

# Fairlee Town Plan

As Adopted by the Voters of Fairlee January 21, 2020



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# Table of Contents

## CHAPTERS

<b>Chapter 1</b>	<b>Introduction .....</b>	<b>3</b>
<b>Chapter 2</b>	<b>People, Education, and Health .....</b>	<b>4</b>
<b>Chapter 3</b>	<b>Housing.....</b>	<b>9</b>
<b>Chapter 4</b>	<b>Economic Development.....</b>	<b>12</b>
<b>Chapter 5</b>	<b>Emergency Services.....</b>	<b>15</b>
<b>Chapter 6</b>	<b>Utilities and Facilities .....</b>	<b>19</b>
<b>Chapter 7</b>	<b>Transportation.....</b>	<b>23</b>
<b>Chapter 8</b>	<b>Energy .....</b>	<b>28</b>
<b>Chapter 9</b>	<b>Natural, Scenic, Cultural Resources .....</b>	<b>38</b>
<b>Chapter 10</b>	<b>Agriculture and Forestry.....</b>	<b>48</b>
<b>Chapter 11</b>	<b>Recreation.....</b>	<b>52</b>
<b>Chapter 12</b>	<b>Land Use.....</b>	<b>54</b>
<b>Chapter 13</b>	<b>Relationship to Other Plans .....</b>	<b>61</b>

## APPENDICES

<b>Appendix A</b>	<b>Implementation.....</b>	<b>62</b>
<b>Appendix B</b>	<b>Municipal Energy Goals .....</b>	<b>70</b>
<b>Appendix C</b>	<b>Maps.....</b>	<b>76</b>
	Map 1 Current Land Use	
	Map 2 Future Land Use	
	Map 3 Transportation	
	Map 4 Town Facilities	
	Map 5 Natural Resources	
	Maps 6-8 Energy: Existing, Solar, and Wind	

# INTRODUCTION



## Overview

Fairlee is a unique community. Unlike many of the towns around Fairlee, it has lakes that are large enough to support a substantial seasonal population and attract tourists from diverse areas and cultures outside of the community.

The Planning Commission has designed this Plan to encourage new growth in the Village Center, balancing the need to serve Fairlee's seasonal population and grow year-round commerce. Encouraging the development of a broader year-round economy will vastly improve the vitality of the Village Center.

The Village Center often acts as the core of the community, where residents meet, engage with each other and build community bonds. The opening of Interstate 91 in 1971 effectively split Fairlee in two. Although the interstate has benefited Fairlee, it effectively separates a substantial amount of the community from the Village Center.

The Planning Commission is seeking to encourage a greater sense of community through this Plan, not only with its goals, but also by fostering community involvement in the planning process itself. The Planning Commission invited such engagement by holding two public meetings in addition to the required public hearings by the Planning Commission and the Selectboard.

## What is a Town Plan?

In Vermont, a Town Plan serves as an official policy statement on the growth and development of a Town. A Town Plan is prepared by a Town's Planning Commission with public input and

expresses the values and vision of a Town's residents regarding how the Town's natural resources should be managed, its lands should be developed and its services should be provided. A Town Plan briefly describes a town's past, identifies existing conditions and, most importantly, states the goals, objectives, policies and recommended actions for the future. Specific reasons to have a Town Plan include:

**Guide for local regulations** - State statute requires that all land use regulations (zoning, subdivision, etc.) must be consistent with the goals of the local plan. The municipal plan functions as the foundation for these regulations.

**Guide for community investments** - Information in the plan can be used for developing the recommendations contained in a Capital Budget and Program, for establishing a community development program, and for providing direction to the Selectboard for such things as community services, emergency services, recreation and municipal facility development to name a few. It also serves to guide the decisions made by the Development Review Board when permits come before them.

**Support for grant applications/planning studies:** Many of the State-run grant programs available to Fairlee consider whether the Town has stated a need for its grant request in its plan.

**Guide for future development** - The District Environmental Commission considers Town Plans during an Act 250 hearing under Criterion 10. The Plan should clearly define what is and is not appropriate in terms of development within the community.

An "approved" Town Plan must be consistent with Statewide planning goals, be compatible with the Regional Plan and other plans in the region and contain all required elements of a Plan. It is not a zoning document, but instead a blueprint by which zoning is implemented. Therefore, a Town's land use regulations (zoning, subdivision, etc.) must conform to the Plan.

# PEOPLE, EDUCATION, AND HEALTH



## Overview

Towns thrive through an interaction of people and a sense of place. It is important to understand the nature of a Town's residents as that drives the need for services and determines what kinds of infrastructure are appropriate for today and the future. To meet social and economic goals Fairlee should work to increase diversity, decrease our median age, and perhaps even grow slightly in population.

## Demographic and Population Profiles

Demographics such as diversity and age shape our Town's needs. For example, studies indicate that diversity is an important foundation for a vibrant economy. Vermont is one of the least racially diverse States in the nation (95% white). Fairlee is even less diverse (98% white).

Fairlee's population change over time is similar to Vermont's. There was a steady rise between 1960 and 1990 and then a gradual flattening that followed. While there is no recent Town-level information available, ACS data indicate that Orange County grew by only 0.1% between 2010 and 2017.

Also mirroring Statewide trends, Fairlee has an aging population. Vermont is one of the oldest states in the nation with a median age of 40.4. The Department of Economic Development's (DED) 2007

Report "Growing Vermont's Next Generation Workforce" ranks Vermont first in the percentage its citizens aged 50-54. Relative to Vermont, Fairlee has a higher median age (47.1). In 2010, 16% of its population was over 65 years of age, marginally higher than Orange County and the State, both at 15%.

Vermont also has the lowest birth rate in the nation (10.4 births per 1,000 of population, compared with 14.2 for the U.S) which, when coupled with immigration of residents over 55, results in an aging population that will need services that are not readily available in a Town like Fairlee, such as elderly housing and public transit. (For additional discussion regarding elderly housing, refer to the Housing chapter, and public transit, the Transportation chapter.)

Different from many rural communities in Vermont – DED's 2007 Report ranked Vermont at the bottom nationally for the percentage of its citizens between the ages of 25 and 29 – Fairlee gained residents aged 25-34 from 2000-2010.

The young adults who choose to return or relocate to Vermont have indicated that their primary motivation for doing so is for the lifestyle associated with the rural landscape. Outdoor recreation, agriculture and the importance of community often encourage these citizens to return, and we have these assets. It would benefit Fairlee if this local trend continues, because young adults create a talented and well-educated pool of workers and start new families.

## Health

Regardless of the demographic makeup of our residents, we want all Fairlee residents to be healthy. Although this section is not State-mandated, the Town believes that its inclusion in the Town Plan will help to ensure that public health and wellness remain a Town priority.

Many sections in this Town Plan have an impact on health, including preservation of green space; clean water; sidewalks that encourage walking; and new development designs to promote human interaction, reduce the use of vehicles, and support local and healthy food.

## Healthcare Facilities

Healthcare facilities are essential in the prevention, treatment, and management of illness, and in the preservation of mental and physical well-being through the services that they offer. Rural

locations such as Fairlee are served by small facilities that assist residents with general health care needs but are not suited for more complex acute care services that require specialized services and equipment. For primary care, residents can visit health care providers in nearby towns, including Little Rivers Health Care in Bradford, Alice Peck Day Memorial Hospital in Hanover New Hampshire, Ammonoosuc Community Health Services in Woodsville, New Hampshire, and Dartmouth Hitchcock Medical Center in Lebanon, New Hampshire. For pediatrics, Upper Valley Pediatrics is in Bradford and in Thetford. For Fairlee's aging population, there are a few regional senior living facilities, including the recently-opened Margaret Pratt Center as well as the Orange East Senior Center which offers two separate types of community meals programs. Fairlee is not home to any health facilities but the local region could be an ideal location for an Urgent Care/Trauma center.

### **Healthy Homes and Food**

Housing is the best-known predictor of health. Lead exposure can lead to significant abnormalities in cognitive development; asbestos and radon exposure can increase the chance of developing lung cancer; uncontrolled moisture, mold, pests, and other triggers cause or exacerbate asthma and other respiratory dysfunction. Inadequate heat can lead to use of inappropriate heating sources potentially resulting in fires or carbon monoxide poisoning; and poorly maintained stairwells and other structures can cause injuries. The risk of falls for older adults is another healthy home concern, particularly when these adults are living in old housing stock that may have uneven floors, narrow stairs, or other potentially hazardous features.

Fairlee residents can make their homes healthier by accessing services provided by home-improvement and weatherization organizations like SEVCA, Vermont Center for Independent Living and Efficiency Vermont. Most of these groups offer rebates for projects, and discounts for income eligible households.

Food access is not simply a health issue but also a community development and equity issue. Access to healthy, affordable, and culturally appropriate food is a key component to a healthy, sustainable local food system. Farm stands and farmers markets, and community meals provide access to healthy foods.

Fairlee residents can purchase groceries at Wing's Supermarket in Fairlee or at Hannaford's in Bradford. The Central Vermont Council on Aging provides meals-on-wheels services Monday, Wednesday and Friday to Fairlee residents through the Orange East Senior Center in Bradford, as well as providing community meals Monday through Friday.

### **Environmental Quality**

Clean air and water are fundamental to a healthy community. An environment free of hazards, such as secondhand smoke, carbon monoxide, allergens, lead, and toxic chemicals, helps prevent disease and other health problems. Implementing and enforcing environmental standards and regulations, monitoring pollution levels and human exposures, building environments that support healthy lifestyles, and considering the risks of pollution in decision-making can improve health and quality of life.

### **Active Living and Active Transportation**

As the built environment has become increasingly car-centric, levels of physical activity have declined. Reduced physical activity has resulted in population weight gains. To counter these trends, it is necessary to make communities more conducive to physical activity, particularly walking and cycling.

Bicycles are used for many reasons: transportation, recreation, commuting and conducting errands. Recreational users include residents who see the health benefits of the sport and visitors who come to Vermont to experience the outstanding scenery.

Walking is an important part of community life and, much like bicycling, actively contributes to the vitality of our roads, reduces our dependence on the automobile, and provides a healthy recreational opportunity.

### **Planning for Health**

A Health Impact Assessment (HIA) is a systematic process that uses an array of data sources and input from stakeholders to determine the potential effects on the health of a population. HIAs provide recommendations on monitoring and managing those effects. They are conducted before decisions are made, so that there is an opportunity to design or implement projects that maximize positive health outcomes. Vermont Department of Health Offices of Local Health may be able to assist Towns with HIAs.

Town Health Officers are given authority by the Vermont statutes to investigate and mitigate any potential or existing public health hazard in his/her Town. The Health Officer investigates upon receipt of information regarding a condition that may be a public health hazard and enforces the rules and permits issued by the Vermont Department of Health. Fairlee's Health Officer can be contacted through the Town Hall.

## Goal 1

To promote health and wellness in Fairlee.

### Policies to Further Goal 1

1. It is the policy of the Town to promote sufficient affordable housing.
2. It is the policy of the Town to promote active transportation through walking and biking.
3. It is the policy of the Town to support increased access to healthy foods.
4. It is the policy of the Town to minimize risk to human health and the environment posed by hazardous sites.
5. It is the policy of the Town to improve accessibility to parks, recreation facilities, and open spaces.

### Actions to Achieve Goal 1

1. The Town should work with the Two Rivers-Ottawaquechee Regional Commission (TRORC) to evaluate Fairlee's role in supplying the region's housing stock by continuing to assess the Town's capacity for growth.
2. The Town should promote opportunities for housing that meet the Town's identified need.
3. The Town should explore bike path options.
4. The Town should help promote access to and awareness of locally grown and locally produced foods.

## Education

Sound planning for educational facilities and programs is necessary to support the social, economic, and cultural welfare of a community. Fairlee's educational achievement is slightly higher

than achievement in Orange County and Vermont. In Fairlee, 96% of residents have a high school degree or higher, compared to the 92% in Orange County and 92% in Vermont. Thirty-nine percent of Fairlee residents have a bachelor's degree or higher, as compared with 30% in Orange County and 37% in Vermont.

### Educational Facilities and Programs

The Rivendell Early Childhood Program (RECP) began in 2001 at the Westshire Elementary School in West Fairlee. In 2008, due to demand for preschool, a second site was added in Fairlee at Samuel Morey Elementary, and a second program with extended hours was added at Westshire Elementary in 2014. There are approximately 40 children ages 4-5 enrolled as part of this program.

Samuel Morey Elementary is located on School Street in Fairlee's Village Center. It provides K-6 level education for students in Fairlee and Orford, and 5-6 education for students from Vershire and West Fairlee. The School was built in 1956 and is in good condition. The most recent capital improvement to the facility was a roof replacement in 2010. There are no major capital improvements planned for this facility in the next 5-10 years. Outdoors, the school's playgrounds were rebuilt in 2012 after a design flaw in the previous playground was discovered. Also, in 2012, the facility received a complete changeover to occupancy and daylight sensors on all outside light fixtures in order to reduce energy use.

Grades 7-12 are taught at Rivendell Academy, which is located across the Connecticut River in Orford, New Hampshire on Route 25A. As part of the diverse educational opportunities offered by Rivendell, high school students have access to college courses at Dartmouth College or Community College of Vermont (CCV) or may participate in affiliated vocational programs at River Bend Career and Technical Center in Bradford or Hartford Career and Technical Center in Hartford.

Parts of the Academy building are aging and in need of investment. In particular, the older sections of the building (which were formally Orford High School) require major heating upgrades. In 2012, high efficiency exterior light fixtures were installed, and the Academy's multi-purpose room was upgraded to include new lighting and a modern audio/visual system. The west wing of the building (which was built in the 1980's) was upgraded with synthetic exterior trim and all windows had foam insulation installed around their framing to reduce

heat loss. In 2013, the Academy participated in an asbestos abatement program. During this period, the gym floor and bleachers were replaced, and air handling facilities were also updated.

There are active after school programs at Samuel Morey Elementary (K-6) and Rivendell Academy (7-10). This provides students who attend with help completing homework and the opportunity to socialize with friends as they participate in a range of activities

### **Student Enrollment**

Enrollments of Fairlee students in the Fairlee School System are reported annually to the Vermont Department of Education. Based upon annual student resident counts from the Department, average daily membership (ADM) at the school for grades (K-12) over the past decade has been as follows: Elementary level enrollment had remained relatively consistent for the past decade. However, since 2016, there has been a significant increase in attendance, rising from 45 students in 2013 to 90 students in 2018. This acute burst in attendance could be in part due to the school consolidations occurring Statewide in recent years.

The Rivendell Academy attendance has been approximately 50 students for the past five years. When compared to the ADM of 87 students during 2004-2005, there has been a decrease of nearly 50% in the number of students. Declining enrollments are being experienced as a State-wide trend, in great part due to Vermont's aging population. But, as was indicated in the Housing Chapter, Fairlee appears to be attracting young adults, which may account for the stability of the primary school population. Losses in student population at the secondary level suggests that residents are either leaving Fairlee when their children reach secondary school age, tuitioning their children to other schools or opting to homeschool. Regardless of the reasons for declines, it is an area of concern. Declining enrollments could impact school taxes and they could also limit the variety of educational opportunities students might have due to reduced staffing and budgets.

### **Adult Education**

Fairlee adults take advantage of adult education opportunities available in the greater Upper Valley Area including Community College of Vermont (CCV) – CCV has offices and classrooms in Hartford, Vermont. CCV is part of the Vermont State

College system and offers full and part time educational opportunities. Attendees may choose a two-year program that leads to an associate's degree, a four-year program that leads to a bachelor's degree, or the college's Certificate Program.

River Bend Career and Technical Center (RBCTC) – Located in Bradford, Vermont, the RBCTC is part of Oxbow High School. RBCTC offers adult education courses that range from the traditional tech center focuses of mechanical and woodworking, to computer technology, small business management and bookkeeping, as well as arts, crafts, languages, and some online courses. RBCTC adult education classes are open to all for a fee. Other, more extensive, opportunities are available in Hartford as well.

As an additional adult opportunity, the Osher Lifelong Learning Institute at Dartmouth (OSHER@Dartmouth) is a volunteer, non-profit (501c3) organization that provides educational programs year-round for residents in the greater Upper Valley and North Haverhill. It is based on the campus of Dartmouth College in Hanover, New Hampshire. Opportunities include studying timely and provocative subjects by participating in courses, attending lectures, interacting at social events, and more.

### **Childcare**

An inventory of registered childcare facilities reveals that Fairlee has a limited amount of childcare available to the community. The State of Vermont has two classifications of regulated childcare. The first is a Registered Family Child Care Home- a child care program approved only in the provider's residence, which is limited to a small number of children based on specific criteria.

The second classification is a Licensed Program, a child care program providing care to children in any approved location. The number and ages of children served are based on available approved space and staffing qualifications, as well as play and learning equipment. A Licensed program must be inspected by the Department of Labor and Industry's Fire Safety Inspectors and must obtain a Water and Wastewater Disposal Permit from the Agency of Environmental Conservation. A Licensed program is considered a public building under Vermont Law. Types of licensed programs include: early childhood programs, school-age care, family homes and non-recurring care programs. There are currently only

two licensed childcare services in Fairlee. Most residents currently arrange for care with relatives or take their children to childcare facilities outside of Fairlee.

## **Goal 2**

**To encourage the creation of affordable childcare facilities that meet the needs of residents in Fairlee.**

### **Policies to Further Goal 2**

1. It is the policy of the Town to support private development of additional, licensed, safe and affordable facilities to meet the childcare needs of its residents.

### **Actions to Achieve Goal 2**

1. To support stability and growth in the local childcare arena, the Town should support local private sector efforts to assist childcare providers looking for business advice and financial investment.
2. The Town should explore the legal aspects to the Town of supporting alternative childcare opportunities, such as cooperative programs.

## **Goal 3**

**To provide a safe and secure learning environment where quality educational opportunities are provided to all students.**

### **Policies to Further Goal 3**

1. It is the policy of the Town to support the Rivendell School District as long as it does not put an undue burden on Fairlee taxpayers.

### **Actions to Achieve Goal 3**

1. The Town will ensure that subdivision regulations enforce phasing and/or special planning for development that may result in a significant addition of school children.
2. The Town will support additional enrollments from Piermont, Warren or other suitable surrounding towns should the Rivendell District find it has the space and the capacity for such growth.

## **Goal 4**

**To connect residents of all ages to vocational opportunities.**

### **Policies to Further Goal 4**

1. It is the policy of the Town to support citizen access to a range of vocations.

### **Actions to Achieve Goal 4**

1. The Town will explore place-based/outdoor education programs for children and adults.
2. The Town will explore and identify opportunities for adult education and retraining programs.

## **Goal 5**

**To promote increased conversation between Town government and the Rivendell School Board.**

### **Policies to Further Goal 5**

1. It is the policy of the Town to continue to work with the Rivendell School Board to identify community needs and ways to best address them.

### **Actions to Achieve Goal 4**

1. The Town and the Rivendell School Board will meet and discuss opportunities for collaboration and strategies to increase community service.



# HOUSING



## Housing Profile

A key element in the character of the Town is its housing - the quality, availability and variety of places where its residents live.

Housing constructed in the absence of adequate planning for public facilities can overburden schools, roads, and other municipal services. Poorly located housing can pollute a water supply or destroy an important wildlife habitat. Housing that is inadequate to meet the demand in a town or region can strain adjacent towns and prevent people from living close to their jobs.

In 2017, The American Census Survey reported that Fairlee had 613 total housing units, and 23% of them (138) were vacant and most likely second or vacation homes. A fourth of the housing units in Fairlee are renter-occupied units, and most housing units (85%) are single units.

## Rental Housing

Fairlee's percentage of renter-occupied housing (23%) is higher than Orange County's. The tight housing market statewide and lack of unoccupied apartments continue to drive up rental costs. Only 2% of Fairlee's apartments are unoccupied. The low percentage of non-seasonal homes that were unoccupied indicates that in 2010 Fairlee was experiencing a shortage of available rental housing stock.

Fairlee's proximity to the Upper Valley and major centers of employment make it a desirable location for rental housing. The most logical location for additional rental housing would be within or adjacent to the Village Center Area, particularly in areas where municipal water is available.

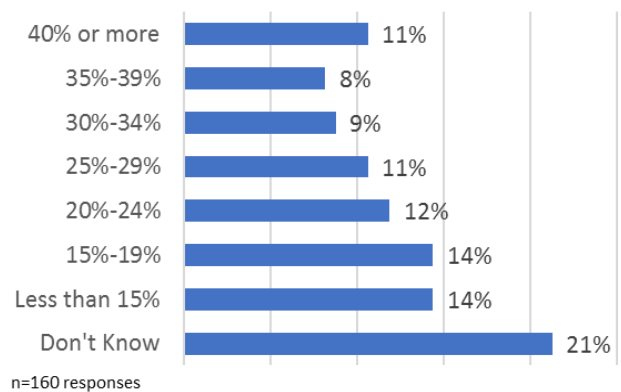
## Affordability

Affordable housing is defined as that which a household making the county median income could afford if no more than 30% of its income was spent on housing costs. For homeowners, housing costs include payments for principal and interest on mortgage, taxes, and utilities. For renters, housing costs include rent and utilities.

In 2000, the US Agency of Housing and Urban Development (HUD) calculated the fair market rent for a modest two-bedroom apartment in Fairlee at \$571 per month; in 2017, that cost had risen to \$945 per month. Given that more than 50% of Fairlee's households filed tax returns valued at less than \$40,000 in 2012, it is likely that some renters in the community find it difficult to afford rental housing in Fairlee.

This assessment is supported by Vermont Housing and Finance's (VHFA) 2013 report "Housing Needs in East-Central Vermont." It reported that 43% of Fairlee's households were spending more than 30% of their income on housing. (A recent community survey indicated that 28% of the respondents were contributing 30% or more.) While the lack of consistent available housing data makes it difficult to accurately track housing values over time, Fairlee's average equalized home value decreased by nearly 10% between 2010 and 2013. Fairlee's average equalized residential home value of \$215,000 in 2017 was a slight decrease from previous years.

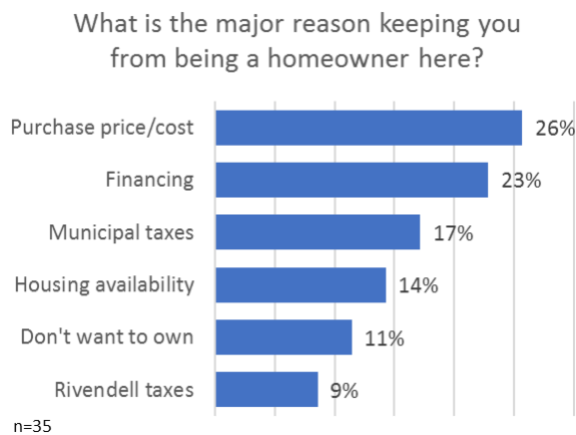
Approximately what percentage of your pre-tax annual income is used toward housing?



The VHFA also indicated that the median income household in Orange County (\$52,710 in 2013, \$56,584 in 2017) could likely afford the

mortgage on the median home price of \$178,700. Fairlee’s median household income is higher than the county median (\$59,486 in 2013, \$66,691 in 2017).

As a result, in Fairlee there is increased demand for affordable housing. In a recent community survey, 26% of respondents indicated that purchase price prevented home ownership and 14% indicated a lack of available housing. For those who rent, only 2% of Fairlee’s apartments are unoccupied. In order to ensure the availability of affordable housing in Fairlee, the community encourages multi-family housing to be developed within or adjacent to the Village Center in areas served by infrastructure.



Another barrier to affordable housing is the age of homes in Fairlee. Vermont’s housing stock is among the oldest in the United States. Forty-seven percent of the homes in Orange County were built before 1970, when housing codes were less stringent, including the use of lead based paint. Fairlee’s older homes were also built before newer energy efficiency technology was available, including air exchangers. These factors have an important impact on the cost of operating housing, ensuring resident’s health and safety, and providing access to Vermonters with different abilities.

In 2017, 21% of Fairlee’s residents were aged 65 or older. As this segment becomes less comfortable managing their own homes and/or as their health declines, they seek a different type of housing. Some choose to downsize, moving from more rural homes to smaller spaces in the Village Center that are within walking distance of required services. Others must relocate to residential care or nursing homes.

Fairlee has neither a residential care nor a nursing home. The Margaret Pratt home in Bradford has recently opened its doors. Several facilities – including Kendal in Hanover, Harvest Hill and Genesis in Lebanon, New Hampshire, The Village and Brookside Nursing in White River Junction, and Valley View in Bradford – are relatively close to Fairlee but would force residents to move out of town. Aging residents and an increased number of millennials add pressure on the Town to continue to address the affordable housing issue.

## Housing and Land Use Policy

Provision of a town’s housing stock is typically a private sector activity. However, the way a community plans for and enables housing is important.

The location of housing affects quality and costs in a number of ways. For example, dense housing developments in rural locations may call for additional roads and add to local maintenance costs. They can also affect the rural character of a neighborhood through increased traffic and could potentially have lower quality fire and first responder service.

The neighborhoods served by Fairlee’s water system are more logical areas for high density or multi-unit housing, which is less expensive to develop than housing that requires more land per unit in more rural areas. Additionally, new multi-family housing in or near the Village Center would stimulate the local economy.

Regardless, without a municipal sewer system, Fairlee will have to take into consideration the potential for negative impacts on existing properties and perhaps should explore community wide opportunities to resolve this situation.

The location of housing plays an important factor in housing affordability. Living near employment or other daily destinations can save costs substantially. The VHFA suggests that driving is likely to cost \$122 less per month for a household that is less than 10 miles from work than for a household that is 25 miles from work. In addition, a household with a shorter commute is likely to have a more stable future because it is less vulnerable to increases in vehicle fuel prices.

## Housing

### Goal 1

To promote safe and affordable housing for Fairlee full time and seasonal residents

#### Policies to Further Goal 1

1. It is the policy of the Town to allow for growth of housing for all income levels at a rate consistent with the community's ability to provide services in a fiscally sound manner and consistent with the other goals and policies expressed in this Plan.
2. It is the policy of the Town to seek public funding in the form of subsidies when necessary to preserve maintenance of or access to affordable housing. Public funds should be considered only when such investments result in developments which are affordable on a long-term basis and when a clear public benefit to the community can be demonstrated.
3. It is the policy of the Town that priority be given to the preservation and improvement of housing already in existence.
4. It is the policy of the Town to locate multi-family housing within the existing Village Area where municipal services are readily available.
5. It is the policy of the Town to assess the possible impacts on residential housing of seasonal and short-term rentals.

#### Actions to Achieve Goal 1

1. The Town should work with State housing agencies, non-profit organizations and lending institutions to ensure that Fairlee residents know and have access to loan or grant funds to acquire or improve their primary homes.
2. The Town should work with TRORC to evaluate Fairlee's role in supplying the region's housing stock by continuing to assess Fairlee's capacity for growth.
3. The Town should market its qualities to developers and nonprofits that are able to add housing to meet the Town's identified need.

### Goal 2

To encourage planning, design and construction of residential housing which minimizes the cost, energy consumption and environmental impacts of housing while maintaining the character of the community.

#### Policies to Further Goal 2

1. It is the policy of the Town to support home weatherization programs.
2. It is the policy of the Town to encourage small rental units in the Village.
3. It is the policy of the Town to prioritize infill development and renovation of larger homes into multiple units within the Village.

#### Actions to Achieve Goal 2

1. The Town will promote home energy audits and weatherization assistance through Capstone Community Action, Efficiency Vermont and similar organizations.
2. The Planning Commission will continue to update zoning regulations to remove barriers and encourage affordable housing in ways that reflect the needs and vision of the community.

# ECONOMIC DEVELOPMENT



## Introduction

A local economy is influenced by activities that occur within the Town and regional economic activities in which the Town's residents are involved.

Data from the Vermont Department of Labor and Industry indicates that the number of establishments (employers) in Fairlee has remained relatively flat for over a decade. Fairlee's number of employers is healthy, with no trend of gains or losses beyond a natural fluctuation. It is important to note that in 2017, 11% of Fairlee's population reported working at home, a steady increase from the 6% reported in 2010.

At the same time, data supports the fact that Fairlee in 2019 is a "bedroom community." While it is likely that many residents will continue to seek employment outside of Fairlee, one of the key goals of the Town Plan is to encourage economic growth within the Town.

## Assets

To encourage economic growth, communities must inventory their assets and look for ways to utilize them to their fullest extent. Fairlee has many desirable and rare assets, including:

**Direct access to the rail system** - The Vermont Rail System follows Route 5 along the Connecticut River, passing through Fairlee

and its central village. This travel corridor has the potential to serve light industry as well as commuters or future travelers from major metropolitan areas such as Boston, should rail ever become a viable method of public transit.

**Direct access to the Interstate** - While it has been acknowledged that the development of I-91 effectively split the community into two sections, the Interstate is a resource that offers Fairlee's economy direct access to travelers, freight and commerce. Because the interchange is within the boundaries of its Village Center, Fairlee can take advantage of interstate travelers by offering goods and services, in a rural setting that reflects a community lacking the patterns of urban sprawl that often develop around interchanges outside of villages.

**Village Center** - Fairlee has a Village Center, it is a location where residents and visitors can do business, utilize services and participate in community events.

**Lake Morey and Lake Fairlee** – Fairlee's recreation environment is enhanced by two lakes, Lake Morey is adjacent to the Village Center and Lake Fairlee is the less developed alternative. Both lakes provide recreation opportunities and are a draw for tourists. Although the population of visitors is higher during the summer, the lakes have increased their draw during winter months.

**The Town Forest and conserved lands** – The open lands in the uplands of Fairlee have 18 miles of trails, diverse biology, and spectacular views.

## Designated Village Center

Tourism is a valuable portion of Fairlee's local economy. Regardless, the community could benefit from a more diverse year-round economy which would provide better local job opportunities and in turn increase Fairlee's draw as a destination. To encourage this type growth, it is the intent of this Plan to focus on the Village Center area as the most logical location to direct a substantial portion of future economic development. As such, it is important to recognize the need for village improvements.

There are numerous locations in the Village Center that could be revitalized, most obviously, the Colby Block. The former Fairlee Railroad Depot is

also a location ripe for revitalization. To encourage revitalization, Fairlee is enrolled in the State of Vermont's Village Designation Program, receiving the designation in January 2015 with validity through 2023. The Village Designation program offers tax credits for the revitalization of buildings within designated areas.

In part, the vitality of the Village Center area is connected with Fairlee's existing water system. There are several State drinking water and wastewater programs that provide financial assistance to communities to expand and improve their existing systems. The likelihood of funding is highest in areas that are designated as growth centers.

Fairlee's existing sidewalk system is substantially smaller than it has been in the past. Returning it to its historical size and improving the quality of design would improve pedestrian travel throughout the Village Center. Additionally, encouraging public transit and expanding park and rides would draw more people into the village.

## Economic Opportunity

Economic activity outside of the Village Center includes the Town's two largest employers (the Lake Morey Resort and the Aloha Foundation), smaller businesses that do not have an impact on their neighborhoods (such as Farmer Hodge's Christmas Shop), and remote employees who telecommute with out-of-town employers.

As noted earlier, Lake Morey and Lake Fairlee are important tourist destinations. The Plan seeks to provide strong opportunities for outdoor-related businesses while considering the need to keep the lakes and their watersheds healthy and vibrant.

Businesses located outside the Village Center should not put an undue burden on community services, particularly roads. Being at an appropriate scale and size, they should live harmoniously with surrounding homes and businesses, and should not negatively affect Fairlee's rural character. The Plan seeks to improve opportunities for remote employees and small businesses by encouraging improvements to the communications infrastructure, such as affordable internet. Through sensible planning and good land use regulations, such activities outside of the Village Center should continue to be encouraged. Such economic diversity will lead to a resilient and sustainable local economy.

## Employment and Wages

Since 2010, Fairlee's unemployment rate has slightly declined and in 2017, Fairlee's unemployment rate of 0.5% was lower than either Orange County's (5%) or Vermont's (5%).

According to the 2010 US Census, of Fairlee residents who are employed, a plurality (27%) work in education, health care and social assistance. Since over 80% of Fairlee's workforce commute to work, it is likely that the plurality is employed by Dartmouth College and Dartmouth Hitchcock Medical Center.

Fairlee's workforce has been consistently earning higher than the county and state average annual wage levels for more than a decade. In 2017, Fairlee's average annual wage was \$33,259, which was 10% higher than Orange County (\$29,651) and slightly higher than the State (\$31,917). Additionally, family incomes in Fairlee – which is an important factor to consider when analyzing the affordability of housing – is higher. In 2017, Fairlee's median family income was \$66,691, 20% higher than the county median (\$56,584) and the State median (\$57,808).

## Goal 1

**To encourage a strong and diverse local economy that provides satisfying and rewarding employment opportunities for residents while maintaining the community's rural character.**

### Policies to Further Goal 1

1. It is the policy of the Town to encourage mixed-use commercial development within the Village Center area.
2. It is the policy of the Town to encourage new commercial development (excluding primary retail) in appropriate locations outside of the Village Center where services such as roads, fire protection and power supply are available or planned.
3. It is the policy of the Town to assure access to strong internet throughout Fairlee.
4. It is the policy of the Town to support local groups that further recreation, culture, and the arts.

### Actions to Achieve Goal 1

1. The Town should support efforts to expand public transit provided that the Village Center is used as a location to pick up and drop off riders.

2. The Town will apply for Village Designation renewal for the Village Center when its current designation expires in January of 2023.
3. The Town will encourage and support the responsible development of information technology and communication infrastructure necessary for new economic growth.

## **Goal 2**

**To encourage a year-round economy in Fairlee.**

### **Policies to Further Goal 2**

1. It is the policy of the Town to work to attract diverse and sustainable businesses.
2. It is the policy of the Town to explore financial incentives options to encourage economic development in Fairlee.

### **Actions to Achieve Goal**

1. The Town should continue its Capital Budget and Program efforts in order to stabilize year-to-year taxes and should examine the implications of tax stabilization on future development.
2. The Town should investigate creating a Tax Increment Finance (TIF) district or alternative funding mechanisms in the Village or around Lake Morey for infrastructure funding.

## **Goal 3**

**To encourage the exploration and development of Town marketing and signage.**

### **Policies to Further Goal 3**

1. It is the policy of the Town to support the development of a marketing strategy.
2. It is the policy of the Town to support local businesses interested in developing marketing and branding.

### **Actions to Achieve Goal 3**

1. The Selectboard, the Recreation Council, and/or the Forest Board should work with residents to develop trailhead signs.

## **Goal 4**

**To encourage the establishment of a redevelopment organization in Fairlee.**

### **Policies to Further Goal 4**

1. It is the policy of the Town to create a task force or committee for community redevelopment planning.
2. The Town should explore the concept of specific real estate purchases should the community perceive a need to elevate the usage and aesthetics of the property.

### **Actions to Achieve Goal 4**

1. The Town will explore policy language that will encourage redevelopment in Fairlee.
2. The Town will identify ways to build and strengthen public/private partnerships.

# EMERGENCY SERVICES



## Overview

Since 2010, Vermont has had 17 federally declared major disasters, including Tropical Storm Irene that caused serious damage throughout Vermont towns. Most of these disasters were classified as severe storms and flooding, and a few as severe winter storms. From major Statewide disasters to individual health emergencies, Emergency Services play a critical role in the safety of Fairlee residents.

## Health Care Facilities

Health care facilities are essential to the prevention, treatment, and management of illness, and to the preservation of mental and physical well-being through the services that they offer. Rural locations such as Fairlee are served by small facilities that can assist residents with general health care needs but are not suited for more complex, acute care services that require specialized services and equipment. Fairlee is fortunate to have a health center (Little Rivers Health Center) located in Bradford, less than ten miles from Fairlee's Village, as well as several other small clinics located in the greater Upper Valley Area. For more extensive care, such as Emergency Room or Urgent Care Dartmouth Hitchcock Medical Center (a tertiary care facility) is located 21 miles south in Lebanon, New Hampshire. For more discussion of health services, refer to the Health Chapter.

## Fire Protection Services

The Town is served by a volunteer fire department that responds to fires and other emergencies in Fairlee and neighboring towns. They respond to approximately sixty calls per year, of

which less than 30% are Fairlee fires. The Department has robust mutual aid agreements with neighboring communities. These departments respond to large fires requiring outside resources.

At present, Fairlee has approximately 20 volunteer firefighters. Because a majority of Fairlee's residents work outside of the community, it can be challenging to find and retain volunteers. While Fairlee's coverage is adequate, there is always a need for additional firefighting manpower.

The Fairlee Fire Department is in the Fairlee Emergency Services Building at 5445 Lake Morey Road. The building was built in 1990 and is in good condition. There is a current need to examine the effectiveness of the building's exhaust system. No other upgrades to the Fairlee Fire Station are anticipated in the next five to ten years.

Fairlee's emergency vehicles include one engine/pumper, tanker, a forestry truck and a rescue truck. The engine/pumper is nearly twenty years old. The estimated cost of replacing it is approximately \$350,000. Fairlee has been fortunate in that its Emergency Services vehicles have primarily been paid for by the Fairlee Fire Brigade through donations or by the Fairlee Fast Squad. The Fairlee Capital Budget and Program identifies funding priorities for the Town, which include some emergency services equipment outlays to 2030.

## Police Protection Services

The Town of Fairlee does not have a full-time police force. Its police services are provided jointly by the Chief of Police (who is appointed by the Selectboard) and the Orange County Sheriff's Department, which provides services based on contract agreements with the Town. Total budgeted amounts allocated for police protection services are roughly \$45,000 per year.

The Fairlee Chief of Police provides limited police security, speed enforcement, and traffic control services. In addition, the Police Chief acts as liaison to other police service providers.

## Emergency Medical Services

### Upper Valley Ambulance

Emergency medical services in Fairlee are provided by Upper Valley Ambulance, Inc. (UVA). UVA is a not-for-profit emergency ambulance and rescue service based in Fairlee's Emergency Services Building. Its staff includes paid full-time and part-time and volunteers. It provides emergency medical

service to a bi-State portion of the Upper Valley, including Fairlee, Bradford, Corinth, Strafford, Thetford, Vershire and West Fairlee in Vermont and Orford and Piermont in New Hampshire.

UVA is paid for its services through taxes, which are assessed on a per capita basis. Those who use the ambulance are charged on an individual basis in addition to fees paid by the Town.

### **Fairlee Fast Squad**

Fairlee maintains a FAST (First Aid Stabilization Team) Squad which is a first-on-the-scene rescue service that provides immediate first aid and stabilization to citizens in the event of a medical emergency or an accident and that provides vital information to the ambulance service prior to their arrival on scene. There is one full-time member of the Fairlee FAST Squad.

The FAST Squad has a five-person rescue truck, which allows it to respond with the necessary equipment to meet the unique requirements of most emergencies. The FAST Squad also has a State-of-the-art “Jaws of Life Tool” and a “Paratech Vehicle Stabilization System,” which allows for safer and quicker extrication of people who are trapped in an accident and makes it possible to stabilize a vehicle left in any position.

### **Dartmouth-Hitchcock Advanced Response Team (DHART)**

The Dartmouth-Hitchcock Advanced Response Team (DHART) is based in Lebanon, New Hampshire at Dartmouth-Hitchcock Medical Center. DHART crews provide air medical transportation services to the local region and respond to public safety agency requests for medical evacuation of trauma patients from scenes of injury, transporting patients to the closest Trauma Center. Operating 24 hours a day and seven days a week, DHART Crews transport adult, pediatric and neonatal patients to any appropriate medical facility in New England. DHART landings within Fairlee are generally coordinated by the Fairlee Fire Department.

## **Emergency Management Planning**

The impact of expected but unpredictable natural and human-caused events to the region can be reduced through proper emergency management. Emergency management is generally broken down into four areas: preparedness, response, recovery and hazard mitigation.

**Preparedness** includes training exercises and the acquisition of suitable equipment for

emergency personnel. Yet it is also the responsibility of residents, business, and government to practice simple preparedness measures, including having disaster supplies on hand, installing smoke detectors and generators, having emergency fuel for generators and vehicles, preparing emergency plans, and knowing basic first aid.

**Response** is the initial emergency response to save life and property during and immediately after the disaster. It is initiated by local emergency crews and then followed by outside forces if necessary. Response operations are greatly enhanced by proper preparedness. Most emergencies of any scale require Towns to work together, often with State or federal agencies. Practicing with all potential partners before an actual emergency is critical to smooth emergency operations.

**Recovery** is the more long-term process of “putting life back to normal.” Recovery can take a long time and is hindered if a disaster is severe or widespread. In large disasters, such as Tropical Storm Irene, recovery includes many State and federal agencies, especially the Federal Emergency Management Agency (FEMA).

**Hazard mitigation** is 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 their effects.

### **Local Emergency Management Plan**

Fairlee maintains a Local Emergency Management Plan (LEMP). The LEMP was developed in partnership with TRORC and addresses mitigation (procedures to reduce the effects of disaster) and education needs.

There are many ways that the Town can reduce damages. It is important to note that communities that were hard hit by Tropical Storm Irene discovered that there was less State and federal assistance than expected and that the assistance that was available required a substantial effort at the municipal level. Since a disaster does not necessarily lead to State or federal assistance, the Town should take sensible steps to reduce disaster costs, damage to property and loss of life.

Fairlee is part of Local Emergency Planning Committee (LEPC #12) and has an appointed Local Emergency Management Director who is responsible for coordinating the various components of the Emergency Management System, including fire,



EMS, law enforcement, public works, volunteer groups and State resources.

In the event of a disaster, the Selectboard will formally declare a State of emergency if the Board feels it exceeds the Town's emergency management capacity. The declaration will be submitted to Vermont Emergency Management and a local emergency operation center (EOC) will be set up in the Town Office and/or the Fairlee Emergency Services Building. For residents in need, the Samuel Morey School serves as Fairlee's Emergency Shelter. The Town has budgeted for a generator for the Town Hall so that Emergency Shelter status can move from the School to the Town Hall. (The School does not have back up power, but food and showers are available at the school if there is power.)

### **Safe Development**

New property development in Fairlee should be designed to allow safe access for emergency services. Poorly designed driveways that are too steep or too narrow can limit access, particularly in the winter, and may represent a safety hazard for emergency responders.

The Fairlee Zoning Ordinance contains provisions to ensure that land development shall be designed to ensure adequate provision of facilities necessary for emergency services. In new subdivisions, the design of such drives or similar facilities should be done in consultation with the Fairlee Fire Department. On major subdivisions, the Development Review Board has the option to require storage ponds and dry hydrants that could be necessary for adequate fire protection.

## **Goal 1**

**To encourage high quality medical care to all Fairlee residents.**

### **Policies to Further Goal 1**

1. It is the policy of the Town to support and encourage the development of local and high-quality health care and counseling services and facilities help residents obtain care as close to home as possible.
2. It is the policy of the Town to support programs that improve medical and mental health services for Fairlee residents.
3. It is the policy of the Town to support the development of assisted living or other facilities or services dedicated to supporting the elderly in Fairlee.

### **Actions to Achieve Goal 1**

1. The Town should support private sector efforts to seek funding to assist with the development of healthcare infrastructure.
2. The Town should explore the opportunity for an urgent care facility.

## **Goal 2**

**To ensure the protection and safety of the citizens of Fairlee.**

### **Policies to Further Goal 2**

1. It is the policy of the Town that the Selectboard maintain an up-to-date Local Emergency Management Plan.
2. It is the policy of the Town to work with TRORC to properly plan for hazard events.
3. It is the policy of the Town to ensure that its residents remain educated about local emergency services.

### **Actions to Achieve Goal 2**

1. The Selectboard should update the Local Emergency Management Plan at least once a year or when key emergency management personnel change.
2. The Selectboard should continue to maintain a Hazard Mitigation Plan with assistance from TRORC.
3. The Selectboard should have a clear plan for use of its Emergency Shelter. This plan should include written guidelines about staffing and operation.
4. Town officials who are part of Fairlee's emergency management team should receive adequate training in the Incident Command System (ICS).
5. The Selectboard should continue to use and investigate additional uses for its "Code Red" alert system.
6. The Town will acquire a generator for the Town Hall so it can serve as an additional Emergency Shelter in Fairlee.
7. The Selectboard should set in motion an education process prior to the movement of the Emergency Shelter from the Samuel Morey School to the Town Hall.

## **Goal 3**

**To maintain appropriate fire and ambulance service.**

### **Policies to Further Goal 3**

1. It is the policy of the Town to support efforts to decrease response times for emergency services.
2. It is the policy of the Town that road and driveway access to proposed developments be evaluated for fire trucks and other emergency vehicles as part of the permit review process.
3. It is the policy of the Town to maintain its relationship with Upper Valley Ambulance.
4. It is the policy of the Town to work closely with the Fairlee Fire Department and FAST Squad to ensure that both have adequate resources.

### **Actions to Achieve Goal 3**

1. The Town should explore ways to ensure that an adequate number of firefighters are available during the daytime and evening hours.
2. Development and zoning regulations should continue to require consideration for emergency vehicles in road and highway access decisions.
3. The Town should include Fire and FAST Squad needs in its Capital Budget and Program.

# Utilities and Facilities



## Overview

Providing services and maintaining facilities is one of the key responsibilities of municipal government. The cost of services and public facility maintenance is a substantial amount of a municipality's yearly budget.

## Capital Budgeting & Planning

State statutes enable communities to create a Capital Budget and Program (24 V.S.A §4443) that outlines how monies will be designated for capital projects that are planned to be undertaken over a ten-year period.

Fairlee has had a capital budget plan that was initiated in the mid 1990's. At the 2019 Town Meeting, voters approved a revised Capital Budget and Program (CPB) and created five reserve funds to be managed by the Town Administrator and Treasurer as part of the yearly budget process. The funds include:

**Emergency Reserve Fund** for purchases of emergency equipment/vehicles. This account, with updates made in 2019, now totals \$162,679 for the use of the Fire and Rescue and Police Departments.

**Town Buildings and Land Reserve Fund** for improvements/repairs to Town buildings and lands. The fund totaled \$98,000 in 2019 and funds recently went to projects such as the Town Hall and information technology. Funds in the future will be designated for Emergency Building repairs and Town Hall window replacement. It is important to consider energy efficiency improvements along with routine capital maintenance.

**Town Highways Reserve Fund** for capital improvements for Town roads, bridges, and culverts. In 2019, this reserve totaled \$83,243, and went toward bridges, culverts, rebuilding a portion of Lake Morey Road East and repair of Terry Hill Road.

**Lake Reserve Fund** for water quality work and beach equipment. This 2019 reserve fund total came to \$31,866 for projects including Milfoil control (with a very effective new chemical treatment) and playground equipment.

There is also a **Water System Reserve Fund** for upgrades and improvements to the Town water system. The Water Department has a fund balance of \$117,767. Because the department is a self-financed entity, it is not included in the Capital Budget and Program. However, it may be included in future budgeting.

In 2019, the Town secured a 40-year \$2 million USDA loan and a \$1.6 million grant to upgrade the water system and address a failed water tank. The Town's portion of the grant is 55%. As of 2019, the Town has a new 275,000-gallon water tank. Upon completion of the projects funded by the grant in 2020, the Town will have water meters, a water filtration system, and replaced water lines on Route 5 South and on the east side of Lake Morey to Joe's Road.

## Town Properties

### Town Office (Town Hall)

The Fairlee Town Hall is located at 75 Town Common Road in the Village. Space in the building is used for the Town Clerk, Town Administrator, Zoning Administrator, Treasurer, and Listers.

In 2013, the Town Hall was damaged when its fire suppression system malfunctioned. The resulting water damage forced the community to replace the hardwood flooring on the first and second floors and add structural support beams to the building. The renovations cost the Town approximately \$230,000, although much of that amount was covered by insurance. Some work beyond the scope of what was insured was done, including several energy efficiency improvements that were suggested in an audit conducted by the Energy Committee in 2010.

In 2017, the Town passed an \$850,000 bond to fund renovation of the Town Hall. An active

committee oversaw the renovation, which made the second floor accessible to the handicapped and returned its auditorium to its historic glory. The project was completed and opened to the public in July 2018. Since then, the auditorium has been used for weddings and receptions, memorial services, musical events, and lectures. It is regarded as a valuable community space and an economic driver for the Village center.

### **Fairlee Public Library**

In 2002, the Fairlee Public Library moved from the Town Hall to its current location at 221 Route 5 North.

In addition to its 15,725 volumes of books, the Library also offers movies, music, audio books, puzzles, board games and video games for borrowing. It provides a range of programs for the community including movie and gaming nights, a creative writing group, book groups and reading opportunities for children. Wi-Fi is available at the Fairlee Public Library 24 hours a day and there are six public computers available for use during library hours. The Library is ADA compliant, making it handicapped accessible.

In 2012 at the request of the Library Trustees, the Energy Committee completed an energy audit on the Public Library building. Most of the recommendations from this audit, which were estimated at a cost of roughly \$6,000, were implemented in 2013, including several health and safety modifications, insulating the foundation and other areas of the building envelope, and improving air sealing throughout the building. Remaining tasks include installing a programmable thermostat and upgrading and improving the efficiency of exterior and interior lighting. It is estimated that remaining projects related to the audit will cost under \$1,000.

### **Emergency Services Building/Equipment**

The Fairlee Emergency Services Building is located at 5445 Lake Morey Road. This multi-purpose facility houses Fairlee's volunteer fire department, Fast Squad and the Upper Valley Ambulance. The building was built in 1990 and is in stable condition.

In 2010, the Energy Committee utilized grant funding to conduct an energy audit of the building, which identified key measures to reduce energy use. The most significant opportunities for saving energy in the building were relatively low-cost, focusing on improvements to the existing lighting system (interior and exterior), heating

system, and hot water. The building's envelope tested well, indicating that only a small amount of additional insulation was needed in the attic to improve efficiency.

There are additional improvements planned for the Emergency Services Building in the foreseeable future. The funding for these repairs will be incorporated in the current year operating budget and in the Capital Budget Program Town Buildings and Land Reserve fund with an estimated annual contribution of \$8,000

### **Fairlee Railroad Depot**

The Railroad Depot building is in Fairlee's Designated Village Center. Last actively used by the railroad in 1972, the building was built in 1848. It has been identified as historically significant because it is an exceptionally well-preserved, first generation structure from the earliest years of railroad development in the State of Vermont.

The building houses an antique shop that is open during the summer and that also utilizes the space for storage during the winter. Its grounds host a summer and foliage season flea market.

The Town has considered possible future uses for the building and has made occasional investments in maintenance with the most recent being substantial repairs to the roof.

### **Town Beach Playground/Bath House**

Fairlee maintains a small building at the Fairlee Public Beach that has changing rooms and bathrooms for beachgoers. The building also has space for storage. In 2018, Fairlee received \$9,000 from the Vermont Recreation and Parks Association to renovate the playground and picnic area, and to make the Beach's pathways handicap accessible.

## **Municipal Services**

### **Public Water**

The Fairlee Village area and parts of Lake Morey Road are served by a municipally owned water supply system. Groundwater serves as the source of supply from two gravel packed wells with a combined yield of 1,200 gallons per minute. Water is stored in two reservoirs (a new 265,000 gallon glass-lined tank and a 100,000 gallon cement tank) which are located off Bald Top Road. Both tanks are in excellent condition.

The system provides water to the Village as well as to neighborhoods near Lake Morey. There

are a total of 340 connections averaging use of approximately 57,000 gallons of water per day. The system has the capacity to handle a maximum demand of 140,000 gallons per day (gpd).

Like many water distribution systems in Vermont, the Fairlee Public Water System is old and in need of improvements. Within the next 2-5 years, it is anticipated that pumps will be due for replacement, and the community recognizes and has been working to establish a suitable backup well site which is needed should the existing well fail or be compromised. Estimates on the potential costs of a pump replacement or a backup well have not been calculated. Several well sites have been investigated but no specific site has been identified.

The Selectboard, Treasurer and the Water Operators have initiated an Asset Management Plan which will be designed to determine replacement costs and values with an overall inventory of the current system. This inventory will coordinate with the installation of the water meters for each of the connections and will integrate the current paper maps with the digital inventory that was created over the last dozen years.

### **Wastewater Treatment**

Fairlee does not have a centralized wastewater treatment facility. All wastewater is handled through on-site septic on a parcel-by-parcel basis.

The Selectboard has recently initiated a committee to study small centralized wastewater treatment. The committee has been working with the State to determine if Fairlee has the potential to use its sandy soils to develop innovative off-site systems. Off-site systems would allow for increased housing density in the Village Area and ensure clean water in Lake Morey.

In the future, a municipal wastewater system could be valuable to Fairlee, but its development would require State or federal grant assistance to make it feasible for the community.

### **Solid Waste Management**

Fairlee is part of the Central Vermont Solid Waste Management District (CVSWMD). Fairlee takes advantage of CVSWMD's various programs, including a household hazardous waste program twice yearly (in Barre and Bradford) and other special collection events as necessary.

The Fairlee Transfer Station is on 4.7 acres owned by the Town on Dump Road. Fairlee's solid waste and recycling is presently handled by

Quinttown Container Service at a cost to the Town of approximately \$20,000 per year, raised through taxes. The Town of Fairlee does not provide curbside pickup. There are local businesses that provide collection to some residents.

Along with incoming solid waste, the Transfer Station collects paper, cardboard, plastic, metal recyclables and compost. To facilitate best practices, the Town is exploring options to have the brush chipped and removed on a yearly basis. The Transfer Station is open only to residents and taxpayers.

The Town intends to enhance the Transfer Station and update its operating policies. Current initiatives include clearing out the growth to the north of the recycling bins and removing the brush that borders the Vermont State Railroad property. The Town's Brush area is also part of the area to be redesigned. Clearing these spaces will facilitate a redesign of the area. Additional enhancement will include involves using the trusses from the old water tank to construct a pole barn that would house the highway contractor's and water department's equipment.

The State owns 7 acres to the north of the Transfer Station, bordered on the west side by railroad tracks and on the east side by the Connecticut River. The State property lies fallow. The Town is interested in acquiring or renting this property from that State to serve as a park or recreation area on Connecticut River.

### **Cemeteries**

Fairlee has three Cemeteries: Village Center Cemetery (located on Route 5 North), Ely Cemetery (located on Bragg Hill Road), and Brushwood Cemetery (located on Brushwood Road). The cemeteries are managed by the Fairlee Cemetery Commission, an elected group that oversees upkeep and long-range planning. While the Village Center Cemetery has adequate capacity, additional space was added to the north as a result of a generous contribution from the Gray family.

### **Communication Facilities**

#### **Telephone and Internet Services**

Fairlee has two landline telephone and internet services: Consolidated Communications (which purchased FairPoint) and Topsham Communications.

Consolidated Communications owns the original copper landlines throughout the entire community and provides telephone and internet with dial-up or DSL based on locations. In certain locations, newer technology can provide phone, internet and TV packages.

Topsham Communication provides fiber coverage within the Village and surrounding primary roads. There are additional hookup charges based on distance from its lines. Its fiber network can provide speeds up to 20Mbps with phone, internet and TV packages that are priced competitively.

Satellite internet is provided locally by HughesNet and ViaSat. The latter is acquiring smaller satellite internet companies and might be an option for residents who are unable to access the internet via fiber or DSL, provided they have a clear view of the southern sky from their location. Although bandwidth over satellite is three to five times faster than dial-up, it is considerably more expensive than other methods of access and it can be affected by heavy weather such as torrential rains and blizzards.

At this point and with the competing fiber and landline coverage by its two providers, Fairlee is not covered by cellular internet. The State of Vermont has put a substantial amount of support behind the notion of providing internet access via this medium. In the future, as major communications companies increase cell service to underserved areas, Fairlee might be a candidate for this type of service

### **Cellular Communications**

Cell coverage in Fairlee is generally excellent, but some areas are not served due to topography. AT&T and Verizon Wireless offer 3G and 4G coverage. It is estimated that 95% of the households and 100% of the businesses in Fairlee have adequate cell phone reception.

Fairlee has a cell tower ordinance that guides the design of towers that might be developed. However, any cellular provider who is creating a network of cell towers is exempt from local land use regulations under V.S.A Title 30, Chapter 5, §248a. Despite the exemption, due consideration to the Town Plan is supposed to occur as part of the permitting process.

## **Goal 1**

**To provide quality public services and public facilities that meet the needs of the community without creating an undue burden on taxpayers.**

### **Policies to Further Goal 1**

1. It is the policy of the Town to provide residents with safe, effective, responsive and affordable municipal infrastructure, facilities and services consistent with other Town goals and whenever possible, to encourage and work with other public and private utility or service providers to do the same.
2. It is the policy of the Town that municipal officials will participate in the Public Service Board's review of new and expanded telecommunications facilities to ensure that the goals and policies of this Plan are considered in future development.
3. It is the policy of the Town to effectively plan for future investments and upkeep of community facilities in order to avoid overburdening taxpayers due to unexpected maintenance costs.
4. It is the policy of the Town to expand community services in ways that provide a benefit to the residents.

### **Actions to Achieve Goal 1**

1. The Selectboard should work with the Planning Commission to maintain a Capital Budget and Program to guide future investments in infrastructure.
2. The Selectboard should decide on the appropriate level of annual reserve inputs in order to meet expected expenditures.
3. The Selectboard should continue to provide information from the Capital Budget and Program so that residents can see both how funds are accumulating and their expected uses.
4. The Town should continue to utilize the municipal web site, the local Listserv and newsletters to communicate and provide residents with knowledge of current municipal data and various town project status.
5. The Town should seek grant funds to better understand the construction and maintenance investments for limited sewer capacity, sidewalks and other infrastructure.
6. The Town should work to create an assets management plan for repurposing existing infrastructure and Town buildings.

- 7. The Town should explore options for centralized community wastewater systems.

# Transportation



## Introduction

Land use, energy, and transportation are related. Land use and transportation are both linked to the Town's economic and environmental well-being. Poorly planned land use patterns increase transportation costs and the tax rate, whereas well-planned development can add to the tax base of the Town, in turn providing additional funds for transportation infrastructure. Smart transportation choices lessen pollution and improve public health as well. This chapter describes what we have now, issues we see as pressing, and our goals, policies, and recommendations for action in the next eight years.

## Town Roads

Fairlee has a small system of roads at just under 24 miles, compared to neighboring Thetford

### Town Roads in Fairlee

Class 1	0 miles
Class 2	5.56 miles (23.5%)
Class 3	11.47 miles (48.5%)
Class 4	6.6 miles 28%)
<b>Total</b>	<b>23.63 miles</b>

and Bradford, which both have over 50 miles of roads, respectively. Most Town roads are Class 3 highways that are maintained in a manner enabling them to be driven under normal conditions in all seasons by a standard car. They may be paved or graveled. Regardless, Fairlee has an above average percentage of Class 2 (such as Lake Morey Road) and Class 4 roads.

Class 4 highways are not required to be maintained. No State aid is available for Class 4 roads. While not suited for regular traffic, Class 4 roads are valuable for the Town from a recreation standpoint, ensuring roadways for snowmobiling, cross country skiing, walking, hunting, horseback riding and other outdoor recreation. Often, these roads are scenic travel corridors for hikers and bicyclists and provide limited access to hunting and conservation lands.

Roads are one of Fairlee's largest Town capital assets, representing several millions of dollars of value. Annual road costs are the second largest Town expense other than public education. Over the years, Fairlee has funded investments in its roads through a combination of sources, VTrans funding, a robust Capital Budget reserve fund and through municipal taxes. Additional Transportation funding comes from numerous State sources for major improvements or repair projects and through State gas tax receipts that provide limited funds based on Class 1-3 road miles. Maintenance of Class 4 roads is funded exclusively by the community.

Because of Fairlee's low road mileage, the Town does not have a its own road crew and or a garage, but instead contracts for road maintenance and plowing on a three-year basis. Keeping roads in good condition makes more sense than letting them deteriorate and then needing major repairs. TRORC has compared programs throughout the region and has found that a program of early intervention using preventative maintenance is 75%-85% less costly than larger reconstruction work after significant deterioration has occurred.

Proper and timely road and drainage system maintenance also protect systems from most severe weather events. Replacing deficient culverts and bridges with proper sized structures helps protect water quality, handles flood events, promotes fish passage, and minimizes the discharge of road sediment.

To plan for maintenance and needed improvements, the Town partners with VTrans and TRORC to plan the effective use of available monies

to maintaining our inventory of roads, culverts and structures.

## State and Federal Highways

Interstate 91 bisects Fairlee. An I-91 exit (Exit 15) provides residents with easy access for commuting and provides the Town with a source of travelers who access the community's recreational opportunities and services.

Route 5 is part of the US Highway system but is maintained by the State of Vermont using Federal funding. Route 5 is a nationally designated Scenic Byway.

State highways in Fairlee include Route 244 and 150 yards of Route 25A before its eastern termination at Route 5.

## Trails

There are several trail networks in Fairlee. The Friends of the Fairlee Forests, a local non-profit, has mapped 18 miles of trails in the Town Forest. The 36-mile Cross Rivendell Trail runs roughly east-west through Fairlee. It is a joint project of the Rivendell Trails Association (RTA), a 501(c)3 non-profit organization with the mission to create and maintain the Cross-Rivendell Trail as an educational and recreational resource, and the Rivendell Interstate School District (RISD). Additional trails include ones maintained by the Vermont Association of Snow Travelers (VAST).

## Access Management

Access management is a planning procedure that examines accessibility between roads and adjacent land uses. For example, shared accesses limit the number of accesses and ensures an efficient flow of traffic and safety at higher speeds. In comparison, increasing access slows traffic and makes for a more pedestrian-friendly environment. Both are appropriate for different settings. Appropriate access leads to more safety and lower costs.

The Selectboard grants access onto Town highways through the Road Access ordinance, while VTrans grants access onto the State highways in Town. All access in Fairlee is reviewed either by the Selectboard or for new development by the Development Review Board through the Unified Bylaws subdivision regulation.

## Public Transportation

Fairlee has limited access to a small regional public transportation system, Stagecoach Transportation Services, which currently offers three scheduled morning pickups and early evening drop-offs at the Park and Ride located at the Railroad station. The Stagecoach route is most beneficial for commuters to employment in Hanover, White River Junction, and West Lebanon, New Hampshire. The Park and Ride has limited spaces; during workdays, most if not all of the spaces are full.

While there is business risk in such a move, more pickups and drop-offs would likely be of benefit to the community, especially if the commuter service was more fully integrated with the Upper Valley's Advance transit system. Additionally, Fairlee's service would be enhanced with a simple connection to Stagecoach's Circular route in Bradford that runs north to shopping areas in Wells River, Vermont and Woodsville, New Hampshire. Finally, more flexibility in ticketing would make Stagecoach more convenient for all users.

Given that Fairlee's elderly population is growing, the need to maintain an affordable source of public transportation that can transport them to major medical facilities like Dartmouth-Hitchcock and larger commercial centers for day-to-day shopping needs is important. Stagecoach has a "Ticket to Ride" Program that responds to personal special requests. It pays a substantial percentage of the cost of rides for senior citizens (60+) and persons with special needs when there is not available transportation in the household or the person requesting the transportation is unable to drive on the day of the trip.

## Modes of Travel

Transportation is not just people driving cars and trucks. Fairlee is fortunate to still have active rail service in a north-south railroad line, maintained by Vermont Rail Systems, which runs through Fairlee parallel to the Connecticut River. The Vermont Rail System provides heavy haul freight rail service connecting to Vermont, New Hampshire, and Upstate New York through its five affiliated short lines, of which one, Washington County Railroad, operates the line that passes through Fairlee.

While there is presently no regular passenger service along the Washington County Railroad line, Fairlee recognizes that passenger access to rail in the village could have a beneficial



economic effect. There are occasional passenger tourist trains, the Green Mountain flyer occasionally makes its way during Fall foliage from White River Junction. The ability for residents to utilize rail to commute to job centers in the Upper Valley would be a valuable commodity that might attract new residents, as well as help reduce greenhouse gas emissions.

Fairlee's nearest airport is the Lebanon Airport, though most of the residents who use air travel fly from Burlington, Manchester or Boston.

For many residents, biking or walking on Town roads is a worthwhile and enjoyable form of transportation in Fairlee that has significant health benefits. Fairlee does not have a consistent system of sidewalks within the Village Area, but students who live close enough do walk to the elementary school, as well as across the river to Rivendell. US 5 shoulders in the village are quite wide but need safety upgrades.

In addition to sidewalk improvements, the Town has studied other possible ways to encourage expanded economic development within the village by improving the village's aesthetics and adding traffic calming measures that would make the village more pedestrian friendly. Efforts to increase business and residences in the village will benefit from improving pedestrian travel throughout the Village Center. Additionally, increasing bicycle and pedestrian safety around Lake Morey could create a better connection to the village, benefit the economy, provide needed mobility for young and old, and lead to an improved recreational experience.

Fairlee has very limited access to a small regional public transportation system, Stagecoach, which currently offers only three scheduled morning pickups at the Park and Ride located at the Railroad station enroute to Hanover, White River Junction, and West Lebanon, NH. Three scheduled drop offs in the early evening provide a return option. It would greatly serve the community if this was integrated with the Upper Valley's Advance transit system as well as increasing the frequency of scheduled stops would help more people be able to use this service. The Park and Ride has limited spaces but is in easy walking distance within the Village Center.

This service would be enhanced if it functioned more as a Bus service, possibly integrating with the Circular route in Bradford that runs to the shopping center in Wells River. Fairlee has discussed a better method of ticketing, possibly

a kiosk to provide a thoughtful access to this valuable service.

Stagecoach also offers limited public transportation in the form of special requests for individuals who need transportation for medical reasons. Fairlee residents can take advantage of Stagecoach's "Ticket to Ride" Program, which helps pay a substantial percentage of the cost of rides for senior citizens (60+) and persons with special needs when there is not available transportation in the household or the person requesting the trips is unable to drive on the day of the trip. Ticket to Ride is available for a broad array of destinations, such as medical services, shopping, errands, and social purposes.

Given that Fairlee's elderly population is growing, the need to maintain an affordable source of public transportation that can bring the elderly to major medical facilities like Dartmouth-Hitchcock and larger commercial centers for day-to-day shopping needs is important. Transit systems involve at least some walking and offer improved health compared to just driving.

## Pollution Reduction

The State's Comprehensive Energy Plan calls for the wholesale electrification of the private car fleet in order to reduce energy use and to eliminate greenhouse gas emissions. Electric vehicles (EVs) hold the promise to also store electric power and help manage power demands on the grid. To further the use of EVs, public charging stations will have to become widespread. Fairlee is constructing one public charging station at its Park and Ride lot and there are 3 available at the Lake Morey Resort.

Carpooling and ridesharing also offer ways to reduce energy use. Expanding the number of parking spaces at the Park and Ride would help encourage these efforts. And certainly, keeping most future development in concentrated, currently developed areas will make energy conservation efforts more feasible.

## Goal 1

**To provide and maintain a safe, clean, energy-efficient and well-maintained transportation network in a cost-effective manner.**

### Policies to Further Goal 1

1. It is the policy of the Town to maintain the existing road system and discourage the expansion or addition of new roads.
2. It is the policy of the Town to actively participate in processes or project that would result in significant changes to Route 5, Route 244, or Route 25 through the Transportation Advisory Committee (TAC).
3. It is the policy of the Town to integrate land use with transportation planning by encouraging concentrated growth in areas served by an adequate highway system or a robust public transportation system. Economic development objectives or new growth creating increased demand for upgrading of these routes need to be balanced with the preservation of Fairlee's downtown, other built-up areas or planned expansion areas.
4. It is the policy of the Town to maintain a reliable and up-to-date inventory of existing culverts and structures, coupled with short- and long-range plans for replacement and upsizing.

**Actions to Achieve Goal 1**

1. The Town should maintain the Town highway reserve fund in the Capital Improvement Plan and a schedule that will guide maintenance and road infrastructure investments in the future.
2. The Town will cooperate with other communities in the region through TRORC and its Transportation Advisory Committee to ensure that the region's transportation system is developed in a well-coordinated manner that recognizes and balances the needs and desires of each community.
3. The Town will continue to replace undersized culverts, bridges and structures with appropriately sized infrastructure according to the current Town road and bridge standards.
4. The Town must ensure that reasonable steps have been taken to minimize direct access to main roads and that pedestrian connections are provided between sites.
5. The Development Review Board and Selectboard will continue to follow the Unified Bylaws Subdivision regulations and Road Access ordinances that contain sight-distance standards based on the actual

travel speeds and not the posted speed limits.

**Goal 2**

**To increase mobility for all persons.**

**Policies to Further Goal 2**

1. It is the policy of the Town to support efforts to sustain, expand or enhance existing public transportation.

**Actions to Achieve Goal 2**

1. The Town will encourage Stagecoach to increase the frequency of stops in Fairlee and to more fully connect its routes to other transit providers.
2. The Town will encourage Stagecoach to make access to its routes more convenient by simplifying ticketing and connecting to its Circular route from Fairlee's Park and Ride.

**Goal 3**

**To reduce energy use and greenhouse gas emissions through a multi-modal transportation infrastructure (auto, pedestrian, bicycle, public transit and rail).**

**Policies to Further Goal 3**

1. It is the policy of the Town to encourage greater use of bicycles and walking.
2. It is the policy of the Town to adhere to the Municipal Road Grant permit and to maintain Class 4 roads, trails, and other public rights-of-way to adequate standards based on available resources.

**Actions to Achieve Goal 3**

1. The Town must pursue efforts to create and improve pedestrian/bicycle travel, accessibility, safety, and health within the Village Center through streetscaping and/or traffic calming.
2. The Town should pursue funding from VTrans or other sources for additional Park and Ride spaces.
3. The Town should pursue funding for a suitable power lines and additional EV charging stations at the Park and Ride as well as potentially at the Library.
4. The Town should support continued improvements to trails and pedestrian

walkways, including a cost analysis with Vtrans on the feasibility of modifying the current corridor to include a village sidewalk system as a way to encourage economic development and safe pedestrian travel.

## **Goal 4**

**To maintain the rural and scenic character of the back roads and byways thereby protecting the rural scenic quality of the Town whenever possible.**

### **Policies to Further Goal 4**

1. It is the policy of the Town to consider public input prior to a decision to substantially change the maintenance level, surface treatment, or class of a Town road.
2. Any plan for changes to routes 25A, 244, and 5 or I-91 should not unduly compromise the historic, scenic, rural and cultural characteristics of these routes.

### **Actions to Achieve Goal 4**

1. The Selectboard must consider the relationship of a road to surrounding features of the landscape, potential quality-of-life impacts to residents, and to evaluate traffic volume and maintenance costs against other factors, when deciding or providing input on whether or not to pave or make improvements to Town or State roads.
2. The Town should work with landowners to encourage permanent landscaping and roadside enhancements to visually define access points and contribute to the roadway's aesthetic character.

# Energy



## Introduction

Where we get our energy and how we use it has been directed largely by economic forces at the State, federal, and international levels, but that is changing. Fairlee’s residents and businesses can’t drill for oil and refine it, but we can largely move away from fossil fuels as an energy source with existing technology. We can do this by shifting to an energy base that is mostly electric, combined with efficiency measures, some wood for heat, and planning for future location of jobs, public services and housing near growth centers. Doing so will reduce overall energy consumption, reduce greenhouse gas (GHG) emissions, and create and keep more money locally as we generate energy from renewable sources. Such planning around energy will be in step with State and regional energy policies and enable the Town to have an “enhanced energy compliant” Town Plan that provides a stronger voice in State energy permitting processes.

## Energy Sources

Energy is essential. We like the modern benefits of our energy system. However, as enjoyable as the ways in which we use energy today, it is not sustainable due to pollution impacts alone. Even if there was not the overriding imperative to lessen the release of carbon dioxide into the atmosphere from burning fossil fuels, it is getting harder to extract these resources safely and affordably.

Much of the background data for this chapter has been developed by the State and our regional planning commission, TRORC, which has created Town-level data from State models. While Fairlee uses energy slightly differently than the State as a whole, the graph below is a good representation of where we are and what needs to change.

We need to lower overall energy use from all sources, increase electricity from renewables as a portion of our energy, and virtually eliminate non-renewable energy use.

Like the rest of this Plan, this chapter is only a look several years into the future. Much has changed in the energy world in the last decade and much can be expected to change ahead. But we can use the best information we have as we chart a course toward meeting our energy needs in a way that also meets State and regional targets transitioning us away from fossil fuels, leading us to a bright future that is sustainable.

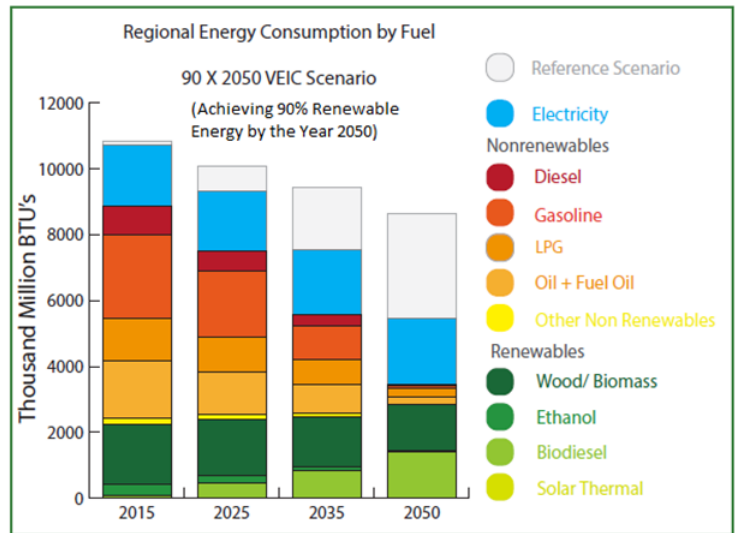
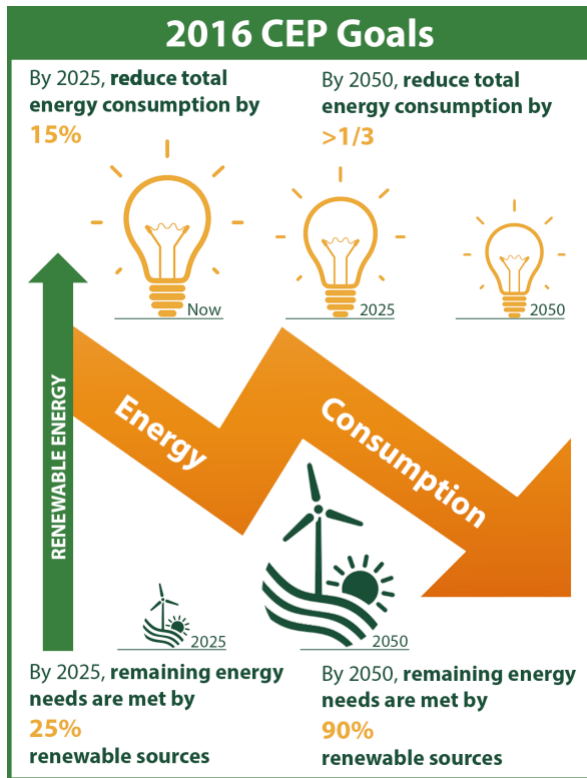


Figure 10: Regional Energy Consumption by Fuel - Source: VEIC

In referring to energy, this Plan is not just talking about electricity. Wood, gas, oil, and other sources are all forms of energy. To compare energy use across source types, it is useful to use a common unit of energy. For this Plan we will use MMBtu (million British thermal units) and kWh (kilowatt hours). 1MMBtu equals 293 kWh. To put these numbers into everyday terms, if you used 1,000 gallons of gasoline to drive each year, and three cords of wood for heat, and 5,600 kWh of electricity for lights and other appliances you would use 114 MMBtus, 72 MMBtus, and 19 MMBtus respectively. This is a good example of why on an individual level,

heating and driving dwarf individual electrical use right now. Overall, total energy use in Fairlee is estimated at 162,425 MMBtus per year, with 32,425 MMBtus (20%) for electricity, 53,000 MMBtus (33%) for transportation, and 77,000 MMBtus (48%) for heating. As one can see, electricity is now a small part of our overall energy use and is not our primary energy source at point of use.



The energy we use locally can be categorized as doing work in one of three areas – heating, transportation, and other household and commercial uses. Some local sources of energy are solar radiation that we turn into heat and electricity, firewood from Town, and any small hydropower or wind turbines we have. Most of the energy we use is for heating followed by transportation, and most of the energy for both is supplied by fossil fuels from far away – gasoline, diesel, heating oil, propane, and natural gas. It is not known how much wood is burned for heat, but it is estimated that almost 19% of the energy we use for heat comes from wood, which would equate to about 333 cords of wood.

Our third and smallest current use of energy is electricity, which is a form of energy, and though some electricity is used as thermal energy to heat our homes and water, most is used for other household or commercial needs such as lighting,

cooking, hot water, refrigeration, and washing and drying clothes. Using the latest figures from 33 permitted solar electric systems in Town, on the best day we may be producing 836kW of electricity from solar if all systems were operating at maximum (nameplate) capacity. This local solar power converts to a probable 1,004,675 kWh of electric energy produced annually or 3,429 MMBtus, just 2% of our estimated annual energy usage. See the generation map for locations of power generation in Town.

Most of our electricity is supplied by the grid and comes from Green Mountain Power (GMP). GMP sources most of its electricity from hydropower sources, but does include non-renewables, such as nuclear, as a significant portion of its current power portfolio. Nuclear electrical generation does not produce greenhouse gas emissions as part of power production but is not considered a renewable resource. As can be seen from the detail above, we are doing well on our electricity currently being generated from renewable sources, but this will have to continue to become more renewable and electricity will move from just a small part of our current energy use to most of our energy.

To move electrical generation to nearly all renewable sources, GMP's power supplies will have to change, a goal they are aiming to meet as early as 2030. And our main uses of energy, heating and transportation, will have to largely electrify. The new electrical generation needed to power these sectors may occur in places outside of Town, but we can't just assume that somewhere else will produce our share.

To that end, the Long-Range Energy Alternatives Planning (LEAP) model calculates a 2050 renewable generation target for Fairlee of 5,485-6,704 MWh of annual energy production. This would probably be met through solar photovoltaic facilities. Given that solar power is not constantly produced, this would equate with about 4-6 MW of new nameplate generating capacity needing (with today's technology) roughly 20-30 acres of total land. Some of this energy could also be supplied instead through sustainable wood harvests, but that level is not known at this time.

Other potential sources are wind and water. There are no good wind sites for commercial scale wind power in Fairlee. Many locations in Vermont, including Fairlee, once depended on hydropower to grind grain, run mills and even supply electricity to homes. But, with the onset of centralized power, most of these small-scale power generation facilities have been replaced by massive hydro facilities such

as Hydro Quebec. There is one hydropower site on Lake Fairlee that is considered “in-service”, meaning that they are not actively producing power, but have the basic infrastructure to do so. Retrofitting this existing site might present an effective means of adding hydropower, lessening the total needed output from new solar installations. Hydropower generating facilities are regulated by the Federal Energy Regulatory Commission and must meet stringent federal water quality standards, though, and as a result, the regulatory process for hydro facilities is extensive and time consuming. Further, streams are public trust resources and the potential impacts of hydro projects warrant significant consideration.

## Energy Needs

What one needs depends on what one wants to do. Assuming we want to live in the future the same way we live now, we need energy to roughly do the things for us it is doing now – heat our homes, power vehicles, keep the lights on and the businesses running. But we can do these activities using much less energy if we are careful and undertake several efforts.

We also need to largely use energy with zero carbon emissions as fast as possible in order to meet greenhouse gas emissions targets that have a reasonable chance of maintaining an overall climate that does not exceed a global increase of more than 2° Celsius by 2100. Such efforts will not stop global warming, but they may keep it to a level where the impacts are much worse than we are seeing already but still manageable. Warming above the 2° Celsius is widely considered to be catastrophic. Even the 2° Celsius may be high enough to be disastrous and so our goals may need to become much more ambitious.

As seen above, we use about 162,425 MMBtus of energy now. However, we can reduce much of our needs by using energy better. And we don’t actually need the same sources as we currently have. The State has provided a model of expected energy use for the Town (LEAP model) that assumes we will do several things to lessen energy needs and to shift energy sources.

To lessen overall energy needs and shift to renewables, the biggest change will be powering the transportation and heat areas with electricity. Most of the energy used in a gas-powered car does not actually result in the car moving due to inefficiency. Electric vehicles (EVs) use energy much more

efficiently, moving a car several times the miles of a gasoline-powered for the same amount of energy. The State goal is to transition 90% of all cars to EVs and heavy equipment to biodiesel by 2050. Heavy equipment is a small part of transportation and consequently this Plan just focuses on cars, except for municipal vehicles.

Right now, there are an estimated 722 vehicles in Town. It is not known how many EVs are in Town, but if we have the same percentage as the State as a whole (1%), then we likely have 8 or 9 EVs in Town now. Intermediate (LEAP) goals are to have 67 EVs by 2025 and 474 by 2035. To reach these goals will require a more than sevenfold increase in EV ownership in the next six years, and then another sevenfold jump to 690 by 2035, with further increases beyond.

For heating needs, we will have to move away from fossil fuels furnaces. The LEAP model shows that one way to achieve our goals is to shift to electric heat pumps, with just over half of our homes having these installed by 2025. Recently developments in heat pumps have allowed them to operate at the colder-temperatures in winter. They also don’t operate in power outages, requiring a second heat source. The State plan and model do not rely on wood as much of an increased source of residential energy for heat but increases in efficiency and building insulation will mean there will be more wood systems out there heating homes, just using roughly the same amount of wood. The regional models assumes that more wood will be used for commercial heating. Wood is a plentiful local resource that could be better used and already makes up a good portion of our heating energy.

Biomass systems can safely and efficiently heat large buildings or even a district. Biomass based systems such as wood chip boilers can produce both heat and electrical power. Nearby Dartmouth College is pursuing switching from oil to a biomass heat and power plant, and Fairlee is close enough that this could affect our local wood supply. There are no biomass energy generation facilities currently in Fairlee.

All models assume we are doing a good job at tightening up our homes and businesses to need less heat (and cooling) in the first place, so much so that a third of our buildings will have been retrofitted by 2025, another third by 2035, and the remainder by 2050. Such massive improvements to buildings are one of the ways in which total energy use is expected to drop.

## Energy Scarcity

There are no scarcities of energy foreseen in the 8-year life of this Plan. Our electrical providers have plenty of power supply resources either under contract or available to purchase currently. Total energy demand is likely to shrink modestly in the near term as population is not expected to grow much and efficiency is constantly improving. Additional solar installations are expected, but GMP's 2018 Integrated Resource Plan estimates power sales being flat or declining for the next decade, mostly due to very efficient lighting and newer appliances. This will likely change in later years as heating and travel come to be electric powered.

What is in short supply now are systems (mainly cars and furnaces) that are powered by means other than fossil fuels, and the means to bring utility scale, locally generated electric power to market in a conventional way, by poles and wires. There is very little three-phase distribution in Fairlee, mostly near the I-91 interchange and the southeast and southwest corners of Town. Three-phase lines are today's preferred way to send local power from solar or wind projects over 150 Kw onto an electric grid. Existing single-phase distribution can carry power from small projects and might be upgraded to 3-phase along roads and other established rights-of-way. Other parts of this Plan discourage new power rights of way through high priority forest blocks, of which Fairlee has many.

As seen above, renewable electricity is not scarce, but that does not mean that it is always cheap. GMP is seeking to handle power demand with current and emerging technologies "pushing" it into storage or using power when cheaper, and curtailing power use by customers when expensive or "pulling" power from battery storage. Such systems can be remotely managed to control when power is used down to the appliance level (for example to heat water) and to store or draw from advanced battery storage, including the storage abilities of EVs. Some storage could also be built by the utilities themselves in small buildings. Such a system would be controlled on a minute-by-minute basis to ensure the grid remains stable.

Electricity is also not always available in the form needed for EVs. Public and private charging stations are still rare, making it difficult for owners of EVs to stray too far from home for fear of running out of charge. Vehicle range is increasing and battery technology keeps improving but having more

charging stations available at locations where people may park for longer periods, such as the park and ride, library, school and Town office would help promote EV usage.

Fossil fuels have varied widely in price over the last several years, and the overall trend is for dwindling supplies, and though there should be ample amounts for the life of this Plan, we must not discourage a shift away from fossil fuels. Wood is a plentiful local source of heating fuel, and many more cords could be sustainably harvested than are being cut now. Plenty of sun is available if we decide to use it.

## Energy Costs

The cost of energy is not an issue for most families, but is still an issue for many, and will be less of an issue for all if targets for better insulating buildings, switching to EVs, and using heat pumps and advanced wood heat systems are met. An EV requires less maintenance costs, as they have no engine or exhaust system, and the cost of electricity comes out to the equivalent of about \$1.50 per gallon (in today's value), instead of \$2.40 a gallon for gas. The daunting cost barriers are not the daily or monthly energy costs but implementing these changes to the buildings and vehicles that use our energy. For example, a new gas-powered Nissan Sentra costs \$18,000, but an all-electric Nissan Leaf EV \$30,000. There are rebates and a hefty federal tax credit that can further reduce the cost. Also, over the life of the Leaf (if driven 200,000 miles), the Leaf will save (assuming an average savings of \$0.90 per gallon) \$6,000 compared to the Sentra on gas alone. With additional savings on engine maintenance the Leaf turns out to be a comparable deal with the Sentra over time, but it may be hard for credit stressed families to get financing or come up with a down payment. This same capital obstacle for owners arises with home energy retrofits or advanced wood heat systems. Over time, these investments pay off, but they require getting financing or having considerable savings on hand.

The cost of power from solar panels continues to fall, as well as costs of battery storage. It is likely that as total energy use shifts over primarily to electricity the timing of when power is used will affect its cost, and that systems to try to use power when most plentiful and cheap will help constrain costs.

## Energy Problems

Our energy problem has not historically been due to supply, it has been relatively abundant and cheap. There are pollution problems from particulates, oil spills, mine waste, etc. Some consider our dwindling fossil fuel reserves a problem (as they certainly will be at some point), but the main way in which we have an energy problem is that environmental costs that we have long assumed to be zero or simply ignored are piling up, primarily in the form of greenhouse gases and the heat they are trapping on the Earth. It is now abundantly clear that we have an extremely short window to rectify this issue by moving to renewable sources of energy across all forms of energy use.

## Energy Efficiency

There are numerous ways to encourage meeting Fairlee's energy needs by lowering demand:

### Decreasing Energy Use by Implementing Energy Efficiency

Residents, businesses, farms, and Town buildings can apply the principles of energy efficiency to use less energy to cost-effectively provide the same level and quality of service. These principles, for most, come down to using newer, better electric appliances and devices, load management, building improvements, smaller, newer cars and trucks, and various means to lower the number of miles driven per person. The great benefit of such end user measures is that they cancel not only direct costs but also many associated costs of entire supply chains.

### Building Energy

New residential construction in Fairlee, like all Towns in Vermont, is subject to the Vermont Residential Building Energy Standards (RBES) under 30 V.S.A. section 51, which requires that new, contractor-built homes (and larger additions) be certified as meeting the RBES standards. State law also requires that such certifications be placed in the Town's land records, but there is little formal enforcement except sometimes when properties are sold. Commercial development is subject to the comparable Vermont Commercial Building Energy Standards (CBES). They apply to all commercial buildings and residential buildings four stories or greater. Rolling the energy certificates into certificates of occupancy under zoning would help to ensure these certifications are issued and filed.

Examples of efficiency and conservation measures that we can take in our buildings include:

- Have an energy audit done to identify the greatest ways to save energy.
- Implement the air-sealing and insulations recommendations of the energy audit.
- Don't heat unused areas of your home.
- Insulating with high R-value (or heat flow resistance) material,
- Using high efficiency windows,
- Installing energy efficient appliances like refrigerators, freezers, front loading washing machines, gas heated clothes driers and heating systems without blowers,
- Using high efficiency lighting,
- Using gas and/or solar hot water heaters,
- Siting buildings to make use of existing wind blocks and natural cooling patterns derived from the landscape's topography.
- Siting buildings with maximum southern exposure to capture passive solar energy.

### Energy Committee and Town Buildings

Fairlee has an Energy Committee (EC), which acts as an advisory board to the Selectboard and Planning Commission (PC) on all things energy related. The Fairlee EC is an independent group created for the purpose of establishing and implementing the Town's energy goals. Fairlee's ECs work has included conducting energy audits on municipal buildings, implementing the audits' recommendations, tracking energy use for these buildings, installing LED streetlights and working with the PC on the Energy Plan. In 2013, the EC worked with the Town Public Library to complete all the energy audit recommendations to air-seal the library and insulate the basement walls. The Town Hall contractor insulated the basement and 1st floor walls according to energy audit recommendations and recent renovations have made energy improvements to the entire building. The water system may benefit from better pumps and operating systems for timing of energy use.

## Renewable Energy

The State of Vermont has adopted a statutory energy policy, codified at 30 V.S.A. § 202a, that encourages the "efficient use of energy resources" and the "wise use of renewable resources and environmentally sound energy supply." It also had adopted various statutory goals



and requirements that promote increased use of renewable energy to meet the energy needs of Vermonters. In the 2011 Comprehensive Energy Plan (CEP), the Department of Public Service set out an ambitious goal that, by 2050, 90% of all energy consumed in the State be from renewable resources. The 2016 CEP kept and further fleshed out that goal with interim milestones. The CEP sets an energy policy vision for Vermont and will issue the next CEP by 2022. Current State goals, which are also incorporated into both this Plan and the regional Plan, include:

- By January 1, 2017, 55% of the State's electricity consumption to be from renewable sources, rising to 75% by 2032. Ten percent of sales must be met from in-State renewables by 2032; and the equivalent of 12% of sales, in fossil-fuel reductions for customers, also by 2032.
- Reducing total fossil fuel consumption across all buildings by one-half percent each year, leading to a total reduction of 6% annually by 2017 and 10% annually by 2025 (10 V.S.A. § 581).
- By 2025, at least 25% of all energy consumed in Vermont to be from renewable sources (10 V.S.A. § 580).
- By 2028, reducing greenhouse gas emissions by 50% from a 1990 baseline (10 V.S.A. § 578).

The information attached in the Appendix lays out Town-level information on our energy use and Town goals to meet regional efforts and those of the State. As Stated earlier, our main supplier of electricity, GMP, plans to hit the 2050 goal in 2030.

Vermont law defines renewable energy generally as energy produced using a technology that relies on a resource that is being consumed at a harvest rate at or below its natural regeneration rate. It allows methane or other flammable gases produced by landfills or anaerobic digestion of agricultural or food wastes to be considered renewable, but nuclear, coal, oil, propane, and natural gas may not be considered renewable.

The commercial generation of energy through renewable resources is controlled at the State level by the Public Utility Commission (PUC). Energy generation facilities must apply to PUC for a "Certificate of Public Good" (CPG). The Certificate of Public Good supplants local land use regulations, though local land use considerations are incorporated in the criteria reviewed by the PUC. Fairlee has the ability to be involved with the

permitting of a commercial energy generating facility through its up-front energy planning work, during the pre-filing notice period provided prior to the start of the CPG process, and in the CPG process itself. The recommendations of the municipality are given due consideration in that process, unless the municipality has an approved energy Plan, in which case they are given substantial deference.

## Energy and Land Use Policy

The Vermont Municipal and Regional Planning and Development Act (24 V.S.A. Chapter 117) does not allow communities to impose land use regulations that prohibit or has the effect of prohibiting the installation of solar collectors or other renewable energy devices. However, statute does enable Vermont's municipalities to adopt regulatory bylaws (such as zoning and subdivision ordinances) to implement the energy provisions contained in their Town Plan. Zoning bylaws are designed to control the type and density of development. It is important to acknowledge the connection between land use, transportation and energy and seek to create zoning ordinances and subdivision regulations that encourage energy efficiency and conservation. Encouraging high density and diverse uses in and around existing built-up areas will lead to more compact settlement patterns, thereby minimizing travel and energy requirements.

At the same time, zoning bylaws must be flexible enough to recognize and allow for the emergence of technological advancements which encourage decreased energy consumption, such as increased use of solar and wind power. Zoning bylaws may contain provisions for planned unit developments (PUDs). PUDs are a grouping of mixed use or residential structures, pre-planned and developed on a single parcel of land. The setback frontage and density requirements of a zoning district may be varied, to allow creative and energy efficient design (i.e. east-west orientation of roads to encourage southern exposure of structures, solar access protection, use of land forms or vegetation for wind breaks, and attached structures), and to encourage the construction of energy efficient buildings. Subdivision regulations are one of the most effective tools for encouraging energy efficiency and conservation. Subdivision regulations, like PUDs, involve Town review (through the DRB) in the design process. Because subdivision regulations govern the creation of new building lots, as well as

the provision of access and other facilities and services to those lots, a community can create zoning requirements that require a developer to site their building to maximize solar gain. Likewise, subdivision regulations can require that landscaping be utilized to reduce thermal loss.

## **Energy and Transportation Policy**

It is important that communities recognize the clear connection between land use patterns, transportation and energy use. Most communities encourage the development of residences in rural areas, and these are in fact coveted locations to develop because of the aesthetics that make Vermont special. However, this rural development requires most of our population to drive to reach schools, work and services. Because transportation is such a substantial portion of local energy use, limiting any new developments to locate adjacent to existing roads will help to keep energy usage down, with development in the village optimal since then transit and walking become practical means of transportation.

### **Goal 1**

**To promote the installation and use of energy efficiency measures that are cost-effective over their life and to encourage the use of renewable energy to meet the remaining demand.**

#### **Policies to Further Goal 1**

1. It is the policy of the Town to encourage the use of energy sources that are the most energy efficient and cost-effective and the least environmentally damaging sources of energy. Those factors shall be determined on a life cycle basis, including all costs related to extraction, processing, refinement, transportation, transmission, reliability, and generation and disposition of waste and pollutants.
2. It is the policy of the Town to encourage the use of energy sources that are the most energy efficient and cost-effective and the least environmentally damaging sources of energy. Those factors shall be determined on a life cycle basis, including all costs related to extraction, processing, refinement, transportation, transmission, reliability, and generation and disposition of waste and pollutants.

3. It is the policy of the Town to use proven design principles and practices with the lowest lifecycle costs (cost of owning, operating, maintaining, and disposing of a building or a building system over a period of time) with the rehabilitation or the development of new buildings and equipment.

#### **Actions to Achieve Goal 1**

1. Town officials and volunteers should work to increase public awareness and use of energy conservation practices, financial incentives, generation and storage methods, and efficiency and weatherization programs through educational efforts aimed at residents and businesses.
2. The Town, with help from the Energy Committee/coordinator, should develop municipal procurement and purchasing policies that emphasize products that are energy efficient (e.g., Energy Star® rated).
3. The Town should continue to develop facility maintenance and operation policies that maximize energy efficiency while maintaining comfort levels for employees and visitors.
4. The Selectboard should authorize the Fairlee Energy Committee/coordinator to track municipal energy use and costs (for example: through the EPA's free Energy Star® Portfolio Manager program) and develop an overall energy budget to manage the Town's energy consumption, which may also include the development of local generating capacity.
5. The Town should continue to implement energy efficiency and renewable heating and power options measures recommended by the Energy Committee for existing and future facilities.

#### **Goal 2**

**To ensure the long-term availability of safe, reliable and affordable energy supplies, and to promote the development of renewable energy resources and facilities in the Town of Fairlee to meet the energy needs of the community and region in a manner that reduces greenhouse gas emissions and maintains other community values.**

## Policies to Further Goal 2

1. It is the policy of the Town to support the development and use of renewable energy resources – including but not limited to wind, solar, biomass, micro-hydro and cogeneration – at a scale that is sustainable, that enhances energy system capacity and security, that promotes cleaner, more affordable energy technologies, that increases the energy options available locally, and that avoids undue adverse impacts of energy development on the local community and environment.
2. It is the policy of the Town that new generation, transmission, and distribution facilities or service areas shall complement the recommended land use patterns set forth in this Plan.
3. It is the policy of the Town to take reasonable steps to minimize the visual impacts to the public from new electrical generation, transmission, and distribution.
4. It is the policy of the Town to locate sites seeking “preferred” designation for new generation and transmission facilities in places that reinforce Fairlee’s traditional patterns of growth and that comply with policies of this Plan.
5. It is the policy of the Town to exclude development from the following areas because of their distinctive natural, historic or scenic value, energy facility:
  - Floodways shown on FEMA Flood Insurance Rate Maps (except as required for hydro facilities)
  - Wetlands as indicated on Vermont State Wetlands Inventory maps or identified through site analysis.
  - Rare, threatened or endangered species habitat or communities.
  - Areas more than 300 feet into interiors of high priority forest blocks or habitat connectors.
6. It is the policy of the Town that all new generation with capacity 15kW over, along with transmission and distribution facilities, shall be sited and designed to avoid or, if no other reasonable alternative exists, to otherwise minimize and mitigate adverse impacts to the following:
  - Historic districts, landmarks, sites and structures listed, or eligible for listing, on State or national registers;
- Public parks and recreation areas, including State and municipal parks, forests and trail networks;
- Special flood hazard areas (100-year floodplain) identified by National Flood Insurance Program maps (except as required for hydro facilities);
- Public and private drinking water supplies, including mapped source protection areas;
- Primary agricultural soils mapped by the U.S. Natural Resources Conservation Service;
- Necessary wildlife habitat identified by the State or through analysis, including core habitat areas, migration and travel corridors (habitat connectors); and
- priority and high priority forest blocks.
7. It is the policy of the Town to not limit consideration of site impacts to generation facilities alone, but also include access roads, site clearing, onsite power lines, substations, lighting, and off-site power lines. Development of these elements shall be done in such a way as to minimize any negative impacts.
8. It is the policy of the Town to set ground mounted generation projects back from property lines at least as much as is required for principal structures in the Town’s zoning, and use screening to reduce the visual impacts of energy generation, transmission, and distribution projects as seen from public roads and neighboring properties in accordance with the following:
  - Without interfering with the project’s function, make the maximum use possible of preexisting vegetation, structures, and topographical features that screen the project on site.
  - Install screening such as vegetation or topographic features to distract the viewer from the project and break up the view of the project.
9. It is the policy of the Town that distribution line reconstructions and extensions subject

to Act 250 jurisdiction must demonstrate that reasonable measures have been taken to minimize the visual impact and avoid and, if not avoidable, minimize the natural resource impacts of the reconstructed line or line extension.

10. It is the policy of the Town that any commercial energy generation facility proposed in Fairlee shall be 5 acres or less in order to be of a scale that is commensurate with our built environment.

#### **Actions to Achieve Goal 2**

1. Town officials shall use this Plan to provide input on behalf of the citizens of Fairlee to participate in the Public Utility Commission's review of new and expanded generation and transmission facilities.
2. The Planning Commission should work with the energy committee to identify areas in Town that are appropriate as "preferred sites" for energy production.
3. The Selectboard should seek a determination of enhanced energy compliance for this Plan to have greater standing in such proceedings.
4. The Town should consider municipal or community-based renewable energy generation and the installation of individual or group net metered generation facilities on Town buildings and property to serve Town facilities. Sources of funding for municipal power generation could include third-party financing, municipal funds, bonds, grants, and available government incentive programs.

#### **Goal 3**

**To promote greater use of and increase public transportation opportunities throughout the community, including Park and Ride access, bus service, bike paths and sidewalks.**

#### **Policies to Further Goal 3**

1. It is the policy of the Town to promote energy efficient travel by residents by encouraging carpooling, increased use of public transportation, telecommuting, home businesses, and safe bike routes.
2. It is the policy of the Town that new significant public investments (including schools, municipal facilities, and major commercial or residential developments)

must be located within or near the Village and shall accommodate transit services.

#### **Actions to Achieve Goal 3**

1. The Selectboard should work to increase walkability, EV charging, carpooling, and the ability to access public transit.

#### **Goal 4**

**To encourage a continued pattern of settlement and land use that is energy efficient.**

#### **Policies to Further Goal 4**

1. It is the policy of the Town to locate dense residential developments within or adjacent to existing Village Centers or within designated growth areas. Commercial development that requires trucking and freight handling should only locate on roads which can effectively handle the size of vehicle needed.
2. It is the policy of the Town that where land development or subdivisions are proposed, design plans should reflect sound energy conservation principles, such as solar and slope orientation, the use of protective wind barriers, and cluster development (siting buildings close to each other to maintain open space on the remaining parcel).

#### **Actions to Achieve Goal 4**

1. The Planning Commission should review and revise zoning and subdivision regulations as needed to achieve the goals and policies of this Plan.

#### **Goal 5**

**To promote the construction of energy efficient residential and commercial buildings and increase awareness and use of energy conservation practices through educational outreach to the public.**

#### **Policies to Further Goal 5**

1. It is the policy of the Town to encourage new buildings to be solar and EV ready, sited for solar gain, and thermally efficient.
2. It is the policy of the Town to encourage residents and owners of existing buildings, including the Town, to obtain an energy audit of the buildings with a focus on identifying and making cost-effective improvements in energy efficiency.

3. It is the policy of the Town to encourage compliance with any Residential Building Energy Standards and Commercial Building Energy Standards “stretch” codes adopted by the Department of Public Service.

**Actions to Achieve Goal 5**

1. The Town should consider ways to ensure that RBES (Residential Building Energy Standard) and CBES (Commercial Building Energy Standards) standards are followed, and that the required certificates are issued and filed in the land records.

# Natural, Scenic, and Cultural Resources



## Introduction

The rural landscape is of the utmost importance to the Fairlee community, for its utility, cultural connections, and its scenic value. Fairlee residents value open, working lands that are hospitable to both recreation and outdoor work. We also value our historic buildings and scenery. It is essential to the community that this landscape be protected as it is a fundamental reason why residents choose to live in Fairlee. Residents want to maintain the quality of their landscape for the future, to protect the natural world they value, while allowing the land to be worked sustainably and harmoniously.

## Water Resources

### Groundwater, Surface Water, and Shoreline

Water resources include groundwater aquifers (the supply of fresh water beneath the ground) and surface waters (includes rivers, streams, ponds and lakes).

Sustainable yields of quality groundwater are necessary for the lives and livelihood of citizens of Fairlee because they supply our residents and businesses with potable water. Fairlee has no mapped groundwater information. The health of Fairlee's groundwater is reflected in our surface waters, as these two are literally connected.

Fairlee surface waters, our lakes and streams, are an important element for outdoor recreation and natural beauty. The main way to preserve surface waters is to prevent erosion and pollutant runoff from entering these waters. Riparian buffers, strips of bankside vegetation along waterways, provide an excellent means of filtering out these pollutants before entering the water. Trees along streams also provide shade, keeping our waters cool, as well as root structure, sources of woody debris, and food. Construction or development along stream banks, or removal or disruption of vegetation within these areas can create increased water pollution, higher water temperatures, destabilization of banks, higher soil erosion rates and loss of fish or wildlife habitats.

Fairlee's lakes (Morey and Fairlee) are an extremely important asset to the community from an economic, recreational and natural resources standpoint. Some residents and campers along Lake Morey continue to use lake water for drinking and cooking. Recognizing this, it is important to consider ways in which the community can protect these areas while balancing the natural benefits of the lakes with their current and future uses. When a lake's natural shore land vegetation is removed and replaced by lawns and impervious surfaces (concrete, asphalt), phosphorus pollution and sediment enter the lake, degrading water quality and leading to problems such as algae blooms. Most development, including land clearing within 250 feet of lake shorelines, is now regulated by the State of Vermont to address these concerns. A clear limitation to this is if a roadway is within this buffer and the Shoreline protection act doesn't seem to incorporate this fact. The Town is participating in implementing the 5-year update to the Basin 14 Tactical Basin Plan which includes the appropriate Water Management for the waters of the Stevens River, Wells River, Waits River, Ompompanoosuc River, and Mid Connecticut River Direct Tributaries Watersheds. The plan is based on the existing water quality and reasonably attainable and desired water quality management goals. is scheduled to be completed by June 2020.

Failing septic systems also impact water quality. This is an issue with camps that used to have light seasonal use and have been expanded and are now used full-time. Many failed systems are not obvious.

## Wetlands

Wetlands are ecologically fragile areas and how these lands are managed have a direct bearing on the quality and quantity of water resources. The Vermont Water Resources Board estimates that wetlands comprise less than 5% of the surface area of Vermont. In addition to being Vermont's most productive ecosystem, wetlands serve a wide variety of functions beneficial to the health, safety and welfare of the general public, including the following:

- Retaining storm water run-off, reducing flood peaks and thereby reducing flooding;
- Improving surface water quality through storage of organic materials, chemical decomposition and filtration of sediments and other matter from surface water;
- Providing spawning, feeding and general habitat for fish;
- Providing habitat for a wide diversity of wildlife and rare, threatened or endangered plants
- Contributing to the open space character and the overall beauty of the rural landscape.

Under the Vermont's Wetland Rules, if land development can be expected to impact a protected wetland, such activity cannot commence unless the Vermont Agency of Natural Resources first grants a Conditional Use Determination (CUD). A CUD will be granted when the proposed use will not have an undue adverse impact on the function of the wetland. In many cases, such approvals are granted with conditions to mitigate impacts and to more readily protect wetlands.

For Fairlee, as well as the State, the most significant wetlands have been mapped and are included as part of the National Wetlands Inventory (NWI) prepared by the U.S. Fish and Wildlife Service. These wetlands have been delineated on USGS topographic maps are shown on Map 5, Natural Resources. Other smaller wetlands often do not show on these maps, so a field determination by a qualified biologist is needed for most activities that involve State permits. There are approximately 378 acres of mapped wetlands in Fairlee.

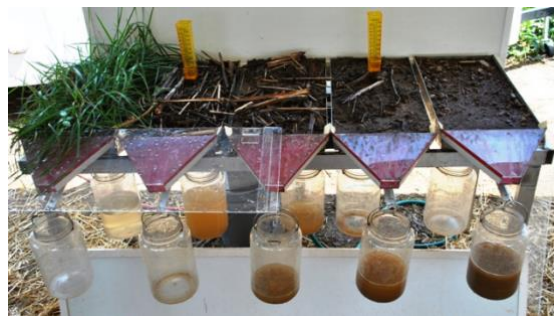
It is important to note that future investigations of wetlands within Fairlee may result in additional areas being determined as significant or important for conservation. Setback requirements for wetlands vary as required by ANR staff, but communities are allowed to set more stringent requirements. Some communities have opted to

create a standardized buffer around wetlands of up to 100 feet.

## Soils

Healthy soils provide flood and drought protection, refill the water table, and cover crops can take heat away from the ground surface. This is because healthy rich soil acts like a sponge, able to better hold and retain water, nutrients, and provide structure. Improving soil organic matter (one way to rebuild soils) not only has a demonstrable effect on crop yield but also helps protect the larger environment from water pollution and greenhouse gas emission. Nitrogen fixation, by which atmospheric nitrogen is converted into a form usable by plants, is an essential process fulfilled in nature largely by the bacteria and fungi that dwell in the soil. High quality soils support:

- Clean water by transforming harmful substances and chemicals to nontoxic forms, cycling nutrients, and catching rainfall to keep sediments and chemicals out of lakes and streams;
- Clean and healthy air by keeping dust particles out of the air and cycling other gases;
- Healthy plant growth by storing nutrients and water and providing structural support through receptive roots; and
- Storage of greenhouse gases such as carbon dioxide in the form of organic matter in the soil.



Rainfall Simulator showing water runoff (jars in front) and infiltration (jars underneath soil) from different soil management types (Source: Benton James, Madison County Soil Conservation District, TN)

Rebuilding soil is critical, and we lose soil every year due to erosion, tillage, and poor management practices. For example, in Vermont, for every 10 tons/acre of corn harvested, we lose 1 ton/acre of soil due to erosion. Soil loss is an

economic issue because it can foul our surface waters and reduce forest and farm productivity.

## **Flood Plain and Resiliency**

Floods are inevitable natural events which affect lands adjacent to watercourses. Floods lead to both inundations, when water rises, and lateral erosion, when streams and rivers move sideways. Floods are not hazards themselves, only when we have built in their path. It is in the public interest to plan for floods, and to implement land use strategies which will minimize the risks to public health, safety, and property.

Floods on larger and slower rivers create fertile, wide, flat floodplains that are excellent agricultural land: exposure to flood damage.

### **National Flood Insurance Program (NFIP)**

The Federal Emergency Management Agency (FEMA) prepared an initial Flood Hazard Boundary Map in 1976 for Fairlee and the most recent Flood Insurance Rate Map (FIRM) in 1991, which includes inundation flood hazard areas for Lake Morey, Lake Fairlee, the Connecticut River and a portion of Mill Pond Brook. This paper map is on file at the Town Office and at TRORC.

Unfortunately, like much of Orange County, some of this data is not digital and can't be used with modern mapping programs. This map is the minimum basis for areas the Town must regulate to be in the National Flood Insurance Program (NFIP). Participating in the NFIP allows owners to buy flood insurance and qualifies the Town for certain State and federal funding sources during and after damaging floods.

The limits of flood hazard areas on the FIRM (shown on Map 2, Future Land Use) show lands along streams, rivers, lakes, and ponds expected to be inundated during the "base flood", commonly called the 100-year flood but more accurately the flood with a 1% chance of being equaled or exceeded in any given year. FEMA's calculations are based on outdated precipitation data that does not consider current or projected increases in heavy precipitation, and generally also do not take into account the impact of ice dams or woody debris on flood flows, underestimating the areas which are subject to flooding damage. There is no planned update for these maps by FEMA. TRORC has determined that a number of structures are identified as being within the FEMA-mapped flood hazard areas, this data was based on the

interpretation of the FIRM map. With new LiDAR available the Town should work with TRORC to determine the exact number and location of these structures.

The Town of Fairlee incorporates Flood Hazard regulations as part of its Zoning Regulations, and is recognized as a participating community in the National Flood Insurance Program. The Town's regulations prudently go above FEMA minimum standards and prohibit new development in mapped flood hazard areas and require structures that are rebuilt to be well above the FEMA-calculated flood level.

### **Fluvial Erosion Hazards**

Much flood damage in Vermont is associated with stream channel instability in what is known as the river corridor area, as opposed to inundation related losses. This reflects Vermont's natural geography and its man-made landscape consisting of steep, relatively narrow valleys with roads and buildings near stream channels. River channels that seem like they have "always been there" actually are in constant movement. Often, we have altered these channels by activities such as dredging, creating a berm, damming, or straightening. Such activities are not without cost, and affect how rivers behave, which is to generally try to undo what we have done. For example, a straightened channel will erode its banks in a flood, trying to recreate meandering curves. Such areas at risk from becoming (or returning to) riverbeds in the future are known as "river corridor" areas and have been mapped by the Vermont Agency of Natural Resources. Considerable amounts of flood damage occur outside of the FEMA-mapped areas in such river corridors.

As mentioned above, the NFIP maps address only inundation issues by applying a water surface elevation-based standard. They do not recognize the danger present from channels that are eroding downward (incising), that can cause bank failures and landslides; filling in with sediment (aggrading) which may clog culverts and bridges; or eroding laterally. Recognizing these risks in land use regulation is prudent.

### **Flood Resiliency**

The 1970s had two federally declared flooding disasters, none in the 1980s and two in the 1990s. From 2000 to 2009 there were nine federally declared disasters from severe flooding, and between 2010 and 2018, Vermont has experienced



an additional 11 federally declared disasters due to flooding. The extreme severity of 2011's Tropical Storm Irene, which inundated some parts of Vermont with heavy rains and severe flooding, has made it clear that Vermont's communities need to plan for flood hazard events.

Fairlee has taken prudent steps in its zoning to not increase our future flood risk by prohibiting new development within the FEMA-mapped flood areas as well as river corridors mapped by ANR. Existing structures may be rebuilt but must be at least one foot higher than the minimum standards allowed by the NFIP. Clearly, protecting development from future harm is a priority for any community, but it should also be noted that communities such as Fairlee who have taken such strong measures qualify for greater Emergency Relief Assistance funding from the State in the event of a disaster declaration. Much of the damage from flooding is not to buildings, but to Town road infrastructure, and Fairlee has adopted the State Road and Bridge Standards to ensure that maintenance and repairs to roads and drainage increase their ability to withstand future floods.

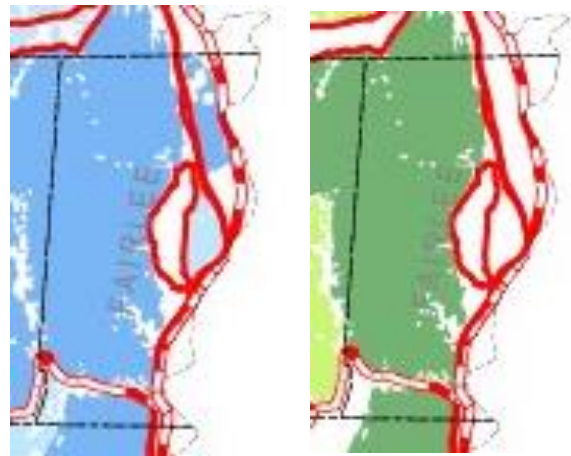
## Forests Blocks and Wildlife Corridors

The greater part of Fairlee is forests that are contained on large parcels of land. Some of this land is very steep and along with the consideration of existing soil types would be hard to develop, but other parts, closer to the river valley in have simply stayed in sizable holdings since settlement. For a Town of roughly 13,000 acres, we have an unusually high amount of land (nearly 5,000 acres) that is conserved or in Town ownership. Five more private parcels that are not conserved have another 2,800 acres. Together, these large tracts of forested land along with smaller parcels, mean that our forests can provide excellent functions as habitat.

Most important when considering development and its impact on wildlife is the concept of habitat fragmentation. Forests provide habitat to a diverse population of wildlife, which are negatively impacted when forested land is fragmented through development, including the simple act of building a road. Forest fragmentation can affect water quality and quantity, fish and wildlife populations, and the biological health and diversity of the forest itself. When many small habitat losses occur over time, the combined effect may be as dramatic as one large loss. Forest fragmentation can disrupt animal travel corridors,

increase flooding, promote the invasion of exotic vegetation, expose forest interiors, and create conflicts between people and wildlife. Habitat loss reduces the number of many wildlife species and eliminates others.

Many forest dwelling species need hundreds to thousands of acres for their health, and some require interior spaces that are far from roads and fields. The Vermont Conservation By Design project has ranked lands on a landscape scale for their importance as forest blocks (shown as light green and dark green) and as wildlife corridors (habitat connectors, shown as light blue and dark blue) that ensure that the forest blocks are held together as part of a regional ecosystem. The below examples display both large areas of Forest Blocks and habitat connectors in Fairlee. It is for precisely these reasons the Land Use maps in Fairlee need to be redrawn to protect these valuable areas.



Fairlee's Forest Blocks (Source: BioFinder, TRORC)

Having wildlife corridors, if planned correctly, allows wildlife to move between habitats and allow individual animals to move between groups, helping to restore or maintain genetic diversity that is essential both to the long-term viability of populations and to the restoration of functional ecosystems. It also provides northern migration to suitable habitat as climate change continues. Fairlee contains an important connection to lands in New Hampshire.

Because of its generally low density and the percentage of forestland enrolled in Current Use in Town, Fairlee maintains a substantial amount of good quality wildlife habitat.

Besides their unique habitat functions, large forest blocks also enable forestry to continue as a

vital part of the local economy and energy supply. Additionally, forests sequester carbon from carbon dioxide in the air, performing a needed service.

## Flora, Fauna, Natural Communities

In Fairlee, there are a broad range of communities that exist in the older forests, early successional forests, open fields and valley floors. The breadth and diversity of wildlife and plant communities indicate a healthy, thriving ecosystem. Yet, natural communities are usually strongly affected by the surrounding environment. Plants respond to soil structure and chemistry, hydrology, and climate. The effects of unmanaged development can have a negative impact on plant communities, which in turn will harm the overall ecosystem in the area affected.

Although nearly all undeveloped land in the Town provides habitat for plants and animals, there are some areas which provide critical habitat that must remain intact for these habitats to function. These areas include wetlands, vernal pools, and deer-wintering areas and ecotome (the edge transition zone between two cover types, such as field and forest). Considering bird habitat is also important to protect species like the peregrine falcons, bald eagles, and warblers in Fairlee. Wildlife is one of the primary attractions to the area and provides many citizens of Fairlee with direct and indirect livelihoods from sports, tourism and direct harvest of wildlife.

Wintering areas are an important habitat requirement for deer during the critical winter months when snow depth and climate are limiting factors to survival. Typically, these areas consist of mature softwood stands, at low elevations or along stream beds, which provide cover and limit snow depths. Southerly facing slopes are also beneficial due to good sun exposure and may be utilized even in areas of limited softwood cover. More specific factors, such as percent of canopy closure, species of softwoods, and stand age, also figure into the quality of the wintering area. Fairlee has in excess of 1481 acres (nearly 11% of Fairlee's total acreage) of deer wintering yards.

Wildlife management requires management of human activities around animals as much as

management of animals around human activities. Managing for specific species is not as desirable as managing for the entire ecosystem supporting the species. Parochial wildlife management programs usually manage for one species at the expense of others, while a more ecological approach is to ensure healthy habitat for all components of the ecosystem. The Vermont Non-Game and Natural Heritage Program have identified several sites in Fairlee that are habitats for rare, threatened or endangered species. Large tracts of forest land, riverines, floodplains, and cliffs are natural communities for many habitats.

There comes a point where a species cannot use seemingly adequate habitat because of adjacent development. While certain strategies may lessen the impact on habitat, planners and developers should keep in mind that almost every development will affect the ecological balance. It should be noted, however, that high density or intensive land uses are more likely to have a negative impact on the quality of wildlife habitats.

## Invasive Species

Invasive non-native species are a growing problem throughout Vermont. Invasive plants are defined as those exotic species that typically spread from disturbed areas into natural communities, but many of these species are also impacting yards, agricultural fields, and working forests. In Fairlee the spread of invasives is negatively impacting the rural character of the Town, reducing native plant populations and consequently affecting wildlife populations, creating economic impacts by dominating other plants in agricultural fields and inhibiting reproduction of trees in sugarbush areas and other forests, destroying the scenic quality of roadsides, reducing property values, and potentially posing health risks. At the present time, the greatest threats are posed by wild chervil (fields, roadsides and recently logged areas), Japanese knotweed (streams, rivers, roadsides, yards), Japanese barberry (forests), and emerald ash borer (forests) but there are increasing threats throughout the region from garlic mustard, giant hogweed, and other invasives.

Some of these invasives, especially wild chervil and knotweed, have proliferated to such an extent that eradication from many sites is impossible, but there are still portions of the Town that have not been infested. Diligence is necessary from Town residents and employees to prevent the further spread of these species, and the introduction

of new species that could pose more serious threats. For example, giant hogweed has been identified from several towns in Central Vermont. This Federally listed noxious weed produces a sap that, in combination with moisture and sunlight, can cause severe skin and eye irritation, painful blistering, permanent scarring and blindness.

One of the more common ways in which invasive species spread to new locations is when seeds or root segments are transported on vehicles, especially construction and logging machinery, mowers, etc. Best management practices have been identified for reducing the accidental spread of invasives including avoiding using fill from invaded sites, washing of equipment before leaving infected sites, stabilization of disturbed sites, timing of mowing, etc.

A concern in Fairlee is waterborne invasives such as milfoil or water chestnut. These invasives develop in and around lakes, often appearing when boats or animals bring them from outside of the community. Fairlee has spent considerable time and money managing milfoil infestations.

## Mineral Resources

The use and management of Fairlee's earth and mineral resources are matters of public good. Maintenance of sustainable quantities of gravel, sand, crushed rock, and other materials are essential for business development, as well as State and local highways. Despite this, public and private interests are oftentimes in conflict over use of the resource. It is in the interest of the Fairlee business owners and residents to enable utilization of these resources when such uses do not significantly inhibit or conflict with other existing or planned land uses, or conflict with other Stated goals in this Plan.

## Natural and Historical Areas

While Fairlee residents would agree that the entirety of the community is significant for its beauty and its rural landscape, there are several areas that represent the most significant places in Town. These lands are what most residents agree make Fairlee the place it is today. These areas include:

- **Bog Pond** – This roughly 10 acre property is a kettle bog with a depth of approximately 40'. It provides a substantial amount of good wildlife habitat and is preserved by the Nature Conservancy.

This valuable asset is bounded by private property and access is granted with permission.

- **The Palisades** – This ledge outcropping is located behind the Fairlee Fire Department and is accessible by a public trail. This area has been a location where falcons nest.
- **Glens Falls** - Located across from the boat launch on Lake Morey, this area has a series of waterfalls which feed into the lake. It is accessible by path.
- **Lakes Morey and Fairlee** – Fairlee's lakes are an essential part of the community's character offering a wide variety of recreational opportunities.
- **Echo Mountain/Eagle's Bluff** - A point of rock that looks over the west side of Lake Morey. It can be accessed by multiple trails from several communities.
- **Fairlee Wetlands**- Located northwest of May Hill off Mill Pond Road, this is an area of upland wetlands.
- **Fairlee Town Hall** – Built in 1914, this building is on the National Register and houses the community's municipal offices. It has kept many of its historic architectural characteristics during the past 100 years. The first floor was substantially renovated in 2013. The second floor which contains a theatre was renovated in 2018.
- **Fairlee and Ely Train stations** – These two historic train stations, one of which is owned by the Town. Both are a significant reminder of the activity of the former Boston and Maine railroad.
- **Fairlee Town Common** – Located in front of the Town Hall, the common contains a veteran's war monument and bandstand.

## Conservation Commission

Vermont statute enables communities to create a Conservation Commission (CC), a volunteer board that focuses specifically on the natural, scenic and cultural resources within a community. Conservation Commissions regulatory authority is provided by State Statute, It generally acts as an advisory committee to the Selectboard and Planning Commission. A CC may conduct inventories of natural resources, manage municipal properties, manage the receipt of any gifts of land to the Town, and assist the Planning Commission with natural resource planning. It would be the responsibility of the Conservation Commission to receive any funds designated for mitigation (of prime agricultural lands) in the event of an Act 250 finding during development of those lands. Fairlee does not have a Conservation Commission.

## Goal 1

**To protect the natural, scenic and historic character of Fairlee while allowing the land to be worked and enjoyed safely and harmoniously.**

### Policies to Further Goal 1

1. It is the policy of the Town to protect the natural, scenic and historic character of Fairlee's working landscape.
2. It is the policy of the Town to actively enhance and maintain Fairlee's outdoor environment for both active and passive recreational uses including hiking, fishing, boating, camping, hunting, music and the arts.
3. It is the policy of the Town to protect both the view-shed and noise-shed surrounding Lake Morey from possible development and noise obstructions.

## Goal 2

**To maintain or enhance the quality and quantity of drinking-water resources (groundwater).**

### Policies to Further Goal 2

1. It is the policy of the Town to permit development in Fairlee only if it does not result in the pollution of groundwater or cause unreasonable reductions in supply.
2. It is the policy of the Town to carefully review and monitor land use activities which potentially threaten groundwater quality.

### Actions to Achieve Goal 2

1. The Town should continue testing water quality in Lake Morey and verify that the same is being done by the surrounding towns on Lake Fairlee.

## Goal 3

**To maintain or improve surface water quality and quantity.**

### Policies to Further Goal 3

1. It is the policy of the Town to not allow ground disturbance within 35 feet of the

top of the bank of designated permanent streams except those that by their nature must be located near streams, such as bridge or culvert construction or permitted bank stabilization.

2. It is the policy of the Town to not allow buildings within 50 feet of the top of the bank of designated permanent streams.
3. It is the policy of the Town to review all proposed development for appropriate location away from brooks, streams, tributaries, and well head recharge areas and for adequate protection of the recharge environment of these resources.
4. It is the policy of the Town to encourage preservation of the natural State of streams by protecting adjacent wetlands and natural areas and by maintaining existing stream bank and buffer vegetation including trees.

### Actions to Achieve Goal 3

1. The Planning Commission should support the watershed district overlays in the update to the Land Use Chapter & Town map for Lake Morey and Lake Fairlee.

## Goal 4

**To protect Fairlee's lakes in a fair and equitable way that ensures their economic and recreational use for future generations.**

### Policies to Further Goal 4

1. It is the policy of the Town to conform development within the vicinity of Lake Morey, Lake Fairlee and the Connecticut River to State stormwater and lakeshore regulations. These areas are also subject to Fairlee's Unified Bylaws and any additional local permitting requirements deemed necessary by the DRB.

### Actions to Achieve Goal 4

1. The Planning Commission should consider additional limitations on removal of vegetation within the buffer of streams and lakes as a method of reducing erosion and improving water quality.

## Goal 5

**To identify and encourage land use development practices that avoid or mitigate adverse impacts on significant wetlands.**

**Policies to Further Goal 5**

1. It is the policy of the Town to abide and adhere to State wetlands regulations.
2. It is the policy of the Town to not locate structural development or intensive land uses in mapped wetlands or within buffer zones to significant wetlands.
3. It is the policy of the Town to plan development within a distance adjacent to mapped wetlands (to be determined by the Planning Commission) so as not to result in undue disturbance to wetland areas or their function. Mitigating measures (including but not limited to buffers) to protect the function of a wetland are an acceptable measure.
4. It is the policy of the Town to direct funding from the State of Vermont which comes from off-site mitigation to the Fairlee Conservation Commission (if such a commission is created) for future land preservation and protection.

**Actions to Achieve Goal 5**

1. The Planning Commission should develop buffer rules for mapped wetlands.
2. The Town should consider completing a Town-wide wetlands inventory.

**Goal 6**

**To identify and encourage land use practices that avoid or mitigate depletion and erosion of soil.**

**Policies to Further Goal 6**

1. It is the policy of the Town to support soil conservation practices including crop rotation, cover crops, conservation tillage, and windbreaks.
2. It is the policy of the Town to reduce impermeable surfaces (such as concrete) to encourage water penetration into the ground.

**Actions to Achieve Goal 6**

1. The Planning Commission should support State best soil management practices for farmers and landowners.

2. The Town should encourage farmers to transition to better soil conservation practices.

**Goal 7**

**To reduce risk to residents from flood damage.**

**Policies to Further Goal 7**

1. It is the policy of the Town that flood hazard areas and river corridors shall not be built upon in order to preserve public safety.
2. It is the policy of the Town that land development shall not result in net loss of flood storage or increased or diverted flood levels that would increase risk to adjacent areas.
3. It is the policy of the Town that utilities or facilities serving existing development (e.g. water lines, electrical service, waste disposal systems, roads and bridges) may be located within these areas only when off-site options are not feasible and provided that these utilities or facilities meet the flood proofing requirements in Fairlee's Zoning Regulations.
4. It is the policy of the Town to maintain its membership in the National Flood Insurance Program.
5. It is the policy of the Town to recognize that upland areas adjacent to unstable rivers and to steep streams may be at risk of erosion during floods.
6. It is the policy of the Town to prevent new buildings (except development exempted by State law, such as agriculture) in the Flood Hazard Area.

**Actions to Further Goal 7**

1. The Planning Commission should ensure the latest river corridor maps, adjusted as needed to accommodate existing development under State rules, are used to delineate flood risk areas.
2. The Planning Commission should maintain the Fairlee Zoning Regulations' prohibition on new development within the floodplain, only allowing renewable energy generation facilities, recreational and agricultural uses.
3. FEMA should revise Fairlee's Flood Hazard maps to accurately reflect the locations of current and future flood hazard areas to assist in appropriate land use decisions.

4. When building or repairing roads and drainage structures, the Town shall seek to minimize future flood risk by sizing structures so that they take into account past flood events.

## **Goal 8**

**To preserve large, connected blocks of forestlands for habitat, wildlife corridors, and as a base for forestry.**

### **Policies to Further Goal 8**

1. It is the policy of the Town that rural development, other than isolated houses and camps, should be designed to preserve continuous areas of wildlife habitat whenever possible, and efforts should be made to maintain connecting links between such areas.
2. It is the policy of the Town that forestry, conservation and outdoor recreation are the preferred uses for lands more than 300 feet inside areas shown as high priority forest blocks or wildlife corridors.
3. It is the policy of the Town that new roads or power lines shall avoid cutting through forest blocks.
4. It is the policy of the Town that subdivisions on large lots with forest shall practice conservation subdivision design by concentrating new lots on the edge of forest so as to retain interior forest in a contiguous and unfragmented lot.
5. It is the policy of the Town to work with conservation groups and others to allow public recreational use of conserved and/or Town lands in ways that maintains their habitat functions.
6. It is the policy of the Town to promote sustainable forestry on forestlands.

### **Actions to Further Goal 8**

1. The Planning Commission should revise the zoning regulations to create districts or provisions to limit development in the Forest/Conservation future land use area from the Town Plan.
2. The Planning Commission should create conservation subdivision standards, waivers, and incentives to achieve forest protection balanced with economic benefit for forest owners.

## **Goal 9**

**To sustain the natural diversity of flora and fauna found in Fairlee.**

### **Policies to Further Goal 9**

1. It is the policy of the Town that native wildlife populations and natural diversity should be sustained and enhanced.

### **Actions to Achieve Goal 9**

1. The Planning Commission should partner with local conservation groups or any other interested parties to protect vulnerable flora and fauna populations.

## **Goal 10**

**To maintain or improve the natural diversity, populations, and migratory routes of natural species, including peregrine falcons, bald eagles, warblers, and the Palisades natural area.**

### **Policies to Further Goal 10**

1. It is the policy of the Town to encourage long-term protection of critical habitats and significant natural communities through conservation easements, land purchases, leases and other incentives.
2. It is the policy of the Town to protect deer wintering areas from development and other uses that adversely impact these areas.
3. It is the policy of the Town that preference shall be given to development that utilizes existing roads and whenever possible preserves existing agricultural use.

### **Actions to Achieve Goal 10**

1. The Planning Commission should consult with the Vermont Department of Fish & Wildlife to understand how to best maintain habitat for natural species.

## **Goal 11**

**To reduce the impact of invasive species on Fairlee's ecosystems.**

### **Policies to Further Goal 11**

1. It is the policy of the Town that new occurrences of invasive species should be controlled to prevent further infestations.

#### **Actions to Achieve Goal 11**

1. The Town should encourage Town employees, contractors, businesses and individuals to become familiar with the best management practices to prevent the accidental spread of invasives.
2. The Town should schedule roadside mowing to minimize and reduce the spread of invasive species.
3. The Town should work with concerned parties to ensure that all boats are properly cleaned before going into or coming out of the lakes.
4. The Town should work to inventory the trees alongside its roads and stay abreast of emerald ash borer spread to plan for removal of trees if needed.
5. The Town should explore hardwood replacement species for ash trees (e.g. oak, elm, and hickory) with consideration to location and nut production.

## **Goal 12**

**To support extraction and processing of mineral resources only where such activities are appropriately sited.**

#### **Policies to Further Goal 12**

1. It is the policy of the Town to consider pollution, noise and vehicle traffic as part of the decision-making process when reviewing proposed gravel/stone extraction projects.
2. It is the policy of the Town that existing and proposed mineral extraction and processing facilities shall be planned, constructed, and managed:
  - a. To not adversely impact existing or planned uses within the vicinity of the project site;
  - b. To not significantly interfere with the function and safety of existing road systems serving the project site;
  - c. To minimize any adverse effects on water quality, fish and wildlife habitats, viewsheds and adjacent land uses; and

- d. To reclaim and re-vegetate sites following extraction.
- e. To minimize noise impacts on adjacent uses including residential areas.
- f. To maintain the rural character of the Town.

#### **Actions to Achieve Goal 12**

1. The Planning Commission should maintain special for mineral extraction operations.
2. The Selectboard should continue to post roads with weight limits at the appropriate times to ensure that hauling does not degrade Town roads.

# Agriculture and Forestry



## Overview

Agriculture and forestry define the character of Vermont and comprise major industries in the Region. Over time, changes in these industries have led to instability. The shape of Vermont agriculture and forestry are changing and the pressures for change come from both inside and outside the State. These changes pose difficult challenges, not just for landowners, but for all who desire a rural lifestyle and working landscape. And yet, opportunities for new and innovative farm and forestry businesses are on the rise. How we maintain the working landscape and support the agriculture and forest industries will have a long-term impact on our landscape and our local economy.

## Farm and Forest Land Issues

An economic restructuring or a shift away from agriculture to the service and tourism industries has placed economic pressure on farm owners. The higher cost of owning land makes it difficult to rationalize conventional farming. Owners of forestland most often are faced with a tax bill on land that exceeds its economic value for timber production. This coupled with a need for house lots or development land in general, has prompted landowners to place their land on the market for these purposes.

For farmland and forestland conservation to be successful, the pressures posed by the market value approach to taxation must be solved for both the landowner and municipality. One means to

address this issue has been the Vermont Current Use Program administered by the State which sets the valuations on farm and forest land based on their productivity values rather than their development values. There are 6483.66 acres of land in Fairlee enrolled in the Current Use Program, this amounts to nearly 48% of all lands in Fairlee.

To read about how development relates to forest fragmentation and wildlife connectors in Fairlee, refer to the Natural Resources Chapter.

## Agricultural Trends

An analysis of the United States Census of Agriculture data between 2002 and 2007 showed that farming in Vermont was slowly shifting away from the larger scale farm that developed as a result of trends toward consolidation. However, in recent years, there has been a decline in both number of farms and average size of farms. Between 2012 and 2017, the number of farms in Vermont decreased, from 7338 total farms to 6808 farms. The average size of farms also declined, going from 177 acres in 2007 to 175 in 2017 acres. These farms produce slightly less than 3% of Vermont's agricultural income.

Despite this decrease in farm size, over the past 10 years a growing movement in sustainable agriculture—involving increased local food production and consumption, value-added processing, and diversified farms—has taken off. In 2017, Vermont had a market value of agricultural products sold of \$781 million, compared to the \$776 million in 2012 and \$674 million in 2007. Many other businesses in Vermont depend on the “farm economy.” According to the Vermont Farm to Plate Strategic Plan (F2PSP), which was released in 2011, Vermont has at least 457 food processing establishments that employ at least 4,356 people and is the second largest manufacturing sector employer in the State, behind computer and electronic products.

In addition, Vermont has at least 263 wholesale distribution establishments that collectively employ at least 2,288 people. The farm-related food industry is clearly connected to the farm economy. Products grown or produced on farms in Fairlee include hay, corn, maple syrup, fruit, cattle, horses, chickens, pigs and sheep. Though federal law recognizes the importance of farmland and farmland protection, local planning and zoning regulations often neglect the issue of prime



agricultural land and the conflicts that arise between expanding development and successful farming.

The distinctiveness of the working landscape gives Vermont its beauty. Farms provide open space for wildlife habitat, scenic views and a connection to the land that is hard to find in other places. They also help our Towns avoid sprawl and maintain small Town and village settlement patterns. As such, to continue to receive the benefits farming has to offer, a community must encourage farming.

## Forestry Trends

Three primary trends have affected the region's forestland and its productivity. First, forests and farms are being increasingly fragmented or subdivided into small lots which threaten the economic viability of forestry. Development pressure in the region has relaxed since the early 1990's, but the economy is predicted to rebound and the trend of land moving out of forest use to other uses will continue, particularly in those areas where access and development suitability are not severe. Funding of the Current Use Program has been identified by the Northern Forest Lands Council as vital to landowners keeping their patience, not over harvesting the forests or opting for liquidation cutting of tracts. High taxes contribute to a low rate of return on timber sales and have prompted some conversion to non-forest uses.

Second, markets for timber and wood have been responsive to a glut of some products affecting prices, at least in the short run. While the numbers of mills in the region have declined, there has been a move to new markets, one being an export demand for hardwood logs and another being a demand for pulpwood and other specialty types. For a State mostly known for hardwood, the demand for pulp has led to better managed forests because it is generally the lower grades or poorer cuts that are being used.

Third, federal and State estate and inheritance tax laws have placed family landowners into financial predicaments where they need to subdivide or develop forest land in order to cover taxes. Current tax law bases estate values on the market value of land rather than at use value. By allowing land to be assessed based on current use, family landowners can realize a more reasonable return on investment for long-term timber management. Forest products continue to be a significant share of the region's manufacturing sector, although the way statistics are kept makes it

hard to quantify. Overall, according to the Vermont Department of Employment and Training, jobs in the lumber and wood products industries have increased Statewide. In looking at the Vermont forest products industry, it is worth noting that the industry, like agriculture, has virtually no impact in setting trends as it is a relatively small national producer. A major long-term issue for the Vermont forest products industry is how to keep it from drifting into the position of selling wood as a raw material without benefiting from the higher paying jobs that come from value-added wood products.

## Agriculture and Land Use Regulation

Land use regulation has a definite impact on farming. For example, a zoning ordinance that allows for large tracts of land to be sold for residential purposes could conceivably help protect open space, but that open space might no longer be available for agricultural use without considerable forethought and design. The same ordinance calling for much smaller lot sizes (such as one acre) would, over time, lead to an incremental decrease in the amount of usable farmland. Therefore, if agricultural uses are to be preserved, we need to protect them. V.S.A. Title 12, Chapter 195, Section 5753 is intended to protect farmers against nuisance law suits. However, there have been circumstances where the State statute has not offered enough protection.

## Sustaining Agriculture and Forestry

Planning policy and implementation efforts should be directed at sustaining agriculture and forestry pursuits and not just conservation of the resource. This is not only because it is the best way to keep the land open, but also because agriculture and forestry are critical industries in the Town and Region. Just as there is a variety of interests, there is a variety of tools that can be used to conserve these resources. Some are directed primarily at sustaining agriculture, others forestry, some are regulatory in nature, others are compensatory, and others voluntary. It is in the public interest to encourage conservation groups, landowners, local officials, and policymakers to utilize these tools.

## Conservation Easements

Conservation easements are a common method used to ensure that the working landscape gets preserved. The Vermont Land Trust (VLT), Vermont's largest non-profit conservation organization, has more than 720 parcels of farms

using conserved land throughout the State, totaling contributing to their 593,000 total acres protected. Most land purchased with the intent of applying a conservation easement to it is funded, at least in part, by some form of grant funding from either State or private sources.

The use of conservation easements has both pros and cons for municipalities:

#### Pros

- Easements are flexible; they can be written to achieve specific goals of the Town involved.
- They are perpetual, and restrictions put on the conserved lands will remain in force even when the property is sold to a new party.
- They conserve scenic beauty and environmentally sensitive areas.
- Eased property remains on the tax rolls.

#### Cons

- Establishing an easement involves up-front costs, such as paying for legal counsel, biological analysis, etc.
- There are long-term expenses involved with monitoring the easement.
- The easement holder is responsible for ensuring that the restrictions placed on the easement are followed.

The Fairlee Planning Commission acknowledges that conservation easements are one potential solution to preserving the working landscape. Other strategies for preserving the working landscape can be found in the Natural Resources chapter.

## **Farming, Forestry, and the Economy**

In addition to preserving Fairlee's working landscape and maintaining the community's aesthetic beauty, farming and forestry can have an economic impact. Vermont is within easy reach of millions of people in cities like Boston and New York City. Additionally, Vermonters are increasingly seeking locally sourced, sustainably produced farm and forest products. Rising fuel prices have led to an increased interest in food and energy security.

Vermont is a national leader in innovative education programs based on local food, agriculture and healthy eating. It is also widely recognized for its strong network of land trusts and other nonprofits that are models for conserving farm and forest lands.

There is already a growing mix of emerging entrepreneurs and long-time land-based businesses that are constantly evolving to stay competitive. They're producing biofuels, artisan cheese, specialty wood products, produce, breads and other value-added items. Wood products, including wood chips and pulp, as described in the Forestry Trends section above, are one of Fairlee's most significant value-added products. Value-added products can be successful even on a small scale, like sauerkraut from R & S Produce in Fairlee. It is in the best interest of Fairlee to encourage the continued development of these industries.

It is essential to encourage the growth of both forestry and agricultural industries within the community. These enterprises will continue to sustain the natural character of the Town while adding the potential for jobs and unique and creative attractions that will bring people into the community for recreation and education. If tourists come to Fairlee to visit a new organic farm or specialty wood or forest product producer, they will need a place to stay for the night; they will buy dinner at local restaurants, adding additional capital to the economy.

## **Goal 1**

**Encourage the conservation, wise use and management of the Town's agricultural and forestry resources, to maintain its environmental integrity, and to protect its unique and fragile natural features.**

### **Policies to Further Goal 1**

1. It is the policy of the Town to discourage fragmentation of existing or potential contiguous areas of high value farming or forestry, into uses other than those incidental to agriculture or forestry
2. It is the policy of the Town that where high value agricultural and forested land are identified, clustered or peripheral development is especially encouraged to protect such resources and prevent fragmentation and sprawling settlement patterns.
3. It is the policy of the Town to encourage farmers, loggers, and foresters to use Accepted Management Practices (AMP) and implement Best Management Practices (BMP) in their operations and to minimize point and non-point source pollution.

### **Actions to Achieve Goal 1**

1. The Town should encourage the agricultural industry, conservation organizations, public schools and the tourism and recreation industries to sponsor continuing educational opportunities to the public that would promote a better understanding of farming and forestry practices and natural resource management in general.

development, area based allocation and/or performance standards.

## **Goal 2**

**Protect the Region's rural agricultural character, scenic landscape, and recreational resources**

### **Policies to Further Goal 2**

1. It is the policy of the Town to preserve recreational and scenic access by ensuring that at the completion of logging projects all roads are restored to their previous condition.
2. It is the policy of the Town to skirt tracts of productive agricultural land rather than divide them when constructing utilities, roads or other physical modifications.

## **Goal 3**

**To encourage the economic growth of agricultural and forest operations at a scale that is appropriate for Fairlee**

### **Policies to Further Goal 3**

1. It is the policy of the Town to support the development of value-added farm and forestry products in Fairlee.
2. It is the policy of the Town that contiguous forest and significant agricultural areas should remain largely in non-intensive uses unless no reasonable alternative exists to provide essential residential, commercial and industrial activities for the Town's inhabitants.

### **Actions to Achieve Goal 3**

1. Local land use planning activities and programs affecting agriculture and forestry should consider the ways to promote these industries. This could include local bylaws and the creation of farm and forest land conservation programs, including overlay districts, agricultural zoning, transfer of development rights, purchase of development rights, cluster

# Recreation



## Overview

Recreation is an essential part of Fairlee’s culture as a community. Fairlee has long been a destination for people who enjoy its lakes and wooded areas, and as a result this has been a core piece of Fairlee’s economy. While the Economic Development chapter of this Plan recognizes the need for Fairlee to develop a more diverse year-round economy, it also acknowledges that Fairlee’s recreational economy is a vital part of the picture.

Public recreation in Fairlee is managed in part by the Fairlee Recreation Council. This all-volunteer group helps organize multiple events throughout the year including events at the Town Beach, Town Christmas Tree Lighting and the yearly Town Holiday party. The Recreation Council is also responsible for maintaining the Community Calendar.

## Town Owned Recreation Areas

The Town of Fairlee has several publicly owned recreation areas which offer multiple types of recreational opportunities. They include:

**Fairlee Beach** – The Town (with assistance from the Recreational Council) operates a public beach on Lake Morey which allows residents and taxpayers access to the Lake for swimming (there is no boat access at the Fairlee Beach). The Recreation Council supports numerous events at the Town Beach. The Town Beach is located on the south end of Lake Morey on Clubhouse Road.

**Fairlee Town Forest** – Fairlee is fortunate to own 1,570 acres of forested land that is open for public recreation. The Fairlee Town Forest is in western Fairlee, covering areas that include Bald Top Mountain and Glenn Falls Brook. The property is home to a large significant wetland, deeryards and other significant wildlife habitat.

**Lake Morey** – Lake Morey is one of Fairlee’s recreational cornerstones. The 550 acre lake is in close proximity to Interstate 91 and to Fairlee’s Village Center. As a result, it has been a popular tourist destination since the late 1800’s. The value of Lake Morey to the Fairlee community cannot be overstated. Its location brings a substantial population of summer residents and visitors. Visitors access the lake for swimming via the beach and for fishing via the Fish and Wildlife access. Residents also have access from the camps, inns and homes that are located within walking distance of the Lake. Historically, most of the summer cottages which line Lake Morey’s shores have been occupied only during the warmer months. In addition to offering summer recreation, Lake Morey has become a prime location for outdoor winter sports. The Lake boasts the longest outdoor Nordic skating track in the United States (maintained by the Upper Valley Trails Alliance). Efforts to expand outdoor winter recreation at Lake Morey have been encouraged by the creation of Lake Morey Winter Weekend. This partnership between the Upper Valley Trails Alliance, Hulbert Outdoor Center and Lake Morey Resort features a range of outdoor winter events on and around the lake. Events such as Winter Weekend should continue to be supported by the community as they will increase the year-round economic viability of recreation in Fairlee.

**Lake Fairlee** – Lake Fairlee is shared between Fairlee, West Fairlee and Thetford, with roughly 100 acres of the Lake located in Fairlee. Unlike Lake Morey, Lake Fairlee has fewer commercial recreation facilities, but it also offers a wide range of lake related recreational opportunities.

## Privately Owned Recreation Areas

**Summer Camps** – Lakes Morey and Fairlee are home to several long-standing summer camps for boys and girls. The Aloha Foundation, which was founded by the Gulick family in the early 1900’s, has a number of camp locations on Fairlee’s lakes; including the

Hulbert Outdoor Center, which offers educational and human resources year-round through school and community programs of environmental education, leadership training, wilderness adventure, family camping, elder hosting, and a wide variety of special seasonal events.

**Birch Meadow Campsite** – Birch Meadow campsite is a canoe campground on the Connecticut River just north of the marshland at the outlet of Lake Morey. This site is maintained by the Hulbert Outdoor Center and is on the Connecticut River Paddlers Trail.

**Trails** – Fairlee is fortunate to have several trail systems that are privately maintained but open to the public. The Cross Rivendell Trail system extends from Orford, New Hampshire through Fairlee for 3.5 miles to points west. In addition, there is a network of roughly 18 miles of public/private trails in an area that extends from Brushwood Rd to the Rivendell Trail system.

**Snowmobile Trails** - Fairlee has a network of trails that during the winter are utilized by snowmobilers. The trails are maintained by the Vermont Association of Snow Travelers (VAST).

## Recreation and the Economy

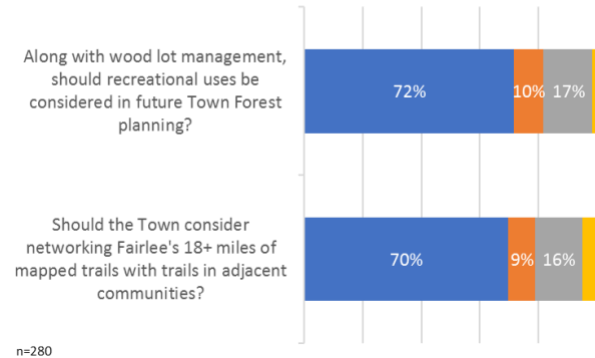
Outdoor recreation is valuable to the economies of most communities in the State of Vermont, including Fairlee. State wide, outdoor recreation supports 35,000 jobs, generates \$187 million in annual State tax revenue, and produces \$2.5 billion annually in retail sales and services, accounting for 12% of gross State product.

According to the Outdoor Industry Foundation, Vermonters participate in outdoor recreation at higher rates than national averages in bicycling, hunting, paddling, snow-based, trail based and wildlife watching activities. In 2011, the Vermont Department of Forests and Recreation conducted several surveys for the Vermont Statewide Comprehensive Outdoor Recreation Plan (SCORP) clearly showing that more than 50% of Vermonters surveyed participate in multiple types of outdoor recreational activity. Activities like mountain biking, ATV riding and trail-based recreation have all seen growth over the past decade.

A recent community survey highlighted that Fairlee residents are interested in expanded outdoor recreation.

Please indicate whether you agree or disagree with the following statements.

■ Yes ■ Don't Know/Not Sure ■ No ■ No Response



It should also be noted that young adults who choose to return to or relocate to Vermont have indicated that their primary motivation for moving to Vermont is the lifestyle associated with the working landscape.

The way land is used in the community has an influence on recreation. Fairlee should continue to maintain a pattern of development in the more rural areas of Town that is low density, allowing for larger amounts of open land and reducing the possibility of having large land areas broken up for development. To ensure that Fairlee's economy grows stronger and more vital, recreation and tourism will need to remain an important part of the equation. The unique value created by the lake and its 4.5 mile Nordic skating track is a unique asset that will attract new tourists to the Town. Recognizing this, the community will continue to support all efforts to increase participation in outdoor winter activities.

## Goal 1

**To maintain, enhance, and expand recreational opportunities in Fairlee.**

### Policies to Further Goal 1

1. It is the policy of the Town to encourage patterns of land use that maintain and enhance the opportunity for outdoor recreation.

### Actions to Achieve Goal 1

1. The Town should explore efforts to create public access to the Connecticut River Byway.

## Goal 2

To make outdoor recreation a strong part of Fairlee's year-round local economy.

### Policies to Achieve Goal 2

1. It is the policy of the Town to encourage the development of outdoor recreational businesses which operate in harmony with the surrounding area.

### Actions to Achieve Goal 2

1. The Town should explore updating the Town Forest plan to include recreational uses.
2. The Town should consider updating the ATV's ordinance on limited use of public trails.

## Land Use



## Introduction

Fairlee's rural character is strongly influenced by how our homes and businesses fit into the landscape, the design of our buildings, the pattern of fields and forests, and the sense of community that comes from people living and working here. This section of the Plan describes Fairlee's current land use and sets a framework on

how land should be utilized in the future, so that Fairlee is strengthened as a vital and thriving community, future growth results in new and expanded job opportunities, and there is a greater ability for young families to find a home in our Town and for older residents to live in Town affordably.

## Current Land Use

The Town of Fairlee has many of the characteristics of a traditional Vermont community, in that it has a single village that is the primary location for civic and commercial uses, with the remainder of Town being generally rural in nature. Unlike many Vermont communities, Fairlee has access to two of Vermont's primary transportation corridors – the interstate and the railroad. This access to transportation infrastructure positions Fairlee to be a good place for limited commercial and industrial development, as well as to have increased commuting options.

Although the interstate has benefited the community, it should be recognized that it divides the community, separating the Village from a majority of Town. Because of this division and nearby steep areas, the Village is constrained in such a way that developable areas near it are limited.

Outside of the Village Center, Fairlee's topography includes a large area of cliffs along the Connecticut River and a second steep ridge in the middle of Town. We have an unusually large amount of public forest that protects water quality and scenic views, and that also offers unique recreational opportunities. Our recreational assets also include two large lakes with many seasonal residences, creating a lively summer dynamic that is unusual in the surrounding Towns. Both of our lakes, Fairlee and Morey, have very little commercial development but are fronted by lakefront homes and camps. The upland watersheds of both lakes are lightly developed.

The Planning Commission has made some much needed updates to portions of the land use policies. One of these is to conserve the rural uplands in the western areas of the Town. Over the past number of years since the last Plan Fairlee has instituted an update to the zoning regulations based on the last Plan revision and adopted a unified bylaw that combines both zoning, subdivision review and Flood hazard regulations. Fairlee's bylaw currently has eight zoning districts: Village Area, Interchange Area, Lakeshore Resort Area, Lake Area, Mixed Use Area, two Residential Area, and an Industrial area.

The new Plan redraws the Land Use map with the rural uplands area and redesignating the Industrial to the newly adopted Regional Mixed Use which will continue to allow all the current uses while limiting the possibility of a heavy industrial use the current designation would permit

The regulations also have five overlay areas: Village Center, Source Protection, Water Service, Flood Hazard Areas, and River Corridors.

## Overall Land Use Goals

A key element of land use planning is to maintain the traditional pattern of development most common to Vermont – densely populated village and urban centers surrounded by open countryside. Accordingly, the following are recognized as key factors for determining the type, scale and intensity of future land use: land topography, soils, water, and other natural resources characteristics; relative ease of access to roads and other transportation facilities; availability to public services, including public water supply; desirability of avoiding land use conflicts; and the needs of the citizens of Fairlee.

### Overall Land Use Goals

1. To encourage the full use of existing or designated growth centers or areas to avoid sprawl
2. To promote the economic viability and revitalization of the Village Center
3. To protect the scenic and recreational value of Lake Morey, Lake Fairlee and the Town Forest
4. To identify and protect those natural and historic resources that are unique to Fairlee and make it special
5. To protect the character of rural areas and their natural resources by avoiding scattered development and incompatible land uses
6. To protect wetlands and aquifers from incompatible development.

### Overall Land Use Policies

1. It is the policy of the Town to ensure careful review of all development projects to minimize the impact on Fairlee's natural and cultural resources.

### Overall Land Use Recommendations

- a. The Town should consider creating a Conservation Commission.

## Future Land Use Areas

The primary goal of the Fairlee Town Plan is to allow for sustainable growth and the creation of jobs while protecting the rural character, recreational assets and vitality of the Village. To encourage growth in a manner that does not overburden the Town's ability to provide services or negatively impact the vitality of the Village Center, the current future land use areas are proposed to continue along with a new area that better distinguishes lands currently in residential areas that are conserved, remote, or best suited to very light development in order to preserve forest habitat and water quality:

- Village Area
- Interchange Area
- Lakeshore Resort Area
- Lake Area
- Mixed Use Area
- Residential Area
- Rural Uplands
- Watershed Overlay (new)
  
- Flood Hazard/River Corridor Area
- Source Protection Overlay
- Designated Village Center Overlay

These areas are for planning purposes and may be used for projects that trigger Act 250 review. They also form the basis for any updates to our unified bylaw. Regulatory methods use zoning and/or subdivision rules to regulate the location, density and design of development within selected areas to minimize harmful impacts while allowing for a reasonable level of development.

Besides the regulatory side which deals with land use on a larger scale, there are other voluntary methods that can work well, and are often the best on a parcel-level scale. Voluntary methods include:

- Preserving land by placing restrictions on its use, through such tools as conservation easements or mutual covenants
- Transferring land to a conservation organization (such as the Vermont Land Trust or Upper Valley Land Trust) through donation

- Selling or donating land with conditions attached, like deed restrictions of conditional transfers

Fairlee could become an active participant in land conservation through the creation of a conservation fund and a Conservation Commission. This fund, which could be funded on a yearly basis, would contain funds that a Conservation Commission could use to purchase land outright, or assist a land conservation organization with the purchase of a conservation easement. It is safe to assume that there will never be enough funding for land protection strategies to acquire conservation easements or ownership for all the unprotected identified areas of value.

## Village Area

The purpose of the Village Area is to provide a location for a dense mix of commercial, civic and residential uses in Fairlee that sustain and improve the vitality of the community's core. Development in this area should take advantage of the existing municipal water service.

## Interchange Area

The purpose of the Interchange area is to allow for a dense mix of light industrial, multi-family housing, professional offices and commercial (including primary retail) uses that can take advantage of the I-91 Interchange.

## Lakeshore Resort Area

The purpose of this area is to maintain and support the recreational value of Fairlee's waterfront while allowing for planned development of resort and recreational development among existing residential establishments.

## Lake Area

The purpose of this area is to maintain existing residential and recreational access to Lakes Morey and Fairlee, while protecting the character of the lakes.

## Residential

The purpose of this land use area is to provide a location for residential development.

Increased density should be allowed. Residential development should be allowed only in areas immediately adjacent to the Village Area with access to municipal services and suitable soils. Areas not adjacent to the Village Center or served by municipal services should be less dense and more rural in character. One of the key factors in determining the density in these and other areas is the soils types and slope.

## Mixed Use Area

The purpose of this land use area is to provide a location for a mix of uses that coordinates with the Regional and Local Plan definitions and will benefit from access to Route 5.

## Rural Uplands

The purpose of this district is to protect large sections of forest from fragmentation and development that could impair water quality downstream (including from flooding and erosion) and to support wildlife corridors. Intact forests have unique habitats needed for many species and form the source for absorbing and filtering rain and snow into the source for clean ground and surface waters at lower elevations.

## Source Protection Overlay

The purpose of the Source Protection Overlay is to protect public health and safety by minimizing contamination of vulnerable aquifers and preserving and protecting existing and potential sources of public drinking water supplies. The Source Protection Overlay allows for appropriate land use regulations, in addition to those currently imposed by existing zoning districts or other State and federal regulations.

## Flood Hazard/River Corridor Area Overlay

The Flood Hazard Area covers lands mapped by FEMA as prone to flooding from inundation that are adjacent to the Connecticut River as well as its tributaries, and lands around Lake Morey and Lake Fairlee which are subject to periodic flooding. River corridors are mapped by the Vermont Agency of Natural Resources and cover lands that are more at risk of erosion under high



flows. These areas overlap in many places but FEMA only maps larger streams whereas ANR covers all streams, many of which can create sizable damage in flash floods.

Flood hazard areas and river corridors are unsuitable for development because of the high loss potential for life and property as well as the limited ability of septic systems to perform adequately during periods of high water. For more specific information about the function of Floodplains, see the Natural Resources chapter. The purpose of this land use area is to:

- a. Avoid and minimize the loss of life and property, the disruption of commerce, the impairment of the tax base, and the extraordinary public expenditures and demands on public services that result from flooding related inundation and erosion
- b. Ensure that the selection, design, creation, and use of development in hazard areas is safe and accomplished in a manner that is consistent with public wellbeing, does not impair stream equilibrium, flood plain services, or the stream corridor
- c. Manage all flood hazard areas designated pursuant to 10 V.S.A. Chapter 32 § 753, the municipal hazard mitigation Plan; and make the Town of Fairlee, its citizens, and businesses eligible for the National Flood Insurance Program (NFIP), federal disaster recovery funds, and hazard mitigation funds as may be available
- d. Protect the environmental and recreational value of Fairlee's rivers, streams and lakes

Fairlee's unified bylaw contains development standards above and beyond the minimum required by the NFIP in order to ensure the safety of the public and to protect against the loss of life and property in the Flood Hazard Area. These apply only to new development and significant improvements to existing development. Regulating river corridors addresses a blank spot in FEMA's approach, which does not include the threat of erosion, and it also helps the Town qualify for more State aid in disasters.

## Watershed Overlays

A watershed is a land area that channels rainfall and snowfall to creeks, streams, and rivers. The purpose of this overlay is to provide extra water quality protection to the underlying areas which

drains into both Lake Morey and Lake Fairlee, so that the water of the lakes retains its high quality and the area remains beautiful and safe.

## Goal 1

**To encourage the growth of Fairlee's Village Area as the commercial and civic center of Town.**

### Policies to Further Goal 1

1. It is the policy of the Town that the establishment of commercial uses be encouraged in the Village Area.
2. It is the policy of the Town that all development in the Village must be consistent in design and scale with the existing character of the village.
3. It is the policy of the Town to locate primary retail establishments (excluding those retail establishments that require substantial area for storage of materials, such as lumberyards and nurseries) within the Village.
4. It is the policy of the Town to encourage multi-family dwellings within the Village Area.
5. It is the policy of the Town to encourage locating parking behind buildings in order to support pedestrian use of the Village.

### Actions to Achieve Goal 1

1. The Planning Commission should investigate form-based zoning for the Village and development standards that will encourage a pedestrian-friendly environment that supports the vitality of the Village

## Goal 2

**To provide a location for thoughtful residential and commercial development at a size and scale that does not negatively impact Fairlee's ability to provide services.**

### Policies to Further Goal 2

1. It is the policy of the Town to include uses that are appropriate in this area such as commercial (including primary retail), civic, municipal and residential. Commercial uses that require a large amount of land for storage of materials or products are not appropriate within the Village Area.

2. It is the policy of the Town to plan the design of development within the village in a way that encourages walkability.
3. It is the policy of the Town to locate buildings in a way that reflects the traditional pattern of a Vermont village, which can be achieved by limiting setbacks from pedestrian areas.

**Actions to Achieve Goal 2**

1. The Planning Commission should consider the overall ramifications of lowering minimum lot size in certain areas based on water supply and feasibility of septic requirements.

**Goal 3**

**To allow a broad mix of uses that will benefit from immediate access to I-91 while maintaining the area as an appropriate entryway into Fairlee’s Village Area.**

**Policies to Further Goal 3**

1. It is the policy of the Town to encourage the development of a mix of appropriately sized commercial uses including primary retail and multi-family housing in an area that is immediately adjacent to the Village Area.
2. It is the policy of the Town to not develop businesses that are commonly associated with strip development or urban sprawl in this area.
3. It is the policy of the Town to allow residential uses in this area, if residential use is not its primary use.
4. It is the policy of the Town to aim for density in this area similar to the Village area to take advantage of existing water services.

**Goal 4**

**To maintain a positive relationship with Fairlee’s resorts while ensuring that the scale, pace and type of development does not negatively impact the waterfront and residents who reside in the area.**

**Policies to Further Goal 4**

1. It is the policy of the Town to support the managed development of Fairlee’s resorts in a fashion that is compatible with the

surrounding area and protective of the character of the waterfront.

2. It is the policy of the Town to limit commercial development in the Lakeshore Resort Area to appropriately scaled recreational businesses. Primary and secondary retail are not appropriate in this area.
3. It is the policy of the Town that the density of this area should be no less than one-acre unless the development is part of a master plan.
4. It is the policy of the Town that resort development within this area participates in an ongoing master planning process.

**Actions to Further Goal 4**

1. The Planning Commission should create a master planning process for commercial developments within the Lakeshore Resort Area which requires a clearly developed five-year master plan as part of the application process.

**Goal 5**

**To ensure that the character and recreational value of Lakes Morey and Fairlee continue to be an asset to the citizens of Fairlee.**

**Policies to Further Goal 5**

1. It is the policy of the Town to recognize the value of access to the lake and its natural character in supporting redevelopment in the Lake Area. Density within this area should be no greater than one acre (without Town services) or ½ acre with Town services. Commercial development is not appropriate in this area.

**Actions to Achieve Goal 5**

1. The Town should ensure that any expansion of homes that would result in an increase in septic needs is properly permitted in order to protect water quality.

**Goal 6**

**To encourage mixed use development that promotes diversity in housing stock.**

### **Policies to Further Goal 6**

1. It is the policy of the Town to design new commercial development within the Mixed Use to:
  - a. create compact and densely developed projects which utilize land efficiently
  - b. reduce the impact of parking and integrate landscaping
  - c. provide pedestrian and vehicular links between developments
  - d. utilize screening between the project and the street to reduce visual impacts and to diminish other impacts such as noise, including use of large trees
  - e. discourage strip development and sprawl
  - f. include signage that effectively communicates the desired message without being inappropriate.
2. It is the policy of the Town to incorporate sound access management techniques, including shared access points into all commercial developments in an effort to ensure traffic safety and to minimize the number of curb cuts.
3. It is the policy of the Town to locate primary retail establishments (excluding those that require a substantial amount of outdoor space for storage of materials) only in Fairlee's Village Area and Interchange Area and not within this land use area.
4. It is the policy of the Town to include commercial (excluding most primary retail) and residential uses as appropriate uses for this area. Commercial primary retail uses that require substantial space for outdoor storage, such as lumberyards or tree sales, would be considered appropriate for this area.
5. It is the policy of the Town that density should be a minimum of roughly an acre. Home occupations and home businesses are encouraged in this area.

### **Goal 7**

**To encourage the development of residences at scales that are appropriate for the area in which they are located, based on availability of services and proximity to the Village Center.**

### **Policies to Further Goal 7**

1. It is the policy of the Town to encourage higher density residential housing in areas that have access to municipal water.
2. It is the policy of the Town to encourage lower-density residential housing in areas of the Town that are not served by municipal water.
3. It is the policy of the Town to encourage multi-family housing in areas of the Town that are adjacent to the Village Center or have access to municipal water.
4. It is the policy of the Town that primary retail establishments are not appropriate for this area. Small-scale businesses such as services or professional offices may be appropriate if they have access to municipal water or are adjacent to the Village Area.
5. It is the policy of the Town that uses within this area should be primarily residential in nature. Commercial development within this area should fit with the character of the area and should not put a burden on roads or create a nuisance.

### **Actions to Achieve Goal 7**

1. The Planning Commission shall examine alternatives to reduce density.

### **Goal 8**

**To maintain high surface and ground water quality and provide interior forest habitat**

### **Policies to Further Goal 8**

1. It is the policy of the Town to limit development in this area to low density residential, forest, and outdoor recreational use.

### **Actions to Achieve Goal 8**

1. The Planning Commission should draft amendments to the unified bylaw to protect the important values of these areas.
2. The Planning Commission should work to conserve lands in these areas.

### **Goal 9**

**To maintain high groundwater quality for residences and businesses and avoid costly remediation.**

#### **Policies to Further Goal 9**

1. It is the policy of the Town to protect current and future groundwater sources.

#### **Actions to Achieve Goal 9**

1. The Planning Commission should review mapped areas and standards in the Source Protection Area to ensure that the latest information is being used.

### **Goal 10**

**To enhance and maintain use of flood hazard areas as open space, greenways, non-commercial recreation and/or agricultural land.**

#### **Policies to Further Goal 10**

1. It is the policy of the Town that the preferred uses for flood hazard areas should be for open space, greenbelts, and non-commercial recreational or agricultural uses.
2. It is the policy of the Town to maintain its membership in the National Flood Insurance Program.

### **Goal 11**

**To minimize net loss of flood storage capacity to reduce potential negative impacts. These impacts include the loss of life and property, disruption of commerce, and demand for extraordinary public services and expenditures that result from flood damage.**

#### **Policies to Further Goal 11**

1. It is the policy of the Town that new or replacement utilities or facilities serving existing development (e.g. water lines, electrical service, waste disposal systems, roads, and bridges) may be located within these areas only when off-site options are not feasible and provided that these utilities or facilities meet the flood proofing requirements in Fairlee's Flood Hazard Ordinance.

### **Goal 12**

**To protect waters and channels that lead into both Lake Morey and Lake Fairlee.**

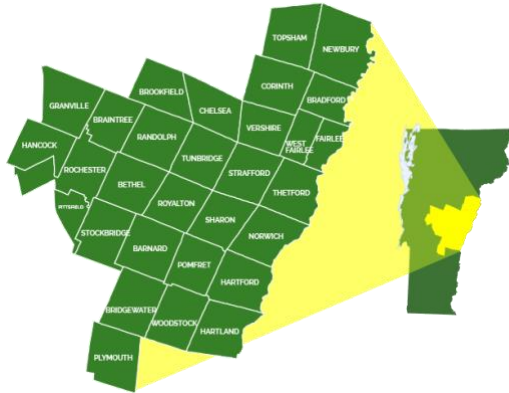
#### **Policies to Further Goal 12**

1. It is the policy of the Town to not permit the creation of new lawn areas within a stream buffer. Vegetation may be pruned and dead or hazard trees removed as long as the overall forest canopy is maintained. Openings of the forest canopy may be created by removal of vegetation not to exceed 5% of the stream buffer area.
2. It is the policy of the Town that within the overlay outside of the village district, no land disturbance is allowed within a stream buffer extending 50 horizontal feet from a river or perennial stream except for:
  - a. accepted agricultural and forestry practices
  - b. road and driveway crossings
  - c. crossings to access fields
  - d. permitted septic repairs
  - e. utility crossings
  - f. crossings by recreational trails
  - g. removal of debris necessary for disaster response
  - h. stream restoration projects
  - i. maintenance of existing structures

#### **Actions to Achieve Goal 12**

1. The Town should implement zoning regulations and bylaws to protect the Lake Morey and Lake Fairlee watersheds.

# Relationship to Other Plans



Fairlee is within the Two Rivers – Ottauquechee Regional Commission. It is one of thirty municipalities that comprise the Region. The Region covers northern Windsor County, most of Orange County and the Towns of Pittsfield, Hancock and Granville. The Commission was chartered in 1970 by the acts of its constituent Towns. All towns are members of the Commission, and town representatives govern its affairs. One of the Regional Commission’s primary purposes is to provide technical services to town officials and to undertake a regional planning program. As is the case in many areas of the State, the extent of local planning throughout the region is varied. Some municipalities are more active than others. Thus, the level of services to each of the Towns changes with time.

The Regional Commission adopted its Regional Plan in July 2017. It will remain in effect for a period of five years, but the Plan is already in the process of being revised. This Plan was developed to reflect the general planning goals and policies expressed in the local plans. It is an official policy Statement on growth and development of the Region. The Regional Plan contains several hundred policies to guide future public and private development in the Region. Policies for land use settlement are identified. These areas are: Town Centers, Village Settlement Areas, Hamlet Areas, Rural Area, and Conservation and Resource Areas. Delineation of each land use area is mapped or charted.

Prior to revisions to this Plan, TRORC provided Fairlee with an “enhanced consultation” at

which staff identified areas of conflict between the Regional Plan and the Fairlee Town Plan adopted in 2014. The major area of concern was the strip of commercial retail development allowed along Route 5 that the Regional Commission viewed as counter to the State planning goal which discourages strip development.

In response to this conflict, the Fairlee Planning Commission has modified the area identified as commercial including retail development, to exclude retail development except for those uses that require substantial space for storage of materials such as lumberyards. Other commercial uses are still allowed outside of the Village Area.

## Goal 1

**To work with neighboring Towns and the region to encourage sustainable land use and environmental policies that benefits the citizens of Fairlee.**

### Policies to Further Goal 1

1. To encourage continued communication and cooperation between Fairlee and its neighboring Towns.
2. To continue participation in TRORC.
3. To exchange planning information and development data with neighboring communities.

# Implementation

In order to ensure that the policies of this Plan are implemented, it is essential to identify what municipal panel, organization or citizen is most suited to act on them. Throughout this Plan, the Planning Commission has identified recommendations for action and indicated who should be responsible for them. Generally, responsibility for implementation of the Plan falls to either the Planning Commission (in the case of implementing changes to land use regulations) or the Selectboard (in the case of implementing municipal policy)

In addition to assigning responsibility, the Planning Commission should track of progress made toward implementing the goals, policies and recommendations of this Plan. This should be compiled in a report to the Administrative body with inclusion in their annual report. The information will be useful to identify areas where additional effort needs to be applied to achieve implementation. It can also be used to describe how successful the community has been at implementation in the next iteration of this Plan, and to guide future policy. In order to track the progress of implementation, the Planning Commission has included a chart that identifies the policy or recommendation, the responsible party and the progress.

<u>Abbreviation</u>	<u>Name</u>
AF	Aloha Foundation
BCSC	Better Connections Steering Committee
CORE	Cornerstone Energy Services
EFVT	Efficiency Vermont
EC	Energy Committee
EM	Emergency Management Committee
DRB	Development Review Board
FD	Fire Department
HUL	Hulbert Outdoor Center
LFR	Lake Morey Resort
LGK	Let's Grow Kids
LMOR	Lake Morey Foundation
PC	Planning Commission
REC	Recreation Council
RSB	Rivendell School Board
SB	Selectboard
TA	Town Administrator
TREA	Town Treasurer
TRORC	Two Rivers-Ottauquechee Regional Commission
TWIN	Twin Pines Housing
VHFA	Vermont Housing Finance Agency
ZA	Zoning Administrator

Task		Responsible Parties
<b>Chapter 2: People, Education, and Health</b>		
1.A	The Town should work with the TRORC to evaluate Fairlee's role in supplying the region's housing stock by continuing to assess the Town's capacity for growth.	SB
1.B	The Town should work to add housing that meet the Town's identified need.	SB, ZA
1.C	The Town should explore bike path options.	SB, PC
1.D	The Town should help promote access to and awareness of locally grown and locally produced foods.	SB, PC
2.A	The Town should explore the opportunity for increased licensed child care with affordable and safe facilities. This includes supporting public private partnerships.	PC, ZA
3.A	The Town will ensure that subdivision regulations enforce phasing and/or special planning for development that may result in a significant addition of school children.	ZA, PC
4.A	The Town will explore place-based/outdoor education programs for children and adults.	PC, ZA
4.B	The Town will identify the need for and opportunities for adult education and retraining programs.	PC
5.A	The Town and the Rivendell School Board will meet and discuss opportunities for collaboration and strategies to increase community service.	SB, RSB
<b>Chapter 3: Housing</b>		
1.A	The Town should work with State housing agencies, non-profit organizations and lending institutions to ensure that Fairlee residents know and have access to loan or grant funds to acquire or improve their primary homes.	SB, PC
1.C	The Town should market its qualities to developers and nonprofits that are able to add housing to meet the Town's identified need.	SB, PC, ZA
2.A	The Town will promote home energy audits and weatherization assistance through Capstone Community Action, Efficiency Vermont and similar organizations.	EC
2.B	The Planning Commission will continue to update zoning regulations to remove barriers and encourage affordable housing in ways that reflect the needs and vision of the community.	PC
<b>Chapter 4: Economic Development</b>		
1.A	The Town should support efforts to expand public transit provided that the Village Center is used as a location to pick up and drop off riders.	SB, ZA
1.B	The Town will apply for Village Designation renewal for the Village Center when its current status expires in January of 2023.	ZA, SB
1.C	Continue working with Topsham Communications to explore extending affordable internet to all residents.	SB

1.C	The Town will encourage and support the responsible development of information technology and communication infrastructure necessary for new economic growth.	SB, PC, ZA
2.A	The Town should continue its Capital Budget and Program efforts in order to stabilize year-to-year taxes and should examine the implications of tax stabilization on future development.	SB
2.B	The Town should investigate creating a Tax Increment Finance (TIF) district or alternative funding mechanisms in the Village or around Lake Morey for infrastructure funding.	SB
3.A	The Selectboard, the Recreation Council, and/or the Forest Board should work with residents to develop trailhead signs.	SB, RC, FB
4.A	The Town will explore policy language that will encourage redevelopment in Fairlee.	SB, PC
4.B	The Town will identify ways to build and strengthen public/private partnerships.	SB, PC
<b>Chapter 5: Emergency Services</b>		
1.A	The Town should support private sector efforts to seek funding to assist with the development of healthcare infrastructure.	SB, PC
1.B	The Town should explore the opportunity for an urgent care facility.	SB, PC
2.A	The Selectboard should update the Local Emergency Management Plan at least once a year or when key emergency management personnel change.	SB
2.B	The Selectboard should continue to maintain a Hazard Mitigation Plan with assistance from TRORC.	SB, TRORC, EM
2.C	The Selectboard should have a clear plan for use of its Emergency Shelter. This plan should include written guidelines about staffing and operation.	SB
2.D	Town officials who are part of Fairlee's emergency management team should receive adequate training in the Incident Command System (ICS).	SB, EM
2.E	The Selectboard should continue to use and investigate additional uses for its "Code Red" alert system.	SB
2.F	The Town will acquire a generator for the Town Hall so it can serve as Fairlee's Emergency Shelter.	SB, TA
2.G	The Selectboard should set in motion an education process prior to the movement of the Emergency Shelter from the Samuel Morey School to the Town Hall.	SB, EM
3.A	The Town should explore ways to ensure that an adequate number of firefighters are available during the daytime and evening hours.	SB, FD
3.B	Development and zoning regulations should continue to require consideration for emergency vehicles in road and highway access decisions.	SB, ZA
3.C	The Town should include Fire and FAST Squad needs in its Capital Budget and Program.	SB
<b>Chapter 6: Utilities and Facilities</b>		
1.A	The Selectboard should work with the Planning Commission to maintain a Capital Budget and Program to guide future investments in infrastructure.	SB, PC
1.B	The Selectboard should decide on the appropriate level of annual reserve inputs in order to meet expected expenditures.	SB



1.C	The Selectboard should continue to provide information from the Capital Budget and Program so that residents can see both how funds are accumulating and their expected uses.	SB, TA
1.D	The Town should continue to utilize the municipal web site, the local Listserv and newsletters to communicate and provide residents with knowledge of current municipal data and various town project status.	SB, TA
1.E	The Town should explore the feasibility of sidewalks, and other infrastructure investments to understand the full costs and requirements to construct and maintain these assets.	BCSC, TA, ZA
1.E	The Town should seek grant funds to better understand the construction and maintenance investments for limited sewer capacity, sidewalks and other infrastructure.	SB, TA, TREA
1.F	The Town should work to create an assets management plan for repurposing existing infrastructure and Town buildings.	SB, TA, TREA
1.G	The Town should explore options for decentralized community wastewater systems.	SB, PC, BCSC
<b>Chapter 7: Transportation</b>		
1.A	The Town should maintain the Town Highway Reserve fund in the Capital Improvement Plan and a schedule that will guide maintenance and road infrastructure investments in the future.	SB, TA, TREA
1.B	The Town will cooperate with other communities in the region through TRORC and its Transportation Advisory Committee to ensure that the region's transportation system is developed in a well-coordinated manner that recognizes and balances the needs and desires of each community.	SB, TAC
1.C	The Town will continue to replace undersized culverts, bridges and structures with appropriately sized infrastructure according to the Town's road and bridge standards.	SB, TA
1.D	The Town must ensure that reasonable steps have been taken to minimize direct access to main roads and that pedestrian connections are provided between sites.	DRB, PC, SB
1.E	The Development Review Board and Selectboard will continue to follow the United Bylaws Subdivision regulations and Road Access ordinances that contain sight-distance standards based on the actual travel speeds and not the posted speed limits. If no such data exists or is not current, the Town will work with TRORC to obtain the appropriate data.	SB, DRB
2.A	The Town will encourage Stagecoach to increase the frequency of stops in Fairlee and to more fully connect its routes to other transit providers.	SB, BCSC
2.B	The Town will cooperate with other communities in the region through TRORC and its Transportation Advisory Committee to ensure that the region's transportation system is developed in a well-coordinated manner that recognizes and balances the needs and desires of each community.	SB, BCSC, TA
2.C	The Town will continue to replace undersized culverts, bridges and structures with appropriately sized infrastructure according to the current Town road and bridge standards.	SB, TA
2.D	The Town must ensure that reasonable steps have been taken to minimize direct access to main roads and the pedestrian connections are provided between sites.	SB, ZA, DRB
2.E	The Development Review Board will continue to follow the United Bylaws Subdivision regulations and Road Access ordinances that contain sight-distance standards based on actual speed limits.	DRB

3.A	The Town must pursue efforts to create and improve pedestrian/bicycle travel, accessibility, safety, and health within the Village Center through streetscaping or traffic calming.	SB, BCSC, PC
3.B	The Town should pursue funding from VTrans or other sources for additional Park and Ride spaces.	ZA, SB, PC
3.C	The Town should pursue funding for suitable power lines and additional EV charging stations (for both types of EV) at the Park and Ride as well as potentially at the Library or Town Office.	ZA, SB, PC
3.D	The Town should support continued improvements to trails and pedestrian walkways.	SB, BCSC, PC
4.A	The Selectboard must consider the relationship of a road to surrounding features of the landscape, potential quality-of-life impacts to residents, traffic volume and maintenance costs against other factors, when deciding or providing input on whether to pave or make improvements to Town or State roads.	SB
4.B	The Town should work with landowners to encourage permanent landscaping and roadside enhancements to visually define access points and contribute to the roadway's aesthetic character.	PC, ZA, DRB
<b>Chapter 8: Energy</b>		
1.A	Town officials and volunteers should work to increase public awareness and use of energy conservation practices, financial incentives, generation and storage methods, and efficiency and weatherization programs through educational efforts aimed at residents and businesses.	SB, EC
1.B	The Town, with help from the Energy Committee/coordinator, should develop municipal procurement and purchasing policies that emphasize products that are energy efficient (e.g., Energy Star® rated).	SB, EC
1.C	The Town should continue to develop facility maintenance and operation policies that maximize energy efficiency while maintaining comfort levels for employees and visitors.	SB, EC
1.D	The Selectboard should authorize the Fairlee Energy Committee/coordinator to track municipal energy use and costs (for example: through the EPA's free Energy Star® Portfolio Manager program) and develop an overall energy budget to manage the Town's energy consumption, which may also include the development of local generating capacity.	SB, EC
1.E	The Town should continue to implement energy efficiency and renewable heating and power options measures recommended by the Energy Committee for existing and future facilities.	SB, EC, PC
2.A	Town officials shall use this plan to provide input on behalf of the citizens of Fairlee to participate in the Public Utility Commission's review of new and expanded	EC, SB, PC
2.B	The Planning Commission should work with the Energy Committee to identify areas in Town that are appropriate as "preferred sites" for energy production.	EC, SB, PC
2.C	The Selectboard should seek to enhance energy compliance approval in order for this plan to have greater standing in such proceedings.	EC, PC
2.D	The Town should consider municipal or community-based renewable energy generation and the installation of individual or group net metered generation facilities on Town buildings and property to serve Town facilities. Sources of funding for municipal power generation could include third-party financing, municipal funds,	EC, PC

	bonds, grants, and available government incentive programs.	
3.A	The Selectboard should work toward constructing facilities in Town that increase walkability, EV charging, carpooling, and the ability to access public transit.	SB
4.A	The Planning Commission should review, and revise zoning and subdivision regulations as needed to achieve the goals and policies of this Plan.	PC
5.A	The Town should consider ways to ensure that RBES and CBES standards are followed, and that the required certificates are issued and filed in the land records.	PC, DRB
<b>Chapter 9: Natural, Scenic, and Cultural Resources</b>		
2.A	The Town should continue testing water quality in Lake Morey and verify that the same is being done by the surrounding Towns on Lake Fairlee.	TA
4.A	The Planning Commission should consider additional limitations on removal of vegetation within the buffer of streams and lakes as a method of reducing erosion and improving water quality.	PC, DRB
5.A	The Planning Commission should develop buffer rules for mapped wetlands.	PC
5.B	The Town should consider completing a Town-wide wetlands inventory.	PC
6.A	The Planning Commission should support State best soil management practices for farmers and landowners.	PC
6.B	The Town should encourage farmers to transition to better soil conservation practices.	PC
7.A	The Planning Commission should ensure the latest river corridor maps, adjusted as needed to accommodate existing development under State rules, are used to delineate flood risk areas.	PC, RPC
7.B	The Planning Commission should maintain the Fairlee Zoning Regulations' prohibition on new development within the floodplain, only allowing renewable energy generation facilities, recreational and agricultural uses.	PC, RPC
7.C	FEMA should revise Fairlee's Flood Hazard maps to accurately reflect the locations of current and future flood hazard areas to assist in appropriate land use decisions.	EM
7.D	When building or repairing roads and drainage structures, the Town shall seek to minimize future flood risk by sizing structures to pass flood events.	SB, TA
8.A	The Planning Commission should revise the zoning regulations to create districts or provisions to limit development in the Forest/Conservation future land use area from the Town Plan.	PC, ZA
8.B	The Planning Commission should create conservation subdivision standards, waivers, and incentives to achieve forest protection balanced with economic benefit for forest owners.	PC
9.A	The Planning Commission should partner with local conservation groups to protect vulnerable flora and fauna populations.	PC
10.A	The Planning Commission should consult with the Vermont Department of Fish & Wildlife to understand how to best maintain habitat for natural species.	PC, ZA
11.A	The Town should encourage Town employees, contractors, businesses and individuals to become familiar with the best management practices to prevent the accidental spread of invasives.	ZA
11.B	The Town should schedule roadside mowing to minimize and reduce the spread of invasive species.	SB, RCOM

11.C	The Town should work with concerned parties to ensure that all boats are properly cleaned before going into or coming out of the lakes.	SB, PC
11.D	The Town should work to inventory the trees alongside its roads and stay abreast of emerald ash borer spread to plan for removal of trees if needed.	SB, PC
11.E	The Town should explore replacement species for ash trees (e.g. oak, elm, and hickory) with consideration to location and nut production.	SB, PC
12.A	The Planning Commission should maintain standards for mineral extraction operations.	ZA, PC
12.B	The Selectboard should continue to post roads with weight limits at the appropriate times to ensure that any hauling does not degrade Town roads.	SB, TA
<b>Chapter 10: Agriculture and Forestry</b>		
1.A	The Town should encourage the agricultural industry, conservation organizations, public schools, and the tourism and recreation industries to sponsor continuing educational opportunities to the public that would promote a better understanding of farming and forestry practices and natural resource management in general.	SB, PC
3.A	Local land use planning activities and programs affecting agriculture and forestry should consider the ways to promote these industries. This could include local bylaws and the creation of farm and forest land conservation programs, including overlay districts, agricultural zoning, transfer of development rights, purchase of development rights, cluster development, area based allocation, and/or performance standards	PC, ZA
<b>Chapter 11: Recreation</b>		
1.A	The Town should explore efforts to create public access to the Connecticut River Byway.	PC, SB, REC
2.A	The Town should consider updating the policy on ATV use and public trails.	SB,
<b>Chapter 12: Land Use</b>		
1.A	The Planning Commission should investigate form-based zoning for the Village and development standards that will encourage a pedestrian-friendly environment that supports the vitality of the Village.	SB, PC, ZA
1.B	The Planning Commission should consider amending the Fairlee Zoning Ordinance to provide guidance as to how landscaping can be used to maintain the character of the village.	PC, ZA
2.A	The Planning Commission should consider the overall ramifications of lowering minimum lot size in certain areas based on water supply and feasibility of septic requirements.	PC, ZA
4.A	The Planning Commission should create a master planning process for commercial developments within the Lakeshore Resort Area which requires a clearly developed five-year master plan as part of the application process.	PC, ZA
5.A	The Town should ensure that any expansion of homes that would result in an increase in septic needs is properly permitted in order to protect water quality.	ZA
7.A	The Planning Commission shall examine alternatives to reduce density.	PC
8.A	The Planning Commission should draft amendments to the Unified Bylaw to protect the important values of these areas.	PC
8.B	The Planning Commission should work to conserve lands in these areas.	PC

9.A	The Planning Commission should review mapped areas and standards in the Source Protection Area to ensure that the latest information is being used.	PC, RPC
12.A	The Town should implement zoning regulations and bylaws to protect the Lake Morey and Lake Fairlee watersheds.	SB, PC

# Appendix A: Municipal Energy Goals

## Municipal Template - Energy Data

The following is an explanation of the information displayed in the Municipal Template for Fairlee.

The intent of the Municipal Template is to provide the municipality with data that can be used to ensure compliance with the requirements of Act 174 and "Enhanced Energy Planning" (24 V.S.A. 4352). The spreadsheet contains data that estimates current energy use and provides targets for future energy use across all sectors (transportation, heating, and electricity). It also sets a target for renewable energy generation within the municipality.

This data is meant to be a starting point for the municipality to begin planning its energy future and to talk about the changes that may need to occur within the municipality to ensure that local, regional and state energy goals are met. This includes the goal that 90% of all energy demand be met by renewable sources by 2050.

Estimates of current energy use consist primarily of data available from the American Community Survey (ACS), the Vermont Agency of Transportation (VTrans), the Vermont Department of Labor (DOL), and the Vermont Department of Public Service (DPS). Targets for future energy use are reliant upon the Long-range Energy Alternatives Planning (LEAP) analysis for the region completed the Vermont Energy Investment Corporation (VEIC). Targets for future energy generation have come from the regional planning commission and DPS. Targets for both future energy use and energy generation have been generally developed using a "top down" method of disaggregating regional data to the municipal level. This should be kept in mind when reviewing the template. It is certainly possible to develop "bottom up" data. For those municipalities interested in that approach, please see the Department of Public Service's Analysis and Targets Guidance.

There are some shortcomings and limitations associated the data used in the Municipal Template. For instance, assumptions used to create the LEAP analysis are slightly different than assumptions used to calculate current municipal energy use. Regardless, the targets established here show the direction in which change needs to occur to meet local, regional and state energy goals. It is important to remember that the targets established by LEAP represents only on way to achieve energy goals. There may several other similar pathways that a municipality may choose to take in order to meet the 90x50 goal.

### Figure 1 - Data Sources

American Community Survey (ACS)  
Vermont Department of Labor (DOL)  
Vermont Department of Public Service (DPS)  
Energy Information Administration (EIA)  
Efficiency Vermont (EVT)  
Long-range Energy Alternatives Planning (LEAP)  
Vermont Energy Investment Corporation (VEIC)  
Vermont Agency of Transportation (VTRANS)

Below is a worksheet by worksheet explanation of the Municipal Template spreadsheet:

## 1. Municipal Summary

The Municipal Summary worksheet summarizes all data that is required to be in the Municipal Plan if the plan is to meet the "determination" standards established by the Vermont Department of Public Service.

### 1A. Current Municipal Transportation Energy Use

Transportation Data	Municipal Data
Total # of Vehicles (ACS 2013-2017)	898
Average Miles per Vehicle (VTrans)	13,228
Total Miles Traveled	11,878,744
Realized MPG (VTrans Transportation Energy Profile 2017)	18.9
Total Gallons Use per Year	628,505
Transportation BTUs (Billion)	75.7
Average Cost per Gallon of Gasoline (eia.gov, Feb. 2019)	2.31
Gasoline Cost per Year	1451,846

This table uses data from the American Community Survey (ACS) and Vermont Agency of Transportation (VTrans) to calculate current transportation energy use and energy costs.

### 1B. Current Municipal Residential Heating Energy Use

Fuel Source	Municipal Households (ACS 2013-2017)	Municipal % of Households	Total heating BUTs annual	Municipal BTU (in Billions)
Natural Gas	0	0.0%	0	0
Propane	166	34.9%	14,784,000,000	14.8
Electricity	18	3.8%	1,729,200,000	1.7
Fuel Oil	194	40.8%	18,770,400,000	18.8
Coal	0	0.0%	0	0
Wood	94	19.8%	9,497,400,000	9.5
Solar	0	0.0%	0	0
Other	1	0.6%	273,900,000	.3
No Fuel	0	0.0%	0	0
<b>Total</b>	<b>475</b>	<b>100.0%</b>	<b>45,054,900,000</b>	<b>45.1</b>

This table displays data from the ACS that estimates current municipal residential heating energy use.

### 1C. Current Municipal Commercial Energy Use

	Commercial Establishments in Municipality (VT DOL)	Estimated Thermal Energy BTUs per Commercial Establishment (in Billions) (VDPS)	Estimated Thermal Energy BTUs by Commercial Establishments in Municipality (in Billions)
Municipal Commercial Energy Use	47	0.725	34

The table uses data available from the Vermont Department of Labor (VT DOL) and the Vermont Department of Public Service (DPS) to estimate current municipal commercial establishment energy use in the municipality.

### 1D. Current Electricity Use

Use Sector	Current Electricity Use
Residential (kWh)	3,669,930
Commercial and Industrial (kWh)	4,514,947
Total (kWh)	8,184,877
Average Annual Residential kWh Data from Efficiency Vermont (EVT), 2017	5,948

### 1E. Residential Thermal Efficiency Targets

	2025	2035	2050
Residential - Increased Efficiency and Conservation (% of municipal households to be weatherized)	33%	67%	100%

This table displays targets for thermal efficiency for residential structures based on a methodology developed by DPS using data available from the regional Long-range Energy Alternatives Planning (LEAP) analysis and ACS. The data in this table represents the percentage of municipal households that will need to be weatherized in the target years.

### 1F. Commercial Thermal Efficiency Targets

	2025	2035	2050
Commercial - Increased Efficiency and Conservation (% of commercial establishments to be weatherized)	6%	9%	18%

This table shows the same information as Table 1E, but sets a target for commercial thermal efficiency. Information from the VT DOL is required to complete this target.



### 1G. Thermal Fuel Switching Targets (Residential and Commercial) - Wood Systems

	2025	2035	2050
New Efficient Wood Heat Systems (in units)	0	0	0

This target was calculated using data from LEAP and ACS. This table provides a target for new wood heating systems for residential and commercial structures in the municipality for each target year. Due to the LEAP model forecasting a large decrease in wood use resulting in a negative number of targets we have put zero in for this section. Towns are encouraged to use efficient wood heat.

### 1H. Thermal Fuel Switching Targets (Residential and Commercial) - Heat Pumps

	2025	2035	2050
New Heat Pumps (in units)	49	129	269

This table provides a target for new heat pump systems for residential and commercial structures in the municipality for each target year. This target was calculated using data from LEAP and ACS.

### 1I. Electricity Efficiency Targets

	2025	2035	2050
Increase Efficiency and Conservation	-0.6%	5.7%	9.9%

Data in this table displays a target for increased electricity efficiency and conservation during the target years. These targets were developed using regional LEAP analysis. Towns are encouraged to consider increased efficiency targets.

### 1J. Use of Renewables - Transportation

	2025	2035	2050
Renewable Energy Use - Transportation	9.6%	23.1%	90.3%

This data displays targets for the percentage of transportation energy use coming from renewable sources during each target year. This data was developed using the LEAP analysis.

### 1K. Use of Renewables - Heating

	2025	2035	2050
Renewable Energy Use - Heating	51.7%	63.8%	92.0%

This data displays targets for the percentage of heating energy use coming from renewable sources during each target year. This data was developed using information from the LEAP analysis.

### 1L. Use of Renewables - Electricity

	2050
Renewable Energy Use - Electricity (MWh)	5,485- 6,704

This data displays the target for electricity generation coming from renewable sources within the municipality for 2050. This data was developed using information from the regional planning commission and DPS. This data is the same as the data in Table 1Q.

### 1M. Transportation Fuel Switching Target - Electric Vehicles

	2025	2035	2050
Electric Vehicles	67	474	986

This tables displays a target for switching from fossil fuel based vehicles (gasoline and diesel) to electric vehicles. This target is calculated on Worksheet 2 by using LEAP and ACS data.

### 1N. Transportation Fuel Switching Target - Biodiesel Vehicles

	2025	2035	2050
Biodiesel Vehicles	118	221	373

This tables displays a target for switching from fossil fuel based vehicles to biodiesel-powered vehicles. This target is calculated on Worksheet 2. by using LEAP and ACS data.

### 1O. Existing Renewable Generation

Renewable Type	MW	MWh
Solar	0.84	1.0
Wind	0.00	0
Hydro	0.00	0
Biomass	0.00	0
Other	0.00	0
<b>Total Existing Generation</b>	<b>0.84</b>	<b>1.0</b>

Table 1O shows existing renewable generation in the municipality as of December, 2018 from vtenergydashboard.org

### 1P. Renewable Generation Potential

Renewable Type	MW	MWh
Rooftop Solar	1	873
Ground-mounted Solar	291	357,189
Wind	39	118,808
Hydro	0	42
Biomass and Methane	0	0
Other	0	0
<b>Total Renewable Generation Potential</b>	<b>331</b>	<b>476,912</b>

Renewable generation potential is based on mapping completed by the regional planning commission that is based on the Municipal Determination Standards and associated guidance documents developed by DPS. The renewable generation potential is expressed in MW and MWh by the type of renewable resource (solar, commercial wind, hydro, etc.).

### 1Q. Renewable Generation Target

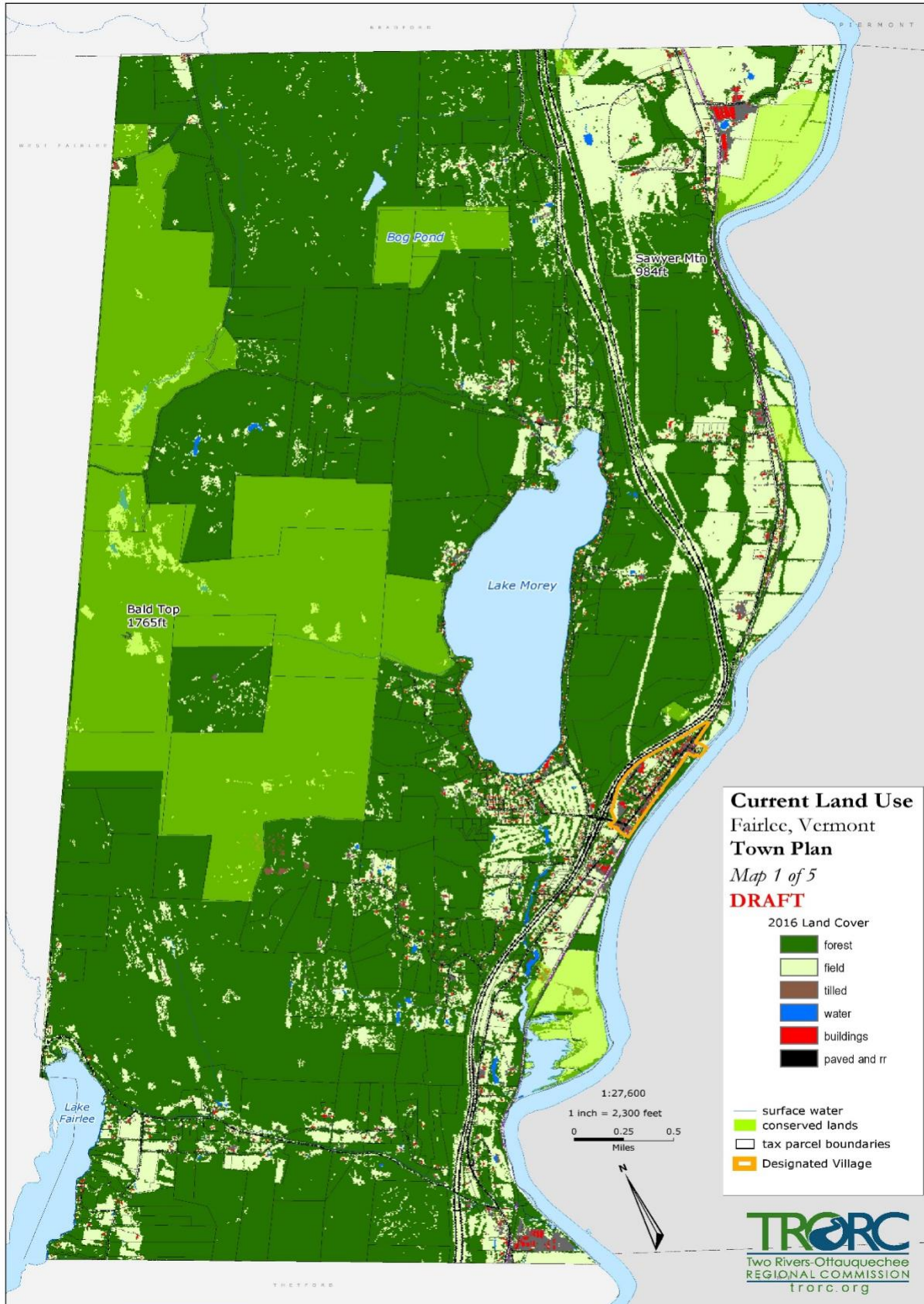
	2050
Total Renewable Generation Target (in MWh)	5,485- 6,704

Renewable generation target for municipalities was developed by the town's population percentage within the region.

### 1R. Sufficient Land

	Y/N
Renewable Sources	Y
Surplus of Generation	7725%

This table shows whether or not there is sufficient land in the municipality to meet the renewable generation targets based on the renewable generation potential in the municipality.



# Future Land Use

## Town Plan

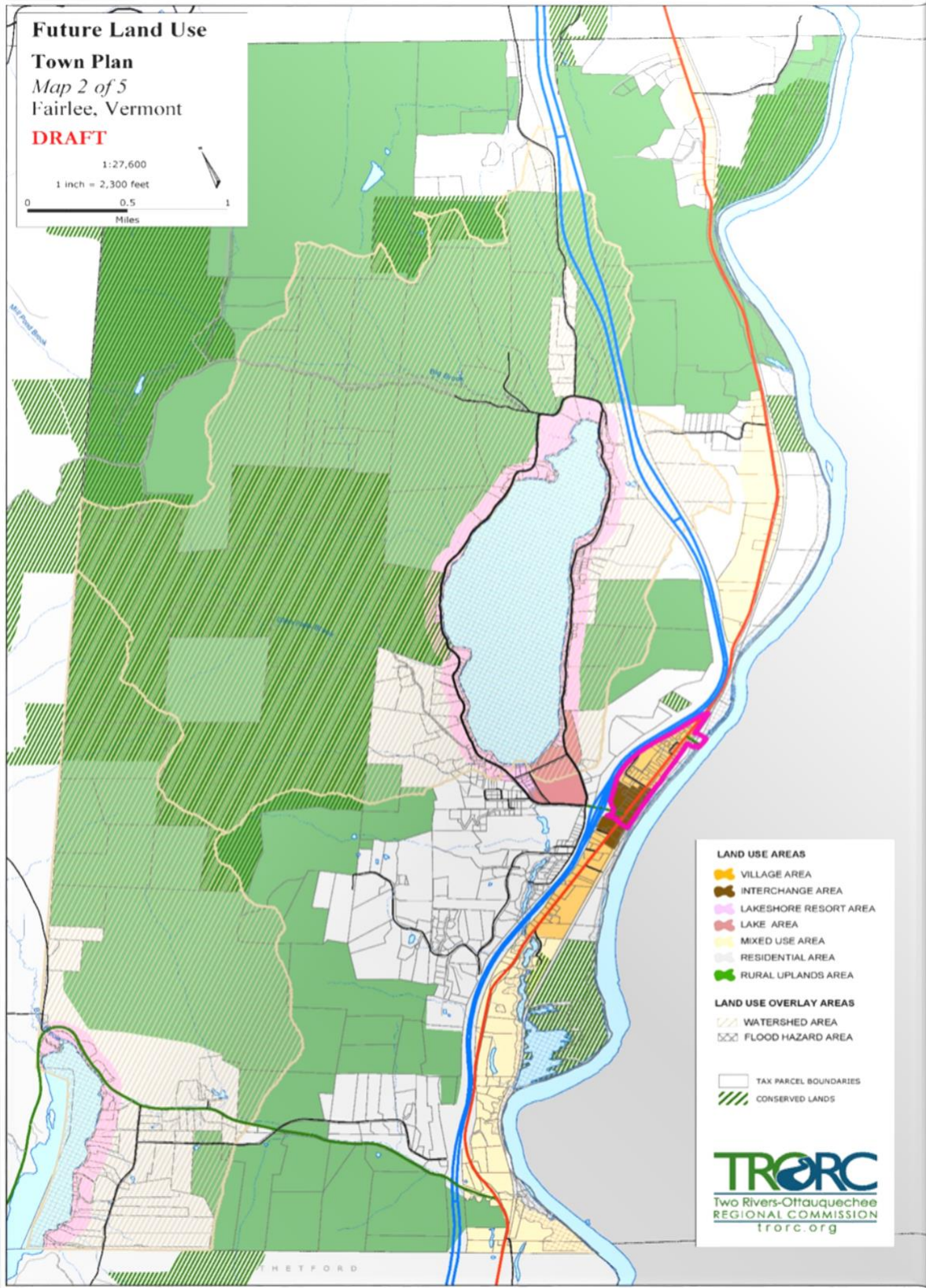
Map 2 of 5

Fairlee, Vermont

**DRAFT**

1:27,600

1 inch = 2,300 feet



**LAND USE AREAS**

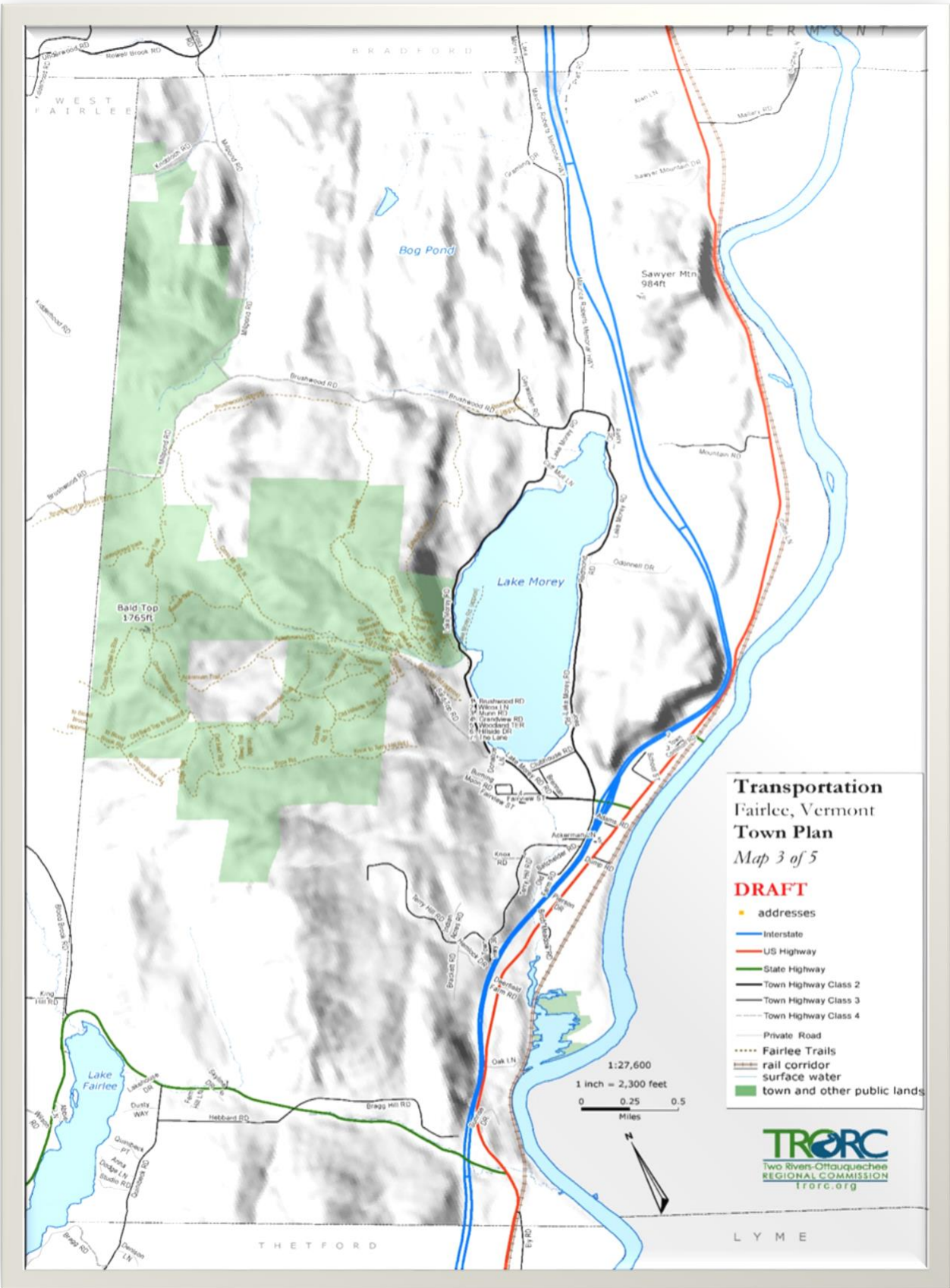
- VILLAGE AREA
- INTERCHANGE AREA
- LAKESHORE RESORT AREA
- LAKE AREA
- MIXED USE AREA
- RESIDENTIAL AREA
- RURAL UPLANDS AREA

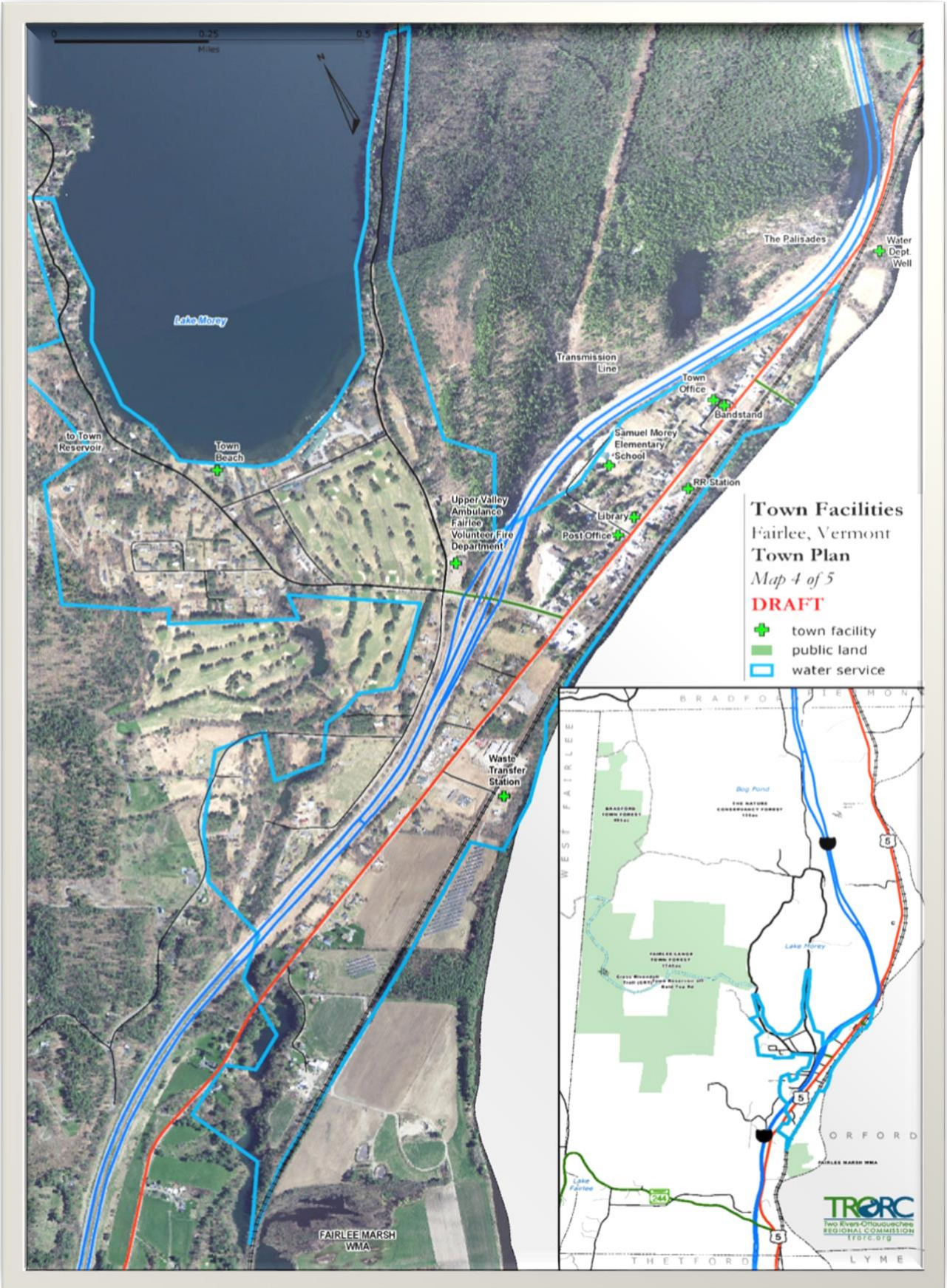
**LAND USE OVERLAY AREAS**

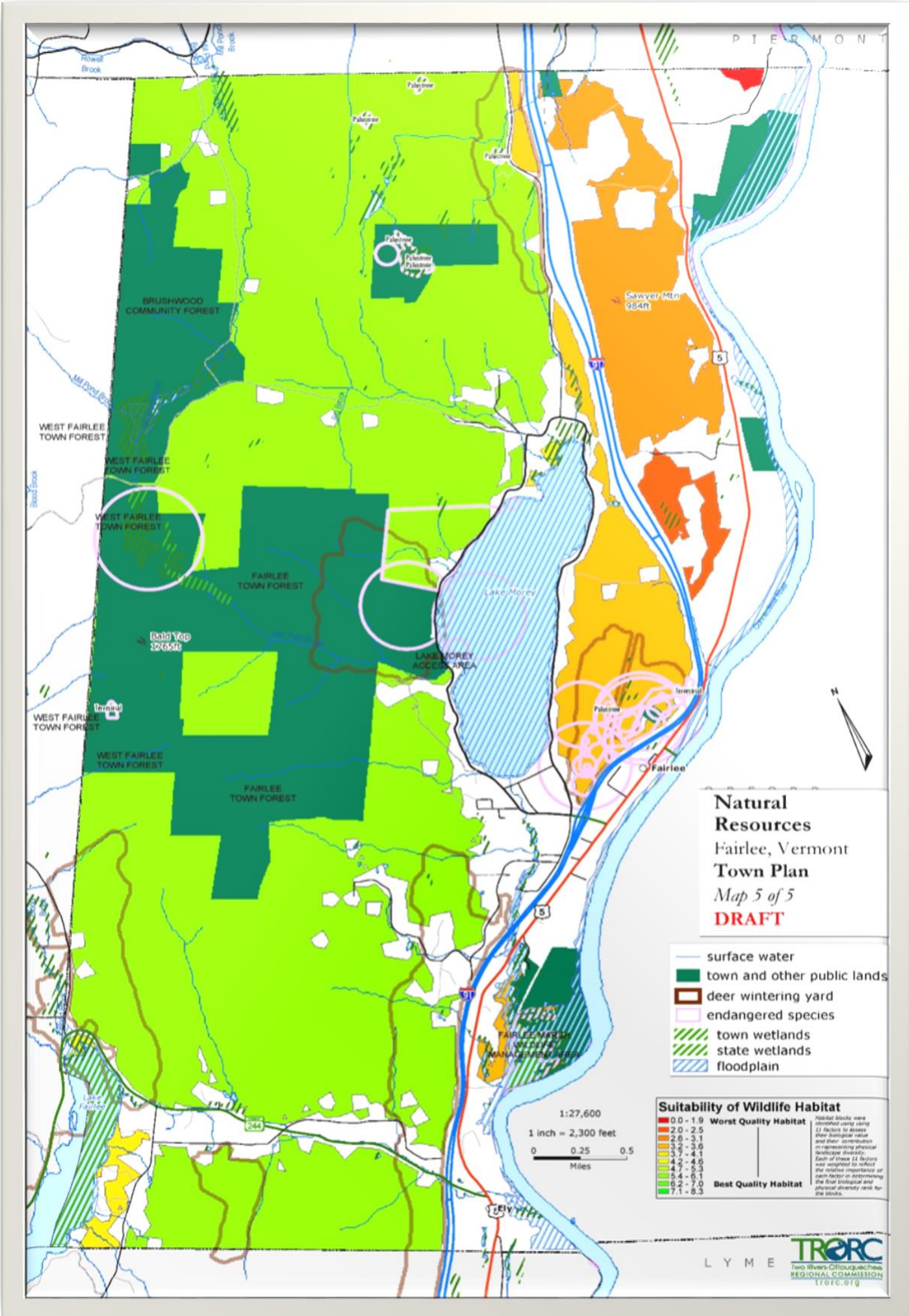
- WATERSHED AREA
- FLOOD HAZARD AREA

TAX PARCEL BOUNDARIES  
CONSERVED LANDS

**TRORC**  
Two Rivers-Ottawa-Quebec  
REGIONAL COMMISSION  
trorc.org









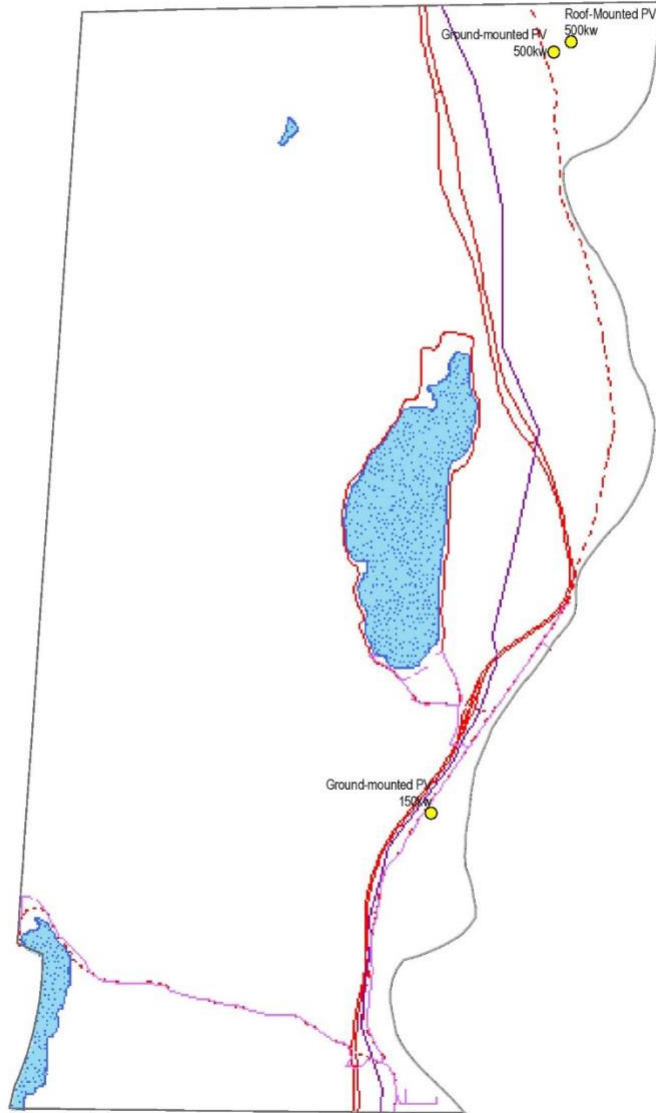
# Existing Energy Generation

This map was created as part of a Regional Energy Planning Initiative being conducted by the Two Rivers-Ottawaquechee Regional Commission, and the Vermont Public Service Department.

Created 2019

## FAIRLEE

- BIOMASS KW**
  - 19
  - 20 - 375
- HYDRO KW**
  - 15 - 100
  - 101 - 500
  - 501 - 2000
  - 2001 - 37400
- Capacity\_k**
  - 15 - 25
  - 26 - 100
  - 101 - 500
  - 501 - 2200
- Substations
- 3 Phase Power Lines
- Transmission Lines
- Lakes/Ponds



0 0.45 0.9 1.8 Miles



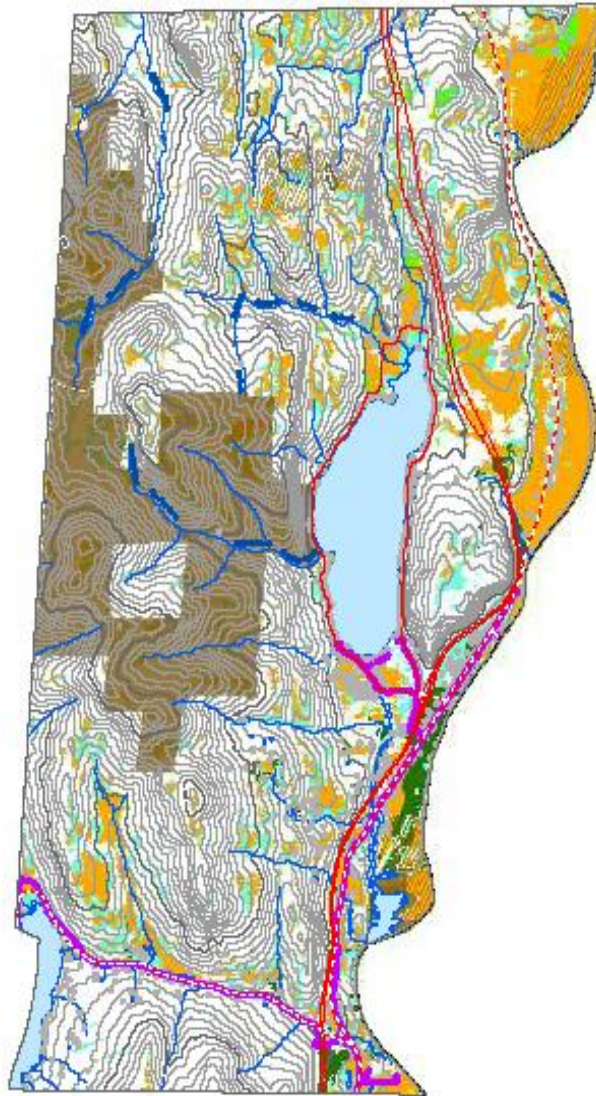
**TRORC**  
Two Rivers-Ottawaquechee  
REGIONAL COMMISSION  
trorc.org

# Solar Energy Potential

Map prepared in partial fulfillment of Energy Planning Initiative  
March 2017

## FAIRLEE

Legend		SOLAR POTENTIAL	
	3 Phase Power Lines		Best Quality
	Structure or Tree Buffer		Good
	Public Open		Consistent
	Private Open		Poor 1m Square
			Not Suitable



**Note:**  
This map shows general potential availability generated from solar energy. It includes overall good areas to solar potential and also includes other conditions that may affect the availability of solar energy development. The availability of solar energy development is not guaranteed. Areas of potential solar energy development are not intended to be developed. The availability of solar energy development is not guaranteed.

This map was developed to identify locations and determine an alternative to solar energy development in the region. The map is not intended to be used as a guide to solar energy development.

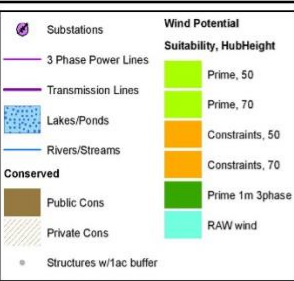
Map prepared by the Vermont State Office of Energy Planning  
Map prepared by the Vermont State Office of Energy Planning  
Map prepared by the Vermont State Office of Energy Planning  
Map prepared by the Vermont State Office of Energy Planning

**Map Data:**  
Map data provided by the Vermont State Office of Energy Planning  
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Map data provided by the Vermont State Office of Energy Planning

**Map Symbols:**  
Map symbols provided by the Vermont State Office of Energy Planning  
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**Map Scale:**  
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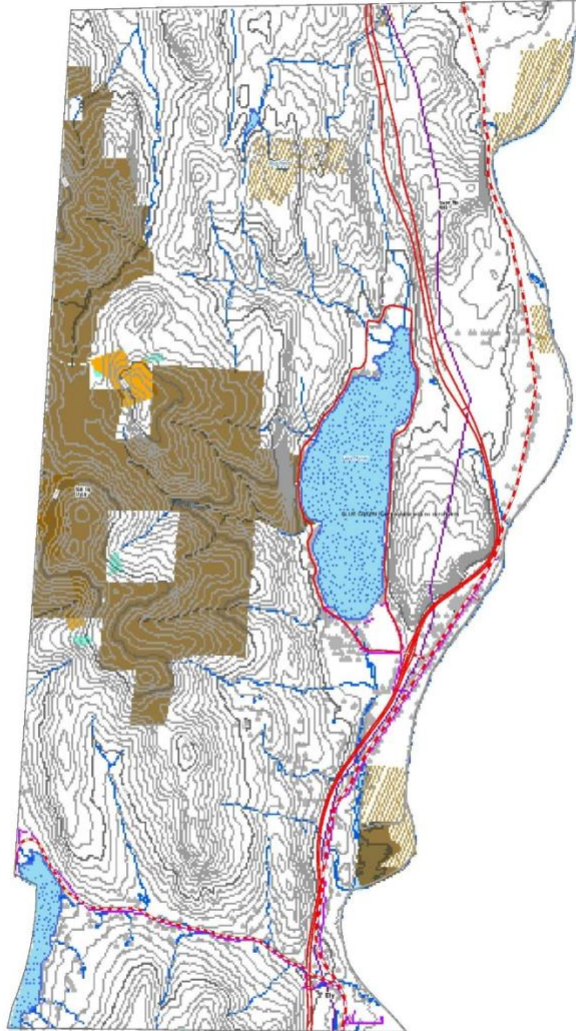




# Wind Energy Potential

This map was created as part of a Regional Energy Planning Initiative.  
Created: 2019

## FAIRLEE



**Wind**  
This map shows areas of potential wind energy development. It includes areas with good access to wind resources and also considers other conditions that may limit the feasibility of wind energy development. These limiting factors are referred to as constraints. Areas of prime wind potential exist where the natural conditions make development feasible and no constraints are present.

These maps are designed to initially identify areas and follow-up on-site work is required to verify the areas are feasible for projects. They are subject to revision and are NOT intended to green-light or fast-track projects.

**DARK GREEN Prime:** No Constraints within 1 mile 3 phase power  
**GREEN Prime:** No Constraints no known or possible constraints present  
**ORANGE Constraints:** no known but at least one or more possible constraints  
**BLUE GREEN Raw potential with constraints**

- Known Constraints**  
 Wetland Pools (confined and unconfined layers)  
 DEC River Corridors  
 FEMA Floodways  
 State significant Natural Communities and Rare, Threatened, and Endangered Species  
 Wilderness Areas, including National Wilderness Areas  
 Class 1 and Class 2 Wetlands (100M and advisory layers)  
 Act 250 Agricultural Soil Mitigation areas
- Possible Constraints**  
 Agricultural Soils (VT Agriculture Important Soil Units)  
 FEMA Special Flood Hazard Areas  
 Protected Lands (updated 07/20/2016)  
 Deer Wintering Areas  
 ANR's Vermont Conservation Design Highest Priority Forest Block Datasets  
 Forest Blocks - Connectivity  
 Forest Blocks - Interior  
 Forest Blocks - Physical Land Division  
 Hydric Soils
- TRORC (Usuitable areas excluded in known constraints)**  
 FEMA Floodways  
 Wilderness Areas, including National Wilderness Areas  
 Class 1 Wetlands

