Mount Ascutney Regional Commission

REGIONAL PLAN

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Acknowledgements

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Mount Ascutney Regional Commission

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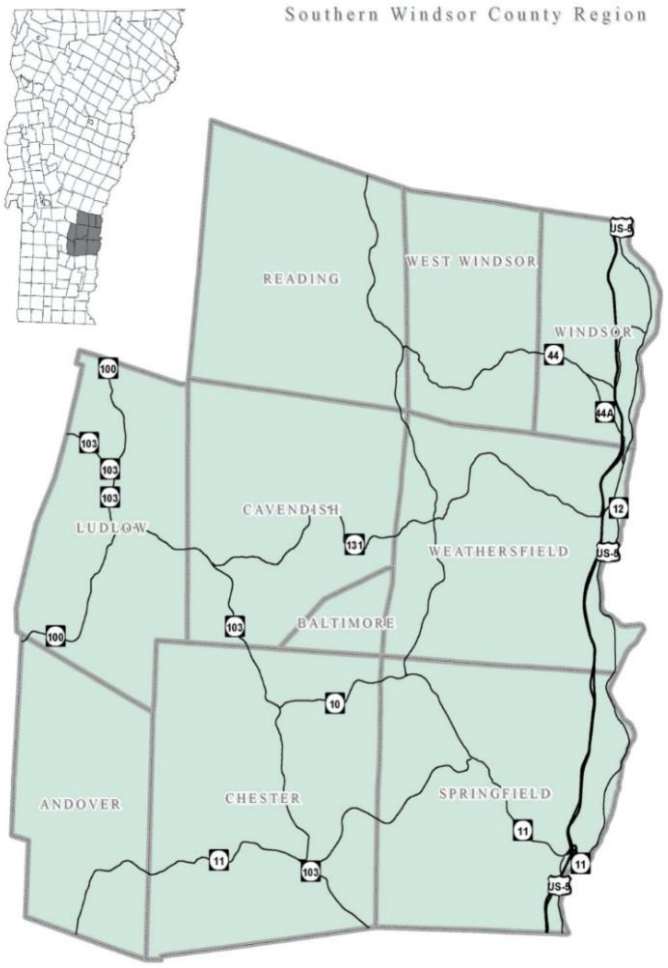

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CH 1: INTRODUCTION

A. Background of the Commission

The Mount Ascutney Regional Commission (MARC) was established in 1966, as the Southern Windsor County Regional Planning and Development Commission, through the action of its constituent towns. The original eight member towns were not contiguous, and it wasn't until 1970 that the Commission began receiving state and federal funds and operated as the Southern Windsor County Regional Planning Commission (SWCRPC) for many years. In 2021, the SWCRPC changed its name to Mount Ascutney Regional Commission.

Currently, the MARC's activities and programs are governed by a ten-person Board of Commissioners; each appointed by the legislative body of his or her member town, with assistance from up to three "at-large" Commissioners as appointed by the Board of Commissioners. In addition, the Board has the responsibility of hiring staff to carry out the goals and policies of the Regional Planning Commission.

The MARC also has the authority to establish advisory committees to address specific regional issues. Currently, the Commission has two such committees, the Brownfields Steering Committee and Transportation Advisory Committee (TAC). Representation on the Transportation Advisory Committee consists of one representative from each community, an ex-officio representative of the Agency of Transportation and provision for four "at-large" members. The primary mission of the Transportation Advisory Committee is to develop and evaluate transportation policy and recommendations as they relate to the Regional Transportation Plan and the Regional Plan.

The primary intent of the MARC and its advisory committees has always been to assist with and advocate for the planning and development activities of its member towns. The MARC exists primarily to provide technical assistance to its member towns; assist in mediating inter-jurisdictional planning and development issues that arise between member communities; facilitate discussion and understanding between local and state entities; develop plans, policies, strategies, and procedures for addressing issues that are regional in scope; assist communities with downtown revitalization and community development projects; annually compile, review, and prioritize regional transportation improvement projects for submission to the Agency of Transportation; and to serve as an information resource for member towns and residents.

B. Statutory Authority

The MARC is authorized pursuant to the duties and optional powers listed in the Vermont Municipal Planning and Development Act (herein referred to as "the Act") [24 V.S.A. §4345]. The MARC is required to adopt a regional plan in accordance with the Act [24 V.S.A §4348]. Volumes 1, 2 and 3 of the Regional Plan are adopted together as one document.

C. The Regional Plan

The purpose of the Regional Plan, in accordance with the Act [24 V.S.A §4347], is to create a vision for coordinated growth and development in the Region in accordance with existing and future needs and resources. The Regional Plan is advisory in nature, purpose, and effect. However, there are a limited number of areas where the Plan can have regulatory implications as discussed below. The Regional Plan is also used to support a host of grant applications including Community Development Block Grants and housing or farmland conservation applications to the Vermont Housing and Conservation Trust Fund.

The Regional Plan guides the MARC in evaluating public and private actions affecting the Region's communities and is the foundation for the MARC's annual work program. The Regional Plan also serves as the Region's basic planning manual and should be used as a guide by the Region's towns in the local planning process.

Because of the inherent interrelationship of all aspects of the Regional Plan, the policies in any section are not to be considered in isolation, but rather in conjunction with all other sections and chapters of the Regional Plan. Each section of the Regional Plan includes statements designed to guide the growth and development of the Region. These guiding statements are defined later in this chapter to help the reader understand the context in which they are used.

The format of the Regional Plan is intended to include all plan elements as required by law (24 VSA § 4348a). Volume 2 of the Regional Plan consists of the Regional Transportation Plan, which serves as both the statutorily required transportation element and the requirements of the MARC's Transportation Planning Initiative with the Vermont Agency of Transportation. Volume 3 of the Regional Plan consists of the Enhanced Energy Plan for the Region, which serves as the energy element under § 4348a as well as the enhanced energy plan under § 4352. Volume 1 includes all other required elements of the Regional Plan. Each chapter in Volume 1 focuses on particular issue areas of regional or statewide interest. Background issues, goals, policies, and recommendations are contained in each chapter. The final chapter of the Plan discusses implementation of the Regional Plan.

D. Use of the Plan in Regulatory Proceedings

The Regional Plan has a regulatory role under three state review processes:

- Act 250/District Environmental Commission Hearings (10 V.S.A., Chapter 151);
- Public Good Determination Hearings for electric generation or transmission facilities (30 V.S.A. §248, or "Section 248")
- Solid waste facility certification (10 V.S.A. §6605).

Major developments are reviewed for conformance with any duly adopted local or regional plan under Act 250 or Section 248. If, however, a conflict exists between the local and regional plans, the regional plan will be given effect over the municipal plan if a proposed development has a "substantial regional impact." See the Implementation Chapter for a definition of substantial regional impact.

The MARC works closely with its member towns in order to ensure that municipal plans are not in conflict with the regional plan. This synergistic relationship attempts to recognize potential concerns with Act 250 and Section 248 applications prior to their submission. In addition, the Land Use Panel of the Natural Resources Board that oversees the Act 250 process narrowly interprets "conflict" as only existing when one plan allows the project, but the other does not. In addition, state statutes require compatibility between regional and municipal plans.

1. Act 250

In the spring of 1970, the Vermont Legislature passed the Land Use and Development Act (Act 250) in order to address growth in the 1960s resulting from the opening of I-89 and I-91, development of the IBM facility in Essex Junction, and expansion of ski tourism in Vermont. Act 250 (10 V.S.A., Chapter 151) establishes a state land use permitting process in order to protect the environment.

The law created nine District Environmental Commissions, consisting of three members appointed by the Governor, to review large-scale development projects and subdivisions using 10 criteria that address environment, aesthetic and community impacts. The District Environmental Commissions have jurisdiction over any project that encompasses more than 10 acres, or more than 1 acre for towns that do not have permanent zoning and subdivision bylaws. (See **Table 1.1** for a listing of one- and ten-acre towns.) The law also applies to any development project with more than 10 housing units or housing lots; and may also apply for construction proposed above 2,500 feet of elevation.

TABLE 1.1 – ONE- AND TEN-ACRE TOWNS FOR ACT 250 JURISDICTION	
1-Acre Towns	**10-Acre Towns**
Cavendish	Andover
Reading	Baltimore
	Chester
	Ludlow
	Springfield
	Weathersfield
	West Windsor
	Windsor

Source: VT Natural Resources Board (July 22, 2022).

Act 250 also created the Vermont Environmental Court to review appeals coming from District Commission rulings.

The Act 250 process allows for the review and comment on all eligible applications by municipal governments, local and regional planning commissions, the state of Vermont, along with other interested parties. Before a proposed development receives approval, it must meet the ten criteria set forth in 10 V.S.A. §6086, which are detailed on the State Natural Resources Board website and summarized below:

Criterion 1: Air and water pollution

1(A): Headwaters

1(B): Waste disposal

1(C): Water conservation

1(D): Floodways

1(E): Streams

1(F): Shorelines

1(G): Wetlands

Criterion 2: Water supply
Criterion 3: Impact on water supply
Criterion 4: Erosion and capacity of soil to hold water

Criterion 5: Transportation

5(A): Traffic

5(B): Transportation

Criterion 6: Educational services
Criterion 7: Municipal services
Criterion 8: Aesthetics, scenic and natural beauty

Historic sites

Historic sites – archaeology

Rare and irreplaceable natural areas

8(A): Necessary wildlife habitat

Criterion 9:

9(A): Impact of growth

9(B): Primary agricultural soils

9(C): Productive forest soils

9(D): Earth resources

9(E): Extraction of earth resources

9(F): Energy conservation

9(G): Private utility services
9(H): Costs of scattered development
9(J): Public utility services
9(K): Public investments
9(L): Settlement patterns (*formerly* "Rural growth areas")

Criterion 10: Local and regional plans

2. Section 248

The development and construction of electrical generation facilities, electrical transmission facilities, and some gas pipelines are regulated by the Public Service Board created by the Vermont Legislature under (30 V.S.A. §248). The Public Service Board has been granted partial judicial power to conduct hearings and issue decisions. The Board consists of three members, appointed by the Governor, serving staggered terms. Prior to undertaking a proposed project, an involved party must receive a "Certificate of Public Good" from the Board.

Under the Section 248 review process, projects are evaluated to determine if they serve the general public good. Pursuant to 30 V.S.A. §248(b), criteria to receive a Certificate of Public Good include:

- Orderly development of the Region with due consideration of Town and Regional Plans;
- Need for present and future demand;
- System stability and reliability;
- Economic benefit;
- Undue adverse impacts on aesthetics, historic sites, air and water purity, natural environment, public health and safety, and Act 250 Criteria 1-8 and 9(K);
- Consistent with company's approved least cost integrated plan;
- Consistent with the VT Department of Public Service's electric energy plan; and
- Does not affect designated outstanding resources waters.

Projects subject to Section 248 review, including net-metered private wind turbines, are exempt from local regulations. However, the impacted municipality and regional planning commission may participate as interveners in the proceedings.

3. Solid Waste Facility Certification

All towns, whether in a solid waste district or not, must adopt a Solid Waste Implementation Plan, which must be in conformance with the Regional Plan in accordance with 24 V.S.A., Chapter 61, §2202(a). The certification process for solid waste facilities will consider if the SWIP is in conformance with the town and regional plans (10 V.S.A., Chapter 159, §6605).

E. Goals, Policies, and Recommendations Defined

The needs of a growing population, the events and consequences that lead to a declining population, and the health of the environment and economy all require the attention of regional and local planning commissions. The goals and policies listed below are general overriding statements of the desired principles that should guide the growth and development of the Region and protect the natural and built environment. The goal and policy statements should be taken within the context of the information and analysis contained in the chapters which follow.

Goals - *Broad statements of what the Region ultimately wants to achieve. Goals reflect realistic intentions regarding a particular resource. They are not placed within a specific time frame. Specific goals are developed for each section of this Plan.*

Policies - *Agreed-upon courses of action to be followed to achieve the goals. Policies contain the principles or standards that guide the choices of implementation measures used to reach the Plan's goals.*

Recommendations - *Suggestions for specific actions to be carried out to reach the stated goals and policies.*

The following Regional Goals and Policies are consistent with the Vermont Planning Goals established by statute (24 V.S.A. §4302):

Regional Goals

1. To achieve a reasonable balance between protection of natural resources and growth in a way that maximizes the potential for both.

2. To assist all member communities in developing effective town plans and implementation documents.

3. To foster a spirit of communication and cooperation between all member communities, and with other governmental entities, and to act as a mediator when disputes arise.

4. To support the efforts of local member governments and serve as a bridge between local and state planning efforts.

5. To provide opportunity for citizen participation at all stages of the planning process.

6. To identify housing needs throughout the Region and to encourage the development and rehabilitation of housing that will meet the needs of all regional residents regardless of social characteristics or income.

7. To preserve the historical settlement patterns and rural character of the Region and to maintain the integrity of its villages.

8. To create and maintain efficient public facilities and services, including but not limited to child care, adequate to meet existing and foreseeable future needs.

9. To provide educational and vocational opportunities that will allow all residents to make the most of their abilities.

10. To develop an economic environment that will support the continuation of traditional land use activities, including sustainable agriculture, forestry, manufacturing, and commerce at scales consistent with the existing land use patterns of the Region.

11. To develop a transportation system that balances the needs of safety, convenience, cost, energy efficiency, environmental protection, economic growth, and recreation.

12. To further the Vermont Planning Goals found in (24 V.S.A. §4302).

13. To welcome people of all backgrounds to southern Windsor County, to commit to the fair, equitable and inclusive treatment of everyone in the Region, and to be a place where individuals can live freely and safely express their opinions.

Regional Policies

1. All inhabitants and wildlife should be provided with a healthy living environment through improvement and maintenance of the air, water, and soil quality.
2. Natural resource use that ensures the protection of sufficient renewable resources for future generations and provides for reasonable economic return should be supported.
3. Irreplaceable natural and fragile areas, outstanding water resources, rare and endangered species and their habitats, and significant scenic features should be protected and preserved.
4. Regionally significant natural, cultural, and archeological features, and historic sites and buildings should be protected and preserved.
5. Cooperation and coordination among member towns is encouraged in planning for growth and development, to enable an evaluation of the potential for regional and inter-jurisdictional impacts.
6. All appropriate agencies should cooperate in the development and maintenance of a safe and efficient regional transportation system that meets the vehicular and pedestrian needs of all residents with minimum impact to the Region's environmental and aesthetic qualities.
7. Environmentally benign or beneficial economic development that will provide desirable jobs for regional residents, reduce unemployment, improve per capita income, enhance the local tax base, and maintain the character of the Region should be promoted.
8. Energy efficiency and conservation, the development of renewable resources, and the use of alternative energy sources are encouraged.
9. The manufacturing and marketing of local value-added agricultural and/or forest products is encouraged.

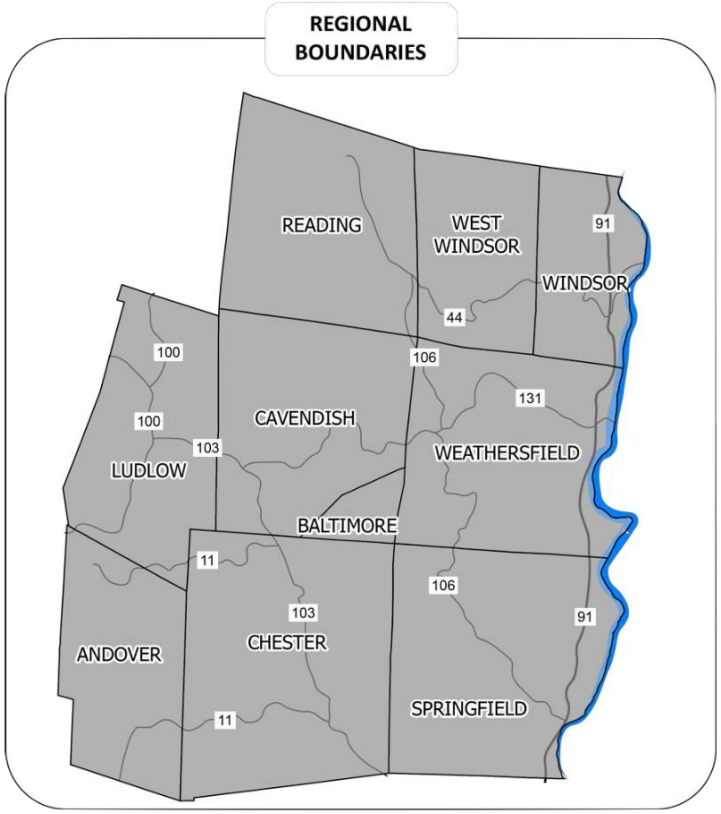
10. The provision and enhancement of recreational opportunities for all residents, and promotion of tourism-related economic development that furthers the goals of this Plan should be encouraged.
11. The protection of significant agricultural and forested land, through incentives and measures which discourage the subdivision or fragmentation of large parcels of such land is encouraged.
12. Efficient infrastructure adequate to support economic or other growth should be created prior to development.
13. Land use and development patterns that are consistent with the long- range goals and policies of local communities, the Region, and the adjoining towns in other regions should be promoted.
14. The region is comprised of diverse, inclusive, and livable communities that meet the needs of people of all ages, incomes, and abilities.

CH 2: REGIONAL PROFILE

Background

This chapter provides a historic review of the demographic, economic, and social factors that have influenced the Region. Data profiles are an important tool in the planning process as they give insight into current conditions along with historic patterns of change and those areas that will need particular attention in the future.

A. Background of the Region



The Region is comprised of ten towns including their villages, hamlets, and dispersed populations. The member towns are Andover, Baltimore, Cavendish, Chester, Ludlow, Reading, Springfield, Weathersfield, West Windsor, and Windsor. The Region is in southeastern Vermont, along the Connecticut River, with Windham County to the south, Rutland County and the Green Mountains to the west, and the remainder of Windsor County to the north. The climate is generally temperate with moderately cool summers and cold winters; as in the rest of Vermont, it creates ideal conditions for summer and winter recreation, spectacular fall foliage, and springtime sap runs. The

weather is unpredictable, and large variations in temperature, precipitation, and other conditions may occur both within and between seasons and across different parts of the region.

B. Physiographic Characteristics

Tectonic impact and glaciation have contributed to the physiographic diversity of the Region. The land is hilly and wooded with moderate to steep slopes. Southern Windsor County contains a broad range of landforms, from the rocky, acidic soils, spruce-fir forests and beech stands of the Green Mountains, to the fertile, sandy soils and white pines of the Connecticut River valley, and the hill farms, orchards, woodlots, and sugar bushes in between. The shallow upland soils tend to be dominated by bedrock, with small, dispersed sites containing "enriched" organic deposits. Soils along the Connecticut are deeper and more fertile, having been deposited by rivers of glacial melt, or by Lake Hitchcock, which covered a large part of the valley ten to twelve thousand years ago.

Much of the Region remains undeveloped or sparsely developed due to the physical constraints imposed by the terrain. Rivers and streams are interspersed throughout the Region, flowing south and east to the Connecticut River. The combination of mountains, streams, valleys, and rocky land has resulted in areas with outstanding geologic features such as Cavendish Gorge and various other peaks, gorges, cascades, and waterfalls. The three principal rivers are the Connecticut River, the Black River, and the Williams River. The broad Connecticut valley holds fertile agricultural land (discussed further in the Plan's Land Use, Natural Resources, and Cultural and Aesthetic Resources chapters), while the narrower and steeper Black and Williams valleys have traditionally been home to sawmills, woolen mills, gristmills, and small hydroelectric power dams. Numerous lakes, ponds, and wetlands comprise the remainder of the Region's surface water features.

Dominant physiographic land features in the Region include two mountains - Okemo Mountain (in Ludlow and Mount Holly) and Mt. Ascutney (shared by Windsor, West Windsor, and Weathersfield) - with elevations over 3,000 feet above sea level. Mt. Ascutney is an example of a monadnock, an isolated mountain of erosion-resistant rock rising above a surrounding area worn flat by water and ice. In addition, Terrible Mountain in Andover is over 2,800 feet in elevation and Hawks Mountain, shared by Cavendish, Baltimore, and Weathersfield, is nearly 2,100 feet above sea level.

C. Population

Vermont's earliest settlers, such as the Abenaki, lived and traveled according to the contours of the landscape and sources of food. Archeological evidence of indigenous settlements along the Connecticut River shows that the river was an important resource in this Region. Over the years,

transportation improvements and settlement patterns shifted in response to technological improvements and changing economic resources.

The following sections provide a detailed picture of population changes in the southern Windsor County Region since 1970.

1. POPULATION TRENDS

According to U.S. Census data from 1970 to 2020, populations in the Region's towns have fluctuated (See Table 2.1 below), with the majority of the Region's towns experiencing growth in population (Andover, Baltimore, Cavendish, Chester, Weathersfield and West Windsor). Out of towns, the highest growth was experienced in West Windsor (114.4%), and the highest decline in population was experienced in Ludlow (-28.2%). Despite this growth in the majority of towns, the overall population of the Region has declined over time, dropping from a population of 23,908 in 1970 to 23,543 residents in 2020, a 1.5% decrease, compared to the Vermont statewide population change, which increased by 40.5% since 1970.

Factors contributing to decreased population in the Region include the loss of major employers, (especially those in the machine tool industry), reductions in the average household size, the relatively high cost of living, difficulty to recruit new employees, and a lack of housing options. The COVID-19 pandemic has led to the conversion of second homes into primary residences and increased activity in the Region's real estate market driven by out-of-state buyers. Some pandemic migrants may become year-round residents in the Region. The recent increase of short-term rentals has also led to a decline of available long-term rentals. As of early 2022, it is too early to determine whether these trends will drive lasting population growth in the Region.

TABLE 2.1 REGIONAL POPULATION TRENDS 1970-2020

Town	1970	1980	1990	2000	2010	2020	1970-2020 % Change
Andover	239	350	373	496	467	432	80.7%
Baltimore	170	181	190	250	244	312	83.5%
Cavendish	1,264	1,355	1,323	1,470	1,367	1,302	3%
Chester	2,371	2,791	2,832	3,044	3,154	3,036	28%
Ludlow	2,463	2,414	2,301	2,499	1,963	1,769	-28.2%
Reading	564	647	614	707	666	439	-22.2%
Springfield	10,063	10,190	9,579	9,078	9,373	8,935	-11.2%
Weathersfield	2,040	2,534	2,674	2,788	2,825	2,740	34.3%
West Windsor	571	763	923	1,067	1,099	1,224	114.4%
Windsor	4,158	4,084	3,714	3,756	3,553	3,354	-19.3%
Region	23,908	25,309	24,524	25,105	24,711	23,543	-1.5%

Source: *U.S. Census Bureau (1970-2010 Decennial Census, 2020 American Community Survey 5-Year Estimates – Table B01001 - Sex by Age)*

2. AGE CHARACTERISTICS

The Region's population is aging, with 24.1% (5,677) of residents falling within the 65+ age bracket according to 2020 Census data, while the Region's proportion of school age children (ages 18 and under) continues to decline in the same way it has since 1970, declining from 19.3% to 17.2% of the Region from 2010 to 2020. As of 2020, the town with the highest percentage of residents age 18 and under was Baltimore (25.6%), while the town with the highest percentage of the population aged 65+ was Chester (29.8%).

The 18-64 age group (U.S. Census changed this to 20-64 in 2000), which represents the labor force, has remained relatively stable since 1980. From 1990 to 2000, only Springfield and Windsor experienced declines in this age group, again probably due to subsequent employment losses. From 2000 to 2010, half of the Region's towns experienced growth in this population, Windsor having the greatest increase at 4.8%, with Springfield following with an increase of 3.8%, while West Windsor had the largest decrease in the Region with a decline of 1.1%. From 2010 to 2020, in the Region overall this age group decreased by 9.4%, with the largest increase in Baltimore (115%) and the largest decrease in Reading (-31%).

Regionally, the 65 and older age group, representing the retired and elderly, continued to increase from 1990 to 2000, but at a slower rate than the previous two decades. From 2000 to 2010, 80% of the Region's towns showed an increase in the 65 and older population, with Andover, Ludlow, Reading, Weathersfield and West Windsor showing the largest increases, ranging from 4.3 to 4.8%. Springfield and Windsor were the only towns to show decreases, at 1.2 and 2.7%, respectively. From 2010 to 2020, this aging population in the Region increased by 20.8% overall, with the largest increases in Chester (73%) and Springfield (30.4%). In terms of decreases, Andover and Weathersfield exhibited the most significant decreases with percent changes of 19.6% and 8.6% respectively.

D. Economy

1. ECONOMIC TRENDS

Southern Windsor County belongs to a region which earned the nickname "Precision Valley" early in the twentieth century. The large numbers of companies specializing in precision manufacturing created wealth and a high standard of living. Opportunities were available to anyone willing to invest the time and energy to master requisite skills up through the 1970s.

Since the 1970s, many of the large machine tool firms sold off their industrial sites or abandoned them in bankruptcy reorganizations. Despite economic development measures and programs, and the fact that the "Precision Valley" is located near institutions of higher education and has infrastructure more conducive to manufacturing, it has yet to fully recover.

2. POVERTY AND WAGES

According to the U.S. Census, as of 2020, approximately 421 (7%) of the Region's 5,985 families were below poverty level, approximately a 17% decrease from 2010. In addition to this decrease in families below the poverty level, the average median family income in the Region has increased by roughly 24.3% from 2010, from $62,619 to $77,828. In the Region, Chester had the highest median family income ($104,948), while Ludlow had the lowest, at $58,594. However, despite increases in income, compared to the 2020 statewide average annual wages ($54,075), all of the towns in the Region fell short, with Springfield having the highest average annual wages in the Region with $52,479, a number that did however surpass the average value for Windsor County ($51,962).

TABLE 2.2 POVERTY STATUS OF FAMILIES IN THE REGION OVER THE LAST 12 MONTHS (2020)

Town	Total Number of Families		Families Below Poverty Level		Families at or Above Poverty Level		Percent Change (2010-2020)	
	2010	2020	2010	2020	2010	2020	Below	At/Above
Andover	133	117	0	4	133	113	N/A	-15%
Baltimore	63	87	1	14	62	73	1300%	17.7%
Cavendish	381	311	19	8	362	303	-58%	-16.3%
Chester	954	871	71	19	883	852	-73.2%	-3.5%
Ludlow	575	445	43	39	532	406	-9.3%	-23.7%
Reading	231	123	4	0	227	123	-100%	-45.8%
Springfield	2,590	2,117	237	263	2,353	1,854	11%	-21.2%
Weathersfield	845	726	31	42	814	684	35.5%	-16%
West Windsor	286	330	9	0	277	330	-100%	19.1%
Windsor	760	858	92	32	668	826	-65.2%	23.6%
Regional	6,818	5,985	507	421	6,311	5,564	-17%	-11.8%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B17013 – Poverty Status In The Past 12 Months of Families By Household Type By Number of Persons in Family)*

TABLE 2.3 MEDIAN FAMILY INCOME BY TOWN (2010-2020)		
Town	**Median Family Income (2010 Inflation-Adjusted Dollars)**	**Median Family Income (2020 Inflation-Adjusted Dollars)**
Andover	$54,531	$92,250
Baltimore	$70,625	$78,750
Cavendish	$57,792	$70,938
Chester	$61,484	$104,948
Ludlow	$58,869	$58,594
Reading	$67,250	$70,313
Springfield	$50,833	$62,917
Weathersfield	$62,306	$79,118
West Windsor	$86,250	$95,833
Windsor	$56,250	$64,615
Regional Average	$62,619	$77,828

Source: U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B19113 – Median Family Income in the Last 12 Months [In 2010 Income-Adjusted Dollars], Median Family Income in the Last 12 Months [In 2020 Income-Adjusted Dollars])

TABLE 2.4 ANNUAL WAGES IN THE REGION (2020)	
Town	**Average Annual Wages**
Andover	$35,687
Baltimore	No data available
Cavendish	$41,304
Chester	$47,263
Ludlow	$39,419
Reading	$45,903
Springfield	$52,479
Weathersfield	$45,106
West Windsor	$47,320
Windsor	$51,583
Windsor County	$51,962
Vermont	$54,075

Source: https://www.housingdata.org/profile/income-employment/wages, Vermont Department of Labor

TABLE 2.5 RESIDENTS EMPLOYED BY INDUSTRY TYPE							
2000			2010		2020		
Industry By Sector	Employed Residents	% of Total Industries*	Employed Residents	% of Total Industries*	Employed Residents	% of Total Industries*	% Change 2000-2020
Services	2,879	22.2%	5,969	23.4%	6,138	56.5%	113.2%
Manufacturing	2,273	17.5%	1,422	18.4%	1,160	10.7%	- 49%
Trade	1,709	13.2%	1,736	13.9%	1,094	10.1%	- 36%
Construction	904	7%	1,075	7.3%	814	7.5%	- 10%
Finance/Ins./Real	501	3.9%	426	4.1%	649	6%	29.5%
Tran./Util./Comm	760	5.9%	465	6.2%	273	2.5%	- 64.1%
Ag./Forest/Min.	319	2.5%	268	2.6%	273	2.5%	- 14.4%

**Includes industries not listed in this table, based on total employed residents in all industries (2010 = 12,315 residents, 2020 = 10,862 residents)*

Source: *U.S. Census Bureau (2010 & 2020 ACS 5-Year Estimates (Table C24030 – Sex by Industry for the Civilian Employed Population 16 Years and Over)*

E. Housing

1. HOUSING UNIT GROWTH

According to U.S. Census data, there were 10,463 housing units in the Region in 2020, representing a 33% decrease since 2010 (15,619). The majority of households in the Region in 2020 are single-family homes (70%) with multi-family units comprising another 23%, and mobile homes representing the remaining 7%. From 2010 to 2020, just one of the Region's towns (Baltimore) experienced increases in the number of housing units, illustrating a large decrease in housing units across the Region over the last decade. **Table 2.6** below illustrates how growth in total housing units in the Region's ten towns has varied.

The Region has a significant need for housing as discussed in the Housing Chapter. A third of homeowners are cost burdened and more than half of renters are cost burdened (see Table 2.7). Residents at risk of homelessness have increased, especially during the pandemic. New housing options, especially of the so called "missing middle" types, are needed to provide homes for residents aging in place, starter homes, affordable housing and workforce housing.

TABLE 2.6 HOUSING UNIT GROWTH BY TOWN							
Town	2000		2010		2020		
	Housing Units	% of Region	Housing Units	% of Region	Housing Units	% of Region	% Change 2000-2020
Andover	350	2.5%	408	2.6%	159	1.5%	- 54.6%
Baltimore	113	0.8%	100	0.6%	114	1.1%	0.9%
Cavendish	852	6%	1,323	8.5%	473	4.5%	- 44.5%
Chester	1,611	11.3%	1,793	11.5%	1,421	13.6%	- 11.8%
Ludlow	3,001	21.1%	3,285	21%	839	8%	- 72%
Reading	404	2.8%	448	2.9%	209	2%	- 48.3%
Springfield	4,232	29.8%	4,324	27.7%	4,227	40.4%	- 0.1%
Weathersfield	1,315	9.3%	1,427	9.1%	1,003	9.6%	- 23.7%
West Windsor	716	5.1%	799	5.1%	494	4.7%	- 31%
Windsor	1,611	11.3%	1,712	11%	1,524	14.6%	- 5.4%
Region	14,205	100%	15,619	100%	10,463	100%	- 26.3%

Source: *U.S. Census Bureau 2000-2010, (2020 ACS 5-Year Estimates (Table B25003 – Tenure)*

TABLE 2.7 COST BURDEN BY TOWN – OWNERS (WITH MORTGAGES) & RENTERS (2020)								
Town	Paying Less than 30% of Income		Paying 30-49.9% of Income		Paying 50% of Income or more		Percent Cost-Burdened	
	Owners	Renters	Owners	Renters	Owners	Renters	Owners	Renters
Andover	46	1	10	21	14	0	34%	95%
Baltimore	34	4	15	0	4	3	36%	43%
Cavendish	125	16	20	27	35	26	30%	77%
Chester	444	84	61	44	19	28	15%	46%
Ludlow	158	196	70	28	61	58	45%	30%
Reading	56	13	17	0	32	8	47%	38%
Springfield	982	460	395	272	156	408	36%	60%
Weathersfield	424	19	159	2	18	19	29%	52%
West Windsor	165	22	53	16	27	11	33%	55%
Windsor	296	291	137	224	42	102	38%	53%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B25091 – Mortgage Status By Selected Monthly Owner Costs as a Percentage Of Household Income in the Past 12 Months, Table B25070 – Gross Rent As a Percentage Of Household Income in the Past 12 Months)*

2. VACATION AND SECOND HOME DEVELOPMENT

In 2020, seasonal housing units made up roughly 38% of the Region's housing stock, with 3,961 total units. **Table 2.8** breaks down this number by town. From 2010 to 2020, the number of seasonal housing units in the Region jumped slightly, with an increase of 269 new seasonal units. From 2010 to 2020, 80% of the Region's towns' numbers of housing units increased, with only Baltimore and Springfield showing decreases. Due to the recreational opportunities Okemo Mountain Resort and the lakes region have to offer, Ludlow holds the largest number of seasonal units in the Region, at 2,197 as of 2020. West Windsor also shows an increasing trend, influenced in part by local efforts to expand recreational opportunities.

During the COVID-19 pandemic, many second home owners stayed in their vacation homes more permanently and many out-of-staters bought properties in the Region. It is not clear at this point the proportion of these individuals that will become year-round residents or move back to their primary homes elsewhere.

TABLE 2.8 SEASONAL HOUSING UNIT GROWTH BY TOWN (2020)

Town	2000	2010	2020	% Change 2000-2020
Andover	110	174	202	83.6%
Baltimore	3	7	0	- 100%
Cavendish	195	303	417	113.8%
Chester	261	317	453	73.6%
Ludlow	1,871	2,195	2,197	17.4%
Reading	94	142	152	61.7%
Springfield	150	134	64	- 57.3%
Weathersfield	103	102	118	14.6%
West Windsor	226	264	294	30.1%
Windsor	30	54	64	113.3%
Region	3,043	3,692	3,961	30.2%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B25004 – Vacancy Status)*

G. Transportation

1. TRANSPORTATION TRENDS

Because of the largely rural nature of Vermont, automobile transportation is essential to everyday life. This prominence of automobile use is evident when looking into the state's transportation statistics, as total vehicle miles traveled show a consistent increase from 2000 to 2010. The resulting wear and tear from this increased roadway traffic will require significant investment. However, these numbers dip back down in 2020 which could be the result of the COVID-19 pandemic and its effect on how often people were traveling, as more residents worked from home and avoided unessential travel, leading to less overall roadway usage.

TABLE 2.9 VEHICULAR TRANSPORTATION TRENDS IN VERMONT					
Category	**2000**	**2010**	**2020**	**% Change 2000-2010**	**% Change 2010-2020**
Population	608,827	625,741	624,340	2.8%	- 0.2%
Motor Fuel Use (Gal.)	411,065,000	388,998,000	323,840,199	- 5.4%	- 16.7%
Total Vehicle Miles Traveled	6,553,996,076	7,250,000,000	5,990,600,000	10.6%	- 17.4%
Automobile Registrations	388,773	290,000	193,407	- 25.4%	- 33.3%
Truck Registrations	137,611	271,544	384,462	97.3%	41.6%
Total Motor Vehicle Registrations	637,671	566,650	607,890	- 11.1%	7.3%
Total Miles of Highway	14,275	14,189	14,248	- 0.6%	- 0.4%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B01001 – Sex by Age), Federal Highway Administration (FHWA), Vermont Agency of Transportation (VTrans)*

A transportation system that safely and efficiently accommodates the mobility needs of commuters and businesses is essential to growing and strengthening the regional economy. Maintaining good access to major market areas by keeping existing infrastructure in good working condition and in addition to making freight, commuter, and tourist travel more efficient through intermodal connections is key.

Because the regional economy lags behind economic growth in Vermont and in the Upper Valley, a growing number of commuters will travel outside of the Region for employment, causing a spike in single-occupant vehicle use. In order to combat this upward trend, other modes of travel should be marketed and made available to employees by businesses. Infrastructure improvements such as expanded or new park-and-ride lots and increased fixed-route transit services would also provide commuters with cheaper and more efficient travel options.

2. Regional Commuting Patterns

According to the U.S. Census Bureau, in 2020 there were 6,626 residents in the Region who commute to work outside their town of residence, equating to 62%. Since 2000, the number of residents who live and work within the Region has decreased greatly, as more residents seek job opportunities outside their home towns. However, there has been an increase in the number of commuters coming into the Region from other areas to work. The traffic generated by these workers, particularly during peak hours, provides insight into the Region's commuter traffic

patterns. Public transportation providers within the Region have noted that since 2000, commuting has increased particularly between Springfield/Weathersfield and the Upper Valley.

TABLE 2.10 COMMUTING TRENDS IN THE REGION (2020)					
Town	**Total Employed**	**Residents who Work in Town of Residence**		**Residents who Work Outside Town of Residence**	
	2020	**2020**		**2020**	
Andover	186	43		143	
Baltimore	146	14		132	
Cavendish	592	150		442	
Chester	1,511	668		843	
Ludlow	779	469		310	
Reading	256	74		182	
Springfield	3,656	1,897		1,759	
Weathersfield	1,274	212		1,062	
West Windsor	566	61		505	
Windsor	1,730	482		1,248	
Region	10,696	4,070	38%	6,626	62%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B08009 - Sex of Workers By Place of Work - Minor Civil Division Level for Selected States [CT, ME, MA, MI, MN, NH, NJ, NY, PA, RI, VT, WI], Table B23025 – Employment Status for the Population 16 Years and Over)*

TABLE 2.11 COMMUTING TRENDS IN THE REGION (2010)					
Town	**Total Employed**	**Residents who Work in Town of Residence**		**Residents who Work Outside Town of Residence**	
	2010	**2010**		**2010**	
Andover	236	74		162	
Baltimore	118	15		103	
Cavendish	607	152		455	
Chester	1,719	895		824	
Ludlow	1,054	634		420	
Reading	373	56		317	
Springfield	4,381	2,303		2,078	
Weathersfield	1,423	258		1,165	
West Windsor	518	166		352	
Windsor	1,556	425		1,131	
Region	11,985	4,978	41.5%	7,007	58.5%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B08009 - Sex of Workers By Place of Work - Minor Civil Division Level for Selected States [CT, ME, MA, MI, MN, NH, NJ, NY, PA, RI, VT, WI], Table B23025 – Employment Status for the Population 16 Years and Over)*

CH 3: LAND USE

Brownsville from Mt. Ascutney

A. Background

Settlement and land use patterns are among the most crucial aspects of how a region functions and grows. This plan places an emphasis on those patterns that characterize our region. The most common settlement pattern is the compact center surrounded by rural countryside. This quintessential Vermont landscape is found throughout southern Windsor County. It is the reason many people choose to live here and is the foundation of the Vermont brand, which benefits many of our region's businesses.

In order to maintain this settlement and land use pattern, most of our region's growth and development will need to occur in or near existing centers, where there is already a built environment and infrastructure to accommodate it, or where traditional settlement patterns and infrastructure can be reasonably extended as needed to accommodate growth over time.

Water and wastewater solutions are needed in some existing centers, such as Perkinsville and Felchville that presently rely on on-site systems.

This goal will be met primarily through town plans and local land use regulations. Towns will need to continue setting the stage for their own land use and development through responsible planning that takes into account settlement and land use patterns in the area and the needs of current and future residents. This regional land use plan is intended to provide a guiding framework for coordinated land use planning and regulation at the municipal level. The Mount

Ascutney Regional Commission[1] (MARC) consulted our towns' existing municipal land use plans while formulating this regional plan. The regional land use plan seeks to develop policies that balance support for local land use goals and objectives with support for regional compatibility between communities. When reviewing future town plans, the MARC will consider whether local land use plans are consistent with this regional land use plan. In most instances, the policies of this plan will bolster and supplement those found in the current land use plans and regulations of southern Windsor County towns. Only in the case of a conflict between local and regional policies with regard to a regionally significant project, will this regional land use plan take precedence over a town plan.

The regional land use plan also has a role in state planning and regulation. Development activities that are subject to certain state permits need to demonstrate conformance with this regional land use plan.

As stated by the Vermont Climate Action Commission, global climate change is a fundamental threat to Vermont, to our economy, environment, and way of life. The regional land use plan seeks policies to adapt to become more resilient in face of the anticipated impacts of climate change. That includes making our community centers resilient and more attractive places to locate, promoting energy efficiency and energy conservation, and maintaining a rural working landscape that is connected, resilient and functioning. For more information and policies regarding this, see the natural resources and emergency management chapters and the enhanced energy plan for the region.

[1] The Southern Windsor County Regional Planning Commission (SWCRPC) officially changed the organization's name to Mount Ascutney Regional Commission (MARC) on January 1, 2021.

Land Use Goals

To maintain the historic settlement pattern of compact centers surrounded by a rural countryside. To achieve the desired future land use and development patterns, development in the region must positively contribute toward:

1. **Supporting a vibrant economy;**
2. **Providing infrastructure that supports the goals of this Plan;**
3. **Avoiding sprawl;**
4. **Maintaining viable farms and forests;**
5. **Encouraging energy conservation and climate adaptation;**
6. **Promoting flood resiliency; and,**
7. **Protecting sensitive ecological resources.**

B. Land Use Classifications

This land use chapter is formulated around six land use classifications that represent a progression from the least developed to the most developed areas in our region, as well as other more specialized land use categories, as shown on the Future Land Use Map. See the descriptions of each land use classification on the following pages.

In addition to the six land use classifications described above, the following other land use classifications that have special characteristics are also shown on the Future Land Use Map and described in more detail in the next section of this chapter:

SPECIAL USE AREAS

1. **RIPARIAN AREAS**
2. **RESORT AND RECREATIONAL AREAS**
3. **INTERCHANGE**
4. **COMMERCIAL NODES AND CORRIDORS**
5. **INSTITUTIONAL**
6. **INDUSTRIAL**

Conservation

Working Lands

Rural Residential

Hamlets & Village Centers

Residential Neighborhood

Town & Regional Centers

Least Developed

Most Developed

CONSERVATION. This land use classification includes lands that are protected from development through public ownership or conservation easements, as well as large blocks of forest land that are largely undeveloped. Some of these lands have physical constraints such as high elevations, steep slopes, or shallow soils. Much of the land is not readily accessible from year-round maintained roads. These factors combine to make these lands poorly suited for development.

Conservation lands are an essential element of our region's landscape and are part of the rural countryside this plan seeks to preserve. They provide ecological services – such as wildlife habitat, floodwater reduction, soil retention, carbon sequestration, recreation, and scenic beauty – that make them a valuable resource for our region. The recreational use of conservation lands contributes to the quality of life enjoyed by our region's residents and to the tourism industry that is a significant component of our regional economy.

The most suitable uses of conservation lands are wildlife habitat and nature preserves, forestry and agriculture, hunting and fishing, outdoor recreation and seasonal camps, environmental education, flood attenuation and groundwater recharge, and similar low-intensity uses that leave the land in a primarily undeveloped, natural state. Conservation lands are generally not appropriate for residential development or for extensions of infrastructure, including but not limited to roads and utilities, that would facilitate further development.

It is our vision that conservation lands will contribute to the environmental, social, and economic well-being of our region and will remain in a largely undeveloped state for the benefit and enjoyment of future generations. To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls intended to guide future residential development away from conservation lands and to limit forest fragmentation and development on land with significant natural resource constraints. On conservation lands, the overall density of residential development allowed is not to exceed 1 dwelling unit per 10 acres.

WORKING LANDS. This land use classification includes rural lands used for farming, forestry, resource extraction, renewable energy generation, and other resource-dependent land use activities. These lands generally remain in large tracts and large areas are actively managed for production. A significant portion of these lands have high quality soils that are necessary to support viable farming and forestry operations. This classification also includes undeveloped lands that are not readily accessible from year-round maintained roads or that may have physical constraints that make them poorly suited for development.

Farming and forestry are the foundation of our region's rural economy and maintain the working landscape that is valued by residents and visitors alike. Alongside conservation lands, working lands are an essential element of our region's character and are part of the rural countryside this plan seeks to preserve. Fragmentation and conversion of these lands to residential or other uses that are not resource-based weakens that foundation and our region's overall economic health. The proliferation of residential or other uses that are not resource-based also decreases the viability of traditional working land uses due to the potential for conflicts over off-site impacts of working lands such as odors, dust, noise, traffic, etc. The most suitable uses of working lands are agriculture and forestry, farm owner and labor housing, rural enterprises, resource extraction, renewable energy generation, outdoor recreation, hunting and fishing, environmental or agricultural education, wildlife habitat and nature preserves, flood attenuation, groundwater recharge, and similar land-based or resource-dependent uses.

It is our goal that the region's working lands will continue to be actively managed for rural production. To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls intended to guide future residential development away from working lands and to limit the conversion and fragmentation of productive farm and forest land. Where the goal is to maintain working lands, the overall density of residential development allowed is not to exceed 1 dwelling unit per 10 acres.

RURAL RESIDENTIAL. This land use classification encompasses rural areas where residential development has displaced farming or forestry as the primary land use. These areas may share many physical characteristics with the region's working lands, but more of the land has been subdivided into residential lots and is no longer configured to support larger- scale or intensive rural production. These areas may include farm and forest lands, but agricultural or timber management activities are more likely to be secondary income sources, hobby farms, or homesteading operations.

Through context-sensitive approaches to siting and design, housing can be accommodated in these rural settings in a manner that protects the productive, ecological, and/or scenic value of these lands provided that the overall density of development in the area remains low. There should continue to be a mix of undeveloped lands, working lands, and residential lands in this classification. Most of the region's new housing should not be located in rural residential settings, but should be guided into existing settlement areas or adjoining areas designated for future growth. The most suitable uses of rural residential lands are agriculture and forestry, rural enterprises, renewable energy generation, outdoor recreation, hunting and fishing, environmental or agricultural education, wildlife habitat and nature preserves, flood storage, housing, and similar low-impact uses.

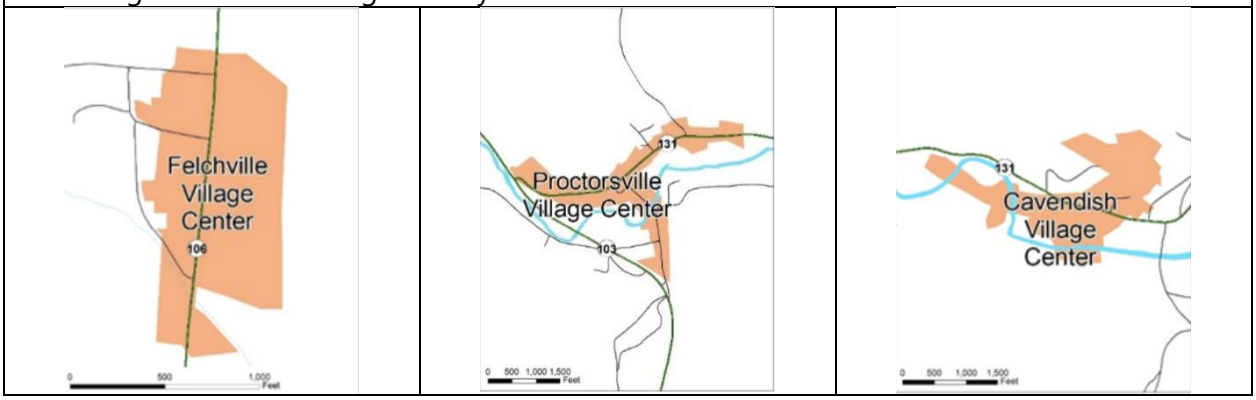
It is our vision that the rural residential areas throughout the region will continue to provide primarily single-family housing in a rural setting that maintains open space between developed sites and offers views of the surrounding natural or agricultural landscape. Accessory dwellings, two-family housing and co-housing are also suitable for rural residential areas. The development pattern will remain irregular (ex. variation in lot sizes and building design) and will respond to the topography and other natural features of the land. Given the absence or limited capacity of the public infrastructure (roadways, water, sewer) serving these areas, large-scale, high-density or rapid development that would significantly increase the amount of housing in these areas is not appropriate. To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls intended to discourage further encroachment of rural residential development into areas designated as working lands or conservation areas. Where the goal is to accommodate rural residential development, the overall density of residential development allowed should not exceed 1 dwelling unit per 2 acres, and local regulations should guide the siting and design of new homes in a manner that preserve rural character and open space.

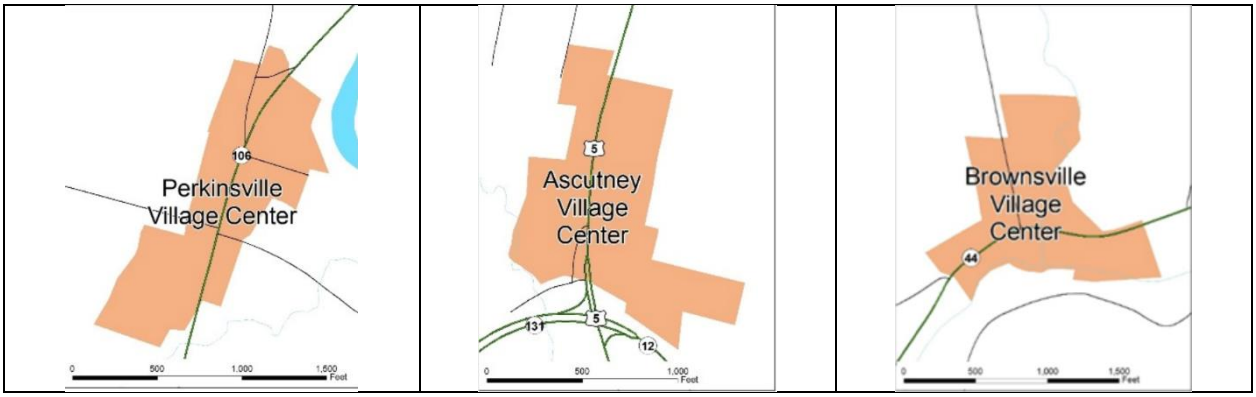
HAMLETS AND VILLAGE CENTERS. This land use classification recognizes the smaller traditional centers in our region that developed historically in locations with economic value such as sites with waterpower for mills, crossroads where travelers would stop, or railroad stations where agricultural products could be shipped to urban markets. They also served as the focus of community life with schoolhouses, churches, cemeteries, and other civic institutions that had to be located relatively close to where people lived prior to the advent of the automobile. Most of the hamlets have long since lost any economic activity or civic function and remain solely as small residential clusters. The village centers, alternatively, have often retained some level of commercial activity such as a general store or inn, and/or active civic functions such as a school, church, library, or grange hall.

Village Centers shown on the Future Land Use Map are generally consistent with the 2020 boundaries for the state-designated Village Centers as shown below. For those villages that do not presently have designation, the Future Land Use Map approximates a boundary for each community center.

Village Centers

Village Centers as designated by the Vermont Downtown Board





Many of these areas are suitable for infill development, more intensive use of existing buildings, and redevelopment of obsolete or abandoned structures or sites. The most suitable uses of hamlets and village centers are housing, small-scale commercial and light industrial uses, civic uses, and similar low-impact uses. Village centers may accommodate future growth and infill or redevelopment, while hamlets should remain in their current form and density without significant growth or change in the character or intensity of development.

Most of our region's town plans call for guiding future growth and development to their hamlets and village centers. However, the lack or limited capacity of water and/or sewer infrastructure constrains development potential within many of our region's hamlets and village centers. Many of the hamlets and village centers are located along streams or rivers and include lands, structures, and infrastructure that are at risk of flood-related damage. These challenges will need to be addressed to achieve the land use and settlement pattern envisioned by state, regional, and local plans.

It is our vision that the hamlets and village centers will retain their historic role and character as focal points in the rural landscape and major contributors to the sense of place and identity of the region's rural towns. Our hamlets and village centers will continue to be the hearts of their towns, hosting civic buildings and uses, and providing the gathering places that sustain a sense of community. The hamlets and village centers will remain compact with distinct edges, and will not sprawl into the surrounding countryside with scattered, low-density development along roadways. Historic buildings will be rehabilitated and/or adapted for new uses in a manner that maintains or restores their architectural integrity. New development will be designed and sited in a manner that is compatible with and reinforces the traditional built pattern. Where appropriate and feasible, infrastructure will be provided within hamlets and village centers to support higher intensity use of existing buildings and new infill development. The built environment in village centers will prioritize walking and bicycling over automobiles.

To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls to guide growth to hamlets and village centers to the maximum extent feasible and

appropriate given factors such as the availability of infrastructure and land suitable for development. To maintain, and extend as appropriate, the traditional settlement pattern, the overall density of residential development allowed should be at least 1 dwelling unit to the acre in hamlets and 2 dwelling units to the acre in village centers.

NEIGHBORHOOD RESIDENTIAL. This land use classification encompasses the traditional residential neighborhoods that extend out from our traditional downtowns and village centers. They feature primarily single- and two-family homes on small lots, although closer to the downtowns there is more diversity of housing types and multi-family housing. Many of these neighborhoods are served by municipal water and/or sewer infrastructure. They are pedestrian-oriented, featuring low-traffic neighborhood streets (often with sidewalks), and offer convenient access to the services and amenities located in our downtowns and nearby commercial areas. The cohesive and intact traditional development patterns create a strong sense of community in these neighborhoods.

It is the overall policy of this plan to guide most of the region's residential growth into existing settlement areas in and around the traditional centers. While these neighborhoods are largely developed, there remains some opportunity for appropriately scaled infill and modest densification within most existing neighborhoods and for development of new neighborhoods within areas served or planned to be served by municipal infrastructure. There is also a need for ongoing maintenance and rehabilitation of the older housing stock in many of these neighborhoods, particularly energy-efficiency improvements.

It is our vision that the neighborhood residential areas throughout the region will continue to function as they have historically – as high-density, primarily residential neighborhoods. The housing stock will be maintained and rehabilitated, as necessary. A limited amount of infill development will occur, but infill will be compatible with and not adversely affect the character or dramatically change the density of these neighborhoods. New neighborhood areas in proximity to existing centers may be created in a manner that logically extends the existing settlement pattern. The most suitable uses of neighborhood residential areas are housing, small-scale service and retail businesses that cater primarily to area residents, civic uses, and similar low-impact uses.

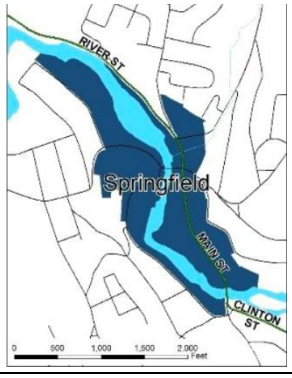
To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls to accommodate infill and modest densification in a manner that will not dramatically alter the character of these neighborhoods. To maintain, and extend where appropriate, traditional neighborhood development patterns, local regulations and other policies or actions should seek to maintain and/or improve building quality and energy-efficiency, front yards and greenspace, and sidewalks and streetscapes in order to contribute to the quality of life and character of these neighborhoods. The density of residential development allowed in neighborhood residential areas should range from 3 to 12 dwellings per acre on average.

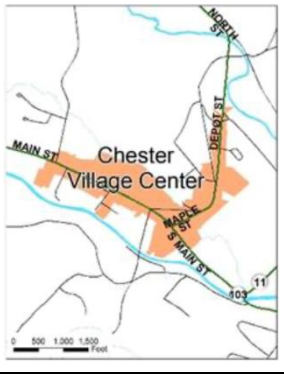
TOWN AND REGIONAL CENTERS. This land use classification includes the downtowns and commercial areas in our region's four larger centers – Chester, Ludlow, Springfield, and Windsor. These centers continue to serve – as they did historically – as employment and service centers for the surrounding towns. They feature traditional downtown business districts characterized by historic buildings and settlement patterns (multi-story buildings built at or close to the sidewalk), as well as commercial and mixed-use areas. These centers are largely served by municipal water and/or sewer infrastructure. The Town and Regional Centers shown on the Future Land Use Map are generally consistent with the 2020 boundaries for the state-designated Downtowns and the larger state-designated Village Centers as shown below.

Town and Regional Centers

Designated Downtowns

Designated Village Centers





Historically, there were distinct edges between these compact centers and the surrounding rural countryside. Auto-oriented development, particularly along the state numbered highways just outside the historic business districts and in some cases along the main streets within them, has frayed that traditional settlement pattern. As discussed in relation to the commercial nodes and corridors, the quality and character of the built environment in our downtowns and commercial areas can be preserved or enhanced through quality building and site design and the provision of streetscaping and sidewalks.

These centers have traditionally been and should continue to be the focus of growth and development in our region. They are suitable for infill development, more intensive use of existing buildings, and redevelopment of obsolete or abandoned structures or sites in a manner that is compatible with and reinforces the historic pattern, form, and character of the built environment. Revitalization of these town and regional centers is a primary goal of this plan.

It is our vision that town and regional centers will retain their historic role and character as traditional downtowns, and will be the focus of economic and community development. They will remain essential components of our region's sense of place and identity, and will host the civic uses and gathering places that sustain a sense of community. Town and regional centers may be used for a mix of commercial, industrial, civic, and high-density residential uses. The town and regional centers will remain compact with distinct edges and will not sprawl into the surrounding countryside with low-density and/or auto-oriented development along the highways that would undermine the economic viability of downtown businesses. Historic buildings will be rehabilitated and/or adapted for new uses in a manner that maintains or restores their architectural integrity. New development will be designed and sited to be compatible with and reinforce the traditional built pattern. Town and regional centers will be places where people can enjoyably and safely walk and bike – they will be designed for people rather than cars.

To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls to guide future growth and development into the traditional centers. To maintain the traditional settlement pattern and encourage infill development, the overall density of development allowed should be at 4 dwelling units to the acre or higher. Local land use regulations should ensure that, in the downtown business districts, development will generally be in the form of mixed-use, multi-story buildings. These buildings should be built at or close to the edge of the sidewalk, with retail and service uses on the ground floor and office or residential uses above. Off-street surface parking will be located to the rear, side, or below buildings. While in commercial corridors, there may be single-use and single-story buildings that house retail, service, or light industrial uses that, due to their scale or character, are not well-suited to locating downtown. As these single-use, single-story buildings redevelop, it is expected that they take measures to better fit the intent of the location (e.g. add greenspace or landscaping, modify the building articulation, or increase building height). All new structures

within town and regional centers must be built to last with quality materials and architectural details that are compatible with nearby historic structures.

C. Special Use Areas

This land use chapter takes into account other future land use areas in our region that have special characteristics. These special use areas are shown on the Future Land Use Map.

RIPARIAN AREAS. The riparian areas serve as an overlay land use category, and include land along rivers, streams, lakes, ponds, and wetlands throughout our region. These areas have soil and vegetation characteristics that are strongly influenced by the presence of water and that distinguish them from surrounding lands. Historically, flooding, and the eroding and depositing of sediment that results, was the predominate force shaping riparian areas. Now, human activities such as damming or channelizing streams, filling or draining wetlands, clearing streambank vegetation, and constructing impervious surfaces has altered, and in many cases adversely impacted, the natural dynamics and functions of riparian areas. Healthy riparian areas provide multiple benefits to our region such as:

- Helping control nonpoint source pollution (run-off from developed lands) by holding and using nutrients, and reducing the amount of sediment entering our surface waters;
- Offering recreation opportunities and contributing to the scenic beauty of our landscape;
- Supplying food, cover, and water for a diversity of animals and serving as migration and travel routes between habitats for a variety of wildlife;
- Reducing downstream floodwater velocity, erosion, and sedimentation, and flood peaks; and,
- Maintaining the water table and the base flow of streams and rivers.

It is our vision that riparian areas outside the developed areas of the region will remain largely undeveloped and naturally vegetated to preserve their critical ecological and flood mitigation functions. The most suitable uses of lands within riparian areas outside our downtowns and village centers are wildlife habitat, outdoor recreation, environmental education, flood attenuation and groundwater recharge, and similar low-intensity uses that leave the land in a primarily undeveloped, natural state. Little new development other than water-dependent structures such as bridges or passive recreation amenities, such as trails, will occur within

riparian areas. Existing development within riparian areas subject to damage from inundation or fluvial erosion will be flood-proofed or removed as most appropriate to reduce the risk to life and property. Rivers and streams will be reconnected to their floodplains and allowed to move naturally within their corridors to the maximum extent feasible given the location of existing infrastructure and development.

Within the developed areas of the region, it is our vision that riparian areas will be transformed into community amenities that provide recreational opportunities, are visually attractive, and serve as green infrastructure to the maximum extent feasible. The substantial investment in public infrastructure and private development within riparian areas will be safeguarded to the maximum extent feasible through flood-proofing and upstream flood attenuation and mitigation efforts.

RESORT AND RECREATION AREAS. This category also serves as an overlay, and identifies locations that were intensively developed primarily for recreational or seasonal use. Examples include the Okemo Mountain Resort and nearby seasonal homes in Ludlow, the public recreation areas on Mount Ascutney, and the densely developed summer home communities around Lake Rescue and Lake Pauline, also in Ludlow. These are areas with

significant natural amenities that bring visitors and seasonal residents to our region, as well as enhance the quality of life for year-round residents. Careful planning is needed to balance development of the facilities and amenities needed to support a four-season tourism industry with preservation of the features and natural settings that are essential to attracting visitors.

The most suitable uses of resort and recreation areas are recreational uses, particularly those that extend the season, diversify offerings, and/or connect recreational facilities. Other tourism- and recreation-supporting uses, such as dining, lodging, vacation homes, recreation equipment rentals, guide services, and transportation providers, are also suitable provided they remain within compact areas designated for residential and/or commercial uses. However, MARC encourages, and will assist its resort communities to build strong, mutually beneficial ties between tourist destinations and nearby downtowns and village centers. One way to achieve that objective is to limit the amount of non-recreation, commercial development in resort and recreation areas and guide more of those uses to nearby downtowns or village centers.

It is our vision that the region's resort and recreation areas will support a tourism industry that will continue to attract visitors and seasonal residents by offering a variety of recreational opportunities throughout the year. They will continue to enhance the quality of life enjoyed by our region's residents and will remain essential components of the sense of place and identity in their host communities. Trail networks and other recreational amenities will be added, improved, expanded, and/or interconnected for the benefit of residents and visitors alike. Future commercial or residential development within resort and recreation areas will remain compact and will be thoughtfully sited and designed with a context sensitive approach to not degrade the scenic beauty, natural resource base and unique sense of place that our tourism industry depends upon.

INTERCHANGE AREAS. This category also serves as an overlay, and includes land around Interstate 91 Exits 7 and 8. These interchanges create opportunities and challenges for their communities and our region with respect to land use and economic development. Interchanges attract development that, if not properly planned, can have adverse impacts on the economic viability of traditional centers, traffic safety and congestion, environmental quality and natural resources, and scenic character.

With good planning and land use regulation, interchange areas can be attractive, efficient community assets that are developed in a manner that is integrated and compatible with the surrounding landscape, and that efficiently provides necessary services to travelers and residents. The most suitable uses of interchange areas are businesses that provide necessary services to the traveling public or that are otherwise transportation-related (transit or trucking providers, for example). Redevelopment and infill of previously developed sites is preferred over greenfield development (i.e. development on previously undeveloped sites).

It is our vision that the interchanges will be attractive gateways to the region that provide necessary traveler services while establishing a distinctive sense of place, minimizing congestion, and avoiding unsafe traffic conditions. They will not be characterized by a pattern of low-density, auto-oriented sprawl. While the interchanges may offer traveler accommodations and services, businesses will not compete with commercial activities within the downtowns or village centers. Efforts will be made to entice visitors into the region's downtowns and village centers where most of the dining, lodging, and similar uses will be located. Existing development sites will be retrofitted or redeveloped in a manner that increases their economic value, enhances their visual appeal, and improves the quality of buildings and site design elements. To achieve

this, MARC will encourage and assist towns to enact effective land use plans and controls to manage the amount, type, and scale of commercial activity that may occur at the interchanges and to promote high-quality site and building design.

COMMERCIAL NODES AND CORRIDORS.

This land use classification includes locations outside of traditional centers that have been developed for commercial and light industrial uses, primarily since the 1960s. This development pattern arose in response to transportation and economic changes that led many customer-oriented businesses to cater to motorists and locate along major roadways. This development pattern is now commonly referred to as sprawl and is often viewed as undesirable in a planning context. Strip development and sprawl is a problem of our own making; it has been cheaper to design, easier to finance, faster to permit, and less complicated to build than compact, walkable, mixed-use development in our traditional centers.

These areas are often the gateways into our traditional centers that create the first impression of a community for travelers. While the services provided in these areas are often essential to the community and region (automobile dealers, for example), this development pattern undermines our basic land use goal of maintaining compact downtowns and village centers surrounded by rural farm and forest lands. This plan recognizes that our region's commercial nodes and corridors are serving an important economic function that can be distinguished from, and complementary to, the function of the commercial districts within our traditional centers. To further state planning goals, it is a policy of this plan to mitigate or avoid many of the issues associated with sprawl – such as poor access management, excessive signage, lot frontages dominated by pavement, lack of sidewalks, and low-quality, generic, single-purpose buildings – through appropriate site planning and design.

Targeted land use planning and regulation can encourage transformation of these areas from single-use, car-dominated development into attractive, mixed-use, pedestrian-friendly development. (See the illustrative images in the next section that demonstrate the intent of this statement.) Many of these locations, particularly those that are served by existing water and/or sewer infrastructure, are suitable for redevelopment. Existing development sites in commercial nodes and corridors often present the potential for more intensive use in a manner more consistent with our land use goals. Redevelopment should transform these areas through improved access management and site design, provision of streetscaping and sidewalks, and

construction of higher-quality, distinctive, multi-purpose buildings. Redevelopment and infill of previously developed sites is preferred over further greenfield development.

It is our goal that the region's commercial nodes and corridors will be transformed to function efficiently and adapt to changes in transportation modes, economic trends, and lifestyle preferences over time; and that a pattern of low-density, auto-oriented sprawl will not expand further into the region's rural areas. Existing development sites will be retrofitted or redeveloped in a manner that increases their economic value, enhances their visual appeal, and improves the quality of buildings and site design elements. Where appropriate and feasible, infrastructure will be improved or provided to support higher intensity use in these already developed areas. The commercial nodes and corridors will become places that people can safely walk and bike around as well as drive to.

To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls to guide businesses of different types and scales to the appropriate location – downtown or village center vs. commercial node or corridor – and to promote high-quality site and building design. The most suitable uses of commercial nodes and corridors are larger-scale or land-intensive commercial and light industrial uses that are not compatible with the scale, settlement pattern, and pedestrian-orientation of our traditional downtowns and village centers and multi-unit housing located in proximity to employment, services, and transit. Where deemed desirable, commercial nodes and corridors may be designated for mixed-use (residential and commercial) development.

INSTITUTIONAL. This land use classification encompasses several sites and facilities throughout the region that are dedicated to public or quasi-public purposes such as airports, prisons, schools, and hospitals. These lands provide essential services or serve necessary civic functions, and most are likely to continue to do so. Many feature purpose-built structures that have unique characteristics and/or are considered local landmarks.

It is our vision that most of these sites and facilities will continue in their current use, potentially with some upgrades or expansions over time, as necessary. If a special use site or facilities will no longer be used for a public or quasi-public purpose, this plan encourages its adaptive re-use in a manner that will be beneficial to the host community (provide needed housing or employment opportunities, for example) and contribute to the tax base.

INDUSTRIAL AREAS. This land use classification encompasses areas developed or designated for industrial use. Industry, particularly the machine tool industry in the Precision Valley, was a defining force that historically shaped land use and development patterns in parts of our region. Today, industry in our region tends to be smaller-scale and more diverse, increasingly based on local or artisanal products and the "Vermont" brand, with less visibility and impact on surrounding lands. Industrial lands remain a critical economic development asset, particularly those with access to infrastructure (water, sewer, three-phase power, fiber optic lines, etc.) and to highway, rail, or air transportation.

This plan supports the full and efficient utilization of designated industrial areas to support and grow the regional economy by attracting and retaining quality businesses that create jobs and operate without adversely impacting surrounding land uses or the environment. The most suitable uses of industrial areas are larger-scale or higher-impact commercial and industrial uses that need larger sites or specialized facilities or infrastructure, or that generate substantial truck traffic or have other off-site impacts that require them to be buffered from residential neighborhoods and our downtowns and village centers. Redevelopment and infill of previously developed sites is preferred over greenfield development.

This plan also recognizes that the types of industrial uses occurring in the region have evolved away from heavy manufacturing towards artisanal or high-tech production. Smaller-scale and lower-impact industrial uses may not necessarily need to be in separate zones, and may be appropriate in mixed use areas. Similarly, traditional industrial sites such as mills or warehouses in our downtowns and village centers may be suitable for adaptive re-use – whether as housing or mixed-use commercial space.

It is our vision that the region's industrial areas will retain their economic role and function principally as sites for industrial and non-retail commercial uses. Underutilized industrial sites, particularly those with good access to infrastructure and transportation networks, will be revitalized and adapted for new employment generating activities. Where appropriate and feasible, infrastructure will be improved or provided to support higher intensity use in these already developed areas. To achieve this, MARC will encourage and assist towns to enact effective land use plans and controls to guide industrial and other compatible commercial uses to these areas, and to guide residential and retail uses that are not compatible with industrial activities away from these areas.

D. Development Standards

Development Standards are intended to direct how future development and redevelopment can occur in ways that will achieve the goals in this Regional Plan. (See the discussion on Substantial Regional Impact in Chapter 11 for more detail and implications for Act 250 proposals.) Unless otherwise specified, each standard applies to all future land use categories. The term "compact centers," used in the land use goal and development standards, generally includes the more developed portions of the region: Town and Regional Centers, Hamlets and Village Centers, and often Residential Neighborhoods. The term "rural countryside" includes the least developed areas: Conservation, Working Lands, and Rural Residential areas.

1. Land development will be consistent with the Future Land Use Map and the corresponding Land Use Classifications. Table 3.1 summarizes the future land use category descriptions, but the future land use map and full narrative descriptions should be referred to for the full meaning of the future land use plan for this region.

TABLE 3.1: SUMMARY OF FUTURE LAND USE CATEGORIES

Category	Density	Description
Town and Regional Centers	Highest: 4 units per acre or higher	Historic, traditional, compact, larger community centers; Focus of economic and community development; Mix of commercial, industrial, civic, and high-density residential uses; Served by infrastructure; Designed for people rather than cars.
Neighborhood Residential	High: 3 to 12 dwellings per acre	Dense, walkable residential neighborhoods surrounding a larger community center; Served by municipal infrastructure; Where new housing is desired.
Hamlets and Village Centers	Moderate: 1 dwelling unit to the acre (Hamlets); 2 dwelling units to the acre (Village Centers)	Historic, traditional, compact, smaller community centers; Focal points, hearts of their towns; Mix of residential uses, smaller-scale commercial, civic buildings, gathering places that sustain a sense of community; Infrastructure is present or desired to support compact settlement patterns.

Rural Residential	Low-Moderate: 1 dwelling unit per 2 acres	Minimize development impacts to maintain rural countryside/rural character; Provide primarily single-family housing in a rural setting that maintains open space between developed sites and offers views of the surrounding natural or agricultural landscape.
Working Lands	Very Low: 1 dwelling unit per 10 acres	Actively managed portion of the rural countryside/working landscape; Avoid fragmentation of productive farm and forest lands; Sustain the rural landscape and traditional rural way of life.
Conservation	Very Low: 1 dwelling unit per 10 acres	Least developed portion of the rural countryside; Contribute to the environmental, social, and economic well-being of our region; Remain in a largely undeveloped state for the benefit and enjoyment of future generations.
Industrial Areas	Variable	Larger-scale or higher-impact industrial and non-retail commercial uses; Specialized facilities or infrastructure; Off-site impacts that require them to be buffered from residential neighborhoods and community centers.
Commercial Nodes and Corridors	Variable	Transform from single-use, car-dominated development into attractive, mixed-use, pedestrian-friendly development; Larger-scale or land-intensive commercial and light industrial uses that are not compatible with community centers; New multi-unit housing in proximity to employment, services, and transit.

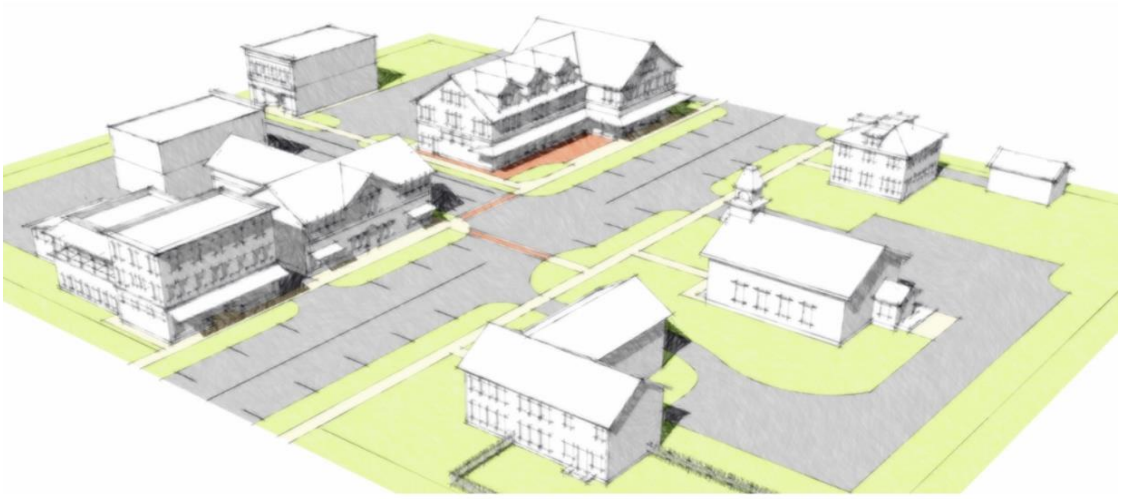
Institutional	Variable	Public or quasi-public uses (e.g. airports, prisons, schools, and hospitals); Expected to continue in their current use; Adaptive re-use may be appropriate if it is beneficial to the community.
Resort and Recreation Areas	Variable	Support a successful tourism industry throughout the year; Development will remain compact and designed and sited in a context sensitive approach.
Interchange Areas	Variable	Attractive gateways to the region; Provide necessary traveler services.
Riparian Areas	Variable	Largely undeveloped, vegetated riparian areas outside of existing developed areas; Allow flexibility within developed areas (e.g. Compact Community Centers, Commercial Nodes and Corridors) to accommodate green infrastructure along with recreation facilities, maintenance of existing infrastructure and redevelopment of existing structures.

2. It is desirable that Municipal and other government buildings are located within **compact centers** in order to maintain and encourage the vitality of downtown and village areas, unless they do not allow for public visitation (e.g. water and wastewater facilities) or by their nature they need to be elsewhere (e.g. a shelter in the town forest).

3. Any land development occurring within **compact centers** must be compatible with the traditional settlement pattern, including the location, form, and scale of buildings in relation to the street and to each other.

NOT THIS: SUBURBAN PATTERN

THIS: TRADITIONAL NEIGHBORHOOD PATTERN



THIS: SHARED PARKING LOCATED TO THE REAR OR SIDE OF BUILDINGS WITH CROSS ACCESS BETWEEN LOTS

4. Subdivisions in **neighborhood residential areas** or in areas **adjacent to compact centers** must be designed to follow and extend traditional neighborhood development patterns. To achieve this, new or extended neighborhoods should feature small, generally narrow lots of varying size and frontage accessed by a network of interconnected streets. Houses should be located close to the street with shallow front yards. Porches, low fences, street trees and/or front yard landscaping should be used to create an attractive, walkable streetscape. Suburban-style subdivisions that feature a regular, consistent pattern of lots, a limited number of building designs, excessively wide streets or driveways, and/or cul-de-sacs are discouraged.

5. Off-street surface parking in **compact centers** must be located to the side or rear of buildings and not between the building and the street. Where lots are devoted entirely to parking or existing front parking cannot feasibly be eliminated or relocated, it should be separated and screened from the sidewalk and/or street with landscaping and/or decorative fencing.

6. New or reconstructed streets within **compact centers** must be designed to safely accommodate pedestrians and bicyclists to the maximum extent feasible.

7. As an element of any proposed land development, sidewalks within **compact centers** must be extended and repaired as necessary to safely accommodate pedestrians and to be accessible for all users.

8. Sites in **compact centers** as well as in **interchange areas** and **commercial nodes and corridors** must be designed to enhance the aesthetic character of the street or highway through well-designed signage, streetscaping and front yard landscaping, parking and service areas, and buildings.

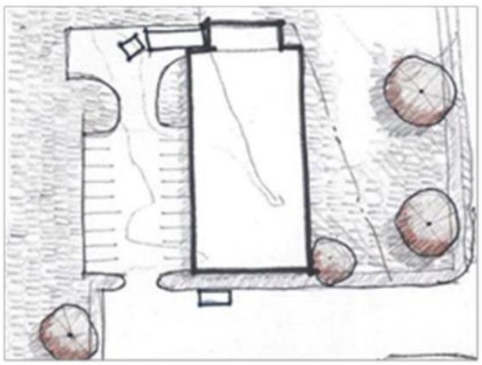
THIS: FRONT PARKING SCREENED TO ENHANCE THE STREETSCAPE

9. Expanses of asphalt must not dominate the view from the street or highway in **compact centers**, **interchange areas** and **commercial nodes and corridors**. Large parking areas must be screened and landscaped, broken up into smaller units divided by landscaping, and/or located to the side or rear of buildings.

10. When any previously developed sites are modified substantially, access management and stormwater management must be upgraded as necessary to meet current standards.

11. Site plans within **commercial nodes and corridors**, **interchange areas**, and **industrial areas** must implement access management techniques such as shared drives, cross access, parallel service drives to the maximum extent feasible given physical conditions and existing development patterns on the site and adjacent lots.

Not This: Typical "Big Box" design



This: Building façade oriented to the street, parking to the rear of the building, sidewalk connections to the existing sidewalk, street trees.

12. New site plans within **commercial nodes and corridors**, **interchange areas**, and **industrial areas** must include sidewalks and other facilities as appropriate to the location that accommodate multi-modal travel. Extension of sidewalks, multi-use paths and/or bike lanes along major corridors is strongly encouraged to facilitate connections between commercial sites and to nearby downtown / village center areas and residential neighborhoods.

13. New uses to be established in the **interchange areas** will be limited to those that do not compete with allowed businesses in a compact center unless it caters to visitor or traveler's services.

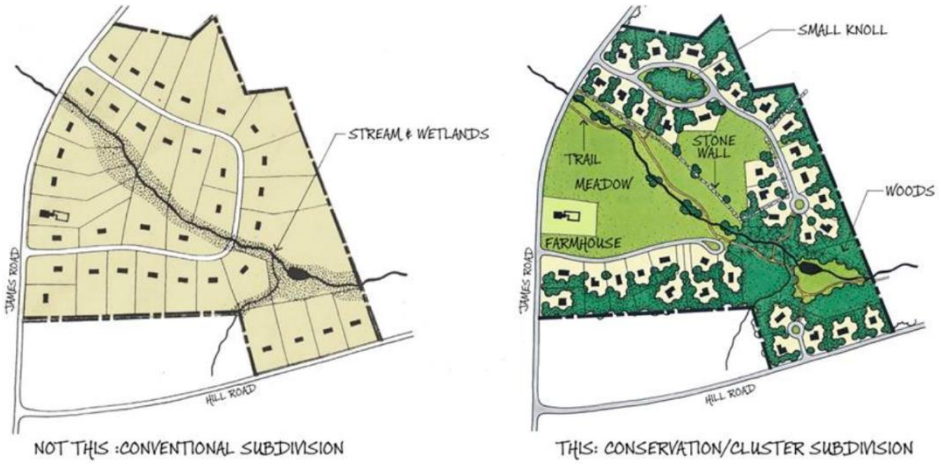
14. **Resort and recreation areas** will have transit service linking them to nearby downtowns or village centers.

15. Land development in the **rural countryside** must be sited and designed to minimize fragmentation of priority forest blocks and habitat connectors, and to minimize adverse impacts on natural resources and the ecological services they provide, including but not limited to, wetlands, floodplains, river corridors, rare, threatened and endangered species, significant natural communities, elevations above 2,500 feet, and slopes steeper than 25%.

16. In **conservation** and **working land areas**, developments on slopes between 15- 24% will be designed and located on the site to minimize adverse erosion and storm water impacts by incorporating Low Impact Development (LID) or other strategies, including:
    a. Development of a lot or site shall require the least amount of site disturbance and reduce the lot coverage and building footprints as much as possible in order to maintain the natural hydrologic processes and reduce the volume and water quality impacts of the proposed development.
    b. Roads, driveways, buildings, and utilities are encouraged to be located on the flattest portions of the site.
    c. Minimize crossing steep slopes with roads and driveways and lay them out to follow topographic contours to minimize soil and vegetation disturbance.
    d. Minimize the length of driveways.
    e. Reduce the total length of residential streets by examining alternative street layouts to determine the best option for increasing the number of homes per unit length.
    f. The scale of development will not exceed the development capacity of the site.

17. Resource extraction operations must be designed and managed to avoid, minimize or mitigate (listed in preferential order) impacts to natural resources, transportation facilities and nearby land uses. Applications for new or expanded extraction operations must at a minimum include: an erosion control and stormwater management plan to ensure that the operation will not result in sedimentation of nearby surface waters and wetlands, or other impacts to water quality, adjoining property and public infrastructure downslope from the site; a landscaping plan that maintains existing mature vegetation or establishes naturalistic plantings to screen the operation as viewed from public vantage points and nearby property; and a reclamation plan to return the site to a condition suitable for other land uses allowed on the site.

18. Rural enterprises, such as value-added processing and direct marketing of farm and forest products, that support the economic viability of keeping farm and forest land in productive use are encouraged. Rural enterprises must be similar in scale and intensity to traditional farming or forestry operations, and must not result in undue off-site impacts, such as noise or traffic, (that are not customary) in the immediate area. Rural enterprises must have a direct and significant connection to local farming and forestry operations, and should not be dependent on importing non-local agricultural or forest products.



19. Any residential development occurring in the **rural countryside** must be sited and designed to minimize conversion and fragmentation of productive land, and to protect rural character. To achieve this, thoughtful site designs that cluster house lot (e.g. conservation subdivisions), locate homes off the land best suited for farming or forestry, and preserve open space are preferred, as is use of shared driveways and other infrastructure. Suburban-style subdivisions that feature a regular, consistent pattern of lots, a limited number of building designs, excessively wide streets or driveways, and/or cul-de-sacs are not consistent with our region's rural character.

20. Any new or expanded transportation facilities or utility infrastructure in the **rural countryside** must be located within existing corridors to the maximum extent feasible. When a new corridor is the only feasible option, it must be sited and designed to follow the natural grade and existing contours to the maximum extent feasible, and to minimize the amount of soil disturbed, forest canopy opened (both during and after construction), land taken out of production, and impervious surface created.

21. Water and wastewater infrastructure provided along state highways and Class 2 town highways **outside of existing compact centers** should not encourage or facilitate sprawl.

22. New development must manage all run-off from developed areas through green stormwater management practices to the maximum extent feasible given the physical characteristics of the site, and previously developed sites must be retrofit as necessary and feasible to provide improved stormwater management.

23. Preservation, rehabilitation, and adaptive re-use of historic buildings in a manner that preserves their architectural character is strongly encouraged.

24. Rehabilitation and re-use of structurally sound buildings listed in the national or state registers of historic places, or listed as a contributing structure within a historic district, is preferred whenever feasible and such buildings generally should not be demolished unless the property owner demonstrates that the demolition is part of a redevelopment plan for the property that will have significant community or economic development benefits.

25. To promote flood resilient communities:
    a. New development in the floodway area is prohibited.
    b. New development in river corridor areas within compact centers must not exacerbate or divert the flow of flood waters, increase the risk of fluvial erosion hazards, and endanger the health, safety and welfare of the public or of riparian

owners during flooding. All other new development in river corridor areas will be avoided.

c. Any modifications to existing development in identified floodway and river corridors will maintain the existing distance between the existing primary building and the top of bank[2].
d. When rebuilt, substantially damaged structures in floodway or river corridors shall relocate to a location on the lot that is outside of the floodway or river corridors. If no such location on that lot exists, the structure must be relocated as far away from the hazard area as possible.
e. New development in identified floodway fringe (i.e. floodplain) areas will locate on a portion of the lot that is outside of the floodway fringe hazard area. If no such location on that lot exists, the structure must be located as far away from the hazard area as possible.
f. Development in identified floodway fringe (i.e. floodplain) areas will not significantly increase the peak discharge of the river or stream within or downstream from the area of development and endanger the health, safety, or welfare of the public or riparian owners during flooding.
g. The capacities of drainage channels and detention facilities will be maintained, and substantial reductions in flood storage through wetland destruction must be avoided.
h. The protection and restoration of floodplains, and upland forested areas[3] that attenuate and moderate flooding and fluvial erosion should be encouraged.
i. New berms that restrict rivers and streams access to adjacent wetlands and floodplains are prohibited, unless warranted to protect public safety. Efforts to improve river and stream access to adjacent wetlands and floodplains shall be made as appropriate based upon hydrologic studies.

26. When any alternative exists, developments will not be sited on soils that are susceptible to flooding or on soils that are not suited for foundations and/or septic systems.

[2] "Top of bank" refers to the point along a stream bank where an abrupt change in slope is evident, and where the stream is generally able to overflow the banks and enter the adjacent floodplain during flows at or exceeding the average annual high water stage.

[3] Upland forested areas are described in the Flood Resilience section of this Plan

CH 4: COMMUNITY UTILITIES AND FACILITIES

In the Mount Ascutney Region there are numerous infrastructure systems and other public services that are essential to the health and welfare of our citizens, the functioning of communities, and to support the economy. This includes such things as water and wastewater systems, communication technologies, electricity, solid waste management, health and human services, emergency services, and other civic facilities and services. Transportation facilities and services are addressed separately in Volume 2 of this Plan.

The purpose of this chapter is to document existing facilities and services; evaluate how they support or could better support local, regional, and state planning goals; and to identify priority investments. Vermont's planning goals (24 V.S.A. §4302) seek "to maintain the historic pattern of compact village and urban centers separated by rural countryside." A critical focus for this chapter is planning how the existing facilities and services should be changed to better serve community needs as well as to support this land use goal. For example, villages without adequate water or wastewater systems will continue to struggle with village revitalization efforts and support affordable housing developments.

Utilities and Facilities Goals

To plan for and provide public facilities and services that meet the current and future needs of the Region and its individual towns and villages. To accomplish this in such manner that maintains the historic settlement pattern of compact centers surrounded by a rural countryside and supports and promotes the economic vitality and development goals of the individual communities and those of the Region. To achieve this goal we will:

1. **Promote public water and sewer infrastructure in community centers and other areas designated for growth in the Regional Plan and municipal plans.**
2. **Facilitate and support broadband improvements so that every household in the Region has access to a fast, efficient and affordable broadband connection at speeds of 100mbps (upload)/100mbps (download).**
3. **Provide other public facilities and services – such as solid waste, health and safety, communications, and educational services – to all inhabitants of the Region in a financially sustainable, energy efficient, and equitable manner.**
4. **Maintain, enhance, and promote recreational, entertainment, and cultural opportunities for all residents of and visitors to the region.**
5. **Promote and support efforts to meet the demand for quality, safe, and affordable child care across the Region. (See also Economic Development and Health Chapters goals and policies)**

A. Electricity, Water, and Sewer

The efficient use of community water and sewer services, and electricity, is vital to the health and welfare of regional residents. The placement and use of these services (and of the transportation network) often determine the character and development patterns of a town. Therefore, towns should carefully plan the placement of service lines to correspond to the areas in which they would most like to see development occur.

1. Electrical Transmission

TABLE 4.1 ELECTRICAL TRANSMISSION SERVICE PROVIDERS BY TOWN

Towns	Electric Service Providers	
	Ludlow Electric	Green Mountain Power
Andover		X
Baltimore		X
Cavendish	X	X
Chester		X
Ludlow	X	X*
Reading		X
Springfield		X
Weathersfield		X
West Windsor		X
Windsor		X

Electric transmission service in the Region is provided by the Vermont Electric Power Company (VELCO). Electric distribution service is provided by Green Mountain Power (GMP) and the Village of Ludlow Electric Light Department. (Electricity producers are discussed in the Energy Chapter.) Electricity, like water and sewer, is an important service for present and future development. The provision of electric utility services enables developers to plan for building structures and developing land at significant cost reductions and increased efficiencies. It is therefore important to place transmission lines and substations in areas that have been designated as desirable for growth.

Transmission lines transport electricity from various generators to customers through switching stations and substations. The larger network of transmission lines and stations are referred to as "the grid." In 2011, a VELCO Connecticut River Valley Study revealed deficiencies in the Coolidge to Ascutney transmission line. Efforts are ongoing to address these issues.

Customers can help defer costly transmission line upgrades and the construction of new power plant capacity through the use of energy efficient appliances and by taking measures to reduce their electricity use during peak demand periods. Other demand side management efforts include encouraging "green buildings," siting new houses to maximize solar advantage,

decentralized energy production such as generating electricity for individual residential or commercial buildings, or through energy conservation measures. (See the Regional Energy Plan, Volume 3 for conservation strategies.)

Power generating facilities and electrical transmission facilities are approved by the Public Utility Commission (PUC) under 30 V.S.A. §248 (Section 248). Projects subject to Section 248 review, including net-metered private wind turbines, are exempt from local regulations. However, the impacted municipality and regional planning commission may participate as interveners in the proceedings. Under Section 248 review process, projects are evaluated to determine if they serve the general public good and if they are consistent with the Regional Plan. In 2018, MARC's Energy Plan received a Certificate of Energy Compliance from the Vermont Public Service Department, granting the Plan "substantial deference" in Section 248 proceedings. See the **Regional Energy Plan** for more.

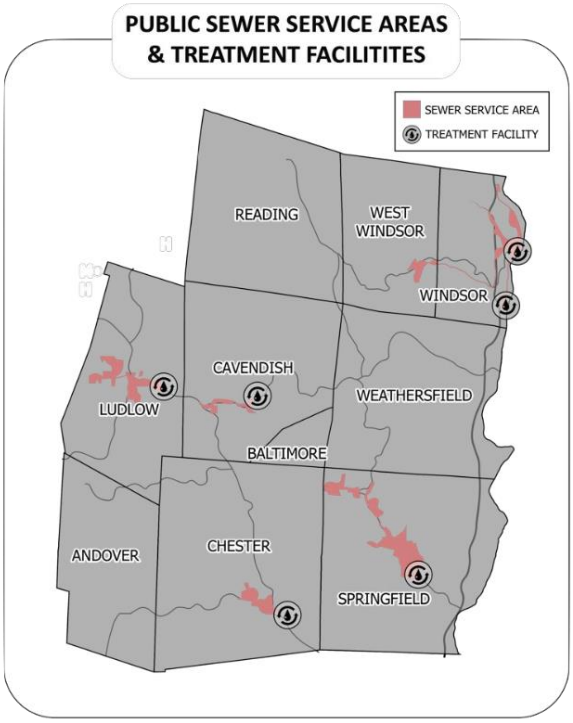
2. Community Water and Sewer Service

Availability of community water and wastewater service is essential to meet Vermont's planning goal to maintain compact centers and a rural countryside. Regional centers listed in the Land Use chapter of this Plan were chosen largely because of their proximity to existing services, or potential for the efficient creation of new or expanded systems. These centers represent the Region's highest priorities for directing growth through the creation of additional municipal water and wastewater capacity. (See the Land Use chapter for more on smart growth, growth centers, and sprawl.)

TABLE 4.2 MUNICIPALLY OWNED PUBLIC WATER SUPPLIES IN THE MOUNT ASCUTNEY REGION

Town/System Name	Population Served[4]
Cavendish & Proctorsville Villages	950
Chester Village	3,200
Ludlow Village	2,818
Springfield	9,800
Windsor	2,350
Ascutney Fire District #2	485

[4] Source: Vermont Water Supply Division; SDWIS Program, August January 2021.



Apart from the Clean Water State Revolving Loan Fund,[5] limited public infrastructure funding opportunities mean that small communities are often limited in their ability to encourage dense, mixed-use development in villages not currently served by water and wastewater facilities. For this reason, the American Rescue Plan Act (ARPA) presents a unique opportunity for towns to invest in water and sewer infrastructure. Lack of shared or centralized water or wastewater service make the further growth of many villages in the Region difficult or impossible. Perkinsville and Felchville both face challenges due to a lack of public water and wastewater services. While Ascutney Village does have a public water system, lack of a public wastewater system limits further growth. Currently, Cavendish, Chester, Ludlow, Springfield, and Windsor host public water and wastewater facilities. The town of Windsor provides wastewater service to the former Ascutney Mountain Resort area and Brownsville Village. With the exception of the Weston Heights system in Windsor, all wastewater facilities in the region operate around or under 50% of their design capacities and have sufficient excess capacity to meet their needs for the foreseeable future. However, certain industries such as breweries can put a greater strain on treatment plants due to the high concentrations of nutrients in their effluent regardless of overall flow volume. Pre-treatment, project phasing, or capacity upgrades may be a necessary local permit condition to accommodate certain new industries or developments.

Improvements continue to be made to wastewater treatment facilities in the region to improve their operations and increase capacity. Chester completed a $1.1 million upgrade of its wastewater treatment facility in 2007 and Ludlow completed a $2.9 million upgrade in 2020. Springfield completed system upgrades in 2004, expanding its facility from 2.2 to 2.4 million gallons per day and improving phosphorus treatment. Springfield also expanded its infrastructure along VT Route 11 to the Southern State Correctional Facility. Since a pressure reduction valve was necessary to tap into a force line, it is unlikely that many of the properties along the line will connect to it; therefore, it is not seen as a contributor to sprawl. Springfield's public water system is currently operating under a temporary permit, and the Town is actively working to address low pressure problem areas. Springfield has voted to allocate the majority

[5] https://dec.vermont.gov/water-investment/water-financing/cwsrf

of its ARPA funding to replacing the water main on Clinton Street from Seavers Brook Road to South Street.

Towns are encouraged to engage in capital planning for their water and wastewater systems to meet requirements of state statute, maintain current levels of service, and to support planned future growth. Carefully planned investments coupled with appropriate zoning provisions can encourage smart growth and discourage scattered and strip development.

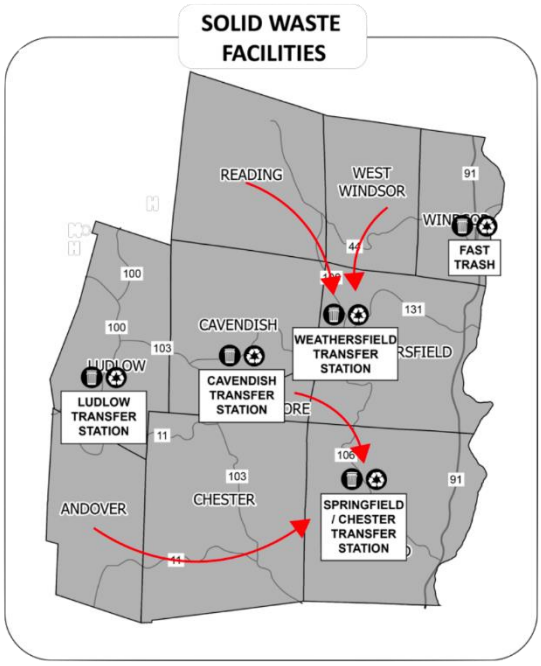
3. Private Water and Sewer Systems

In addition to municipal water and wastewater systems, the Region is also served by privately owned wells and on-site septic systems. There are a total of 50 non-municipal water systems in the Region[6], examples of which include those serving mobile home parks, condominiums, schools, industrial sites, and campgrounds.

De-centralized septic systems may allow for greater densities where municipal wastewater systems are not available. A decentralized system is where a cluster of structures share a common wastewater system for either on-site or off-site disposal. *Wastewater Solutions for Vermont Communities* (Vermont Department of Housing and Community Affairs, January 2008) is a good guidance document for solving community wastewater problems. In some cases, the establishment of a public or community water system serving village lots with on-site septic systems may facilitate increased densities. Monitoring to ensure the efficiency of these systems is important for the protection of the water supply, which is essential to the health and welfare of the Region.

[6] Source: Vermont Water Supply Division; SDWIS Program, August January 2021.

B. Solid Waste Facilities



Until its dissolution on June 30, 2007, the New Hampshire/Vermont Solid Waste Project was a bi-state agency, consisting of two districts and serving a total of 29 towns in New Hampshire and Vermont. The districts were formally organized in 1981. Two facilities were constructed in New Hampshire, including a waste to energy facility in 1987 and an ash monofill in 1988. At that time, the Project contracted with Wheelabrator Claremont, Inc., to incinerate solid waste from its member towns' residential, institutional, and commercial sources. All of the towns in the Region are part of the Southern Windsor/Windham Counties Solid Waste Management District (District). See the District's website at www.vtsolidwastedistrict.org for more information.

In 1987, Vermont legislature passed Act 78, a revision to state solid waste law that recognized the environmental and economic impacts of landfilling and incinerating an ever-increasing waste stream, and articulated policies encouraging reduction, reuse, and efficient disposal of solid waste. State law also defines a role for regional planning commissions in solid waste planning, conditioning certification of solid waste facilities on conformance with a regional plan.

All Vermont municipalities, either individually or as part of a solid waste district or an intermunicipal association, are required by Vermont law to adopt a Solid Waste Implementation Plan (SWIP). The SWIP documents town or district waste management facilities and articulates how solid waste will be managed over the subsequent five years and must be in compliance or consistent with the State goals, as well as in accordance with any municipal or regional plan, prepared and adopted pursuant to 24 V.S.A. Chapter 117.

In conformance with Act 78, the District adopted a Comprehensive Solid Waste Management Plan in 1993. On June 2, 2008, the District received pre-approval from ANR of its revised SWIP and adopted the SWIP that year after two public hearings. Subsequently, ANR approved the District's updated SWIPs in 2013 and 2018.

In 2012, the Vermont Legislature unanimously passed the Universal Recycling Law (Act 148), which bans three major categories of materials from Vermonters' trash bins:

- "blue bin" recyclables
- leaf and yard debris; clean wood
- food scraps (organics; compostable kitchen wastes)

Act 148 was phased in over the course of five years, 2015 – 2020, with updates made in 2018 and 2019:

1. Beginning October 1, 2019, unclaimed bottle bill deposit fees (escheats) are collected and remitted to the Department of Taxes, and deposited into the Clean Water Fund.2. Effective July 1, 2020, Single Use Products Ban of plastic straws, plastic stirrers, single-use plastic bags, and expanded polystyrene ("Styrofoam") food and beverage containers

1. Household Hazardous Waste Collections

The District sponsors two, one-day Hazardous Household Waste Collection events per year, at which residents and businesses from all member towns can safely dispose of hazardous household waste materials that are banned from incinerators and landfills. There is no pre-registration or fee for residents, but businesses are required to pay a fee and pre-register for all collection events. The District is in the process of constructing a permanent facility at the Springfield Transfer Station. Once this facility is open, much more household hazardous waste will be able to be disposed of, diverting it from the waste stream.

In order to ensure that solid waste management in the Region protects the environment, is economically efficient, and safeguards the health of the Region's residents, the goals, policies, and recommendations at the end of this chapter are adopted.

C. Community Health and Safety Resources

The health and safety of residents are of primary importance within any community. The provision of adequate services and facilities, including hospitals, ambulances, clinics, elderly care, convalescent homes, senior citizen centers, psychiatric care, police and fire protection, and detention facilities, helps to ensure a safe and healthy social environment. For a more in-depth discussion of public health in the Region beyond services and facilities see the Health Chapter.

1. Hospitals

Health care for the Region is provided through a variety of facilities and services, including two hospitals, medical clinics, and various facilities located outside the Region. Springfield Hospital is a 25-bed facility that provides a full-range of inpatient and outpatient care including 24-hour emergency services. The Hospital also provides care through the Windham Center, a 10 bed,

inpatient psychiatric center in Bellows Falls. Springfield Medical Care Systems (SMCS) collaborates with the Hospital and provides adult day care and specialty clinics operated in collaboration with Dartmouth Hitchcock Medical Center (DHMC) and Cheshire Hospital. Mount Ascutney Hospital in Windsor is affiliated with Dartmouth Hitchcock Medical Center, and provides 35 beds and a variety of services, including 24-hour emergency medical facilities, acute care, rehabilitation services and specialty clinics. Medical clinics are located in Chester, Springfield, and Ludlow. Residents also commute to additional facilities in Vermont, including the Mountain Valley Health Center in Londonderry and Rutland Regional Medical Center. Several hospitals in New Hampshire also provide service to the Region, including Alice Peck Day Hospital in Lebanon, Valley Regional Hospital in Claremont, and DHMC in Lebanon. Residents must travel to DHMC, Cheshire Medical Center in Keene, NH, or other hospitals outside of the region for specialized care, such as dialysis or radiation treatments.

2. Nursing Homes and Assisted Living

The Vermont Health Care Association currently lists two nursing homes, one residential care facility, and two assisted living facilities in the Region as members (see **Table 4.3**). There is a high demand for more elderly care and housing facilities in the Region, and that need is expected to grow during the next several years (see the Housing chapter for more information).

TABLE 4.3 NURSING HOMES, RESIDENTIAL AND ASSISTED LIVING FACILITIES IN THE MOUNT ASCCUTNEY REGION

Facility Name	Location	Services	Number of Beds	Demand
Gill Odd Fellows Home	Ludlow	Nursing	46	High
Springfield Health & Rehab Center	Springfield	Nursing	102	High
Cedar Hill Health Care Center	Windsor	Nursing	39	High
Village at Cedar Hill	Windsor	Assisted Living	20	High
Stoughton House- Historic Homes of Runnemede	Windsor	Assisted Living	27	High
Evarts House- Historic Homes of Runnemede	Windsor	Residential	12	High

Source: MARC, Staff at the above facilities, 2020

Increasing numbers of seniors prefer to "age in place".[7] Significant investment in public transportation, home care and other services is necessary to provide for elders and persons with disabilities to age in place safely and comfortably. The 2016 *Vermont Elders & Persons with Disability Transportation Program Review* report emphasized the need for additional funding for transportation services for elders "aging in place".

[7] https://www.vhfa.org/documents/publications/housing_elderly.pdf

3. Correctional Facilities

Southern State Correctional Facility in Springfield is the only correctional facility located in the region following the closure of the Southeast State Correctional Facility in Windsor in 2017. According to a May 2020 report from the Vermont Department of Corrections, the Springfield facility currently houses 337 male inmates, occupying approximately 89% of the facility's 377 available beds. A committee made up of state, regional, and local stakeholders, including MARC, are currently planning for the adaptive reuse of the Windsor facility. Land may also be available at the Southern State Correctional Facility for commercial redevelopment.

See the Emergency Management chapter for emergency services in the Region.

D. Communications Facilities

TABLE 4.4 COMMUNICATIONS SERVICE PROVIDERS

Utility Type	Service Providers	And.	Balt.	Cav.	Che.	Lud.	Rea.	Spring.	Wea.	West Winds.	Winds.
Telephone	Comcast (Xfinity)			X		X		X*	X*	X	X
	VTel				X			X			
	TDS		X	X		X			X*		
	Consolidated Comm.	X		X	X		X*	X*	X	X	X
Cable	TDS			X							
	Comcast			X		X		X*	X*	X	X
Local Access	SAPA				X			X	X		
	Okemo Valley TV			X		X					
	Windsor On-air	X	X	X	X	X	X	X	X	X	X
	VTel*	X	X	X	X	X	X	X	X	X	X
Broadband	Comcast (Xfinity)			X		X		X*	X*	X	X
	TDS	X	X	X		X		X	X*		
	Consolidated Comm.	X		X	X		X*	X*	X*	X*	X
	HughesNet	X	X	X	X	X	X	X	X	X	X
	EC Fiber						X			X	X
	Viasat	X	X	X	X	X	X	X	X	X	X
	Wavecomm	X	X	X	X	X	X	X	X	X	X
	VTEL	X			X			X			

Communications facilities are an essential service for most Vermont residents and businesses. Countless economic, social, and cultural benefits are available to communities that possess free

and open access to people and ideas in other parts of the world. Developing the necessary communications infrastructure and access to these services, such as broadband, is an integral component of economic development and land use planning. The COVID-19 public health emergency emphasized the importance of broadband access when in-person economic and educational activities are restricted.

1. Telecommunications

a. Land-Line Telephone Services

Over ninety percent (90%) of Vermont residents had one landline telephone in their household, according to the 2018 Vermont Telecommunications Plan prepared by the Vermont Department of Public Service. While mobile phones and email are now everyday means of communication, land-line phones continue to provide critical functions, including 911 emergency services and health care information networks. In the Region, these services are provided by four providers: Comcast (Xfinity), VTel, TDS, and Consolidated Communications (formerly FairPoint).

b. Wireless Communication Facilities

The Department of Public Service, records 22 telecommunications facilities approved by the Vermont Public Utility Commission (PUC) under 30 V.S.A. § 248a between 2011 and 2017[8]. The majority are located in Ludlow. A 2018 Wireless Drive Test conducted by the Department of Public Service collected wireless service data along State Highways, for each of Vermont's six facility based operating providers: AT&T, Sprint, T-Mobile, US Cellular, Verizon Wireless and VTel Wireless. The measurements ranged from No Service to Great Service at a download speed of over 10 Mbps (megabits per second). In the Region, service was generally worse along state routes in western areas, especially in Reading, Cavendish, and Chester.[9] Improving wireless service in the region is vital not only for convenience but to improve public safety. Public safety agencies, such as emergency medical services, fire, and police departments, rely on wireless communications and telecommunications to provide essential services, disseminate vital information, and respond to emergencies.

[8] A map showing locations of approved facilities is available here: https://publicservice.vermont.gov/content/tower-locations

[9] The resulting report can be found here: https://publicservice.vermont.gov/sites/dps/files/documents/Mobile%20Wireless%20Coverage%20in%20VT_Jan%2 02019.pdf
The accompanying map can be found here: https://www .arcgis.com/apps/webappviewer/index.html?id=444a3d49c2374d509958f1c0e1d0d21b

Network infrastructure must be developed in an efficient, safe, and thoughtful manner. Possible impacts upon scenic and cultural resources, aesthetics, and public health should all be considered during the planning process.

(1) Telecommunications Act of 1996

Congress enacted the Telecommunications Act of 1996, which called for the rapid deployment of advanced telecommunications and information technologies and services. The Act significantly limited communities' traditional zoning and health authorities over the siting of towers, giving the FCC almost sole power to regulate a variety of environmental siting issues including public health concerns.

Wireless telecommunication facilities require near "line of sight" access from the user to a tower to avoid disconnected calls. In addition, the new technology, PCS and SMRS in particular, operate at a low frequency with a range of only one and half to two miles. Our Region's topography dictates that these facilities are located at close intervals, resulting in more locations.

(2) Local and Regional Planning

Thoughtful local and regional planning, which includes viewshed analysis, should be done for the inevitable siting and development of future wireless communications facilities. The Vermont League of Cities and Towns has prepared a Model Wireless Telecommunications Facilities Bylaw. Contact the RPC office if your town would like a copy. The MARC can also assist towns in understanding the limitations of the Telecommunications Act of 1996 and how Act 250 applies, identifying which ridge lines and viewsheds to preserve, determining alternative locations and designs that could mitigate negative impacts, and outlining provisions for the removal of a facility when it is no longer needed. 24 V.S.A. § 4412(9) authorizes local administrative review for telecommunication facilities with no or de minimis impacts.

2. Television, and Other Media

While television and radio are largely used for entertainment purposes, they are also a key part of the communications system in the Region. Both play a role in accessing information and emergency broadcasting. Cable television is available in at least a portion of eight towns in the Region (see Table 4.4). There are two satellite television providers that can serve any location as long as the site allows for adequate satellite reception. Local public access television channels include Springfield Area Public Access television (SAPA TV), Okemo Valley TV, and Windsor On-Air.

Numerous commercial radio stations serve this area, but only one station broadcasts from this region. Vermont Public Radio broadcasts on eight stations statewide, one of which – 89.5 WVPR – broadcasts from the summit of Mount Ascutney in Windsor.

Newspapers that serve this Region include the Eagle Times, The Vermont Journal, The Shopper, Vermont Standard, Springfield Reporter (online only), The Valley Marketplace, Valley News, Chester Telegraph (online only), and Rutland Herald.

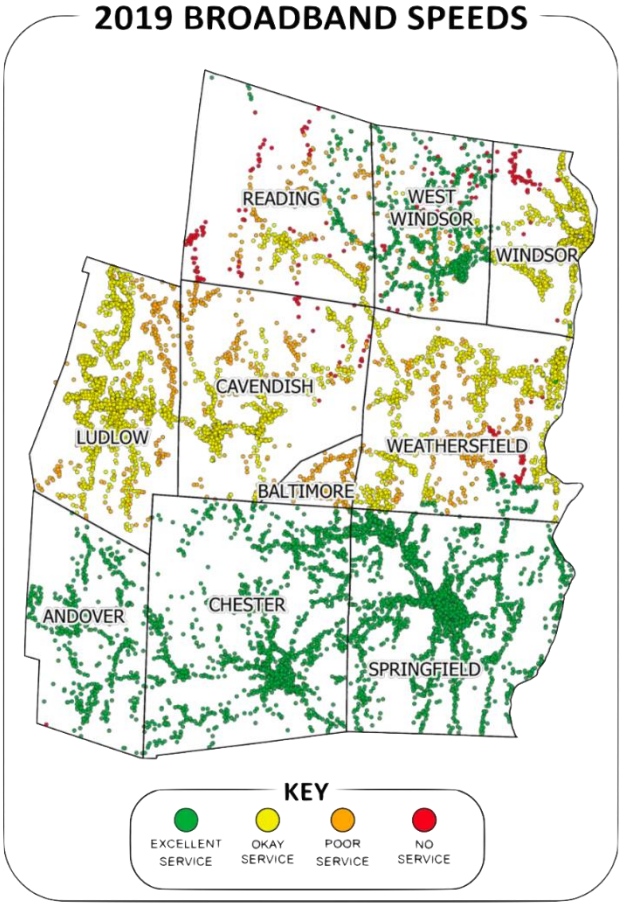
3. Broadband and Public Wi-Fi

a. Broadband

In the last decade, broadband service has not just become a prominent means for communication, but a necessary means for businesses and residents to perform day-to-day tasks. "In 2018, through Acts and Resolves No. 169, the General Assembly found that broadband is essential for supporting economic and educational opportunities, strengthening health and public safety networks, and reinforcing freedom of expression and democratic, social, and civic engagement." During the COVID-19 pandemic, this proved to be especially true. People rely heavily on efficient broadband service for schools, workforce training programs, distance learning programs, remote work, telehealth visits, amongst other tasks. It is yet to be seen how the COVID-19 pandemic will affect our Region permanently, but it is projected that some of the "temporary" lifestyle and work changes set about in the pandemic, will become more permanent.

It is imperative to the success of the Region that every household has access to, not just broadband, but fast and efficient broadband connection. As noted in the "2019 Broadband Speeds" map below, Andover, Chester, Springfield, and most of West Windsor have access to adequate internet service. Windsor, Weathersfield, Baltimore, Cavendish, and Ludlow all struggle with consistent access to service.

Broadband – High-speed Internet and communication networks provided by a wide band of frequencies that enables many messages to be communicated simultaneously.



Fiber Optics – Fiber optic cable is a high-speed data transmission medium. It contains tiny glass or plastic filaments and has a speed of a symmetrical 100mbps (upload)/100mbps (download) speed.

Cable – Cable broadband connects your home to a fiber cabinet in your area. However, instead of using copper wires, cable broadband uses coaxial cables to connect to the cabinet, giving you a much faster internet connection than the traditional copper phone line at speed that can range from asymmetrical 25mbps (upload) / 3mb(download) speed to anywhere over 100mbps upload speeds. Although speeds can be high, this can be inconsistent.

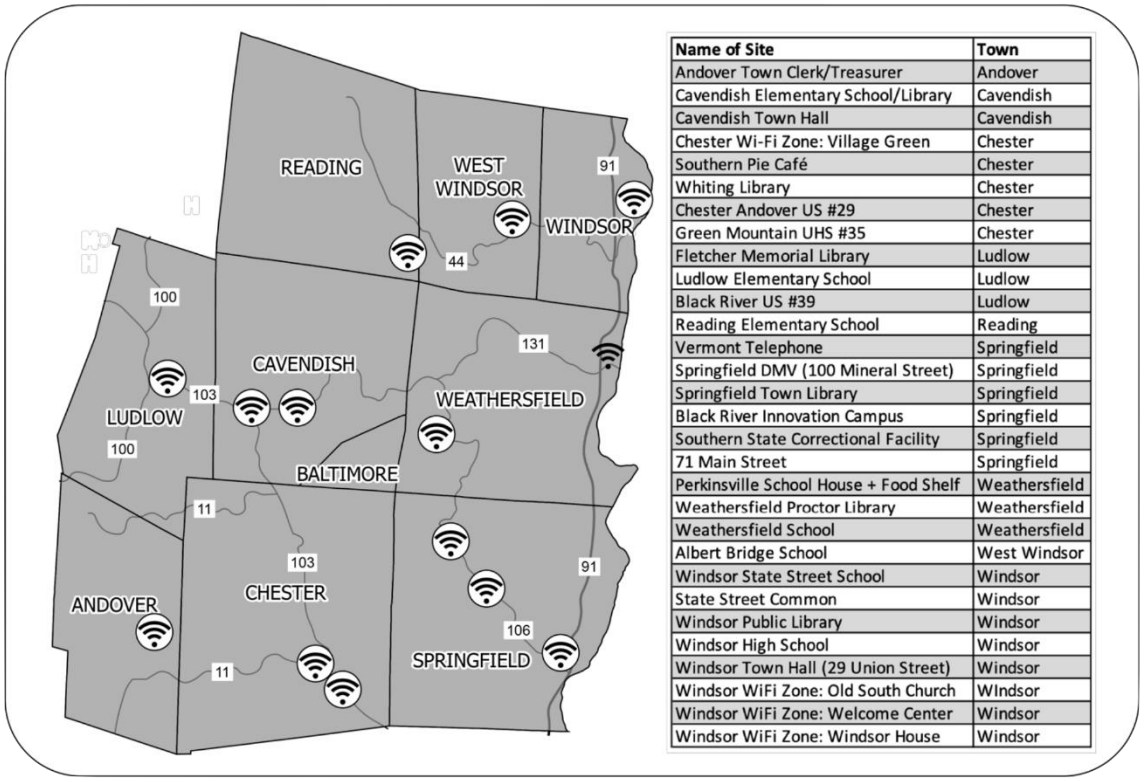
Digital Subscriber Line ("DSL") – Technologies that extends the ability of copper telephone lines to carry data and communications, this technology is becoming increasingly outdated and sometimes fails to reach over 4 (upload)/ 1 (download) speeds, which is considered "underserved" according to federal standards.

Satellite – High-speed satellite internet services are generally not as fast as DSL; however, are available on any site with a clear view of the southern sky.

Communication Union Districts – According to the Department of Public Service, "A Communications Union District (CUD) is an organization of two or more towns that join together as a municipal entity to build communication infrastructure together"

A map of broadband providers for each town can be found at this link.

Public WiFi Locations



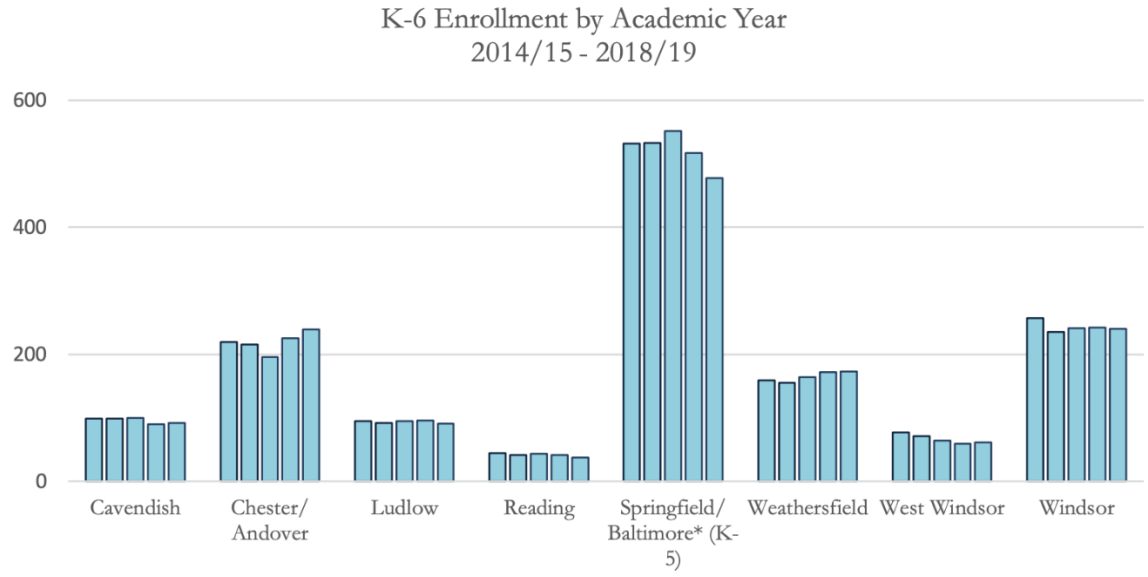
Name of Site	Town
Andover Town Clerk/Treasurer	Andover
Cavendish Elementary School/Library	Cavendish
Cavendish Town Hall	Cavendish
Chester Wi-Fi Zone: Village Green	Chester
Southern Pie Café	Chester
Whiting Library	Chester
Chester Andover US #29	Chester
Green Mountain UHS #35	Chester
Fletcher Memorial Library	Ludlow
Ludlow Elementary School	Ludlow
Black River US #39	Ludlow
Reading Elementary School	Reading
Vermont Telephone	Springfield
Springfield DMV (100 Mineral Street)	Springfield
Springfield Town Library	Springfield
Black River Innovation Campus	Springfield
Southern State Correctional Facility	Springfield
71 Main Street	Springfield
Perkinsville School House + Food Shelf	Weathersfield
Weathersfield Proctor Library	Weathersfield
Weathersfield School	Weathersfield
Albert Bridge School	West Windsor
Windsor State Street School	Windsor
State Street Common	Windsor
Windsor Public Library	Windsor
Windsor High School	Windsor
Windsor Town Hall (29 Union Street)	Windsor
Windsor WiFi Zone: Old South Church	WIndsor
Windsor WiFi Zone: Welcome Center	Windsor
Windsor WiFi Zone: Windsor House	Windsor

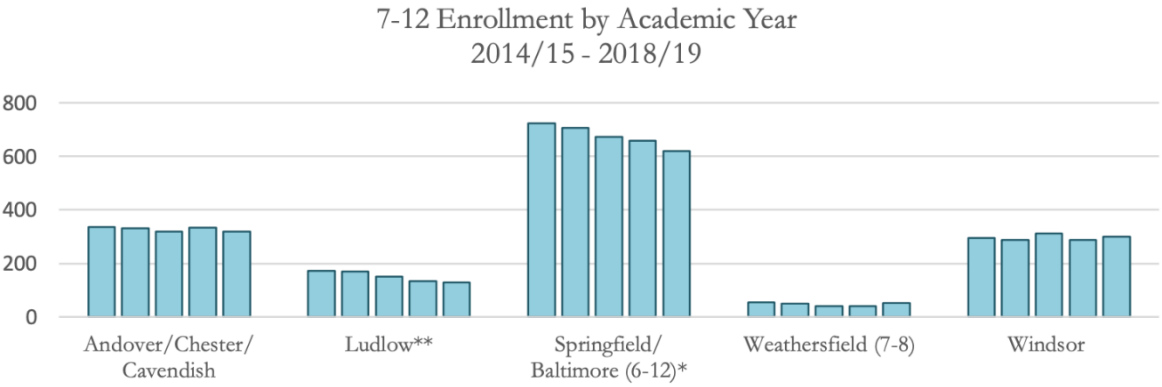
E. Educational Resources

Educational opportunities available in the Region include childcare facilities; elementary, middle, and high schools; vocational and technical schools, colleges, and universities; continuing education programs, museums, and historical societies; and libraries and cultural opportunities. Many factors should be considered in the analysis of schools and their ability to serve as adequate facilities for providing educational opportunities to area residents. Program and policy issues for public schools are generally addressed by local school or school district boards.

The Region is currently served by four supervisory unions: Springfield School District (SSD), Two Rivers Supervisory Union (TRSU), Windsor Central Supervisory Union (WCSU) and Windsor Southeast Supervisory Union (WSESU). Springfield, Chester, and Windsor are now the only towns in the Region with public high school facilities. . The student population in the Region has remained relatively stagnant in recent years. Many smaller schools have closed consolidated with larger schools under Act 46. Act 46 was enacted in 2015 to create a more sustainable student population and educational experience. These mergers occurred throughout the Region, leading to the closure of a number of schools, including Black River High School in Ludlow. The independent Expeditionary School at Black River has since opened in the former Black River High School building in Ludlow.

The River Valley Technical Center is in the Howard Dean Education Center in Springfield. It serves over 450 students for at least one period of course work per day and provides services for 600-1,000 adults. Services include a job training program which is contracted through Vermont Technical College. Also located in the Howard Dean Education Center are the Community College of Vermont's Springfield Office, and UVM Extension.





*Source: Vermont's Education Data Warehouse (edw.vermont.gov). *Superintendent of schools office*
*** Black River High School in Ludlow closed in 2020.*

The Vermont Legislature has enacted several educational funding programs seeking to provide all students with an equal opportunity for education regardless of municipal tax base. The current program, Act 68, sets statewide residential and non-residential tax rates providing base level funding per pupil in all school districts. Each district may then request additional funding from local taxpayers. This program remains controversial as overall costs and tax rates continue to rise. According to the Vermont Department of Education, per pupil spending in Fiscal Year

2018 was $18,400. In its 2014 session, the Vermont Legislature passed Act 166 requiring school districts to provide at least 10 hours of pre-kindergarten instruction.

F. Child Care

The availability of affordable, high-quality childcare is vital to the health and economic development of the Region and its inhabitants. Quality childcare contributes to early childhood development, enables parents of young children to enter or remain in the workforce, enhances the productivity of working parents, and contributes to the expansion of the local and regional economies. In addition, facilities that are located near residential clusters, schools, the workplace, or public transportation may reduce automobile trips and congestion. Public facilities such as schools, town offices, and libraries are often located in convenient locations and should consider providing childcare or space for childcare services as should private businesses. For more on the role of childcare in the region's health and economic stability and the potential role of businesses in providing childcare, see the Health and Economic Development Chapters.

The State of Vermont Child Development Division maintains a list of all registered home care providers and licensed childcare centers in the State, with the exception of informal arrangements. The State regulates childcare providers, requiring they meet the basic standards for children's health and safety. Many programs achieve a higher standard through accreditation by a national program.

In our Region the availability of childcare varies greatly by town. There are currently no listed state licensed facilities in the smallest, rural towns of West Windsor, Andover and Baltimore. The existing lack of access to child care has been exacerbated by the COVID-19 crisis. The Springfield Area Working Communities Challenge, a Federal Reserve funded initiative to increase workforce participation in the region, estimates that current capacity can only meet approximately half of the demand for child care. For a current listing of licensed providers and registered homes by town, visit www.brightfutures.dcf.state.vt.us, which currently lists 47 state registered facilities in the Region.

Child care expenses can deter some families from seeking safe and convenient services. The Child Care Subsidy Program, established by the Vermont Agency of Human Services, which is based on gross monthly income and family size can assist some low-income families with the cost of childcare. There are also some tax credits available for both businesses and employees and employer childcare subsidies, but many are underutilized.

In response to the COVID-19 crisis, the Springfield Area Working Communities Challenge created a one-time grant fund for families in the Springfield Agency of Human Services (AHS) district, which includes all 10 towns in the Mount Ascutney Region. This fund was distributed by the Springfield Area Parent Child Center (SAPCC). It was intended to help parents and guardians

remain in the workforce or reengage in the workforce by temporarily covering costs pertaining to childcare, including back bill and registration fees.

SAPCC offers additional financial support for families to cover unexpected costs of living including transportation and housing challenges.

G. Recreation

Recreation Photograph 1 - Town of Ludlow with Okemo Ski Area in the Background, Source: MARC

1. Introduction

The Mount Ascutney Region offers many recreational opportunities to residents and visitors alike. Some of these opportunities include hiking, biking, camping, downhill skiing, x-country skiing, hunting, horseback riding, ATV riding, paddling, and fishing. The abundance and variety of opportunities within the region are not only a reason to live within or visit the region (outdoor recreation is commonly associated with the Vermont 'way of life'), but also an important sector of the economy.

2. Recreation Resources

The region is home to many areas devoted to indoor and outdoor recreation, ranging from public opportunities on state and municipal lands to those available on private lands. Ludlow is home to the Okemo State Forest and the Okemo Ski Resort, West Windsor is home to Ascutney Trails (a multi-use trail system) and Ascutney Mountain which is one of the Northeast's premier

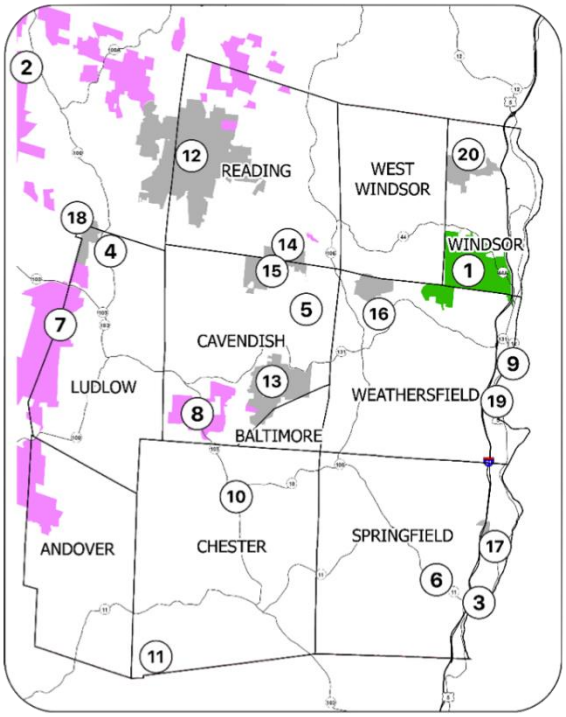
hang-gliding spots, Windsor is home to the Mt. Ascutney State Park which offers several hiking trails, Springfield is home to the Toonerville multi-use path; and Reading is home to a large portion of the Green Mountain Horse Association's trail network. Furthermore, VAST (Vermont Association of Snow Travelers) maintains an expansive network of snowmobile trails in the region. Indoor recreation opportunities include craft fairs, contra dances, indoor concerts, and recreation centers.

Public and private entities work continuously to improve and expand recreational opportunities in the region. Of particular note is the multi-jurisdictional Mount Ascutney Outdoor Recreation Plan, a multi-town initiative to improve the trail network on and around Mount Ascutney. A more comprehensive list of the Region's recreational resources is included below.

Recreation Photograph 2 - Trailhead at the North Springfield Reservoir, Source: USACE

a. Federal Lands

The U.S. Army Corps of Engineers owns and operates a dam along the Black River in Springfield. The associated land and impoundment, covering 1,361 acres of fields, forests, wetlands, and lakes is available to the public. Summer activities include swimming, sunbathing, picnicking, fishing, boating, kayaking, canoeing, and wildlife viewing. A shelter is available to rent for daytime use at the Stoughton Pond Recreation Area. In the winter, the land is available for cross-country skiing, snowmobiling and snowshoeing. For more information, visit: http://www.nae.usace.army.mil/Missions/Recreation/NorthSpringfieldLake.aspx.



#	NAME	TYPE
1	ASCUTNEY STATE PARK	STATE PARKS
2	COOLIDGE STATE FOREST	STATE FORESTS
3	HOYT LANDING ACCESS	STATE OWNED ACCESSES
4	LAKE RESCUE ACCESS	STATE OWNED ACCESSES
5	LORD STATE FOREST	STATE FORESTS
6	MUCKROSS	STATE PARKS
7	OKEMO STATE FOREST	STATE FORESTS
8	PROCTOR PIPER STATE FOREST	STATE FORESTS
9	WILGUS STATE PARK	STATE PARKS
10	WILLIAMS RIVER ACCESS	STATE OWNED ACCESSES
11	WILLIAMS RIVER STATE FOREST	STATE FORESTS
12	ARTHUR DAVIS WMA	WMA
13	HAWKS MOUNTAIN WMA	WMA
14	KNAPP BROOK WILDLIFE MANAGEMENT AREA	WMA
15	KNAPP BROOK WMA	WMA
16	LITTLE ASCUTNEY WMA	WMA
17	SKITCHEWAUG WMA	WMA
18	TINY POND WMA	WMA
19	WEATHERSFIELD WMA	WMA
20	WINDSOR PRISON WMA	WMA

STATE-OWNED RECREATION LAND

b. Wildlife Management Areas (WMAs)

WMAs are owned by the Vermont Department of Fish and Wildlife and are managed primarily for the conservation of fish, wildlife, and their habitat, but the areas also provide opportunities for outdoor recreation. There are nine WMAs in the southern Windsor County Region of varying size.

c. State Parks

There are three State Parks in the Mount Ascutney Region: Wilgus, Mount Ascutney and Muckross.

Wilgus State Park sits along Route 5 in Weathersfield and offers a campground with shelters, access to the Connecticut River, and hiking with great views of the Connecticut River Valley. For more information about Wilgus State Park please visit the following webpage: https://vtstateparks.com/wilgus.html.

Ascutney State Park is located along Route 44 in Windsor, and offers camping and hiking opportunities. The Park includes a "Summit Road" ending approximately 1⁄2 mile from the summit of Mt. Ascutney. The summit can also be reached using a network of hiking trails. The

summit of Mt. Ascutney is home to a viewing tower and several other vantage points offering spectacular views of the surrounding countryside. The West Peak area is used as a hang-gliding launch platform. For more information on the Ascutney State Park including a recreational guide, please see the following website: https://vtstateparks.com/ascutney.html.

Muckross State Park is located off of Route 11 in Springfield, a short walk from the park and ride. The Park is the region's newest, established in 2016. The Park offers areas for picnicking and a network of informal trails for visitors to hike and explore. Since it is a new park, Muckross has no established facilities, but the State has commissioned a Master Plan outlining potential future uses and facilities for the Park. For more information about Muckross State Park, please visit the following website: https://vtstateparks.com/muckross.html.

Recreation Photograph 3 - Mt. Ascutney over Lake Runnemede, Source: MARC

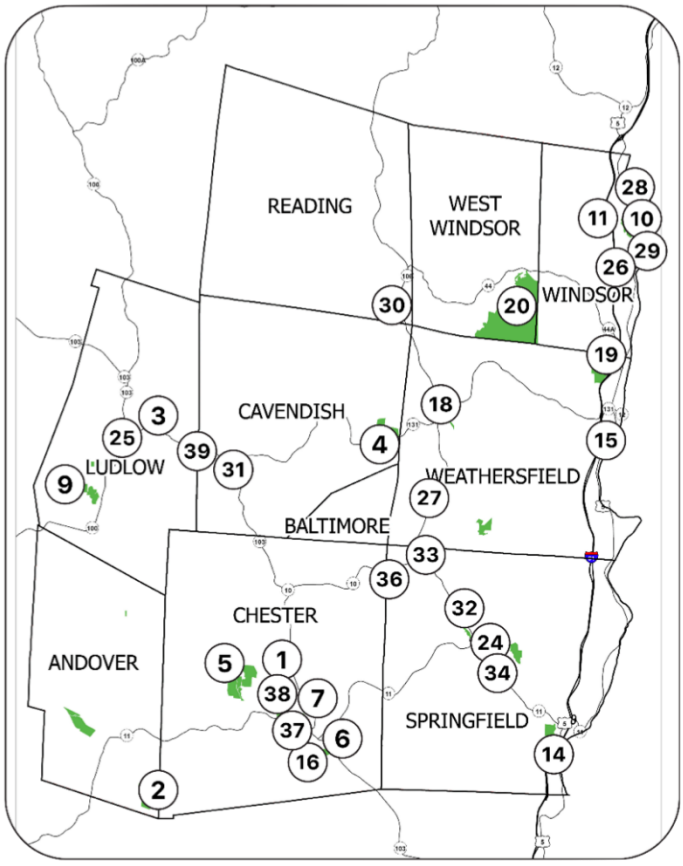
d. State Forests

There are four different State Forests in the Mount Ascutney Region, the Albert C. Lord, Proctor Piper, Williams River, and Okemo State Forests. These lands are owned by the State of Vermont and are managed by the Vermont Department of Forests, Parks, and Recreation. The Department's mission includes stewardship of these lands for the health, integrity, and diversity of important species, natural communities, and ecological processes, as well as management of

the forests for sustainable use including compatible outdoor recreation activities, such as multi-use trail systems. The Okemo State Forest is the only one in the region with its own informational document, which can be found here: https://vtstateparks.com/assets/pdf/okemo_sf_trails.pdf .

e. Other State-Owned Lands

Hoyt's Landing in Springfield offers fishing and boating access to the Connecticut River and picnic areas in the summer and ice fishing access in the winter.



#	NAME
1	ADAMS LOT
2	ANDOVER TOWN FOREST
3	BLACK RIVER HIGH SCHOOL FOREST
4	CAVENDISH WOOD LOT
5	CHESTER TOWN FOREST
6	GREEN MOUNTAIN UNION HIGH SCHOOL FOREST
7	HADLEY LOT
9	LUDLOW TOWN FOREST
10	PARADISE PARK
11	PARADISE PARK
14	SPRINGFIELD TOWN FOREST
15	TENNEY HILL LOT
16	TOWN OF CHESTER
18	WEATHERSFIELD TOWN FOREST
19	WEATHERSFIELD TOWN FOREST AT ASCUTNEY
20	WEST WINDSOR TOWN FOREST
24	COMTU CASCADE PARK
25	DORSEY PARK
26	FAIRGROUNDS PARK
27	HOISINGTON FIELD
28	JOHN P LARKIN COUNTRY CLUB
29	CONSTITUTION COMMON
30	CLAUDE BARTLEY MEMORIAL FIELD
31	GREVEN FIELD
32	RIVERSIDE PARK
33	NORTH SPRINGFIELD SOCCER FIELD
34	FREEDOM PARK
35	THE COMMONS PARK
36	ROTARY PARK
37	COBLEIGH FIELD
38	THE PINNACLE
39	FLETCHER FIELDS

TOWN-OWNED RECREATION LAND

f. Town Forests and Town Parks

In addition to the State-owned lands, many of the municipalities in the Mount Ascutney Region own land that is used for recreational purposes. These lands include municipal parks, forests, ballfields, and fairgrounds.

g. Road Network

It is also worth recognizing the importance of our state and local road networks for recreational uses, which are perhaps the most frequently used resource for routine recreation by residents. Roads are used for walking, jogging, bicycling, equestrian and other uses. With the advent of fat bikes and electric bicycles, bicycling is becoming a year-round recreational activity and more difficult routes are accessible to a greater number of people. The region's scenic gravel roads make it well situated to take advantage of these developments. MARC has published maps and descriptions of bicycling routes in the region on the Ride Windsor County webpage at https://ridewindsorcountyvt.weebly.com/.

Variable widths of the existing roadway shoulders on paved routes may limit recreational uses. Many class 4 town highways and legal trails are used for snowmobiling, snow shoeing, and cross- country skiing; however, their use is subject to local rules and restrictions. In accordance with Vermont's Complete Streets Law (Act 34, 2011), accommodating all modes of travel (i.e. walking and bicycling) is to be considered in all state and municipally managed transportation projects on paved roads.

h. Water Access

The Connecticut River forms the eastern boundary of the area, providing the towns of Springfield, Weathersfield, and Windsor with ample river-based recreational activities such as canoeing, kayaking, fishing, and swimming. In addition to the Connecticut River, the region also is home to two other major rivers, the Black River and Williams River, and various streams and ponds that contribute to water-based recreation. Many informal swimming holes also exist along the network of streams and rivers in the region. According to the Basin 10 Management Plan, the Black River hosts Twenty- Foot Hole on the North Branch in Reading, and Buttermilk Falls in Ludlow, on Branch Brook. Also on the Black River are Tolles Hill Dam, a USACE recreational area in Perkinsville, and Flat Rock, opposite Mill Road just north of the Route 106 river crossing in Perkinsville. For more information on water-based recreation, please see the Connecticut River Joint Commission's Recreation Plan, the Basin 10 Water Quality Management Plan, and the Connecticut River Paddlers' Trail Guide.

i. Events

Black River, Source: MARC

In addition to the resources listed above, the region is also host to several events devoted to outdoor recreation. The Vermont 100 and Vermont 50 are two long distance races that are very popular, utilize the forests, and are a boon to the local economy. The Vermont 100 is the last ultra-marathon to host both humans and horses on the same track. The Toonerville trail hosts several marathons and is being actively promoted to become a venue for the marathon circuits. There are many smaller events held in towns throughout the region such as Old Home Days, July 4th firework shows, outdoor concerts, ducky derbies, and many more.

3. Key Priorities

The list of key priorities included below was taken directly from the State of Vermont's 2019-2023 Statewide Comprehensive Outdoor Recreation Plan. Towns and regions should be aware of these priorities when conducting planning for recreational opportunities.

a. Stewardship of Natural Resources and Recreational Assets

Conserving Vermont's natural, cultural, and recreational assets ensures that the opportunities we enjoy now will continue to be available for future generations. By monitoring, restoring, and maintaining healthy soil and forests, clean water and air, high-quality habitat and biological diversity, we promote healthy, functional ecosystems while creating a foundation for sustainable access and recreation.

b. Stakeholder Communication, Coordination, and Engagement

Vermont boasts a broad array of public, private, and non-profit partners who play active roles in supporting outdoor recreation across the state (and beyond it in some cases -- the Appalachian Trail, Northern Forest Canoe Trail, and Lake Champlain, for example). These independent but

interdependent organizations plan for, provide, and manage land and water resources, human resources, and equipment, programming, and recreational infrastructure.

c. Participation and Access for All

While Vermont provides exceptional recreation opportunities, access is not consistently available and not all Vermonters are able to participate. Vermont has the opportunity to bridge this gap through, among other strategies, continued support of recreation access and opportunities in Vermont's downtowns, villages, and neighborhoods.

d. Community Connections, Health, and Wellness

Supporting and building connectivity between neighborhoods, community facilities, trail networks, and recreation infrastructure within communities will provide greater opportunities for promoting health and wellbeing. Focusing on the role of outdoor recreation in fostering livability can lead to benefits for multiple audiences, including the significant projected population increases for older adults.

e. Economic Vitality & Tourism

Vermont's landscape of forests, farms, and human communities and their associated outdoor recreation opportunities are major reasons why people visit and live in Vermont. Outdoor recreation contributes to sustaining vibrant rural economies and strengthens the state's position as a premier tourism destination.

For additional information regarding the priorities, please see the 2019-2023 Vermont Comprehensive Outdoor Recreation Plan.

H. Policies

Water, Sewer and Electricity Policies

1. Extensions of service infrastructure should take place in areas proposed for development by town plans and local bylaws and should not lead to sprawl or strip development or service use that exceeds existing or planned system capacity.

2. Water conservation techniques should be used in new development, and in the rehabilitation of existing development, to lengthen the life of wastewater treatment facilities and slow the depletion of groundwater resources.

3. Careful facility siting, landscaping and other mitigation techniques should be employed to minimize aesthetic impacts of transmission line projects.

Solid Waste Facilities Policies

1. Promote efforts within or among the Region's towns to reduce waste production, reuse, recycle, and compost. The hierarchy, as described in the Vermont Solid Waste Management Plan, of "reduce, reuse, recycle" should form the basis for all solid waste planning in the Region.

2. Land application of sludge[10] in the Region is encouraged provided that it does not pose a risk to human health or have negative impacts on aesthetics or the natural environment.

3. When measuring the economic viability of solid waste reduction or recycling programs, avoided costs of solid waste production and disposal, and of environmental cleanup, shall be considered as economic benefits.

[10] Sludge, also known as biosolids, is a byproduct of wastewater treatment. For more on biosolids and their potential uses, see the EPA webpage: https://www.epa.gov/biosolids/basic-information-about-biosolids.

Community Health and Safety Resources Policies

1. Expansion or creation of health and safety facilities is encouraged in locations selected for the efficient delivery of services and as necessary to meet the current and future demand.
2. Existing or proposed correctional facilities should be sited, maintained, and managed in a manner which ensures the safety and security of local residents.
3. The impact of existing and potential development on public health and safety facilities and services should be evaluated prior to new development.
4. New nursing homes and assisted living facilities should be located in close proximity to services or along public transportation routes in order to provide efficient access to services for residents.

Communication Facilities Policies

1. Support the development of broadband communication networks Region-wide.
2. New or expanded wireless communications services must collocate on existing facilities or be sited on existing structures, where feasible, and shall minimize negative visual impacts.
3. New communications facilities must minimize impacts on wildlife habitat and corridors, forest blocks, wetlands, rivers, streams, ridgelines, and other natural, scenic, and aesthetic resources, and should comply with the following standards
    a. Protecting view corridors from highways, residential areas, historic districts, public use areas, and outdoor recreation areas such as hiking trails, rivers, lakes, and ponds should be paramount in the design and siting permitted.
    b. All new wireless communications facilities sited on a ridge should be located below the ridge so that the tops of any such facility are below the site lines of persons using the highways or in the residential areas and historic districts. At a minimum, the tops of such facilities must not exceed the elevation of the immediate ridge.
    c. New access roads should be designed for minimal ground disturbance and clearing, follow the land contours, and avoid open land to minimize visual and ecological impact.
    d. If new wireless communications facilities are added to existing wireless communications facilities on peaks or ridges, such existing facilities should be retrofitted or maintained in a manner to minimize any negative visual impact.

e. At the site of wireless communications facilities, the existing vegetation and tree cover should be maintained to the maximum extent possible.
f. Prior to the application hearing, a demonstration of the visual impact of the tower must take place to inform the public (by simulating the silhouette of the facility by raising a dark colored balloon to the height of the top of the proposed facility, or other reasonable simulation).

4. Decommissioned wireless communications facilities or portions of facilities must be removed and the site restored and reclaimed to its original condition. All roads and accesses to the site which are no longer needed should be reclaimed and restored.
5. Permits for communications facilities should require a performance bond or other financial security ensuring the reclamation and restoration of the site should the facility be abandoned or rendered obsolete by technological advances. The performance bond should take inflation into account as many years may elapse between construction and removal of the facility.
6. The development and use of alternative technologies to serve the industry is encouraged. These include, but are not limited to, "stealth" designs for wireless communications facilities or complete coverage of such facilities within existing buildings and structures, and satellite technology, which would reduce the need for new, and allow for the removal of existing, wireless communications facilities.

Educational Resources Policies

1. Expansion or restructuring of academic, vocational, recreational, and cultural education facilities and resources to meet the needs of all residents will be supported, where communities show need and/or where existing facilities are inadequate.

Child Care Policies

1. Town plans should assess current and future local needs and supplies of child care services, including whether local barriers exist for the provision of these services.
2. Member towns should periodically review land use regulations to identify unnecessary barriers to childcare facilities and mechanisms to promote the development of childcare services in appropriate locations convenient to local services and densely populated areas.

Recreation Policies

1. High impact recreational activities such as horseback and ATV riding shall be located outside of ecologically sensitive areas, which are defined as natural features that contribute to the survival and/or reproduction of wildlife or are more susceptible to damage from human activities. For the purposes of this chapter those areas include: wetlands and vernal pools; concentrated black bear feeding habitat (mast stands); rare, threatened, and endangered species habitat; significant natural communities; riparian areas and surface waters; prime agricultural soils; slopes greater than 25%; ledge, talus, and cliff habitat; land in excess of 2,500' in elevation; and habitat as identified by the Vermont Department of Fish and Wildlife as either significant wildlife habitat or necessary wildlife habitat in accordance with 10 V.S.A. § 6086(a)(8)(A).
2. Multi-use and multi-season trails are preferred over single-use and single-season trails, provided that the various uses can be accommodated without undue risks to health and safety.
3. Public access to major water bodies and watercourses should be maintained and expanded in accordance with local goals and the area's capability to handle increased traffic without undue adverse impact on the natural or cultural features of the area.
4. Expansion of public access to ecologically sensitive areas is generally not encouraged. Where it is demonstrated that increased public access to ecologically sensitive areas is important for educational or experiential needs a management plan that addresses preservation and protection of the sensitive area should be prepared.
5. Development that could threaten the quality of recreational waters should be discouraged and alternatives sought.
6. Planning and construction of recreational opportunities on sites of public utilities or public works facilities (e.g. incorporation of trail networks into public utility corridor planning) is encouraged as it will help to achieve more efficient and productive use of these lands.
7. The development of multi-purpose trails using abandoned railroad beds, Class 4 roads, and other public rights-of-way is supported.

Ch 5: EMERGENCY MANAGEMENT, FLOOD RESILIENCY, AND THE COVID-19 PANDEMIC

Emergency Management Goals

To build disaster-resistant communities in the Region through sound emergency and land use planning by:

1. Developing community resilience and resistance by connecting municipalities with a variety of resources, tools, and Information to respond to various disasters and emergency situations.
2. Assisting in the preparation, development, and implementation of local emergency operations plans, local hazard mitigation plans, mapping of vulnerable areas, etc.
3. Minimizing the loss of life, physical and emotional Injury, financial loss, property damage
4. Organizing and encouraging emergency training for local emergency personnel and elected municipal officials.
5. Participating in and supporting the Regional Emergency Management Committee to facilitate cooperation and coordination among fire and rescue services, law enforcement, and other emergency management service providers.
6. Identifying and securing funding to reduce emergency planning and management costs within the Region.
7. Facilitating key stakeholder engagement and planning, to include training, recruitment, and retention for emergency management volunteers.

1. EMERGENCY MANAGEMENT

1A. Emergency Planning

Building disaster-resistant communities through sound land use planning is a primary goal of emergency planning. When considering future land use in town plans and zoning regulations, towns should weigh the predictable consequences of development given disaster risks such as flood hazard areas, steep slopes, and inadequate roads. If done effectively, emergency planning can save lives, reduce incidences of injury, protect public and private property, and preserve the cultural, historical, scenic, and natural resource assets of the Region. Within our Region, there are issues of adequate emergency management service coverage, lack of volunteers, and the cost of emergency management equipment. Emergency responders face challenges such as volunteer recruitment, retention, and aging volunteers, which can result in longer wait times for residents. More recently, with the onset of the COVID- 19 pandemic, other emergency management issues have arisen.

There are four phases in Emergency Management:

- Mitigation
- Preparedness
- Response
- Recovery

Being prepared for when an emergency or natural disaster occurs is a priority for all towns in the Region. Towns can take steps to combat the four main objectives of emergency management.

Each town in the Region currently has adopted or is in the process of adopting a Local Hazard Mitigation Plan, to help prevent and mitigate the damages caused by these events. With the plan and membership in the National Flood Insurance Program (NFIP), all towns within the MARC Region may apply for Pre-Disaster Mitigation, Hazard Mitigation, Building Resilient Infrastructure and Communities, and Flood Mitigation grants all administered through the Federal Emergency Management Agency (FEMA). In addition to the Local Hazard Mitigation plans, towns must adopt a Local Emergency Management Plan (LEMP) that outlines the specific procedures and locations for Emergency Operations Centers, shelters, and other emergency services (20 V.S.A. § 6). If a town does not adopt or keep current mitigation, preparedness, response, and recovery measures, eligibility for the emergency relief assistance funds (ERAF) drops significantly. As of 2022, 80% of eligible communities have adopted all four hazard mitigation measures.

TABLE 5.1 LOCAL HAZARD MITIGATION PLAN SCHEDULE BY TOWN			
Town	**Date Adopted**	**Duration**	**Expiration**
Andover	8/27/18	2018-2023	2023
Baltimore	9/5/18	2018-2023	2023
Cavendish	4/10/21	2016-2021	2021
Chester	10/6/22	2021-2026	2026
Ludlow	12/3/18	2018-2023	2023
Reading	4/10/17	2017-2020	2022
Springfield	12/10/18	2018-2023	2023
Weathersfield	10/15/18	2018-2023	2023
West Windsor	5/15/18	2018-2022	2022
Windsor	11/13/21	2021-2026	2026

The Emergency Relief and Assistance Fund (ERAF) assists communities by providing funding after federally-declared disasters. Eligible public costs are reimbursed by federal taxpayers at 75%. For disasters after 2014, the State of Vermont will contribute an additional 7.5% toward the costs. For communities that take specific steps to reduce flood damage the State will contribute 12.5% or 17.5% of the total cost. This means that a well-prepared town will receive 92.5% total reimbursement through Federal and State share (see Table 5.2). According to Flood Ready Vermont, a town can maximize their Emergency Relief and Assistance Funding (ERAF) and enhance their preparedness through participating in the following five measures:

12.5% - eligible communities have adopted four mitigation measures:

1. National Flood Insurance Program (participate or have applied);
2. Town Road and Bridge Standards (adopt standards that meet or exceed the 2013 template in the current: VTrans Orange Book: Handbook for Local Officials);
3. Local Emergency Management Plan (adopt annually after town meeting and before May 1)
4. Local Hazard Mitigation Plan - Adopt a FEMA- approved local plan (valid for five years). Or, a draft plan has been submitted to FEMA Region 1 for review.

17.5% - eligible communities also:

5. Protect River Corridors from new encroachment; or, protect their flood hazard areas from new encroachments and participate in the FEMA Community Rating System.

After a declared disaster the damage, to public infrastructure including roads and culverts may approach a million dollars. Here is how the cost of damage will be carried by federal, state, and municipal taxpayers:

TABLE 5.2 EMERGENCY RELIEF AND ASSISTANCE FUND COST-SHARING			
	7.5% ERAF Rate	12.5% ERAF Rate	17.5% ERAF Rate
Federal Share	$750,000	$750,000	$750,000
State Share	$75,000	$125,000	$175,000
Municipal (Town Taxpayer) Share	$175,000	$125,000	$75,000
Total Cost	$1,000,000	$1,000,000	$1,000,000

A town can check their ERAF standing through the State of Vermont's Community Reports. As of 2022, the towns in our Region are eligible for the following ERAF rates:

TABLE 5.3 ERAF RATES IN THE REGION						
X= IN COMPLIANCE		**12.5% Eligibility**				**17.5% Eligibility**
Town	**ERAF Rate**	**1. National Flood Insurance Program**	**2. Town Road and Bridge Standards**	**3. Local Emergency Management Plan**	**4. Local Hazard Mitigation Plan**	**5. Protect River Corridors**
Andover	**12.5%**	**X**	**X**	**X**	**X**	
Baltimore	**17.5%**	**X**	**X**	**X**	**X**	**X**
Cavendish	**7.5%**	**X**	**X**			**X**
Chester	**12.5%**	**X**	**X**	**X**	**X**	
Ludlow	**12.5%**	**X**	**X**	**X**	**X**	
Reading	**17.5%**	**X**	**X**	**X**	**In Process**	**X**
Springfield	**7.5%**	**X**	**X**		**X**	
Weathersfield	**12.5%**	**X**	**X**	**X**	**X**	
West Windsor	**12.5%**	**X**	**X**	**X**	**X**	
Windsor	**12.5%**	**X**	**X**	**X**	**X**	

(*Source: State of Vermont's Community Reports)*

1B. Mitigation

Mitigation is actions taken to reduce the loss of life (human, pets, or livestock) or damage to property by lessening the impact of future disasters. In the event of a foreseeable natural or human-caused disaster, these actions seek to reduce exposure to, probability of, and potential loss from hazardous and disastrous events. Mitigation includes compliance with the National Flood Insurance Program (NFIP) flood hazard regulations. Towns must be in compliance with this program to enable property owners to obtain flood insurance to blunt the effects of catastrophic loss. All towns in the Region are currently members of the NFIP program.

FEMA, through Vermont Emergency Management (VEM), has a hazard mitigation program to assist towns in permanent mitigation projects. Through risk analysis, towns can identify areas of concern and assign a priority ranking to mitigation projects. FEMA offers additional resources for making communities disaster-resistant. The Vermont Local Roads Program assists towns in setting the proper standards for roads, culverts, bridges, and access to local roads.

The FEMA Hazard Mitigation Assistance (HMA) includes funding the following programs:

1. Hazard Mitigation Grant Program - Assists in implementing mitigation measures after a federally-declared disaster, but not tied to the disaster area. The program can also fund the cost of preparing a Local Hazard Mitigation Plan.
2. Building Resilient Infrastructure and Communities (BRIC) - Nationally competitive funding with changing priorities, funded annually by Congress.
3. Flood Mitigation Assistance (FMA) – Provides funding to reduce the threat or eliminate the risk of flood damage to buildings insured under the National Flood Insurance Program.

The full list of high priority mitigation projects in the Region are listed in the Appendix. Common High Priority Mitigation projects for MARC towns include:

- Culvert work: Inventory, Assessment, Upgrade, Replacement
- Annually update Local Emergency Management Plan
- Review and implement other recommended activities in the "Firewise" program
- Flood resiliency projects
- Annually review mitigation plan and projects
  Seek appropriate funding for eligible mitigation projects

1C. Preparedness

Preparedness is taking stock of the persons and assets available for response to an emergency resulting from damage caused by a natural or human-caused hazard. The first step in preparedness is the town's Local Emergency Management Plan, which is a guide for use in the early stages of disaster response. A current local emergency management plan is required for municipalities to receive increased state reimbursement through the Emergency Relief and Assistance Fund (ERAF). It identifies key emergency personnel, an Emergency Operations Center, contact information, sheltering locations, tasks, and an evacuation plan.

The full list of high priority preparedness projects in the Region are listed in the Appendix. Preparedness projects for MARC towns include:

- Update and maintain Local Emergency Management Plan
- Conduct annual maintenance program on culverts
- Actively seek funding for emergency management projects
- Review and implement other recommended activities in the "Firewise" program
- Engage in public outreach and education

1D. Response

Emergency response is a time-sensitive reaction to an incident designed to save lives, stabilize an emergency, and protect property and the environment. Emergency response may include warning, evacuation, rescue, shelter, keeping the residents up to date on relevant information, and providing medical care to the public. A town's response is often dependent on mutual aid, an agreement among neighboring towns to assist or standby with equipment and personnel during an emergency. Though few formal agreements have been made, many ad hoc mutual aid agreements exist throughout the Region. The need may arise for additional assistance when an emergency is greater than what can be reasonably handled by the responding department. The situation may be, for example, a large natural disaster, such as the significant damage caused by intense floodwaters. In 2011, floodwaters from Tropical Storm Irene required a widespread regional emergency response, including the assistance of many towns within the region as well as State aid and the National Guard.

1E. Recovery

Recovery is the effort to restore the infrastructure and the social and economic life of communities after a disaster. It incorporates mitigation and preparedness strategies to lessen and avoid damage from the next event. FEMA provides recovery assistance to communities following federally designated disasters.

To aid in Recovery, the following funding programs are available to towns:

1. The Emergency Aid and Assistance Fund (ERAF)- uses state funding to match federal public assistance after a federally declared disaster. "Eligible public costs are reimbursed by federal taxpayers at 75%. For disasters after October 23, 2014, the State of Vermont will contribute an additional 7.5% toward the costs. For communities that take specific steps to reduce flood damage the State will contribute 12.5% or 17.5% of the total cost."

2. Post Disaster Funds- Funds to aid in recovery after a disaster. Funds may be available to support a wide array of recovery efforts including but not limited to: individual and household assistance, highway disasters, and public assistance.

1F. Emergency Services

1. AMBULANCE

An ambulance is a medically equipped vehicle, usually accompanied by a paramedic or emergency medical service (EMS) personnel to provide urgent health care for sick or injured patients and to transport them to the hospital in an emergency. Ambulance and emergency rescue services are provided through volunteer services in Chester, Cavendish, Reading, and Ludlow. Several towns, including Andover, Baltimore, Weathersfield, and West Windsor contract with other municipalities, as well as private firms from within and outside of the Region for ambulance service. Several factors including the Region's aging population, challenging work hours, and stringent training requirements have made it difficult for volunteer services to attract and retain staff. Springfield and Windsor provide full-time ambulance services.

2. FIRE

All the Region's towns currently utilize municipal or independent fire departments. Andover contracts with the Town of Chester, and Baltimore contracts with Springfield for fire services. Capabilities of existing fire service facilities are generally considered adequate by the towns to address current and projected needs, although as with ambulance services volunteer fire services

also face recruitment and staffing challenges. Weathersfield is expanding its fire protection infrastructure through the creation and installation of fire ponds and dry hydrants.

The two common types of fires that occur in the Region are structural and wildland fires. Structural fires involve residential, commercial, or industrial buildings. Structural fires can be caused by cooking, heating, electrical or lighting equipment, intentional fire setting and smoking materials. Wildland fires are any fire that are not considered structural. A large percentage of wildland fires are human-caused that result from un-attended campfires, burning debris, negligent discard of smoking material, and arson. Most fires in Windsor County are structural fires by a ratio of two structural fires for every wildland fire.

3. POLICE

Law enforcement in the Region is provided by local, county, state, and federal police offices. The towns of Springfield, Ludlow, and Windsor offer full-time 24-hour police service while Chester and Weathersfield have a full-time local police department supplemented by the Vermont State Police during off hours. All towns have, as required by state statute, a town constable. The Windsor County Sheriff's Office provides contractual patrol service to the towns of Andover, Cavendish, and Reading. In addition, the County Sheriff's Office serves as backup support for local and State Police when requested. In addition, the State Police are mandated by Vermont law to provide service for any town that does not employ a full-time police department. State Police service for the Region is provided through the Rockingham and Royalton barracks. The duties of the various and related law enforcement organizations may either overlap or fall short of providing adequate coverage throughout the Region. An assessment of the service areas and coordination of the duties performed by each level of law enforcement would assist towns in planning for more efficient service. Such an analysis would also provide help for eliminating potential gaps in current and future services.

Recruiting new police officers and state troopers is difficult presently. The severe shortage of staffing is forcing many towns to reduce full-time police coverage and has limited the ability of State Police to provide coverage to those towns.

Since 1998, Enhanced 911 (E911) service has been available for all Vermont towns choosing to participate in the system. Every town in the Region is participating in the E911 system. E911 relies on locatable physical addresses linked to telephone numbers, a system that provides the name of the telephone subscriber, the location from which the call originated, and the names of all emergency service providers for the location for every E911 call. The call can then be forwarded to the proper dispatch center(s) to dispatch emergency service providers to the scene, even if the caller is unable to describe his or her location or the nature of the emergency. It is extremely important for towns to make the E911 Board immediately aware of any road changes to keep the master lists accurate and up to date.

FirstNet Authority

FirstNet, also known as the First Responder Network Authority, is an independent agency within the U.S. Department of Commerce's National Telecommunications and Information Administration (NTIA). The network is dedicated to emergency responders and public safety through the buildout, deployment, and operation of a public safety broadband network.

In 2017, Vermont "opted-in" to the FirstNet Network. This decision enabled FirstNet and AT&T to create a system of modernized devices, apps, and tools for first responders. The network's goal is to provide police, EMS, fire, and other public safety personnel updated communication through:

- Connecting first responder subscribers to the information when handling day-to-day operations, responding to emergencies, and supporting large events.
- Creating an efficient communications experience for public safety personnel during natural disasters and severe weather events or search-and-rescue missions.
- Enhancing network coverage across Vermont's rural landscape
- Creating a set of tools for public safety, including public safety apps and specialized devices

1G. Hazard Assessment

Local Hazard Mitigation Plans are used to identify policies and actions that can be implemented over the long term to reduce risk and future losses. Mitigation Plans form the foundation for a community's long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage.

In addition to the local hazard mitigation plans, to best gauge the Region's susceptibility to various disasters, a Regional Hazard Analysis was conducted in the process of creating the Local Emergency Planning Committee (LEPC) #3 All-Hazards Resource Guide. This analysis began with an inventory of possible hazards, along with assigning a probability and vulnerability score to each hazard. A probability score of 0-4 was given to each potential hazard with 0 being unlikely and 4 being an annual event. Next, a vulnerability score of 1-4 was assigned, with 1 representing a moderate event impacting between 30-300 people, and 4 indicating a disaster impacting over 9,000 people. **Table 5.4** below shows the results of this hazard analysis, indicating the Region is most vulnerable to power outages, severe winter weather, & hazardous materials release, with several other hazards following close behind.

TABLE 5.4 STATE HAZARD ASSESSMENT (2018)			
Hazard Impacts	**Probability**	**Potential Impact Average**	**Score***
Fluvial Erosion	4	3.75	15
Inundation Flooding	4	3.25	13
Ice	3	2	8.25
Snow	4	1.75	7
Wind	4	1.5	6
Heat	3	2	6
Cold	3	2	6
Drought	3	2	6
Landslides	3	2	6
Wildfire	2	2.75	5.5
Earthquake	2	2.75	5.5
Invasive Species	2	1.75	3.5
Infectious Disease Outbreak	2	1.75	3.5
Hail	3	1	3

*Score = Probability x Average Potential Impact

Source: 2018 Vermont State Hazard Mitigation Plan

According to the National Climatic Data Center, 206 storm events occurred in Windsor County between January 1, 2010 and January 1, 2021, resulting in two deaths, zero injuries, and $129.654 million in property damage due to:

- **FLOODS** – 23 events with $125.925 million in property damage;
- **WINTER STORMS** - 46 events with $2.13 million in property damage;
- **EXTREME COLD** – 1 event with $0 in property damage;
- **THUNDERSTORMS, PRECIPITATION, AND/OR HIGH WINDS** - 83 events with $1.3 million in property damage;
- **HAIL** – 24 events with $15,000 in property damage.

In addition to the weather-related emergency events listed above, there are also various human-caused emergency events impacting our Region, including vehicular crashes. According to the Vermont Agency of Transportation data on federal aid system roads in the Region, from 2010 to 2021, there were 2,000 vehicle crashes resulting in 1,041 injuries and 29 deaths.

1H. Local Emergency Planning Committee (LEPC) and Regional Emergency Management Committees (REMC)

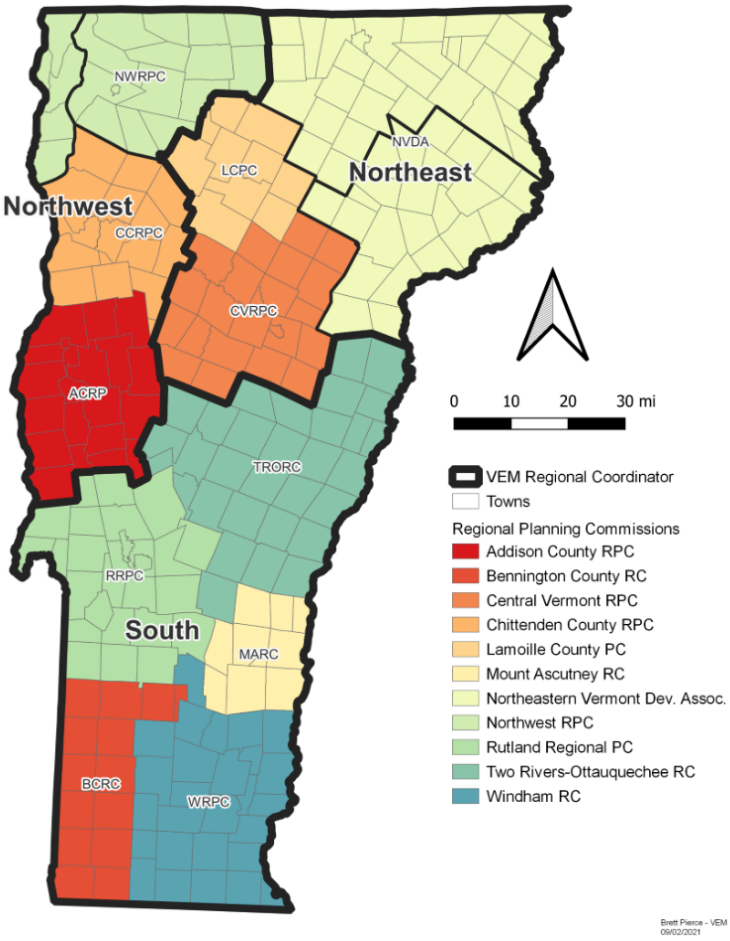
Local Emergency Planning Committee (LEPC)

In large part, Emergency Management in Vermont has been primarily a town responsibility, led by local emergency managers, or persons in the community who are involved in emergency preparedness, and was handled differently from town-to-town. The former LEPC #3 covered all ten towns in the Region with a focus on Hazardous Material incident preparation. This former LEPC has since been replaced with a Regional Emergency Management Committee (REMC), which is focused on all-hazards.

Under 20 V.S.A. §32, Local Emergency Planning Committees (LEPC) were appointed under the State Emergency Response Commission. The LEPCs included membership from fire departments, local emergency medical services, law enforcement, regional planning commissions, hospitals, Vermont Department of Health, Vermont Emergency Management, American Red Cross, and other interested public and private individuals.

The LEPC performed a number of duties including: activities pursuant to the Emergency Planning and Community Right-to-Know Act (EPCRA), 42 U.S.C. §11001 et seq. (1986), collection and administration of data related to the legal right to know what chemicals are used, stored, transported through or made in the region, coordinating with local emergency officials in the development of both local and regional emergency management plans, and pursuing additional funding opportunities. In addition, the LEPC was responsible for developing a regional disaster response plan, which includes training and testing exercises. ***Regional LEPCs have now been replaced by a single statewide LEPC transitioned from regional LEPCs to a single statewide LEPC***.

Regional Emergency Planning Committee (REMC)



REMC stands for Regional Emergency Management Committee, which are regionally organized and controlled committees that participate in all-hazards planning, in addition to the statewide Local Emergency Planning Committee (LEPC).

In July 2021, the Local Emergency Planning Committees (LEPC) were replaced with a single statewide Local Emergency Planning Committee. The state Emergency Management Division established Regional Emergency Management Committees (REMC) which "shall coordinate emergency planning and preparedness activities to improve their regions' ability to prepare for, respond to, and recover from all disasters."

Mount Ascutney Regional Emergency Management Committee (REMC) is made up of Local Emergency Management Directors and Emergency Services Representatives from each municipality in the region. Representatives from fire departments, emergency medical services, law enforcement, media, transportation, hospitals, the department of health district office, organizations serving vulnerable populations, amongst other emergency management stakeholders can participate.

The REMC conducts All-Hazards preparedness planning and coordinates with Vermont Emergency Management (VEM), the State Emergency Response Commission (SERC), and the new Statewide Local Emergency Planning Committee (LEPC).

The REMC prepares an annually updated plan that includes:

- Regional contact information
- Regional resources
- Regional mutual aid agreements
- Regional Emergency Services

Important Emergency Management Information for Towns

Key Steps for your Community:

- Ensure that Selectboards are aware of and have adopted these required plans.
- Appoint an Emergency Management Director, Emergency Management Coordinator or both.
- Make sure the Local Emergency Management Plan (LEMP) is updated annually.
- Create a Local Hazard Mitigation Plan (LHMP) every five years. Review the implementation table once a year.
- Incorporate river corridor protection measures into land use bylaws and town plans.
- Identify a local shelter within your community, have written agreements in place, and keep supplies stocked. Check in with agreements and supplies annually.
- Include an Emergency Preparedness line item in the town budget to pay for various emergency-related expenses
- Have Mutual Aid Memorandum of Understanding (MOU's) in place and review them annually.
- Use Front Porch Forum or town newsletters to engage with and inform residents about emergency preparedness measures.

In the Event of a Disaster

1. Share Information for Local Situation Reports

MARC serves as the reporting voice for our region's towns. Whether your town sustains damage or not, please report to MARC about the status of your town's damage in the event of a disaster as soon as possible. We will send your information to the state's Watch Officer so that resources and funding can be allocated to help respond to the damage and assist with emergency response in your town. . Or, if we are notified of a situation that could be impacting our region, we will reach out to each town to collect local situation reports. Learn more about damage reimbursements at Vermont Flood Ready website.

2. Document, Document, Document

During an emergency event, document as many details as possible through written documentation, photos, videos, etc. Record work done by paid staff and volunteers during response and recovery, including what was done, the date, who was doing the work, the duration of the work, and the materials and equipment used.

Emergency Planning and Management Policies for Towns

1. Towns are encouraged to undertake and periodically review an all-hazards risk assessment in their community to identify potential hazards and the life and property at risk, including cultural, historical, and natural resource assets.

2. Towns are encouraged to develop and implement regulations to make communities more disaster-resistant.

3. Towns are required to review, update, and adopt Local Emergency Management Plans yearly before May 1st.

4. Towns are encouraged to adopt minimum standards for public roads, bridges, and culverts, using the Vermont Agencies of Transportation and Natural Resources, and FEMA standards.

5. Towns are encouraged, in the adoption of minimum road standards, to include the requirement that all private roads and driveways be properly constructed to prevent damage from storm water runoff.

6. Towns are encouraged to participate in the Vermont Enhanced 911 program.

7. Towns are encouraged to appoint representatives for the Regional Emergency Management Committee, to coordinate emergency preparedness and response with other municipalities and regional stakeholders.

Emergency Planning and Management Recommendations for RPC

1. Work with towns to undertake and periodically review their local hazard mitigation plan implementation tables and plans to identify potential hazards and the life and property at risk, including cultural, historical, and natural resource assets.

2. Work with towns to plan and adopt regulations that promote mitigation, preparedness, response, and recovery in the event of a disaster.

3. Work with towns to appoint representatives to the REMC and actively engage in meetings.

4. Explore efforts to develop a regional emergency response plan that includes surrounding areas in Vermont and New Hampshire.

2. FLOOD RESILIENCE

Flood Resiliency Goals

1. Assist towns in the Region with identifying and recognizing flood hazard areas to develop an understanding of flood risk and to make informed decisions about risk planning and management.
2. Support the goals and policies outlined in the Natural Resources Chapter around flood resilience.

The purpose of this section is to further the State Planning Goal of encouraging flood resilient communities and to address the requirements of 24 V.S.A. §4348a(a)(11). Flood and fluvial erosion hazard areas, as described in this section, are shown on Map 1. Water Resources.

Flooding is the most significant, common, and costly natural hazard which threatens the Region, and may include inundation flooding, flash flooding, ice jams, seasonal flooding, and dam inundation. Several significant recent flooding events have raised the awareness of flooding throughout the Region, such as Tropical Storm Irene in 2011 and unnamed events in July 2013 and July 2014. Table 5.5 shows flood events which have been defined as a presidentially declared disaster under the Stafford Act.

TABLE 5.5 FEDERAL DISASTER DECLARATIONS: WINDSOR COUNTY 1990 - 2021

FEMA Disaster Number	Date of Declaration	Description
4532	April 8, 2020	COVID-19 Pandemic
4445	June 14, 2019	Severe Storms, Flooding
4330	August 16, 2017	Severe Storms, Flooding
4207	February 3, 2015	Severe Winter Storm
4140	August 2, 2013	Severe Storms and Flooding
4120	June 13, 2013	Severe Storms and Flooding
4066	June 22, 2012	Severe Storm, Tornado, and Flooding
4043	November 8, 2011	Severe Storms and Flooding
4022	September 1, 2011	Tropical Storm Irene
4001	July 8, 2011	Severe Storms and Flooding
1995	June 15, 2011	Severe Storms and Flooding
1951	December 22, 2010	Severe Storm
1790	September 12, 2008	Severe Storms and Flooding
1784	August 15, 2008	Severe Storms, Tornado, and Flooding

1778	July 15, 2008	Severe Storms and Flooding
1715	August 3, 2007	Severe Storms and Flooding
1698	May 4, 2007	Severe Storms and Flooding
1559	September 23, 2004	Severe Storms and Flooding
1488	September 12, 2003	Severe Storms and Flooding
1428	July 12, 2002	Severe Storms and Flooding
1358	January 18, 2001	Severe Winter Storm
1336	July 27, 2000	Severe Storms and Flooding
1307	November 10, 1999	Tropical Storm Floyd
1228	June 30, 1998	Severe Storms and Flooding
1184	July 25, 1997	Excessive Rainfall, High Winds, Flooding
1124	June 27, 1996	Flooding
1101	February 13, 1996	Storms and Flooding
1063	August 16, 1995	Heavy Rain, Flooding
990	May 12, 1993	Flooding, Heavy Rain, Snowmelt
938	March 18, 1992	Flooding, Heavy Rain, Ice Jams
875	July 25, 1990	Flooding, Severe Storm

(Source: FEMA Declared Disasters)

Damage from inundation flooding can vary greatly depending on the amount of precipitation, snow cover, spring melt, soil saturation levels, and topography. The FEMA has designated Special Flood Hazard Areas throughout the Region, most recently updating the maps in 2007. The Special Flood Hazard Area, or floodplain, is the area determined by FEMA to have a 1% chance of annual flooding. (See Table 5.6 for definitions of common flood hazard terminology.) Particularly at risk during these flood events are village areas and related public infrastructure located within known flood hazard areas; this includes the Village of Chester, Windsor downtown, Village of Ludlow, Brownsville, and Proctorsville. While these areas are especially prone to flooding, all areas may experience inundation flooding.

TABLE 5.6 FLOOD ZONE DEFINITIONS	
Floodway	The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height; also known as the regulatory floodway. As designated and determined by FEMA.
Floodway Fringe (i.e. Floodplain)	The remaining portion of special flood hazard areas after exclusion of the floodway; also known as floodplain.
Fluvial Erosion	The erosion or scouring of riverbeds and banks during high flow conditions of a river. Fluvial erosion can be catastrophic when a flood event causes a rapid adjustment of the stream channel size and/or location.
Fluvial Erosion Hazard Zone	Includes the stream and adjacent lands necessary to accommodate the slope and plan form requirements of a geomorphically stable channel and is subject to fluvial erosion as defined by the Vermont Agency of Natural Resources and delineated on the current Fluvial Erosion Hazard Zone Map. Currently, only the Black River has a map showing fluvial erosion hazard zones.
Special Flood Hazard Area	The land in the flood plain within a community subject to a 1 percent or greater chance of flooding in any given year; also known as floodplain. As designated and determined by FEMA.
River Corridor	The land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures. As of September 2014, no river corridor maps are available for this Region.

Special Flood Hazard Areas are low lying areas adjacent to rivers or streams and can be identified as high-risk areas for flooding. Early towns were built along river areas with easy access to waterpower and transportation resulting in many towns and villages within the Region having significant populations within the identified flood hazard area. River flooding may be widespread, affecting many towns, public utilities, and transportation infrastructure.

The following buildings and infrastructure are at risk from inundation flooding due to their location within special flood hazard areas:

- Number of residential structures within the Special Flood Hazard Area = 289
- Number of residential structures within the Floodway = 75
- Number of commercial enterprises within the Special Flood Hazard Area = 38
- Number of commercial enterprises within the Floodway = 12

- Number of bridges and culverts within the Special Flood Hazard Area = 277
- Number of bridges and culverts within the Floodway = 67

TABLE 5.7 PERCENTAGE OF COMMUNITY STRUCTURES WITHIN SPECIAL FLOOD HAZARD AREAS IN THE REGION

Town	Percentage of Community Structures
Andover	1%
Baltimore	0%
Cavendish	7%
Chester	4%
Ludlow Town	5%
Ludlow Village	13%
Reading	2%
Springfield	2%
Weathersfield	2%
West Windsor	1%
Windsor	17%

Source: Vermont Flood Ready

In recent years, the Region has faced several severe flooding events, contributing to thousands of dollars of detrimental property damage, highlighting the dangers of continued flooding and erosion hazards, as well as the need for mitigation projects to lessen each flood's impact. All the towns in the Region work with MARC to identify projects and strategies for maintaining flood resiliency and all have an adopted Local Hazard Mitigation Plan. Historic and existing land use patterns throughout the Region have resulted in encroachments to the flood and fluvial erosion hazard areas, berms, and the loss of woody vegetation from stream banks. These practices have resulted in the increased loss of a river's floodplain access and increased chance of erosion and river avulsion.

For more information on Flood Resilience, please see the Natural Resources Chapter.

3. REGIONAL IMPACT OF COVID-19

On March 13th, 2020, a State of Emergency was declared in response to the COVID-19 pandemic. In response to the health emergency, the State of Vermont, along with the rest of the country mandated protective measures including social distancing, capacity limits, and mask wearing. As of 2022, although the full effects have not been felt, the pandemic has had a serious impact on the Region's businesses, food security, substance use disorder and overdoses, food and housing security, and more.

In response, federal, state, and local emergency action was enacted to expand emergency and urgent care facilities, food and housing resources, accommodations for testing and vaccination centers and more.

Windsor County: COVID-19 Cases Per Day

(March 2020- April 2022)

Source: USA Facts

TABLE 5.8 COVID-19 CUMULATIVE CASES AND DEATHS (MARCH 2020- APRIL 2022)			
	Cases	Deaths	Rate of Death
Windsor County	9,850	54	0.55%
Vermont	131,460	661	0.50%

Source: USA Facts

Vaccination

Getting vaccinated and vaccine boosters are the best way to protect not only yourself but others against serious illness and death. Any person is eligible to get a booster at least 5 months after their second dose of the Pfizer or Moderna vaccine, including persons under the age of 5. There are additional booster shots available. As of 2022, the CDC recommends everyone stay up-to-date with vaccinations, including primary series doses and boosters for their age group, to protect themselves against the COVID-19 virus.

The COVID-19 vaccine became available in January 2021 prioritizing high risk individuals and became available for all people later in that year. In May 2022, the Center for Disease Control (CDC) approved vaccination and booster shots for children between the age of 5-11. And since then, vaccines have been approved for those under the age of 5.

For current information on the COVID-19 vaccine click here.

Prevention

Due to the evolving and easy transmission of the COVID-19 virus, as well as a high hospitalization and death rate, the prevention of the spread of the virus is important. Before the availability of vaccines, the state and local municipalities required masks and social distancing measures to prevent the spread of the virus. As of 2022, the mask mandates and social distancing requirements are lifted but the risk has not completely dissipated, especially for high-risk individuals.

Prevention of the spread of COVID-19 can be managed through:

1. Staying up to date on vaccinations
2. Getting tested
    a. After exposure
    b. If you exhibit symptoms
3. Staying home if you feel sick
4. Masking and social distancing
5. Knowing if you are at high risk for COVID-19

For more information on ways to prevent the spread of COVID-19, click here.

Testing

Testing is one of the tools the people and visitors to the Region can use to help quash the spread of COVID-19. There are several testing methods available to the public, including free at-home tests provided by the U.S. federal government. Testing sites are free, and most testing sites do not

require people to exhibit symptoms to get tested. Vermont Health Department testing locations closed June 2022.

For current information on COVID-19 testing, click here.

Luckily, despite these infection rates, there are also high rates of COVID-19 vaccination in the Region's towns, with most towns presenting rates over 70%, with 4 of those towns having rates above 90%, as of December 16th, 2021.

TABLE 5.9 COVID-19 VACCINATION RATES IN THE REGION

Town	COVID-19 Vaccination Rate
Andover	51-60%
Baltimore	41-50%
Cavendish	71-80%
Chester	>90%
Ludlow	>90%
Reading	>90%
Springfield	71-80%
Weathersfield	41-50%
West Windsor	81-90%
Windsor	>90%

Updated December 16th, 2021

Appendix:

I. Important Emergency Contacts

Contact	Phone Number
State Watch Officer	1-800-347-0488
VT ANR (Emergency Protective Measures for Instream Work)	(802) 490-6195
VTrans District 2 (Andover, Chester, Springfield, Cavendish, Baltimore, Weathersfield)	(802) 254-5011
VTrans District 3 (Ludlow)	(802) 786-5826
VTrans District 4 (Reading, West Windsor, Windsor)	(802) 295-8888
Mount Ascutney Regional Commission (MARC)	(802) 674-9201
American Red Cross	(855) 891-7325
HazMat Hotline	1-800-641-5005

II. High Priority Mitigation Projects in the Region

Town	Type of Action
Andover	Consider VTculverts.org data, VT Road & Bridge Standards, Geomorphic Assessments, and Resident Input to Prioritize Culvert Replacement
Andover	Replace and Upgrade Known Undersized Culverts based on above
Andover	Keep culvert/bridge inventory updated
Andover	Attend training on floodplain management and flood regulation administration
Andover	Update LEMP
Baltimore	Complete annual culvert upgrade based on inventory
Baltimore	Develop an action plan for removing high risk trees from along power lines
Baltimore	Conduct annual maintenance program on ditches
Baltimore	Maintain a LEMP
Cavendish 2018-2021 plan	Consider VTculverts.org data, VT Road & Bridge Standards, Geomorphic Assessments, and Residents Input to Prioritize Culvert Replacement
Cavendish 2018-2021 plan	Replace and Upgrade Known Undersized Culverts based on above
Cavendish 2018-2021 plan	Enhance outreach on safe winter home heating to homeowners, in addition to school program
Cavendish 2018-2021 plan	Review and implement other recommended activities in the “Firewise” Program
Cavendish 2018-2021 plan	Work with State to Mediate High Hazard Stone Culvert (ID-Singleton's)
Cavendish 2018-2021 plan	Implement Erosion Hazard Prevention Measures to protect Identified Critical Town Infrastructure – Sewer Lift
Cavendish 2018-2021 plan	Improve Flood Resiliency in Davis Road Bridge Replacement Project (in-progress, see below)
Cavendish 2018-2021 plan	Complete Black River Streambank Restoration Project (in-progress, see below)

Cavendish 2018-2021 plan	Determine and Formalize Process for Implementing Mitigation Actions
Chester 2021-2026 plan	Complete erosion and flood mitigation efforts on vulnerable stretch of Rt.35 along the South Branch that is susceptible to further deteriorate due to streambank erosion and stormwater during heavy rain and high flows **Phase I:** Complete repairs of highly eroded section **Phase II:** Complete engineering study/design for flood and erosion resiliency on remainder of road **Phase III:** Implement recommended upgrades to remainder of road
Chester 2021-2026 plan	Address flood risk to Mountain/Flamstead and Marshall Rd areas as recommended in the Road Erosion Inventory Report: **Phase I:** Conduct an engineering study for a stormwater system to control stormwater runoff and help stabilize the river bank. This project is consistent with Town Plan policy to strengthen stormwater infiltration practices for new development to improve flood resiliency. **Phase II:** Implement engineering design
Chester 2021-2026 plan	Address flood risk associated with three bridges over the Williams River used for access to private properties along Rt.103 (Thompson, Jewett, and Palmer). Failure of these bridges may isolate residents and cause debris jams and flooding downstream. **Phase I:** Conduct study to determine best options **Phase II:** Conduct Engineering Design in Progress **Phase III:** Implement Project
Chester 2021-2026 plan	Allocate enough funding each budget cycle to acquire and maintain an adequate salt/sand inventory beginning early in the fall season in anticipation of ice events over the season
Chester 2021-2026 plan	Make continued progress on Municipal Roads General Permit (MRGP) standards for implementing best management practices on hydrologically-connected road segments
Chester 2021-2026 plan	Update bridge and culvert inventories and maintain a priority list for upgrades and repairs to reduce risk of damage and infrastructure failure from flooding and erosion
Chester 2021-2026 plan	Conduct annual review of Hazard Mitigation Plan progress as noted in Section 6.3 prior to capital budgeting process and recommend incorporating projects selected from this plan, if feasible and funding is available
Chester 2021-2026 plan	Work with MARC to encourage hazard mitigation awareness and incorporate mitigation/preparedness actions into other town planning efforts providing specific examples and language to be discussed and considered
Chester 2021-2026 plan	Complete construction and opening of New Emergency Services Facility and use the opportunity for public outreach
Chester 2021-2026 plan	Work with MARC to provide a concise and comprehensive list of available funding sources to include a description/examples of eligible project types and application schedules to better coordinate efforts in implementing mitigation projects.
Ludlow	Seek funding for development of emergency plans and flood hazard mitigation for the Wastewater Treatment Facility and Fire Station
Ludlow	Improve efforts to incorporate hazard mitigation into other town planning, discussions, and activities
Ludlow	Continue progress on current East Hill FEMA Buyout project and seek other potential FEMA buyout opportunities
Ludlow	Continue efforts to move forward on retrofitting existing drainage system at Commonwealth intersection

Ludlow	Prioritize hydrologically connected road segments and prepare a 5-year plan for upgrade to incorporate new Municipal Roads General Permit standards to reduce road erosion and runoff
Ludlow	Actively seek funding to install recommended best management practices on local roads to meet new Municipal Roads General Permit state road standards based on identified priorities above
Ludlow	Work with MARC to seek grant opportunities more proactively for bridge and culvert upgrades to supplement town maintenance programs
Ludlow	Review recommended activities from the "Firewise" Program to enhance annual outreach for fire safety to all residents
Reading 2016-2021 goals	Incorporate River Corridor Plan recommendations into prioritization of capital spending on maintenance and upgrade of roads, bridges, culverts and ditches
Reading 2016-2021 goals	Identify vulnerable roadways and improve drainage through additional ditching and culverts with a focus on major evacuation routes
Reading 2016-2021 goals	Provide informational materials and buyout options to at-risk residential and commercial structure owners within River Corridor
Reading 2016-2021 goals	Implement annual awareness program for residents in early fall on the hazards of home heating and chimney fires
Reading 2016-2021 goals	Work with MARC to actively seek funding opportunities for HM recommendations in River Corridor Plans including conservation easements, bank restoration, debris and berm removal
Reading 2016-2021 goals	Review identified site specific mitigation measures recommended in River Corridor Plans and develop a plan to address those that are doable based on funding and available personnel
Reading 2016-2021 goals	Work with MARC to incorporate hazard mitigation plan into long-term planning process and Town Plans
Reading 2016-2021 goals	Work with MARC to Update Flood Hazard Regulations to include river corridor overlay and discourage development in FEH areas
Reading 2016-2021 goals	Create redundant power supply for critical facilities – Town & School
Reading 2016-2021 goals	Assess the vulnerability of critical town infrastructure facilities in River Corridor and determine specific mitigation options
Reading 2016-2021 goals	Review "Firewise" program, determine effectiveness, and incorporate new programs
Springfield	Work with MARC to incorporate these new Hazard Mitigation Plan Strategies into Other town planning efforts
Springfield	Mitigate Lincoln Street slope failure
Springfield	Mitigate North Main Street slope failure
Springfield	Determine stabilization options for the slope failure off of Seavers Brook Rd. (2016 REIR, ID#126)
Springfield	Evaluate stabilization options for severe bank erosion threatening utilities along Middle Rd. (2016 REIR, ID#67)
Springfield	Evaluate and prioritize remaining projects in 2016 Road Erosion Inventory Report not listed here
Springfield	Implement MRGP Plan to meet standards; prioritize road segments as funding becomes available

Springfield	Develop a Stormwater Master Plan
Springfield	Develop design plans to mitigate stormwater flow from Grove Street to reduce flood risk to Whitcomb Building residents and implement
Springfield	Develop design plans for the breach or removal of the Weathersfield Reservoir Dam
Springfield	Implement Vermont Alert System for the Town to include Training, Data Collection and Program Planning
Springfield	Establish Standard procedures for VT Alert to Inform Residents of Heating Fire Hazards during Extended Extreme Cold events, Brush Fire Hazard during Extended Dry Periods, Evacuation Routes and Emergency Shelters
Springfield	Conduct formal annual monitoring of this HMP and informing the public on progress made
Springfield	Conduct an educational outreach for Seavers Brook community on flood risk and resiliency
Springfield	Proactively manage culvert upgrade program by seeking new funding opportunities for Municipal Roads General Permit Standards compliance (MRGP)
Springfield	Identify and educate property owners located within Special Flood Hazard Areas or River Corridor on flood and erosion risks, mitigation, FHA By-Laws, and NFIP
Weathersfield 2018-2022 plan	Culvert upgrade to ___ (identify culvert 1 remaining)
Weathersfield 2018-2022 plan	Continued specialized hazardous materials training and exercises
Weathersfield 2018-2022 plan	Stone line ditch – Amsden Hollow Road
Weathersfield 2018-2022 plan	Incorporate new MRGP Standards in identifying and prioritizing vulnerable hydrologically-connected roadways and implement required practices to meet standards *as funding becomes available*
West Windsor 2018-2022 plan	Assess options to establish a second access to Ascutney Mountain Resort and Yale Heights and Happy Canyon housing developments during hazard events
West Windsor 2018-2022 plan	Enhance annual culvert upgrade program using Road Erosion Inventories and new funding opportunities for municipal roads
West Windsor 2018-2022 plan	Obtain funding to replace large culvert on Bible Hill Rd.
West Windsor 2018-2022 plan	Establish alternative route to siltation ponds in Talc Mine area and remove the Pellet Plant Bridge
West Windsor 2018-2022 plan	Formally adopt policies that address storage of unsecured objects in floodplain or river corridor
West Windsor 2018-2022 plan	Work with MARC to incorporate these new Hazard Mitigation Plan Strategies into Other community planning efforts
West Windsor 2018-2022 plan	Work with MARC on a Grant Opportunity to Modify River Corridor Map
West Windsor 2018-2022 plan	Identify and educate property owners located within Special Hazard Flood Areas or River Corridor on flood and erosion risks, mitigation, FHA By-Laws, and the current NFIP
West Windsor 2018-2022 plan	Conduct an All-Hazards Vulnerability Assessment for the Town's water system
West Windsor 2018-2022 plan	Continue progress on incorporating recommendations in Flood Resilience Addendum to Town Plan in FHA By-Laws revisions
West Windsor 2018-2022 plan	Modify regulations and recommendations in Land Use Planning to accommodate highwater flows
West Windsor 2018-2022 plan	Conduct formal annual monitoring of this LHMP and informing the public on progress made

III. High Priority Preparedness Projects in the Region

Town	Type of Action
Andover	Map ponds as emergency water source
Andover	Update EOP
Baltimore	Develop procedures and planning for pre-winter activities
Baltimore	Conduct annual maintenance program on ditches
Baltimore	Maintain a LEOP
Cavendish 2018-2021 plan	Actively seek funding to provide back-up power supply for town EOC/Shelter
Cavendish 2018-2021 plan	Review and implement other recommended activities in the 'Firewise' Program
Chester 2021-2026 plan	Continue progress to upgrade all technical level emergency responders to EMT or higher level to provide more capacity for emergency response
Chester 2021-2026 plan	Complete construction and opening of New Emergency Services Facility and use the opportunity for public outreach
Chester 2021-2026 plan	Work with MARC to provide a concise and comprehensive list of available funding sources to include a description/examples of eligible project types and application schedules to better coordinate efforts in implementing mitigation projects
Reading 2016-2021 goals	Create redundant power supply for critical facilities – Town & School
Reading 2016-2021 goals	Assess the vulnerability of critical town infrastructure facilities in River Corridor and determine specific mitigation options
Reading 2016-2021 goals	Review "Firewise" program, determine effectiveness, and incorporate new programs
Springfield	Implement Vermont Alert System for the Town to include Training, Data Collection and Program Planning
Springfield	Establish Standard procedures for VT Alert to Inform Residents of Heating Fire Hazards during Extended Extreme Cold events, Brush Fire Hazard during Extended Dry Periods, Evacuation Routes and Emergency Shelters
Springfield	Conduct formal annual monitoring of this HMP and informing the public on progress made
Springfield	Conduct an educational outreach for Seavers Brook community on flood risk and resiliency
Springfield	Proactively manage culvert upgrade program by seeking new funding opportunities for Municipal Roads General Permit Standards compliance (MRGP)
Springfield	Identify and educate property owners located within Special Flood Hazard Areas or River Corridor on flood and erosion risks, mitigation, FHA By-Laws, and NFIP
Weathersfield 2018-2022 plan	Annual culvert inspection program
Weathersfield 2018-2022 plan	Dry hydrant mapping and needs assessment
Weathersfield 2018-2022 plan	Continued specialized hazardous materials training and exercises
Weathersfield 2018-2022 plan	Research funding opportunities WWVFD station repairs

West Windsor 2018-2022 plan	Assess options to establish a second access to Ascutney Mountain Resort and Yale Heights and Happy Canyon housing developments during hazard events
West Windsor 2018-2022 plan	Enhance annual culvert upgrade program using Road Erosion Inventories and new funding opportunities for municipal roads
West Windsor 2018-2022 plan	Identify and educate property owners located within Special Flood Hazard Areas or River Corridor on flood and erosion risks, mitigation, FHA By-Laws, and the current NFIP
West Windsor 2018-2022 plan	Prepare an Emergency Response Plan for the Town's water system

CH 6: NATURAL RESOURCES

Class II Wetland in Ascutney

Background

The landscape of our Region is composed of forests, fields, surface waters, and developed lands. This rural landscape, with an abundance of natural resources, is the reason many people choose to live in or visit this region.

Changing land use patterns have resulted in ecosystem shifts and changes, affecting both wildlife and habitat. Throughout the region, the landscape has undergone shifts from an original landscape of forested land to agricultural lands in the 19th and early 20th centuries, and now back to primarily forestland. The re-establishment of forestland has significantly improved the water quality of our rivers, streams, and lakes, along with the species that depend on them. However, the loss of agricultural land has made communities within the Region less self-sufficient, requiring many food products to be imported from other regions and states.

A lack of proper planning often leads to piecemeal development that can fragment forest blocks and habitat connectors, and other wildlife habitat areas. Land use regulations that require minimum lot sizes, but do not allow for the flexibility of clustered development, may have negative impacts on ecosystems. Additionally, allowing development to encroach upon critical natural areas, such as floodplains, is not only detrimental to habitat, but also jeopardizes property, infrastructure and public safety.

Just as we plan for the connection of economic and residential centers with roads and other infrastructure, planners should provide for connectivity of wildlife habitat, in addition to protection of all critical natural resources. The following sections outline the diversity of natural resources throughout the Region, while providing policies and goals that strive to connect, integrate, and protect the landscape for balanced ecosystem sustainability.

Natural Resources Goals

Ensure the continued protection and/or restoration of the Region's significant natural resources, including forestlands, wildlife, wildlife habitat, surface water and groundwater resources, earth resources, and air quality. In order to achieve this goal, we will:

1. Promote biodiversity by minimizing development impacts on large, contiguous forest blocks and habitat connectors;

2. Protect ecosystems within which rare, threatened or endangered (RTE) species are found;

3. Promote reclassification of pristine water resources to afford further protection;

4. Protect groundwater as a public trust;

5. Maintain and improve water quality in accordance with 10 V.S.A. § 6068(a);

6. Encourage well managed extraction of mineral resources; and,

7. Ensure that drinking water supplies are safe and sufficient to meet current needs as well as the needs of future growth and development.

Agricultural Lands

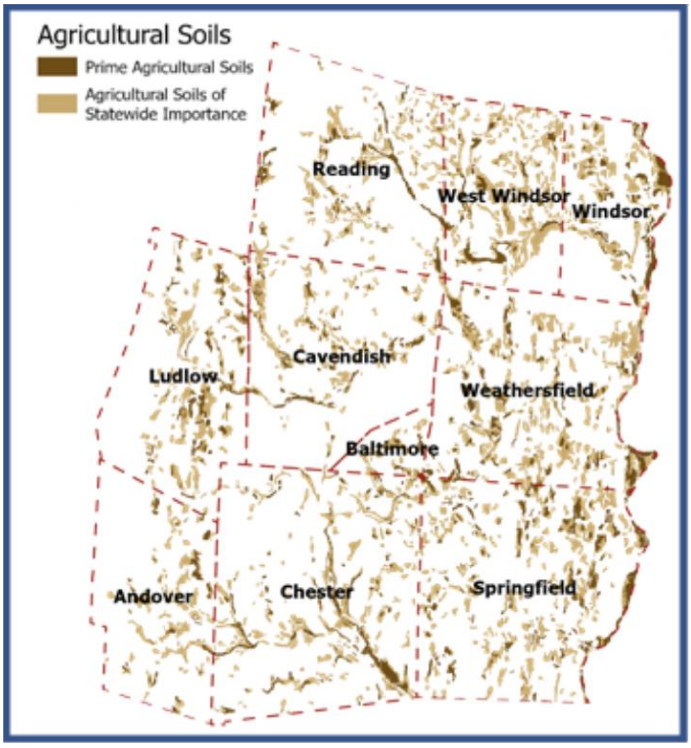
The Region and Vermont as a whole are net importers of food supplies. However, changes in the foreseeable future may require increasing local food production as transportation costs rise, the costs of petroleum and petroleum-based farm supplies increase, the western United States experiences increasingly severe water shortages, among other factors.

Some of the benefits of productive agricultural lands include:

- A more self-sufficient regional population;
- A local, stable and reliable supply of food products;
- Preservation of regional heritage and open space; and,
- Support for the tourism economy.

Prime agricultural soils should be maintained to support existing and future agricultural productivity, so as to encourage local farming and food production operations, and reduce dependency on imported food products in the Region.

Classification of Agricultural Soils



The Region has many areas identified as having prime agricultural soils (Map 7). As defined by the Natural Resource Conservation Service (NRCS), prime agricultural soils are available for use and have a combination of the best characteristics for producing food, forage, fiber, and oilseed crops. The best suited land uses for prime agricultural soils include forests, cropland, pasture, or other similar uses; but once developed, these soils lose their agricultural characteristics. Prime agricultural soils are valuable for their current and potential future farming uses. There are also many areas of agricultural soils of statewide importance throughout the Region. These soils exhibit many of the same characteristics of prime agricultural soils, but are constrained by one or more of the following: slope, erosion potential, depth to bedrock, and/or location within a mapped floodplain. Agricultural soils of statewide importance may also be valuable for their current and potential future farming uses.

Protection of Prime Agricultural Soils

Agricultural soils are a finite resource. Regenerative agricultural practices should be encouraged to the extent practicable as a means of resource preservation. Prime agricultural soil use for non-agricultural purposes is strongly discouraged. Protecting important agricultural soils, while

also encouraging smart growth, can be challenging. Many designated downtowns and village centers are located in a river valley and are surrounded by areas of prime agricultural soils and/or agricultural soils of statewide significance, which constrain future growth and development in those areas. A balance is necessary in order to protect agricultural soils, while allowing the flexibility to facilitate new growth within or adjacent to growth centers in accordance with the State Planning Goals in 24 V.S.A. §4302(c)(1).

Forest Resources

Forested land, including forest blocks and habitat connectors (Map 6), serves as a major asset to the Region. These forestlands provide a natural system of surface and groundwater filtration, stormwater retention, air purification, soil stabilization, carbon sequestration, and critical habitat for many species of native wildlife such as bobcat, bear, and deer. Vermont forests are home to a diversity of significant natural communities, Species of Greatest Conservation Need and uncommon species, along with many rare, threatened, and endangered (RTE) species. They also serve as an important economic resource for the Region. The harvest and manufacturing of forest products contributes approximately $1.4 billion to Vermont's economy annually and employs 10,555 people.[11] Forestlands form the foundation for numerous outdoor recreational activities such as walking, hiking, skiing, hunting, and camping; serve as a renewable energy resource through heat and power production; and provide the scenic qualities of an attractive natural setting for residents and visitors. Sound management of forested land takes into account all of these economically and environmentally beneficial values, and balances them for the common good.

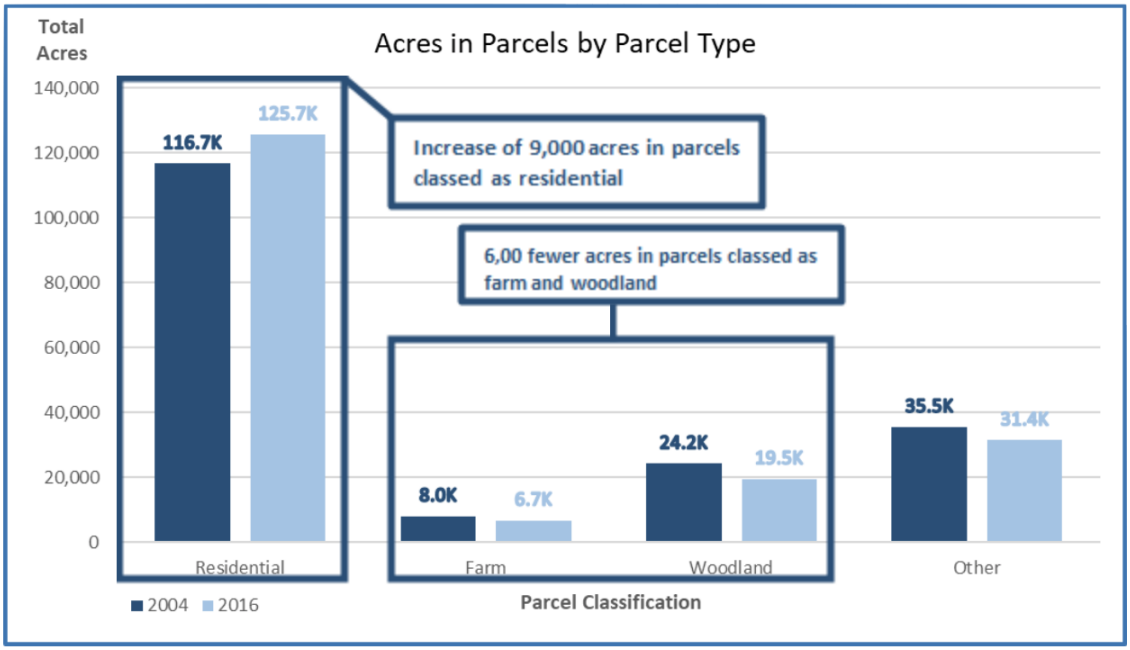
Forest Fragmentation

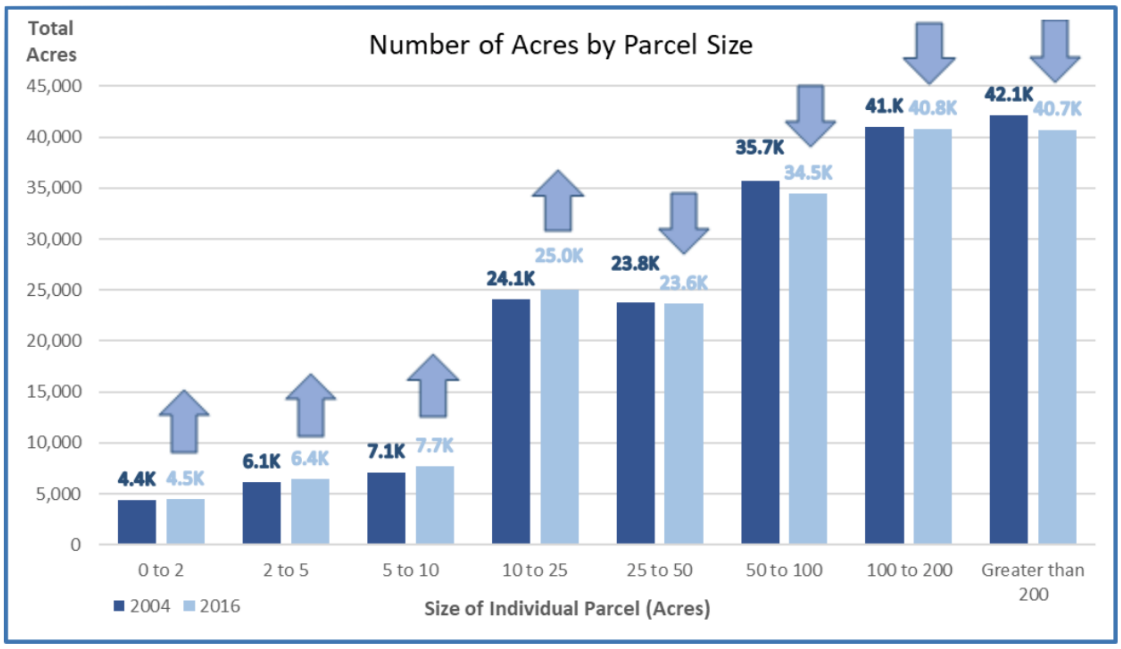
Forest fragmentation presents an increasing threat to the economic and ecological stability of forest land in the Region. As discussed in the Wildlife Section of this chapter, many of the species that drive tourism, wildlife viewing, hunting and fishing require larger, contiguous blocks of forest and a connected network of forest blocks. Even as overall forest cover remains relatively stable over time, large, contiguous forest blocks are becoming fragmented and isolated in the Region. Forest fragmentation occurs through two processes: increased residential and public infrastructure development such as roads and power lines, and parcelization. Parcelization occurs when large parcels are subdivided into smaller lots. Even if left forested, small lots in multiple ownerships can be difficult to effectively manage; recreation access can be reduced due to differing objectives of landowners; and timber production is less economically feasible. The charts below track parcelization in the Region through two metrics, parcel size and

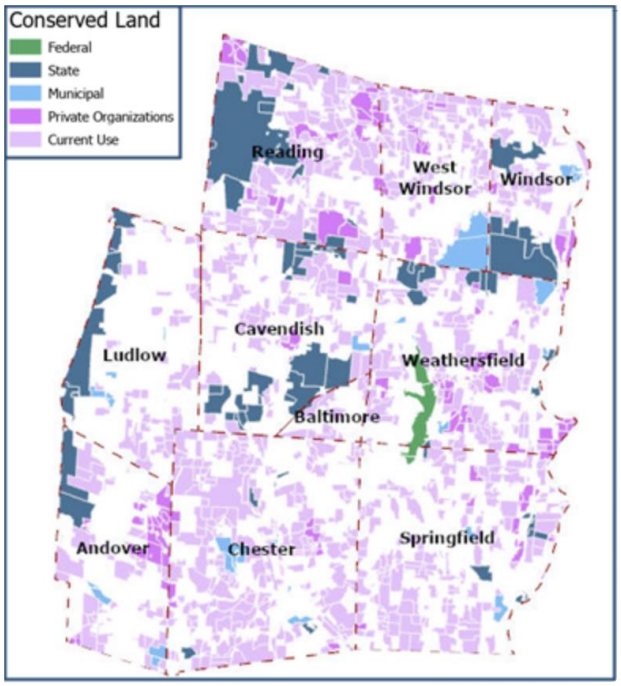
[11] Vermont Department of Forests, Parks and Recreation, *2015 Vermont Forest Fragmentation Report* (April, 2015)https://fpr.vermont.gov/sites/fpr/files/About_the_Department/News/Library/FOREST%20FRAGMENTATION_FINA L_rev06-03-15.pdf

parcel classification. Both show the same trend: fewer large parcels dedicated to forestry and farming and more, smaller residential lots.

Connectivity between forest blocks (Map 6) is also of vital importance. The ability for wildlife to readily move across the landscape preserves genetic diversity through the exchange of genes between populations, allows species to better adapt to climate change impacts, among other benefits. The Mount Ascutney corridor represents a particularly important habitat connector as one of only a handful of crossings between Vermont and New Hampshire and should therefore be a focus of conservation efforts in the Region. Other important regional corridors include the Connecticut River Corridor and another wildlife corridor which runs north to south along the central and western parts of the Region (see Map 6).







Sources: VCGI, VT Dept of Taxes

Conserved Forestland

In addition to several town forests and land owned by the U.S. Army Corps of Engineers, a large amount of forestland in the Region is owned by the State of Vermont and managed in a variety of ways. Unlike Vermont State Parks, which focus equally on recreation and conservation, Wildlife Management Areas (WMAs) are managed primarily to benefit Most of the forested land in the Region is in private ownership. Vermont's Use Value Appraisal (or Current Use) Program requires landowners to implement land management plans and has been successful in facilitating sound management of a large portion of private forest and farmland in the Region.

Exotic Invasive Species

Exotic invasive species are non-native plants and animals that invade and alter both natural and managed areas. When they are free from natural predators, exotic invasives persist and proliferate to the detriment of native plants and animals. Not all non-native plants are invasive and not all invasive plants are non-native.

Exotic invasive species have come to the Region through a variety of sources, including ornamental plant trade, conservation plantings, and agricultural operations. The threat of exotic invasive species to forest, open land, and riparian areas in the Region is ongoing.

Below is a diagram including many of the invasive species in the Region. For additional information regarding invasive species, please visit https://www.vtinvasives.org/.


ASH YELLOWS
Candidatus Phytoplasma fraxini
BALSAM WOOLLY ADELGID
Adelges piceae
BEECH LEAF DISEASE
Litylenchus crenatae mccannii
BUTTERNUT CANKER
Sirococcus clavigignenti-juglandacearum
FOREST PESTS
ASIAN LONG-HORNED BEETLE
Anoplophora glabripennis
BEECH BARK DISEASE
Cryptococcus fagisuga and Neonectria spp.
EMERALD ASH BORER
Agrilus planipennis
DUTCH ELM DISEASE
Ophiostoma novo-ulmi
The Asian Long-Horned Beetle threatens hardwood trees. This poses a threat to recreation and forest resources (like maple syrup production).
Beech Trees are an important part of the Northern Hardwood Forest. Forest animals rely on beech nuts as a vital food source.
Ash trees infested with emerald ash borer will die. This poses a threat to Vermont;s economy and ecology, as 5% of Vermont's trees are Ash.
Most American Elm trees have been eradicated because of Dutch Elm Disease. Trees can still be found in forests, but often succumb to the disease after producing seeds.
CHESTNUT BLIGHT
Cryphonectria parasitica
ELONGATE HEMLOCK SCALE
Fiorinia externa Ferris
GYPSY MOTH
Lymantria dispar
HEMLOCK WOOLY ADELGID
Adelges tsugae
OAK WILT
Bretziella fagacearum
JUMPING WORMS
Pheretimoids
PEAR THRIPS
Taeniothrips inconsequens
SPOTTED LANTERN FLY
Lycorma delicatula
RED PINE SCALE
Matsucoccus matsumurae
Jumping Worms alter the soil of the forest floor leading to a reduction of organic matter, and some seed banks. Their presence may also alter the spread of other invasive species.
SIREX WOOD WASP
Sirex noctilio
Spotted Lantern Flies remove sap which reduces photosynthesis, weakening the plant. Adult flies secrete honeydew which allows the growth of fungus on the leaves, stems, and fruit.
THOUSAND CANKER DISEASE
Geosmithia morbida sp. nov
WHITE PINE BLISTER RUST
Cronartium ribicola
WINTER MOTH
Operophtera brumata


AMUR MAPLE
Acer ginnala
AUTUMN OLIVE
Elaeagnus umbellata
JAPANESE BARBERRY
Berberis thunbergii
ASIATIC BITTERSWEET
Celastrus orbiculatus
BLACK LOCUST
Robinia pseudoacacia
COMMON BARBERRY
Berberis vulgaris
Barberry displaces native plants and reduced wildlife habitat and forage. Barberry is a host to deer ticks, which can transmit Lyme disease. The plant can also alter soil pH.
COMMON REED
Phragmites australis
Common Reed replaces native flora. It does not provide a quality habitat for insects, birds of amphibians. The root systems are tired to the death of nearby native root systems.
BORDER PRIVET
Ligustrum obtusifolium
GIANT HOGSWEED
Heracleum mantegazzianum
Giant Hogsweed grows rapidly and displaces native plants. The plant leaves the ground bare in winter, making it open to erosion. The sap is dangerous to human skin.
COMMON BUCKTHORN
Rhamnus cathartica
GLOSSY BUCKTHRON
Frangula alnus
BURNING BUSH
Euonymus alatus
BUTTERBURS SWEET COLTSFOOT
Petasites hybridus
CYPRUS SPURGE
Euphorbia cyparissias
DAME'S ROCKET
Hesperis matronalis
EUROPEAN ALDER
Alnus glutinosa
EUROPEAN SPINDLE-TREE
Euonymus europaeus
FALSE INDIGO
Amorpha fruticosa
FALSE SPIRAEA
Sorbaria sorbifolia
GARLIC MUSTARD
Alliaria petiolata
GOUTWEED
Aegopodium podagraria
TERRESTRIAL PLANTS
JAPANESE KNOTWEED
Fallopia japonica
Knotweeds form thick dense stands and can crowd out native vegetation. The masses can clog waterways and increase erosion, lovering habitat for wildlife. They are difficult to eradicate.
MULTIFLORA ROSE
Rosa multiflora
Multiflora Rose forms dense thickets that crowds out native plant species. Spread through a variety of methods, this plant can grow in many types of conditions.
HIMALAYAN BALSAM
Impatiens glandulifera
VINE HONEYSUCKLE
Lonicera japonica
DWARF SHRUB HONEYSUCKLE
Lonicera xylosteum
JAPANESE HOPS
Humulus japonicus
JAPANESE STILTGRASS
Microstegium vimineum
GIANT KNOTWEED
Fallopia sachalinensis
MILE-A MINUTE VINE
Persicaria perfoliata
NARROW- LEAVED BITTER-CRESS
Cardamine impatiens
NORWAY MAPLE
Acer platanoides
PORCELAINBERRY
Ampelopsis brevipedunculata
PRINCESS TREE
Paulownia tomentosa
TREE OF HEAVEN
Ailanthus altissima
Tree of Heaven forms dense thickets that crowd out native species. They are extremely tolerant of harsh conditions, and can easily invade forests and cause habitat change.
REED CANARY GRASS
Phalaris arundinacea
REED MANNA GRASS
Glyceria maxima
RUSSIAN OLIVE
Elaeagnus angustifolia
SPOTTED KNAPWEED
Centaurea stoebe
BLACK SWALLOWWORT
Cynanchum louiseae
PALE SWALLOWWORT
Cynanchum rossicum
WALL-LETTUCE
Mycelis muralis
WHITE POPLAR
Populus alba
WILD PARSNIP
Pastinaca sativa
YELLOW FLAG IRIS
Iris pseudacorus

Wildlife Resources

The landscape of the Region includes a variety of natural resources such as rivers, lakes, forests, and wetlands that provide habitat for numerous wildlife species. Planning for the preservation of wildlife habitat is critically important for the continued survival of wildlife species in the Region. In addition to providing habitat and creating economic opportunities, lands that are left undeveloped contribute to the rural character of the Region.

Habitat

A diversity of habitat types is necessary for the continued existence of the various fish and wildlife species that inhabit the Region. A major detriment to wildlife survival rates and proliferation is the impact of human development on the natural environment. Although most development in the Region is done on a relatively small scale, it can have a significant cumulative impact on wildlife habitat. As people move to the Region, development of new single-family housing outside of growth centers is increasing. This growth pressure in rural areas is having a detrimental impact on large, contiguous blocks of wildlife habitat, including forest and connectivity blocks, fields and other open spaces. Scattered, small-scale development causes fragmentation of these habitat areas, potentially degrading or eliminating the land needed to support certain species. A diversity of healthy populations can only be achieved through maintaining variety in the types of wildlife habitat available. Conservation of a diverse mix of natural areas and attention to connections between large tracts of wildlife habitat is necessary for a diverse and healthy wildlife population to survive and flourish. The following sections describe some important habitat types that may be found in the Region.

Large mammals such as moose, bear, deer, bobcat, and a variety of other species, such as wild turkeys and grouse, rely on large contiguous areas of forests, fields and other undeveloped lands for food, shelter, breeding grounds and migratory stop-overs. Fragmentation of such land can result in decreases in the number of species, as well as population sizes. A variety of songbirds reside in wooded areas that are characterized by less intense human use.

Mast

Mast is high-energy food, including seeds, nuts, and berries, produced by certain trees and shrubs, such as beech and oak. Mast production areas provide critical fall feeding areas for a number of wildlife species, such as bear, deer and grouse. Mature oak and beech stands are the most important mast production areas for wildlife and shall be preserved whenever possible.

Deer Wintering Areas

During winter months, deer tend to congregate in coniferous forests along westerly and southernly slopes where they are protected from wind and cold temperatures. The greatest limitation to the size of the deer herd in the state is the quality and availability of wintering habitat. Identified deer wintering areas should be afforded protection to the extent feasible.

Aquatic Habitat

A variety of aquatic habitats are necessary to sustain different aquatic species. Many fish species in Vermont have lost habitat due to increased development along rivers, streams and lakes. One of the greatest threats to fish habitat is nonpoint source sediment pollution, caused by channel/bank erosion and mismanaged highway runoff, among other sources. Riparian buffers of natural vegetation along waterways, green stormwater infrastructure/low impact development practices, and proper highway maintenance (such as armoring drainage ditches and proper highway crowning) can help mitigate some of these impacts.

Development sometimes results in loss of buffer vegetation, which can facilitate thermal stress (increased water temperatures), among other issues. Certain fish species, such as trout and salmon, require cold-water habitat, and share the need for well oxygenated, free-flowing water with few blockages, as well as gravel streambeds for spawning. Small, cold headwater streams serve as the most productive habitat for wild trout. These streams remain cool throughout the summer season, and generally have been minimally altered by land and water development activities. Headwater streams throughout the Region should be considered for reclassification to Class A(1) where supporting data exists in order to afford them further protection.

Hydroelectric facilities (hydro-dams) inhibit aquatic organism passage (AOP), and often restrict migratory fish species from accessing critical spawning habitat. Mitigation measures often include installation of fish ladders or elevators to allow upstream passage to spawning habitat. Provision and maintenance of this passage infrastructure is generally a condition of the facilities' operating license.

Smaller barriers to AOP are far more common. Stream crossing culverts often outlet above the water surface elevation at the downstream end, preventing upstream passage for some or all species and life-stages. Replacing these culverts with structures of adequate size and appropriate grade allow aquatic species to access the upstream portion of the habitat. In addition, removing small, dated dams that serve no functional purpose along smaller rivers and streams is a common and effective means to restore aquatic passage, and should be encouraged when feasible.

Rare, Threatened and Endangered Species; and Significant Communities

Rare, threatened, and endangered (RTE) plant and animal species and significant communities are identified throughout the Region. The Vermont Department of Fish and Wildlife's Nongame and Natural Heritage Program has identified and mapped RTE species, and significant natural communities throughout the State. These habitat areas/natural communities have been identified by points on the map, but do not reveal which species reside there (as a protective measure) (**Appendix A – Map___)**. Development should not negatively impact these areas. The Vermont Department of Fish and Wildlife should be consulted to determine if these areas have

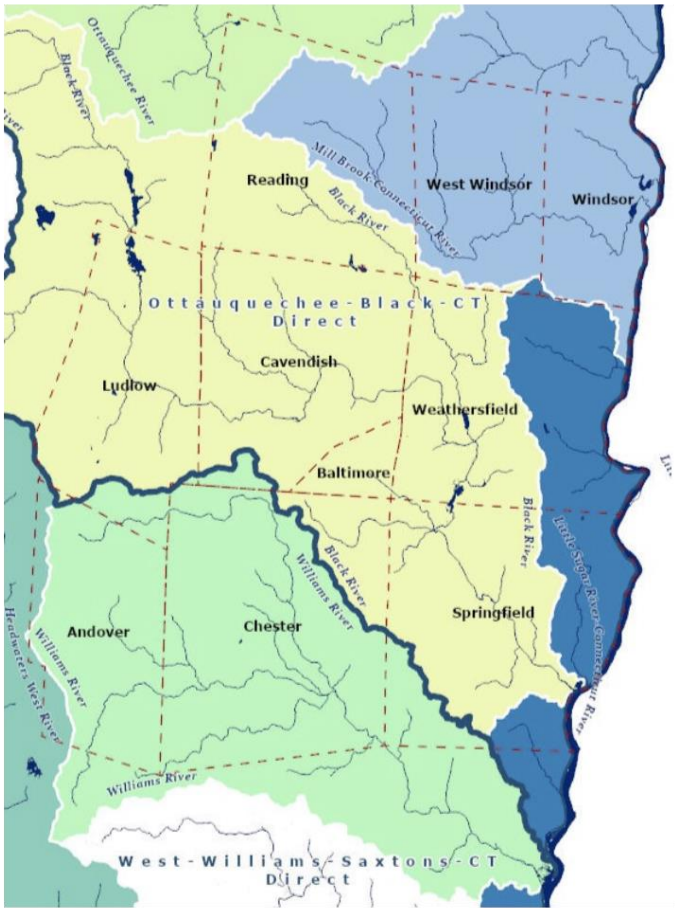
practical conservation value for the community based on potential, continued or historical presence and/or regular recurrence at a given location.

Water Resources

Lakes, ponds, rivers, streams, wetlands, and clean drinking water sources are all important elements of a healthy ecosystem. Surface waters provide habitat for fish and other aquatic species and are recreational resources for swimming, paddling sports, and fishing. Naturally vegetated buffers along rivers provide natural greenway corridors that connect networks of wildlife across the Region. Wetlands are important for habitat, natural water pollution abatement, flood control, and recharge of surface and ground water.

Groundwater is the primary source for most residential and municipal water supply systems in the Region, and has many points of exchange both to and from surface waters. Water resources can easily be degraded if not properly managed. Development and other human activity can adversely affect surface water, groundwater, and wetlands through direct and indirect pollution discharges caused by a variety of land use activities. Many of the Region's larger rivers serve as mixing zones for dilution of treated wastewater effluent.

Basins, Watersheds and Tactical Basin Planning



The Region is situated within the Connecticut River watershed, and sits within three basins, as defined by the State: The Black River (Basin 10), the Williams River (Basin 11), and the Lower Connecticut River (Basin 13). Each of the three major drainage basins in the Region are depicted in the map to the left. Basins also include a number of sub-basins (i.e., Mill Brook within Basin 10). Tactical Basin Plans must be developed by the Vermont Department of Environmental Conservation for each basin and must be updated every five years, pursuant to 10 V.S.A. § 1253. Basin Plans provide an overall view of the health of the waters in the Basin and define ongoing and future actions to address high-priority stressors. The Department also prepares biological assessment reports for each basin roughly every five years. These assessment reports summarize chemical, physical and biological monitoring data and help inform the development of Basin Plans.

In June 2018, the Basin 10 Plan was adopted by ANR and remains in effect until 2023. The Basin 11/13 Plan was adopted in January 2015, and is set to expire in 2021. The new plan is under development as of the adoption date of this Regional Plan.

Regional Planning Commissions, Natural Resources Conservation Districts, and local watershed groups assist in the development of Basin Plans. Regional Planning Commissions are responsible for ensuring conformance between Basin Plans and Regional Plans.

Surface Waters and Water Quality

The Region's surface water resources consist of ponds, lakes, rivers, streams and wetlands which offer a variety of uses, such as recreation; wildlife habitat; food supply; commercial, industrial, and domestic use; and public drinking water supply. The major lakes and ponds in the Region include Lake Rescue, Stoughton Pond, Mill Pond, Knapp Pond, North Springfield Reservoir, and Lake Runnemede. The largest rivers in the Region include the Connecticut (serving as the border

between New Hampshire and Vermont), Black, and Williams Rivers. Major streams in the Region include Mill Brook, Twentymile Stream, Jewell Brook, and Tracer Brook.

The State is required to list impaired waters on the 303(d) List of Impaired Waters. Impairment is defined by the Vermont Water Quality Standards (VWQS). The State is required to address impaired waters through issuance of a Total Maximum Daily Load (TMDL) plan, which specifies the maximum allowable daily amount of a given pollutant the impaired water can receive to achieve compliance with the VWQS. As of the adoption date of this Regional Plan, there are no stream segments within the Region included on the 303(d) List. However, the Connecticut (CT) River, which flows north to south along the eastern border of the Region, is listed as impaired by the State of Vermont due to flow alteration as a result of hydroelectric facility operations. The CT River is also listed as impaired by the State of New Hampshire due to high pH levels resulting in low dissolved oxygen concentrations in the Long Island Sound.

Most point-source discharge pollution problems in the state have been addressed through the construction of municipally owned and operated wastewater treatment facilities, as well as regulation of industrial discharges. However, non-point source pollution continues to be an issue throughout the Region and State. The most common sources of non-point source pollution include agricultural runoff, channel and streambank erosion, removal of riparian vegetation, flow modification, developed land runoff, and highway runoff. These various stressors result in thermal modification, organic enrichment or low dissolved oxygen concentrations, and excess sediment and nutrient loading.

Town highway runoff is a significant contributor to water quality impacts throughout the Region. If proper highway maintenance practices are not in place, stormwater runoff can erode the road surface and drainage network, particularly along gravel roads, which can lead to sediment and nutrient pollution. This scenario also contributes to road failure events and increased highway maintenance costs. In an effort to address town highway runoff impacts on water quality, the Vermont Department of Environmental Conservation issued the Municipal Roads General Permit (MRGP) as an element of the 2015 passage of Act 64 (Vermont Clean Water Act). The MRGP regulates stormwater discharges from town highways to surface waters. For a more in-depth discussion of the MRGP and its associated requirements, please see the Regional Transportation Plan.

Wastewater treatment facilities can also degrade water quality if effluent treatment is insufficient, or if adequate infrastructure is not in place to treat certain nutrients, such as phosphorus. The ability of rivers and streams to dilute effluent from treatment facilities is predicated on in-stream flow and depth. For this and many other reasons, water withdrawal from rivers and streams can have a negative impact on water quality and associated habitat, and must be evaluated before a withdrawal permit can be issued.

Pollutants can also be carried into rivers and streams via precipitation. For years, there have been statewide fish consumption advisories for mercury content as a result of atmospheric

deposition.[12] The advisory guidelines are more stringent for the consumption of lake trout and walleye, especially for women of childbearing age, but suggest limits on consumption of all fish for all segments of the population. Atmospheric deposition cannot be effectively controlled at the local, regional, or state level.

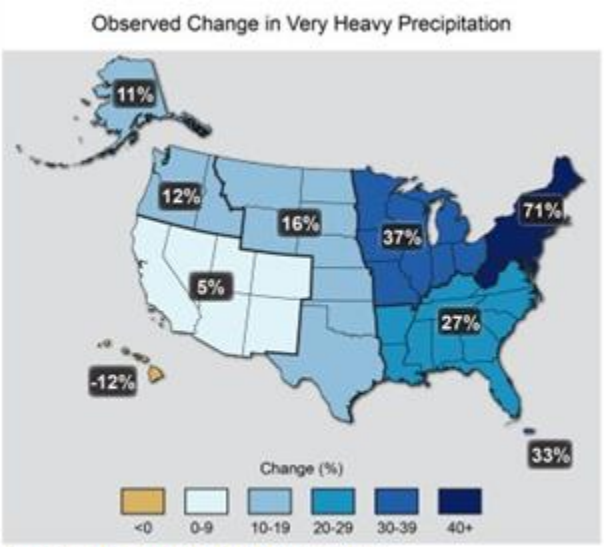
Surface water quality is also significantly impacted by flooding events. Flood waters often carry large woody and solid debris, soil and farm runoff, and other pollutants. A lack of floodplain access as a result of berms and incised channels is a major catalyst for fluvial erosion and associated sediment and nutrient pollution. Please see the Flood Resilience Section below for a more in-depth discussion of flooding and its impacts.

[12] Atmospheric deposition is the process, long recognized by scientists, whereby precipitation (rain, snow, fog), particles, aerosols, and gases move from the atmosphere to the earth's surface. Source: Atmospheric Deposition (maryland.gov)

Flood Resilience

The purpose of this section is to further the State Planning Goal of encouraging flood resilient communities and to address the requirements of 24 V.S.A. §4348a(a)(11). Flood and fluvial erosion hazard areas, as described in this section, are shown on Map 1. Water Resources.

Increased Risk of Flooding:



Source: globalexchange.gov, 2014

Flooding is one of the primary natural disasters in Vermont. Accordingly, flooding is identified as one of the most significant natural hazard events in all ten of the MARC member towns' *Local Hazard Mitigation Plans*. In addition, weather patterns are changing and predicted future climate conditions include increasing average temperatures, an overall increase in precipitation, less snowpack and shorter/more intense rainfall events. As a result, it is imperative that communities evaluate their flood resilience as a significant amount of the built environment is within or near flood or fluvial erosion hazard areas, and municipal culvert and stormwater networks may not be adequately sized for these future conditions. The legislature recognized this fact and acted upon it by passing Act 16 in 2013.

Types of Flooding:

River Corridor. Source: floodready.vermont.gov.

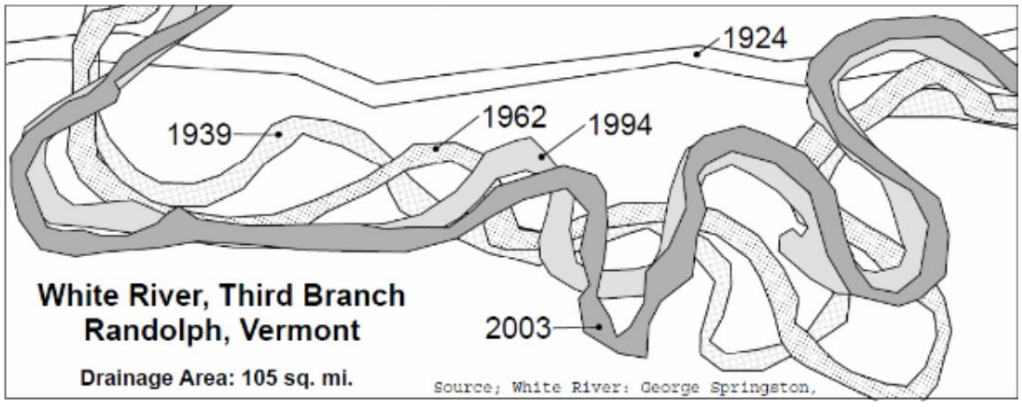
Inundation Flooding, or overbank flooding, occurs when a stream channel or waterbody receives a significant amount of rain or snow melt from its watershed, or when the stream channel is blocked by a debris or ice jam. The excess water spills out onto or inundates the floodplain. This type of flooding can occur slowly or in a short duration; flood waters can cover a small area or a large area.

Fluvial Erosion is when a river, stream, or brook shifts laterally during a high flow event by eroding its banks. This type of flood hazard is not recognized on the FEMA maps discussed below. The region experienced significant, widespread damage from Tropical Storm Irene (2011). The majority of the damage was a result of fluvial erosion rather than inundation flooding. As a result, the State established statewide "River Corridors," which include the anticipated meander belt of a river and a fifty-foot buffer as shown in the graphic above. River Corridor is defined in Vermont statute as follows:

> "River Corridor" means the land area adjacent to a river that is required to accommodate the dimensions, slope, planform, and buffer of the naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition, as that term is defined in section 1422 of this title, and for minimization of fluvial erosion hazards, as delineated by the Agency of Natural Resources in accordance with river corridor protection procedures. 10 V.S.A. Chapter 32 § 752.

In Vermont, most flood-related damage occurs outside the Special Flood Hazard Areas. Much of the damage is due to the erosive power of water causing damage to critical public infrastructure such as roads and stream-crossings. Homes, businesses, and community buildings have also been damaged by fluvial erosion. Where stream meanders are confined by human activity, streams fall out of an equilibrium condition and become steepened, straighter and more erosive. The more powerful the stream-flow, the higher the risk for damage.

Today, most streams in Vermont are not in an equilibrium condition, because riparian development, channelization practices, and other historic land uses have prevented the river from assuming its most stable natural shape (meander pattern, slope, channel width and depth, sediment bars, etc.). Vermont communities can choose to limit additional encroachment within the mapped River Corridor. Doing so can help streams dissipate erosive energy in undeveloped areas and help prevent flood damage to existing riparian development from progressing. On the other hand, it is important to note that while the River Corridor protects the stream's ability to establish and maintain equilibrium, the boundaries of the River Corridor do not predict where the stream will actually go. The River Corridor is not a predictive model, and in response to existing encroachments and recent channelization practices, most streams in Vermont are not in a dynamic equilibrium condition.



Source: Flood Ready VT

The river corridor includes both the channel and the adjacent land. The purpose of the zone is to identify the space a river needs to re-establish and maintain stable "equilibrium" conditions. In other words, if the river has access to floodplain and meander area within this corridor, the dangers of fluvial erosion can be reduced over time. River corridor maps are delineated based on scientific, location-specific assessment of the geomorphic (or physical) condition of a river.

The Vermont Rivers Program has designed protocols to evaluate river conditions all over the state. The resulting data are used to map meander belt widths. One can think of this belt width as the particular "wiggle room" a river needs to find its most stable path down the valley, while efficiently moving and storing its sediment load. The shape and width of the meander belt varies with valley shape, surficial geology (e.g., bedrock, glacial lake sand), and the natural channel length, slope, and width. The lower the slope and the broader the valley, the more sinuous a river will likely be, in a natural setting. Rivers that have been historically straightened or encroached upon lose their natural stability when they lose their meanders and floodplain access. Given an appropriate amount of lateral space, an unstable river can eventually develop a stable meander pattern. Meanders may shift within the corridor over time, but the river will be less susceptible to dramatic channel adjustments and accelerated erosion.

Ice jams are common in the Region, and occur during winter and spring months when river ice begins to break up and flow downstream. Ice flows can build up against bridge abutments or other obstructions and create a temporary dam impounding large volumes of water which have the potential to flood the surrounding areas and damage infrastructure. The most devastating winter floods have been associated with a combination of heavy rainfall, warming temperatures, rapid snowmelt, and the resulting ice jams. Winter weather with less than average snowfall can result in greater ice build-up on streams and rivers, potentially resulting in greater ice jam damage. Ice jams threaten many of the same properties as inundation flooding and the damage can be expected to be similar.

Flash flooding events are rapid onset events which, according to Vermont State Climatologist Lesley-Ann Dupigny-Giroux "often result from stagnant or slow-moving thunderstorms as well as from the passage of a series of thunderstorms over the same geographic area. Such high intensity and often long duration events produce large amounts of precipitation in a short period of time. These precipitation amounts can quickly exceed bank-full widths along rivers and streams, trigger mass movements (such as landslides and mudslides), sweep away unattached structures (e.g., mobile homes), and carve new river channels into unstable riverbanks." High intensity rain events that result in flood and erosion damages are becoming much more common with changing climate patterns.

Hazard Areas and Areas to be Protected:

Areas in the region that are particularly at risk of flooding and fluvial erosion are discussed below and are shown on the accompanying Water Resources Map. These hazard areas are based on mapping data from FEMA and the Vermont Agency of Natural Resources.

Flood Hazard Areas are the areas in the region that are at higher risk of inundation flooding (i.e., Special Flood Hazard Areas) and are shown on FEMA's Flood Insurance Rate Map (FIRM), as most recently amended. The maps are available through FEMA's online Flood Map Service Center. Digital Flood Insurance Rate Map data can also be accessed through the Natural Resource Atlas or the Flood Ready Vermont website.

The Flood Hazard Map depicts the Special Flood Hazard Areas (SFHA). The Special Flood Hazard Area depicted is based on the digital Flood Insurance Rate Maps.

Table 6.1 below summarizes the land areas that are within these identified flood hazard areas. Note that "floodway fringe" is also known as the "floodplain."

TABLE 6.1 FLOOD HAZARD ZONES BY LAND AREA

Hazard Zone	Area in Region	
	Acres	%
Floodway	9,017	4%
Floodway Fringe (Floodplain)	21,667	9%
Total Land Area	220,132	100%

Note that the figures presented in Table 6.1 are based on GIS calculations of land area or building points, which may vary slightly from data presented by the U.S. Census Bureau or other sources. While other portions of the region may be at risk of flooding, they are not mapped at this time. Flooding from ice jams and flash flooding are also concerns.

River Corridors (RC) include both the channel and the adjacent land. Rivers are dynamic and, as a result, development that is located too close to river/stream banks is at risk of potential bank erosion and/or planform adjustment (channel migration). The River Corridor, which is shown on the River Corridor Map, depicts the portions of the region that are at risk of this type of fluvial erosion damage. This mapping data can also be found on the ANR Atlas and Flood Ready Vermont websites referenced above.

Tables 6.1 below summarizes the land areas that are within these identified river corridors:

TABLE 6.2 RIVER CORRIDOR BY LAND AREA

HAZARD ZONE	AREA IN REGION	
	ACRES	%
River Corridor	6,818	3%

The river corridor within the region encompasses significant portions of land that are critically important for our economic development efforts, including within many of the region's Designated Downtowns and Village Centers and along important local infrastructure corridors. The potential economic development impacts associated with adoption of river corridor bylaws should be carefully considered by each community prior to adoption.

In an effort to incentivize municipal adoption of river corridor protections, Vermont established the Emergency Relief and Assistance Fund (ERAF). ERAF provides state funding to match Federal Public Assistance following federally-declared disasters. In other words, participation in ERAF results in a lower local cost-share for disaster recovery efforts. In order to receive the maximum state cost-share of 17.5%, communities must protect river corridors from new encroachment, or protect flood hazard areas from new encroachment and participate in the FEMA Community Rating System.

Additional Emergency Relief and Assistance Fund requirements include participation in the National Flood Insurance Program (NFIP), as well as municipal adoption of:

1. VTrans Town Highway Road and Bridge Standards
2. Local Emergency Management Plan
3. FEMA approved Local Hazard Mitigation Plan

For additional information regarding Emergency Relief and Assistance Fund requirements and benefits, please visit the Flood Ready VT website.

Wetlands fulfill a variety of functions, including flood storage, erosion control, removal of pollutants, and wildlife habitat. The State recognizes the importance of these functions in 10 V.S.A. §905. In January 2020, ANR issued the amended Vermont Wetlands Rules, which classify wetlands according to their functions (i.e., Class 1, 2 or 3).

The major functional values of wetlands are:

- Storage of flood water and stormwater runoff;
- Protection of surface and groundwater through filtration of pollutants;
- Habitat for fish, wildlife, migratory birds, hydrophytic vegetation, and RTE species;
- Specialized, seasonal breeding habitat (such as vernal pools);
- Natural science education and research;
- Recreational value; open space; aesthetics; and
- Erosion control through binding and stabilizing of the soil.

Development activity in or near a Class 1 or 2 wetland requires a Conditional Use Determination from the Agency of Natural Resources to ensure no undue adverse impact on its protected functions. Zoning administrators in municipalities that have zoning regulations are required to notify the Wetlands Program of activities proposed within wetlands prior to the issuance of a local zoning permit. The Wetlands Program has 30 days to provide comments on the project to

the zoning administrator. This review mechanism protects zoning administrators from issuing local permits that might violate state and/or federal regulations.

Vermont wetlands are also protected under Act 250. Federal protection is afforded by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency through administration of Section 404 of the Clean Water Act. Section 404 regulates the dredging or placement of fill in waters of the United States, including wetlands. The Clean Water Act also requires regulated activities to be certified as compliant with applicable Vermont Water Quality Standards.

Communities in the Region should consider adoption of local zoning bylaws to afford further protection to wetlands that provide critical flood water and stormwater runoff storage, erosion control, and wildlife habitat benefit.

Upland forests are defined as those areas of the landscape that have moist to well drained soils or exposed bedrock and that support plants adapted to growing in moist to well drained soils. Adequate vegetative cover in rural upland areas and steep slope areas helps to maximize infiltration of water into the soil, and minimize or slow down stormwater runoff in ways that mitigate water quality impacts, erosion and flooding hazards to downstream locations. Efforts to minimize heavy cutting in forestry activities, limiting the extent and densities of developments, and properly managing stormwater in these upland areas will help contribute toward flood resilience.

Riparian buffers and other land areas adjacent to waters provide a variety of flood control functions. Riparian buffers help facilitate a resilient river corridor by attenuating flood waters, providing streambank stability, reducing flood and ice damage, and helping slow and infiltrate stormwater runoff.

Vernal Pools

Vernal pools are temporary bodies of water which usually occur in woodland depressions, meadows, sand flats, or floodplains and serve as critical breeding habitat for a variety of amphibian and insect populations as well as rare, threatened and endangered species. Most vernal pools in Vermont are filled by spring rains and snowmelt. They typically dry up during summer months. Vernal pools are shallow and may range in size from a few feet to 150 feet in width. Vernal pools are protected as Class II wetlands under the 2020 Vermont Wetland Rules.

Riparian Buffers

A riparian buffer is a strip of vegetation located adjacent to a body of water. Maintaining vegetative buffers of native trees and shrubs is among the easiest and most cost-effective ways to improve and protect water quality in streams, rivers, lakes, ponds and wetlands. Buffers filter runoff from roads, lawns, farms, developed land and construction operations that may carry fine sediment, nutrients, oils, fertilizers or other pollutants. The roots of buffers systems help stabilize stream banks to prevent erosion and associated pollution. Buffers also help facilitate soil infiltration, and therefore reduce stormwater runoff volumes. In addition, riparian buffers help

shade the stream channel, reducing thermal stress. This improves aquatic habitat for cold-water fish species such as eastern brook trout.

Riparian buffers offer clear-cut habitat, water quality, and flood/fluvial erosion hazard mitigation benefit. However, some flexibility in buffer type and width should be considered for projects that provide significant public benefit (such as bike paths, parks, and other recreational uses) within designated Downtowns and Village Centers.

Stormwater

Significant changes have been made in recent years to federal and state stormwater regulations. In 2017, the Agency of Natural Resources adopted new stormwater regulations via the 2017 Vermont Stormwater Management Manual (VSMM) Rule. These regulations were updated in response to recent significant advances in the design and range of best management practices (BMPs) and site design approaches available to meet Vermont's water quality goals.

A major change associated with adoption of the 2017 VSMM is the regulation of all existing parcels containing three or more acres of impervious surface. These parcels will be regulated under the Developed Lands General Permit (commonly referred to as the "3-acre rule"). The permit is currently in effect in the Lake Champlain and Memphremagog watersheds, as well as stormwater impaired watersheds state-wide. The permit is not expected to take broad jurisdiction in the Connecticut River watershed for a number of years. The 2017 VSMM serves as the design standard for the General Permit. The 2017 VSMM also serves as the design standard for the operational stormwater permit program.

Under the VSMM Rule, permittees are required to provide site/development plans that have been stamped and certified by a licensed professional engineer (PE) as compliant with the VSMM standards. Communities may also elect to adopt local zoning bylaws or subdivision regulations in an effort to regulate development which is not otherwise jurisdictional under Act 250 or the 2017 VSMM.

The VSMM standards often feature low impact development and green stormwater infrastructure practices, which are techniques used to control stormwater runoff from developed lands. Techniques can range from utilization of constructed wetlands and subsurface stormwater infiltration, to collection of rooftop runoff for domestic reuse. The goal of green stormwater infrastructure and low impact development is to mimic pre-development hydrologic conditions through use of practices that infiltrate and/or detain runoff.

In addition, the Agency of Natural Resources established a town highway stormwater permitting authority by way of the Municipal Roads General Permit (MRGP) in 2015. The MRGP regulates stormwater discharges from "hydrologically connected" town highways, and mandates a suite of drainage standards along those portions of town highway in an effort to mitigate erosion and associated sediment and nutrient pollution. For a more in-depth discussion of the MRGP and its associated requirements, please see the Regional Transportation Plan.

The *Vermont Standards and Specifications for Erosion Prevention and Sediment Control (2019)* and the *Low-Risk Site Handbook for Erosion Prevention and Sediment Control* provide guidelines for sediment control and erosion prevention during construction. Many of the guidelines and standards outlined in these resources apply under the Construction General Permit (CGP), which regulates construction activities that disturb greater than one acre of soil. It is anticipated that the CGP may regulate construction activities that disturb as little as half an acre of soil in the future.

Several measures can be taken to mitigate stormwater impacts on water quality during construction, including:

- Laying gravel on the construction entrance to prevent soil from being transported from the site onto the pavement;
- Properly installing and maintaining silt fencing;
- Diverting and slowing the rate at which stormwater runoff from any surrounding hillsides passes through the site; and/or,
- Exposing only the soil on the area which will be worked on and then stabilizing the soil when finished with approved methods.

Groundwater

Groundwater is the Region's primary source of drinking water. Groundwater migrates through aquifers, which are water-bearing strata of permeable rock, sand, or gravel. Potential groundwater pollutants include septage from improperly designed or malfunctioning septic tanks and leach fields, leakage from underground storage tanks, improperly discarded chemical or radioactive material and leaching animal waste from pasturing farm animals. Groundwater contamination/pollution abatement is difficult and costly. Therefore, pollution prevention through proper regulation of source protection areas (SPAs) is key to maintaining clean and safe groundwater supplies.

The Vermont Drinking Water and Groundwater Protection Division has developed a groundwater protection strategy, including the identification and mapping of source protection areas for all communities in the Region. Vermont's Water Supply Rule (*Environmental Protection Rule, Chapter 21; revised March 17, 2020*) defines a Source Protection Area/Public Water Source Protection Area as:

> "…a surface and subsurface area from or through which contaminants are reasonably likely to reach a Public water system source."

Source protection areas must be delineated to support installation of new public water supply systems, or for increases in approved yield of an existing source. Groundwater sources require delineation of Wellhead Protection Areas, which are delineated using geologic, hydrogeologic, and pumping test data.

Soils

Soil is composed of disintegrated rock, water, air, decaying organic matter, and microorganisms. Soils vary greatly in composition, and play an important role in water impoundment locations, vegetation species and density, and development suitability. Common soil uses in the Region include agriculture, forestry, earth resource and mineral extraction, and recreational and building site development.

TABLE 6.3 SLOPE CLASSIFICATIONS	
% Slope	**Classification**
0-3%	Generally suitable for most types of development, may require drainage
3-8%	Most desirable for development, having least restrictions
11-15%	Suitable for low density development with particular attention given to erosion control, runoff, and septic design
15-25%	Unsuitable for most types of development and septic systems, construction costly, erosion and runoff problems likely
>25%	All types of construction should be avoided, careful land management for other uses needed

Source: Natural Resources Conservation Service

Erosion poses a threat to soil. Soil erosion is a naturally occurring process, but can be accelerated by development activities. Soil is often protected from wind and stormwater runoff by vegetation in undeveloped settings. When vegetation is removed, fertile topsoil often quickly erodes. Topsoil generally has more capacity than the subsoil to hold moisture, supply nutrients, and allow plants to establish root systems. Erosion, development, mining, logging, and other activities can destroy protective vegetation.

Soil slope is one of a few important factors in determining development suitability. **Table 6.3** above identifies Natural Resource Conservation Service slope classifications and associated development constraints. Map 3. Topographic Constraints shows slopes over 25 percent.

In Vermont, land in excess of 2,500 feet in elevation is considered fragile environment and development should be strongly discouraged. Land at these elevations tend to be predominantly steep with an extremely shallow soil depth to bedrock, and a high susceptibility to erosion. These highland areas are largely forested and facilitate infiltration of stormwater runoff and groundwater recharge.

Ski areas may require development in areas greater than 2,500 feet in elevation, and with slopes greater than 25%. However, careful consideration must be given to any negative impact development may have on the environment, such as degradation of water quality, erosion of topsoil, and encroachment on wildlife habitat.

Mineral Resources

Mineral resources such as sand, gravel, crushed rock and stone, talc, soapstone, granite and marble, are necessary resources for road improvement, building construction, drainage, septic systems, and for exportation. Sand and gravel for domestic use, and talc for exportation are the predominant mineral resources extracted from the Region today. Sand and gravel deposits occur in abundance along the Connecticut River and its tributaries. However, many town-owned pits are experiencing diminished sand and gravel supplies for town highway maintenance use. Talc is currently mined and processed in Ludlow. That mine is expected to remain stable well into the future.

Excessive resource extraction can permanently damage natural and aesthetic resources with broad implications for water quality and availability, as well as the potential for destruction of archaeological sites. Sand and gravel deposits serve as areas for aquifer recharge and filtration, vital for high quality sources of drinking water. Disturbance of these areas can reduce stormwater infiltration, resulting in degraded water quality. Maintenance of wide buffers of native vegetation around extraction pits is strongly encouraged. On-site storage and disposal of materials at extraction sites can contaminate groundwater through leaching of hazardous materials. On-site material storage and disposal shall not be permitted.

Air Quality

Residents of the Region are fortunate to live in an area that has relatively clean air. However, threats to air quality do exist and may either be locally generated or transported from outside the State's borders. Local air quality problems may be generated through auto emissions, especially in congested areas; local industrial and manufacturing facilities, including mineral extraction; trash incineration; smoke from wood stoves; and illegal burning of garbage. Transported air pollution comes across state lines or from other regions of the country, as evidenced by acid rain and reduced visibility in the summer.

Air quality standards are established at the federal level through the EPA. The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQS) (40 C.F.R. part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act also established two types of national air quality standards: Primary standards (to protect public health) and Secondary standards (to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.) The EPA Office of Air Quality and Standards set NAAQS standards for six principal or "criteria" pollutants: particulates, sulfur dioxide, carbon monoxide, nitrogen dioxide, lead, and ozone. Currently, Vermont is compliant with all standards set under NAAQS, however it is bordered by other states that are non-compliant for some pollutants. It is important that development of new industrial or manufacturing facilities include approved emission control

systems to stay in attainment with standards. In addition, dust from mining operations and construction can cause local air quality problems if not properly controlled.

For additional discussion on air quality issues and climate change, please refer to the Regional Enhanced Energy Plan.

Natural Resources Policies

Development Definition**:** For the purposes of this Chapter, the term "development" is defined as any development activity that requires approval through either Act 250 or Section 248 review procedures.

1. Where an alternative exists, development is prohibited in large tracts of Prime Agricultural Soils located outside of designated downtowns, villages, and other locally designated growth areas.
2. Development within downtowns, villages, and other locally designated growth areas should be allowed on areas of Primary and/or Secondary Agricultural Soils, if supported in the town plan, but shall use innovative site designs such as clustered development on the periphery (for examples, see *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks* (1996) by Randall Arendt) to minimize negative impacts and prevent fragmentation. Additionally, such developments shall be required to maintain a small tract for future small-scale agricultural use or community garden.
3. Agricultural and forestry activities shall minimize point and non-point source pollution through use of the Vermont Required Agricultural Practices (RAPs) and Acceptable Management Practices (AMPs) for forestry activities.
4. Invasive species that threaten forestry, agriculture and aquatic resources and habitat should be closely monitored by state and federal governments, and education and prevention methods shared with landowners.
5. All developments must show the following information on site plans, based on the most currently available data through the Vermont Center for Geographic Information, the Vermont Fish and Wildlife Department's Biofinder, the Vermont Agency of Natural Resource's Natural Resource Atlas, local natural resources inventories, or detailed site review:
    a) Rare, threatened and endangered species (see Map 6);
    b) Priority forest blocks and habitat connectors (see Map 6);
    c) Areas over 2,500 feet in elevation;
    d) Cliff areas or rock outcroppings identified as habitat for peregrine falcons, bobcats, or other wildlife;[13]

[13] Not currently available through online resources. This data would have to come from a local natural resource inventory or detailed site review.

e) Other identified significant wildlife habitat areas available through other sources, such as local natural resource inventories.

6. Development must avoid negative impacts to the following critical wildlife habitats as identified by the Vermont Fish and Wildlife Department:
    a) Rare, threatened and endangered species;
    b) Cliff areas or rock outcroppings identified as habitat for peregrine falcons, bobcats or other wildlife.
7. Development must minimize negative impacts to and fragmentation of the following critical resources as identified by the Agency of Natural Resources to maintain their important ecological and economic functions. Such development must be designed and sited in a manner to minimize encroachments to and preserve continuous priority forest blocks and habitat connectors by locating structures and roads to the periphery of these areas:
    a) Priority forest blocks and habitat connectors (see Map 6);
    b) Other identified significant wildlife habitat areas available through other sources, such as local natural resource inventories.
8. Maintain undisturbed buffers of vegetation along watercourses, lakes, ponds and wetlands in order to protect shorelines, provide shading to prevent undue increase in stream temperatures, minimize effects of erosion, sedimentation and other sources of pollution, and maintain scenic, recreational, and habitat values in accordance with *ANR Riparian Buffer and Corridor Technical Guidance (2005)*. In order to further development goals of this plan, reduced buffer width requirements should be considered to accommodate the development of public recreation paths, sidewalks, and utility or road crossings, within designated Downtowns and Village Centers, but efforts shall be made to minimize undue adverse impacts.
9. Headwater streams[14], gorges, waterfalls, and cascades and the land around these important resources must be protected. Outstanding Resource Water (ORW) designations for these areas should be considered where deemed appropriate.
10. Development must not result in undue degradation of any surface water resource.
11. It is state policy to achieve no net loss of significant wetlands as defined in the *Vermont Wetland Rules*. In order to achieve this:
    a) Destruction of wetlands and construction in wetlands will be avoided when any reasonable alternative exists.
    b) Development will minimize negative impacts to significant wetlands and their associated values and functionality.
12. Groundwater withdrawals must not adversely impact the quality or quantity of groundwater or surface water resources, such as municipal water sources, adjacent wells, wetlands, streams, rivers and lakes.
13. Minimize areas of earth disturbance, grading and vegetation clearing on slopes over 15%.

[14] A stream that has few or no tributaries, and typically has a steep, incised channel that is often associated with active erosion, seeps, or springs. Headwater streams are referred to as first order streams.

14. In working land and conservation future land use areas, development on slopes between 15-24% must be designed to minimize adverse stormwater and erosion impacts by incorporating low impact development and green stormwater infrastructure principles, including:
    a) Development of a lot or site shall require the least amount of site disturbance and reduce the lot coverage and building footprints as much as possible in order to maintain the natural hydrologic processes and reduce the volume and water quality impacts of the proposed development.
    b) Roads, driveways, buildings and utilities must be located on the flattest portions of the site.
    c) Minimize crossing steep slopes with roads and driveways and lay them out to follow topographic contours in order to minimize soil and vegetation disturbance.
    d) Minimize the length of driveways.
    e) Reduce the total length of residential streets by examining alternative street layouts to determine the best option for increasing the number of homes per unit length.
    f) The scale of development will not exceed the development capacity of the site.
15. Development is prohibited in areas predominated by slopes exceeding 25% or above 2,500 feet in elevation (other than appropriately designed recreational trails, ski lifts, zip lines, lookouts, and other similar recreational uses). Appropriately designed recreational uses above 2,500 feet in elevation are those that do not result in undue adverse impacts on the environment and are consistent with the future land use goals in this Regional Plan.
16. When any alternative exists, developments shall not be sited on soils that are:
    a) Susceptible to flooding;
    b) Located in identified river corridor areas; and
    c) Not suited for foundations and/or septic systems.
17. Development proposals for shallow soils shall provide and conform to an erosion control plan for construction activities and a site drainage plan.
18. Support mineral resource extraction as an important component of the working landscape economy, provided that such operations minimize impacts to the environment and neighboring properties.
19. Mineral extraction activity that is determined to have undue adverse impacts on neighboring properties is prohibited.
20. Mineral extraction activity that may destroy or significantly imperil wildlife habitat or other critical natural resources is prohibited.
21. Where mineral extraction is determined to be appropriate, adequate measures to minimize adverse effects (e.g., visual, noise, groundwater, surface water, and air pollution) on the environment and its wildlife shall be taken.
22. Effective site reclamation and re-vegetation plans shall be provided and implemented.
23. Mineral extraction and processing facilities must be planned, constructed, and managed:
    a) to provide direct access to Class III or better highways;
    b) to not interfere with the function and safety of existing road systems serving the project site. Factors to be considered in determining impacts include, but are not limited to:

(i) Extent of increase in heavy vehicular traffic;
(ii) Effects of weight loads on roadbeds and bridges;
(iii) Conflicts with pedestrians or bike users; and,
(iv) Numbers and frequency of heavy vehicles traveling through dense residential areas.

24. Prohibit development or activities that significantly degrade air quality.
25. Support efforts to reduce locally and regionally generated air pollutants by encouraging the use of energy conservation guidelines as developed by the Vermont Department of Public Service.

APPENDIX A – MAPS

See Regional Plan Maps online at marcvt.org/2022-Regional-Plan/

Ch 7: CULTURAL & AESTHETIC RESOURCES

Long before European settlement, Abenaki people inhabited and were stewards to the land. Because of cultural and historic genocide put in place by European settlers throughout history, there are few Abenaki people left. Because of the history of violence towards this group, it is important that we, as a Region, commit to equitable policies and acknowledgements that benefit future generations of Abenaki descendants and vow to omit future harm.

Abenaki History

While the exact dates of Abenaki and indigenous settlement cannot be traced back exactly, Abenaki oral history and archelogy point to people being in Vermont and New Hampshire as far back as 12,000 years ago, and data signifies that as far back as 7,000 years ago indigenous people were propagating plants and using agricultural practices in the Northeast. Abenaki people were and still do plant corn, beans, squash, and sunflowers to sustain their families. In addition, Abenaki people hunted, fished, and gathered resources both as a form of sustenance, but as a part of a long-standing culture. The Abenaki people have historically and presently played a large part in reforestation and conservation efforts throughout the state.

From the 1620's to present day, with the first colonizers from Europe reaching the Americas to present day, Abenaki people have seen thousands of their burial goods and sacred items stolen. Every European foray into Abenaki land included "searches" for gold and treasure that included looting sacred burial sites, and murdering Abenaki people. In addition to pillaging villages, and murdering the indigenous people, European colonizers exposed smallpox and other diseases that devastated the Indigenous communities. More acts of harm have been enacted over the history of European colonization through harmful policies, treaties, and unequal distribution of punishment.

Since then, there have been some preservation efforts by the State of Vermont to recognize harm done and acknowledge and preserve indigenous resources and recognize indigenous Abenaki people and stewards of the land.

In 2006, the Vermont Legislature formally recognized the Abenaki.

In 2019, the State replaced "Columbus Day" with "Indigenous People's Day".

In 2020, hunting and fishing rights were recognized by the State of Vermont.

While hundreds of years of harm cannot be undone overnight, the Region can take steps to enact goals and policies that recognize significant historical and archeological indigenous sites and recognize the contribution of knowledge the Abenaki people have understanding scenic lands.

For more information on the Sokoki Abenaki people, click here.

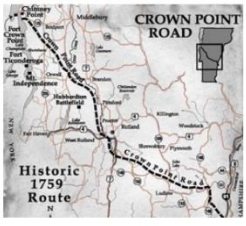
A. 1. Cultural and Historic Resources

Cultural and Historic Resources Goals

Ensure the protection, promotion, and restoration of culturally and historically significant resources by

1. Promoting equitable acknowledgements of indigenous populations throughout the Region through cultural and historic preservation methods as defined by the Abenaki and indigenous people themselves;
2. Ensuring the preservation, maintenance, and enhancement of significant cultural and historic resources throughout the Region;
3. Promoting the historical and cultural heritage of the Region.

Cultural, natural, economic, and political history has shaped the character of the Region. This character is reflected in the buildings, archeological sites, structures, events, and traditions established by residents throughout the Region's history. The importance of these cultural and historic resources is reflected in their ability to provide a sense of continuity to the Region's cultural fabric. A shared sense of history and cultural pride creates stronger communities and encourages the appreciation of other cultures. Historic and cultural sites, buildings, and events can also provide economic benefits because they draw visitors from around and outside of the region to enjoy the rich cultural fabric these resources provide. Cultural and historic resources can also serve dual purposes as unique community gathering places for the enjoyment of music, theater, and other cultural performances. In all, it is important to protect significant cultural and historic resources from destruction or inappropriate alteration to avoid losing the sense of place that has been developed over hundreds of years.



Crown Point Military Road

The Crown Point Road originally served as a military supply route for the British army, and later for American forces during the Revolutionary War. Started in 1759, The Crown Point Military Road connected Fort No. 4 in New Hampshire with other military fortifications at Crown Point and Mt. Independence on Lake Champlain. The road was built through Springfield, Weathersfield, Cavendish, and Ludlow and sections of the road are still in use for transportation and recreation.

U.S. Congressman and General Lewis Morris

Morris was clerk of the Vermont House of Representatives in 1790 and 1791, and was a member of the convention to ratify the United States Constitution. The General Lewis R. Morris House property lies in eastern Springfield township. The house and related outbuildings constitute a cluster next to the west side of the historic valley road (now called Old Connecticut River Road).

U.S. Consul William Jarvis

Jarvis came to Weathersfield, Vermont in 1812. Jarvis played an integral part in introducing Merino sheep to the United States and subsequently in the development of the sheep herds in this country. The successful introduction of the Merino herds in Vermont resulted in "merino mania" and the growing demand for wool by the textile industry of New England led to a change in farming practices.

U.S. Secretary of State William Evarts

Evarts was an American lawyer and statesman. He was involved in three of the most important political cases in his day. He was buried at Ascutney Cemetery in Windsor. Evarts owned numerous properties in Windsor, including Evarts Pond and Evarts Estate. The homes included 26 Main Street in Windsor that was later restored and reopened as the Snapdragon Inn.

President Calvin Coolidge

Coolidge was educated at the Black River Academy in Ludlow. Black River Academy operated as a school, serving as the Town of Ludlow's public high school until 1938, when a new school was built. The original academy building burned early in the school's history, and the school operated in a church for 44 years until this building was built in 1888

American Precision Museum

The Region is home to the development of the American machine tool industry. The Robbins and Lawrence Armory was an early manufacturer of rifles for the United States government and produced 50,000 rifles during the Civil War for use by Union troops. Today, it houses the American Precision Museum. Out of the armory came industries like Jones and Lamson (J&L) Company, Fellows Gear Shaper, Bryant Grinder, and Lovejoy Tool. Since that time, only Lovejoy continues to operate today. In Windsor, the industry continued after the demise of the armory, with the evolution of the Cone-Blanchard Company, which closed in the late 1990s. The building is now occupied by Seldon Technologies, which specializes in nanotechnology.

The Woolen Mill

The Mill was also an important part of Vermont's history and economy in the 19th and early 20th centuries. Although the mills no longer operate, some of them can still be seen across the Region. The Woolen Mill complex in Ludlow and the Mack Molding building in Cavendish are both excellent examples of how historic buildings can be reused while preserving their historic character. The old mill in Proctorsville serves as an example of how important historical development patterns are to Vermont communities.

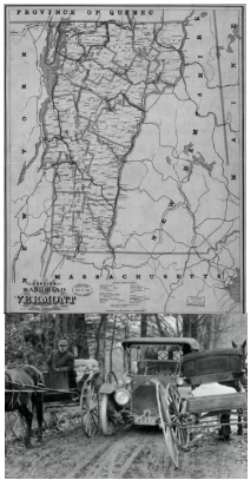
Covered Bridges

The Region is home to several covered bridges built in the 19th century including: Upper Falls in Weathersfield, Bests and Bowers in West Windsor, Baltimore in Springfield, Titcomb in Cavendish. Built in 1866, the Cornish-Windsor Bridge is 465 feet long and is the second longest covered wooden bridge in the United States.

Architectural Styles

There are distinct architectural styles common to the Region. The most obvious example is the "Snecked Ashlar" which were built in the 1830's and 1840's with stone from the nearby hills. Making up Chester's Stone Village are the original ten snecked ashlar buildings built on North Street. These buildings can also be seen in homes, schoolhouses, and churches across the Region. In Vermont, this type of construction is found almost exclusively in southern Windsor County. Another distinct architectural feature found more often in the Region than in other parts of New England is the recessed balcony, which can be seen in Ascutney, Perkinsville, and Ludlow.

The Region also has many individual buildings that are notable historic resources. Two examples are the NAMCO block apartment building and the Windsor House. The NAMCO block was built to house employees of the National Acme Manufacturing Co., which occupied the Lawrence and Robbins Armory building after the turn of the century. It is noteworthy because of its symmetry and efficient use of space, air circulation, and light. It was designed to provide the most comfortable living quarters possible within available space. The Rockingham Area Community Land Trust and Housing Vermont have rehabilitated the building into 58 affordable housing apartments. The Windsor House, according to the National Register of Historic Places, "served as a prominent hostelry for almost 150 years and had many important personages." In the 1970s, the Windsor House was rescued from destruction by a local group calling itself Historic Windsor. This group saved the building, established it as a newly thriving commercial and cultural center that has brought new life to downtown Windsor.



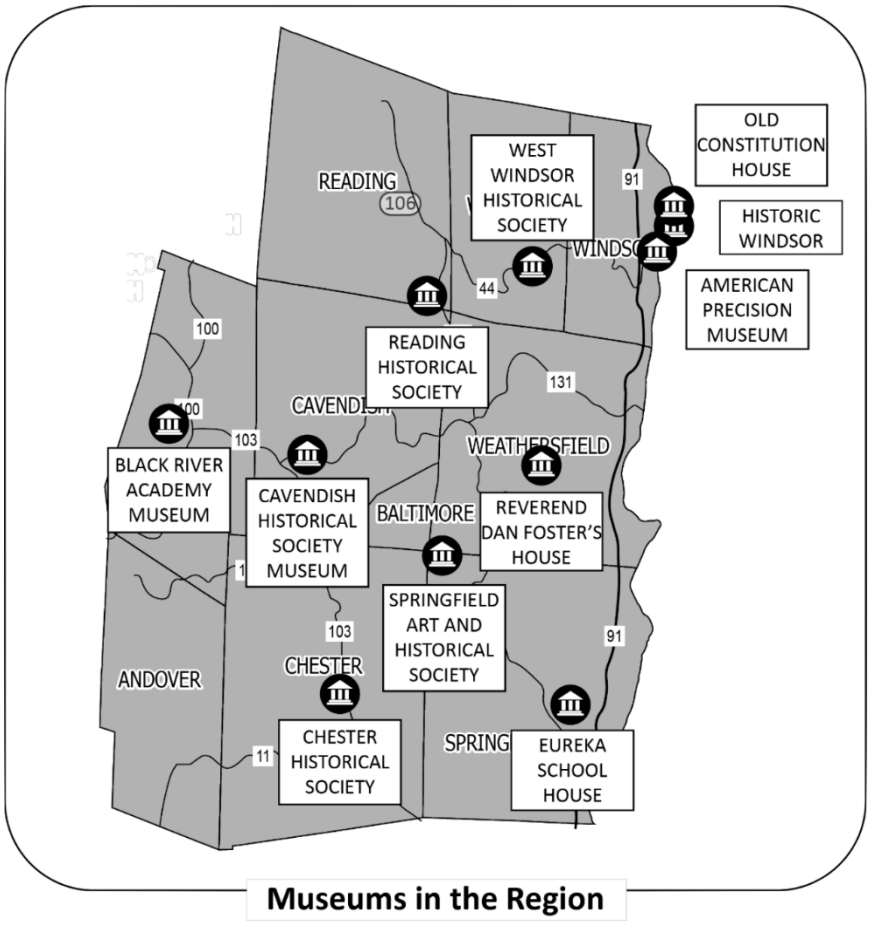
Transportation Systems

Like most places in the United States, Vermont was transformed first by the train and then by the automobile. The construction of the railroad system in the 1800s was instrumental in developing industries such as mining and manufacturing. The passenger rail system accelerated the westward migration by Vermonters in the latter half of the century. The ease of rail travel first brought vacationers to the state and the Region in large numbers. Tourists were attracted by the pastoral scenery, mineral springs, and mountaintop hotels. By 1950, Vermont was aggressively marketing itself across the country as a tourist destination, and the interstate system played a vital role in maintaining this status. The boom of the automobile industry and interstate took over for the passenger rail system in the 60s. While passenger rail travel is not as important as it once was for passenger travel, rail is still very important to move goods in and out of the Region.

The Vermont Constitution

In 1777, the Vermont Constitution was drafted and signed in Windsor. The Vermont Constitution was the first in North America to abolish slavery and was ahead of its time in expanding voting rights. The Old Constitution House still stands in Windsor and is now open to the public as a state historic site.

The Vermont Division for Historic Preservation (DHP) keeps track of national and state historic designation documentation, which can be found here. There are also numerous sites in the Region listed on the National Register of Historic Places. Chester, Ludlow, Springfield, Weathersfield and Windsor all have historically designated districts listed on the National Register. The Weathersfield Historical Society has produced its own detailed registry for the town, which has been adopted by the Vermont DHP. According to DHP, the state register is a list of "districts, sites, buildings, structures, and objects" of local, state, and national significance in "history, architecture, archeology, and culture"; the National Register is "the official federal listing of historic, architectural, and archeological resources worthy of preservation". The structures, sites, markers, and districts listed in these registries, along with the Region's cemeteries, all have regional significance. The figure below identifies museums located in the Region, celebrating both the cultural heritage and the contemporary talents of the Region's residents.



Source: RPC; this is not a comprehensive list of all historic resources for each town, but only a preliminary survey to determine what the towns consider as five of their most important historic resources.

The Region hosts numerous fairs and festivals that draw visitors from outside, including the Ludlow Fireman's Auction and the Springfield Apple Festival. Local events specific to each town, such as the annual Autumn Moon Festival in Windsor, also contribute to a strong sense of community.

A. 2 Tools for Historic Preservation

The following are some of the most commonly used tools for protecting historic resources in Vermont.

State and National Registers - Listing on the State or National Register identifies a resource as having historical or cultural significance. While listing does not place any restrictions on property owners, it can foster a sense of pride and responsibility in individuals and communities. Listing on the National Register provides protection against the use of federal funds to negatively affect the

historic character of a site; it can also provide communities and individual property owners with federal funding for rehabilitation projects, and with investment tax credits.

Downtown Designations - Vermont's "Historic Downtown Development Act" is intended to "encourage investment in and restoration of municipal downtown districts". Areas that receive designation as a "downtown development district" are eligible for benefits in the form of financial aid and tax incentives for certain projects. In our Region, Springfield and Windsor have designated downtown status. As of 2021, Ludlow is seeking downtown designation.

Designated Village Centers – Village center designation, as provided for in 24 V.S.A. Chapter 76A, was created by the legislature to recognize and encourage local efforts to revitalize Vermont's traditional village centers. While village center revitalization is an ongoing process to improve a community's vitality and livability, village center designation is only one tool and its focus is on supporting commercial activity in the center of Vermont's villages. In our Region, the villages of Ascutney, Brownsville, Cavendish, Chester, Felchville, Perkinsville and Proctorsville are Designated Village Centers.

Certified Local Governments (CLGs) - A 1980 amendment to the National Historic Preservation Act of 1966 requires that at least 10% of states' Historic Preservation Funds be given to "Certified Local Governments" (CLGs). A local government becomes eligible for this program when the State Historic Preservation Officer (SHPO) certifies that the local government has established its own historic preservation commission and a program that meets state and federal standards. In addition to being eligible for matching survey and planning grants, CLGs review nominations of National Historic Register properties within their jurisdictions and provide local perspective to the plans and programs of the VT Division of Historic Preservation. Windsor is the only town in the Region that is a CLG.

Local Zoning - Under Vermont law, towns may include Design Review Districts and Historic Districts in their zoning bylaws. Design Review Districts offer communities, after public hearing and preparation of a design plan, the opportunity to review and approve the construction, demolition, substantial alteration, movement, or change in use of a building within the district. Historic Districts offer a more specific set of guidelines for reviewing projects in the district based on historical an architectural significance and a predetermined set of criteria. Springfield and Windsor have adopted downtown design review districts in their zoning bylaws. Towns may also include review of historic impacts under conditional use and site plan approval guidelines in their zoning bylaws.

Act 250 - Some development may be subject to review of potential impact on historic resources under criteria 8 and 10 of Act 250. Under criterion 8, applicants must show that a project will "not have an undue adverse effect on the scenic or natural beauty of the area, aesthetics, historic sites or rare and irreplaceable natural areas". Under Criterion 10, a project must be shown to be in conformance with "any duly adopted local or regional plan or capital program".

Section 106 of the National Historic Preservation Act of 1966 – The Vermont Division for Historic Preservation reviews projects when a federal agency/funding is involved with a project.

Vermont Historic Preservation Act – In accordance with 22 V.S.A. §742 the Vermont Division for Historic Preservation reviews projects when a state agency/funding is involved with the project, on behalf of the Vermont Advisory Council on Historic Preservation.

The most important tools for historic preservation in any town are a sense of pride and a strong stewardship ethic in its residents. Education and cooperation between local planning and development bodies, historical societies, residents, visitors, the business community, and property owners should be fostered throughout the Region. The cultural and historic resources of southern Windsor County may represent its most distinct and outstanding feature. Recognizing and protecting their value can foster civic pride; stimulate improvements in education; encourage environmental protection and sound land use planning; help attract businesses and expand tourism; and support the agricultural and forestry economies through the preservation of farms and maintenance of historical settlement patterns.

B. Aesthetics: Scenic Lands and Open Space

Scenic Lands and Open Space Goals

Achieve a balance between scenic or open land uses and other land uses in the best interest of the environment and the Region's residents through:

1. Maintaining and/or enhancing the diversity of ecosystems throughout the Region by promoting connectivity between significant habitat wherever possible;

2. Protecting the environmental character and integrity of significant natural and scenic resources as identified by member towns.

3. Integrating indigenous knowledge of conservation into policies and practices.

The harmonious mix of open space, villages, farms, country roads, mountainous terrain, historic architecture, and surface waters in the Region provides for scenic vistas and an attractive landscape. This landscape is also an economic asset and has a tangible economic value to the Region. The rural lifestyle and scenic landscapes attract many tourists. Tourism is a significant industry in the Region. The preservation of these aesthetic and scenic resources has become increasingly difficult due to economic and development pressures. Over the past several decades, highway strip development has emerged between town and village centers and the countryside thus threatening the Region's traditional land use pattern. Agricultural fields and working forestlands juxtaposed to dense villages combine to create the traditional Vermont landscape that residents and tourists cherish. Development can occur in ways that do not adversely impact this traditional landscape, such as innovative site plans, clustering around already established villages and town centers. Future development needs to be cognizant of the landscape's heritage and work towards mitigating any adverse impacts to the land's historic legacy.

Scenic Resources

Scenic resources are public or publicly accessible areas, features, landscape patterns, or sites that are easily recognized by the Region and contribute to Region's distinct character. Vermont has been involved with scenery preservation issues as early as 1937. In 1966, the State established the Scenery Preservation Council. Key milestones for the Council were the passage of the "outdoor Advertising Law, i.e., the billboard ban in 1968; numerous studies on Vermont's scenic qualities; and the publication of the "Vermont Backroads Handbook". Efforts to mitigate any negative effects of development are necessary to protect, preserve, and improve the significant aesthetic resources within the Region. Such efforts should include a continued emphasis and restructuring of municipal planning and zoning administration, which protects and preserves the landscape heritage in the Region. Identifying key scenic resources is imperative to protecting the rural landscape and value of the Region. While scenic resources can be hard to identify, they can be sorted into four main categories; Highlands, Lowlands; Centers; and Countryside.

Highlands:

Mountainous areas made up of scenic ridgelines with significant changes of topography, bedrock and soil conditions that also host woodlands containing native plant and wildlife habitat. The Region has prominent ridgelines and mountain tops that are inherently and especially sensitive, e.g. the Alps and Little Ascutney Mountain. Development in these areas is strongly discouraged. Such proposed development should work towards design plans that retain the prominent natural appearance by locating in less visible areas and away from highly visible ridgelines, blending and or hiding structures within existing wooded hillsides, and where possible, avoid excessive use of reflective glass.

Aesthetic resources are protected by Criterion 8 of Vermont's Act 250, which does not relegate scenic beauty to pristine areas alone, but to settled areas and farmlands as well.

Lowlands:

Characterized by riparian corridors, wetlands, waterways, and floodplains, areas like this can provide ecological benefits as well as recreational opportunity. Lowland areas, like those around the Connecticut River, are good examples of resources that should be preserved. Covered Bridges that go over waterways are of particular interest to this region and help create a unique aesthetic experience for visitors and community members alike.

Central Gateways:

Dense central places like a village center that is characterized by significant or historic buildings like public offices, monuments, a commercial core, and a more urbanized residential area.

Countryside:

Woodland or agricultural areas outside of an urban center with limited residential development. Countryside can be characterized by open fields, managed crop fields, and/ or orchards.

Scenic Roadways:

The Scenic Roads Law was passed in 1977, initiating the state Scenic Roads Program. The purpose of the Scenic Roads Program was to protect the physical character and condition of the roadway right-of-way.

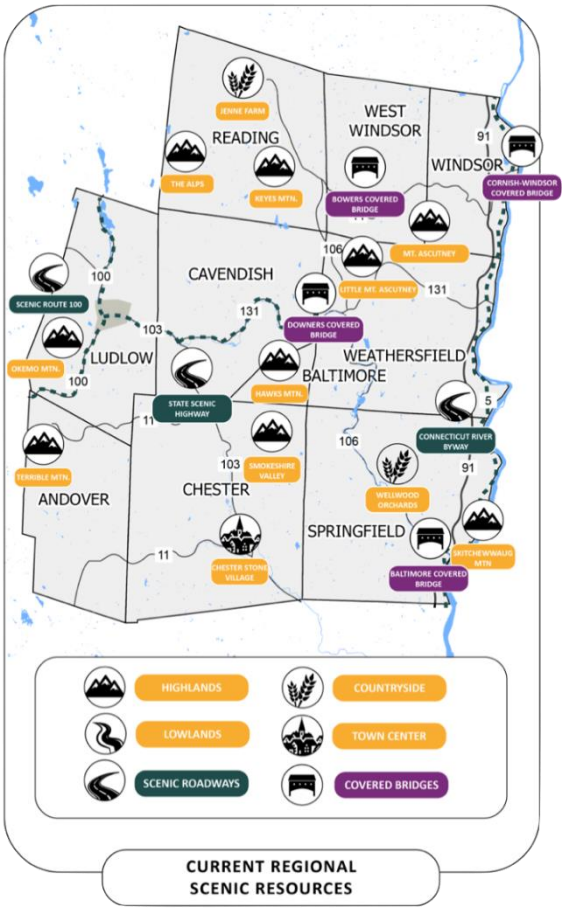
National Scenic Byways Program: The purpose of the Byway program is to foster cooperative ventures or public-private partnerships, and to protect, enhance, and/or promote the natural, cultural, historic, archeological, recreational, and scenic qualities. The Connecticut River Byway was awarded national designation by the Federal Highway Administration. The segment of the Byway in this Region includes the US Route 5 corridor through Windsor, Weathersfield and Springfield. The two spurs including VT Route 44 to Brownsville and VT Route 11 to downtown Springfield, continue to be part of the originally designated Connecticut River Scenic Byway.

State scenic roads may be established by recommendation of the Scenery Preservation Council per 19 V.S.A. §2501. Any construction or maintenance work on designated state scenic roads must be consistent with the standards established by VTrans pursuant to 10 V.S.A. §425. The segment of VT Route 131 in Cavendish is the only designated State Scenic Highway in this Region.

Towns in Vermont are enabled to designate municipally maintained roads as "scenic roads," as established by 19 V.S.A. §2502. Town scenic roads are also subject to the standards established by the State Transportation Board. Those standards for scenic roads address appropriate minimum roadway widths, alignment, landscaping, and traffic control methods, pursuant to 10 VSA §425. There are no town designated scenic roads in this Region currently.

Covered Bridges:

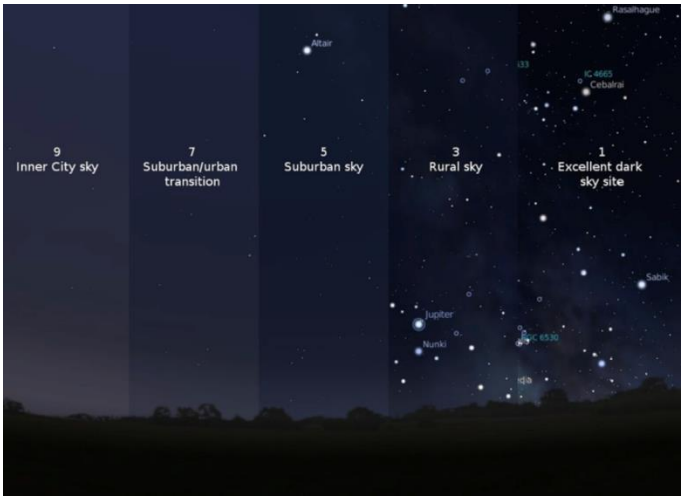
Covered bridges are a staple of New England, and the character of many of the scenic resource elements listed above are amplified by covered bridges in the region. For example, the iconic Cornish-Windsor covered bridge from multiple angles frames a view of Mount Ascutney and the Connecticut River.



SCENIC RESOURCE TYPOLOGY	TOWN	NAME
COUNTRYSIDE	CAVENDISH	20 MI. STREAM RD.
COUNTRYSIDE	READING	BAILEY MILLS RD
COUNTRYSIDE	WEST WINDSOR	BIBLE HILL
LOWLANDS	LUDLOW	BLACK RIVER
CENTRAL GATEWAY	WEST WINDSOR	BROWNSVILLE
COUNTRYSIDE	READING	CAPERS HILL RD.
LOWLANDS	CHESTER	CHESTER RESEVOIR
LOWLANDS	SPRINGFIELD	COMTU FALLS
LOWLANDS	WINDSOR, WEATHERSFIELD, SPRINGFIELD	CONNECTICUT RIVER
HIGHLANDS	WINDSOR	CORNISH HILLS
COUNTRYSIDE	LUDLOW	GHIA FARM
LOWLANDS	SPRINGFIELD	GOULDS MILLS
COUNTRYSIDE	WINDSOR	GREAT RIVER FARM
HIGHLANDS	BALTIMORE, CAVENDISH	HAWKS MOUNTAIN
COUNTRYSIDE	READING	JENNE FARM
HIGHLANDS	READING	KEYES MOUNTAIN
LOWLANDS	CAVENDISH	KNAPP POND
LOWLANDS	WINDSOR	LAKE RUNNEMEDE
HIGHLANDS	WEST WINDSOR	LITTLE MT. ASCUTNEY
CENTRAL GATEWAYS	LUDLOW	MAIN ST.
CENTRAL GATEWAYS	SPRINGFIELD	MAIN ST.
CENTRAL GATEWAYS	WINDSOR	MAIN ST.
LOWLANDS	WINDSOR	MILL BROOK
LOWLANDS	WINDSOR	MILL POND
HIGHLANDS	WEATHERSFIELD	MOUNT ASCUTNEY
HIGHLANDS	LUDLOW	OKEMO MOUNTAIN
COUNTRYSIDE	WEST WINDSOR	PARIS HILL FARM
CENTRAL GATEWAYS	CAVENDISH	PROCTORSVILLE VILLAGE CENTER
HIGHLANDS	SPRINGFIELD	SKITCHWAUG MOUNTAIN
HIGHLANDS	CHESTER	SMOKESHIRE VALLEY
CENTRAL GATEWAYS	CHESTER	STONE VILLAGE
HIGHLANDS	ANDOVER	TERRIBLE MOUNTAIN
HIGHLANDS	READING	THE ALPS
CENTRAL GATEWAYS	CHESTER	THE GREEN
LOWLANDS	CAVENDISH	TWENTY MI. STREAM
COUNTRYSIDE	SPRINGFIELD	WELLWOOD ORCHARD
COUNTRYSIDE	WINDSOR	WINDSOR PRISON PROP.

Preserving Scenic Resources:

Limiting Light Pollution:



One of the most valued resources of a rural region is a night sky unimpaired by "sky glow" from the misdirected light of urbanized areas and recreational resorts. Many outdoor lights are poorly designed or improperly aimed, allowing light to project above the horizon and wash out the view of the stars. Poorly designed exterior lighting also creates glare, light trespass on neighboring property, and energy waste. There are now options for outdoor lighting, which are better designed to direct light downward where it belongs. These fixtures are commonly referred to as "dark sky compliant," and maintain light distribution towards the ground full cutoffs avoiding projection into the sky. Future consideration of this technology would help reduce cumulative negative effects on aesthetic resources. Groups like the Springfield Stellafane astronomy club rely on the dark sky created by limited light of sky to recreate. Springfield also has an "Observatory Protection Overlay District" that minimizes light effecting observatories in Springfield.

Maintaining Open Space:

"Open space" may be defined as land which is not developed and is of some benefit to the public for many of the reasons described throughout this chapter and the Natural Resources chapter. Open space that is publicly owned or permanently protected through the sale or donation of development rights may ensure the long-term productive capacity of forest or agricultural land; preserve wildlife habitat; protect groundwater resources; provide recreation land; and preserve important historic, scenic and cultural resources.

The Upper Valley Land Trust (UVLT) is in Hanover, New Hampshire, and provides conservation leadership, tools and expertise to permanently protect the working farms, forested ridges, wildlife habitat, water resources, trails and scenic landscapes that surround residential areas and commercial centers. UVLT focuses its mission in 45 Vermont and New Hampshire towns (including Springfield, Weathersfield, Windsor, West Windsor, and Reading) in the upper Connecticut River valley. UVLT is a sponsor member of the Land Trust Alliance, an organization that promotes land

conservation by providing advocacy and professional resources to over 1,600 land trusts nationwide.

To ensure that open lands that provide the greatest public benefit are protected for present and future generations, towns should develop open space plans.

For more information: Open Space & Resource Protection Programs

Policies

A. Cultural and Historic Resources Policies

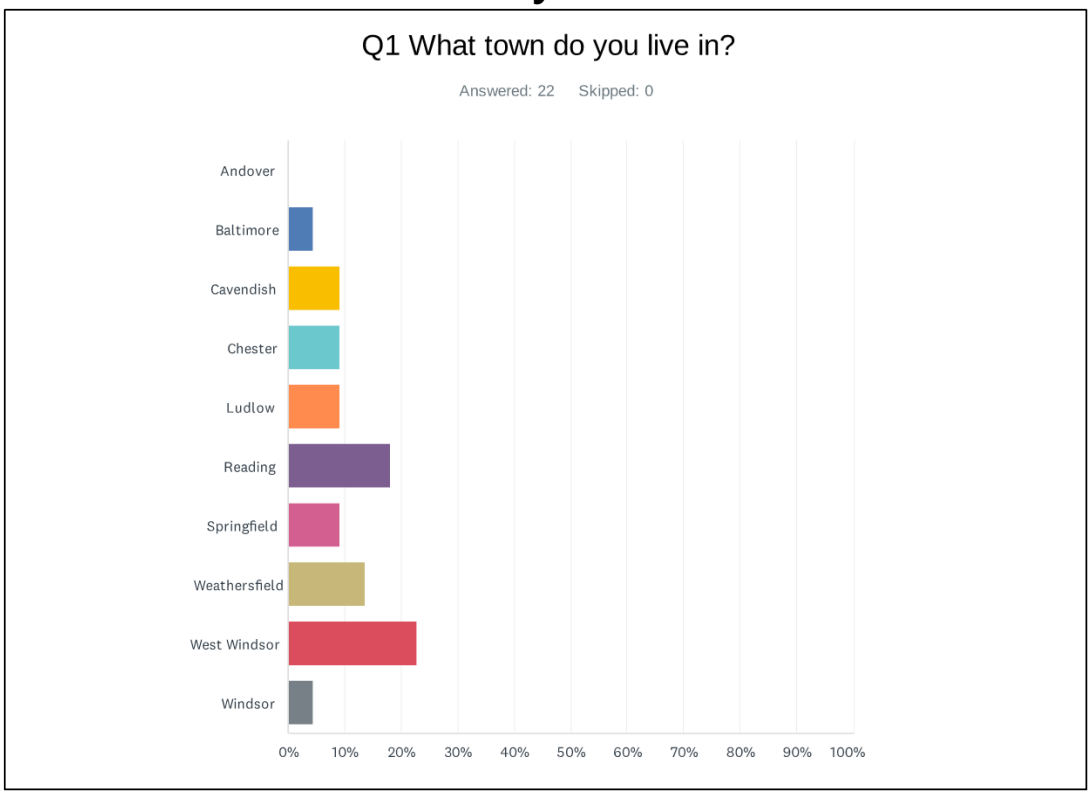
1. Acknowledge the presence and continuous stewardship of indigenous people to the cultural and historical resources in the region.
2. Proposed development adjacent to or within historic or cultural sites must adhere to similar massing, size, scale, and overall design of the site. Development must enhance historical or cultural value and appreciation.
3. Increase awareness of community, regional, state, and federal programs which sponsor or provide financial or technical assistance for cultural and historic preservation and education.
4. Adaptive reuse of historically significant buildings and sites is desired as long as the project is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties and any local historic or design review guidelines.
5. Regionally significant historic buildings and sites should be preserved unless existing conditions make it unreasonably cost prohibitive. Necessary renovations should reflect the historic character of the resource. In the case of private homes, owners are encouraged to consider the site's historic, cultural, and economic value to themselves and the community when deciding how best to maintain and manage them.
6. Promote the education and increased awareness of significant cultural/aesthetic resources, such as cellar holes and stonework.
7. Acknowledge, protect, respect, and memorialize Abenaki and indigenous burial sites, archeology, ethnohistory, and traditional knowledge.

B. Scenic Lands and Open Space Policies (See also Natural Resources Chapter)

1. Support local, state, or federal programs and legislative efforts which protect and enhance the economic, cultural, environmental, and aesthetic values of forested and scenic resources.
2. Support, and promote, the continuation of programs that provide incentives for landowners to conserve farmland, forestland, and open space (e.g., Forest Legacy Program, Use Value Appraisal Program).
3. Conservation easements of important open and scenic lands are supported.
4. Historic, archeological, and indigenous sacred resources that enhance the scenic resources of the Region are preserved.
5. The sites highlighted in the Scenic Resources section of this chapter are inherently and especially sensitive. Development around the Region must not result in undue adverse impacts on these scenic resources.
6. Structures and exterior areas shall be illuminated only at levels necessary to ensure the safety and security of persons and property. Any lighting that will disturb the natural or aesthetic value of a scenic resource shall not be used.

   Exterior lighting must be fully shielded and minimize the amount of blue light in the nighttime environment (i.e., Dark Sky Friendly).

APPENDIX: Scenic Resources Survey



ANSWER CHOICES	RESPONSES	
Andover	0.00%	0
Baltimore	4.55%	1
Cavendish	9.09%	2
Chester	9.09%	2
Ludlow	9.09%	2
Reading	18.18%	4
Springfield	9.09%	2
Weathersfield	13.64%	3
West Windsor	22.73%	5
Windsor	4.55%	1
TOTAL		22

Q2 What would you say are the outstanding scenic mountains or highlands in your town or region? Highlands: Hillsides and ridgelines, that because of topography, bedrock, and soil conditions prominent mountains, forest cover, and other elements, are outstanding scenic resources. (ex. View of Mt. Ascutney from Paradise Park in Windsor)

Answered: 22 Skipped: 0

#	RESPONSES	DATE
1	Springfield is not really a mountain or highland place, it however has been attracting glamping sites and a rural retreat. The development of these resources has been impeded by ANR and Acr 250 restrictions that sometimes make little sense.	2/1/2022 10:59 PM
2	Mt. Ascutney, Skitchewaug Mt., Mt. Ephraim, Hawk's Mt. (see this link about plane crash on Hawk's Mt. http://www.gendisasters.com/vermont/11490/hawk039s-mountain-vt-bomber-crashes-june-1947)	2/1/2022 12:19 PM
3	Keyes Mountain, Mt Moses	12/6/2021 5:38 PM
4	Mount Ascutney as seen from various points in W. Windsor. one is along Bible Hill Road but there are many more	11/29/2021 7:54 PM
5	hawkes MT Keyes MT	11/29/2021 7:38 PM
6	Steadman Fro the East Side	11/22/2021 8:37 AM
7	View from the height of S. Reading Rd. looking south south east. Hawks mountain.	11/22/2021 7:08 AM
8	Hawks Mountain Little Ascutney	11/18/2021 3:01 PM
9	Views of ascutney, view of Cornish hills and ridges across the river from Jarvis St, view from the beach of Kennedy Pond, covered bridge, windsor town forest, prison property	11/18/2021 12:46 PM
10	Views of: The Alps, Mt. Ascutney, Little Ascutney In Reading. Region: Okemo Mtn, Skitchewaug Mtn, Terrible Mtn	11/18/2021 12:04 PM
11	View from the top of Okemo View from the top of North Hill View from the top of the Ford Farm/Burns residence View from the top of the cemetery View from the top of East Hill View from the dams on Route 100 South/Andover Road View of the lakes from parts of Okemo	11/18/2021 10:57 AM
12	View of Okemo as you drive into town from the south. Views of the Lakes on VT Rt. 100 North. New England style architecture in the village.	11/18/2021 8:07 AM
13	Mt Ascutney, Little Ascutney and the valley between. View of Hawks Mtn from the Weathersfield Center Rd.	11/18/2021 7:08 AM
14	Jenne Rd., Town Hill, Grasshopper Rd. Ridgeline views, Pastures, Available trails	11/18/2021 5:57 AM
15	The land on both sides of Birmingham Road before Chaos; outcropping on one side with an amazing assortment of spring wildflowers and the ledge on the other with lady slippers and below, wetlands.	11/17/2021 8:01 PM
16	Mt. Ascutney, Rt. 44, and the Brownsville/Hartland ridgeline.	11/17/2021 5:04 PM
17	hawk mt.	11/17/2021 4:04 PM
18	View of Ascutney from the end of High Street, Smokeshire valley,	11/17/2021 3:55 PM
19	Mount Ascutney and Little Mount Ascutney not to mention every ridgeline in town	11/17/2021 3:53 PM
20	Mt. Ascutney--view from every angle.	11/17/2021 3:50 PM
21	Mt Ascutney, Little Ascutney Mtn, Hawks Mtn, Ludlow Mtn, Terrible Mtn	11/4/2021 4:13 PM

Q3 What would you say are outstanding scenic lowland features in your town or region?Lowlands: Characterized by riparian corridors, wetlands, waterways, and floodplains, areas like this can provide ecological benefits as well as recreational opportunities. (ex. The Connecticut River)

Answered: 20 Skipped: 2

#	RESPONSES	DATE
1	The Black River could be a major asset of the Town, however its ability to serve as such has been destroyed by buffer zone requirements which have surrounded it with poison ivy, tree debris, dying trees, and other obstructions which impede it visibility, accessibility, and use. The Town is protected from flooding by a large flood control dam, yet it is still subjected to unnecessary restrictions, against the wishes of the Town	2/1/2022 10:59 PM
2	Black River, Connecticut River and Hoyt's Landing, North Springfield Bog	2/1/2022 12:19 PM
3	Land around the Black River as it flows through Felchville. Land around the Mill Brook in and north of Hammondsville.	12/6/2021 5:38 PM
4	Mill Brook as it runs through West Windsor. In the region, the Connecticut River is very scenic, especially with the Windsor/Cornish Covered Bridge. In Taftsville, the river, dam, and River Road	11/29/2021 7:54 PM
5	Beaver meadows along 106Reading. Beaver meadows upper Black R for flood resiliance and habitata	11/29/2021 7:38 PM
6	The North Branch Williams River Valley North of Chester	11/22/2021 8:37 AM
7	20 mile stream road as a parallels the alps. Route 131 corridor. Davis Road	11/22/2021 7:08 AM
8	Black River and Valley	11/18/2021 3:01 PM
9	Paradise park, CT river (duh), old mill brook	11/18/2021 12:46 PM
10	Mill Brook, North Branch Black River, wetlands along Tyson Rd in Arthur Davis WMA, Niagara Falls, Twentyfoot Hole in Reading. Region: CT River and valley, Black River along RT 131, Goulds Mill & Comtu Falls (Springfield), Paradise Park wetlands and Lake Runnemede, west Windsor flats along Rt 44, Hoyts Landing and setback	11/18/2021 12:04 PM
11	Black River watershed Lake Pauline and Lake Rescue Flood Control Dams (includes our recreation pond)	11/18/2021 10:57 AM
12	See above. Scenic drive along VT Rt 100, North and South. (Maybe that's why it's a 'scenic corridor')	11/18/2021 8:07 AM
13	Protected areas along the Black River (Army Corps), Black River North Branch fields following Rte 106	11/18/2021 7:08 AM
14	Mill Brook	11/18/2021 5:57 AM
15	Twenty Mile Stream as it flows along Heald Road.	11/17/2021 8:01 PM
16	Mill Brook, West Windsor Rt. 44 valley corridor.	11/17/2021 5:04 PM
17	Connecticut River and every stream in the area	11/17/2021 3:53 PM
18	The Mill Brook water way, including the low land area along Rt. 44	11/17/2021 3:50 PM
19	Covered bridges, Connecticut River, Black River along Scenic Route 131, Ludlow lakes region, Black River through downtown Springfield, Knapp Ponds, Lake Runnemede, Mill Pond, Chester Reservoir	11/4/2021 4:13 PM
20	Mill Brook	11/4/2021 10:06 AM

Q4 What would you say are outstanding scenic community centers in your town or region?Centers: Dense central places like a village center that is characterized by significant buildings or historic architecture like public offices, monuments, a commercial core, and a more urbanized residential area. (ex. Main Street in Downtown Windsor)

Answered: 21 Skipped: 1

#	RESPONSES	DATE
1	The potential scenic center for Spring field is the Black River, however, because of buffer zone restrictions it cannot be easily seen, accessed, or used. Muckross State Park could also be a major scenic center but its structures are being neglected and falling into decay by the State. And the State has not improved its access or trail system. It needs more funding and local control.	2/1/2022 10:59 PM
2	Downtown Springfield	2/1/2022 12:19 PM
3	Felchville; Hammondsville; land around Bailey's Mills	12/6/2021 5:38 PM
4	In the region, the Town of Woodstock - Main Street, Billings Farm.	11/29/2021 7:54 PM
5	Old barns. Stone walls along roads… which are often pushed over for the sake of "road drainage". The better back roads program by the way destroys scenic roads withe armouring that wa sat times a useless need	11/29/2021 7:38 PM
6	The Green In Chester	11/22/2021 8:37 AM
7	Proctorsville village center. Cavendish historical society building	11/22/2021 7:08 AM
8	None	11/18/2021 3:01 PM
9	Main st downtown windsor, Waterfront area in downtown windsor, Juniper Hill Inn, Snapdragon Inn	11/18/2021 12:46 PM
10	Reading: Fletchville, Indian Stone marker. Region: Chester Stone village, Weathersfield Bow, Windsor main St old buildings	11/18/2021 12:04 PM
11	Historic Preservation area Village Center Black River Academy Museum Ludlow Town Office Building Veteran's Park and Minipark (Daniel Kesman Park) Historic Churches: Baptist, Catholic and United Church Dorsey Park and Town Recreation Area The Armory that includes our TV station, Good Neighbors and Recreation areas	11/18/2021 10:57 AM
12	See #2 above. Main St. Ludlow. No billboards. No "big box" stores.	11/18/2021 8:07 AM
13	I suppose Perkinsville although additional infill development would make it more attractive	11/18/2021 7:08 AM
14	The village green in Proctorsville	11/17/2021 8:01 PM
15	Mt. Ascutney and associated ski area.	11/17/2021 5:04 PM
16	town office	11/17/2021 4:04 PM
17	The village green along Main Street (VT Route 11)	11/17/2021 3:55 PM
18	Main street, Windsor	11/17/2021 3:53 PM
19	Brownsville Village center, Ascutney Outdoors	11/17/2021 3:50 PM
20	Main Street in downtown Windsor, State Street Common Windsor, Proctorsville green, Chester Village Green, core Main Street in downtown Springfield, Stone Village, Brownsville, Weathersfield Center Church and Grove, Perkinsville Green, Ludlow Village Center, Felchville	11/4/2021 4:13 PM
21	Brownsville	11/4/2021 10:06 AM

Q5 What would you say are outstanding scenic countryside vistas in your town or region?Countryside: woodland and/or agricultural areas outside of an urban center with limited residential development. (ex. Jenne Farm in Reading)

Answered: 20 Skipped: 2

#	RESPONSES	DATE
1	The complex being developed by Jim Veltrop	2/1/2022 10:59 PM
2	As you say - Jenne Farm; Lexington Farm in Felchville; New Hall Farm in S. reading; Springbrook Farm	12/6/2021 5:38 PM
3	Already mentioned - River Road in Woodstock/Taftsville, Bible Hill in West Windsor, Route 12A along the river with the Covered Bridge. Almost every road has beauty!	11/29/2021 7:54 PM
4	The visat from south reading stone schoolhouse of a scarred up MT ascutney. Let the whole darn thing grow back and leave it the sacred it once was. Ascutney Outdoors center is about to kill the solitude of the MT	11/29/2021 7:38 PM
5	Mount Ascutney and little Ascutney from the 131 west side	11/22/2021 8:37 AM
6	S. Reading Rd. 20 mile Stream Road. Sections of East Road	11/22/2021 7:08 AM
7	Views of Mountain Ascutney from various high points. Views of the southern Green Mountains from Center Road and Skyline Drive. And Connecticut Valley from same. North Branch valley.	11/18/2021 3:01 PM
8	Great River Farm, Windsor prison property and windsor town forest, view from Kennedy Pond	11/18/2021 12:46 PM
9	Reading: Caper Hill Rd & farms, Jenne Farm, Baileys Mills Rd., Knapp ponds. Region: Twentymile Stream Rd fields, CT River valley	11/18/2021 12:04 PM
10	South Hill, East Hill and North Hill have beautiful woodlands, farms and meadows. Our zoning requires 3 acres in our agricultural, residential areas. The aquifer district (Terrible Mountain) requires 5 acre zoning. Parts of West Hill encompass several different zoning areas. Example: the Ghia Farm on West Hill has beautiful fields and scenery, but is surrounded by chalets and second homes.	11/18/2021 10:57 AM
11	Any area outside of the Village. Especially those areas with views of the valleys and opposing ridge lines.	11/18/2021 8:07 AM
12	Weathersfield Center meeting house and surrounding lands, open agriculture fields across from Crown Point GC, Wellwood Orchard	11/18/2021 7:08 AM
13	Jenne Farm / Rd, Baileys Mills Rd, Town Hill all in Reading	11/18/2021 5:57 AM
14	The western side of East Road	11/17/2021 8:01 PM
15	West Windsor Story Town Hall and Butcher & Pantry Store.	11/17/2021 5:04 PM
16	woodland and agricultural	11/17/2021 4:04 PM
17	view of farms along 103 North	11/17/2021 3:55 PM
18	Armstrong property, GMHA, mile long field, certainly tree lines roads such as Bryant Rd and Cowshed in W. Windsor	11/17/2021 3:53 PM
19	Views from Cemetery Road towards Bible Hill and beyond.	11/17/2021 3:50 PM
20	Paris Hill farm	11/4/2021 10:06 AM

CH 8: ENERGY

See the Regional Energy Plan.

Ch 9: HOUSING

Source: Braxton Freeman

Housing Goals

1. Ensure the availability of safe and sanitary housing for all residents, and their ability to get housing that is needed.

2. Maintain and sustain existing primary homes in good condition for year-round residents.

3. Make the process easier to build the type of homes that the region needs in the places we need them.

4. Create the types of homes that are necessary to address the region's identified needs.

5. Build homes that improve the region's economic health and are consistent with smart growth principles.

6. Increase public awareness of the region's housing needs and opportunities, and to build acceptance of efforts to address these needs.

7. Support the Goals, Policies and Priorities of the Keys to the Valley Project.

8. Support interdisciplinary, interorganizational, and cross-section approaches to the housing issues in the region.

9. Provide assistance so that all communities in the region meet affordable housing goals.

Housing is a key element of any equitable and sustainable community. The supply of housing should be adequate to house those who live and work in the community and should expand at a rate that can accommodate economic growth. In addition, housing should be available to house the Region's expanding elderly population and to maintain a population of families that bring students to area schools and workers to local jobs.

In 2022, the Region is in a housing crisis. To address the complex housing issues in the Upper Valley, as well as throughout our Region, the Keys to the Valley (KTTV) project was launched. Made up of the Upper Valley Lake Sunapee Regional Planning Commission, Two Rivers-Ottauquechee Regional Commission, and MARC, the KTTV initiative uses data to engage with and create goals and policies for a multi-pronged solution.

The Keys to the Valley initiative supplements this Housing Chapter with additional Information and analysis. It describes the housing crisis in more detail and identifies a few ways to help address the housing situation:

- **Spread knowledge of the region's housing needs** to increase public awareness of the region's housing needs and opportunities, and to build acceptance of efforts to address these needs. This involves community outreach and coordination, sharing information and relatable stories, and developing metrics for monitoring the region's housing needs.
- **Ensure access to a safe home** to ensure the availability of safe and sanitary housing for all residents, and their ability to get housing that is needed. This includes providing adequate emergency housing facilities; making sure that rental units meet all applicable codes for safe and sanitary habitation; reducing exposure to mold and lead hazards and improving the knowledge of and compliance with legal requirements, such as the Fair Housing Law. Housing conditions are known to have a significant impact on physical and mental health.
- **Sustain existing primary homes** in good condition and for use by year-round residents. This includes maintaining or improving the conditions of existing homes; keeping existing owner-occupied and renter-occupied homes as primary residences; and discouraging conversion to secondary homes or short-term rentals.
- **Make it easier to build homes**. Make the process easier to build the types of homes that the region needs in the places we need them. This involves eliminating unnecessary regulatory barriers, streamlining the local and state review processes, and building grassroots support for proactively addressing our housing needs.
- **Create the types of homes the region needs** to produce the types of homes that are necessary to address the region's identified needs. This means building homes for the incomes we have and for our population, prioritizing the creation of so-called "Missing

Middle" and supportive housing types. This also involves building the capacity of local developers, building trades, and supportive housing providers.

- **Build smart for economic health**. Build homes that improve the region's economic health and are consistent with smart growth principles. This includes prioritizing housing developments that further village revitalization efforts, are served by water and sewer infrastructure, encourage walking, bicycling and public transit, and contribute to a stronger, more resilient community and stable tax base.

An additional way to help address the housing situation includes:

- **Build smart for the environment.** Build homes that meet energy efficiency standards and avoid negative environmental impacts. Ensure that locations and construction methods anticipate and respond to climate change.

A. Housing Characteristics

The population in the region increased less than 1% between 2010 (24,711 residents) and 2020 (24,860 residents), according to US Census Bureau decennial statistics. Likewise, the production of new homes has been modest in this region over the past decade. In 2019, there were 10,292 households in the region, 27% of which resided in rentals and the remainder owned their own homes.

There were 14,978 total housing units in the region in 2019. Seasonal units accounted for about 27% (4,021 units) of the total units. Owner-occupied units were about 52% of the total (7,826 owner-occupied housing units) and 21% were renter-occupied (3,131 housing units). This proportion of housing units is substantially unchanged when compared to the previous Regional Plan.

Single-detached housing units make up the predominate type of ownership in the region (69%), with multi-family buildings (23%) and mobile homes (6%) following behind with significantly lower prominence. Rentals of various scales can be found throughout the region, but the larger apartment buildings are found in Springfield, Windsor and Ludlow. Data is not readily available for accessory dwelling units, but anecdotal evidence suggests there are only a small number of them in the region at this time.

TABLE 9.1 RESIDENTIAL BUILDING TYPES (2019)									
	Single- Family Detached		Single- Family Attached		Multi-Family Building		Mobile Home		Total
	#	%	#	%	#	%	#	%	#
Vermont	**222,797**	**66.5%**	**13,574**	**4.05%**	**76,380**	**22.81%**	**22,167**	**6.62%**	**334,918**
Windsor County	**24,580**	**70.5%**	**738**	**2.1%**	**7294**	**20.9%**	**2264**	**6.5%**	**34,876**
Region	**10,709**	**69.2%**	**201**	**1.3%**	**3618**	**23.4%**	**958**	**6.2%**	**15,486**
Andover	354	88.3%	0	0.0%	21	5.2%	26	6.5%	401
Baltimore	105	83.3%	1	0.8%	2	1.6%	18	14.3%	126
Cavendish	725	71.8%	24	2.4%	175	17.3%	86	8.5%	1,010
Chester	1,347	73.6%	59	3.2%	218	11.9%	207	11.3%	1,831
Ludlow	1,864	56.6%	36	1.1%	1253	38.1%	139	4.2%	3,292
Reading	371	92.5%	0	0.0%	11	2.7%	19	4.7%	401
Springfield	2,985	67.0%	37	0.8%	1182	26.5%	253	5.7%	4,457
Weathersfield	1,159	87.0%	0	0.0%	57	4.3%	116	8.7%	1,332
West Windsor	696	77.0%	24	2.7%	170	18.8%	14	1.5%	904
Windsor	1,103	63.7%	20	1.2%	529	30.5%	80	4.6%	1,732

Source: Vermont Housing Data

The average median household income for the region in 2020 was $62,423, with West Windsor and Windsor being the towns in the region with the highest and lowest median household incomes, at $88,636 and $44,180 respectively.

TABLE 9.2 STRUCTURES BUILT BY YEAR		
	# of Structures Built Before 1939	# of Structures Built Before 2000
Vermont	**25.6%**	**86.0%**
Windsor County	**27.7%**	**88.2%**
Region	**28.6%**	**88.1%**
Andover	16.1%	83.4%
Baltimore	26.8%	91.1%
Cavendish	24.9%	75.2%
Chester	30.5%	88.0%
Ludlow	19.8%	91.3%
Reading	31.5%	86.3%
Springfield	34.8%	93.4%
Weathersfield	16.7%	88.3%
West Windsor	25.4%	88.3%
Windsor	59.8%	95.3%

In terms of cost burden in the region, households who spend over 30% of their income on rent are considered cost-burdened, with the severity of the burden increasing as the percentage rises. In the region, the majority of owners with mortgages fall below the 30% mark and are not considered cost-burdened, however 1/3 of owners and the majority of renters (54%) fall within the cost-burdened bracket, with housing and rent payments that equate from 30-50+% of their household income. The town with the highest percentage of cost-burdened owners with mortgages is Reading, with 47% of owners paying over 30% of their income, while Andover has the highest percentage of cost-burdened renters at 95%. For the lowest percentages, Chester has the lowest percentage of cost-burdened owners at 15%, while Ludlow has the lowest percentage of cost-burdened renters at 30%.

The housing stock is old in this region, with 29% of homes being built in 1939 or earlier, and 88% of the housing stock being built before 2000. Additionally, the average household size is small and continues to get smaller, equating to an average size of 2.37 for our region. Many of the homes in the region are quite large and, given the average household size, have a lot of under-utilized capacity.

According to the Keys to the Valley project and US Census data, populations of people aged 62 and up are increasing and projections are for continued increase of that age cohort into 2030, while most other age cohort populations decline. Many communities in the region are planning aging in place; in other words, how the aging population can successfully remain in their communities as they get older. Additional services may be needed to age in place, such as transportation services, help with maintenance, community nursing, or other programs. Production of new smaller homes or rentals, accessory dwellings, or homesharing in existing houses could also support aging in place.

B. Seasonal Housing

Recreation and tourism are important economic activities in parts of the region, especially in the vicinity of Okemo Mountain Resort, the Ludlow lakes area, and the former Ascutney Mountain Resort in Brownsville. As such, there is a higher number of seasonal units in these and surrounding areas. (See Table 9.3 for more information.)

TABLE 9.3 NUMBER OF SEASONAL HOUSING UNITS BY TOWN (2020)

Town	Number of Units for Seasonal, Recreational, or Occasional Use
Andover	202
Baltimore	0
Cavendish	417
Chester	453
Ludlow	2,197
Reading	152
Springfield	64
Weathersfield	118
West Windsor	294
Windsor	64
Region	3,961

Source: *2020 ACS 5-Year Estimates (Table B25004 – Vacancy Status)*

The construction and maintenance of seasonal housing units are important for local economies (e.g., construction trades, property management, tax revenues). However, the influx of second homeowners from larger metropolitan areas can influence housing prices beyond what is possible to pay for given prevailing local wages.

During the COVID-19 pandemic, some second homeowners moved into their second home, which had impacts on the local communities, such as with school enrollment. There is a lack of reliable

data regarding this trend at this time. As of 2022, it is not clear if this will have lasting impacts, but it is conceivable that possible future climate migration could have similar influences.

C. Short Term Rentals

Short term rentals are a relatively new occurrence, and the numbers of units listed on Airbnb, VRBO and similar websites has grown tremendously in recent years. For example, Ludlow had nearly 600 listings in December 2021. A short-term rental is defined as a furnished house, condominium, or other dwelling room or self-contained dwelling unit rented to the transient, traveling, or vacationing public for a period of fewer than 30 consecutive days and for more than 14 days per calendar year. Short term rentals are important travel accommodations for visitors and a source of income for property owners. The growth of short-term rentals has reduced the numbers of long-term rentals for residents.

D. Subsidized Housing

A number of housing units in the Region are maintained for families with lower incomes. These properties are managed by State or local housing authorities or by organizations such as the Windham and Windsor Housing Trust whose mission is to develop and manage housing for low- and moderate-income families in their service area. See their Homes Matter Here website.

Most of the existing subsidized housing units are located in higher density neighborhoods where residents have access to services and public transportation. The development of these projects is also benefited by public water and sewer Infrastructures. These connections are important in order for residents who might not be able to afford automobiles to have access to employment, retail areas and health services. The majority of subsidized units in the Region are in Springfield and Windsor. Although these areas are ideal for providing higher density housing, outlying towns must also begin to make efforts to provide housing for those who work in their communities but cannot afford to live in them.

TABLE 9.4 AFFORDABLE RENTAL HOUSING PROPERTIES IN THE REGION

Property Name	Street Address	City/Town	Total Apartments	Apts restricted to elderly and/or tenants with disabilities
517 Depot Street	517 Depot Street	Chester	6	0
Black River Overlook	146, 147 & 161 Rublee Lane	Ludlow	22	0
Chester Elderly Apartments	110 Senior Circle	Chester	36	36
Cox House	38 Maxwell Perkins Lane	Windsor	7	7
Edwin L. Huber Building	80 Main Street	Springfield	60	60
Ellis Block	26 Main Street	Springfield	9	0
Evergreen Heights	70 Seavers Brook Road	Springfield	44	0
Gill Terrace Apartments II	9 Gill Terrace	Ludlow	36	36
Gill Terrace Retirement Apartments	7 Gill Terrace	Ludlow	24	24
Louis H. Whitcomb Building	1 Mineral Street	Springfield	72	72
Maples - Springfield	201 South Street	Springfield	28	28
Mountain View Apartments - Springfield	105 Mountain View Drive	Springfield	72	0
Phelps Court	54 State Street and 8 & 10 Phelps Court	Windsor	14	0
Pleasant Brook Apartments	82, 106 & 108 Pleasant Street	Chester	24	0
Proctorsville Green Housing	6 Parks Place; 20 Village Green and 7 Depot Street	Cavendish	16	6
Red Maple - South Street Duplex	54 South Street	Springfield	2	0
Southview Apartments	30 Stanley Road	Springfield	69	0
Union Square Apartments	7 Union Street	Windsor	58	0
Wall Street Apartments	1 - 3 Wall Street	Springfield	13	0
Westview Terrace Apartments	59 Westview Terrace	Springfield	58	11
Windsor Village Apartments	65 State Street	Windsor	77	67
Woolson Block	31 Main Street	Springfield	20	0
TOTAL			**767**	**347**

Source: VHFA (housingdata.org)

E. Homelessness and Transitional Housing

Improving access to emergency housing begins with supporting providers in maintaining, communicating, and expanding their services. There are significant numbers of residents in the region who have difficulty finding a home. The demand for emergency housing increased significantly in 2020 and 2021, in part, as a result of the pandemic.

Access to safe housing for people experiencing sudden or chronic homelessness is essential to ensuring the health and dignity of people living in the Region. While this need may be most visible in the region's urban centers, it is also felt in rural and suburban communities.

For more information on homelessness and transitional housing please see the Health Chapter.

F. Fair Housing Laws

State and federal fair housing laws help protect against housing discrimination. Under the Federal Fair Housing Act and the 1988 amendments, individuals may file complaints alleging housing discrimination based on race, color, national origin, religion, gender, handicap, or familial status. Those individuals may also allege related acts of discrimination that are governed by other federal

laws such as the Civil Rights Act of 1964. Vermont law (9 VSA §4503) prohibits any person from engaging in "unfair housing practices "such as the refusal to sell or rent and many other actions involved in the advertisement, financing, and brokering of a dwelling.

1. Municipal Responsibility in Fair Housing

Fair housing laws also protect homeowners and residents from being victimized by practices such as steering potential residents to only certain communities, neighborhoods, or developments. A municipality has fair housing responsibilities regardless of whether the federal or state government has funded the activity that is the basis for the complaint. A fair housing violation does not require a discriminatory intent: a violation can be found simply because municipal officials carried out regular activities in a routine way and failed to recognize their special fair housing responsibilities.

Municipalities carry out four broad categories of activities that affect housing. Each category can trigger municipal fair housing responsibilities:

1) **REGULATORY ACTIVITIES -** When a municipality enacts and administers regulations (e.g., zoning or building/housing codes) that affect existing or potential residential properties.
2) **PROVISION OF SERVICES -** When a municipality provides routine services in residential areas or to residents.
3) **PROVISION OF SUBSIDIES -** When a municipality offers financial incentives (e.g., grants, loans, or loan guarantees) or special services (e.g., special infrastructure projects or housing rehabilitation services) to residential property owners or to residents; and
4) **PROPRIETARY ACTIVITIES -** When a municipality buys or sells real property, particularly if the property was used or will be used as a residence.

Under the Fair Housing Act, a person who believes that he or she is a victim of housing discrimination may file either a complaint with HUD or a lawsuit in federal or state court. If a municipality must defend itself against a complaint based on the Fair Housing Act, or if it is found to have violated the Act, the costs can be considerable. Municipal officials who are considering a new ordinance, expenditure, or action, or reviewing an existing one can begin to avoid allegations of failing to meet its obligations by asking, "What are the fair housing implications in undertaking this action?"

2. Fair Share Housing

One issue that has received recognition nationwide and has been addressed by planners at all levels of government is the inability of low- and moderate-income households to locate in desirable areas at affordable costs. Court decisions and legislation in many states have required that each town meet its share of the need for affordable housing. The towns of Springfield and Windsor carry a disproportionate number of housing units for low- and very low-income households, while the towns of Andover, Baltimore, Reading, and Weathersfield have no subsidized housing. The lack of subsidized housing units in some of our towns can be attributed to the lack of adequate water and wastewater infrastructure. In Weathersfield, 8.7% of total housing units were mobile homes in 2019, serving some affordable housing needs. Baltimore increased the number of mobile homes from 10.6% in 2000 to 14.3% in 2019. Cavendish has mobile homes accounting for 8.5% of total housing stock. More information can be found in Table 9.1, "Residential Building Type (2019)".

G. Regional Housing Needs

A Keys to the Valley analysis concludes that a total of 10,000 housing units will need to be created across the greater Upper Valley - including 1,512 in the MARC region - by 2030 to meet the projected demand (see the Table below). To create the types of homes that are necessary to address the region's identified needs. This means building homes for the incomes we have and for our population, prioritizing the creation of so-called "Missing Middle" and supportive housing types. This also involves building the capacity of local developers, building trades, and supportive housing providers.

TABLE 9.5 HOUSING NEEDS FOR THE REGION (KEYS TO THE VALLEY)

2030 Housing Needs Forecasts – Regional Planning Commission Regions

Region	Year	Year 2030 Housing Projections[1] Population in Households	Total Households	Owner-Occupied Households	Renter-Occupied Households	Percentage of Cost-Burdened[2] Households: 2013-2017 Owned	Rented
TRORC (VT)	2010	55,160	23,993	17,833	6,160	29%	43%
	2030 Projected	59,280	28,220	21,540	6,680		
	Change, 2010-2030	*4,120*	*4,227*	*3,707*	*520*		
		7.47%	*17.62%*	*20.79%*	*8.44%*		
MARC (VT)	2010	23,946	10,438	7,547	2,891	32%	51%
	2030 Projected	25,600	11,950	8,950	3,000		
	Change, 2010-2030	*1,654*	*1,512*	*1,403*	*109*		
		6.91%	*14.49%*	*18.59%*	*3.77%*		
UVLSRPC (NH)	2010	83,859	36,298	25,203	11,095	28%	43%
	2030 Projected	88,520	40,830	28,820	12,020		
	Change, 2010-2030	*4,661*	*4,532*	*3,617*	*925*		
		5.56%	*12.49%*	*14.35%*	*8.34%*		

These new homes are prioritized to be located within community centers served by Infrastructure and in walkable neighborhoods. To address the needs, many of these new homes should be smaller, lower-cost homes and "missing middle" type homes that enable aging in place, provide starter homes, and support business recruitment/workforce housing needs. They should be in a price range that Is affordable (i.e. 30% of the household Income) of our residents at all Income levels. In addition, a concerted effort Is also needed to address the nearly 1/3 of our residents that are cost burdened.

H. Recent Trends and Issues

There are numerous trends and issues that impact the housing situation in the region. Some of the notable ones are summarized below.

- The availability of homes on the market are at a record low and costs are very high. In 2021, a total of 669 homes were sold in the region; the average price was $352,792. Housing sales prices in 2021 are 70.5% higher than in 2011. To afford a home at this 2021 average price, a household would need an income of approximately $102,000, according to VHFA's affordable home price calculator. A general lack of new home construction combined with increased demand during the COVID-19 pandemic have resulted in a very challenging housing market.

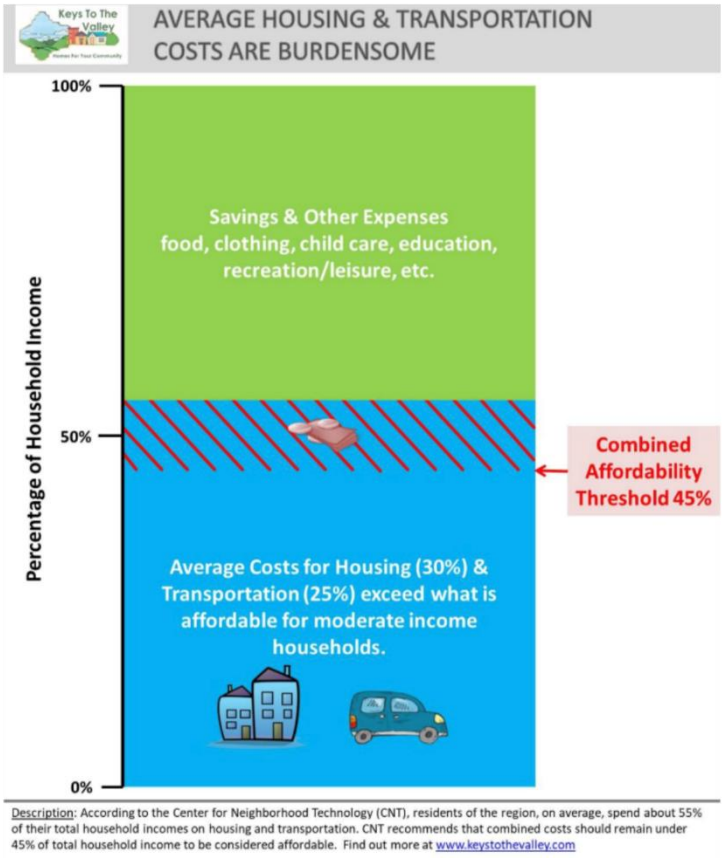
- As discussed in the Keys to the Valley initiative, about 1/3 of the households in this area are cost burdened, meaning they spend 30% or more of their household income on housing (i.e. rent, mortgage, property taxes, utility costs). This 30% target is used as a proxy for housing being too expensive. Exceeding this target makes it harder to pay for transportation, food, health insurance, prescription medications and other costs. Those who are "severely cost burdened" spend more than 50%. Renters are much more likely to be cost burdened by housing. This can be a reflection of either a liveable wage issue or cost of housing problem, or both.

TABLE 9.6 COST BURDEN BY TOWN – OWNERS (WITH MORTGAGES) & RENTERS (2020)								
Town	Paying Less than 30% of Income		Paying 30-49.9% of Income		Paying 50% of Income or more		Percent Cost-Burdened	
	Owners	Renters	Owners	Renters	Owners	Renters	Owners	Renters
Andover	46	1	10	21	14	0	34%	95%
Baltimore	34	4	15	0	4	3	36%	43%
Cavendish	125	16	20	27	35	26	30%	77%
Chester	444	84	61	44	19	28	15%	46%
Ludlow	158	196	70	28	61	58	45%	30%
Reading	56	13	17	0	32	8	47%	38%
Springfield	982	460	395	272	156	408	36%	60%
Weathersfield	424	19	159	2	18	19	29%	52%
West Windsor	165	22	53	16	27	11	33%	55%
Windsor	296	291	137	224	42	102	38%	53%

Source: *U.S. Census Bureau (2020 ACS 5-Year Estimates (Table B25091 – Mortgage Status By Selected Monthly Owner Costs As a Percentage Of Household Income in the Past 12 Months, Table B25070 – Gross Rent As a Percentage Of Household Income in the Past 12 Months)*

- Where people live directly impacts their transportation options and household costs. Accordingly, both housing and transportation costs affect people's ability to afford a particular home. A common occurrence is for lower-income workers to find lower-cost housing in outer-lying areas, which requires greater transportation costs.

  As discussed above, housing that costs less than 30% of a household's income is considered affordable. Transportation costs of 15% or less are similarly considered a target for affordability. In the greater Upper Valley region, the average household pays 10% more of their income on housing and transportation than what is considered "affordable."



- Costs of building materials have increased dramatically since 2020, which makes new construction and renovations more expensive. According to the National Association of Home Builders, the cost of building materials has increased 33% since the start of the pandemic.
- There is a lack of contractors (e.g. carpenters, plumbers, electricians) to build new homes and renovate existing buildings to create new housing units. The costs of labor for housing construction have also increased by about 39% since the start of the pandemic, according to National Association of Home Builders.
- According to data provided by the U.S. Census Bureau, the median size of a new single-family home completed in 2019 in the Northeast was 2,364 square feet, compared to 1,450 square feet in 1973. The same source indicates that, in the Northeast, the average contract price for a new single-family home started in 2019 was $156 per square foot. In other words, the typical cost to build the median sized single-family house may cost about

$369,000 based on these figures. To build the median sized home in 1973 would reduce costs by about $143,000.

- Development of multi-family dwellings also faces similar cost hurdles to single family, where per unit cost averages around $325,000.
- Most zoning bylaws do not account for other types of housing that are needed or desired (e.g., "the missing middle"). In fact, many bylaws only allow single-family dwellings and accessory dwelling units as permitted residential uses. Two-family dwellings, multi-family dwellings, and mobile home parks are often restricted as to where they can locate, and commonly require additional levels of review. In more dense areas, mixed-use structures that are part commercial and part residential may not be allowed or require additional levels of review and applicable standards. Zoning in suburban and rural areas throughout the U.S.A. has been used at times to exclude lower income individuals and renters by only allowing single-family residences, requiring large minimum lot sizes, and even mandating minimum home size.
- As discussed in the *Planning for Equity Guide*, an individual's address can be a proxy for opportunity. A home's location impacts the household's access to good schools, jobs, services and transportation options. Homes are a social determinant of health. Home ownership, for many households, represents their largest financial investment and an important source of wealth that can be passed down to children or grandchildren.

  Federal policy, local zoning rules and the mortgage industry historically denied access to home ownership for minority groups.

  Restrictive zoning rules – notably large minimum lot sizes, low densities and not allowing multi-family dwellings in residential districts – can limit access to these opportunities for lower-income households. Too frequently, lower-income homes are forced to locate through pricing and other measures in higher-risk or undesirable areas, such as within flood hazard zones or close to railroads or industrial facilities.

  An overarching goal of this plan is to provide good homes for everyone in this region. Promoting equity and inclusion is an integral part of a community's success. Toward that end, we propose using an "equity in all policies" approach in regional and local planning efforts, which means employing an "equity lens" to ensure that proposed policies and regulations will serve and benefit all residents of a community in ways that reduce or eliminate inequity.

- Aging In Place: Individuals age 62 and up comprise a significant and growing portion of the Region's population. A public opinion survey from the Keys to the Valley project found that most seniors would prefer to remain in their current homes, while more than a quarter want to move as they age. Seniors feel their needs are met to enable them to "age in place" (e.g., access to healthcare). However, over 20% of seniors said that current transportation options are not sufficient to meet their needs, and almost 15% do not have the assistance they need for daily chores and maintenance. Seniors who are looking to move primarily want smaller, single-story homes with low levels of maintenance. Locations in downtowns or villages and accessible design are also important home qualities. Remaining in their current community was less of a priority for seniors (25%) than having a safe, low-maintenance home and access to needed services. This indicates that both a local and regional strategy is needed for accessibility upgrades, service delivery, and new home options for those willing to move out of their current living space.

I. Housing Policies

1. The Keys to the Valley project serves as the foundation for MARC's housing policies and will guide our housing implementation actions.
2. Increasing the availability of homes (both rental and owned) that are affordable to residents at all income levels is an urgent, high regional priority.
3. Regulatory reform is needed to make it easier to build the missing middle types of homes that are needed to address our regional housing needs in locations that further smart growth principles. Missing middle types of homes within compact centers (per the Land Use Chapter) includes accessory dwelling units, duplexes, 3- and 4-unit rental buildings, smaller starter homes, townhouses, bungalow courts, live/work units, mixed use buildings, tiny houses and co-housing. In the rural countryside (per the Land Use Chapter), missing middle housing includes accessory dwelling units, mobile homes, tiny houses and converting existing houses or barns into duplexes.
4. To further land use goals and smart growth principles, a majority of new residential development is to be located along public transit routes and within compact centers, especially where served by public sewer and water infrastructure.

5. Multi-family housing, assisted living facilities and senior housing are prioritized along public transit routes and within compact centers, especially where served by public sewer and water infrastructure.

6. Housing developments and/or land use development patterns that result in concentrations of poverty, blighted residential areas and the segregation of various income groups is contrary to the goals of this Plan.

7. Housing projects of 10 or more market rate units must include an affordable component. Affordable housing developments are encouraged to have a mix of units so that some are market rate.

8. Bolster programs for safe and sanitary homes, such as lead paint abatement in coordination with town and state officials and partner organizations.

9. Newly developed or rehabilitated housing that has been subsidized with public funds (such as grants, loans, or subsidies) must remain affordable for a period of at least 30 years.

10. The use of innovative construction and design techniques that enhance the affordability, energy efficiency, and environmental suitability of housing for all residents is promoted.

11. To support efforts to end homelessness, creating low-barrier shelters along public transit routes and within village and downtown areas are prioritized.

12. Support and promote existing and proposed programs that provide incentives and financial or technical support for addressing our regional housing needs.

13. When reviewing housing elements in town plans, MARC will look for consideration of:

    a) Consistency with future land use goals;
    b) Aging in place;
    c) Accessible, safe housing;
    d) Low-income housing for all communities;
    e) Workforce housing;
    f) Fair housing that advances diversity, equity and inclusion;
    g) Energy efficiency; and,
    h) Connection to public transit routes or safe bicycling or walking connections to services.

CH 10: ECONOMIC DEVELOPMENT

Economic Development Goals

The Region's comparative advantage is in its quality of life, excellent work force and entrepreneurial spirit. Economic development activities need to strengthen and enhance these regional characteristics through:

1. Maintaining and enhancing the "quality of life" enjoyed by residents of the Region in order to retain current and attract new businesses and workers.

2. Diversifying the Region's economy and increase economic resiliency.

3. Prioritizing economic growth that revitalizes Regional and Town Centers, Village Centers and Hamlets.

4. Supporting economic development within designated growth centers and industrial parks.

5. Prioritizing investments in public services and facilities that further these economic development goals, including expanding and improving infrastructure such as broadband, wireless telecommunication, transportation, energy, sewer and water systems, energy efficiency and clean energy.

6. Supporting public health, and housing policies and programs that allow for residents in the Region to participate in the workforce and contribute to the local economy.

7. Using land use practices and regulations that foster economic development and growth.

8. Having a skilled and educated workforce.

9. Using collaborative efforts with local and state partners to implement coordinated economic development activities.

Introduction

Sustainable economic development is vital to the prosperity of a Region. The survival of a healthy economy depends, not just on economic growth, but how wealth is distributed within the region. The purpose of this chapter is to define goals and recommendations based on information, data, and analyses of the Region that will improve the economy and, therefore, the quality of life for its residents.

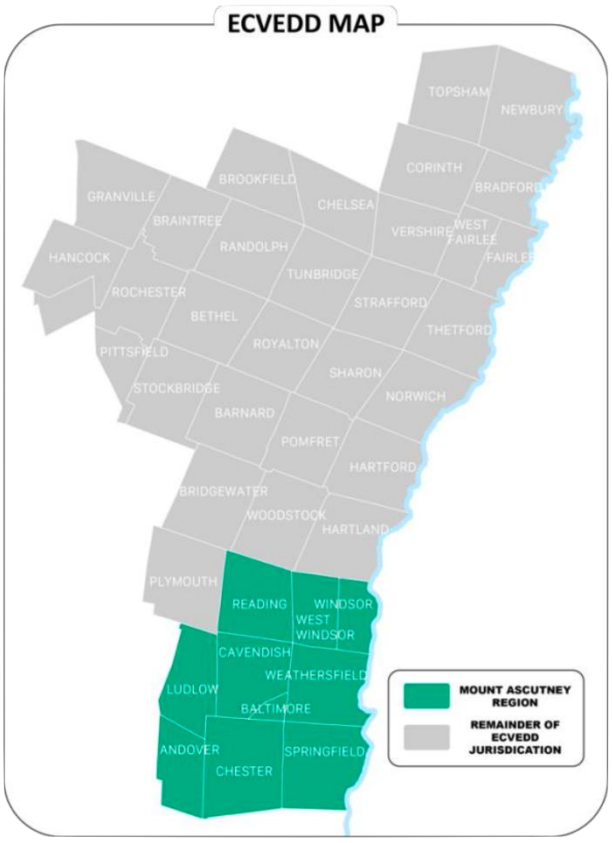
This chapter is intended to work in conjunction with the goals of the East Central Vermont Economic Development District (ECVEDD) and the Comprehensive Economic Development Strategy (CEDS). An Economic Development District is a federally designated organization charged with the development, maintenance, and implementation of the Comprehensive Economic Development Strategy (CEDS). Although the ECVEDD and the CEDS guide the greater central Vermont area, our Region has specific strengths, weaknesses, opportunities, and threats (SWOT) that make it unique.

When evaluating the Region's economy, it is important to recognize that economic development is more than creating new jobs, building new roads, attracting new businesses, constructing new housing, and increasing the taxable grand list. Economic development also includes considerations of the quality of jobs and the sustainability of a high quality of life for all residents within the Region.

With the implications of the COVID-19 pandemic, the economic landscape of the Region has shifted. A lot of statistics in this chapter may not reflect this shift. The permanent economic implications of COVID-19 will not be felt for some time.

ECVEDD/CEDS

The federally designated East Central Vermont Economic Development District (ECVEDD) consists of 40 towns within parts of Addison, Orange, Rutland, and Windsor Counties. ECVEDD's mission is to access and provide resources and to facilitate and support quality decision making for the benefit of entrepreneurs, businesses, and communities in East Central Vermont. This designation allows the region to gain access to Economic Development Administration (EDA) Investment Assistance through a variety of grant opportunities. Any requests for EDA funding must align with the CEDS. The East Central Vermont EDD (ECVEDD) uses grants to retain the organization and implement the strategies and goals outlined in the Comprehensive Economic Development Strategy (CEDS) plan. A CEDS ambition is to create a strong and resilient economy, while providing a framework for local and regional collaboration. An approved CEDS is required to access EDA funding.

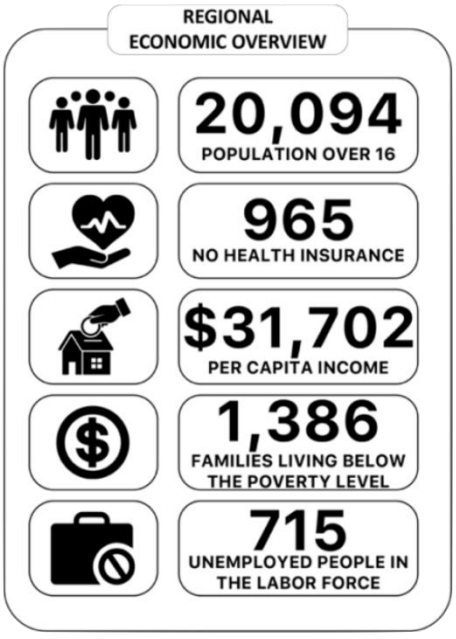


As of 2020, the goals of the CEDS are for a

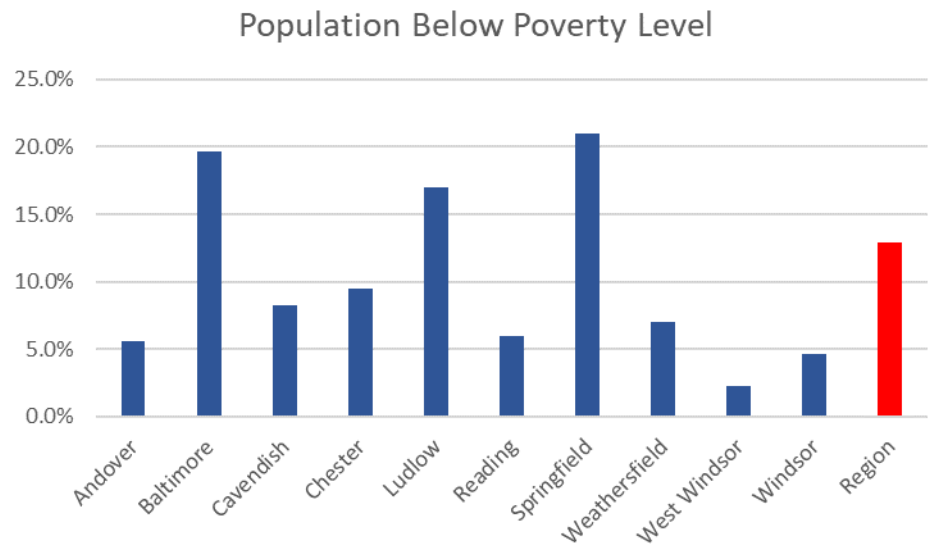
1. Resilient region;
2. Innovative business environment;
3. Robust and ready workforce;
4. Infrastructure and homes for growth;
5. Quality life and place; and
6. Healthy community.

The 2020-2025 CEDS plan characterizes central Vermont's economy as overall slow growing, with a heavy reliance on tourism. The plan outlines economic hurdles being post-industrial brownfields, high property taxes, aging infrastructure, aging population, population loss, and a lack of access to services like public transit and job training. Although central Vermont's overall job growth from 2010 to 2018 was only 2%, creative sector employment grew by 14% over the same time. The CEDS highlights issues with housing affordability both in rental and ownership, as well as elevated high school drop-out rates in our Region compared with northern towns within the ECVEDD.

Regional Overview



Historically, the Region is known for machine-tool manufacturing. Although some remnants of machine-tool industry remain, the Region has shifted towards a more diversified economy. The Region is characterized as mostly rural, with the downtown areas retaining commercial centers, and agriculture and forested land making up the remainder of the Region. Like other small towns in Vermont, the Region is dealing with population loss and stagnation. The population continues to age, and the Region struggles to attract and retain young professionals and families. The Region continues work towards more affordable housing, adequate work options, childcare, and other factors that draw people to live in the Region. Unlike some of the towns in the northern part of the ECVEDD, our Region tends to have a higher level of poverty, with close to 13% of the population in the Region living below the poverty level.



Source: 2020 ACS 5-Year Estimates

For more information about the Region, see Chapter 2: Regional Profile.

Town Overview

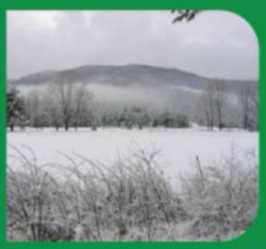
Each town in the Region contributes differently to the local economy. While larger towns like Windsor, Springfield, and Ludlow attract larger business activity, smaller towns may have working landscapes, home-based businesses, or workers that may telecommute to their jobs in larger towns. Below you will find an economic profile for each town based on their most recent town plan updates.

ANDOVER

According to Andover's 2018 Town Plan, the town is nestled in the eastern slopes of the Green Mountains and maintains an entirely rural atmosphere. Because of the rural nature, most of the residents find work outside of the town. Historically, Andover residents engage in farming or forest-related work. Although the relevance of this work has shifted over the years, some residents still find employment or hobby in sugaring, farming, or forestry. Due to its geographic location, the town also has many seasonal homes.

BALTIMORE

According to the 2016 Baltimore Town Plan, Baltimore is the smallest of the nine towns, with a population of a little over 200 people. As a mostly residential community, residents in Baltimore rely heavily on outside employment to sustain their way of life. Because of infrastructural limitations, the town will likely be unable to attract new business. The town plan points to a need to encourage home-based businesses.



CAVENDISH

According to the 2020 Town Plan for Cavendish, important economic sectors in the town are, "manufacturing, health care, lodging, food services, education, and retail trade." In addition to a more formal employment sector, there are some more underreported home and self-employment-based occupations like artists, musicians, and building tradespeople. Even so, more than 90% of people commute to work in neighboring towns.

CHESTER

According to the 2020 Chester Town Plan, Chester is an attractive place to work and live given its small size. Chester also has a Village Center Designation which allows for its eligibility for a variety of tax credits and grants. In terms of economic development, Chester wishes to build upon its existing strengths to welcome new businesses and improve the quality of life for all beings, while maintaining the charm and history of the town.

LUDLOW

According to the 2019 Ludlow Municipal Plan, Ludlow started initially as an agricultural community and then transitioned into a manufacturing community in the late 1800s. The community has steered away from that over the years but has become a tourist destination for outdoor recreation. Because of this, the economic sectors in Ludlow are heavily dependent on lodging and food service, and there is a susbstantial reliance on seasonal employment and short-term housing.

READING

According to the 2020 Reading Town Plan, like many other towns in the Region, Reading's local economy historically relied on agriculture and milling. More recently, most households commute to other towns for work. The Town hopes to encourage and support local business through investment in local infrastructure, building on the core downtown, and ensuring safe multi-modal transportation through streetscape improvements.

SPRINGFIELD

Springfield is the most populous town in the region, and many people from other towns within the region travel to Springfield for employment. According to the 2019 Springfield Town Plan, the town's roots are in machine tool manufacturing. Over the years, with the demise of the machine tool industry, the town struggles to maintain high-quality, high-paying jobs. This struggle has led to issues with population retention. Springfield hopes to build on the town's strengths to encourage new, high-quality jobs to retain and expand on the population.

WEATHERSFIELD

According to the 2017 Weathersfield Town Plan, the rural town character and agricultural setting is the greatest asset to the community. Most working people in the town travel outside of Weathersfield for employment. Given this priority, most businesses in the town are small or home-based, to not interfere with the aesthetic character of the place. The town's goals are to maintain the rural character by encouraging small home-based businesses that are appropriate wherever residential development is allowed.

WEST WINDSOR

According to the 2020 West Windsor Town Plan, the town was historically agriculture-based. Agriculture remains relevant to the economy to this day. Since then, the town has relied for decades on the business of a commercial ski resort in town. Since then, a small non-profit has taken over and provides recreational opportunities for the community, there have been infrastructure expansions, and some small businesses have opened. West Windsor wishes to continue to support local businesses and agriculture while providing high-quality jobs and prioritize sustainable development that balances out vacation homes and tourism with preserving the natural landscape.

WINDSOR

According to the 2019 Windsor Municipal plan, the town has a history of being an industrial and manufacturing center, and though the prevalence of these industries remains, other sectors in the area have grown, like education, health care, leisure and hospitality, and more. The town wishes to build on its existing assets to build a prosperous downtown, encourage start-ups, cultural tourism, business around wood products, and feed the creative economy.

Employment Data and Characteristics

Employment data is important for the Region because it outlines regional business activity and shifts in economic trends, while also highlighting areas of economic strength, and areas of economic weaknesses. For this section, we use the number of businesses that have registered a trademark name in the Region, a summary chart of all the major employers in the Region, and the number of people who need public assistance. Together, these pieces show a snapshot of the economic condition in the Region.

Employment Development Department Trade Names

Trade names statistics reflect the number of business name registrations. Trade names take a snapshot of new business activity in a town. When the economic atmosphere of a town allows for it, more people are willing to register and start new businesses. The atmosphere may change based on economic opportunities through local, state, or federal grant opportunities, interest rates on new business lending, or growth in one economic realm that allows for growth in another economic realm. For example, a growth in the housing market may lead to growth in the construction market.

TABLE 10.1 EMPLOYMENT DEVELOPMENT DEPARTMENT TRADE NAMES

TOWN	2005	2006	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	TOT
ANDOVER	0	0	7	1	6	0	0	1	3	2	4	7	4	35
BALTIMORE	2	2	0	1	1	0	0	3	0	0	1	2	1	13
CAVENDISH	6	16	11	10	9	11	15	5	3	7	6	8	4	11
CHESTER	32	28	20	25	19	17	21	23	15	17	20	18	16	27
LUDLOW	27	33	25	20	23	20	24	27	13	12	11	21	13	26
READING	6	3	5	2	6	6	4	4	4	9	5	6	0	6
SPRINGFIELD	46	25	37	42	27	27	41	39	26	27	32	39	32	44
WEATHERSFIELD	19	16	18	28	28	20	16	16	7	13	7	7	2	19
WEST WINDSOR	0	0	2	0	2	0	4	3	4	9	3	1	4	3
WINDSOR	28	24	32	16	22	31	40	23	13	20	15	23	2	28
TOTAL	**166**	**147**	**157**	**145**	**143**	**132**	**165**	**144**	**88**	**116**	**104**	**132**	**78**	**171**

Table 10.1

Largest Employers

In addition to the largest employers highlighted in **Table 10.2** it is also important to consider that businesses that employ five or fewer individuals account for a large percentage of employment in the Region. The smaller, more diverse nature of these businesses allows for increased flexibility and adaptability for them to respond to changing global and local demand. While the largest employers, healthcare facilities (Mount Ascutney Hospital and Springfield Hospital), may struggle to respond to change.

TABLE 10.2 LARGEST REGIONAL EMPLOYERS

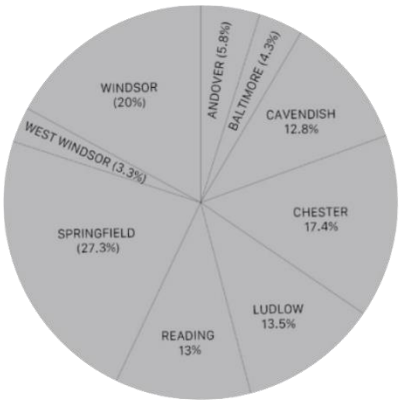
EMPLOYER	PRODUCT/ SERVICE	TOWN	2003 #OF EMPLOYEES	2008 #OF EMPLOYEES	2021 #OF EMPLOYEES
OKEMO MOUNTAIN INC.	SKI RESORT	LUDLOW	1200 | WINTER 250 | SUMMER	1500 | WINTER 300| SUMMER	
LOCAL GOVERNMENT	SCHOOLS / MUNICIPAL	ALL	273	1349	
SPRINGFIELD HOSPITAL	HOSPITAL / MEDICAL	SPRINGFIELD			410
SPRINGFIELD MEDICAL CARE	HOSPITAL / MEDICAL	SPRINGFIELD	480	600	230
MT. ASCUTNEY HOSPITAL	HOSPITAL / MEDICAL	WEATHERSFIELD	320	475	
STATE GOVERNMENT	ALL SERVICES	ALL	224	405	
JELD- WEN	DOOR / WINDOW	LUDLOW | SPRINGFIELD	97	250	250
NEWSBANK, INC.	ELECTRONIC PUB.	CHESTER	260	200	175
BLACK RIVER PRODUCE	WHOLESALE	SPRINGFIELD	130	152	250
MACK MOLDING	MOLDED PLASTIC	CAVENDISH	140	103	80
SHAW'S	SUPERMARKET	SPRINGFIELD | LUDLOW		100	
SIMON PEARCE, US	GLASS /CERAMICS	WINDSOR	97	95	120
FEDERAL GOVERNMENT	ALL SERVICES	ALL		93	
PRECISION VALLEY	UTILITY MAPPING	SPRINGFIELD	56	86	125
GILL ODD FELLOWS HOME	NURSING HOME	LUDLOW	80	80	
LBL FABRICATIONS	FABRICATION	SPRINGFIELD		80	35
VISITING NURSE ALLIANCE	NURSING	LUDLOW | CHESTER | SPRINGFIELD	75	80	
LOVEJOY TOOL COMPANY	MILLING CUTTERS	SPRINGFIELD	76	68	45
V-TEL	TELECOMMUNICATION	SPRINGFIELD	59	65	60
IVEK	DISPENSING	SPRINGFIELD		61	110
SPRINGFIELD PRINTING	PRINTING	SPRINGFIELD		50	45
VERMONT PACKINGHOUSE	FOOD	SPRINGFIELD			75
IMERY'S	MANUFACTURING	LUDLOW			35
IMAGE-TEK	MANUFACTURING	SPRINGFIELD			70
DREW'S ORGANICS	FOOD	CHESTER			85
HARPOON BREWERY	FOOD	WINDSOR			50

People in Need of Public Assistance

Public assistance helps people in need afford food, Medicare, housing, and other basic human essentials that would otherwise not be afforded by a person or household. Public assistance may refer to either a social welfare and/or social insurance program. An increased reliance on public assistance may happen because of an income gap between the cost of living in the Region and wages, an unforeseen economic downturn, or the closing of a large employer. In the pie chart below, there are many households who need public assistance in Chester (17.4%), Springfield (27.3%), and Windsor (20%). Compared with the rest of the ECVEDD area, our Region has 5.6% more households relying on public assistance than the Northern towns in the ECVEDD area.

HOUSEHOLDS ON PUBLIC ASSISTANCE

TOWN	2015	2016	2017	2018	2019	2020	%
ANDOVER	17	19	15	19	17	11	**5.8%**
BALTIMORE	7	7	6	10	4	4	**4.3%**
CAVENDISH	103	107	107	99	103	86	**12.8%**
CHESTER	289	271	261	259	245	257	**17.4%**
LUDLOW	139	125	130	136	140	129	**13.5%**
READING	50	41	39	39	28	32	**13%**
SPRINGFIELD	1105	1097	1129	1067	1054	1044	**27.3%**
WEATHERSFIELD	19	0	0	0	0	0	**0%**
WEST WINDSOR	16	14	13	14	17	16	**3.3%**
WINDSOR	389	391	361	352	335	292	**20%**
TOTAL	**2,134**	**2,072**	**2,061**	**1,995**	**1,943**	**1,871**	**11.7%**
VERMONT	**-**	**-**	**-**	**41,805**	**40,321**	**39,149**	**15.2%**



During the COVID-19 pandemic, the number of people in need of public assistance increased, while workforce participation decreased. Hospitality, restaurants, and manufacturing amongst other sectors were impacted by the pandemic, the full impact will not be felt for some time.

Workforce Data and Characteristics

Analysis of the 2019 State of Vermont's Regional Workforce Summit concludes that the biggest obstacle in the workforce is a lack of workers. With an aging population, compounded by socioeconomic conditions like a lack of childcare infrastructure, workforce housing, etc., there is a large percentage of the population that does not participate in the Regional workforce. While larger employers may not struggle as much with this issue, smaller employers see it affecting their bottom line. The solution, however, is routed in long term invested commitment to rebuilding the Region and strengthening both the workforce and all of the factors that draw and keep a sustainable labor force.

The service sector is an important part of the local economy. This sector includes such types of employment as health care, education, recreation, and arts and entertainment. Some of the largest service employers in the Region are health care providers, such as Mount Ascutney Hospital and Health Care Center and Springfield Hospital. Some of these service providers are the fastest growing, highest wage-earning sectors of the regional economy.

The need to develop a strategy to meet the demands of the regional economy and create and maintain jobs that mirror economic trends is necessary to preserve quality of life and to create a critical mass of skilled labor. Workforce development opportunities provided by the River Valley Workforce Investment Board (WIB) and the Howard Dean Education Center include a major starting point to achieving this goal. WIB is responsible for coordinating workforce training in the Region, takes input from employers and workers in the Region and partners with area educators and providers to help develop training programs to serve the area's

economic development needs. In addition, the Springfield area was awarded a Working Communities Challenge grant to increase workforce participation which includes addressing systematic barriers to workforce participation like childcare, housing, education, transportation, etc.

Competitive Assessment

SWOT

The purpose of a SWOT analysis is to gauge the internal and external factors that play into the successes and challenges of a situation. This qualitative SWOT analysis survey was given in Fall of 2021 to regional economic stakeholders, like local business owners, chamber of commerce members, and other economic development stakeholders.

Weaknesses and Threats

Given the results of the SWOT analysis and
the list of priority projects for the region, we
can deduce that our Region struggles economically with a high cost of living, lack of housing, lack of a workforce population, that is threatened by the increasingly aging population of the region, compounded by the increase in the number of people struggling with substance use disorder and low wages. Since these issues are not just economic, but have a social element to them, it is imperative that we use a multi-pronged approach to making sure all people in the Region can afford to not just live in the area, but enjoy local business establishments and support the local economy.

Strengths and Opportunities

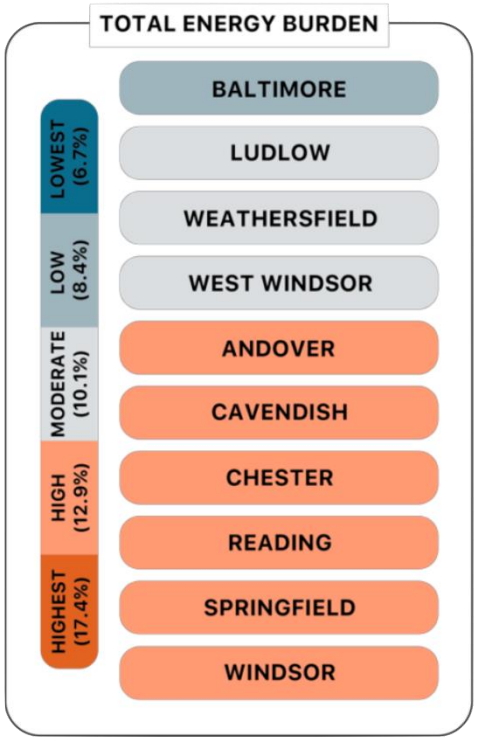
Although there are significant challenges facing the Region, there are also ample strengths and opportunities to build upon and improve existing economic conditions. According to the results of the survey, there are opportunities to invest in a better broadband system for potential remote work, continue to sustain and conserve the natural beauty of the Region, and market the Region for the unique lifestyle it provides the people who choose to live here.

The MARC can support these projects through continuing to engage with economic development stakeholders, as well as approach socioeconomic projects that promote healthy and equitable economic opportunities for all people living in the Region.

When asked about the implications of COVID-19 on the Region's economy, respondents largely agree there are serious negative effects on the labor force, small businesses (especially those that rely on tourism), but also that the pandemic could bring opportunity for more remote work, and telehealth opportunities as well as an increase in a permanent tax base.

Climate Action and the Economy

Today's world is experiencing an increased awareness of our individual and collective impact of our energy consumption on the environment. According to Vermont's Climate Action Plan, the state of Vermont has spent an estimated 2 billion dollars per year on fossil fuels (gasoline, diesel, fuel oil, propane, and natural gas) over the last ten years. The economic burden of fuel often falls on lower income households, renters, and small businesses who cannot afford to upgrade their energy systems. Andover, Cavendish, Chester, Reading, Springfield, and Windsor all on average carry a high energy burden; Ludlow, Weathersfield, and West Windsor have a moderate energy burden, and only Baltimore has a low energy burden. Although initial costs of shifting to renewable energy can be costly, there are more concerted efforts and funding to help ease the cost and shift households and businesses into a less energy consuming, and overall, more cost-effective energy system.



More information can be found in the Regional Energy Plan.

Black River Innovation Campus

Black River Innovation Campus (BRIC) in Springfield, VT is a major asset to this Region. BRIC is a nonprofit center that provides a wide range of technological and career services. With a digital live/workspace, entrepreneurship center, and computer science and digital training, the

goal of BRIC is to “eliminate barriers of entry for digital and technology entrepreneurs and web-enabled businesses.” BRIC works in many fields across economic development, education, technology, and outreach and has attracted (according to the 2021 ECVEDD Annual Report) $2.5 million in investment alone. For more information on BRIC, click here.

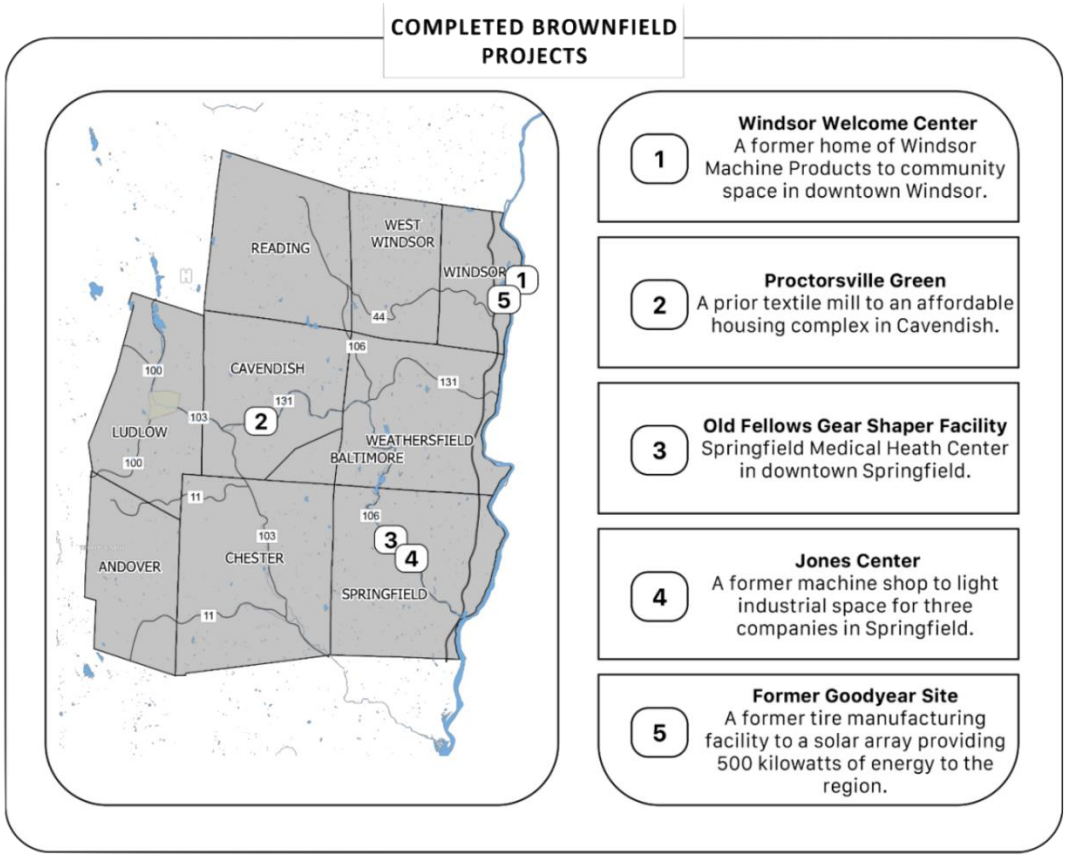
Adaptive Re-Use and Brownfields

Adaptive re-use of the existing infrastructure left behind by the departure of an expansive machine tool industry and other large industrial manufacturing complexes including Goodyear Rubber Co., Fellows-Gear Shaper and Park & Woolson mill complexes, represents a viable economic opportunity. Many of these properties are located within or on the outskirts of historic downtowns. Adaptive reuse of these sites contributes to the revitalization of downtown areas and provides potential space for new commercial businesses, light manufacturing, and affordable housing. The RPC has partnered with many different organizations to help see this to fruition and has been successful in attracting new businesses to Springfield and Windsor.

Since 1999, the Mount Ascutney Regional Commission has been an active participant in the Environmental Protection Agency's (EPA) Brownfields Program, which provides federal funding for environmental assessment and cleaning up of brownfields. The Regional Commission's Brownfields Program has been assisting towns, property owners, and potential developers throughout the region in the revitalization of properties and structures previously used for industrial and commercial purposes with known or suspected pollution including soil contamination due to hazardous waste. These properties, when cleaned up, have the potential to become valuable to the surrounding community. Redeveloped properties can generate tax revenues, jobs, stimulate economic growth, and can transform blighted sites into generators of renewable energy and green space that is productive, environmentally safe, and aesthetically appealing.

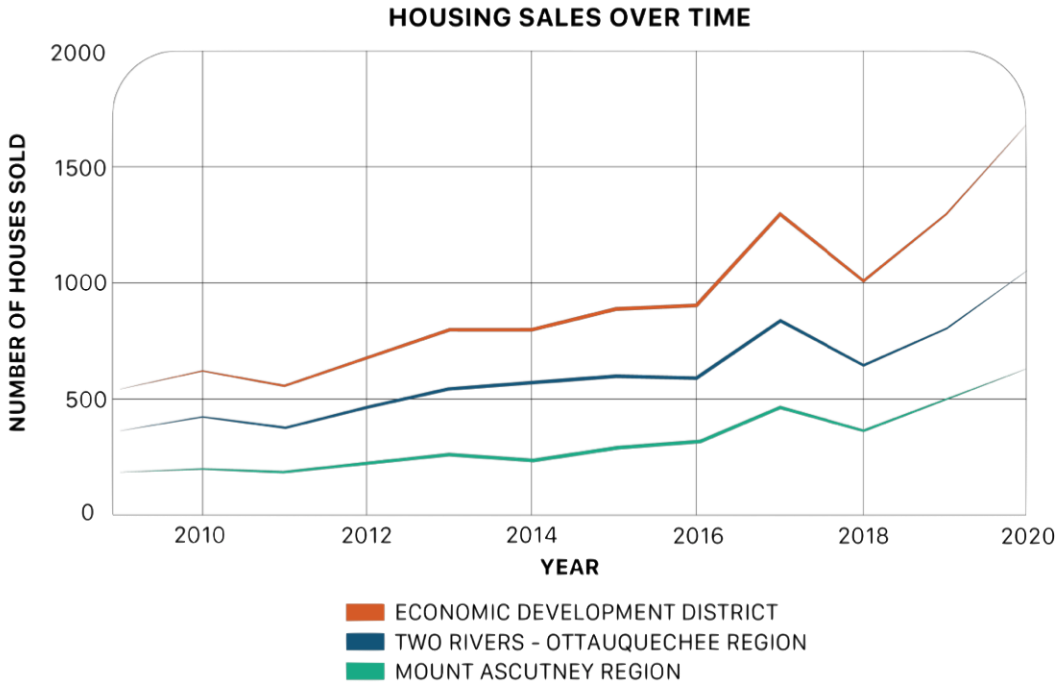
The Program offers technical assistance and funding in the form of low interest loans and subgrants to assist property owners and bona fide prospective purchasers of brownfields properties in all phases of brownfields revitalization from environmental assessments, through corrective action planning and remediation.

The MARC Brownfields Reuse Program has provided funding to facilitate various stages of assessment and cleanup at the following sites:



Housing

Another challenge to economic growth is to ensure adequate workforce housing for workers in this Region. Like most of the Northeast, this Region suffers from a lack of housing units, both new and old, at a price that is affordable for a significant portion of the workforce. The 2003 Vermont Job Gap Study documents that a significant percentage of full-time workers in Vermont still do not earn enough to pay for all the necessities of living. Focusing on the development of affordable housing in the Region, coupled with attracting new good paying jobs, is paramount to ease this burden.


HOUSING SALES OVER TIME
NUMBER OF HOUSES SOLD
2000
1500
1000
500
0
2010
2012
2014
2016
2018
2020
YEAR
ECONOMIC DEVELOPMENT DISTRICT
TWO RIVERS - OTTAUQUECHEE REGION
MOUNT ASCUTNEY REGION

	# OF SALES	TOTAL VALUE OF SALES	AVERAGE SALES PRICE	% OF CHANGE FROM PREVIOUS YEAR
2009	184	$33,449,447	$181,790	-22.8%
2010	201	$47,726,554	$237,446	30.6%
2011	186	$38,484,105	$206,904	-12.9%
2012	221	$45,797,903	$207,230	0.2%
2013	263	$59,748,576	$227,181	9.6%
2014	237		$235,505	3.7%
2015	290	$62,553,766	$215,703	-8.4%
2016	317	$75,224,840	$237,302	10.0%
2017	464	$97,081,064	$209,022	-11.9%
2018	364	$84,425,148	$231,938	11.0%
2019	498	$143,842,342	$288,840	25.0%
2020	637	$210,467,451	$330,404	14.4%
		10 YEAR CHANGE: 39.1%		

ASCUTNEY REGION

	# OF SALES	TOTAL VALUE OF SALES	AVERAGE SALES PRICE	% OF CHANGE FROM PREVIOUS YEAR
2009	365	$99,915,823	$273,742	-18.2%
2010	423	$110,786,849	$261,907	-4.3%
2011	376	$130,188,950	$346,247	32.2%
2012	467	$116,755,537	$250,012	-27.8%
2013	540	$138,849,589	$257,129	2.8%
2014	566	$162,280,161	$286,714	11.5%
2015	602	$178,886,877	$297,154	3.6%
2016	595	$150,247,281	$252,516	-15.0%
2017	843	$243,690,354	$289,188	14.5%
2018	651	$212,097,890	$325,803	12.7%
2019	807	$241,414,123	$299,150	-9.0%
2020	1065	$405,808,315	$381,041	27.4%
		10 YEAR CHANGE: 45.5%		

TRORC REGION

	# OF SALES	TOTAL VALUE OF SALES	AVERAGE SALES PRICE	% OF CHANGE FROM PREVIOUS YEAR
2009	549	$133,365,270	$242,924	-20.2%
2010	624	$158,513,403	$254,028	4.6%
2011	562	$168,673,055	$300,130	18.1%
2012	688	$162,553,440	$236,270	-21.2%
2013	803	$198,598,165	$247,320	4.7%
2014	803	$162,280,161	$202,092	9.8%
2015	892	$241,440,643	$270,673	-0.3%
2016	912	$225,472,121	$247,228	-8.7%
2017	1307	$340,771,418	$260,728	5.5%
2018	1015	$296,523,038	$292,141	12.0%
2019	1305	$385,256,465	$295,216	1.0%
2020	1702	$616,275,766	$362,089	22.7%
		10 YEAR CHANGE: 42.5%		

EDD REGION

Keys to the Valley

Headed by MARC, TRORC, and UVLSRPC, all regional planning commissions in the Upper Valley, this project aims to tackle the housing crisis, through a collaborative and multi-faceted approach. The main objective of the Keys to the Valley project is to address the housing crisis in the Upper Valley and find state, regional, and local solutions that intersect these issues. More information on Key to the Valley can be found here.

Workforce Training and Support

Workforce training efforts in the Region attempt to connect people with employment resources by addressing systematic barriers a person may have to working or advancing their careers. In the Region, there are various agencies working to address these issues, and MARC can continue to support these projects through partnering and promoting Regional awareness and spearheading planning issues that create hurdles for success.

Working Communities Challenge

In the Region, a major program that promotes workforce development is the Springfield Area Working Communities Challenge. The program works to address specific issues that residents may have with transportation, childcare, housing, education, and recovery. This program includes our Region and beyond and works with community partners who have varying expertise in all realms of the different subject areas. For more information on the Working Communities Challenge click here.

Recovery Friendly Communities/ Workforce

Recovery friendly workforce programs specifically acknowledges and works intentionally with individuals in recovery. A recovery friendly workforce creates a safe space for those in recovery, engages employers and employees on substance use disorder and behavioral health education, creates health and safety- based programming, and becomes active partners in prevention and recovery with the Region and local communities. Recovery-friendly communities are a part of the Working Communities Challenge and Working Fields Agency. More information on the importance of the programs for people in recovery can be found in the Health Chapter.

Child Care

While Vermont law is very restrictive regarding childcare, the industry is a necessary part of the Vermont economy — pumping money into local communities by supporting working families, creating jobs, and generating taxes through employment and the purchase of goods and services. Money spent on childcare stays in Vermont communities, helping children, families, and local businesses. Statewide, childcare:

- Is a significant force in the state's economy;
- Enables people to work; and
- Negatively impacts economic growth when supply is insufficient.

In the Region, childcare has become increasingly hard to come by over the years. According to Let's Grow Kids, 3 out of 5 of Vermont's youngest children do not have access to childcare, and 21,225 children under the age of 5 need childcare. Middle income families spend on average between 20-40% of their income on childcare, which can affect their ability to become active participants in the local and regional economy. Employers can become active participants in helping to solve the childcare crisis by creating a family- friendly workplace through instituting family-friendly work-polices. In the Region, multiple agencies are

addressing this issue, including the Working Communities Challenge and Let's Grow Kids. For more information on Let's Grow Kids, click here. Additional information on childcare can be found in the Health Chapter.

Policies / Recommendations

Economic Development Policies

1. Develop and enhance regional development activities that support the diversity of the Region's economic base by encouraging entrepreneurship, supporting the expansion of local businesses and attracting new businesses that are consistent with the Regional Plan and Comprehensive Economic Development Strategy and Town Plans.
2. Support economic development efforts that will promote building sustainable competitiveness in the highest return, value-added sectors of the economy.
3. Plan infrastructure investments to serve town and village center revitalization and industrial parks.

Economic Development Recommendations

1) Support regional priority projects like
   a) Improved access into North Springfield Industrial Park
   b) Springfield wastewater extension to Hartness Airport
   c) Evaluate cost effective wastewater solutions for Ascutney, Perkinsville and Felchville
   d) Bolster outdoor recreation (e.g. develop app of things to do in region, implement Mt Ascutney Outdoor Rec Plan, etc.)

2) Assist municipalities in a review of their regulations and administrative procedures to ensure clarity in their permitting process.

3) Encourage towns to develop capital improvement programs so that future expansion/maintenance of infrastructure will not place undue hardship on communities.

4) Provide education forums and other types of technical assistance to educate municipalities on economic development and infrastructure planning.

5) Continue to provide staff assistance to local economic and downtown development groups.

6) Coordinate vocational and technical training opportunities to support statewide workforce programs.

Local Resources

Vermont Department of Economic Development
www.thinkvermont.com

Vermont Economic Development Authority
www.veda.org

Vermont Small Business Development Center
www.vtsbdc.org

USDA Rural Development
www.rd.usda.gov/vt

Springfield Regional Chamber of Commerce
www.springfieldvt.com

Okemo Valley Regional Chamber of Commerce
www.yourplaceinvermont.com

Springfield On the Move
www.springfieldonthemove.net

East Central Vermont EDD
https://www.ecvedd.org

20-25 ECVEDD CEDS
https://www.ecvedd.org/ceds/

Vt Dept Labor(regional economy / employers / labor market info / workforce / unemployment / so many stats...etc)
https://labor.vermont.gov/

Springfield Regional Development Corp
https://www.springfielddevelopment.org/

Black River Innovation Campus
https://bricvt.org/

References

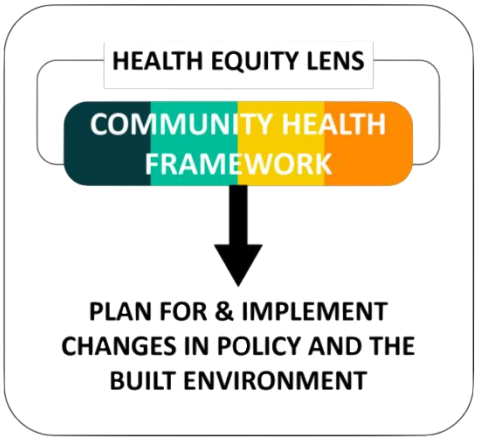
http://legislature.vermont.gov/assets/Legislative-Reports/2014-Annual-Report.pdf

https://publicassets.org/wp-content/uploads/2020/12/SWVT2020.pdf

CH 11: HEALTHY, INCLUSIVE & LIVABLE REGION

Planning and public health are interrelated in many ways. Sustainable communities look to many components that determine good health, such as active transportation, cultural and recreational opportunities, safe and affordable housing, quality education, availability of public health programs and services, access to healthy food, and more. The concept of "health" is often associated with issues surrounding physical health. This chapter cannot cover all these issues comprehensively and points to specific elements of the regional plan to view these more in-depth.

Introduction and Background



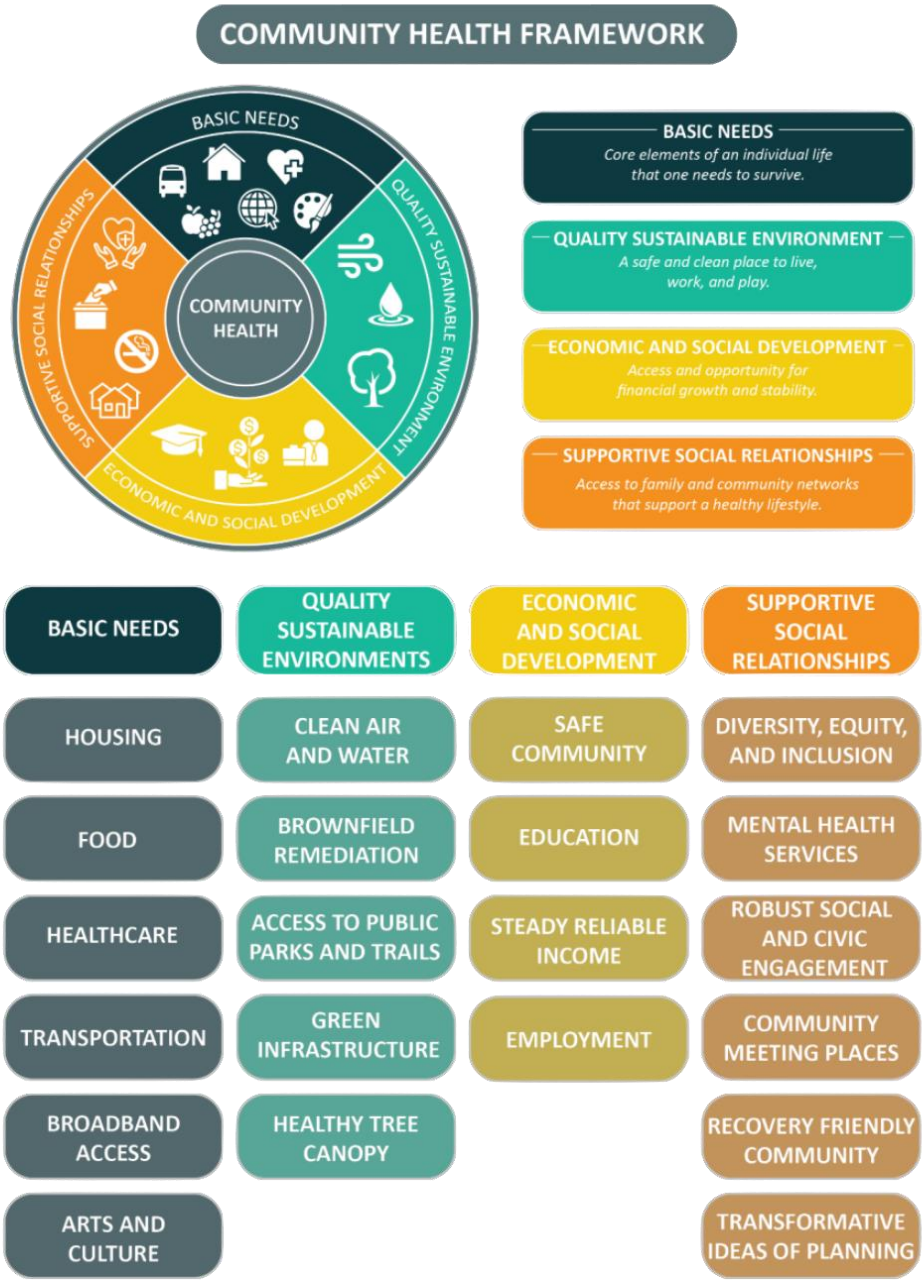
According to the Vermont Department of Health, health equity is based on the understanding that depending on the socioeconomic disadvantage, historical injustice, and other systemic inequalities that are associated with race, gender, ethnicity, social position, sexual orientation, and disability, a person may not have equal access to elements of community health that help them live a healthy life. Therefore, community health equity aims to attain the highest level of health for all people in our region. Removing obstacles to health is imperative to the success of these individuals and their communities.

Improving the built environment in ways that promote active living, healthy eating, social and mental health, and safe environmental conditions, among others, benefits the health of an entire community. It is therefore imperative that our Region prioritizes planning for health in all policies and emphasizes health as a priority for a community's overall success.

As a regional commission, our role is to view all projects through a health equity lens and work with our health and equity partners to achieve healthy vibrant communities. Through policies and project implementation centered around the Community Health Framework, the Region can be a healthier and more equitable place for all.

Community Health Framework

The community health framework is based around the four key elements of public health that create the success of a community. For this chapter, we will use the framework (below) to guide the rest of the health equity discussion.



BASIC NEEDS

Basic Needs

Basic needs are the core elements of an individual life that one needs to survive. Basic needs are outlined in this chapter as housing, food, healthcare, transportation, broadband, and arts and culture.

Health - Basic Needs Goals

The Region's residents have expanded connections to health services - Expanded connections to health services improve the health and wellness of residents in the MARC Region. Connections to health services are expanded through improved multi-modal transportation access, location of new health facilities and other innovative approaches resulting in more convenient access to health services.

1. Help the Vermont Housing and Conservation Board achieve their goals through outreach, education, and community engagement.

2. Support efforts to diversify housing stock through zoning review.

3. Help increase food security and reduce hunger in the Region by completing a Regional food systems analysis, promoting local food production, and removing distance and transportation barriers to healthy and affordable food.

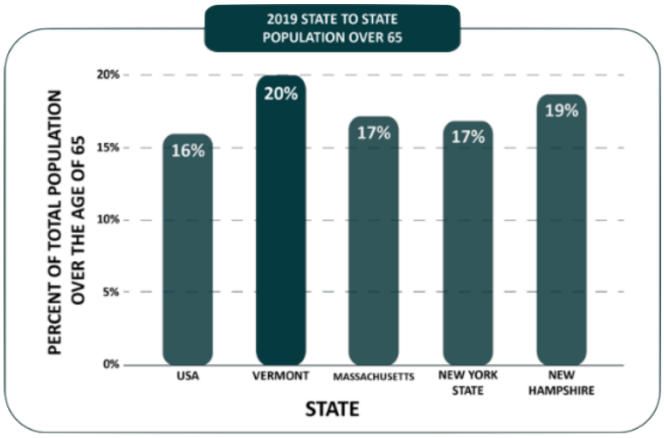
4. Promote multi-modal transportation programs and designs that encourage safer pedestrian and bike movement.

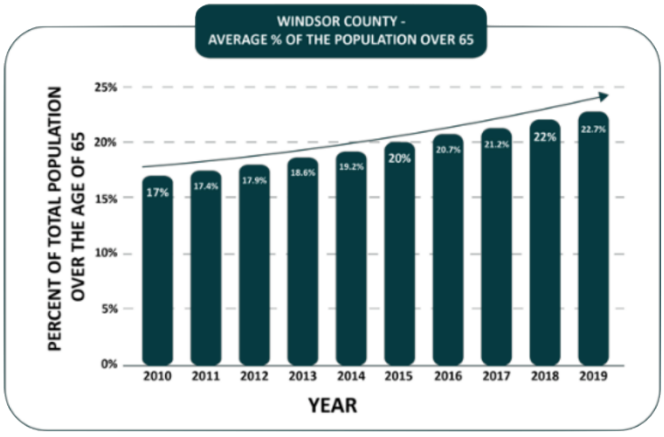
5. Encourage ride-sharing programs for food access, appointments, and Regional recreation.

6. Use Health Impact Assessments to anticipate the impacts of new development on community health.

Housing

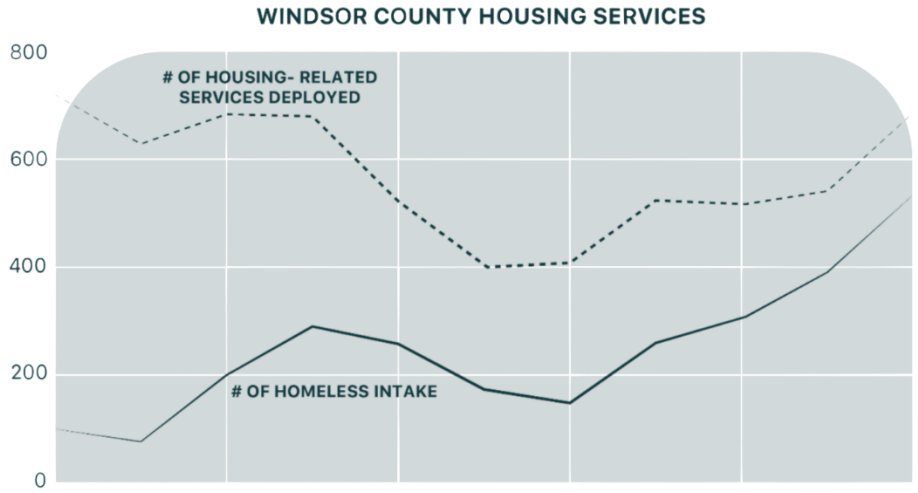
According to the CDC, access to safe and affordable housing has a significant and lasting effect on a person's physical and mental health. With the population of the State of Vermont and the Region growing increasingly older, this is especially important. With an increasingly aging housing stock, the State and the Region run the risk of asbestos, mold, and lead exposure in the home. Exposure to lead can cause anemia, weakness, and kidney and brain damage. Exposure can be even more damaging to children and can lead to permanent developmental problems. Asbestos exposure is tied to different types of cancers and complications in a person's lungs. Health hazards are found at a much higher rate in the lower-income housing stock.





The Region is facing unprecedented challenges to housing affordability, especially for renters and low-income community members. Housing affordability is tied to health because often if a person is spending over 30% of their income on rent or a mortgage, they will struggle with the other costs of living that are imperative to a person's health and well-being. A person who struggles with housing costs can struggle with affording healthy and fresh food, medical care, and other basic needs. People who struggle with housing affordability are also more likely to have stress-related conditions.

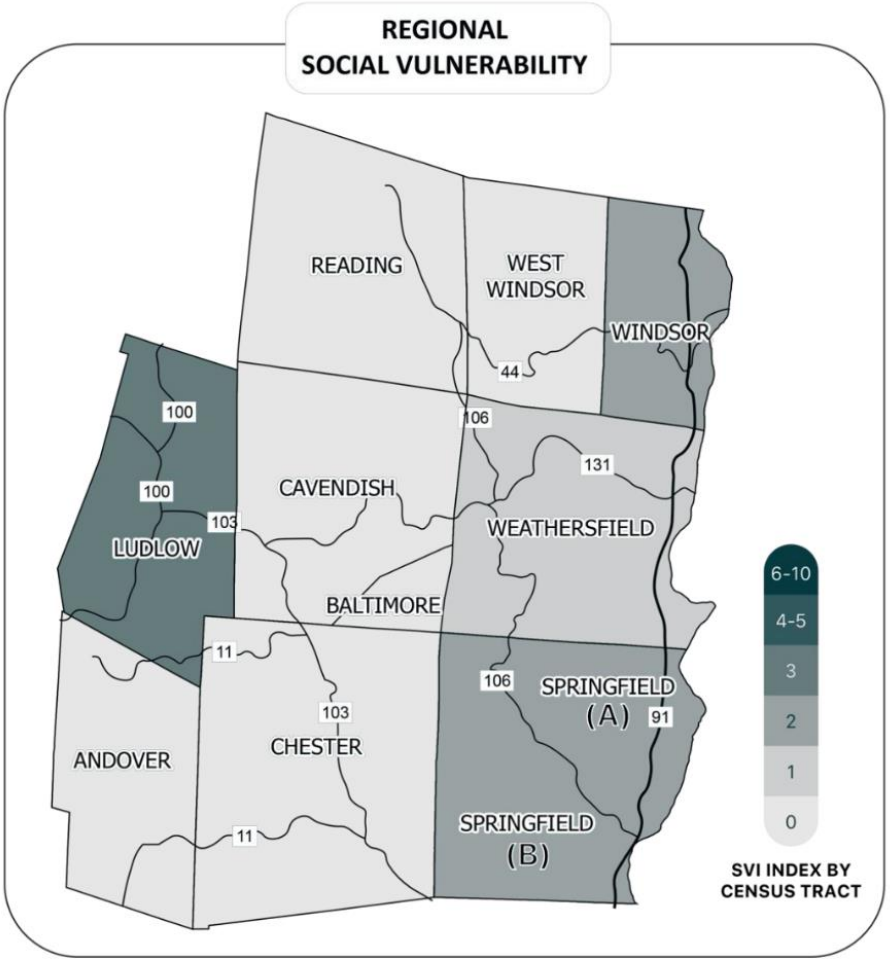
Homelessness is traditionally defined as a person or persons living without a permanent place to live. People may live out of a vehicle, with friends or family, on the streets, or in a shelter. People who struggle with chronic homelessness suffer from illness at a higher rate than the rest of the U.S. population. People experiencing homelessness on average have a lifespan that is 12 years shorter than that of the rest of the U.S. population. It is also worth noting that people experience homelessness at the same or similar rate in rural areas as they do in urban areas. People who have a disability, neurodivergence, are a part of the LGBTQ+ community, have mental health issues, or are a person of color are more likely to become homeless.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
# OF HOUSING- RELATED SERVICES DEPLOYED	720	631	683	682	521	397	406	526	517	541	687
# OF HOMELESS INTAKE	102	79	200	287	254	171	145	260	304	387	535

Vermont's Social Vulnerability Index (SVI) is a measure that explores community level social determinants of health. The SVI mapping and data tool can be used to identify areas within the Region that are disproportionately vulnerable to better improve public health planning, collaboration with local stakeholders, and engaging with people in the Region who need social services. Social vulnerabilities are "flagged" when a census tract is in the 90th percentile and above in a category of social vulnerability. The categories of social vulnerabilities are housing and transportation, demographic, and socioeconomic. In our Region, Springfield, Weathersfield, Ludlow, and Windsor all have SVI flags. While all socio-economic vulnerabilities play a hand in housing issues, the areas that are specifically flagged for risk in the housing and transportation fields are Weathersfield, Ludlow, and the northern part of Springfield above Route 106. Weathersfield is in the 98th percentile for the percent of mobile homes in the state; Ludlow is in the 93rd percentile for the number of large apartment buildings; and northern Springfield is in the 90th percentile for the number of people living in group quarters in the state.

MARC can support housing issues by supporting partners and data on lead and asbestos exposure, continuing to support zoning changes that allow for workforce housing and a dense urban center, and work on projects to increase safety and housing security for all individuals in the Region.



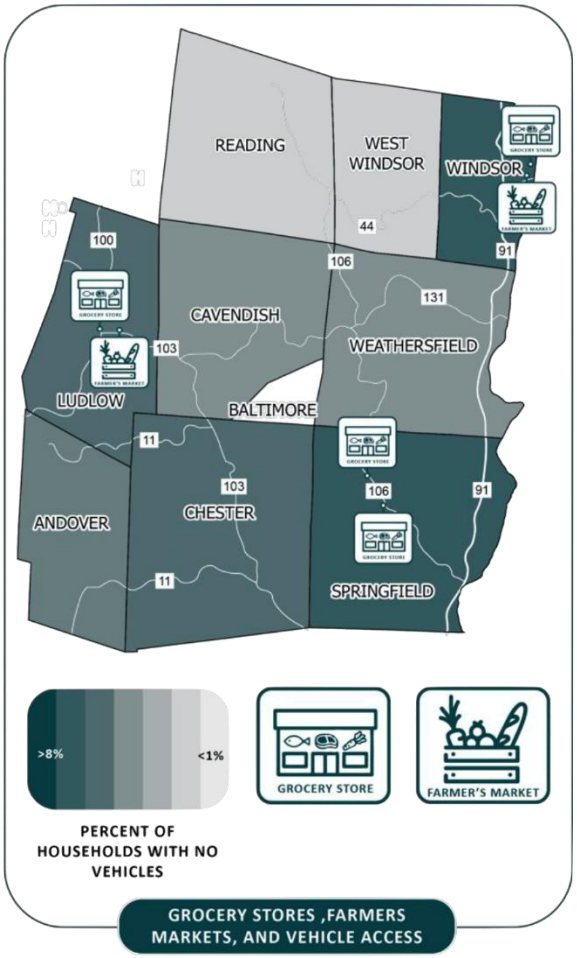
HOUSING AND TRANSPORTATION VULNERABILITY

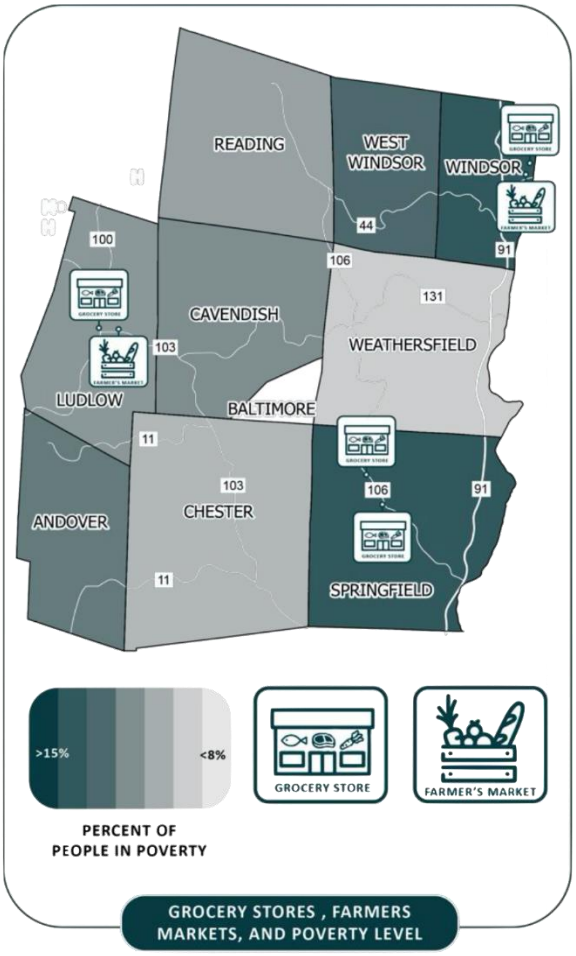
CENSUS TRACT	POPULATION ESTIMATE	LARGE APARTMENT BUILDING	MOBILE HOME %	CROWDING	NO VEHICLE	GROUP QUARTERS	HOUSING FLAG	DEMO-GRAPHIC FLAG	SOCIO-ECONOMIC FLAG
READING & WEST WINDSOR	2,949	63.0%	40.8%	22.8%	18.5%	13.3%			
WINDSOR	3,527	88.6%	53.8%	59.2%	85.3%	89.7%		1	1
WEATHERSFIELD	2,816	45.1%	**98.4%**	77.7%	52.2%	36.4%	1		
CAVENDISH & BALTIMORE	1,904	12.5%	47.8%	71.7%	38.6%	62.5%			
LUDLOW	1,946	**93.5%**	31.5%	63.6%	64.7%	75.5%	1	1	1
ANDOVER & CHESTER	4,136	59.2%	44.6%	65.2%	54.9%	47.3%			
SPRINGFIELD (B)	5,043	74.5%	29.9%	40.2%	86.4%	72.8%		2	
SPRINGFIELD (A)	4,278	77.7%	36.4%	10.3%	84.8%	**90.2%**	1	1	

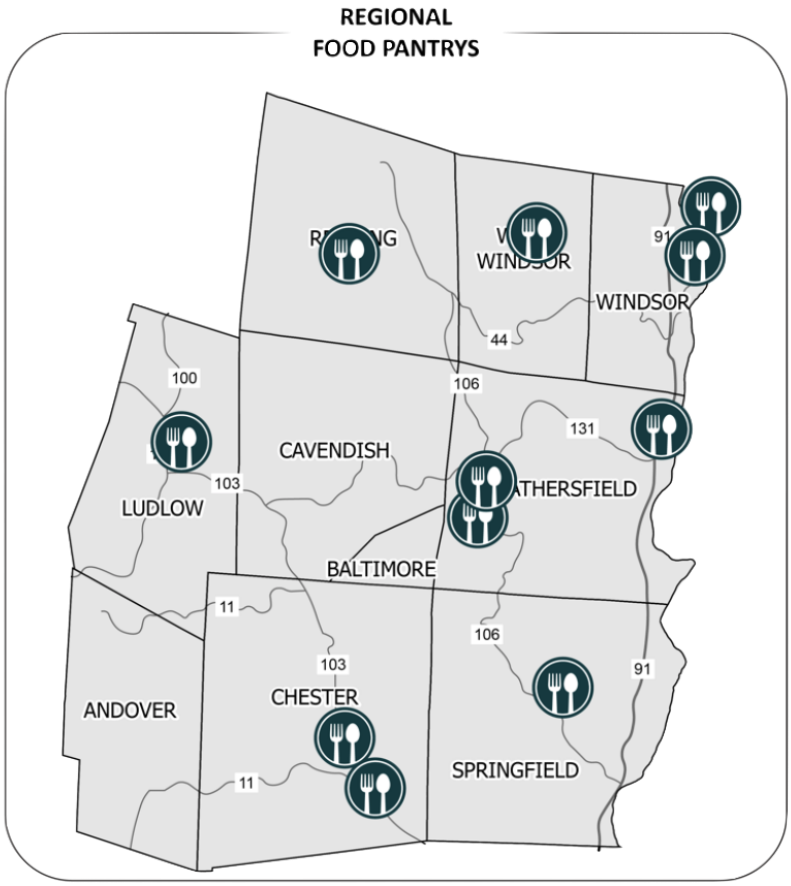
Food

Physical access to healthy food options is vital to a person's ability to create and maintain a healthy lifestyle. The same data that ties food access to health also suggests that a positive change in the local food environment can change a person's diet for the better. Households living in rural areas are more likely to struggle with food security, and experience unique barriers to healthy food access.

1. **Rural food access definition –** Rural food access differs from urban or suburban food access in that households living in rural places are more likely to travel further to gather groceries. While there are limited studies done in our region, there are a number of farmer's markets and grocery stores that run during the summer months, some of which, run all year to provide fresh food. According to the 2019 USDA Economic Research Service, 13% of the Windsor County population lives more than 10 miles from a supermarket, and Ludlow, Weathersfield, and parts of Springfield have an increased vulnerability around access to a personal vehicle or adequate and reliable public transportation.







NAME	TOWN
CHESTER/ANDOVER FAMILY CENTER	CHESTER
BLACK RIVER GOOD NEIGHBOR	LUDLOW
GOOD NEIGHBOR FOOD SHELF	READING
SPRINGFIELD FAMILY CENTER	SPRINGFIELD
READING FOOD SHELF	WEATHERSFIELD
PERKINSVILLE COMMUNITY CHURCH	WEATHERSFIELD
WEATHERSFIELD BAPTIST CHURCH	WEATHERSFIELD
ASCUTNEY UNION CHURCH	WINDSOR
SAINT FRANCIS ASSISI	WINDSOR
WEST WINDSOR FOOD SHELF	WEST WINDSOR

2. **Food Security –** Food security is defined by the USDA as a household's access to enough food with nutritious value. Households struggling with food security do not necessarily struggle all the time. In 2019, 74,520 (or 11.9%) people in Vermont struggled with food security. In 2020, with the onset of the COVID-19 pandemic, this number jumped drastically, with around 25% of Vermonters experiencing a lack of food security. A household struggling with this may have to decide between other basic needs like housing or medical bills, and nutritionally adequate foods. The negative health effects of hunger and a lack of proper nutrition is the highest and most prevalent amongst children. When

children are hungry, there can be serious health effects as well as social effects. As a result of these health implications, there is an increasing strain on the governmental healthcare system and a reduction of general productivity.

Because of the COVID-19 pandemic, there is an elevated number of households experiencing food insecurity and hunger within the region. There has also been an increase in the number of places for community members and families to receive free or reduced-price meals and groceries.

To promote food security in the Region, MARC can continue to work with local food security partners to collect data, disperse information, and look for areas in need of services or food infrastructure.

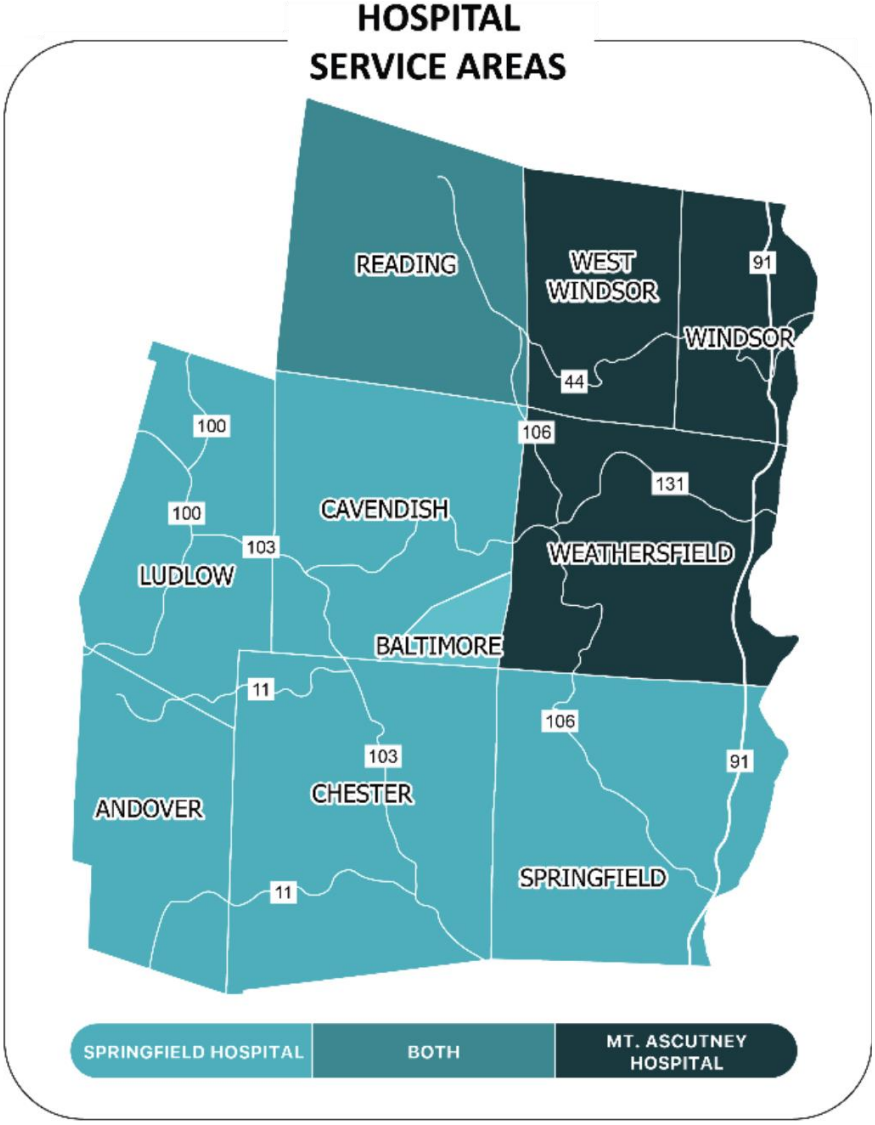
Healthcare

Having access to healthcare has been shown to prevent premature death, increase the overall quality of a person's life, and detect and prevent illness and disease. About 5% of Windsor County is uninsured. People who lack healthcare may lack it because they are unable or ineligible to receive affordable insurance through their work or through government services. With an aging population and increasing healthcare costs, seniors have less money to spend in other areas. Healthcare costs are also one of the number one contributing factors to bankruptcy in the United States.

There are many different types of Healthcare Facilities that each uniquely help contribute to a Region's overall health.

Healthcare typologies are listed below:

- **Primary Care**
- **Specialty Care**- Dentists, eyecare, special needs services
- **(2) Emergency Care (Hospitals**) – Springfield Hospital and Mount Ascutney Hospital
- **Urgent Care**
- **Long-term Care (Nursing Facilities)**- There is an increase in the number of people in need of affordable long-term care facilities, as the population in Vermont grows older. More information can be found in the Utilities and Facilities Chapter.
- **Hospice Care**
- **Mental Healthcare**
- **Substance Misuse Rehabilitation**



Local Need / Local Solutions

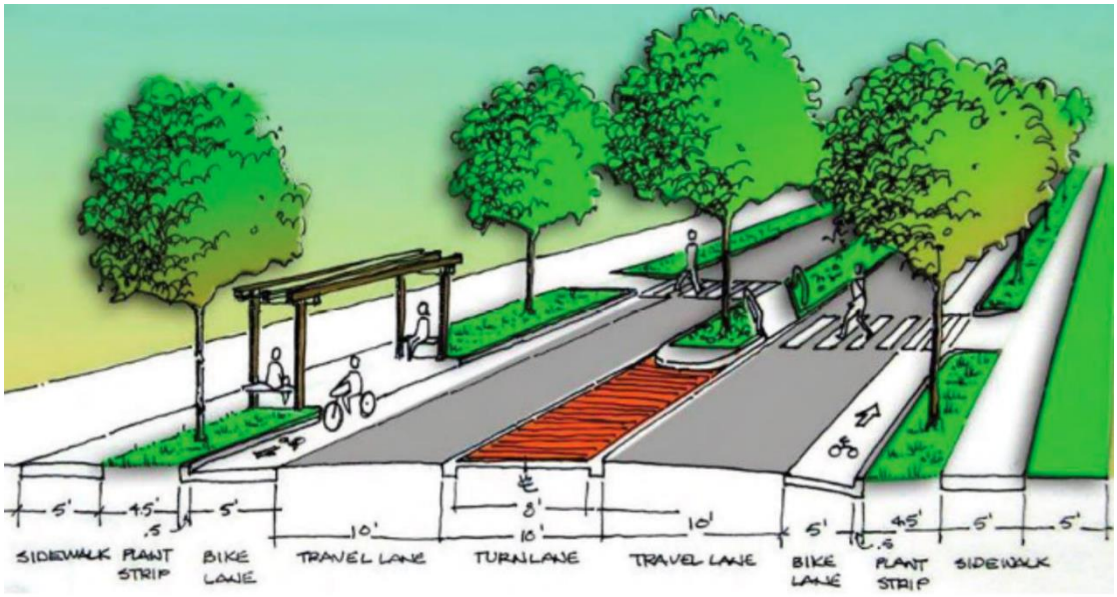
According to both the 2019 Springfield Hospital Community Health Needs Assessment (CHNA) and the 2021 Mt. Ascutney Hospital CHNA, the top priority items for our Region is a lack of dental care facilities, and substance use disorder treatment facilities, mental health providers, and affordable healthcare. In the Mt. Ascutney service area, issues of child abuse and neglect, and other socio-economic conditions like food access were brough up as high priority needs for their area.

MARC can support healthcare efforts through continued partnership with our Region's hospitals and care facilities, advocating for health policies in Town Plans, and provide support, education, and outreach on service availability throughout the Region.

With the COVID-19 pandemic, people have been moving into the Region from larger cities like Boston and New York City. With an influx of new residents, there could also be a strain on the healthcare system capacity.

Transportation

The relationship between transportation and community health is directly correlated. Reliable transportation services are fundamental to a healthy community. Improvements in transportation infrastructure can be an element that positively impacts individual and community health. Transportation access in the region is heavily car dependent, with most people relying on their personal vehicles to access groceries, doctors' appointments, etc. But transportation infrastructure is more than just being able to access a car.



According to Smart Growth America, sidewalks and bike lanes that make people feel safe can increase active transportation, especially for people who use a wheelchair or have limited mobility. Not only does having sidewalks and safe bike lanes encourage exercise, but they can also reduce vehicle-pedestrian crashes. Programs like Complete Streets (see image above for an example) use sidewalk and bikeway design to connect people to parks, public transportation, schools and other destinations to promote a healthy lifestyle and encourage active transportation for all users.

Access to trails and public parks has been proven to improve a person's physical and mental health, with ties to reducing risks for cardiovascular diseases, and other health issues. See Map 5 for regional recreation opportunities.

Access to public transportation in the Region is important, especially for people who either do not have access to a personal vehicle and/or have a physical disability that limit their ability to drive to a doctor's appointments, get groceries or accomplish other basic tasks. As stated in Volume 2: Regional Transportation Plan, the Elders and Disabilities program helps people travel to medical appoints, obtain food, and take personal care trips within the Region. Creative solutions like ride-sharing programs, and pick-up drop-off programs are important to get people to appointments, to grocery shop, and to recreate.

In March of 2020, with the onset of COVID-19, the State of Vermont enacted a law that made Vermonters able to conduct medical appointments online. Whether telehealth is here to stay, only time will tell.

Broadband Access

As discussed in the Utilities and Facilities chapter, access to sufficient broadband is becoming more and more critical to the success of a community. Not only is reliable broadband vital for those running businesses, or working from home, but broadband access is also vital for people in need of telehealth services, civil engagement, and supporting social relationships. Access to direct care may not always be possible and can be subsidized with telehealth services. During the COVID-19 pandemic, disparities were highlighted between people who had access to fast and reliable service and those who did not. Moving forward, broadband access will be important for maintaining medical records, doing follow-up appointments, ordering prescriptions, etc. People over the age of 65 are less likely to have reliable broadband in their homes, even though people over the age of 65 are more likely to need health services. With the Region hosting an increasingly aging population, it is important to assess which demographic of people lacks access to reliable broadband and why. Over the past decade, and highlighted by the COVID-19 pandemic, access to fast, reliable, and affordable broadband services is an essential element to everyday life.

Arts and Culture

Access to arts and culture have been proven, according to the World Health Organization, to contribute to childhood development, can help those dealing with mental health problems express themselves and alleviate depression and anxiety, and improve memory and cognitive function for aging population. Community and educational art programs are important pillars for

people of all ages and income levels and can lead to an overall happier and healthier community. It is especially important for marginalized groups to have equitable access to community-based activities and programming. Schools and libraries in the Region facilitate some programs, but within the Region, there is limited opportunity for community-based arts and cultural expression.

QUALITY SUSTAINABLE ENVIRONMENTS

Quality Sustainable Environments

Quality sustainable environments are a safe place to live, work and play. Quality sustainable environments are outlined in this chapter as they pertain to clean air and water, brownfield remediation, green infrastructure, a healthy tree canopy, access to public parks and trails, noise pollution, and the built environment.

Health - Quality Sustainable Environments Goals

1. Create a built and natural environment that supports healthy and active choices, including a deliberate focus on the built environment's influence on physical activity, mobility choices, access to food and the natural environment throughout the Region.

2. Help eradicate housing contaminates through supporting state and local partners with data, marketing, and program support and creation.

3. Support goals and policies stated in the Natural Resources Chapter.

Clean Air and Water

It is important to conserve the resource of clean air and water for economic, aesthetic, and environmental purposes. Being in areas of clean air and water supports healthy brain function and

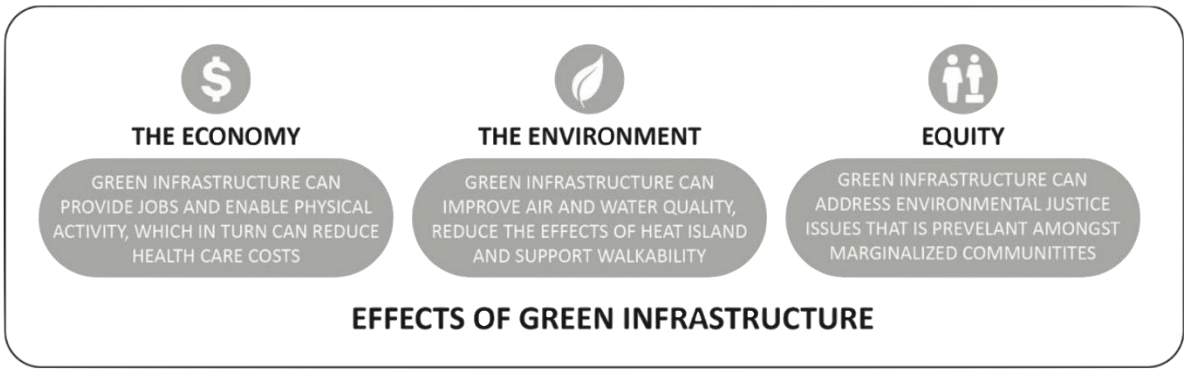
development. Pollution in water can lead to stomach or liver illness, respiratory issues, and even neurological effects depending on the toxins. Air pollution can cause asthma or exacerbate asthma or other lung issues. More information on water quality issues can be found in the Natural Resources Chapter.

Brownfields

While brownfields are discussed in the Economic Development Chapter, they have a significant impact on community health due to contamination from former industrial or commercial land uses. Brownfield contamination poses environmental health risks.

Green Infrastructure

Green infrastructure is natural and semi-natural landscape elements that have a variety of ecological benefits, such as clean water and air, carbon sequestration, flood control, and climate change mitigation. Green infrastructure can help with clean air, stormwater management, and public health. Not only does green infrastructure reduce physical risks posed by climate change, but green infrastructure improvements and exposure to natural elements are also tied to mental health improvements.



Healthy Tree Canopy

While there appears to be no shortage of trees in our Region, a tree canopy is important, even in town and village centers. Tree canopy has been linked to promoting physical activity like biking or walking and stress reduction. Tree canopy is also important in town and village centers because street trees can be used as a traffic calming measure to slow down vehicular traffic, making downtown centers safer for pedestrians and bicyclists. The Vermont Urban and Community Forestry organization helps communities with analysis, education, and funding to create and improve current tree canopies. In our region, Chester, Springfield, and Windsor, are all active in this program.

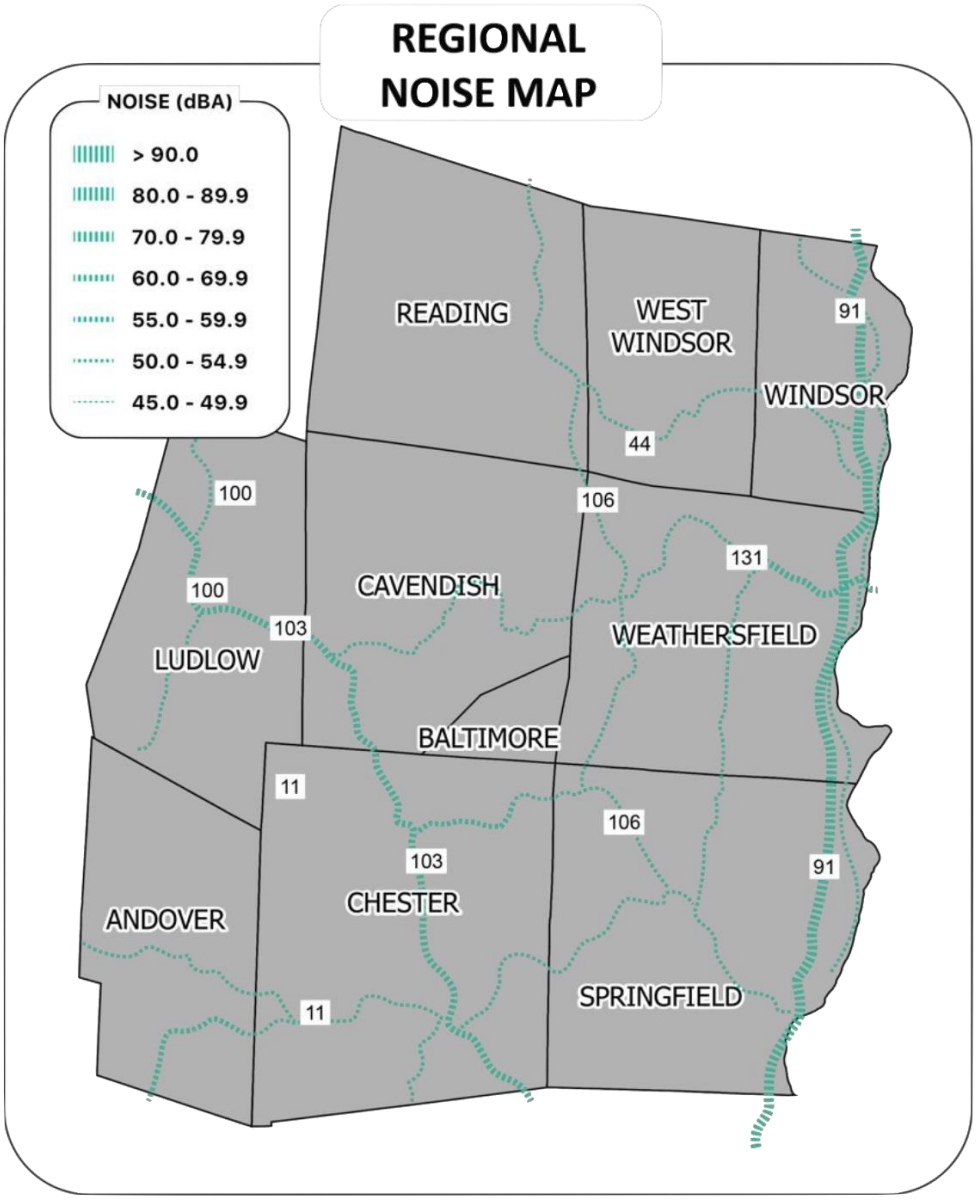
Access to Public Parks/Trails

As discussed in the Utilities and Facilities Chapter (Chapter 4), access to parks and trails can be a great way, especially in Vermont, to boost the local economy and provide jobs to residents. Proximity to public parks and trails can encourage exercise for community members and improve psychological and social health. Having places for children to recreate and play is critical for their cognitive development. Low-income communities, communities of color, and other marginalized groups tend to live in areas that lack clean air and water, a healthy tree canopy, and sufficient access to public parks and trails. It is important for the sake of overall community health to ensure that these communities are at the forefront of planning services around quality and sustainable environments.

Noise Pollution

Noise pollution is consistent exposure to high sound levels that may lead to unfavorable physiological and psychological effects. The science of noise pollution is relatively new but important. Noise pollution can cause noise-induced hearing loss and cardiovascular diseases (like ischemic heart disease and hypertension). Noise pollution studies have also correlated the effects of amplified sound levels on mental health, diabetes, cognitive function, and other injuries. According to the Center for Disease Control, "hearing loss is the third most common chronic physical condition in the United States and is twice as prevalent as diabetes or cancer." People who experience hearing loss are more likely to have lower employment rates and workplace productivity, and incur higher healthcare costs. Adults who are hearing impaired are also more likely to have a lower income, be unemployed, or underemployed as compared to adults who are not hearing impaired. In our Region, one of the largest sources of noise pollution is in relation to major highways.

The National Transportation Noise map shows noise levels (decibels) across the United States, while the Regional Noise Map below indicates areas along major roadways in our Region that may struggle with noise pollution.



During the COVID-19 pandemic, the need for community greenspaces was heightened because it allowed for people to socialize and exercise without risking exposure.

ECONOMIC AND SOCIAL DEVELOPMENT

Economic and Social Development

Economic and social development is access and opportunity for financial growth and stability. Economic and social development are outlined in this chapter as they pertain to safe communities free of crime and violence, steady and reliable income, education, and employment.

Health - Economic and Social Development Goals

1. The Region is a safe place full of economic, educational, and employment opportunity for all current and future residents.

2. Support economic development projects, ideas, and goals that build equity within the Region.

Safe Communities

Living in a community that not only is safe but has a strong sense of community trust is important for community health and wellbeing. While it is traditionally understood that more violent crimes happen in urban areas as opposed to rural areas, crime in urban areas has decreased significantly in the last 30 years, while violent crimes in rural areas have gone up. Crime rates in the Region are relatively low.

In addition, the Region has local Emergency Medical Services (EMS) and Fire Stations that are intended to serve the community 24/7 in dire circumstances. Reliable EMS personnel are important to public health because they are the intersection between the public during medical emergencies and traumatic injuries. Fire Stations can save lives by preventing and extinguishing fires. Fire Service personnel often provide fire safety education and materials in local schools. Since these services heavily rely on volunteer support, it is important that they are prioritized during the planning process. More information can be found in the Emergency Management Chapter.

As discussed previously, as well as in the Transportation Chapter, another aspect to community safety is having adequate infrastructure that protects pedestrians and cyclists. Lack of sidewalks,

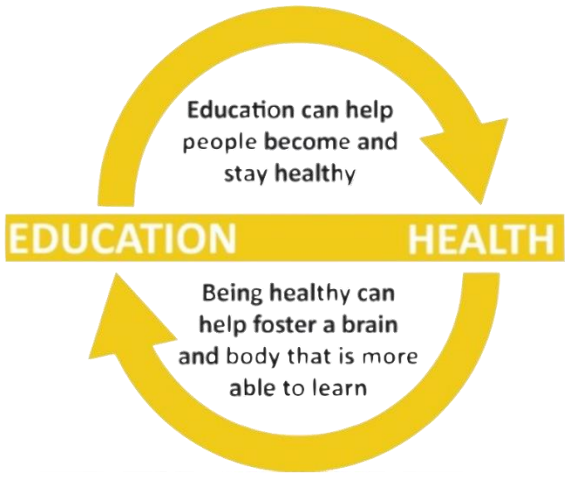
crosswalks, bike path infrastructure, and lack of connected pedestrian and bicycle routes all contribute to the actual and perceived dangers of walking and bicycling. This kind of infrastructure is imperative near schools, and for people with physical disabilities who may need extra time or space.

Led by the State of Vermont in Partnership with Local Motion, schools have an opportunity to participate in the Safe Routes to School Program (SRTS). According to VTrans, "walking and biking to school helps students develop independence, improves academic performance, helps reduce traffic congestion and air pollution, and helps create a stronger community." While none of the schools in our Region are currently enrolled in SRTS, there are plenty of opportunities to improve walking and biking infrastructure through SRTS grants near schools.

Steady and Reliable Income

The relationship between income and health outcomes is directly correlated. Those living in higher wage households with steady and reliable income are more likely to have access to healthier living and working environments as well as healthcare in general and higher quality healthcare with better benefits. Households living below the federal poverty level have a lower life expectancy than that of people with higher incomes. Black and brown communities are more likely to face discrimination and have a harder time finding steady and reliable income. Socioeconomic demographics of the region can be found in the Regional Profile Chapter.

Education



Access to education is important because not only does obtaining higher levels of education help with economic security and therefore steady job retention and health benefits but being healthy can also help people (especially school-aged children) concentrate and do better in school. Socio-economic predispositions can determine a person's access to healthy food, regular doctor's visits, etc. It is therefore important to address the spectrum of health issues from early education to higher education as well as the socio-economic circumstances that may inhibit a person from leading a healthy lifestyle. Education opportunities span from pre-k and childcare education to after-school

programs, to technology and trade schooling opportunities for the region. Providing healthy food options, mental health resources, substance misuse education, and health education throughout all hierarchies of education is vital for a person to live a healthy lifestyle. In addition, targeting socio-economic factors that may lead to health inequities are also important.

Employment

Having access to a consistent job and safe working conditions is essential for a person's ability to maintain their health. Steady employment helps a person maintain a healthy living situation, get adequate childcare, and provide nutritious food. There is also a correlation between income level and health disparities. The higher the household income level is, the more likely they are to live in safer neighborhoods that are closer to healthy food options, more walkable, and with recreation spots nearby. Studies show that an employer can save $6 for every $1 they spend on workplace health and wellness programs. These programs reduce sick leave, health plan costs, workers compensation, and disabilities costs by around 25%. On the other hand, unemployment can have adverse effects on a person's health. A person or household dealing with unemployment or chronic unemployment is more likely to have poor health and develop a stress-related illness. Unemployment can also cause poor mental health and has been tied to an increase in anxiety and depression. When a person faces unemployment, they are also less likely to have health insurance, which can lead to a lack of preventative care and delays in care for chronic health conditions. They may also be less able to afford prescription drugs for their chronic conditions.

Recovery Friendly Workforce

The Recovery Friendly Workforce connects employers, workers, and job seekers with resources and supports to create better outcomes for everyone. Recovery partners offer workshops for employers who want to become "Recovery Friendly". These sessions build capacity for empathy and understanding of substance use disorder as a treatable disease. Employers learn valuable tools to support their current workers seeking recovery, such as connection to recovery coaching, the science of addiction, and referral to state & local initiatives.

Recovery Coaches host educational and support groups, and/or confidential 1:1 meeting with employees and job seekers. They help workers connect with the resources and support they need to find and maintain recovery, and to select a workplace that will be a good fit for them. In 2022, recovery friendly workforce initiatives in the Region are sponsored by Regional Partners like the Springfield Regional Development Corporation, Turning Point of Springfield, and is a method of education and awareness that is valuable for Regional businesses and partners.

SUPPORTIVE SOCIAL RELATIONSHIPS

Supportive Social Relationships

Supportive social relationships are defined as access to family and community networks that support a healthy lifestyle. This concept is based on the understanding that an entire community is accountable for public health. Engaged people benefit from strong social networks with friends, family, and coworkers. They are involved in the civic life of their communities, and are empowered to help create and promote belonging, inclusion, and meaningful connection. Planners play a role in helping communities create and sustain healthy environments and infrastructure, while also providing a platform for public engagement, participation, and collaboration.

Health - Supportive Social Relationships

1. Create connections and support efforts of non-traditional regional partners that promote supportive social relationships, like for example recovery partnerships, Regional food resources, etc.

2. Support the building and expansion of Regional community assets.

3. Use the Healthy Communities page on MARC's website as a health landing page to guide community members and partners to agencies that can help them.

4. Point people within the Region to supportive services via mapping, marketing, and other avenues.

5. Introduce DEI internally into MARC's policies and procedures, and provide consultation to towns.

Socially cohesive and supportive relationships, families, homes, and neighborhoods

Building a socially cohesive community given the rural nature of the Region can be a challenge. Social cohesion can be found in community meeting places, places to go like a movie theater, bowling alley, or park, library or after school program. In families where parents or guardians are ill-equipped to handle bringing up a child, community resources can help. Given the expanding nature and influence of the digital world, community can be tied through online meetings and

activities. In marginalized groups, online community groups can make up for a lack of local diversity.

Diversity, Equity, and Inclusion (DEI)

Diversity, Equity, and Inclusion (DEI) training focuses on educating people on implicit biases, and structures of inequity in workplaces, societal structures etc. The purpose of DEI training is to enhance people's knowledge of other groups by both building awareness about biases and skills for interaction. In planning, DEI training can be used to understand the history of policies and procedures that have excluded certain groups. For example, in the 1930's, the federal government began redlining real estate in "risky" neighborhoods for federal loans based on racial and ethnic demographics. This practice was a perfectly legal form of segregation and disenfranchisement, the remnants of which can still be seen today. Education around how policy affects marginalized groups can help reduce and prevent further harm to these marginalized groups.

Mental Health Services

According to the Center for Disease Control (CDC), mental health includes services around emotional, psychological, and social wellbeing. Mental health is important for a person's overall health, the risks of poor mental health being an increased risk for diabetes, heart disease and stroke. Being a part of a marginalized socio-economic group increases the likelihood of poor mental health outcomes. For example, members of the LGBTQ+ youth community in Vermont are four times more likely to commit suicide than non-LGBTQ+ youth. Public health interventions and services are important ways to address these issues by creating an understanding and supportive community free of bias and discrimination. Mental health, mental illness, and mental disability are issues that are slowly gaining the attention they need. Land use planning can play a supporting role in meeting the needs of people with these special needs.

School Districts in the Region address mental health for students by having:

1. School Social Workers
2. Behavioral Interventionist Programs
3. Behavioral Specialists
4. Board Certified Behavior Analysts
5. Student Assistance Program Counselors
6. Autism Services

In 2017, the State of Vermont implemented a text crisis line that offers 24/7 support. In 2019, of the young people who used this support service, 19% were under 13, and 81% were ages 14-17. 91% of respondents identified as female, 9% male, and 3% transgender. 61% of respondents identified as being members of the LBGTQ+ community.

For the rest of the population, mental health services were listed in both the 2019 Springfield Hospital CHNA, and the 2021 Mount Ascutney Hospital CHNA as a top priority item. With the onset of COVID-19, according to the Mount Ascutney CHNA, people in the hospital service area are experiencing heightened anxiety.

Robust Social and Civic Engagement

Civic engagement ranges from everything from planning, to access to local government processes, access to voting, in both political and non-political realms to protect public values and/or make changes in the community. Traditionally, the role of a planner is in the role of community engagement, partnership with stakeholders. With a movement for more virtual engagement tools, there is an opportunity for community participation outside of the traditional meetings. Trying a multi-faceted and non-traditional approach to community engagement can aim to reach more marginalized communities.

Recovery Friendly Communities/Substance Use Disorder Prevention

The goal for a recovery friendly community is for the community's programs and policies to make it easier for its members with Substance Use Disorder (SUD) to achieve and maintain recovery. This can be accomplished through:

1. Access to treatment facilities
2. Programming drug/ alcohol-free entertainment
3. Discouraging & educating around stigma
4. Recovery-friendly housing
5. Recovery-friendly workplaces
6. Healthy community relationships and environment

MARC can support these efforts through our partnership with the Green Peak Alliance to provide Regional informational services on recovery programs and efforts, collaborating on creative solutions, and supporting Regional partnerships and community assets that help reduce substance use harm in the Region.

Transformative Ideas of Planning

Planning for public health is a newer concept that pivots on the idea that internal and external structures of our society do not work without one another. As stated throughout the chapter, a lot of the places and people that need improvements in the public health realm have been systematically marginalized by society through policy, infrastructure, and planning. While

planning for change and supporting existing programs are important, for equitable change, we must also plan with and for communities and people who typically get left out. This may mean for example supporting indigenous people through a structure that is atypical for the RPC or participating in internal education on the history and issues of racial injustice, and generational poverty in the Region. Planning for public health cannot and will not happen without the input of marginalized communities.

State/Regional Health Resources

While this chapter addresses the aspects of community health and data overviews, Mount Ascutney Hospital and Health Center along with Springfield Hospital have created Community Health Needs Assessments, that are updated regularly. This chapter is intended to complement the work of these assessments.

Health and Equity Vocabulary

Community Health Framework-

1. Basic Needs- Core elements of an individual life that one needs to survive
2. Quality Sustainable Environment- A safe place the live, work, and play
3. Economic Social Development- Access and opportunity for financial growth and stability
4. Supportive Social Relationships- Access to a family and/or community networks that support a healthy lifestyle

Discrimination - is the unequal treatment of members of various groups based on race, gender, social class, sexual orientation, physical ability, religion and other categories.

Diversity - The practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations, etc.

Emergency Care (Hospitals) - Emergency services are defined as covered inpatient and outpatient services that are needed to evaluate or stabilize an emergency medical condition. (Source: George Washington University Department of Public Health)

Equity (vs. Equality) - The term "equity" refers to fairness and justice and is distinguished from equality: Whereas equality means providing the same to all, equity means recognizing that we do not all start from the same place and must acknowledge and adjust imbalances.
Health Disparities - are statistical differences in health that occur between groups of people. These could be from any cause.

Health Equity - exists when all people have a fair and just opportunity to be healthy – especially those who have experienced socioeconomic disadvantage, historical injustice, and other avoidable systemic inequalities that are often associated with social categories of race, gender, ethnicity, social position, sexual orientation and disability.

Health Inequities - exist when avoidable inequalities lead to an uneven distribution of the resources and opportunities for health, and are differences in health that are avoidable, unfair or stemming from injustice. The concept of health inequities focuses on conditions that create health, and emphasizes the systemic distribution of opportunity, wealth and power.

Hospice Care- Medical care to help someone with a terminal illness live as well as possible for as long as possible, increasing quality of life. (Source: Hospice Foundation)

Inclusion- The practice or policy of providing equal access to opportunities and resources for people who might otherwise be excluded or marginalized, such as those who have physical or mental disabilities and members of other marginalized groups.

Long-term Care (Nursing Facilities)- Long-term care involves a variety of services designed to meet a person's health or personal care needs during a short or long period of time. These services help people live as independently and safely as possible when they can no longer perform everyday activities on their own. (Source: National Institute on Aging)

Mental Healthcare- services devoted to the treatment of mental illnesses and the improvement of mental health in people with mental disorders or problems. (Source: Collins Dictionary)

Power - having the potential to shape our lives and the world around us.

Prejudice - is an unfavorable opinion or feeling formed beforehand or without knowledge, thought or reason. (Source: Healthy Vermont)

Primary Care - Primary health care ensures people receive quality comprehensive care - ranging from promotion and prevention to treatment, rehabilitation, and palliative care - as close as feasible to people's everyday environment. (Source: World Health Organization)

Social Determinants of Health - are the conditions in which people live, learn, work, play, worship and age that affect a wide range of health, functioning, and quality of life outcomes and risks. These include social, economic, and physical conditions, as well as patterns of social engagement and sense of security and wellbeing.

Specialty Care- Specialty care means advanced medically necessary care and treatment of specific physical, mental, or behavioral health conditions or those health conditions which may manifest ages or subpopulations, that are provided by a specialist, preferably in coordination with a primary care professional. (Source: Law Insider)

Stigma – preconceived views or bias against those who struggle with substance misuse or chronic poverty, for example – is a major barrier to equitable treatment in society and in healthcare systems. Greater awareness of the structural underpinnings of poverty and of how addiction functions as a disease leads to more empathy, understanding, and solutions for those in need of support.

Substance Use Disorder (SUD) - is a complex condition in which there is uncontrolled use of a substance despite harmful consequences.

Substance Misuse Rehabilitation- Substance misuse disorder rehabilitation treatment can be used to help a person recover from addictions, injuries, and even physical or mental illnesses. (Source: Rehabs)

Urgent Care- An urgent care center is a walk-in clinic focused on the delivery of medical care for minor illnesses and injuries. Urgent care facilities are important because they can lessen the burden that falls on emergency rooms when urgent care facilities don't exist. (Source: ACEP)

Resources

https://www.cdc.gov/nceh/publications/books/housing/cha02.htm
https://www.healthvermont.gov/sites/default/files/documents/pdf/ADM_State_Health_Improvement_Plan_2019-2023.pdf
https://www.healthvermont.gov/about-us/our-vision-mission/health-equity

Ch 12: IMPLEMENTATION

Background

Implementation of the goals and policies outlined in this document depends upon the cooperative efforts of the Region's member communities, along with the efforts of the numerous local, regional, state and federal agencies, and private interests involved in land use planning activities. The MARC must work with all of these groups to successfully implement this Plan, and the Plan has been written with this idea as its foundation.

At the federal level, the Regional Plan can be used to justify and prioritize the use of federal funds for community development, transportation improvements, natural resource protection and management, and other investments. Careful planning and clear statements of regional goals and priorities help to ensure that federal money is spent usefully and fairly. State funding can be secured through the same process, and state government can use the Regional Plan in several other ways, as well. One of the goals of Act 250 is to include local and regional planning concerns in the state regulatory process. These concerns are addressed by requiring developers to show that projects will conform to local and regional plans. Regional plans are used in the certification of solid waste facilities and in the granting of certificates of public good for electric generation and transmission facilities; they may also have an effect on state policy through the statutory requirement for review of state agency plans (24 V.S.A. §4305(d)).

At the local and regional levels, the Regional Plan interacts with plans of surrounding regions, municipal plans adopted by member towns, and with the activities of developers and other private groups. Implementation of this plan can only proceed if its goals and policies are compatible with those of adjoining regions and member towns. It is the responsibility of the MARC to provide assistance to its members in the development of their town plans and to help ensure that those plans are in the best interest of not only an individual town, but for all towns in the Region. This Plan sets forth guidelines for the most effective implementation measures to be developed by local governmental bodies with assistance from the MARC. Finally, it is the duty of the MARC, through the adoption of this Plan, to provide general advisory guidance for managing the growth and development of the Region. Additionally, the Plan should provide guidance to developers to help ensure the orderly, efficient, and healthful use of land and resources.

A. Determination of Substantial Regional Impact

The MARC should act as a review agency for any proposed development of substantial regional impact. The MARC is required under Vermont law (24 VSA §4345(a)) to define "substantial regional impact as that term may be used with respect to its region." As such, the MARC defines "substantial regional impact" as:

> *Any proposed development of such size, scale, character or intensity of use that it has a sustained influence upon: the growth and development in adjacent towns; the regional economy; affordable housing stock; or regionally important cultural and natural resources or infrastructure; and meets one or more of the following criteria:*

1. **It may affect the Region's economy by:**
    a) Generating new employment equal to or greater than 1 percent (1%) of the Region's existing employment as measured by the Department of Employment and Training; or

    b) Increasing the cost or availability of affordable housing in the town in which the project is located or in adjacent towns;

2. **It may affect the infrastructure capacity by:**
    a) Substantially affecting the safety of the traveling public on highways and other transportation facilities within other towns;

    b) Generating peak hour traffic equal or greater than five percent (5%) of the peak hour capacity of the transportation network serving the project site;

    c) Contributing to a reduction in the peak hour Level of Service (LOS) from D to E or from E to F;

    d) Substantially changing the service area or capacity of utility services, including but not limited to, public water and sewer systems, demand for energy, and/or solid waste services;

    e) Generating student populations that will adversely affect school capacities in one or more neighboring communities and/or union high school districts; or,

    f) Creating capital improvements such as the extension, upgrading or enlargement of electrical transmission lines.

3. **It may change the existing settlement patterns in the Region by:**
    a) Requiring the alteration, degradation or destruction of designated regionally significant historic, cultural, natural, aesthetic or scenic features; or,

b) Locating in geographic areas that have not supported the type, scale or intensity of proposed development in the past, and is not supported by local or regional Future Land Use Maps.

4. It may affect the natural resources of the Region by:

a) Producing excessive pollutants or substantially degrading air or water quality;

b) Altering, degrading or destroying the animal and/or plant habitat as identified in this Plan as worthy of protection; or,

c) Substantially fragmenting or reducing the area or productive capacity of regionally significant forested and agricultural lands;

The definition of substantial regional impact shall include both individual project proposals as well as cumulative impacts of multi-phased projects as described in this Chapter. Proposed developments that have substantial regional impacts may have positive as well as negative impacts.

An impact analysis should be provided for any project of substantial regional impact. The analysis should include such effects as population growth in other towns, impact on infrastructure capacity (roads, traffic congestion, public water and wastewater facilities, schools, etc.), and impacts on cultural and natural resources (critical wildlife habitat, water quality, scenic resources, etc.).

1. CUMULATIVE DEVELOPMENT IMPACTS

When certain development occurs incrementally, there is concern for the impacts resulting from that cumulative growth. Development or a series of developments, when located within a limited geographic area, under the control of a single applicant, and planned incrementally over a relatively short period of time, can produce environmental, social, and economic impacts that are contrary to sound and coordinated comprehensive planning, which is the goal of this Plan and Vermont law. Incremental development review methods have the potential of failing to adequately evaluate the cumulative impacts of growth within an area. (Examples of this kind of development could include a large multi-phased subdivision or recreational area such as a ski resort.)

In these situations, the MARC may request cumulative impact review by requesting, coordinating and reviewing cumulative impact studies. The scope of each cumulative impact study or master plan should address impacts to both the natural and human environment and offer measures to avoid and/or mitigate adverse impacts. The costs of such studies shall be borne by the applicant.

B. Implementation

The Regional Plan will be implemented in a number of ways. Most implementation measures rely on coordination with municipal planning and regulation efforts, as well as collaborating with the efforts of other municipal, regional, state, federal and private entities. Implementation of the Regional Plan consists of the following measures:

MUNICIPAL PLANNING. The MARC's efforts to assist with local planning and implementation will include the following activities:

- The MARC shall consult with its municipalities before town plans are set to expire or at other times as needed or requested. In accordance with 24 V.S.A. §4350(a), this consultation will involve ascertaining the municipality's planning needs and identifying assistance that the MARC can provide. This consultation process will also involve a review of the town plan with respect to the required elements under §4382 and consistency with State planning goals under §4302.
- After adoption of a town plan, the MARC will evaluate and confirm local planning efforts and approve town plans per 24 V.S.A. §4350. Currently, all towns have plans approved and planning processes confirmed by the RPC, which makes them eligible for the state municipal planning grant program.
- The MARC will maintain an on-going status listing of municipal planning and regulatory documents, and annually report the findings to municipalities and the Department of Housing and Community Development.
- The MARC will offer technical assistance to municipalities as they prepare new or updated plans, bylaws, ordinances, and other implementation tools. MARC staff will help local planning commissions assemble and analyze data, conduct research and surveys, and prepare text and maps.

TRAINING. The MARC will organize, sponsor, and conduct workshops and training seminars for local officials as well as hosting workshops with state agencies and the Vermont League of Cities and Towns. MARC staff frequently meets with local boards to address specific issues and/or concerns and is often the most effective means of outreach to its member towns. The GIS Planner often assists towns with specific mapping needs and training of local officials.

SPECIAL PROJECTS. Member towns often want to undertake special planning studies to address a particular issue in their community, e.g. resource mapping, transportation studies, emergency response plans. The MARC is available to assist towns either as a principal consultant or with technical and data support services.

MAPPING. Every effort will be made to ensure that GIS activities are supported and accessible to municipalities in the Region. The MARC has a full complement of GIS hardware and software and a GIS Planner (as well as other staff) trained in the operation of such

systems. The MARC has undertaken many mapping projects for its towns in the past and will continue to do so in the future.

GRANT ASSISTANCE. The MARC will continue to assist municipalities in the preparation of applications for grants to support planning initiatives, housing or economic development projects, and other programs of public benefit (e.g. Municipal Planning Grants, Municipal Education Grants, EPA Brownfields Grants, and Town Highway Structures Program). The MARC will also continue to assist towns and agencies with project management services.

COLLABORATION. MARC's goals can also be achieved by close collaboration with other state, private and/or public organizations as well as other regional planning commissions. Combining resources can be an effective means of achieving a common interest and reinforce the commission's goals and programs. It also provides an opportunity to aggregate resources that might not otherwise be available.

COMMITTEE ASSIGNMENTS. The MARC established special focus committees to address particular issues of importance to the Region. These committees include: Executive, Budget, Personnel, Permit Review and Town Plan Review Committees. The MARC also appoints members and staff to serve on the boards or committees of other organizations, such as the Connecticut River Joint Commission's Vermont Watershed Advisory Commission. The MARC also established two advisory committees to guide two of the organization's bigger programs: the Transportation Advisory Committee (TAC) and Brownfields Steering Committee. The MARC staffs the Regional Emergency Management Committee. The MARC needs to evaluate the work of its committees and assignments annually.

REVIEWS OF STATE AGENCY PLANS. It is important for the MARC to coordinate with state agencies and evaluate the impacts of state agency plans and programs on municipalities and the region, and to provide responses accordingly.

DEVELOPMENT REVIEWS. Under state law the MARC is enabled to participate in various regulatory and non-regulatory proceedings. The MARC takes a very active role in reviewing every Act 250 application that it receives to determine conformance with the Regional Plan. The MARC is active in other proceedings that have a bearing on the Region: Department of Public Service (Section 248), Water Resources Board, and Rules put forward by state agencies.

RECOMMENDED INFRASTRUCTURE. In accordance with 24 V.S.A. §4348a, the Regional Plan includes recommended infrastructure needs in order to meet future demands or to facilitate desired future land use conditions:

- Volume 2 of the Regional Plan includes programmed transportation projects and identified future needs to address the future needs of the regional transportation system.

- The following implementation matrix includes identified priority investments in public facilities and utilities to further the goals of this Regional Plan. However, this list is not all inclusive. Recommendations from each chapter are also intended to implement this Regional Plan. In addition, the MARC will assist municipal efforts to address town plan implementation strategies, and local efforts to develop capital budgets and programs, and other implementation tools.

Additional implementation measures rely on coordination with municipal planning and regulation efforts, as well as the efforts of other municipal, regional, state, federal and private entities.

Implementation Matrix for the Mount Ascutney Regional Commission Regional Plan

Recommendation	Municipality	Responsible Party	Expected Timing				Priority of Need (Low, Medium, High)	Generalized Cost Estimate	Method of Financing
			Ongoing	0-2 Years	3-5 Years	5-10+ Years			
Seek funding to upgrade water and sewer lines needed to further goals of regional and town plans as needed.	All	Selectboards/ Fire Districts	X				High	High	Grant/Loan/Bond
Assist towns in the development or update of capital budget and improvement programs	All	MARC, Selectboards			X		Medium	Low	Grants
Acquire equipment/invest in solid waste collection facilities to implement requirements of Act 148	All	Selectboards		X			High	Unknown	Unknown
Replace water storage tanks and increase capacity	Cavendish	Selectboard				X	High	$350,000	Grant/Loan
Seek funding to implement wastewater system improvements (Cavendish Capital Budget & Program)	Cavendish	Selectboard			X	X	High (See CBP)	Variable	Grant/Loan/Bond
Repairs or removal of water supply dam in Town Forest	Chester	Water Dept.				X	Low	$500,000	Grant/Loan
Assist town officials to implement recommendations	Chester	Town Manager, Selectboard,	X				High	Variable	Grant/Loan

in the Village Center Master Plan		Planning Commission							
Seek funding to implement water and sewer system projects identified in Chester's system improvements plan).	Chester	Water Dept. / Sewer Dept.			X		High	High	Grant/Loan/Bond
Apply for funding for engineering analysis to address wastewater issues in the villages of Felchville and further village revitalization efforts	Reading	Selectboard		X			High	$30,000	DEC planning advance funding (Revolving Loan Funds)
Extend sewer service to Hartness State Airport	Springfield	Public Works				X	Medium	$500,000	Grant/Loan/Bond
Seek funding to implement priority needs listed in Springfield's Water and Wastewater Capital Plan as most recently amended.	Springfield	Public Works	X				High	High	Grant/Loan/Bond
Seek funding to implement the Weathersfield Reservoir dam removal.	Springfield	Selectboard, Public Works, MARC	X				High	$800,000	Grant
Implement water system improvements noted in the Ascutney Fire District #2 Water System Feasibility Study	Weathersfield	Ascutney Fire District #2		X			High	High	Vermont Bond Bank

Develop regional outdoor recreation trails plans	All	Consortium, MARC to facilitate		X			High	Low-Medium	Grants
Work with towns and partners to continue developing a trail around Mt. Ascutney and implement other recommendations from the Mt. Ascutney Outdoor Recreation Plan	West Windsor, Windsor, Weathersfield	Consortium, MARC to facilitate	X				High	Variable	Grants
Coordinate with Chambers of Commerce, SRDC, towns and other partners to explore marketing the region for outdoor recreation through app development, websites, and other promotional materials	All	MARC, Conservation Commissions, Recreation groups, SRDC, Chambers of Commerce		X			Medium	Medium	Grants
Maintain an up-to-date Ride Windsor County bike route map and guide, and make printed maps available in bike shops and other locations throughout the region.	All	MARC	X				Medium	Low	Transportation Planning Initiative
Assist Weathersfield to seek funding for a wastewater/water feasibility study to further Perkinsville	Weathersfield	Selectboard		X			High	$30,000	DEC Planning advance funding (revolving loan funds)

Village Center revitalization efforts.									
Assist Weathersfield to seek funding for a wastewater feasibility study to further Ascutney Village Center revitalization efforts.	Weathersfield	Selectboard		X			High	$30,000	DEC Planning advance funding (revolving loan funds)
Continue to assist Springfield with implementation of the recommendations from the Downtown Master Plan.	Springfield	MARC, Selectboard	X				High	Variable	Grants/financing
Explore options to provide regional or intermunicipal services, such as a regional floodplain and/or zoning administrator, or intermunicipal fire or ambulance services.	All	MARC, Selectboards			X		Medium	Variable	Municipal capital budgets
Support local energy committees and assist towns to implement energy goals set out in town plans.	All	MARC, Selectboards, Energy Committees	X				Medium	Variable	Grants, municipal capital budgets, bonding
Seek grant funding for a feasibility study to develop a regional housing utility that would provide technical support and financing for the development and conversion of homes that are	All	MARC		X			High	$50,000	Grant

affordable for residents, such as accessory dwelling units.									
Expand broadband access to all households in all communities	All	MARC, Selectboards, CUD, Providers	X				High	High	Grants/Financing
Assist Ludlow with implementation of the Village Center Master Plan	Ludlow	MARC, Selectboard, Village Trustees	X				Medium	Variable	Grants/Financing
Implement recommendations from the Active Transportation Plan	All	MARC, Selectboard, VTrans	X				Medium-High	Variable	Grants/Financing/ VTrans capital program/municipal capital budget
Implement recommendations from the Ludlow Microtransit Feasibility Study	Ludlow	MARC, Selectboard, Village Trustees			X		Medium	$40,000	Grants/Financing/ municipal capital budget
Implement recommendations from the Springfield and Windsor Microtransit Feasibility Studies	Springfield, Windsor	SEVT, VTrans		X			Medium	Springfield: $190,000-$250,000 Windsor: $190,000-$250,000	Grants

Develop a regional forest fragmentation study	All	MARC		X			High	Medium	Grants, ACCD Funding
Ensure all of MARC's actions, policies, and operating procedures reflect our commitment to diversity, equity and inclusion	MARC	MARC		X			High	N/A	N/A
Shift away from the use of fossil fuels by developing the infrastructure of electric charging stations and other fuels that help to reduce or avoid greenhouse gas emissions.	All	Towns, MARC, VTrans, PSD, ACCD	X				Medium	Variable	Grants

C. Plan Relationship

1. STATUTORY REQUIREMENTS

In accordance with 24 V.S.A. §§ 4345a(5) and 4348a(8), the purpose of this section is to indicate how this Regional Plan relates to:

1. Development trends and needs;
2. Plans for adjacent municipalities and regions;
3. Compatibility with approved municipal plans; and,
4. Consistency with State Planning Goals under 24 V.S.A. §4302.

2. REGIONAL PLAN IN CONTEXT

For this Plan to be effective, the plans of adjacent regions and member towns must be considered and efforts made to ensure that all plans are coordinated and consistent with one another. It is therefore advisable to review the appropriate plans to determine if conflicts exist and resolve any differences cooperatively. As of the adoption of this Plan, all towns in the Region have duly adopted municipal plans approved by the MARC pursuant to 24 V.S.A. §4350. Upon request by member towns, the MARC works with local planning commissions to draft or amend municipal plans; if a town wishes to have an MARC-approved plan, this process includes helping the local planning commission to incorporate the required elements and planning goals into the plan. It is equally important to respect the wishes and planning goals of towns without approved plans. The MARC strives to include the perspectives of these towns in its deliberations through local representation on the Board of Commissioners.

Should conflicts between the Regional Plan and plans of adjacent regions or member towns arise, the MARC will attempt to resolve them to the benefit of all affected parties, so that the future visions of all affected parties can be realized. MARC staff can assist municipal planning commissions in updating town plans at their request. In doing so, the update process will strive to: encourage compatibility with neighboring town plans, lead to more effective management of the Region's lands, and attain both the state planning goals and the goals and policies of the Regional Plan.

3. HOW THE REGIONAL PLAN RELATES TO DEVELOPMENT TRENDS & NEEDS

According to recent trends, the Region is not experiencing significant levels of growth. Since 2000, the Region has experienced a population change of -4.7%, with a recent change of -6.2% from 2010 to 2020. In addition to these Region-wide changes, between 2010 and 2020, 80% of member towns experienced a decline in their respective populations, with just Baltimore and West Windsor experiencing population growth.

However, during the COVID-19 pandemic, housing sales increased dramatically. At this point, it is not clear how many of those people buying houses in the area during the pandemic will be year-round residents or second home owners. A potential scenario is that the region may experience significant future growth as a result of climate migration.

A few communities, especially Ludlow, have experienced significant levels of growth in housing units over the last 20 years; most of that growth represents the production of additional seasonal housing units related to the Okemo Mountain Resort. Affecting regional development trends in recent years have been the closing of Ascutney Mountain Resort and the generally poor economic conditions since 2008. In addition, the Region has experienced a shift from a once vibrant local manufacturing sector, to a significant proportion of workers commuting to work locations outside of the Region. However, the Region is experiencing modest levels of investment in recent years, particularly with respect to energy generation facilities, broadband/communications infrastructure, small-scale businesses in village centers and industrial parks, and incremental residential development. Generally speaking, residential development in the last two decades has occurred in rural locations outside of the village centers and surrounding dense neighborhoods.

As a result of these trends, this Regional Plan attempts to improve a focus of future investment in or around village centers in accordance with State Planning Goals. This Plan acknowledges the needs for water and sewer infrastructure investments and village revitalization initiatives, such as the Downtown Program, in order to accomplish this focused development in villages. This Plan also strives to implement economic development strategies identified in stand-alone documents for the Region.

4. COMPATIBILITY WITH PLANS OF MEMBER MUNICIPALITIES

Each town plan in the Region uses different future land use designations or terminology; however, many of these proposed designations are similar in nature or effect. In so far as most town plans designate areas of concentrated development to be surrounded by rural areas, the Regional Plan is compatible with all of the town plans in the Region. In the winter of 2014, plans for all member municipalities have been approved by the Southern Windsor County Regional Planning Commission.

ANDOVER TOWN PLAN 2018: Andover is a rural community with two historic hamlets. There are currently no village centers, and the entire Town functions as the "rural countryside" per the first State Planning Goal [24 V.S.A. §4302(c)(1)]. The Town Plan generally calls for future growth to maintain this rural character in low-density development patterns, which is compatible with the Regional Plan.

BALTIMORE TOWN PLAN 2016: Baltimore is a small rural town of 312 residents. Similar to Andover, the entire Town functions as the "rural countryside," and possesses and values a similar rural character whose preservation is reflected thoroughly in the 2016 Town Plan. The 2016 plan calls for preservation of natural resources and the environment through careful implementation of utilities and land use, as well as a focus on encouraging residential use of renewable energy. Additionally, the plan encourages the development of quality housing that meets the needs of

residents of various income levels, as well as encouraging more economic opportunities within the town, such as small home businesses to reduce need for commuting and businesses that promote Baltimore's rural character, such as agricultural and forestry services. This is compatible with the Regional Plan.

CAVENDISH TOWN PLAN 2020: The Cavendish Town Plan was adopted in 2020. Both the Regional Plan and Cavendish Town Plan call for dense, mixed-uses to concentrate in the two villages of Cavendish and Proctorsville, surrounded by a low-density, rural working landscape.

CHESTER TOWN PLAN 2020: The historic village of Chester is largely surrounded by rural areas, which it aims to preserve and maintain through careful implementation of various aspects of the town plan, including promoting environmentally-friendly business practices, as well as discouraging development and land use patterns that will negatively impact the town's natural resources. Additionally, the 2020 Town Plan calls for the development and maintenance of quality housing that is affordable and accessible for diverse groups of people within Chester and their individual needs, as well as encouraging development that allows for public transportation and other modes of transport that are environmentally- friendly and convenient for residents. The Chester Town Plan is compatible with the Regional Plan in accordance with 24 V.S.A. §4302(f)(2).

LUDLOW MUNICIPAL DEVELOPMENT PLAN 2019: This Plan serves both the Town and Village of Ludlow. The plan was adopted in 2019, with key themes for improvement, including growth and maintenance of a diverse population of residents of different ages, income levels, etc., with a focus on attracting more year-round residents, particularly families with children. Additionally, the plan calls for improvements to the streetscape of Ludlow, such as filling empty storefronts, bringing in more high-tech businesses, and better traffic control to ensure safety and enjoyment for those walking around town, improving the experience of both those visiting and permanent residents of Ludlow to increase tourism and satisfaction of those living there. Ludlow's plan is compatible with the Regional Plan as both call for intensive development to be concentrated in and around the Village, and in the resort areas and industrial park/areas.

READING TOWN PLAN 2022: The Town of Reading has the newest adopted plan in the Region, with their Town Plan being adopted in February 2022. A large portion of Reading's land area is limited from future development by public ownership, conservation easement or enrollment in the Current Use program. Intensive development is encouraged in the village and hamlet areas to the extent it is appropriate without water or sewer infrastructure. The Plan also identifies the need to evaluate wastewater solutions for Felchville as a way to facilitate village revitalization. Reading's plan also articulates a desire for a rural landscape in the remainder of town. This town plan is compatible with the Regional Plan.

SPRINGFIELD TOWN PLAN 2017: As the largest town in this Region, Springfield maintains a large network of infrastructure and is a center of economic activity for much of the Region. The most recent Springfield Town Plan was adopted in 2017 and amended in 2019. Although it does not expire soon, the Town is currently preparing updates to the Plan. The 2019 Town Plan encourages the revitalization of the downtown and surrounding neighborhoods. The Plan also calls for working landscape activities, outdoor recreation, and other appropriate low-intensity uses in the more rural countryside. The 2019 Plan more closely align with State planning goals and it is compatible with the Regional Plan.

WEATHERSFIELD TOWN PLAN 2017: Weathersfield adopted their most recent town plan in 2017. Weathersfield calls for intensive development to focus in the villages of Ascutney and Perkinsville, and with smaller concentrations at Downer's Corners, and generally promotes rural character in the remainder of the community. The Plan includes detailed information on environmental conservation and historic and scenic resource protections. This plan is compatible with the Regional Plan.

WEST WINDSOR TOWN PLAN 2020: The town of West Windsor updated their town plan most recently in 2020. The 2020 Town Plan includes an overarching list of Strategic Goals for 2020 and future years, highlighting a wide range of specific topics most relevant to improving West Windsor and its various components. These goals include aims to revitalize vacant and underused buildings, emphasis on fighting climate change through the creation of a Sustainability Committee, more development of Ascutney Outdoors and other recreational opportunities, further development of aging in place programs and an overall goal to bring more families into West Windsor to increase school attendance in the newly formed Mt. Ascutney School District. The plan calls for concentrating intensive development within the village/primary growth and resort base areas. A residential/secondary growth area is identified to allow moderately-dense housing to locate around the village. A small commercial/light industrial area is located where there is a small, existing cluster of non-residential uses (i.e. veterinary services, humane society and wood pellet facility). The remainder of Town is designated for rural, low-density uses. The 2020 town plan is compatible with the Regional Plan.

WINDSOR TOWN PLAN 2019: Windsor exhibits a very dense village area that is surrounded by rural areas. The community was once a manufacturing center, but now functions largely as a bedroom community for the Upper Valley. The 2019 Town Plan encourages a vibrant downtown surrounded by a rural countryside. It also calls for maintenance of existing infrastructure and systems, such as public safety and resources, as well as improvements that will help to revitalize Windsor's downtown and attract more business and employment opportunities. The Plan is compatible with the Regional Plan.

5. COMPATIBILITY WITH PLANS OF ADJOINING REGIONS

The three Vermont regional planning commissions that adjoin southern Windsor County are Two Rivers-Ottauquechee, Windham and Rutland Regional Commissions. A fourth adjoins the Region to the east in New Hampshire: the Upper Valley Lake Sunapee Regional Planning Commission. Each has adopted a regional plan. The MARC has reviewed each of them, and taken care to ensure that the goals, policies, and recommendations of the Regional Plan are compatible with those of plans adopted by adjacent commissions. A review of plans for each adjoining region is summarized below:

2018 RUTLAND REGIONAL PLAN: The most current Rutland Regional Planning Commission (RRPC) Regional Plan was adopted in 2018. Towns in this region include Benson, Brandon, Castleton, Chittenden, Clarendon, Danby, Fair Haven, Hubbardton, Ira, Killington, Middletown Springs, Mendon, Mount Holly, Mount Tabor, Pawlet, Pittsford, Poultney, Proctor, Rutland City, Rutland Town, Shrewsbury, Sudbury, Tinmouth, Wallingford, Wells, West Haven, and West Rutland.

The 2018 plan outlines the vision of the RRPC Region, including three main goals surrounding the 1) economy, 2) quality of life for residents and 3) the environment. Firstly, the Region aims to have a strong and diverse economy, in order to allow for opportunities across various industries, from agriculture to healthcare and create high-value goods within the Region. The second goal outlines quality of life for the Region's residents, aiming to provide residents with high levels of health, wellbeing and community belonging, as well as educational, cultural, employment and recreational opportunities. The third and final goal discusses quality of care for the Region's environment, emphasizing sustainable and responsible use of natural resources and maintenance of historical resources to preserve the Region's past. The RRPC plan is compatible with the adjacent designations in the MARC Regional Plan.

2002 TWO RIVERS-OTTAUQUECHEE REGIONAL PLAN: The Two Rivers-Ottauquechee Regional Commission last updated their Regional Plan in 2020. Towns in this region include Barnard, Bethel, Bradford, Braintree, Bridgewater, Brookfield, Chelsea, Corinth, Fairlee, Granville, Hancock, Hartford, Hartland, Newbury, Norwich, Pittsfield, Plymouth, Pomfret, Randolph, Rochester, Royalton, Sharon, Stockbridge, Strafford, Thetford, Topsham, Tunbridge, Vershire, West Fairlee, and Woodstock.

Similar to the MARC Regional Plan, the plan for TRORC designates areas for future development to concentrate in village, town or regional centers, which are to be surrounded by a rural countryside primarily consisting of rural and conservation/resource areas. Much of the areas surrounding this boundary between the two regions are rural in existing character and desired future conditions. The 2020 TRORC Regional Plan outlines an extensive list of goals,

encompassing everything from increasing access to important healthcare services, to focusing on land use and development that minimizes negative impacts and instead is beneficial to the Region and its residents, to transportation system developments that have minimal negative environmental impact. Overall, the plan presents a multi-faceted approach to maintaining and improving a wide variety of issues and areas in the TRORC Region, many of these goals directly overlapping with those of the MARC Regional and town plans. The TRORC plan is compatible with the adjacent designations in the MARC Regional Plan.

2015 UPPER VALLEY LAKE SUNAPEE REGIONAL PLAN: The Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC) is located in New Hampshire. Towns in this region include Acworth, Charlestown, Claremont, Cornish, Croydon, Dorchester, Enfield, Goshen, Grantham, Hanover, Lebanon, Lempster, Lyme, New London, Newbury, Newport, Orange, Orford, Piermont, Plainfield, Springfield, Sunapee, Unity, Washington, and Wilmot.

The Connecticut River forms the boundary between their region and southern Windsor County. The UVLSRPC Regional Plan was last updated in 2015, outlining three major themes composing the vision for the Region: 1) Opportunity, 2) Resiliency, and 3) Resources. The first theme, Opportunity, outlines access to a wide variety of resources (housing, health, education, economic development, etc.) and how those resources impact the region's current and future success. The second theme, Resiliency, discusses more about the Region's preparedness for different events and their ability to bounce back in order to maintain the Region's strengths despite adversity and better benefit the community in the long run. The third and final overarching theme, Resources, encompasses the UVLSRPC's wide variety of natural, economic and cultural resources and explains the importance of preservation and sustainable use of these resources in order to foster and maintain continued success in the Region. The UVLSRPC plan is compatible with the adjacent designations in the MARC Regional Plan.

2014 WINDHAM REGIONAL PLAN: The Windham Regional Commission (WRPC) last updated their regional plan in 2014. Towns in this region include Athens, Brattleboro, Brookline, Dover, Dummerston, Grafton, Guilford, Halifax, Jamaica, Londonderry, Marlboro, Newfane, Putney, Readsboro, Rockingham, Searsburg, Somerset, Stratton, Townshend, Vernon, Wardsboro, Westminster, Weston, Whitingham, Wilmington, Windham, and Winhall.

Windham's plan is for the area that borders southern Windsor County to the south, which is primarily a rural area in both existing conditions and desired future conditions. The 2014 Regional Plan includes an extensive list of regional goals, including general goals also included in the town plans within the MARC Region. Some of these goals include preservation and improvement of natural resources and quality of air, water, etc., as well as provision of safe and effective transportation systems, promotion of thriving economies that provide valuable employment opportunities, encouragement of renewable energy and energy efficiency,

development that is compatible with past land use and settlement patterns and more, offering a multi-faceted approach to sustaining and improving the Region's infrastructure. The WRC plan is compatible with the adjacent designations in the MARC Regional Plan.

Due to the developmental nature of the local, regional, and state agency plans, the MARC provides elements of its plan for review and continually reviews elements of adjoining regions and member communities for consistency. The MARC is working with the various local, private and state entities to ensure planning consistency at all levels. As such, the MARC has provided each town in the Region; the Vermont Department of Housing and Community Affairs; the Vermont Agency of Natural Resources; the Southern Windsor/Windham Solid Waste Management District; Conservation Commissions; Chambers of Commerce; regional development corporations; and abutting towns and regional commissions with copies of the draft of the Regional Plan and an invitation to comment.

6. CONSISTENCY WITH STATE PLANNING GOALS

The Regional Plan was reviewed for consistency with the State planning goals under 24 V.S.A. §4303. Under state law, "consistent with the goals requires substantial progress toward attainment of the goals established in this section, unless the planning body determines that a particular goal is not relevant or attainable" [24 V.S.A. § 4302]. The proposed plan was found to be consistent with the State planning goals which are summarized below.

24 V.S.A. § 4302(b) Engage in a continuing planning process that will further the following goals:

(1) To establish a coordinated, comprehensive planning process and policy framework to guide decisions by municipalities, regional planning commissions, and State agencies.

(2) To encourage citizen participation at all levels of the planning process, and to assure that decisions shall be made at the most local level possible commensurate with their impact.

(3) To consider the use of resources and the consequences of growth and development for the region and the State, as well as the community in which it takes place.

(4) To encourage and assist municipalities to work creatively together to develop and implement plans.

24 V.S.A. § 4302 (c) To further the following specific goals:

(1) To plan development so as to maintain the historic settlement pattern of compact village and urban centers separated by rural countryside.

(A) Intensive residential development should be encouraged primarily in areas related to community centers, and strip development along highways should be discouraged.

(B)Economic growth should be encouraged in locally designated growth areas, employed to revitalize existing village and urban centers, or both, and should be encouraged in growth centers designated under chapter 76A of this title.

(C) Public investments, including the construction or expansion of infrastructure, should reinforce the general character and planned growth patterns of the area.

(D) Development should be undertaken in accordance with smart growth principles as defined in subdivision 2791(13) of this title.

(2) To provide a strong and diverse economy that provides satisfying and rewarding job opportunities and that maintains high environmental standards, and to expand economic opportunities in areas with high unemployment or low per capita incomes.

(3) To broaden access to educational and vocational training opportunities sufficient to ensure the full realization of the abilities of all Vermonters.

(4) To provide for safe, convenient, economic, and energy efficient transportation systems that respect the integrity of the natural environment, including public transit options and paths for pedestrians and cyclists.

(A) Highways, air, rail, and other means of transportation should be mutually supportive, balanced, and integrated.

(5) To identify, protect, and preserve important natural and historic features of the Vermont landscape, including:

(A) significant natural and fragile areas;

(B) outstanding water resources, including lakes, rivers, aquifers, shorelands, and wetlands;

(C) significant scenic roads, waterways, and views;

(D) important historic structures, sites, or districts, archaeological sites, and archaeologically sensitive areas.

(6) To maintain and improve the quality of air, water, wildlife, forests, and other land resources.

(A) Vermont's air, water, wildlife, mineral, and land resources should be planned for use and development according to the principles set forth in 10 V.S.A. § 6086(a).

(B) Vermont's water quality should be maintained and improved according to the policies and actions developed in the basin plans established by the Secretary of Natural Resources under 10 V.S.A. § 1253.

(C) Vermont's forestlands should be managed so as to maintain and improve forest blocks and habitat connectors.

(7) To make efficient use of energy, provide for the development of renewable energy resources, and reduce emissions of greenhouse gases.

(A) General strategies for achieving these goals include increasing energy efficiency of new and existing buildings; identifying areas suitable for renewable energy generation; encouraging the use and development of renewable or lower emission energy sources for electricity, heat, and transportation; and reducing transportation energy demand and single occupancy vehicle use.

(B) Specific strategies and recommendations for achieving these goals are identified in the State energy plans prepared under 30 V.S.A. §§ 202 and 202b.

(8) To maintain and enhance recreational opportunities for Vermont residents and visitors.

(A) Growth should not significantly diminish the value and availability of outdoor recreational activities.

(B) Public access to noncommercial outdoor recreational opportunities, such as lakes and hiking trails, should be identified, provided, and protected wherever appropriate.

(9) To encourage and strengthen agricultural and forest industries.

(A) Strategies to protect long-term viability of agricultural and forestlands should be encouraged and should include maintaining low overall density.

(B) The manufacture and marketing of value-added agricultural and forest products should be encouraged.

(C) The use of locally-grown food products should be encouraged.

(D) Sound forest and agricultural management practices should be encouraged.

(E) Public investment should be planned so as to minimize development pressure on agricultural and forest land.

(10) To provide for the wise and efficient use of Vermont's natural resources and to facilitate the appropriate extraction of earth resources and the proper restoration and preservation of the aesthetic qualities of the area.

(11) To ensure the availability of safe and affordable housing for all Vermonters.

(A) Housing should be encouraged to meet the needs of a diversity of social and income groups in each Vermont community, particularly for those citizens of low and moderate income.

(B) New and rehabilitated housing should be safe, sanitary, located conveniently to employment and commercial centers, and coordinated with the provision of necessary public facilities and utilities.

(C) Sites for multi-family and manufactured housing should be readily available in locations similar to those generally used for single-family conventional dwellings.

(D) Accessory apartments within or attached to single-family residences which provide affordable housing in close proximity to cost-effective care and supervision for relatives, elders, or persons who have a disability should be allowed.

(12) To plan for, finance, and provide an efficient system of public facilities and services to meet future needs.

(A) Public facilities and services should include fire and police protection, emergency medical services, schools, water supply, and sewage and solid waste disposal.

(B) The rate of growth should not exceed the ability of the community and the area to provide facilities and services.