

Mount Ascutney Regional Commission

REGIONAL PLAN

Adopted October 14th, 2022
Effective November 18th, 2022

Public Hearing Schedule

September 19th, 2022

October 14th, 2022



Mount Ascutney Regional Commission
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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.

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.**

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.

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.

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 streams¹⁴, 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/

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.

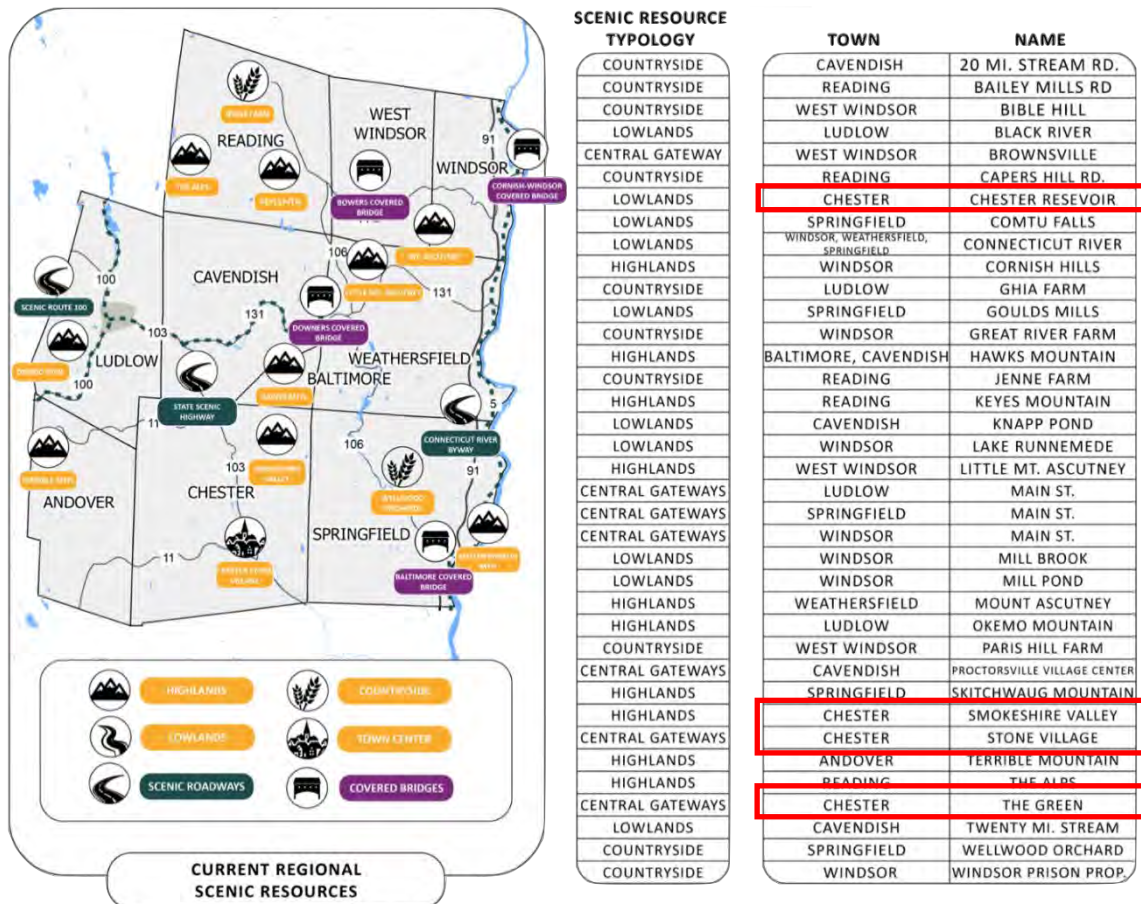
National Scenic Byways Program: The purpose of the Byway program is to foster cooperative ventures or public-private partnerships, and to protect, enhance, and/or promote the natural, cultural, historic, archeological, recreational, and scenic qualities. The Connecticut River Byway was awarded national 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.



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 (UFLT) 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. UFLT focuses its mission in 45 Vermont and New Hampshire towns (including Springfield, Weathersfield, Windsor, West Windsor, and Reading) in the upper Connecticut River valley. UFLT 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).

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, Skitchewaung 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, Skitchewaung 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 its 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 106 Reading. Beaver meadows upper Black R for flood resilience and habitat	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 it 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 Springfield 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 with armoring that was at 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

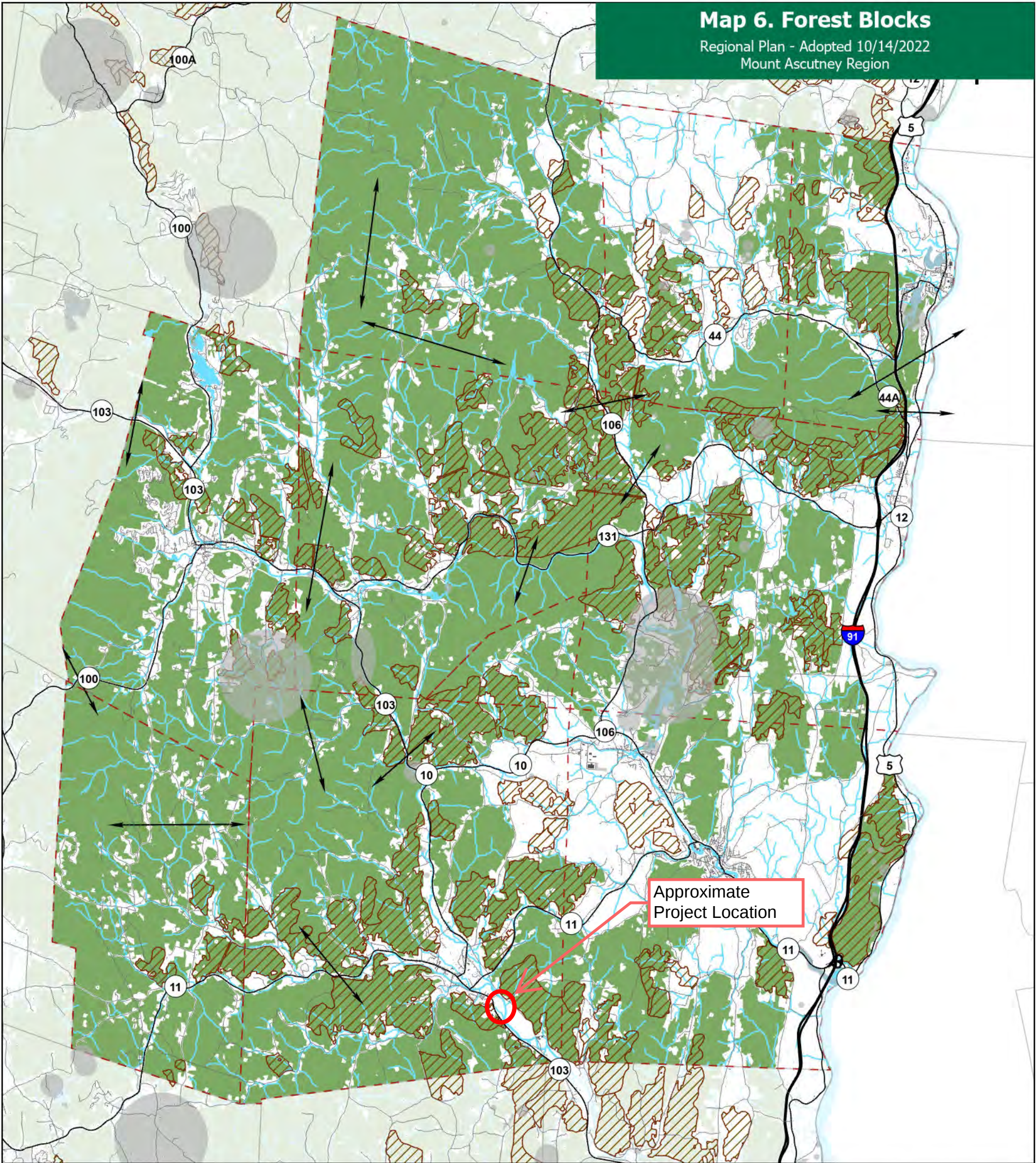
Q5 What would you say are outstanding scenic countryside vistas in your town or region? Countryside: woodland and/or agricultural areas outside of an urban center with limited residential development. (ex. Jenne Farm in Reading)

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 agriculural	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

Map 6. Forest Blocks

Regional Plan - Adopted 10/14/2022
Mount Ascutney Region



Approximate
Project Location

- Potential Wildlife Crossing Areas
- Rare, Threatened, and Endangered Species
- Deer Wintering Areas
- Building Footprints
- Priority Forest Blocks and Habitat Connectors

Data Sources:
Forest Blocks and Habitat Connectors-Derived from VT Conservation Design (ANR, 2020); Potential Wildlife Crossing Areas (RPC, 2020); Rare, Threatened and Endangered Species (ANR, 2019); Deer Wintering Areas (ANR, 2016); Boundaries (VCGI, 2016; NH Granit, 2014); Roads (VTrans, 2019); Building Footprints (VCGI, 2016), Waterbodies (VCGI, 2019)

The priority forest blocks and habitat connectors presented here and referred to in the text of the Regional Plan were derived from four separate but overlapping datasets developed by the Vermont Agency of Natural Resources (ANR) for Vermont Conservation Design and BioFinder. The four datasets combined here are: Highest Priority Interior Forest Blocks, Priority Interior Forest Blocks, Highest Priority Connectivity Blocks, and Priority Connectivity Blocks.

From VT ANR: Vermont Conservation Design is the data and the vision that is delivered through the BioFinder map interface. It is a tool that identifies features at the landscape and natural community scales that are necessary for maintaining an ecologically functional landscape – a landscape that conserves current biological diversity and allows species to move and shift in response to climate and land-use changes.

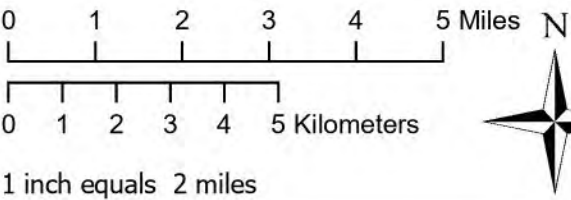
For more on BioFinder: <https://anr.vermont.gov/maps/biofinder/>



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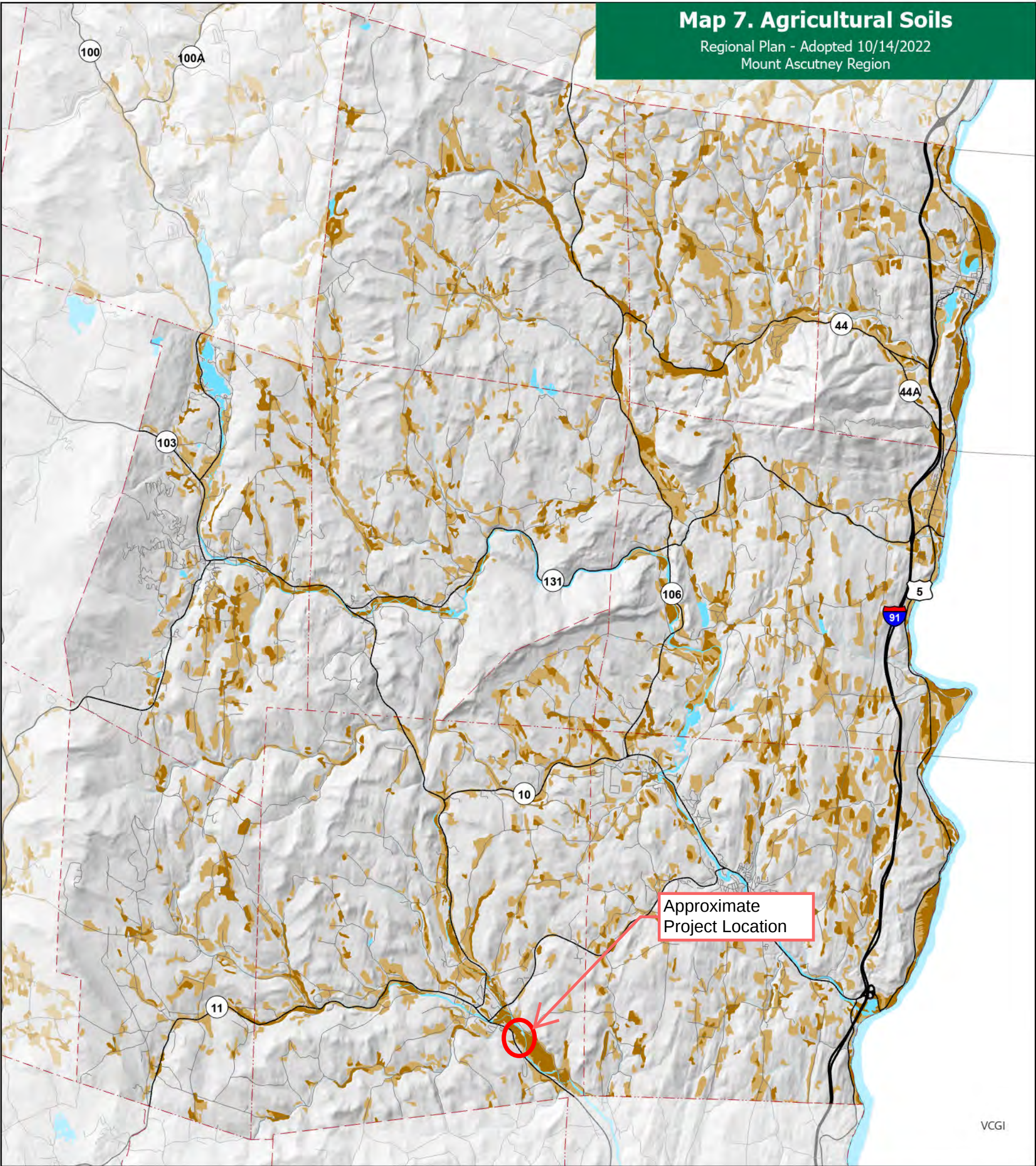
VT State Plane, Meters, NAD 83

Map drawn: March 9, 2021
Plan Adopted: October 14, 2022
Plan Effective: November 18, 2022



Map 7. Agricultural Soils

Regional Plan - Adopted 10/14/2022
Mount Ascutney Region



Prime Soils

- Prime Agricultural Soils
- Agricultural Soils of Statewide Importance

Roads

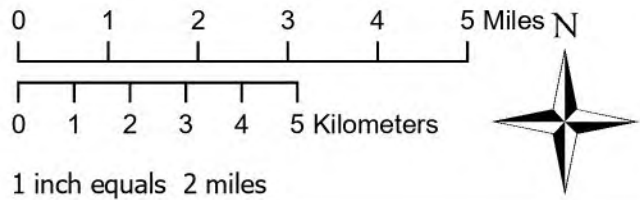
- Interstate
- US and State Highway; and Class 1 Town Highway
- All other Roads and ROW

Waterbodies

- Major Lakes and Ponds
- Major River

Soils of Statewide Importance are those which are of Statewide importance for the production of food, feed, fiber, forage, and oilseed crops. In Vermont, criteria for defining and delineating Statewide Important Farmland was determined by the appropriate state agencies, working with the Natural Resources Conservation Service (NRCS).

Data Sources:
Agricultural Soils (NRCS, 2016);
Boundaries (VCGI, 2016; NH Granit, 2014); Roads (VTrans, 2019);
Waterbodies (VCGI 2019); Hillshade (VCGI, 2016)



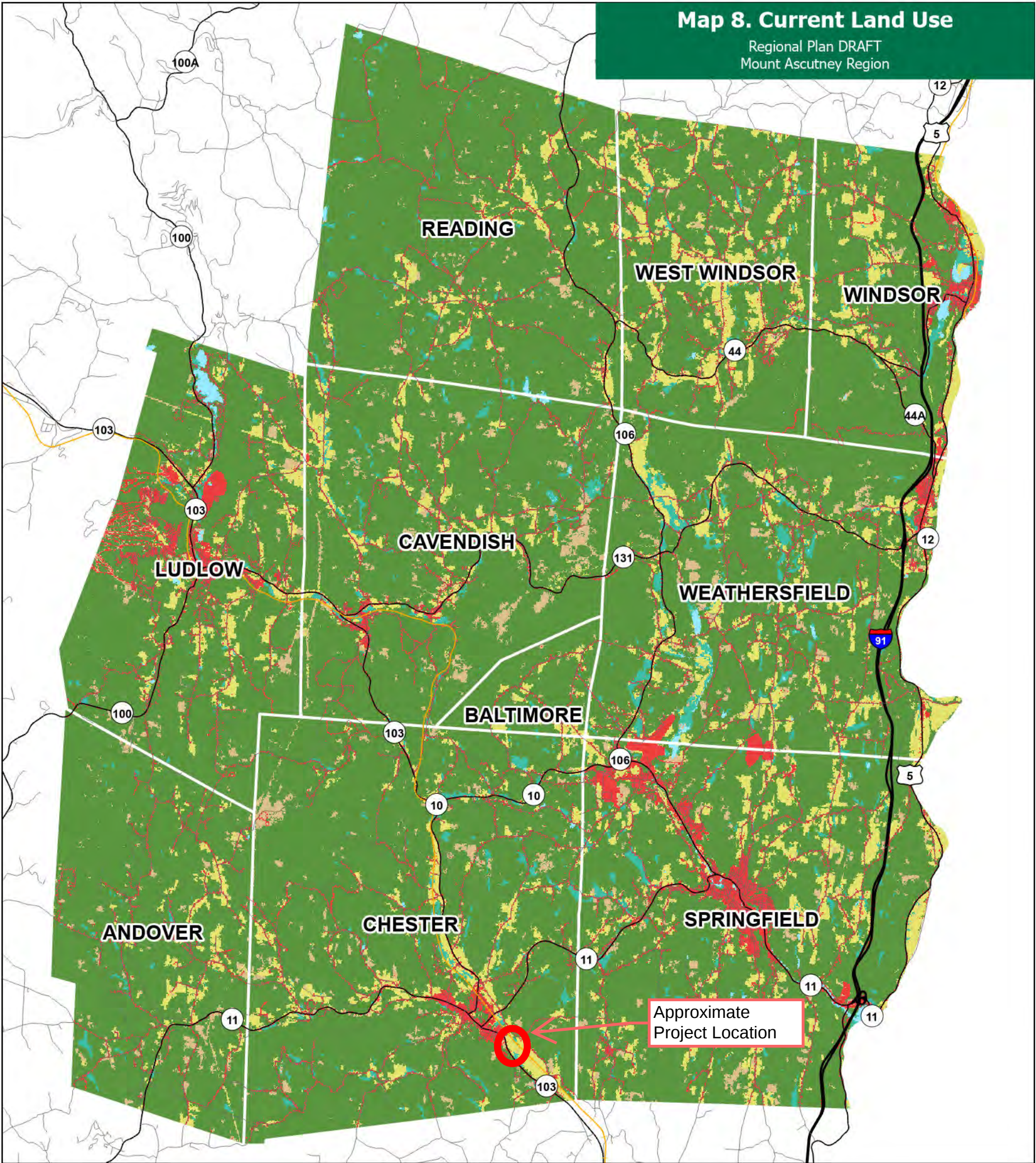
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VT State Plane, Meters, NAD 83

Map drawn: January 5, 2021
Plan Adopted: October 14, 2022
Plan Effective: November 18, 2022

Map 8. Current Land Use

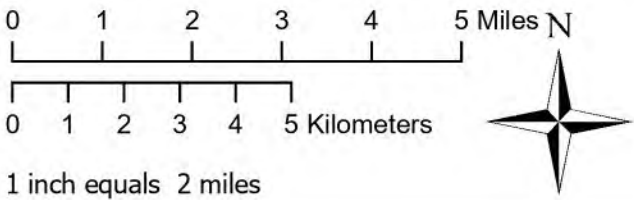
Regional Plan DRAFT
Mount Ascutney Region



- Developed
- Forest
- Agricultural
- Open Land (brush, transitional, or barren)
- Wetlands (including wooded wetlands)
- Water

Current land uses in the Mount Ascutney Region including developed areas, forests, agricultural areas, and wetlands. This is a simplified version of data from the 2019 National Land Cover Database (NLCD). The NLCD is provided by the Multi-Resolution Land Characteristics (MRLC) consortium, a group of federal agencies who coordinate and generate consistent and relevant land cover information at the national scale. NLCD data is collected by LandSat and has a resolution of 30 meters.

Data Sources:
Boundaries (VCGI, 2016; NH Granit, 2014); Roads (VTrans, 2019); Land Cover generalized from MRLC (NLCD, 2019)

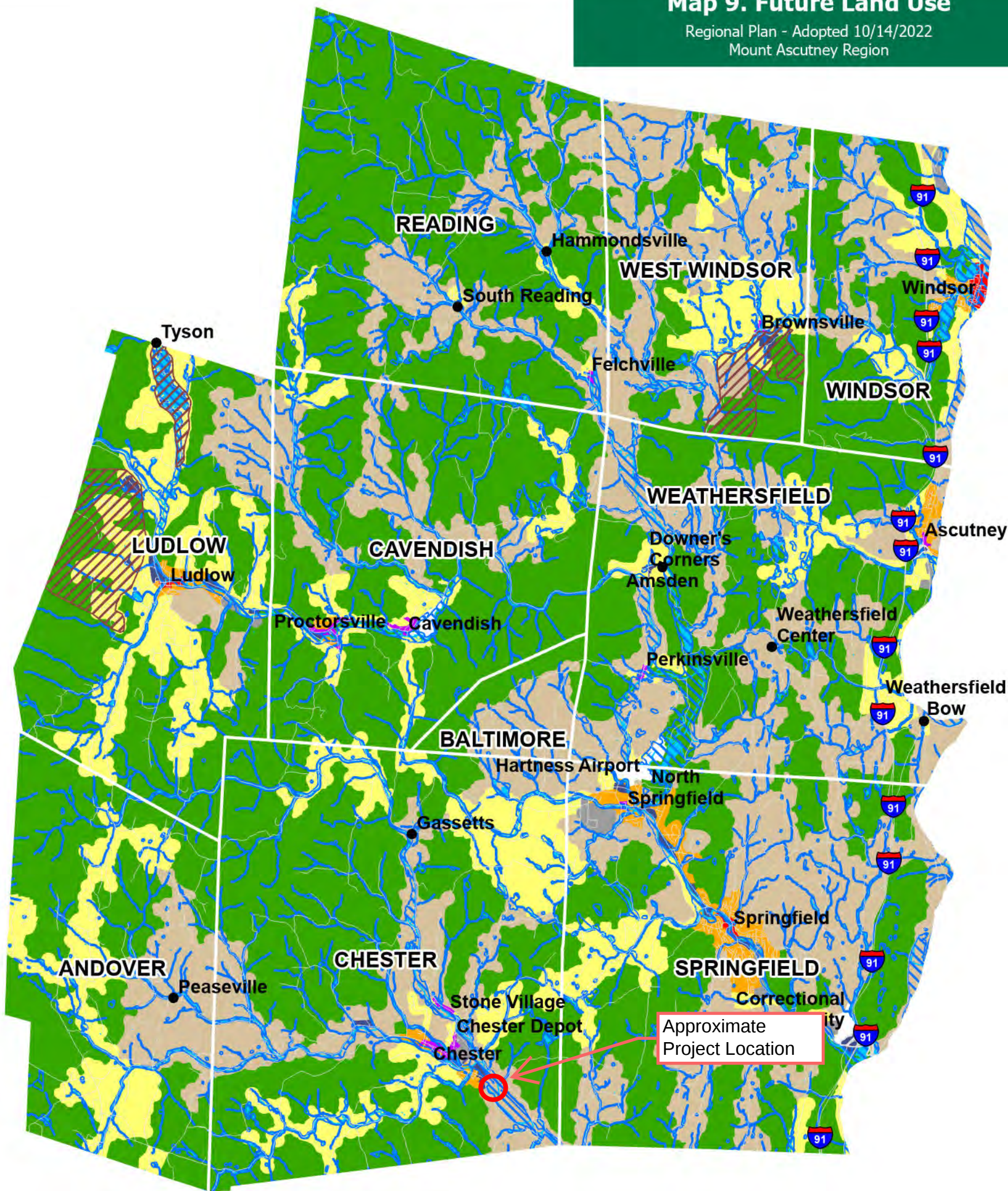


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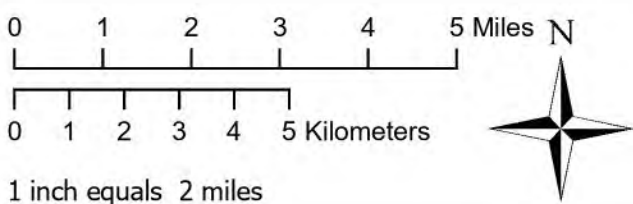
Map drawn January 11, 2022
Plan Adopted: October 14, 2022
Plan Effective: November 18, 2022

Map 9. Future Land Use
Regional Plan - Adopted 10/14/2022
Mount Ascutney Region



- Hamlet
- ▨ Interchange Overlay
- ▨ Resort/ Recreation Overlay
- ▨ Riparian Overlay
- Commercial Nodes/ Corridors
- Conservation
- Village Centers
- Industrial
- Neighborhood Residential
- Rural Residential
- Special Use Areas
- Town and Regional Centers
- Working Lands

Data Sources:
Boundaries (VCGI, 2016; NH Granit, 2014)



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VT State Plane, Meters, NAD 83

Map drawn: September 25, 2021
Plan Adopted: October 14, 2022
Plan Effective: November 18, 2022

Mount Ascutney Regional Commission

REGIONAL PLAN

VOLUME 3: ENERGY

Adopted June 25, 2018
Re-Adopted October 14th, 2022
Effective November 18th, 2022



Mount Ascutney Regional Commission
P.O. Box 320
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as oil, natural gas, and coal – and nuclear energy. Unlike fossil fuels, which are finite, renewable energy sources regenerate. Renewable energy sources include: solar energy from the sun, geothermal energy from heat inside the earth, wind energy, biomass, biofuels, and hydropower from flowing water.

In general, electricity is generated at power plants and moves through a complex system of electricity substations, transformers, and power lines – sometimes called “the grid” – that connect electricity producers and consumers. Figure 1 illustrates how “the grid” functions. Most “local” grids are interconnected for reliability and commercial purposes, forming larger, more dependable networks that enhance the coordination and planning of the electricity supply. In Vermont, VELCO operates the electric transmission system. In our region, Green Mountain Power and Ludlow Electric provide power within their respective service areas. Power is also generated at smaller, decentralized facilities, such as solar panels and wind turbines (i.e. “distributed generation”).

C. Purpose of Plan

Vermonters rely on energy to support their lifestyles. We are heavily reliant on fossil fuels for much of the energy that is currently consumed in southern Windsor County. Fossil fuels are problematic due to a number of factors including, their finite supply, highly variable costs, negative environmental impacts (e.g. extraction operations, fuel distribution, emissions, climate change), and need to be imported from outside of the region. In response, Vermont has established ambitious energy goals to conserve energy, increase the utilization of renewable energy, and reduce greenhouse gas emissions.

The intent of this plan is to serve as the energy element of the Mount Ascutney Regional Plan per 24 V.S.A. §4348a(a)(3) as well as to meet the requirements of an “Enhanced Energy Plan” in accordance with 24 V.S.A. §4352. The Mount Ascutney Regional Commission (MARC) intends to submit this Plan to the Commissioner of Public Service for a determination of energy compliance, which would enable this document to receive “substantial deference” in Section 248 proceeding. Accordingly, this Plan hereby embraces the State Energy Goals as referenced in 24 V.S.A. §4302(7), 10 V.S.A. §578(a), 10 V.S.A. §580, 10 V.S.A. §581, and in the 2016 Vermont Comprehensive Energy Plan.

D. ENERGY GOALS

In the 2016 Vermont Comprehensive Energy Plan (CEP), the State of Vermont identified a number of goals and strategies to achieve energy conservation throughout the state. The most significant of these goals is referred to as “**90/50**”. (See Below.)

By 2050, 90% of Vermont’s total energy will be derived from renewable sources.

This overarching goal has informed the regional conservation strategies and renewable generation requirements that are articulated throughout this plan.

State Statutes and the 2016 Vermont Comprehensive Energy Plan (CEP) contain energy planning goals that include but are not limited to:

- ❖ By 2025, 25% of remaining energy needs will be met by renewable sources, 40% by 2035, and 90% by 2050
- ❖ By 2025, total energy consumption per capita will be reduced by 15%, and by 2050 by more than one-third.



- ❖ By 2025 Renewable sources will meet the demand for 10% of transportation needs, 67% of electricity demand, and 30% of building energy demand.
- ❖ By 2032, 75% of electricity demand will be derived from renewable sources
- ❖ By 2050, 50% of electricity will be obtained from locally distributed energy generation.
- ❖ Major reductions in contributions to greenhouse gas emissions will be made.
- ❖ By 2020, 80,000 housing units will undergo weatherization in Vermont.

The MARC hereby adopts the goals established in statute and in the 2016 CEP for the region. The region will strive to achieve these goals through the detailed policies and actions identified in this plan. Below is a list of some of the methods outlined in this plan to further energy conservation and efficiency efforts within our region:

- ❖ Reduce total energy consumption throughout all sectors, including: electricity, space heating, and transportation.
- ❖ Support efforts at the local level to choose energy efficient and renewable options.
- ❖ Create a diverse mix of energy sources to reduce the impact of supply restriction.
- ❖ Utilize local, renewable sources of energy to decrease reliance on out-of-region, and out-of-state forms of fuel.
- ❖ Select energy choices that help preserve the environment.
- ❖ Strive for both an adequate supply of electricity, as well as a distribution network to meet the region's needs.
- ❖ Maximize energy efficiency by matching fuel type to end use.
- ❖ Support adaption and lifestyle changes that contribute to meeting the State's goals for future energy use and generation.

E. Plan Organization

This Plan is intended to address the Guidance for Regional Enhanced Energy Planning Standards as developed by the Vermont Department of Public Service on March 2, 2017. This document is organized into the following sections:

- Section I is an introduction that presents background information and highlights key issues for the region.

There are no significant non-renewable energy generation facilities in the region, with the exception of backup generators at substations. Electricity transmission service is provided by the Vermont Electric Power Company (VELCO). The existing transmission lines, three-phase power lines and substations are shown on the Utility Service Map. Consideration should be given to the condition of our electricity transmission system and its ability to support the state and regional goals for renewable energy targets. The MARC should engage with VELCO as it relates to this issue when updating Vermont's Long-Range Transmission Plan. Emerging technologies, such as battery storage, may help to address capacity issues with the grid.

Table 3: Renewable Energy Generation in Southern Windsor County			
Renewable Source	# of Sites	Installed Capacity (MW)	Annual Generation (MWh)
Solar	276	6.6	8,087
Wind	4	0.02	65
Hydropower	6	2.8	9,790
TOTAL	286	9.4	17,942

At this time in this region, energy production from renewable sources is limited. The region currently has 6.6 MW of installed capacity of solar energy between both roof-mounted and ground-mounted sites, the majority of which are residential units.¹¹ Only a few residential-scale wind turbines have been installed to date. The total installed capacity of these turbines, located in Cavendish, Ludlow, and Springfield, is roughly 0.02 MW. Active hydropower sites include the Green Mountain Power hydroelectric facility in Cavendish and five smaller facilities in Springfield that are all located along the Black River. These hydro facilities have over 2.8 MW of installed capacity. In addition, the Wilder and Bellows Falls hydropower facilities are located outside of the region, but affect some areas within southern Windsor County that lie along the Connecticut River. Biomass is presently used exclusively for heat.

In order to meet the 90/50 goal outlined in Vermont's Comprehensive Energy Plan, major increases in renewable electricity production for both the state and the region will be needed.

¹¹ <http://www.vtenergydashboard.org>

decrease. This can be seen in Figure 12 below. As with the statewide scenario, most of this decline will come from the regional residential heating and transportation sectors.

Overall, the total amount of energy utilized in the region will decline by 50% by 2050.

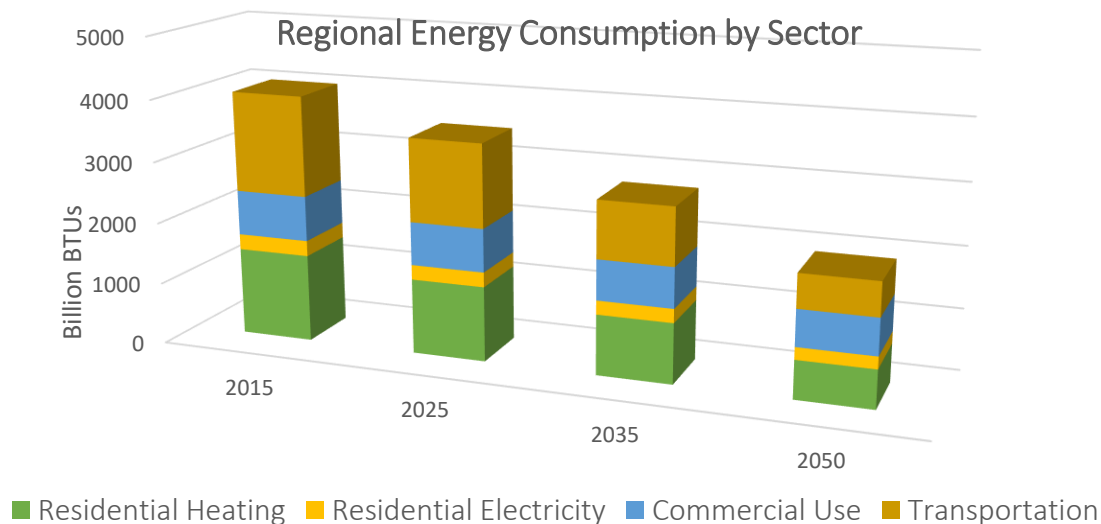


Figure 12: Southern Windsor County Regional Energy Targets by Sector (Source: LEAP Regional Model Goal Scenario)

The regional targets clearly show that a substantial increase in efficiency, conservation, and electrification of energy production and consumption will be needed across all sectors. Residential heating and transportation in particular will be transformed, with the most dramatic change over the next 30 years. Transportation energy consumption will need to drop by over 65%, and Residential Heating by 56%, in order to meet the 90/50 goal by 2050. Note that these aspirational targets are primarily intended to show the scale and types of changes needed to achieve the energy goals. They represent only one potential pathway to 90/50.

C. Regional Energy Use by Fuel Type

In order to meet 90/50 energy targets, the changes required for the region generally mirror the changes necessary for the entire state. Figure 13 below illustrates the following changes in regional energy consumption by fuel type across all sectors:

- A dramatic reduction in total energy consumption by approximately 50%;
- A shift from nonrenewable to renewable direct energy sources; and,
- Growth in demand for electricity generated from renewable sources.

The direct consumption of energy from nonrenewable fuels such as diesel, gasoline and heating oil will fall from 69% of total energy consumption to 8% by 2050, according to the LEAP analysis. Direct energy consumption from renewable fuels, such as wood for heating, ethanol and biodiesel, will increase from 18% to 53% of total regional energy consumption over the same period. Electricity consumption, which currently makes up only 13% of regional energy demand, will make up the difference and increase to 39% of total energy consumption due to the increase in utilization of electricity for space heating and transportation. Currently, generation of

electricity by renewable sources is minimal as a percent of total generation, but will become the primary fuel source by 2050 in order to meet state goals. The breakdown of electricity generation by fuel source and transition to renewable fuels is described in the section on target electricity generation.

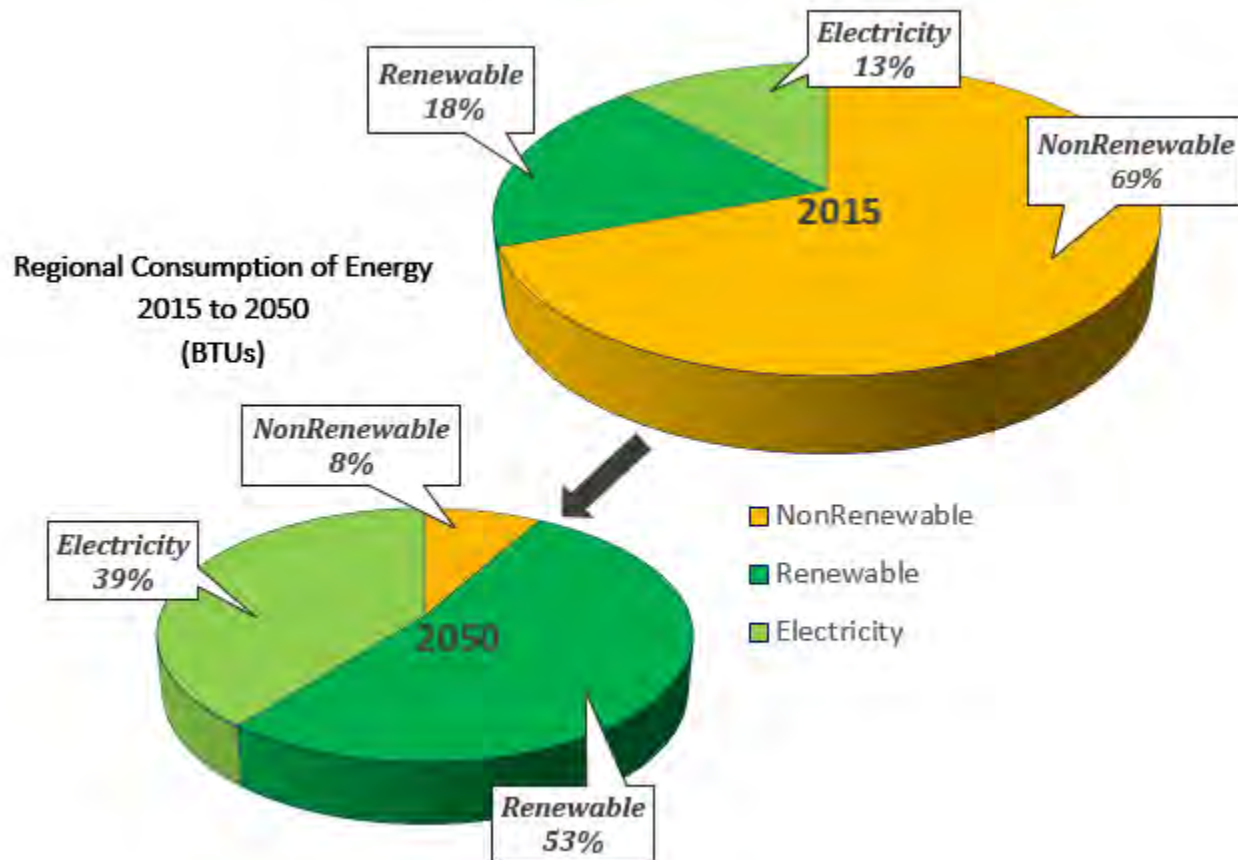


Figure 13: Regional targets for energy consumption across all sectors. Note how the size of the 2050 pie chart shrinks to about half the size of 2015, reflecting the overall reduction in energy demand needed to meet energy goals. Electricity will largely be generated from renewable sources by 2050. The other energy sectors are broken down by renewable and non-renewable, reflecting the significant shift away from non-renewables by 2050.

90% of regional energy demand will be generated with renewable sources by 2050.

Figure 14 below gives a closer look at the breakdown by fuel source. In order to meet the energy goals, transportation fuels that today are primary sources of fuel, such as gasoline and diesel, will need to be almost entirely eliminated by 2050. It is anticipated that, along with increased vehicle electrification, biodiesel will be utilized as an alternative to the fuels used now by the trucking fleet. More on these changes can be found in the transportation and space heating portions of this section. Although compressed natural gas is expected to be utilized by other regions throughout the state, the Region has no pipeline and it will therefore not be incorporated in this plan as a “bridge” fuel. Under this scenario, fuel oil for heating is replaced by heat pumps and wood, including cord and pellet. Due to the elimination of other fuel sources, wood increases as a proportion of total energy consumption, going from 15% in 2015 to 28% by 2050.

G. Electricity Generation Targets

State Electricity Generation Targets

As mentioned in Section II, the majority of the Vermont's electricity is provided by out-of-state sources, most notably Hydro Quebec, as well as limited in-state sources. This leaves the state of Vermont vulnerable. The closing of the Vermont Yankee nuclear power plant further limited the amount of electricity generated within the state. To compensate for this loss in electricity generation, some regions have utilized natural gas and wood biomass powered generators. Other renewable sources of energy will be able to further bridge this growing gap of electricity production. Nuclear has very high life-cycle costs for energy production, and there is no permanent long-term plan for waste storage. It seems unlikely that a new nuclear power plant will be permitted in Vermont. For the purposes of this

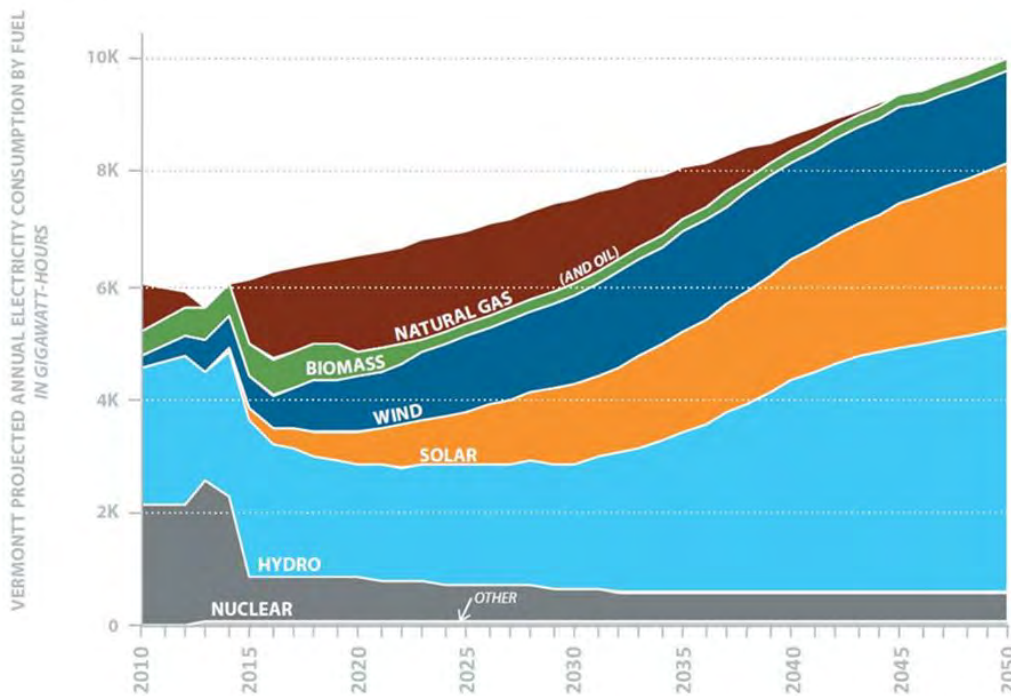


Figure 19: Projected Electricity Consumption Annually in Vermont (VEIC)

plan, we are assuming that no new non-renewable power plants (i.e. nuclear or fossil fuel-based power plants) will be constructed in this region.

Due to the dramatic increase in electricity consumption required for the state to achieve the 90/50 goal, it is estimated that 50% of Vermont's electricity will need to be produced in-state. Figure 19 shows that by 2050 total state annual electricity demand will increase from 6,000 GWh to 10,000 GWh. This increase is primarily due to the transition for heating and transportation away from fossil fuels to electricity. Anticipating the increased demand for electricity production, the LEAP model has predicted that hydro, solar, and, wind power will be the prevailing sources of electricity production throughout the state. Hydroelectric is estimated to provide half of the state's electricity production by 2050, however, the majority of this supply will be imported. Projections also indicate that nuclear power, along with natural gas, will decrease over time as sources of

electricity. By 2050, there should be little to no fossil fuel-based electricity production in the state. Figure 19 also shows that in-state solar and wind generation will provide 5KGwh or 50% of total electricity demand by 2050.

Regional Electricity Generation Targets

As noted earlier, the need for electricity within the region will double over the plan period, and will become a considerable portion of the region's overall energy usage by 2050. The increase in regional electricity consumption by sector is shown in Figure 20. The remainder of this section will discuss the projected regional electricity generation targets as modeled by LEAP and one scenario for providing that additional generation capacity.

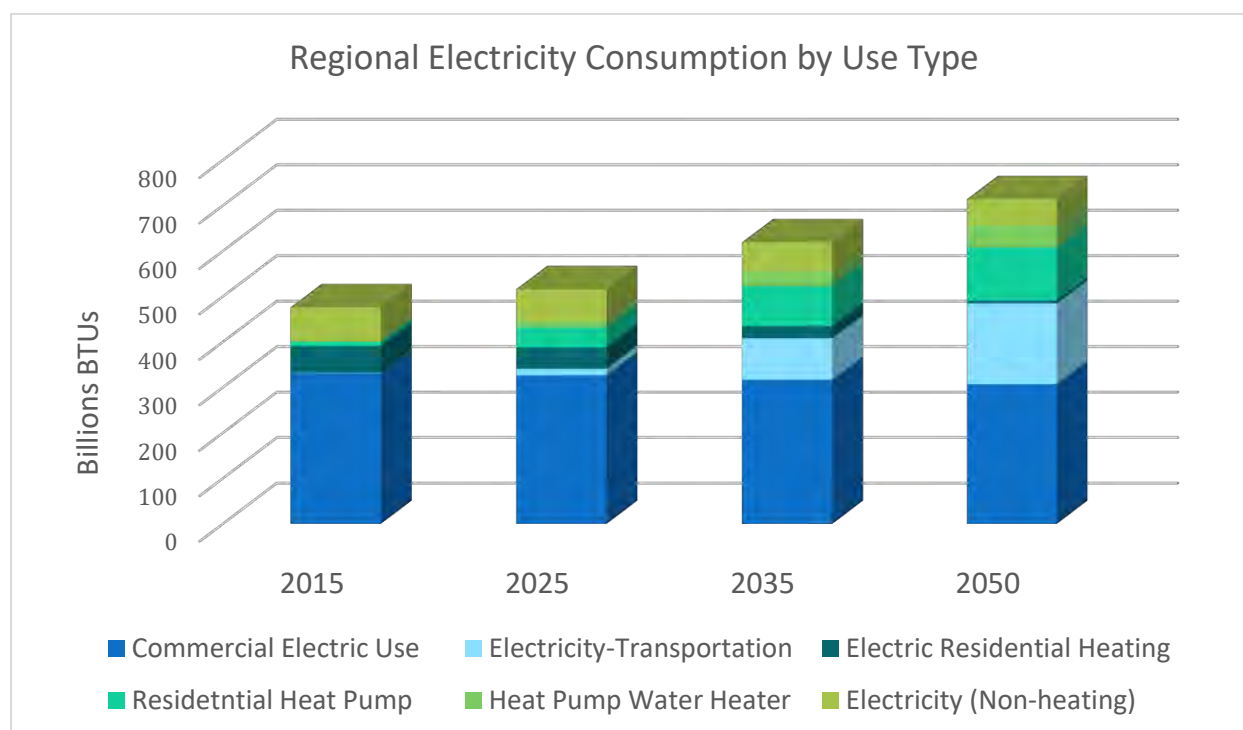


Figure 20: Southern Windsor County Electricity Consumption Targets by Use Type

The Department of Public Service and the regional planning commissions developed targets for regional generation. Targets were allocated to regions based on estimates generated by the LEAP model. Population and current and prospective generation potential were among the variables considered when determining the regional generation target. The intent of the targets is to achieve the overall state goals of generating 50% of statewide electricity demand in-state, and to have 90% of all energy come from renewable sources.

The resulting regional renewable generation target for the southern Windsor County region of 194,612 MWh was then broken down by town and is outlined in Table 8. The target MWh generation for each town in the region was determined by the regional planning commission. Each town's target is based on several factors, each as a percentage of the regional total: town population; the potential land area for ground-mounted solar generation, which is determined from resource mapping (See the maps in Appendix B); and each town's commercial/industrial electricity usage. For reference purposes only, the potential land area used for this exercise was based on solar potential within 1 mile of 3-phase power lines in each municipality.

Table 8: Renewable Energy Generation Targets By Town	Population	Percent Contribution	Target (MWh)
Andover	550	5%	10,261
Baltimore	292	2%	3,496
Cavendish	1504	7%	13,588
Chester	3110	12%	24,015
Ludlow	2140	11%	21,825
Reading	708	4%	8,298
Springfield	9258	32%	62,386
Weathersfield	2794	11%	21,811
West Windsor	1136	5%	9,884
Windsor	3496	10%	19,078
Total Regional Target	24,988	100%	194,612

H. Renewable Energy Generation Targets

❖ Statement of Policy on the Development and Siting of Renewable Energy Resources

The intent of this plan is to provide for the development of renewable energy resources per 24 V.S.A. §4302(c)(7) in order to achieve the goals established in the *2016 Vermont Comprehensive Energy Plan*. In order to meet 90% of Vermont's energy need from renewable sources by 2050 a significant amount of new renewable energy generation will be necessary, in addition to conservation efforts. Our target to meet the 90% by 2050 state goal is to develop 194,612 MWh of new renewable energy generation output. (This target is equivalent to installed capacity of 158.7 MW of ground-mounted solar.) The purpose of this sub-section is to articulate how we wish to achieve the Region's target.



❖ Renewable Generation Targets

As further described below, developing a mix of renewable generation types is desirable in order to meet the overall renewable targets established in this plan. The targets presented in Table 9 represent one possible scenario for how southern Windsor County can meet the region's overall renewable generation target.

Table 9: Renewable Generation Targets (MWh)	2025	2035	2050
Rooftop Solar	6,630	10,605	23,861
Ground-Mounted Solar	41,235	82,661	158,876
Wind (residential-scale)	613	3,066	6,132
Hydro	175	974	5,743
Total New Renewable Generation Target	48,653	97,306	194,612

This particular scenario for regional renewable generation targets was determined based on resource mapping, assumptions on site cost feasibility, and regional preferences regarding industrial wind generation. (See the related discussion in Section IV). Resource mapping, which is described in more detail in the sub-section below, identifies site generation potential for both solar and wind. Site generation potential is determined based on known and potential land use constraints. The following assumptions were then applied to determine the region's renewable generation targets.

1. Maximize the potential that the region has for rooftop solar.
2. Maximize the potential for generating hydro power at 22 existing dam sites.
3. Determine contribution from residential-scale wind turbines. (Utility-scale and commercial-scale wind generation are not considered in this scenario.)
4. Determine ground-mounted solar generation from preferred sites and most cost efficient mapped areas.

As more fully explained in the Energy Resource Map sub-section below, these targets represent a very small percentage of the total potential for the region. In 2050, our ground-mounted solar target is only 2.4% of the region's solar potential. This 2050 ground-mounted solar target is equivalent to about 130 MW of installed capacity, which might require an estimated 1,040 acres of land to accommodate the solar arrays and related facilities. The wind target is only 0.02% of the total potential in southern Windsor County, representing the installation of about 200 residential-scale wind turbines, each approximately 30 meters high measured at the hub.

There are a few projects in development that are not incorporated in the existing conditions baseline for the region. These projects, discussed in more detail below, are either recently approved but not yet constructed and online, or petitions for a Certificate of Public Good are still pending. It is the MARC's assumption that once approved and online, these pending new facilities will contribute toward meeting the new renewable generation targets.

❖ Energy Resource Maps

This section describes how energy resource maps are generated and interpreted when analyzing the region's potential for solar and wind generation.

POTENTIAL AREAS

The wind and solar maps both include “potential areas,” which depict the portions of the region that have the potential for renewable energy generation based upon computer models and GIS mapping data. These areas do not represent “preferred sites” nor do they indicate with exact precision where solar and wind projects are desired to be constructed. Rather, they delineate where the potential for generation exists, and aid in evaluating whether sufficient land area exists to meet our regional renewable generation targets. In fact, some sites located outside of the mapped potential areas may prove to be viable for renewable energy generation.

Potential areas reflect two types of constraints: “known constraints” and “possible constraints.” Both are described below:

“Known Constraints” involve conditions which would likely make development not feasible. Known constraints include the following resources:

- a) Vernal pools with a surrounding 50-foot buffer;
- b) DEC river corridors;
- c) FEMA floodways;
- d) State significant natural communities and rare, threatened and endangered species;
- e) National wilderness areas; and,
- f) Class 1 and Class 2 wetlands.

“Possible Constraints” have potential for renewable energy generation, but have one or more of the constraints listed below. These constraints signal conditions that would likely require mitigation and which may render a site unsuitable after a site-specific study has been conducted. Currently adopted and in-force state, regional or local policies may prevent development in areas with Possible Constraints.

- a) Agricultural soils (NRCS-mapped prime agricultural soils, soils of statewide importance or soils of local importance);
- b) Act 250 agricultural soil mitigation areas;
- c) FEMA special flood hazard areas (floodplain);
- d) Protected lands (state fee lands and private conservation lands);
- e) Deer wintering areas;
- f) ANR conservation design highest priority forest blocks; and,
- g) Hydric soils.

The accompanying maps show “prime” areas for both solar and wind resources. These prime areas represent potential areas that avoid both types of constraints (i.e. “known constraints” and “possible constraints”).

The accompanying maps also show “secondary” areas for both solar and wind resources. These secondary areas do not have any “known constraints” based on available GIS data, but they have one or more “possible constraints” present.

See the Constraints Map for more detail.

PREFERRED SITES

The following sites indicate preferred locations for siting a generator of a specific size or type in this region:

- a) Rooftops of existing buildings;
- b) Remediated brownfield sites;
- c) Disturbed portions of extraction sites (i.e. gravel pit, quarry);
- d) Vacant lands within industrial parks; and,
- e) Any preferred sites that are clearly and specifically identified in a municipal plan that has received an affirmative determination of energy compliance.

The MARC reached out to our towns as part of the process to develop this plan. Local planning commissions and energy committees found it very challenging to identify specific preferred sites on a map. No specific preferred sites were located on a map for this Regional Energy Plan. The MARC will work with developers and municipal boards to consider proposed preferred sites under PUC Rule 5.100 for any specific sites not clearly within the above categories.

UNSUITABLE AREAS

This category represents areas that are not suitable for renewable energy generation projects (i.e. “no go” areas). Unsuitable sites include the presence of one or more of the “known constraints” as described above. However, there may be other unsuitable areas that cannot be mapped at this time (i.e. archeological resources).



The MARC will provide technical assistance to our member towns to develop local enhanced energy planning maps, including but not limited to identifying local constraints and preferred sites.

Solar Resource Potential

The growth of solar power generation projects in this region has been significant between 2013 and 2017. According to data provided in support of this enhanced energy planning process as of May 2017, this region has 276 known solar project sites with a total capacity of nearly 6.6 MW. Common issues with ground-mounted solar projects include, but are not limited to, choosing a suitable site for the scale of the project, setbacks from roads and adjacent buildings, landscaping/screening, maintenance, and site decommissioning.

The Potential Solar Resources Map shows where prime and secondary ground-mounted solar potential sites are located in relation to transmission lines and three-phase power lines. The solar potential data is based upon a computer model that takes slope direction, slope steepness, and solar radiation values into consideration. Figure 21 depicts the proportional relationship between the total land area in the

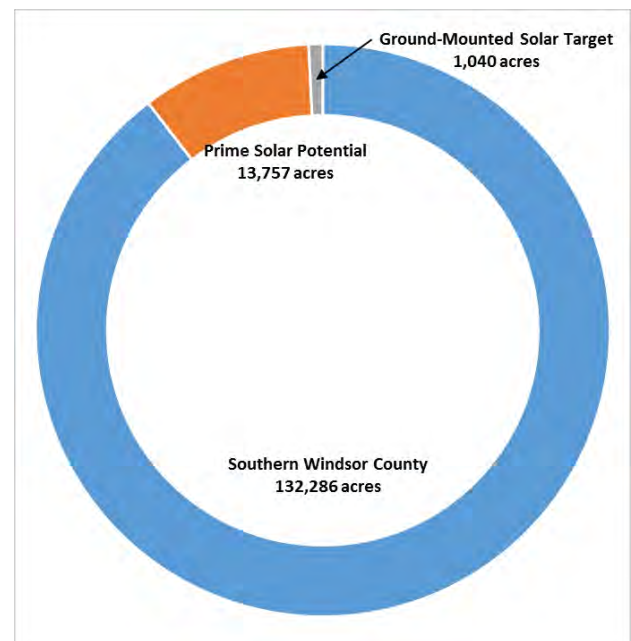


Figure 21: Proportional relationship between total land area in the region, land area of prime solar potential, and the estimated land area needed to address our renewable target via ground-mounted solar in Table 9.

region, prime solar potential land area, and estimated land area needed to meet the ground-mounted solar target.

Approximately 43,700 total acres of combined prime and secondary solar potential land areas were in the region. That is about 33% of the region's total land area. Reducing the solar potential area to include only those areas within 1 mile from 3-phase power lines resulted in a reduced solar potential land area of just over 18,000 acres, or nearly 14% of the land area of the region. There are nearly 6,175 acres of prime solar potential land within 1 mile of 3-phase power lines. If we were to meet our region's total renewable energy target through ground-mounted solar alone, we would need an estimated 1,270 acres, which is about 1% of the total land area in the region. These areas represent a combination of public and privately-owned lands.

Certain projects are perfectly sited, such as a 150 kW photovoltaic array constructed on town-owned land on a south-facing slope behind the Cavendish wastewater treatment facility. It is hidden from view from most vantage points. There are no neighbors, and travelers on the adjacent section of VT Route 131 would never know it is located there. (See Figure 23.)

In 2016, a petition was withdrawn for a 4.5 MW ground-mounted solar project proposed to be located on the prison lands in Windsor due to local opposition and concern for both the scale of the project and impacts upon scenic resources and wildlife habitat. The MARC did not take a formal position on the project.

In 2017, the Public Utility Commission issued a Certificate of Public Good (CPG) for a 20 MW solar power generation facility in Ludlow and Cavendish known as the Coolidge Solar Project [Docket #8685]. This project is not included in the existing conditions data presented in this plan due to the timing of the CPG. Despite the project's large size, the visual impacts are highly localized due to its location in a bowl-shaped area. The Coolidge Solar Project is in very close proximity to the existing Coolidge Substation.

Wind Resource Potential

According to available data (May 2017), there are four known wind turbine sites in this region, generating about 0.02 MW of installed capacity and nearly 65 MWh of output. There have not been any commercial- or utility-scale wind power proposals in this region to date. Notable local opposition has been observed for recent utility-scale wind turbine proposals in Grafton and Windham, located adjacent to this region.



The wind potential (i.e. utility-scale) is greatest in the western portion of the region. However, residential-scale wind generation may be possible throughout most of the region at lower elevations. The Wind Resources Map shows where prime and secondary wind potential sites are located in relation to transmission lines and three-phase power lines. The wind potential data is based upon a numerical weather model and a micro-scale wind flow model to produce a high-resolution (200m) wind resource map. The models are the product of a collaborative effort between the Massachusetts Technology Collaborative, the Connecticut Clean Energy Fund and the Renewable Energy Trust Northeast Utilities. It is intended as a preliminary assessment of wind potential areas.

D. Renewable Energy Generation

General Renewable Energy Generation Strategies

The following tactics focus on implementing strategies for increasing renewable energy production, which will contribute to achieving the 90/50 goals for all previous sectors (Electricity, Transportation, and Thermal Efficiency).

*Total regional
renewable generation
of 194,612 MWh by
2050*

- 1) Show support for renewable energy generation facilities that conform to our statements of policy on the development and siting of renewable energy resources.
- 2) Promote and/or structure policies and incentive programs to promote installation of solar projects where there is electricity demand and on locations where the land has already been impacted by previous development (e.g. roofs, parking lots, landfills).
- 3) Promote the utilization of [passive solar design](#) and siting principles to be incorporated into new buildings in order to reduce heating loads.
- 4) Support updates to municipal building standards and energy codes that promote incorporation of solar photovoltaics for new construction and major renovations.

Solar Generation

The following statements of policy apply to the development of solar energy generation projects in the Mount Ascutney region:

- 1) Encourage the exploration of newer technologies that improve energy production and/or reduce impacts as they become available.
- 2) Encourage infrastructure improvements that further our energy goals (e.g. larger container sized battery storage systems).
- 3) Support rooftop solar projects.
- 4) Encourage the location of solar projects on preferred sites, as identified in this Plan, as long as they are appropriately designed and scaled for the character of the area in which they are located.
- 5) Support residential-scale ground-mounted solar projects.
- 6) Ground-mounted solar projects of 150kW and greater must demonstrate that the proposed project siting is appropriate in scale as it relates to the character of the area in which it is to be located, and that all reasonable options have been considered in siting the facility.
- 7) The setback standards in 30 V.S.A. §248(s) apply to all applicable ground-mounted solar projects.
- 8) All ground-mounted solar projects of 150 kW or greater²⁰ that are within view of major roadways (i.e. interstate highways, state highways, US routes, and Class 1 and Class 2 town highways) must provide adequate landscaping in order to appropriately screen the project from the view of the traveling public.
 - a) This landscaping must consist of a mix of native plants that provide adequate screening during all months of the year (i.e. conifers or a mix of deciduous and conifers).
 - b) All landscaping materials will be planted at a size that provides adequate screening within 5 years of being planted.
- 9) The applicant must maintain any landscape plantings required for mitigation, including the replacement of any dead or diseased vegetation serving as part of the landscape mitigation measures, throughout the life of the project or until the project ceases commercial operation.
- 10) The applicant is expected to provide a plan for the site to be adequately decommissioned at the time when the project ceases commercial operation in accordance with PUC Rule 5.900.
- 11) Ground-mounted solar facilities must avoid “known constraints”.



Figure 23: This is a photo of the Town-owned 150 kW solar project in Cavendish as described on page __. This is an example of a perfectly sited project. Because it is not visible from any major public roads and has no neighbors, no landscaping is warranted. (Credit: Peter LaBelle)

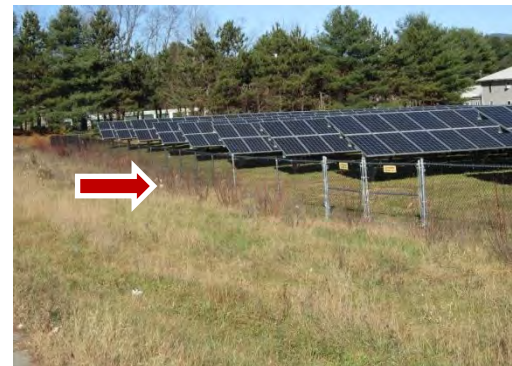


Figure 24: This project is an example of inadequate landscaping/screening. Note deciduous shrubs do not provide year-round screening, small plants will take many years to grow up to provide effective screening, and a lack of mowing the grass between the landscaping and roadway, which is to the left of the photo.

²⁰ This includes all applicable projects that are not exempt under [PUC Rule 5.800](#).

- 12) Ground-mounted solar facilities must not have undue adverse impacts on “possible constraints”. In addition, applicants shall demonstrate that the project will not have undue adverse impacts on significant wildlife habitat, wildlife travel corridors, stormwater, water quality, flood resiliency, important recreational facilities or uses, scenic resources identified in this plan, or inventoried historic or cultural resources. Project proposals must consider placement of such facilities in locations where impacts are minimal or employ reasonable measures to mitigate undue adverse impacts on the applicable resources.

Wind Generation

The following statements of policy apply to the development of wind energy generation projects in the region:

- 1) The MARC supports the installation of residential-scale wind turbines (i.e. not to exceed 30 meters in height, measured at the hub).
- 2) The MARC encourages consideration of newer technologies (e.g. vertical axis wind turbines).
- 3) Commercial-scale wind turbines (i.e. not to exceed 50 meters in hub height) must demonstrate that the proposed project siting is appropriate in scale as it relates to the character of the area in which it is to be located, and the applicant must also demonstrate that all reasonable options have been considered in siting the facility.
- 4) All wind turbines and related facilities (e.g. access roads, power line interconnections) must avoid “known constraints”.
- 5) All wind turbines and related facilities must not have undue adverse impacts on “possible constraints”. In addition, applicants shall demonstrate that the project will not have undue adverse impacts on public safety (e.g. ice shedding, ice throw), significant wildlife habitat, wildlife travel corridors, stormwater, water quality, flood resiliency, important recreational facilities or uses, scenic resources identified in this plan, or inventoried historic or cultural resources. Project proposals must consider placement of such facilities in locations where impacts are minimal or employ reasonable measures to mitigate undue adverse impacts on the applicable resources.

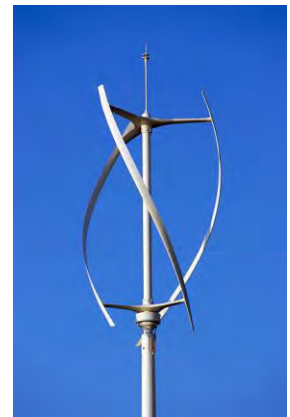
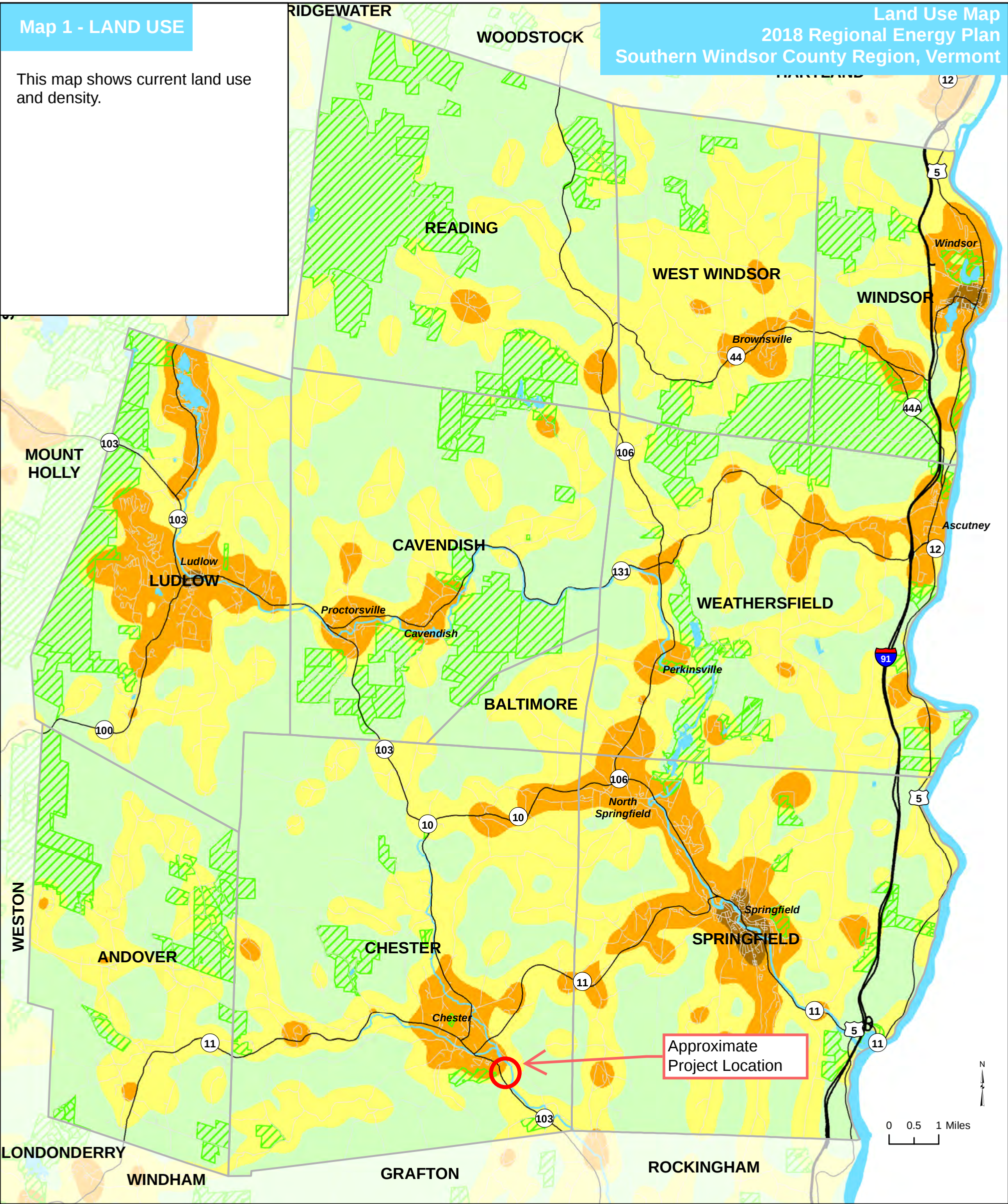


Figure 25: This photo is an example of a vertical axis wind turbine.

Map 1 - LAND USE

This map shows current land use and density.

Land Use Map
2018 Regional Energy Plan
Southern Windsor County Region, Vermont



- HIGH RESIDENTIAL DENSITY**
"Urban" area with at least 1 unit per acre. Also includes significant commercial and industrial uses.
- MEDIUM RESIDENTIAL DENSITY**
"Suburban" area with between 1 unit per acre and 1 unit per 10 acres. Also includes some commercial and industrial uses.
- LOW RESIDENTIAL DENSITY**
"Exurban" area with between 1 unit per 10 acres and 1 unit per 200 acres.
- RURAL**
"Rural" area with less than 1 unit per 200 acres.

- Housing Density**
- Undeveloped or Rural (less than 0.025 units per acre)
 - Exurban (0.025 to 0.1 units per acre)
 - Suburban (0.1 to 1 unit per acre)
 - Urban (at least 1 unit per acre)
 - Conserved Lands
 - Interstate
 - US & VT Highway; and Class 1 Town Hwy
 - All other roads and ROW
 - Major River
 - Major Lakes and Ponds
 - Town

Data sources: Housing Density (ACRPC 2013 using 2011 esite data), Conserved lands (Protected Lands Database) (VCGI and others 2016), Waterbodies (VHD 2008), Roads (VTrans 2015), Town Boundaries (VCGI 2012).

SWCRPC
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION
PO Box 320, Ascutney, VT 05030
www.swcrpc.org

VT State Plane, Meters, NAD 83
Map for planning purposes only.
Not for regulatory interpretation.

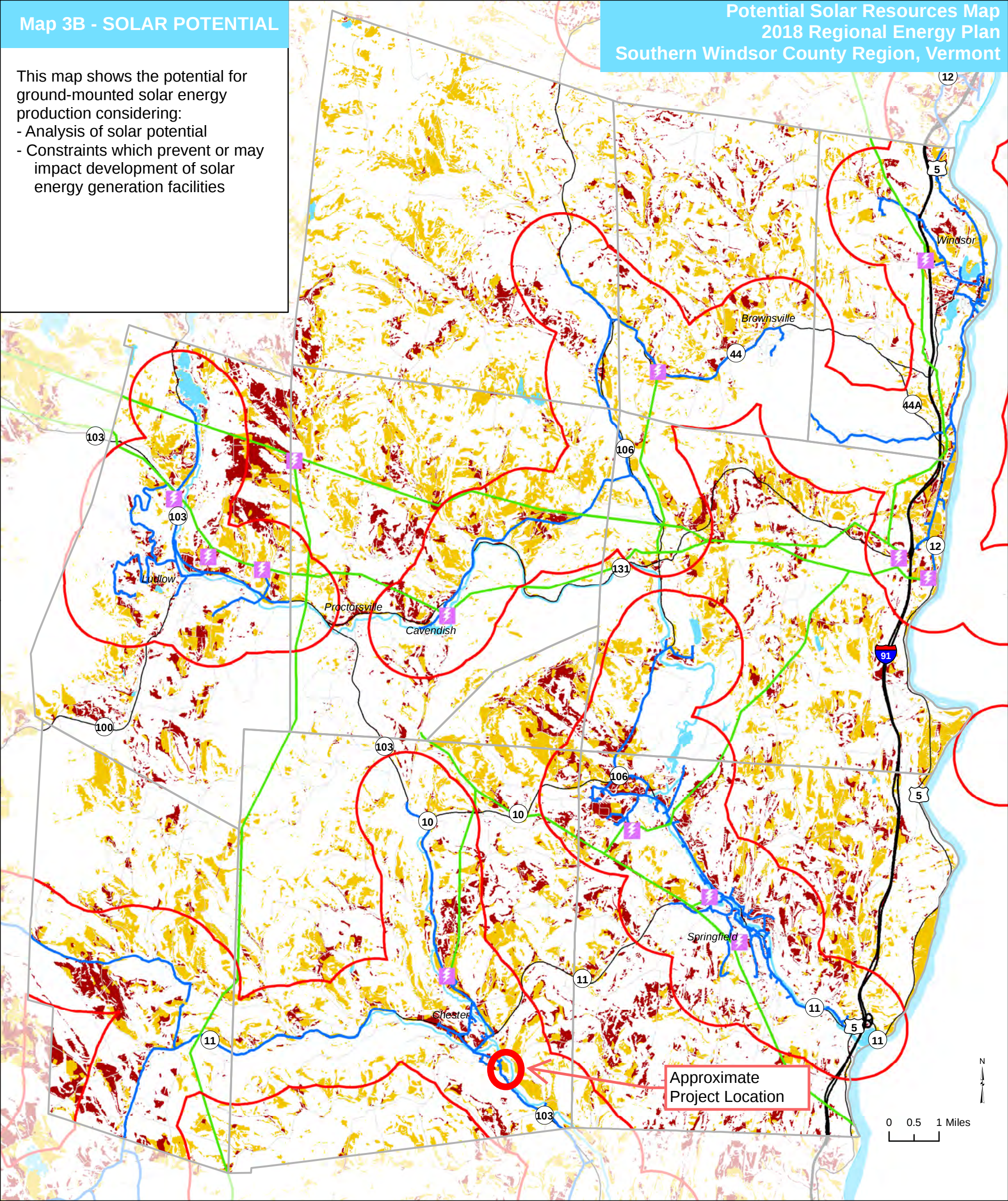
Map drawn June 22, 2017
Plan Adopted: June 25, 2018
Plan Effective: July 30, 2018

Map 3B - SOLAR POTENTIAL

Potential Solar Resources Map
2018 Regional Energy Plan
Southern Windsor County Region, Vermont

This map shows the potential for ground-mounted solar energy production considering:

- Analysis of solar potential
- Constraints which prevent or may impact development of solar energy generation facilities



**PRIME SOLAR POTENTIAL/
No known constraints**



**SECONDARY SOLAR POTENTIAL/
Possible constraints**



Substation



Electric Transmission Line



Three Phase Electricity Distribution Lines



Area within 1 mile of existing three phase electricity distribution lines



Interstate



US & VT Highway; and Class 1 Town Hwy



All other roads and ROW



Major River



Major Lakes and Ponds



Town

Solar potential for ground-mounted systems was calculated to consider the following conditions:

- slope direction
- slope steepness
- radiation values from ESRI solar analyst

For more info see <http://vcgi.vermont.gov/opendata/act174>

The Regional Energy Planning Standards are available at <http://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards>

Data sources: Prime and Secondary Solar Potential (VCGI 2017), Three Phase Electricity Lines (BCRC 2015 and Town/ RPC 2018), Buffer on Three Phase Lines (SWCRPC 2018), Transmission Lines (RPC 2016), Substations (RPC 2017), Waterbodies (VHD 2008), Roads (VTrans 2015), Town Boundaries (VCGI 2012).

SWCRPC
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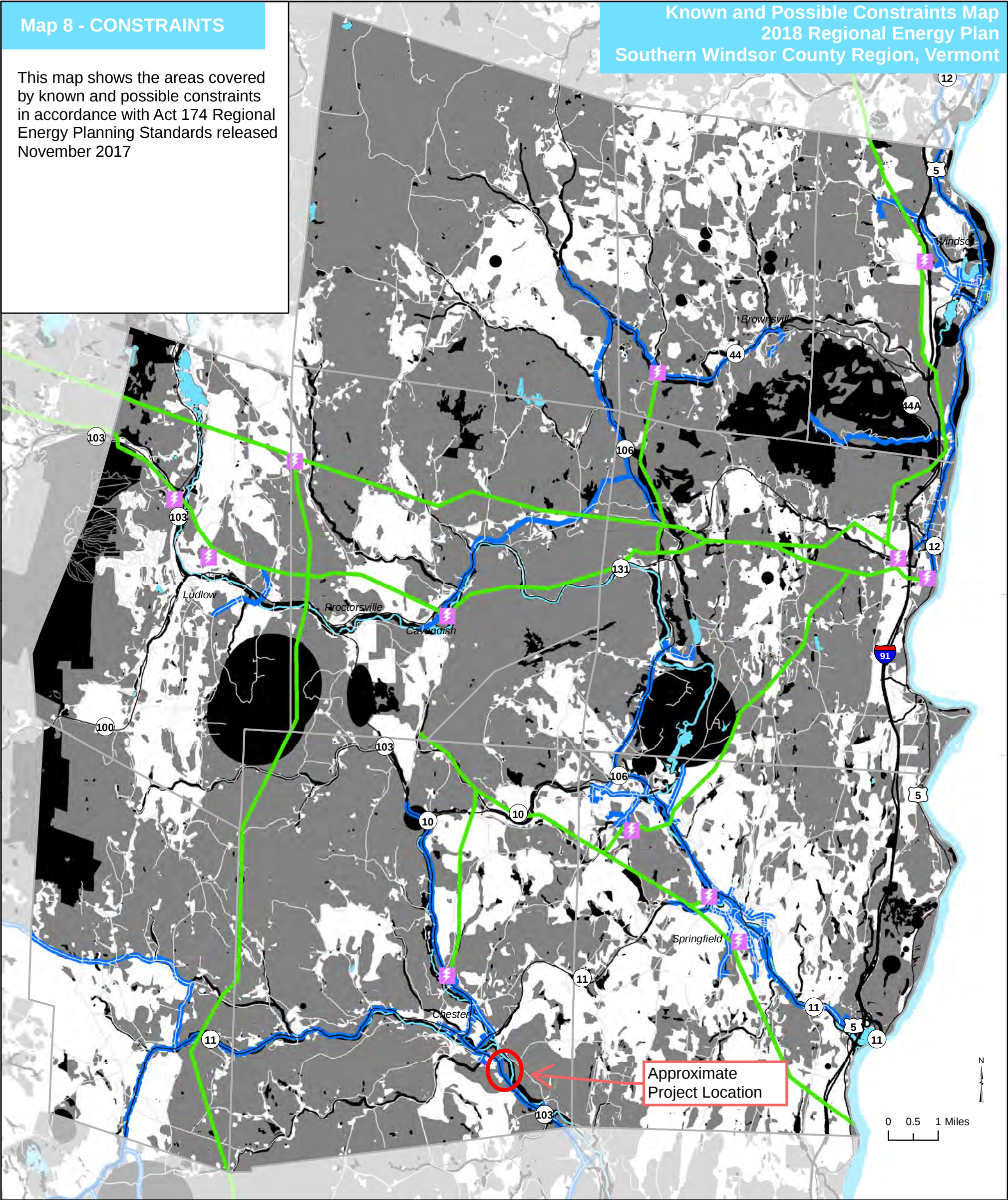
VT State Plane, Meters, NAD 83
Map for planning purposes only.
Not for regulatory interpretation.

Map drawn May 14, 2018
Plan Adopted: June 25, 2018
Plan Effective: July 30, 2018

Map 8 - CONSTRAINTS

This map shows the areas covered by known and possible constraints in accordance with Act 174 Regional Energy Planning Standards released November 2017

Known and Possible Constraints Map
2018 Regional Energy Plan
Southern Windsor County Region, Vermont



KNOWN CONSTRAINTS
signal likely, though not absolute, unsuitability for development based on statewide or local regulations or designated critical resources.



POTENTIAL CONSTRAINTS
signal conditions that would likely require mitigation, and which may prove a site unsuitable after site-specific study, based on statewide or regional/ local policies that are currently adopted or in effect.

- Known Constraint
- Possible Constraint
- ⚡ Substation
- 🔌 Three Phase Electricity Distribution Lines
- 🟢 Electric Transmission Line
- 🛣 Interstate
- 🛣 US & VT Highway; and Class 1 Town Hwy
- 🛣 All other roads and ROW
- 🌊 Major River
- 🟢 Major Lakes and Ponds
- Town

In November 2017 the State defined the following as "known" constraints:

- Vernal pools
- DEC River Corridors
- FEMA Floodways
- State significant natural communities
- Rare, Threatened and Endangered Species
- National Wilderness Areas
- Class 1 and 2 Wetlands

The State defined the following as "possible" constraints:

- Agricultural soils
- FEMA Special Flood Hazard Areas
- Protect Lands (ie conserved lands)
- Act 250 Agricultural Soil Mitigation areas
- Deer wintering areas
- ANR's Vermont Conservation Design Highest Priority Forest Blocks
- Hydric Soils

Data sources: Known and Possible Constraints defined by the State (VCGI Act 174 v2), Substations (BCRC 2015 and SWCRPC 2016), Three Phase Electricity Lines (BCRC 2015), Transmission Lines (RPC 2016), Waterbodies (VHD 2008), Roads (VTrans 2015), Town Boundaries (VCGI 2012).

SWCRPC
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VT State Plane, Meters, NAD 83
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Map drawn May 14, 2018
Plan Adopted: June 25, 2018
Plan Effective: July 30, 2018

TOWN OF CHESTER, VERMONT
TOWN PLAN

With updates adopted by the Chester Select Board on May 6, 2020
Expires on May 6, 2028

Chester has experienced increasing levels of growth in recent years. Between 2006 and 2007, conditional use permits have increased 140%. While subdivision permits increased 58%, the number of lots created increased 80% in that same timeframe. Growth in Chester and the region as a whole has slowed considerably since the economic downturn in 2008.

Recent commercial growth has been in rural parts of the Town. Of the 24 conditional use permits issued in 2007 (which were primarily for commercial uses), only 10 were located in the village areas.

Goals and Objectives

The people of Chester desire to maintain the rural character of the community while encouraging the economic well-being of its residents. The rural character is exemplified by the many attributes of the Town; the vast amount of wooded and undeveloped areas; the unique villages and the streams and abundant wildlife. The Town of Chester illustrates a traditional village character. A mixture of residential and commercial uses exist in harmony. As development pressures increase upon the Town and less densely populated areas, it is vital that the unique characteristics of the Town be preserved. The Town wishes to continue a mixture of residential and commercial development.

Most residents indicate a preference for rural character rather than an urban or suburban community. They want growth to occur at a pace and in a manner which does not destroy the character of the community or result in significant tax increases. Growth deemed good for the Town should enhance the social, environmental, cultural, and economic values of the Town. It should not undermine the ability of the taxpayers to support the Town on a sound financial basis. The following goals and recommendations provide a general overview of the direction in which the residents of Chester would prefer to see the Town develop.

Goal 1: To encourage development so as to maintain the existing settlement pattern of compact village centers separated by rural countryside.

Recommendations:

1. Intensive residential development should be encouraged only in the areas of the Town serviced by sewer and water; strip development along the highways should be discouraged.
2. Residential development that occurs in designated rural areas should be designed so as to prevent negative impacts to natural, cultural and aesthetic resources.
3. Development should be discouraged on slopes greater than 15%.
4. Development on ridge lines should be limited.
5. Business and industrial growth should occur in areas adjacent to where business and industry now exist and where town water and sewer are available or plan to be made available.
6. Public investments, including the construction or expansion of the infrastructure, should reinforce the general character and planned growth patterns of the area.

7. Development should be consistent with the existing density pattern of the area and consistent with an historic rate of growth.

8. Growth and development should occur at a rate which does not undermine the taxpayers' ability to support the town on a sound financial basis.

Goal 2: To encourage a strong and diverse economy that provides satisfying and rewarding job opportunities.

Recommendations:

1. Economic growth should build upon expansion of existing businesses or encourage businesses that support the goals and aspirations of the community.

2. Economic growth should be encouraged in village centers and area designated for industry on the Future Land Use Map and should be employed to revitalize and rehabilitate existing village centers.

3. Home occupations are encouraged as long as they are appropriate to adjoining land uses, and do not adversely affect air, water or scenic resources or cause noise that is offensive to surrounding neighbors.

4. Businesses that employ sound environmental practices should be promoted.

Goal 3: To maintain and broaden access to educational and vocational training opportunities for all Town residents.

Recommendations:

1. Encourage development of educational and cultural opportunities for all residents.

2. Support community wide cultural events and activities.

Goal 4: To encourage and maintain a safe, convenient, economic and energy efficient transportation network.

Recommendations:

1. Improvement or expansion of public utilities and transportation should occur along existing corridors to encourage desired development patterns.

2. Alternative forms of transportation such as walking, bicycling and public transportation should be encouraged.

Goal 5: To identify and protect important natural and historical features of the Vermont landscape, including woodland, wetlands, scenic and significant archeological sites, significant architecture, villages, wildlife habitats and agricultural land.

Recommendations:

1. Include important resource areas on Future Land Use Map and develop a conservation plan to protect and preserve those features.
2. Encourage the renovation and preservation of historic buildings in village centers.
3. Discourage development within flood plains to the extent that it will cause damage to natural or manmade resources.

Goal 6: To maintain or improve the quality of air, water, wildlife and land resources.

Recommendations:

1. Discourage development in areas of natural, cultural and scenic significance.
2. Support state and federal policies and standard to protect the water quality of the Town's rivers, streams and groundwater supplies.
3. Support measures to encourage areas for habitat for wildlife.
4. Encourage the use of transportation systems that have minimal impacts on air quality.
5. Continue policies and practices that promote the extraction of minerals in a manner that ensures that land and water resources are minimally impacted.

Goal 7: To encourage the efficient use of energy through conservation and the use of renewable energy resources.

Recommendations:

1. Encourage the development of a transportation system that encourages the use of public transportation and ride-sharing and enables increased non-motorized vehicle and pedestrian traffic. Emphasize links between schools, stores, work and home.
2. Help to ensure that the design, location and maintenance of existing and future transportation systems are consistent with the land use patterns recommended in the Town Plan.
3. Encourage the location of community service structures, retail sites, public utilities, day care centers, state offices and other frequently visited sites within walking distance of residential areas.

Goal 8: To maintain and enhance recreational opportunities for residents and visitors.

Recommendations:

1. Develop and maintain good recreational plans and infrastructure to provide recreation opportunities for all residents and visitors.

Chapter 1 - Land Use

The two most important considerations in determining desirable land uses are:

- Does it appear, from objective evidence, expert opinion, public opinion or common sense that the proposed use in the area proposed will be good for Chester and the majority of its residents?
- If it is good for Chester and most of its residents, is the proposed location compatible with the proposed use of the land?

The land use recommendations of the Town Plan should reflect both of these criteria in guiding the future growth of the Town. A use which will have an undue adverse effect on the Town should not be undertaken, even if the land is perfectly capable of supporting it. A use which the land cannot support should not be undertaken, even if it might otherwise be good for the Town.

The survey and public workshops indicate a preference for encouraging a vibrant village area and conserving the working landscape surrounding the village. Growth should occur at a pace and in a manner which does not destroy the rural character of the Town. Planning for growth and development should enhance the social, environmental, cultural and economic values of a rural community. The ability of the taxpayers to support the Town on a sound financial basis should remain as a basic consideration in future land use planning.

Current Land Use

Land use in the Town of Chester follows patterns of traditional Vermont villages. (See the Current Land Use Map.) The traditional village area includes Main Street, the Depot and Stone Village that feature a mixture of commercial, industrial, and residential uses, with services such as a post office, health care, the elementary school, bus stops, and municipal offices. The village center is served by municipal water and sewer service, while outlying areas are served by private wells and on-site septic systems. Residential areas outside the village centers are primarily rural in nature, and of low or moderate density.

The majority of the land area in the Town is forested land. Steep slopes, undeveloped ridgelines, rivers and large wetland areas not only add to the scenic beauty of the landscape, but are also important habitat areas for fur bearing wild game and birds. Open fields and agricultural lands are important assets to the Town and define its rural character.

The list below was compiled from the 2008 Chester Grand List. It illustrates the distribution of land parcels among the different Grand List use categories.

Of Chester's 33,892.31 acres of land (which does not include the area taken by state and local roads and highways), roughly 118.3 acres are state lands: 2.2 acres for the Agency of Transportation's garage, 8.1 acres of Department of Fish and Wildlife land, and 108 acres of the Department of Forests, Parks, and Recreation Lands, with the remaining lands being privately owned. An additional 694 acres of land are town lands, as discussed in more detail in the Utilities and Facilities Chapter.

Future Land Use

The population in Chester is increasing; the number of housing units has increased over the last ten years. The ongoing and planned growth of Okemo Mountain Resort and other ski areas may put some residential and commercial development pressure on the town of Chester. The current zoning map designates uses and areas of development that are sufficient to handle most of the development in the foreseeable future. The Town is currently developing a VT Route 103 Corridor Management Plan to address growth along the highway corridor in coordination with the Southern Windsor County Regional Planning Commission, VTrans and the Town of Rockingham.

The Future Land Use map is a representation of the basic land use patterns that the Town would like to see develop in the years to come. It is intended to show the types and relative concentrations of development that are most appropriate for different parts of Chester. This information is meant to: (1) help the Town to maintain and update effective implementation bylaws; (2) give clear guidance on local priorities in state planning and regulatory proceedings; and (3) provide landowners and developers with a tool that will help them locate and design projects in efficient and locally acceptable ways.

It is based on historical development patterns, public input received in the 2008 planning survey and planning workshops, locations where public water and sewer infrastructure support dense mixed-use development, and rural areas that support low-density uses and a working landscape. Workshop participants cherish the historic village area and encourage future growth that will not diminish the historical character or vitality of the village. The most intensive development (commercial, industrial and higher-density residential) should occur in and around the village area. Outlying areas should grow at a slower pace, and should see relatively lower-intensity and lower-density uses.

The Future Land Use Map includes the following categories:

Forest

The majority of land in Chester is forested. The Forest areas support a variety of uses and encompass predominantly large parcels or tracts that are valuable for working landscape related uses, including forestry and extraction. In addition, these areas also contribute to the town's rural character, and serve as habitat for wildlife and outdoor recreational uses, including cross-country ski trails, snowmobile trails, hiking and hunting, with the cooperation of the owner of the land. The contiguity of large blocks of forest land is important for many types of wildlife, especially for large mammals such as deer, bear, and moose, as well as for forestry management and recreational activities. The forest areas designated on the Future Land Use Map include large, remote land parcels that support these valuable land uses. These also coincide with areas identified in the 2008 planning workshop by Chester residents as important resource areas that serve important functions as wildlife habitat, forest lands and recreational uses. Any development which occurs in forest areas should be designed so that these important recreational, forestry and habitat areas are maintained wherever possible. The ability of forest areas to provide these benefits should not be significantly impaired. Development in these areas should be undertaken in ways that protect their value and ensure the continued presence of healthy forest ecosystems in the Town. Applications for local zoning permits and Act 250

permits for extraction operations shall be reviewed on a case-by-case basis for positive benefits for the town as well as negative impacts on the environment, infrastructure and adjacent land uses. Cluster development could be considered in these areas for the maximization of forest preservation.

Farmlands

Farms have historically been important to the Town's economy, food supply, and cultural heritage. There are only a few active farms in Chester now, but there are many other properties with hayfields or other open space that contribute to the land use patterns and aesthetic qualities that make the Town a desirable place to live, work, and visit. In addition, large, contiguous areas of prime agricultural soils (as defined by the USDA Natural Resources Conservation Service) might be valuable for future farming. . The potential for agricultural use and production should not be impaired in designated agricultural areas. Cluster development could be considered in these areas for the preservation of open lands.

Public Lands

Outdoor recreation opportunities are a vital part of the Town's economy and quality of life. Public lands that support these activities – within the confines of the primary use – include the Williams River State Forest, Green Mountain Union High School lands, and the Water Department land off Reservoir Road, as discussed in the Utilities and Facilities Chapter. These areas should be conserved and efforts made to enhance publicly accessible recreation opportunities where possible.

Rural

Rural areas can support a number of different uses, including low density residential, forest, agricultural (including tree farms and other horticultural uses), open, and transitional (scrub/shrub). The densities of existing development vary throughout the rural areas, ranging from no development to a cluster of homes surrounding the intersection of two roads (e.g. the intersections of Flamstead Road and Cummings Road, and Cavendish Road and Dean Brook Road). The primary concern in rural areas shall be to discourage sprawl and strip development, and to maintain existing, low-density settlement patterns. Growth is encouraged to follow the traditional patterns by concentrating in higher densities at these historic crossroad areas. Cluster development is encouraged wherever possible, as long as the overall density remains low. Open space and recreational resources should be preserved wherever possible.

Mixed Use Village

The village centers, that is, Main Street and the Green, Depot area, and Stone Village, currently have a mixture of high density residential, commercial, industrial, and public uses. These areas should remain as they are in character and settlement pattern. Commercial development has historically been located in the village centers, and is encouraged to occur in these areas because of the availability of Town water and sewage. Commercial development in mixed use areas

should be surrounded and interspersed with high density residential, public and light industrial uses. These areas are intended to continue the long tradition of Vermont's village centers. Development in these areas should be of the highest density in the Town, and should facilitate development of a circulation system that accommodates pedestrians and other non-motorized travel. New development should not detract from the historic character and aesthetic qualities of the village centers. Affordable housing, assisted living facilities and multi-family residential are encouraged in these areas, and discouraged in rural areas that are far from services available in the village.

Hamlet

The Hamlet area in Gassetts currently exhibits a mixture of moderate density commercial, industrial and residential uses. Density in Gassetts is limited due to soil limitations, as no public water or wastewater services are currently available. Development and redevelopment in this area should continue in the current moderate density, with a mix of commercial, light industrial and residential uses. Access management is a consideration as this location receives a lot of truck traffic and the intersection of VT Routes 10 and 103 is a high crash location.

Special Considerations

There are several important considerations within any of the land use categories above that merit special attention. These special considerations include:

Important Natural Resources - They include: floodplains; vegetated areas next to surface waters; wetlands; Natural Heritage Inventory sites; critical deer wintering habitat and bear habitat as defined by the Vermont Agency of Natural Resources; regionally significant historic sites; and other locally defined sensitive natural areas and scenic resources. Development should be planned as to minimize negative impacts to these resources, while ensuring the economic benefit to the owner of the land.

Industrial - Industrial uses are allowable under conditional use review within the mining and commercial zoning districts, and should be compatible with adjacent land uses with respect to traffic, noise, vibrations, or other impacts in conflict with residential and some commercial uses.

Hazardous Materials - Hazardous materials, either from within or outside the State of Vermont, shall not be imported to and/or disposed of within the boundaries of the Town of Chester, except in accordance with accepted business practices as permitted by State law.

Mineral Deposits - The mining or extraction of soil, sand, gravel, stone, bedrock, talc and other minerals and hydrocarbons within the Town of Chester should be encouraged within the zoning districts where these are allowed. Adequate regulations shall be established to protect the public health, safety, comfort, and welfare, to reduce negative impacts on essential wildlife habitat, and to control noise, dust, vibration, air and water pollution, and to assure the restoration of the land after mining is completed.

While residential development may be expected in almost all land use categories, higher densities should be concentrated in and around established village areas. Residential development should be compatible with the land use and housing goals of this plan, and should not conflict with the values defined in the land use categories of this plan.

Timing of Development

Chester is a rural community, which has historically seen family-by-family growth. Chester residents wish to continue this steady and well paced pattern of growth, and to the extent possible, prevent sudden large increases in population which would place undue stress on Town facilities and village character.

Land Use Goals

1. To preserve the historical development pattern or mixed-use village areas surrounded by open land, agriculture, forest, and low-density residential use.
2. To direct growth and development in Town where it will be most effective and efficient to provide the necessary public infrastructure and services.
3. To achieve the concentration of infrastructure development within the village area and areas identified in this chapter as areas desirable for growth.
4. To establish land uses and land use patterns that protect and enhanced the values defined in this chapter.
5. To provide a Town highway system that encourages and complements historic land use patterns.

Land Use Policies

1. Revitalization of village commercial, residential and mixed-use areas, including the appropriate use, maintenance and reuse of existing historic structures and other existing buildings whenever possible, should be encouraged.
2. Excessive commercial development along VT Routes 10, 11 and 103 (i.e., strip development) is discouraged. Access management and innovative commercial development that maintain the characteristics of the existing village areas and greens, is encouraged.
3. Maintaining the density pattern for residential development that protect or enhance the existing settlement patterns and resources is encouraged.
4. In order to maintain the existing settlement patterns, higher density residential, commercial, and industrial development should be located in the village areas of the Town, and within walking distance of most of the residents of the village.
5. Necessary transportation improvements, especially road and bridge maintenance, public transit options, car and van pooling, or other techniques to utilize existing

infrastructure should be supported.

6. The Town should make efforts to attract and locate viable and appropriate businesses in areas targeted by the town for economic development.
7. Residential and mixed use development tailored to the tourist and ski industries should be sited and designed to protect the settlement patterns, commercial development and natural resources of the Town.
8. Use of public funding for the maintenance or improvement of infrastructure, development of affordable housing, and conservation of natural resources is encouraged.
9. Development adjacent to significant natural resources (waterways, large forested areas, wildlife habitat, etc) should be compatible with the value of those resources and negative impacts on the natural resource should be mitigated with buffer strips or visual screening, where this will be effective mitigation and where possible.
10. The elimination or mitigation of the adverse effects of development on the natural resources that extend beyond Town borders or which are regionally significant should be considered and is encouraged.
11. The location of municipal and other government buildings should be in established village areas in order to maintain and encourage pedestrian access and the vitality of the village areas.
12. Programs that help owners of farm and forestland bear the burden of the mandated financial responsibility for resource protection should be supported.
13. Any proposed development should not place an undue burden upon Town facilities or services.
14. Preserve the historical development pattern of mixed-use village areas surrounded by open land, agriculture, mining, forest, and low-density residential use.

Land Use Recommendations

1. Develop effective land use regulations that are consistent with the purpose and intent of this Town Plan.
2. Evaluate proposed development projects for possible adverse effects to important natural resources, both within and beyond town borders.
3. Develop effective bylaws, including zoning and subdivision regulations that are consistent with the purpose and intent of this Town Plan and the needs and plans of abutting Towns and the Region.
4. Encourage, and communicate to the state and federal agencies, the necessity for notice to the town of plans for, or discussion of, the location or relocation of government buildings within the Town, to the Town, or from the Town.
5. Consider zoning provisions, such as access management, cluster development, planned unit developments and/or transfer of development rights, to better

Chapter 2 – Transportation

Chester has experienced a large increase in automobile and truck traffic in recent years, especially on VT Route 103 which is part of the National Highway System (NHS) and Vermont Truck Network (VTN). Recreational and commercial traffic travels down VT Route 103 causing seasonal weekend congestion and potentially dangerous conditions. Thus, for VT Route 103 as part of the NHS and VTN, mobility and convenience for regional travel are most important. However, it is also a local road for Chester residents for whom mobility and speed are reduced in importance, presenting the classical functional conflict between roadway uses. As a result mobility, convenience and safety all suffer. The residents of Chester feel this conflict and are faced with the challenge of balancing the need to provide for increased traffic on State and local roads while maintaining traffic safety and the rural character and quality of life that are some of the town's greatest assets.

Roadway Inventory

State Highways

State highways connect large population areas outside Chester. Those highways passing through Chester are VT Routes 10, 11 and 103. There are 19.1 miles of state highways in Chester.

VT Route 103 runs southeast to northwest from I-91 in Rockingham to Route 7 just south of Rutland. It has been part of the National Highway System (NHS) since 1997 and prior to becoming a part of the NHS this Route has served large trucks and oversized loads for years. The NHS roads are intended to be part of an “interconnected system of principal arterial routes” and “serve interstate and interregional travel.” This Route is also designated as part of the Vermont Truck Network and this designation allows trucks that are 72 feet in overall length to travel on the Network without a permit from the Department of Motor Vehicles. Trucks of this length traveling on highways off of the Network are required to get a permit, which encourages more trucks to use VT 103. Truck traffic averages about 10 percent of the total traffic volume along VT Route 103 in southern Windsor County.

Running east to west across the southern section of Chester, VT Route 11 connects I-91 in Springfield to Route 7 in Manchester Center. Truck traffic is 7.6 percent of the total volume of VT Route 11 between Springfield and Chester.

VT Route 10 runs east to west from North Springfield to Route 103 in Gassetts. Truck traffic is 6.1 percent of the total traffic volume on Route 10, between North Springfield and Gassetts.

Town Highways

In the Town of Chester there are presently 2.559 miles of Class 1 town highways. VT Routes 11 and 103 become Class 1 town highways as they pass through the village. These sections of the state numbered routes are maintained by the town with funds being provided to the town through the State Aid Funding program; however, the Vermont Agency of Transportation is responsible for scheduled road resurfacing and center line pavement markings. The town has 12.609 miles of Class 2 town highways, formerly state aid highways or roads that connect town to town.

Chapter 3 Utilities and Facilities

The development of public utilities, facilities and services should be based upon a projection of reasonably expected population increase and economic growth, and should recognize the limits of the Town's human, financial and natural resources. In addition, any proposed public facilities should recognize the Goals and Objectives set forth in the Town Plan. The town anticipates not more than 6% growth over the next twenty years. The existing municipal facilities and services are generally considered to be adequate to accommodate these anticipated future conditions, unless otherwise indicated in the Town Plan. Town-owned properties as of 2019 are listed in Table 3.1.

Town Property	Acres	Value	Town Property	Acres	Value
Adams Family Aquifer	30.53	\$90,800	Land – Dean Brook Road	3.20	\$26,400
Bouchard Land	0.12	\$19,200	Library Building	0.46	\$623,300
Cemeteries:			North Street Bridge Field	0.50	\$32,000
Adams Road	1.00	\$6,500	Parizeau Rte 11 West	1.3	\$24,800
Brookside	3.80	\$63,900	Peck Land	4.00	\$42,000
North Street	5.74	\$46,500	Perry/Pierce Land	501.35	\$855,900
Pleasant View	8.90	\$93,400	Quimby Land	1.10	\$10,000
Poplar Grove	0.42	\$2,700	Rainbow Rock	1.84	\$23,000
Smokeshire	0.49	\$1,200	Recreation Area (The Pinnacle)	37.28	\$743,500
Spoonerville	0.28	\$1,800	Riverbank	3.47	\$15,200
Colbeth Land	0.12	\$16,200	895 Route 11 West	2	\$12,000
Dodge Land	9.08	\$57,200	Salt Shed/Henry Land	0.63	\$28,300
Emergency Services Land	4.04	\$95,400	Suojanen Land Reservoir Rd.	0.2	\$700
Flamstead Acres (Lot 45)	0.11	\$13,600	Town Garage	6.12	\$717,000
The Green	1.50	\$57,500	Town Hall	0.41	\$580,900
Hadley Land	14.10	\$66,300	Wastewater Treatment Plant	13.45	\$2,752,900
Hammond Park	0.55	\$41,000	Water Tank Site (GMUHS)	1.00	\$20,000
Academy Building/Central School	3.86	\$481,800	Water tank and land VT 103 S	139.57	\$1,449,700
Jeffrey Well Site	17.00	\$834,900	Weatherby Farm Land	40.00	\$105,000
Kingsbury Rd., 93	0.25	\$69,200	Well Site on Canal Street	3.00	\$125,800
Kingsbury Rd., 96	3	\$67,900	Wiley Land	3.00	\$75,200
			Yosemite Fire House	0.11	\$96,800
			Total	865.68	10,461,000

Table 3-1

Source: 2019 Town of Chester Annual Report

1 The Town does not provide for refuse collection. Residents may contract with a private waste
2 hauler or bring refuse, including recyclables, brush, lawn and garden waste and kitchen waste,
3 directly to the Springfield Transfer Station at 135 Fairground Road in Springfield, one mile north
4 of Riverside School (west side). They operate on a ticket system for trash payment. Tickets can
5 be purchased at the Chester Town Hall, and other places locally.

6 A list of accepted recyclables is available at the Transfer Station or at the regional District
7 website, www.vtsolidwastedistrict.org. Most recyclables are accepted free of charge, including
8 all types of batteries, fluorescent tubes and bulbs, televisions, monitors, printers, hard drives and
9 peripherals. There is a "Second Chance Shop" for unwanted, but still usable, items including
10 books. Architectural salvage can be found or donated. Metal is accepted free of charge; bulky
11 waste is charged by weight. Household Hazardous Waste collection take place at several
12 locations in the District each spring and autumn.

13 In 2012 the Vermont Legislature passed Act 148, The Universal Recycling Law, an "act relating
14 to establishing universal recycling of solid waste." The Vermont Materials Management Plan:
15 Moving from Solid Waste towards Sustainable Management, was effective on June 18, 2014. As
16 of July 1, 2017, kitchen waste must be accepted at all transfer stations in Vermont. Keeping food
17 waste out of landfills will become mandatory on July 1, 2020. Waste haulers and facilities are
18 required to collect recyclables (metal, glass, #1 and #2 plastics, paper and cardboard) leaf and
19 yard debris and clean wood.

20 **Electric Utilities**

21 Electric power for the Town of Chester is provided by Green Mountain Power. Electric
22 transmission service is provided by the Vermont Electric Power Company (VELCO).
23 Underground utilities are encouraged to preserve the historic look of the village and the beauty
24 of scenic areas.

25 **Telephone, Cable Television and Internet Infrastructure**

26 Telephone, high speed internet and television service are available in Chester through the town-
27 wide fiber optic network built by Vermont Telephone (VTel). Comcast provides television cable
28 service, high-speed internet and phone service. Dish provides satellite television service. These
29 vital improvements enable people to work efficiently at home, reducing commuting traffic and
30 benefiting the environment of the Town. It also offers essential support to businesses that may
31 want to locate in this picturesque town.

32 **Communications Towers and Structures**

33 A modern telecommunications infrastructure is essential to the public welfare and economic
34 development. The Town of Chester is fortunate to own a site for a communications tower, a low
35 hill on the western edge of the town center called the Pinnacle. The towers currently on the site
36 cannot be seen in most parts of town. In 1997, at Chester's invitation, US Cellular erected the
37 first cellular telephone tower at that site next to the existing low band tower. A second cellular
38 phone company, Cellular One, rented space on the tower. VELCO offered to build a higher
39 capacity tower for the town in 2015 since VELCO needed to expand its communication system
40 to meet state mandates. The offer was accepted and the new tower was completed in 2018. Cell
41 phone companies lease space on the new tower. The town also uses the towers for police, fire,
42 ambulance and public works radio communications. This arrangement has provided Chester with

1 of 2018 and an additional 6 holes are planned for 2019. The course is also used as a snowshoe
2 trail in the winter.

3 **Swimming**

4 The swimming pool located at the Pinnacle Area is the most highly utilized recreation program
5 for the Town. Approximately 200 children per year receive swimming lessons through the
6 Recreation Department. In addition, the swimming pool averages 50 to 60 kids per day during
7 the summer months. The current pool was upgraded in 2017, which will extend the life of the
8 pool to at least 2037. More renovations and improvements are planned for the bathhouse and the
9 snack shack which operates at the pool location.

10 **Hiking Trails**

11
12 There are currently three hiking trails on Chester public land. The town supports the continued
13 expansion of the hiking and biking trail system including the potential purchase of additional
14 lands to achieve this.

15
16 The **Lost Mine Trail** is two miles long and runs through Chester's 550-acre Town Forest. The
17 trailhead is located just west of town off of Balch and Water Farm roads. The trail has a variety
18 of features including a historic mine, pine and hemlock groves, a forest management area,
19 massive and intricate stone walls, mossy streams and hillside caves. The trail is rated moderate
20 for hiking.

21
22 The two-mile **Butternut Hill Trail** is also located in Chester's Town Forest. The trail is adjacent
23 to and connects with the Lost Mine Trail, to form a four-mile loop. It ascends to the summit of
24 Butternut Ridge (1,725 feet) and offers views of Stratton and Magic mountains and other hills to
25 the southwest. There are multiple trails heads with small parking areas that offer access to the
26 moderate/strenuous hike.

27
28 The **Green Mountain Nature Trail** is a two-mile loop trail that traverses through the 160-acre
29 forest adjacent to the Green Mountain Union HS. This trail offers a moderate hike that winds
30 and climbs through evergreen and hardwood forests. The trail also features a large glacial
31 boulder, stone walls, several wooden bridges and views of the South Branch Williams River.

32
33 Looking ahead, the Town will continue to look for trail development opportunities on Town
34 property, in particular a trail that is within walking distance of the village green. The 14-acre
35 Brookside Town Forest Property, directly north of the Brookside Cemetery and across Lover's
36 Lane brook, will continue to be evaluated for the development of a trail. Continued planning and
37 design for enhancing Brookside Cemetery should also incorporate plans to access the Town
38 Forest property across the brook. A pedestrian-style, wooden covered bridge spanning Lover's
39 Lane Brook would be an ideal accent to the landscape and trail, and a unique attraction within
40 walking distance of the village green.

41
42 Likewise, the Town will continue to assess opportunities to develop a flat, pedestrian-friendly
43 trail either along the Williams River, on one of its tributaries, or in some other opportune
44 location or corridor. A relatively flat walking trail, accessible from the village center, would

1 greatly enhance walking and hiking experiences for everyone, and offer a more natural setting
2 than the existing sidewalks in the residential areas.

3
4 At the Pinnacle Recreation Area on Lover's Lane, the establishment of a loop trail to offer
5 walkers and hikers the opportunity to circumnavigate the pinnacle (summit) will be assessed for
6 development. Construction of a loop trail would provide the Town with another trail asset in the
7 heart of town and enhance and broaden the hiking opportunities at the recreation area.

8
9 For mountain bike enthusiasts, the establishment of a more defined mountain bike trail/trail
10 network (both on and off road) within the greater Chester area will continue to be explored. To
11 encourage winter recreation, all town hiking trails will be promoted for snowshoeing and, where
12 feasible, cross country skiing. The Pinnacle area in particular, will be established and known for
13 its snowshoeing 'track'.

14
15 Eventually, the existing trails will be linked to create an integrated Chester Town trail network,
16 bookended by the GM Nature Trail to the east and the Pinnacle Trail to the west.

17 18 **Winter Recreation**

19 The Chester Snowmobile Club is a private organization which cooperates with Vermont
20 Association of Snowmobile Travelers (VAST) to bring an exhilarating and safe winter travel
21 experience to Chester residents and visitors alike. With private landowners it plans, lays out and
22 maintains 65 miles of snowmobile trails in the Chester area. These trails connect to the VAST
23 state-wide trail system. Eight miles of those trails are on Town of Chester property and 23 miles
24 of the trails are within the town itself. This system of trails attracts tourists in season, and is
25 beneficial economically to the Town of Chester and its tourist industry. The club has assisted the
26 Chester Fire Department by providing a machine and sled for use in medical emergencies on the
27 local trails. The club grooms the sliding hill at the Pinnacle, the track for sleigh rides and dog
28 sleds at Winter Carnival and provides a Port-a-Potty during the winter at the Pinnacle. An effort
29 to establish a trail-side fuel station in Chester is underway.

30 31 **Forest Lands**

32 The State of Vermont, Department of Forests and Parks owns the Williams River State Forest,
33 130 acres of land located in the southwest corner of town, also known as the Popple Dungeon
34 area.

35
36 The Chester Water Department owns 550 acres of land off Reservoir Road in the geographic
37 center of the town. The land was purchased as a watershed area and holds an 11-acre reservoir
38 which is used for recreational purposes. The reservoir previously served as the town's drinking
39 water source. It is now preserved for use during an emergency, such as if the Jeffrey and Canal
40 wells are not available. The 550-acre site operates under a ten-year Forest Management Plan
41 prepared and managed by the State Forester. The plan was first adopted in 1983 and is revised
42 annually. Under this plan and careful management the Town Forest provides income to the

allowing solid waste processing businesses in the bylaws.

Recreation

13. Provide recreation programs to the Town of Chester residents that meet the recreation needs of all residents regardless of age.
14. Maintain the 550-acres Town Forest as a managed forest and continue access to it for field studies, fishing and hunting.
15. Maintain the Doctor Adams land for wildlife and scientific field studies for all.
16. Continue the use of the public lands as resources for hunting and fishing and encourage private owners to do the same.
17. Pursue expansion of the existing trail network. Purchase of additional lands should be considered to achieve this objective.

Public Utilities

18. Provide residents with safe, effective and efficient utility service.
19. Place utility lines in areas designated for growth.
20. Place new utility lines along existing corridors whenever possible; multipurpose use of utility corridors is encouraged with common use of utility poles for telephone, electric, cable and fiber optic lines.
21. Consider aesthetic and natural resource impacts when placing utility lines.
22. Promote underground electric lines where possible and practical.
23. Do not construct new towers, access corridors and utility poles serving towers when adequate communication coverage can be obtained through use of existing structures.

Priorities for Action on Solid Waste:

1. Promote education for citizens on trash reduction such as composting and eliminating single use items with poor recycling potential.
2. Promote education for businesses and organizations concerning solid waste disposal and reduction.
3. Encourage citizens, businesses and organizations to make extensive use of composting and recycling at point of use, the transfer station and curbside pickup.
4. Enforce the prohibition of illegal roadside dumping.
5. Encourage recycling and compost drop-off and pick-up operations to establish in the immediate Chester area for increased resident convenience.

Chapter 4 - Natural and Cultural Resources

Some of Chester's greatest assets are natural and cultural resources as identified during the extensive public outreach in 2008 and 2009 to update this Town Plan. Residents value the historic charm of the village surrounded by open fields, rivers, hills and large tracts of forested lands. This plan seeks to encourage future growth that also protects these natural and cultural resources articulated in this chapter.

Earth Resources

Topography and Soils

Soils vary greatly in their composition, which will determine where water impoundments occur, the kind and amounts of vegetation, and what types of land use are most appropriate. Outside of the village area, where public water and sewer services are not available, the development potential of each site will be determined by the on-site septic suitability of the soils.

The Town no longer has authority to issue on-site septic permits, but can require developments to use public water and wastewater services. In 2002, the Potable Water Supply and Wastewater regulations (10 V.S.A. Chapter 64) were amended by the Vermont Legislature. As of July 1, 2007, the Vermont Agency of Natural Resources (ANR) has universal jurisdiction over on-site septic and potable water permits. ANR developed new rules on September 29, 2007, which allow for innovative or alternative systems (Subchapter 10 of the *Wastewater System and Potable Water Supply Rules*). These new rules may allow for development on areas of steep slope, where it was not allowable before.

According to the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), all types of construction should be avoided on lands with slopes over 25 percent. However, some uses – such as hiking or ski trails – may be suitable. Slopes between 15 and 25 percent may not be suitable for development due to limitations for septic systems, erosion and stormwater runoff problems, and high construction costs. Development in these areas may require engineering or other special design techniques to avoid these potential problems. Driveways over 10 percent in grade are generally considered to be too steep for safe emergency vehicle access, and difficult for maintenance and any vehicle access in the winter months. All roads and driveways should meet the appropriate town highway standards, as adopted by the Selectboard, in terms of steepness of grade and drainage techniques.

Farmlands

The number of working farms in Chester has been decreasing over the years. Farms provide open space and contribute to the rural qualities that people enjoy about Chester. Forest and farmland provide habitat requirements for a variety of mammals, reptiles, amphibians, and birds. This patchwork of fields, forests, and the viewsheds among them constitute an aesthetic resource that deserves recognition and protection. The farms along the Williams River are considered especially scenic for residents and visitors traveling on VT Route 103 before entering the village

1 of Chester. Many of these farms are also located within floodplains, serving another important
2 function: flood storage capacity.

3 The NRCS has identified the most productive agricultural soils (see the Natural Features Natural
4 Features Map that shows NRCS agricultural soils in Chester). The NRCS category of “prime
5 agricultural soils” has the greatest potential for productivity and is important for current and
6 future food production. “Soils of statewide significance” are also important, but limited in their
7 productive capacity by slope or other mitigating factors. Once these soils are disturbed for
8 construction, their potential for farm productivity is lost. Preserving large contiguous areas of
9 these important agricultural soils is important for future food production for the town.

Forest Lands

12 Forests serve a variety of functions and uses, and contribute significantly to the town’s rural
13 character. Forests protect air and water quality and support biological diversity. Woodlands
14 provide critical habitat for many species of wildlife, including white-tailed deer, moose, black
15 bear, wild turkey and a variety of songbirds. The larger the blocks of contiguous forestland, the
16 greater the number of wildlife species it supports. Connections between large blocks of forest
17 land allow for larger habitat areas and greater biodiversity.

18 Forests are also important to the local economy by providing products such as lumber,
19 pulpwood, fuel wood, and maple syrup. Vermont and the rest of the New England states have been
20 deforested three times since the settlement of America by early colonialists. Yet, the majority of land
21 in Chester is in woodland or forest. The predominant canopy species have changed since pre-
22 settlement. The forests and woodlands of Chester are currently a mix of broadleaves and conifers.
23 Sugar Maples are important part of Vermont’s, and Chester’s, cultural heritage, providing colorful
24 foliage and maple syrup.

25 Outdoor recreation is enjoyed by many of the Town’s residents and is an attraction for tourists.
26 Woodlands support a variety of recreational pursuits including hunting, trapping, hiking,
27 horseback riding, cross-country skiing, snowmobiling, and nature and foliage viewing.
28 Forestland in Chester also supports some low-density residential uses.

29 Most of the forests in Chester are under private ownership. Currently, 14,360 acres of land in
30 Chester is enrolled in the current use (or Use Value Appraisal) program. The program provides
31 reduced property tax assessment for qualifying owners of forest and agricultural land. The State of
32 Vermont reimburses communities for some of the tax revenue that is lost due to enrollment of land
33 under the program. In addition, nearly 734 acres are protected under a private easement.

34 However, a few important forests are publicly owned, including the Williams River State Forest,
35 the Town Forest and Doctor Adams’ land, as discussed in the Utilities and Facilities Chapter.

36 Forests are threatened by fragmentation caused by roads and residential development, and
37 irresponsible logging practices. Development in forested areas should be encouraged to occur at
38 the periphery where access can be provided by existing roads.

6. Require that earth resource extraction activities do not adversely affect surrounding properties and mitigate adverse impacts on essential wildlife habitat, and that extraction sites be restored to viable condition in a timely manner.
7. Roads and driveways shall meet town standards and shall provide adequate, safe emergency vehicle access.

Earth Resources Recommendations

1. Promote, through education, the correct management practices for agriculture and forest-related activities by using the expertise of professionals.
2. Work with area land trusts, in cooperation with land owners and the community, to educate people on the different methods available to preserve important forested and agricultural lands.
3. Identify areas of significant aesthetic value to the entire community.
4. Review local and state regulations to assure that the public interest is protected. Amend local regulations to conform to any revised state regulations.
5. Consider land use regulations to restrict developments in steep slope areas

Water Resources

Water Bodies and Watercourses

The majority of land area in Chester is within the Williams River watershed, but the northeast corner of the Town surrounding the Great Brook is in the Black River watershed. The village of Chester is located at the confluence of the north, south and middle branches of the Williams River, which meet and form the mainstem of the Williams River just southeast of VT Route 11 near Green Mountain Turnpike. The Williams River forms a broad, fertile valley through Chester. There are a few small ponds in Chester; most notable is the Chester Reservoir located in the Town Forest, which is discussed in the Utilities and Facilities Chapter.

Water bodies and watercourses serve a variety of important functions, including scenic beauty, recreation, wildlife habitat, food supply, commercial and industrial uses, and drinking water supplies. The rivers and many of the streams contain healthy populations of native fish. The middle and north branches and the mainstem of the Williams River offer good whitewater boating opportunities. Rivers and streams are sensitive to change, and land uses can affect water quality and river stability further downstream.

In June 2008, the Vermont Agency of Natural Resources (ANR) adopted a Basin 11 Management Plan, which includes the Williams River watershed. The primary water quality problems for the basin include water temperature warming, siltation and sedimentation, and altering the physical habitat. The primary causes of those problems include removal of riparian vegetation, streambank modification and destabilization, and channelization. The North Branch of the Williams River is prone to ice jams and flooding in the late winter and early spring.

Due to the significance of these surface waters, it is important that they be protected. Protection of surface waters involves stream bank management, overseeing point source discharges of wastes, and controlling non-point sources of water pollution (for example, agricultural runoff, erosion from logging or construction, and stormwater runoff from roads and impervious surfaces). Naturally vegetated buffers next to surface waters can help to filter pollutants, provide shade for fish, and habitat for birds and mammals. In addition, wider buffers (over 100 feet) can provide natural greenways and wildlife corridors.

Wetlands and Vernal Pools

A number of wetlands are also located throughout Chester, many of which are included in the National Wetlands Inventory. Wetlands are biologically productive ecosystems and serve a variety of functions: retaining stormwater runoff, reducing flood peaks, protecting groundwater quality, filtering eroded sediment, and providing habitat for a wide diversity of plants and animals. They also provide open space and contribute to Chester's scenic landscape. According to the Vermont Wetlands Rules, Class 1 and 2 wetlands (those identified in the National Wetlands Inventory) require conditional use review by ANR prior to the issuance of a local zoning permit. Class 3 wetlands are not included in the National Wetlands Inventory and are not protected by the Wetland Rules.

Vernal pools are temporary bodies of water which usually occur in woodland depressions and provide important breeding areas for a variety of amphibian and insect populations. Most vernal pools in Vermont are filled by spring rains and snow melt and are dry during the summer. They provide safe breeding grounds for insects and amphibians because they do not support fish populations. Most vernal pools in the state occur in forested habitats, but they may also be found in meadows, sand flats, and river flood plains. Because of their small size and temporary nature, vernal pools are not protected under the Vermont Wetland Rules.

The Town may wish to inventory Class 3 wetlands and vernal pools and consider protections in local regulations as well.

Groundwater

Groundwater is Chester's primary source of drinking water. It moves underground through aquifers, which are water-bearing strata of permeable rock, sand, or gravel. Maintaining good quality and adequate quantities of groundwater are important considerations for preserving the public health and safety. Potential groundwater pollutants include septage from improperly designed or malfunctioning septic tanks and leaching fields for wastewater, leakage from underground gas and oil tanks, and improperly disposed of chemical or radioactive materials. Once contamination occurs, control and abatement are extremely difficult, if not impossible. The key is to prevent pollution from entering rock fractures in the first place. Chester's Zoning Ordinance established two aquifer protection districts to protect the public water supply.

Effective June 9, 2008, Section 1 of Vermont Act 199 sets forth the General Assembly's finding that groundwater resources of the state are held in trust for the public.

Flood Hazard Areas

In the 2006 Chester Predisaster Mitigation Plan, flooding is identified as the most probable hazard event in Chester. This is true especially given the proximity of infrastructure and the village area to flood hazard areas, and the large number of river and stream crossings in Chester. Chester has flood hazard regulations in effect and is in the National Flood Insurance Program (NFIP). These regulations establish development standards for areas within floodway and floodplain areas as discussed below. Chester residents or business owners with buildings in the floodplain may purchase flood insurance through the National Flood Insurance Program (NFIP). Through the NFIP Community Rating System (CRS), a town which exceeds the minimum requirements may qualify for a special classification which would reduce flood insurance rates for its policy holders. Any development in the flood hazard areas requires local flood hazard review.

Chester flood hazard regulations pertain to both floodway and floodplain areas as mapped by FEMA. These represent land areas in Chester which in any given year have at least a one percent chance of being inundated by flood waters. This is known as a 100-year flood event. Floodways are the river channels during a 100-year flood event. The floodway fringe is the adjacent areas where 100-year flood waters pond, but are not flowing as in the floodway channel. They serve as storage areas for water during periods of heavy rains and spring snow melt, agricultural fields, wildlife habitat and travel corridors. These areas also present limitations to development due to the hazards of flooding and related damage.

Development outside of these FEMA-designated flood hazard areas does not guarantee safety from potential flooding. Flash flooding is also a possibility along smaller and seasonal streams. These flood prone areas are not inventoried at this time. Since Chester is in the NFIP, owners of buildings in areas that might be subject to flash flooding may choose to buy flood insurance.

Water Resources Goals

1. Maintain or enhance the integrity and functions of Chester's surface waters and wetlands.
1. Protect the quality and quantity of groundwater for Chester residents.
2. To encourage flood resilient communities.

Water Resources Policies

1. Continuous areas of undisturbed vegetation along rivers and streams should be encouraged, thereby protecting shorelines, wildlife habitat and scenic quality.
2. New development adjacent to streams or rivers must be designed to cause minimal damage to the stream environment. Any such development should be planned so that surface waters do not become silted, contaminated or otherwise degraded.
3. Natural vegetated buffer strips between development and surface waters should be

maintained.

4. Any storing or transporting of chemicals or other hazardous material should be done in such a manner so as to have no adverse effects on streams or other sources of water.
5. The use of road salts and other chemicals adjacent to sensitive areas such as wetlands, stream crossings, and steep slopes should be minimized.
6. Any alterations to ponds and wetlands must be in compliance with local zoning and all State and Federal laws.
7. Restrict development within the aquifer protection districts in order to protect the public drinking water.
8. Adopt *Chester's All Hazard Mitigation Plan (AHMP)*, as most recently approved under 44 C.F.R. §201.6, to serve as the flood resilience element for *Chester's Town Plan*, including the flood resilience-related strategies identified in the *AHMP*.

Water Resources Recommendations

1. Review zoning regulations to protect rivers and streams, ponds and wetlands not already protected under state law.
2. Include high elevation streams and buffer areas in a plan for open space conservation.
3. Consider conducting an inventory of class 3 wetlands and/or vernal pools.

Wildlife Resources

Wildlife Habitat and Travel Corridors

Chester's landscape includes a variety of natural resources such as rivers, streams, forests and wetlands that provide habitat for numerous wildlife and aquatic species. Chester residents value watching wildlife in their backyards, hunting, fishing, as well as supporting efforts to preserve open spaces and riparian areas for both recreational uses and preserving wildlife habitat. The abundance and diversity of wildlife provide both economic and recreational opportunities for residents. In addition, lands that are left undeveloped to provide for wildlife habitat also contribute to the rural character of the Region.

A diversity of habitat types is needed for the continued existence of the various fish and wildlife species that inhabit the town. Many animals rely on large contiguous areas of forests, fields and other undeveloped lands for food, shelter, breeding grounds and migratory stop-overs. The fragmentation of such land can result in decreases in the number of species and the sizes of populations of many species. Moose, whitetail deer, black bear, bobcat and wild turkey are a few of the animals that can be found in Chester. A variety of songbirds reside in wooded areas

that are characterized by less intense human use. Although most development in Chester is done on a relatively small scale, cumulative development can combine overtime to have a major impact on wildlife habitat. These cumulative impacts can cause fragmentation of these habitat areas, potentially diminishing or eliminating the land needed to support some species. Conservation of a diverse mix of natural areas and attention to connections between large tracts of wildlife habitat is necessary in order for a diverse and healthy wildlife population to survive and flourish.

The Wildlife Habitat Map shows wildlife habitat suitability areas as mapped by the Vermont Department of Fish and Wildlife. These areas represent undeveloped areas most likely to support a broad spectrum of wildlife. These mapped wildlife habitat suitability areas should be used as an indicator, and more detailed inventories or site investigations should be used to determine the actual critical wildlife habitat areas.

Based on state wildlife/vehicle crash data and the proximity of large blocks of wildlife habitat suitability areas, the following approximate areas appear to have potential value as wildlife travel corridors:

- Grafton Road south of Popple Dungeon Road
- Ingraham Hill Road
- Old Stage Road south of Popple Dungeon Road
- Smokeshire Road west of Miner Road
- VT Route 11 between Shady Grove Lane and Swett Road
- VT Route 103 between Jewett Road and Brooks Road
- VT Route 103 between Cavendish Road and Wyman's Falls Road
- Williams Road
- Wyman's Falls Road (Class 4 section)

Rare, Threatened and Endangered Species

The Wildlife Habitat Map also shows the approximate locations of rare, threatened and endangered species. According to the Vermont Non-game and Natural Heritage Program, these include two vascular plants occurring along the North Branch of the Williams River. The DRB should contact the Department of Fish & Wildlife to evaluate the potential impacts of any proposed development in these areas.

Wildlife Resources Goals

1. Encourage the biodiversity and population of wildlife, including natural predators, by minimizing development impacts on large blocks of habitat and wildlife travel corridors.

2. Protect rare, threatened and endangered species and their habitats.

Wildlife Resources Policies

1. Develop strategies to protect areas containing rare species, exemplary natural communities and necessary wildlife habitat. Strategies may include public and quasi-public ownership or conservation easements protecting such lands.
2. Encourage the conservation of contiguous properties and discourage practices which fragment wildlife habitat.
3. Development should be designed and sited in a manner to preserve contiguous areas of active or potential wildlife habitat by clustering, building to the periphery of habitat areas and/or planned unit developments.
4. Corridors connecting habitat areas for large mammals must be incorporated in plans for management and conservation of forested areas.
5. Fragmentation of significant and necessary wildlife habitat should not be approved.
6. Development shall protect rare, threatened and endangered species.

Wildlife Resources Recommendations

1. Request that the Regional Planning Commission create and update maps indicating the locations of state regulated natural resource constraints.
2. Consider conducting a local inventory of wildlife habitat areas.
3. Review subdivision regulation to ensure conformity with wildlife habitat policies.
4. Seek input from the Vermont Department of Fish and Wildlife on the potential impacts of development on identified rare, threatened or endangered species.

Air Quality

Chester does not have a heavy industrial base or concentrated population that has led to an air quality problem. Accordingly, the Town's good air quality constitutes an environmental resource that has aesthetic as well as human health benefits. Elements that could negatively affect air quality include: smell, light, particulate matter (from dust, smoke or fumes), radiation, chemical vapors, motor vehicle exhaust and power plant emissions.

Chester's ambient air quality should be maintained. Town equipment should meet emission standards. The town should take an active role in the review of development proposals or plans that could adversely affect air quality.

Light Pollution

Chester residents who participated in the 2008 Community Values Workshop identified the dark night sky and rural character as some of the things they love about Chester. Light pollution from development can negatively impact the rural character and quality of life enjoyed by Chester residents. The Chester Zoning Bylaws establish standards to reduce glare from illuminated signs and regulate lighting through site plan review and under performance standards for conditional use review. Lighting levels should be a balance between aesthetics, security, energy efficiency, reducing adverse impacts on the night sky, and safety (i.e. reducing glare).

Air Quality and Light Pollution Goals:

1. To maintain Chester's good ambient air quality and clear night sky.

Air Quality and Light Pollution Policies:

1. Town equipment should meet emission standards.
2. Proposed new lighting should avoid glare and other unnecessary light pollution.
3. The DRB should take an active role in reviewing development proposals for air or light pollution.

Air Quality and Light Pollution Recommendations:

1. Review land use regulations to ensure conformance with air quality and light pollution policies.

Ridgelines and Scenic Views

Several areas in Chester are known regionally for their scenic views and landscape. In the 2008 Town Planning Survey, a high percentage of respondents answered that scenic views, rural character, ridgelines, wildlife habitat, important farmlands and water resources should be preserved. The following specific resources were identified as "scenic" at the 2008 Community Values Workshop:

- Wyman's Falls
- Wyman's Falls Road
- The Pinnacle
- Town Forest
- Williams River
- Farms along the Williams River

Prominent hills and ridgelines are valued by Chester residents. Chester has several hills or ridges that rise above 1,500 feet in elevation, including Steadman Hill (2,309 feet), Ingraham Hill (1,948 feet) and Butternut Hill (1,715). These areas are not only fragile due to high elevation and steep slopes, but are also valued for their scenic attributes, wildlife habitat and forestry. Development in these areas should be discouraged, but if allowed should take precautions to minimize negative impacts, including establishing no-cut zones or requiring landscaping.

Ridgeline and Scenic View Goal:

1. Preserve the scenic views and ridgelines that most contribute to Chester's rural character.

Ridgeline and Scenic View Policies:

1. Development is discouraged in identified scenic areas and ridgelines. Any development in these areas should minimize negative visual and environmental impacts.

Ridgeline and Scenic View Recommendations:

1. Consider land use regulations to restrict developments along ridgelines and in scenic areas.

Cultural Resources

The Chester Village Historic District (entered in the National Register on August 8, 1985) corresponds to the village center, focused on the Green together with related historic development along Main Street between Maple Street and Lovers Lane, including seven side streets. The Chester Village Historic District occupies the flat bottomland along the north side of the Middle Branch of the Williams River. The river flows along the base of a ridge whose abrupt slope provides a south backdrop for the village. A similar juxtaposition defines the valley bottom on its north side where a small brook flows essentially parallel to the Middle Branch, also flowing along the foot of a low ridge. There are 156 principal buildings in the district, among which only 17 buildings do not contribute to the district's historic character. The architectural styles represented include the Federal, Greek Revival, Italianate Revival, Gothic Revival, Queen Anne/Eastlake, Colonial Revival, and Georgian Revival. Most are of wood-frame construction and the buildings generally share the temple form and domestic scale with gable facades oriented toward the street. There are three examples of the "snecked ashlar" construction (which is prevalent in the buildings of the Stone Village Historic District). Although a few intrusions have appeared in the recent decades, Chester Village Historic District retains to an extraordinary extent the integrity of its nineteenth and early twentieth century architectural environment. The

description of the district and of the various individual buildings can be found in the National Register under the Chester Village Historic District.

The Stone Village Historic District (Entered in the National Register on May 17, 1974) lies northerly of the Village District, on either side of Route 103 between the bridge over the Williams River northerly to the “Tavern” building, a distance of about 0.6 of a mile. The Stone Village is set in the Williams River Valley, where the river’s alluvial plane opens to the west of the community and provides an expansive view to the opposite bluff about a quarter-mile away. The base of Mt. Flamstead is near the rear of the structures on the east side of the two-lane, tree-lined, paved VT Route 103, and the hillside provides a striking backdrop to the village. Of the 18 buildings that comprise this Historic District, 13 of the buildings are fine, well-maintained examples of “snecked ashlar” construction. The buildings described in this historic district are a church, a school, a tavern, a barn and 14 residences. The description of the district and of the various individual buildings can be found in the National Register under the Stone Village Historic District.

Other important historic resources identified at the 2008 Community Values Workshop include cemeteries, the Academy building, Yosemite Fire House and historic school houses. Important cultural resources include the town center and “village charm,” Village Green, railroad and train station, Player’s Guild, Ellsworth medical clinic, public transportation services, community events sponsored by local businesses, and a sense of community.

Future development, including road and bridge projects, should be sited so as to preserve these historic and cultural resources for future generations.

Cultural Resources Goals

1. Protect and preserve the structures recorded in the state and national registers of historic places.
2. Protect and preserve the cultural resources as they are identified by the residents of Chester.
3. Protect and preserve the physical setting and aesthetics of the area within which the historic villages are set.

Cultural Resources Policies

1. The demolition of historically significant structures should be discouraged.
2. Property owners of historic structures seeking inclusion in the State or National Registers should be encouraged and assisted in their efforts.
3. Encourage the preservation of historic buildings.

Cultural Resources Recommendations

1. Review bylaws to strengthen protection of historic structures and the aesthetics of the surrounding area.

Chapter 6 Energy

1. Purpose

It is the overall intent of this chapter to encourage the efficient use of energy and the development of renewable energy resources in accordance with 24 V.S.A. §4302(c)(7). It is also the intent of this energy chapter to address the requirements of Act 174 of 2016 and to meet the enhanced energy planning standards developed by the Vermont Department of Public Service (DPS). This was prepared based upon the *Guidance for Municipal Enhanced Energy Planning Standards* (DPS; March 2, 2017) in order for the Chester Town Plan to be given greater weight in the Section 248 process. This chapter describes existing conditions in Chester and conveys community policies on energy conservation, renewable energy production, and how land uses can contribute toward energy conservation.

The Southern Windsor County Regional Planning Commission (SWCRPC) has developed a 2018 *Regional Energy Plan* to meet these standards in order to receive Section 248 “substantial deference”. Chester is coordinating the development of this municipal energy plan with the SWCRPC so that:

1. The municipal plan is informed by the ongoing regional energy planning process; and,
2. The municipal plan is compatible with the regional plan.

This energy chapter was developed with assistance from the SWCRPC through funding provided by the Vermont Department of Public Service.

1.1 Community Energy Survey

A survey was conducted in January 2018 to get input from residents to assist in this enhanced energy planning process. Key findings from this survey are summarized below.

1. The vast majority of respondents indicate that energy issues are very important (57%) or important (29%) to them. A majority (about three-quarters of the respondents) support the goal of 90% of energy coming from renewable sources by 2050.
2. There is very strong support for roof-mounted solar arrays.
3. Strong support was expressed for non-residential solar power.
4. Support was expressed for non-residential wind power; however, 23% are not in favor and another 21% are neutral.

For more detail about the survey see Appendix 6C.

Due Consideration: To give such weight or significance to a particular factor as under the circumstances it seems to merit, and this involves discretion. [*Black’s Law Dictionary, 6th ed. 1990*]

Substantial Deference: Means that a land conservation measure or specific policy shall be applied in accordance with its terms unless there is a clear and convincing demonstration that other factors affecting the general good of the State outweigh the application of the measure or policy. [*30 V.S.A. §248*]

1.2 Energy Goals

Through the 2016 Vermont Comprehensive Energy Plan (CEP) and Statute, the State of Vermont has identified a number of goals and strategies to achieve energy conservation throughout the state. The Town of Chester embraces the State Energy Goals¹ including but not limited to the following. Through the detailed policies and actions contained in this plan, Chester will strive to achieve these goals.



**Reduce total energy consumption per capita
by**

15% by 2025

More than one third by 2050



**Reduce greenhouse gas (GHG) emissions from 1990
levels**

40% reduction by 2030

80% to 95% reduction by 2050



**Meet remaining energy need from renewable
sources**

25% by 2025

40% by 2035

90% by 2050

¹ Energy goals as referenced in 24 V.S.A. §4302(7), 10 V.S.A. §578(a), 10 V.S.A. §580, 10 V.S.A. §581, and in the Vermont Comprehensive Energy Plan

Fossil fuels are currently the primary fuel type used for heating structures in Vermont³. According to American Community Survey (ACS) data (2011-2015), the predominant ways to heat homes in Chester include fuel oil (62%), wood (25%) and propane/LP gas (13%). In 2015, the estimated average annual cost to heat a home was \$1,452 and about \$6,248 to heat a business. See Appendix 6A for more detail about heating existing buildings.

Wood is the only form of these heating fuels that is renewable and locally produced. Sustainable forestry operations are important not only to supply fuel wood for residents, but also to maintain an active working landscape in rural Chester and support a local forestry economy.

2.5 Transportation

As a rural area, transportation options for Chester residents is dominated by the personal automobile (see the Transportation Chapter for more information about other modes of travel). The negative environmental impacts of single-occupant vehicle driving is well documented. Costs associated with using an automobile for most of your travel needs can be significant (see the Housing Chapter for more information on household transportation costs). About 88% of the local work force travel to jobs located in another town. Common work destinations are Chester, Springfield, Ludlow, Bellows Falls, and Rutland. Approximately 71% of employed Chester residents drive alone to work. The average commute time is 21 minutes.

According to ACS data, there were about 1.9 vehicles per occupied household in 2015. The average vehicle miles traveled in a year is estimated at nearly 13,200, which accounts for approximately 1.9 million gallons of total fuel used and an estimated total fuel cost of more than \$4.4 million.

Fuel costs are volatile. Gasoline costs of around \$4 a gallon in 2008 and \$3.70 in 2014 were challenging for many household budgets. During June 2018, average motor vehicle fuel costs in Vermont are about \$2.96 per gallon.

Chester's *Village Center Master Plan* includes recommendations to improve the walking and bicycling facilities in the villages, some of which the Town is actively implementing.

3. Energy Targets

The standards that the Department of Public Service has established for energy targets must be met if this Plan is to receive substantial deference in Section 248 energy siting proceedings. Chester is utilizing targets (or scenarios) developed using the Long-Range Energy Alternatives Planning (LEAP) Model and provided to Chester by the SWCRPC. The background for the targets are described in more detail in the *2018 Southern Windsor County Regional Energy Plan*. The purpose of the targets, when combined with the analysis presented in the previous section, are intended to provide an overview of existing energy use and projections for the pace of change

³ Vermont Comprehensive Energy Plan (Department of Public Service, 2016)

that is needed over the next three-plus decades. **The targets simply demonstrate that, in order to meet 90% of Vermont’s energy need from renewable sources by 2050, a significant amount of change will be needed in the forms of energy conservation, behavior modification, and development of new local renewable energy generation.**

Energy targets for Chester are presented in Appendix 6B.

4. Implementation Actions (Pathways)

In order to meet our stated energy goals and targets, the Town of Chester identifies the following implementation actions, also referred to as “Pathways”. These implementation action categories are intended to be consistent with those used in the *Guidance for Municipal Enhanced Energy Planning Standards* (DPS; March 2, 2017).

4.1 Conservation and Efficient Use of Energy

The Town of Chester encourages the conservation and efficient use of energy.

Efforts to improve energy efficiency and conservation are Chester’s initial focus. Chester has identified the following implementation actions to achieve this policy.

In order to assist in implementing these actions, the Town will consider establishing an Energy Committee under 24 V.S.A. §§4433, 4464. The Town will also consider including priority municipal energy efficiency projects into the Capital Budget and Program. The Town may also consider establishing a fund to support appropriate municipal energy projects (e.g. capital projects, outreach efforts, incentives).

4.1.1 Encourage Conservation by Individuals and Organizations

Chester cannot control the use of energy by individuals and organizations. However, the Town can lead by example, serve as a resource, and encourage individuals and organizations to conserve and use energy efficiently. To do so, Chester identifies and promotes the following resources to provide guidance to individuals and organizations:

- a) Inform residents about energy efficiency programs through [Efficiency Vermont](#) and the Weatherization Assistance Program for low-income households through Southeastern Vermont Community Action ([SEVCA](#)) and encourage residents to participate.
- b) Work with partner organizations and Efficiency Vermont to offer workshops and educational opportunities to businesses on efficiency in new construction, retrofits, and conservation practices.
- c) Publicize local energy conservation projects to encourage future private and public activities.

4.3.2 Strongly Prioritize Development in Compact Mixed-Use Centers

As indicated in the enhanced energy planning guidance, households within a compact, mixed-use center typically use less energy than those located in outlying areas. The energy savings are realized through reduced vehicle-miles-traveled and generally smaller homes, which require less energy to heat and cool. Transportation energy use can be further reduced by locating services such as shopping or daycare within walking or biking distances to the places where people work and live. This enables people to either choose an alternative to driving a single-occupancy vehicle or to significantly reduce the length of their drive. Chester chooses to encourage this by:

- a) Maintaining Village Center Designation, and improving the awareness of property owners about the tax credit opportunities to help pay for improvements to eligible buildings within Chester's Village Center.
- b) Coordinating with Southeast Vermont Transit (The Current) and the Go Vermont program to discuss options to promote car-sharing and public transit services.
- c) Continuing to actively work on making sidewalk improvements based on the recent Village Center Master Plan.

4.4 Statement of Policy on the Development and Siting of Renewable Energy Resources

The heating, transportation and conservation targets and pathways combined are not sufficient to meet the 90% by 2050 energy planning goal. The Long-Range Energy Alternatives Planning (LEAP) model also assumes the purchase of additional out-of-state renewable energy will help to reach this goal; however, that is also not sufficient to meet the energy goals. New local renewable energy generation is also needed in order to achieve the ambitious "90 by 50" energy goal. The following sections discuss how the municipality wishes renewable energy generation to take place in Chester.

4.4.1 Evaluate Existing Renewable Energy Generation

According to existing data, there are 38 known renewable energy generation facilities in Chester as of November 2017⁴, as summarized in Table 7. Existing facilities nearly amount to 2.17 MW of installed capacity. In order to more easily compare existing facilities with the targets for new renewable energy needs, generation output was estimated in MWh based upon the conversion factors found in the Guidance for regional enhanced energy plans.

Table 7: Existing Renewable Generation in Chester⁴

Type	Number of Sites	Installed Capacity (MW)	Est. Output (MWh)
Solar	38	2.17	2,667
Wind	0	0	0

⁴ Vermont Energy Dashboard (February 2017)

Hydro	0	0	0
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4.4.2 Analyze Generation Potential from Preferred Sites and/or Potentially Suitable Areas

An analysis of renewable energy generation potential was conducted for Chester by the SWCRPC. This consisted primarily of an analysis of existing and available GIS mapping data based upon the guidelines established by the DPS for enhanced energy planning. Table 8 below summarizes the findings of this analysis.

Table 8: Potential Renewable Energy Generation⁵

Type	Capacity (MW)	Generation Output (MWh)
Roof-top Solar	3.1	3,802
Ground-mounted solar	517.2	634,306
Wind	854.6	2,620,326
Hydro	0.016	56
Total	1,375	3,258,490

Based upon this analysis, there is significant potential to generate power from renewable sources in Chester, primarily through ground-mounted solar and wind. There is limited potential to generate hydropower from the three existing dam sites that do not generate power at this time. The potential for rooftop solar projects is limited. Without ground-mounted solar and/or some forms of wind, there is not adequate generation potential from hydro and rooftop solar to meet the “90 by 50 goal” alone.

4.4.3 Identify Sufficient Land for Renewable Energy Development to Reasonably Reach the 2050 Targets

Table 9 summarizes Chester’s targets for renewable energy generation⁶. There is more than adequate land area in Chester that has solar potential to meet our 2050 renewable energy target of 24,015 MWh, which is the equivalent of approximately 19.58 MW of ground-mounted solar at the installed capacity. The guidance assumes 8 acres of land is generally needed to support 1 MW of solar. This would amount to about 157 acres of land to meet this target. This represents about 4.3% of the total land area in Chester that is estimated to have potential to generate solar power.

⁵ Derived from GIS mapping analysis (SWCRPC, 2017)

Table 9: Renewable Energy Generation Targets⁶

Renewable Energy Generation	2025	2035	2050
Chester Targets (in MWh)	6,004	12,008	24,015

4.4.4 Ensure that Local Constraints do not Prohibit or Have the Effect of Prohibiting the Provision of Sufficient Renewable Energy to Meet State, Regional or Local Targets

These constraints have been analyzed, and the Town does not believe that these constraints prohibit or have the effect of prohibiting sufficient renewable projects needed to meet the state, regional or local energy goals.

The following resources are not appropriate locations for renewable energy projects and are hereby excluded from the potential wind and solar sites as depicted on the map. The following are consistent with the “known constraints” as described in the DPS mapping guidance.

- a) Vernal pools with a surrounding 50 foot buffer;
- b) Department of Environmental Conservation (DEC) river corridors;
- c) Federal Emergency Management Agency (FEMA) floodways;
- d) State significant natural communities and rare, threatened and endangered species;
- e) National wilderness areas; and,
- f) Class 1 and Class 2 wetlands.

The following represent constraints that will likely require mitigation and which may prove a site unsuitable after a site-specific study has been conducted based upon state, regional or local policies that are adopted and currently in effect. Points a) through g) below are consistent with the “possible constraints” as described in the DPS mapping guidance.

- a) Agricultural soils (NRCS-mapped prime agricultural soils, soils of statewide importance or soils of local importance);
- b) Act 250 agricultural soil mitigation areas;
- c) FEMA special flood hazard areas (floodplain);
- d) Protected lands (state fee lands and private conservation lands);
- e) Deer wintering areas;
- f) ANR conservation design highest priority forest blocks; and,
- g) Hydric soils.

4.4.5 Statements of Policy to Accompany Maps

Chester hereby promotes the development of renewable energy generation in order to achieve the energy goals and

Undue Adverse Effect (Impact)

An adverse impact that meets any one of the following criteria:

- (1) Violates a clear, written community standard intended to preserve the aesthetics or scenic, natural beauty of the area;
- (2) Offends the sensibilities of the average person (i.e. it is offensive or shocking because it is out of character with its surroundings or significantly diminishes the scenic qualities of the area); or,
- (3) Fails to take generally available mitigating steps that a reasonable person would take to improve the harmony of the proposed project with its surroundings.

This definition is based upon Vermont case law. The term undue adverse effect is used in accordance with 30 V.S.A. §248.

targets as established in this plan. The following statements of policy apply to renewable energy projects:

- a) All new development should be sited to accommodate solar.
- b) Chester encourages rooftop solar projects.
- c) Chester encourages residential-scale wind turbines.
- d) Renewable energy projects, including ground-mounted solar projects of 15 KW and bigger, must not be located in the following areas:
 1. Vernal pools with a surrounding 50 foot buffer;
 2. Commercial scale projects in the river corridors as most recently mapped by the Vermont Department of Environmental Conservation (DEC);
 3. FEMA floodways;
 4. State significant natural communities and rare, threatened and endangered species;
 5. National wilderness areas;
 6. Class 1 and Class 2 wetlands; and,
 7. Within 50 feet of all streams and Class 1 and 2 wetlands.
- e) All ground-mounted solar projects must meet or exceed the setback standards in 30 V.S.A. §248(s).
- f) Any new biomass facility and all ground-mounted solar projects of 150 kW or greater that are within view of public roadways (i.e. state highways, US routes, and Class 1, 2 and 3 town highways) must provide plantings that blends the project with its surroundings. This shall consist of naturalistic plantings using a mix of native plants and avoid introducing [invasive species](#).
- g) The applicant must replace any dead or diseased vegetation serving as part of the landscape mitigation measures throughout the life of the project or until the project ceases commercial operation.
- h) In accordance with PUC Rule 5.900, the applicant is required to provide a plan for the site to be adequately decommissioned at the time when the project ceases commercial operation. This should involve the removal of all parts of the project from the site including, but not limited to, the solar panels or wind turbine, inverters, metal framework that supports the solar panels, fencing, control invasive species, and any necessary site recovery as stipulated in the permit.

Wind Turbine Categories

Residential-scale – wind turbines that are up to 30 meters (or 98 feet) tall, measured at the hub, or the center of the wind turbine blades.

Community-scale (sometimes referred to as commercial-scale) – wind turbines that are up to 50 meters (or 164 feet) tall, measured at the hub.

Utility-scale – wind turbines that are usually 70 meters (or 230 feet) tall or greater, measured at the hub.

Plants for site reclamation and restoration after decommissioning an energy generation site should be chosen with plant communities in mind, and considering the original composition of the community before disturbance. Consideration of soils, hydrology, solar access and physiographic region should guide plant selection. Plants should include canopy, mid-story, and woody and herbaceous understory layers. All plants should be

native to Vermont. Publications to refer to include:

Mixed Hardwood Forests:

http://dec.vermont.gov/sites/dec/files/wsm/lakes/Lakewise/docs/lp_naturalcomm.pdf

Lacustrine, Riparian and Wetland Areas:

http://dec.vermont.gov/sites/dec/files/wsm/lakes/Lakewise/docs/pl_native-veg.buffer-manual.1994.pdf

General Information for determining Plant Community to restore:

<https://www.uvm.edu/rsenr/sal/vbp/VBP.pdf>

<http://vtfishandwildlife.com/node/200>

<http://vtfishandwildlife.com/learn-more/landowner-resources/liep-invasive-species-program/terrestrial-invasive-plant-resources/native-plant-sources>

i) Proposed renewable energy facilities must not have undue adverse impacts on significant wetlands, significant wildlife habitat, wildlife travel corridors/habitat connectivity, stormwater, water quality, flood resiliency, important recreational facilities or uses, scenic resources identified in this plan, or inventoried historic or cultural resources.

j) Proposed renewable energy facilities must not result in forest fragmentation or perpetuate invasive species.

k) For all utility-scale wind (i.e. hub height of 70 meters/230 feet) and commercial-scale wind projects (i.e. hub height of 50 meters/164 feet hub height), the applicant must demonstrate that the proposal was evaluated and that reasonable mitigation was considered with respect to the following criteria:

1. Operational noise, to be measured at the property line, will result in noise levels consistent with state standards.
2. Avoid or minimize “shadow flicker” through careful project siting, planting trees or other methods.
3. Avoid or minimize adverse impacts to significant wildlife habitat and wildlife travel corridors, including applicable terrestrial, aquatic and aerial species (e.g. migratory, resident and breeding bird and bat populations).
4. Avoid or mitigate safety hazards in the vicinity of the project area (i.e. ice shedding or ice throw hazards, blade throw hazard, and tower fall zones).

Shadow Flicker

A flickering effect caused when rotating wind turbine blades periodically cast shadows, such as through the windows of adjacent homes. Shadow flicker is considered by some individuals as a nuisance and may cause headaches. No more than 30 hours per year is commonly used as a limit to reduce nuisance complaints.

4.4.6 Maximize the Potential for Renewable Generation on Preferred Locations

Preferred locations include specific areas or parcels that are specifically identified to indicate preferred locations for siting a generator or a specific size of type of generator. Identifying

1 preferred sites informs the community where renewable generation is desired. The identification
2 of such sites can help to streamline the permitting process.

3 Preferred sites for Chester include:

- 4 a) Rooftops;
- 5 b) Parking lots;
- 6 c) Brownfield sites; and,
- 7 d) Disturbed portions of extraction sites (i.e. gravel pit, quarry).

9 4.4.7 Demonstrate the Municipality's Leadership by Example

10 Chester will lead by example by working with partner organizations to identify opportunities for
11 local renewable energy generation that benefits the community and furthers the goals and
12 policies of this plan.

Estimated fuel cost per year:	\$4.4 million
Residents driving alone to work:	71%
Average commute time:	21 minutes

**Electricity Use Table 6-A.6**

Electricity Usage in 2015 ^{vi}	(see figure)
Avg. Residential Usage:	6,689 KWh
Total Usage (2014-2016):	↑ 254,657 KWh
	↑ 1.4%

**Energy Generation Table 6-A.7****Existing Renewable Energy Generation**

Solar	38 sites	2.17 MW	2,666.6 MWh
Wind	0	0	0
Hydro	0	0	0
Biomass	0	0	0

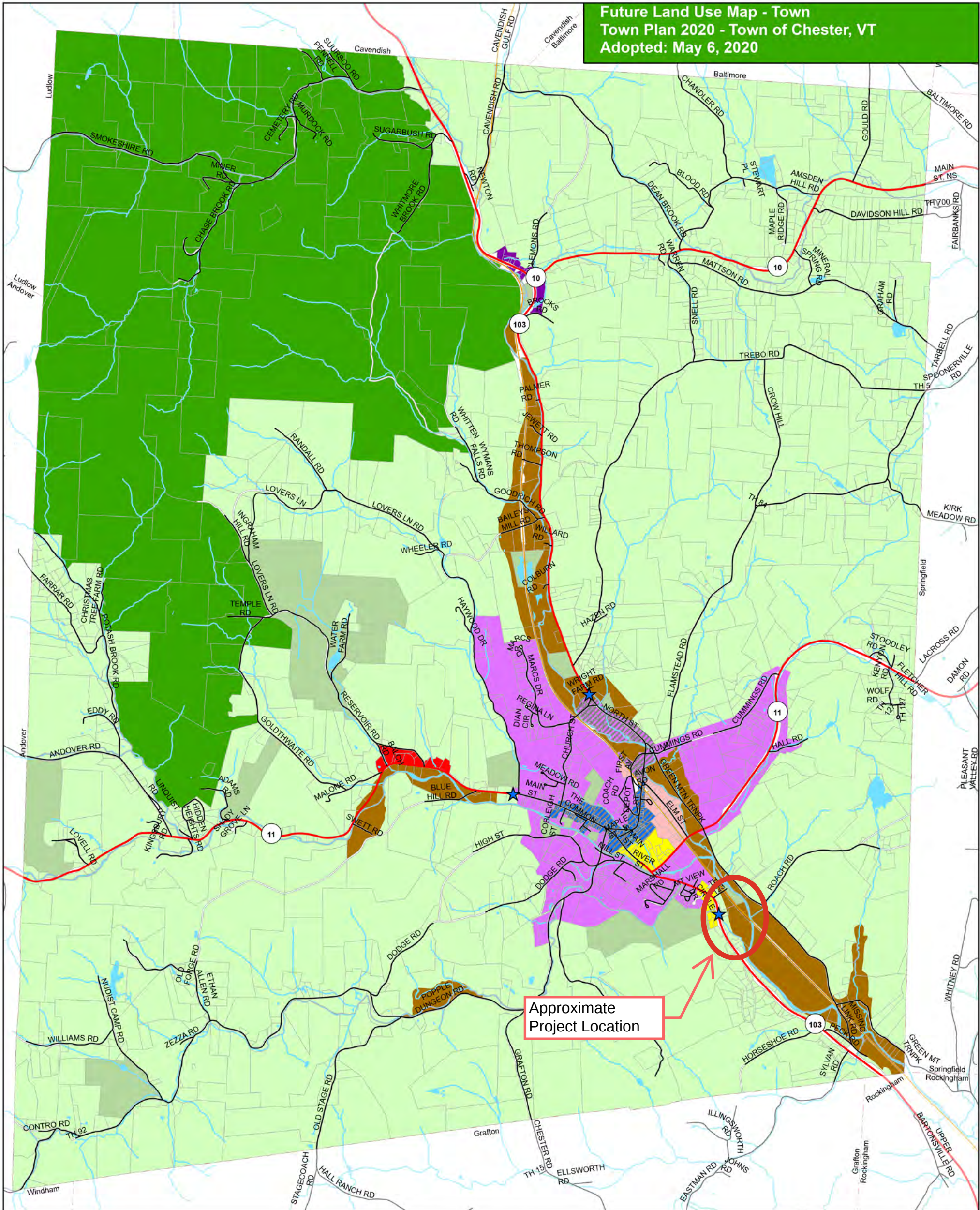
Renewable Energy Generation Target ^{vii}

2015 (Baseline)	2,666.6 MWh
2025	6,004 MWh
2035	12,008 MWh
2050	24,015 MWh

Potential for Renewable Energy Generation ^{viii}

Rooftop Solar	3.1 MW	3,802 MWh
Ground-Mounted Solar	517.2 MW	634,306 MWh
Wind	854.6 MW	2,620,326 MWh
Hydro	0.016 MW	56 MWh

Future Land Use Map - Town
Town Plan 2020 - Town of Chester, VT
Adopted: May 6, 2020



- ★ Gateway/ Transition
- The Center of Chester (Village Center Subdistrict)
- The Center of Chester (Stone Village Subdistrict)
- Commercial
- Commercial Industrial
- Special Mixed Use Area
- Village Residential
- Gassetts/ Hamlet
- Farmlands
- Conservation
- Public Lands
- Forest/ Rural
- Water
- State Highway

- Town Highway (C1,2,3)
- Railroad
- Rivers and Streams
- Lakes and Ponds
- Town Boundary
- Parcels

0 0.45 0.9 Miles

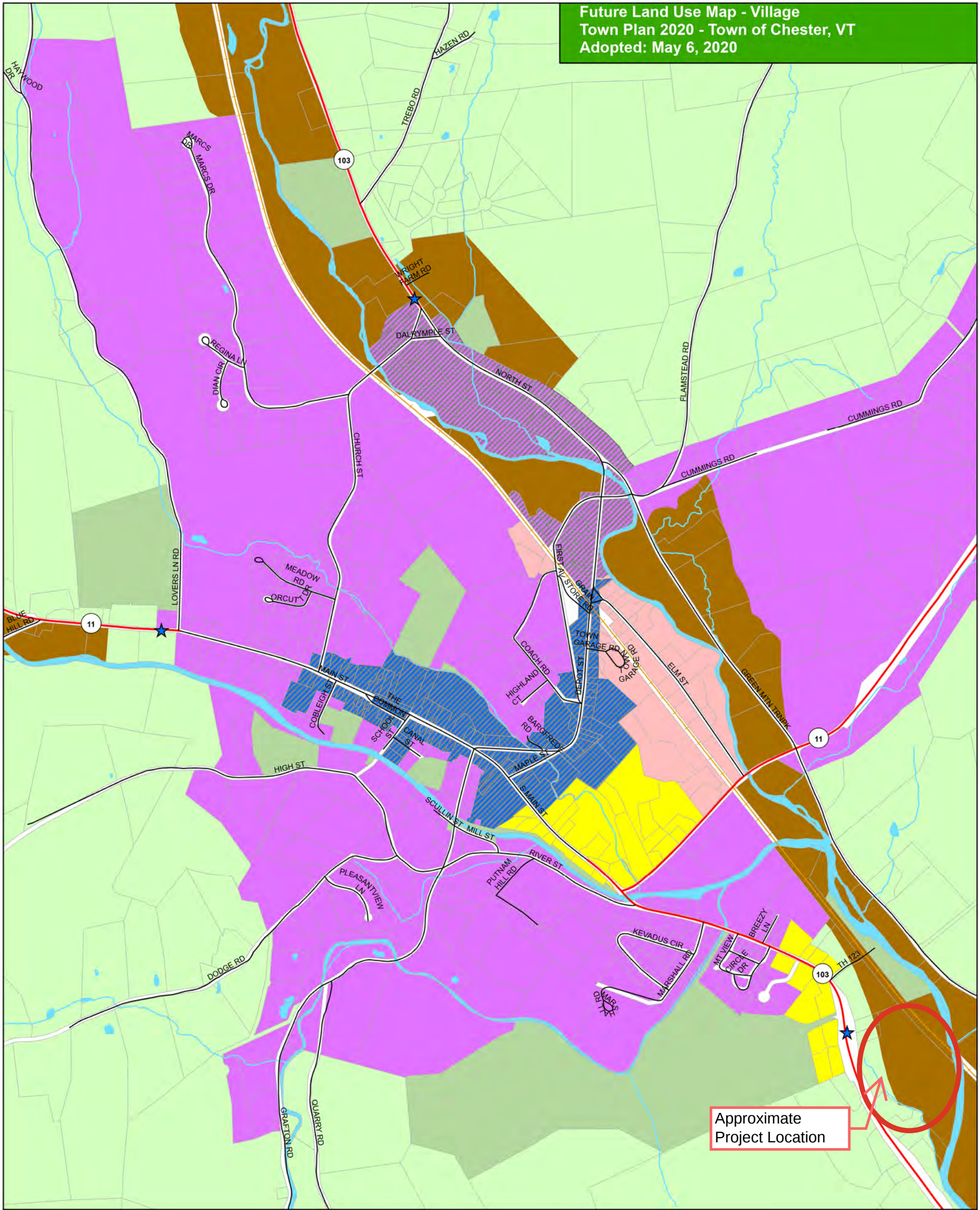
Data Sources: Future Land Use (RPC April 2016 Draft), Roads (VTrans 2014), Railroad (VTrans 2014), Rivers and waterbodies (VHD 2008), Parcels (CA 2014), Town Boundary (VCGI 2012 and RPC 2014 using Parcels 2014)

VT State Plane Meters, NAD 83

Map for planning purposes only.
Not for regulatory interpretation.

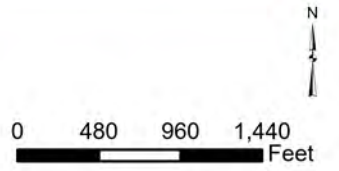
Map drawn April 26, 2016



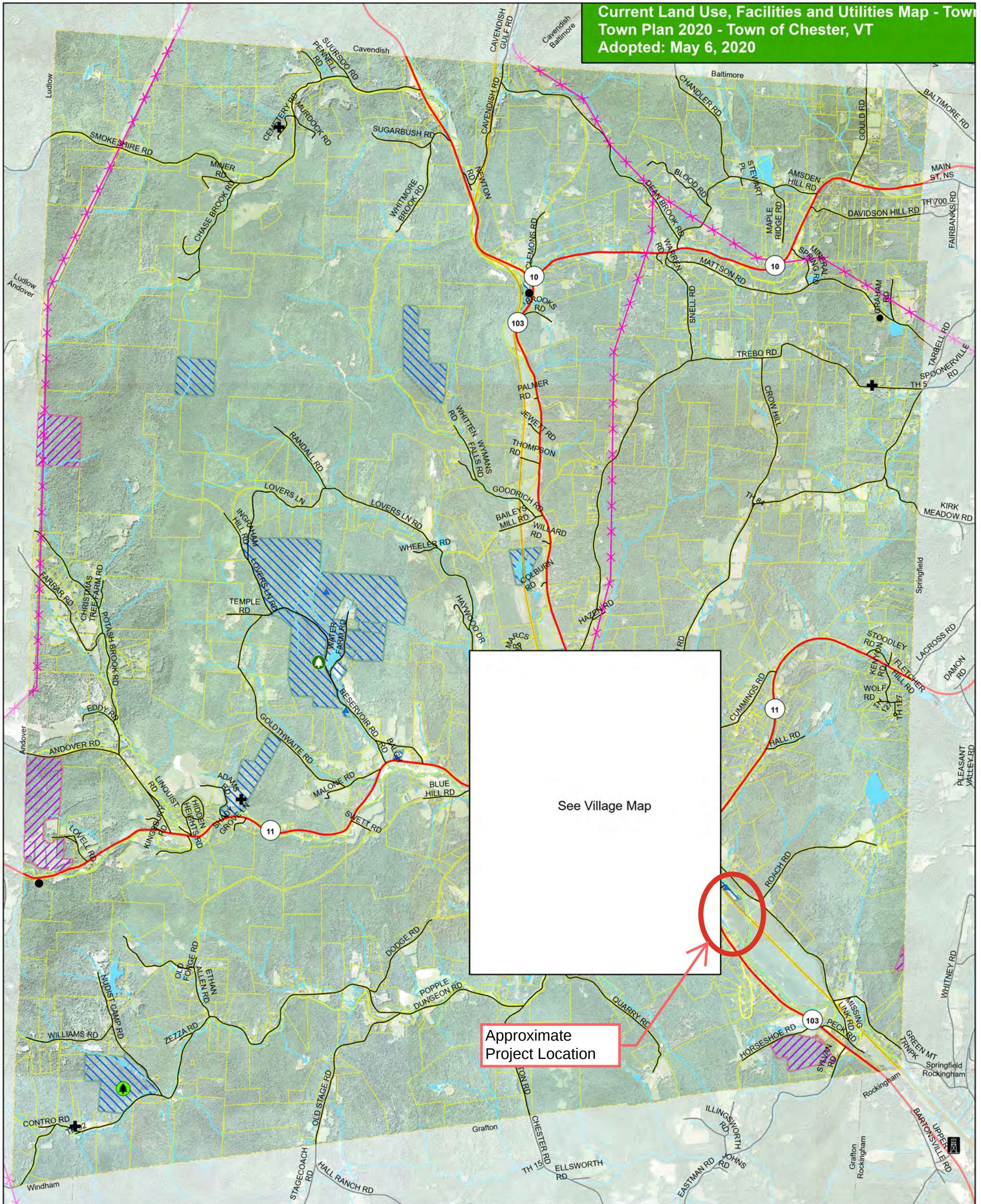


Approximate
Project Location

- ★ Gateway/ Transition
- The Center of Chester (Village Center Subdistrict)
- The Center of Chester (Stone Village Subdistrict)
- Commercial
- Commercial Industrial
- Special Mixed Use Area
- Village Residential
- Gassetts/ Hamlet
- Farmlands
- Conservation
- Public Lands
- Forest/ Rural
- ROW
- Water
- State Highway
- Town Highway (C1,2,3)
- Railroad
- Rivers and Streams
- Lakes and Ponds
- Town Boundary
- Parcels



Current Land Use, Facilities and Utilities Map - Town of Chester, VT
Town Plan 2020 - Town of Chester, VT
Adopted: May 6, 2020



- | | | |
|--|--|--|
|  Town Services |  Town Park/ Forest/ Recreation Area |  Railroad |
|  Post Office |  Lake or River Access |  Transmission Line |
|  Library |  Fishing Access |  Rivers and Streams |
|  Train Station |  Other notable recreation site |  Lakes and Ponds |
|  School |  Cemetery |  Public Land |
|  Other Civic/ Public Site |  Telecommunications Facility |  Privately conserved land |
|  Health Clinic |  State Highway |  Town Boundary |
|  Large Solar Array |  Town Highway (C1,2,3) |  Parcels |
|  State Forest | | |

Note: Use of public lands may be restricted.

Data Sources: Telecommunications Tower (Natural Resources Board 2007 and SWCRPC 2013), Electric Transmission Line Corridor (VCGI 2003 and SWCRPC 2015), Public Land and Privately Conserved Land (2010 Town Plan, VLT 2013, UVM 2013, ANR 2012, SWCRPC 2015), Site types (VT E911 July 2015, 2010 Town Plan, SWCRPC 2015), Cemeteries (VTrans 2001, 2010 Town Plan and SWCRPC 2015), Roads (VTrans 2014), Railroad (VTrans 2014), Rivers and waterbodies (VHD 2008), Parcels (CA 2014), Town Boundary (VCGI 2012 and RPC 2014 using Parcels 2014), Aerials (NAIP 2014)

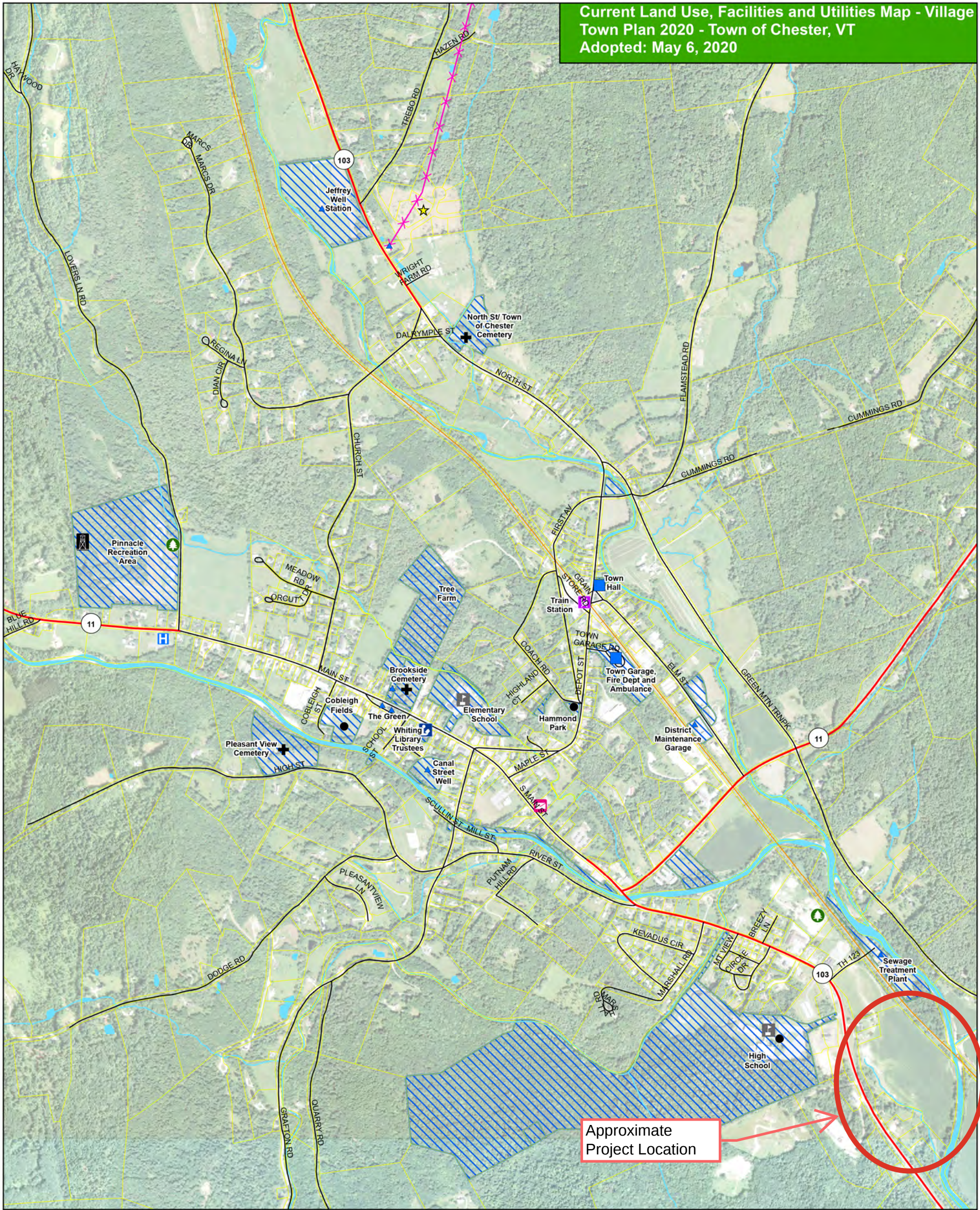
VT State Plane Meters, NAD 83

Map for planning purposes only.
Not for regulatory interpretation.

Map drawn March 1, 2016



Current Land Use, Facilities and Utilities Map - Village
Town Plan 2020 - Town of Chester, VT
Adopted: May 6, 2020



- | | | |
|--------------------------|------------------------------------|--------------------------|
| Town Services | Town Park/ Forest/ Recreation Area | Railroad |
| Post Office | Lake or River Access | Transmission Line |
| Library | Fishing Access | Rivers and Streams |
| Train Station | Other notable recreation site | Lakes and Ponds |
| School | Cemetery | Public Land |
| Other Civic/ Public Site | Telecommunications Facility | Privately conserved land |
| Health Clinic | State Highway | Town Boundary |
| Large Solar Array | Town Highway (C1,2,3) | Parcels |
| State Forest | | |

Note: Use of public lands may be restricted.

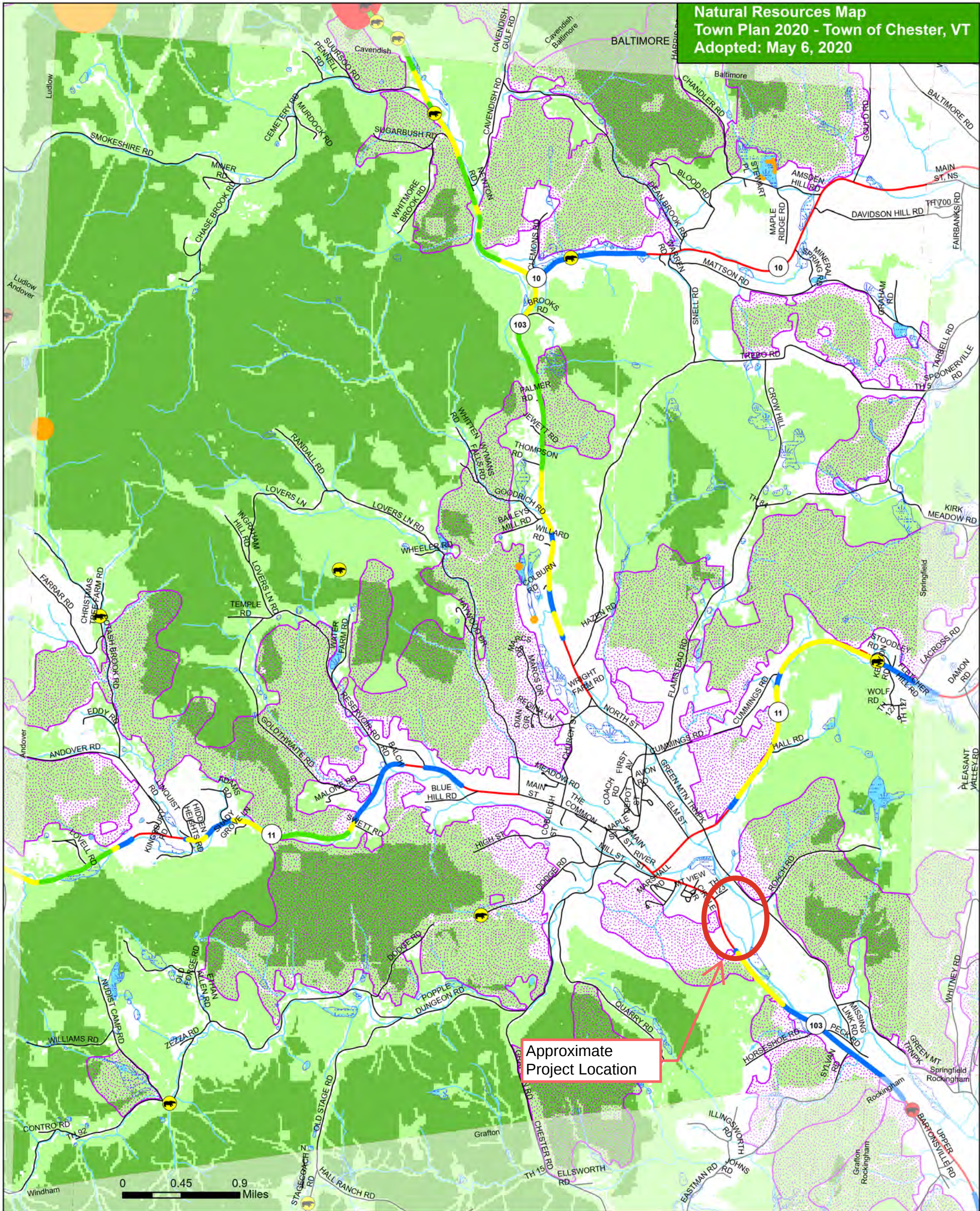
Data Sources: Telecommunications Tower (Natural Resources Board 2007 and SWCRPC 2013), Electric Transmission Line Corridor (VCGI 2003 and SWCRPC 2015), Public Land and Privately Conserved Land (2010 Town Plan, VLT 2013, UVM 2013, ANR 2012, SWCRPC 2015), Site types (VT E911 July 2015, 2010 Town Plan, SWCRPC 2015), Cemeteries (VTrans 2001, 2010 Town Plan and SWCRPC 2015), Roads (VTrans 2014), Railroad (VTrans 2014), Rivers and waterbodies (VHD 2008), Parcels (CA 2014), Town Boundary (VCGI 2012 and RPC 2014 using Parcels 2014), Aerials (NAIP 2014)

VT State Plane Meters, NAD 83

Map for planning purposes only.
Not for regulatory interpretation.

Map drawn March 1, 2016

Natural Resources Map
Town Plan 2020 - Town of Chester, VT
Adopted: May 6, 2020



- Bear Collision
- Bear Travel
- Bear Mast

- State Threatened Species
- State Endangered Species
- Deer Wintering Area
- Wetland

- Wildlife Crossing Value
(out of 10)
- 5 - 5.5
 - 6 - 6.5
 - 7 - 7.5
 - 8 - 8.5

- Wildlife Habitat Suitability
(out of 10)
- 0 - 6
 - 6.01 - 8
 - 8.01 - 10

- State Highway
- Town Highway (C1,2,3)
- Rivers and Streams
- Lakes and Ponds
- Town Boundary

Note: Some data, eg wetlands and vernal pools, is incomplete. Further study may be needed prior to applying for permits to develop or make changes to the land. Currently no vernal pools have been identified in Chester.

Data Sources: Threatened and Endangered Species (ANR 2015), Bear Collision (ANR 2004), Bear Travel/ Crossing Area (ANR 2004), Bear Mast (ANR 2001), Biofinder (ANR 2013), Vernal Pools (SN6 component of Biofinder 2013), Wetlands (VSWI, ANR 2010), Deer Wintering Areas (ANR 2011), Wildlife Habitat Suitability (ANR 2006), Wildlife Crossing Value (ANR 2006), Waterbodies (50ft buffer on VHD 2008), Roads (VTrans 2014), Railroad (VTrans 2014), Rivers and waterbodies (VHD 2008), Parcels (CA 2014), Town Boundary (VCGI 2012 and RPC 2014 using Parcels 2014)

VT State Plane Meters, NAD 83

Map for planning purposes only.
Not for regulatory interpretation.

Map drawn Feb 11, 2016



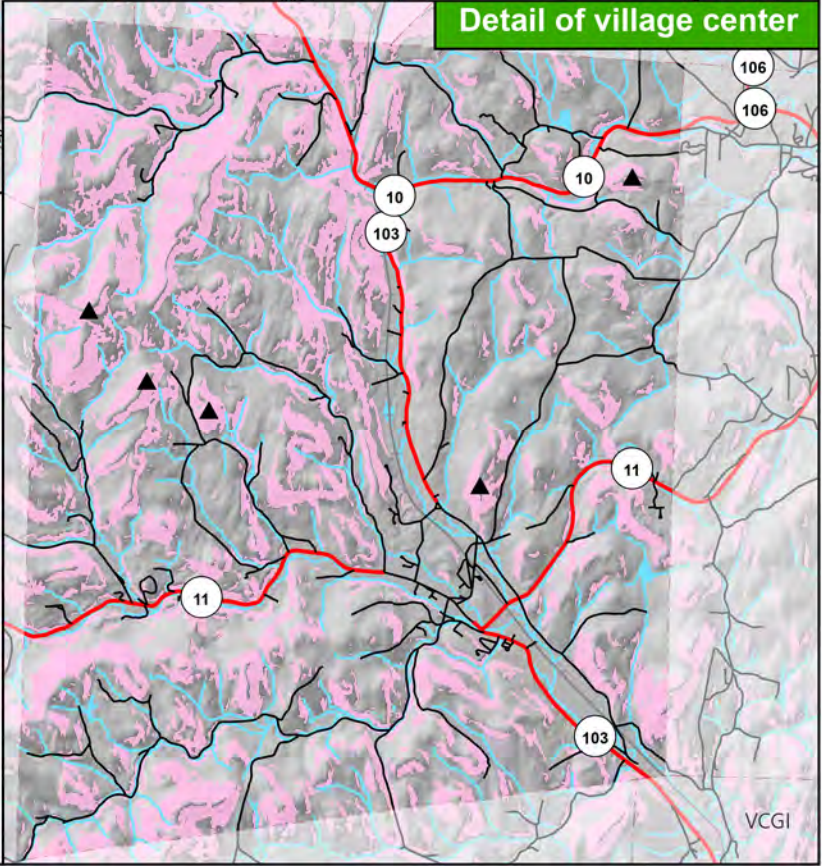
SOUTHERN WINDSOR COUNTY
REGIONAL PLANNING COMMISSION
PO Box 320, Ascutney, VT 05030
www.swcrpc.org

Slopes, Soils and Elevation Map
Town Plan 2020 - Town of Chester, VT
Adopted: May 6, 2020



Approximate
Project Location

Detail of village center



- ▲ Hill or Mountain Summit
- 100ft Contour
- ≤ 23.9
- Steep Slopes (24% and over) (small map only)
- Prime Agricultural Soils
- Agricultural Soils of Statewide Importance
- State Highway
- Town Highway (C1,2,3)
- Railroad
- Rivers and Streams
- Lakes and Ponds
- Town Boundary

Data Sources: Contours, steep slopes and hillshade (VCGI 2016), Agricultural Soils (NRCS 2011), Roads (VTrans 2014), Railroad (VTrans 2014), Rivers and waterbodies (VHD 2008), Town Boundary (VCGI 2012 and RPC 2014 using Parcels 2014)

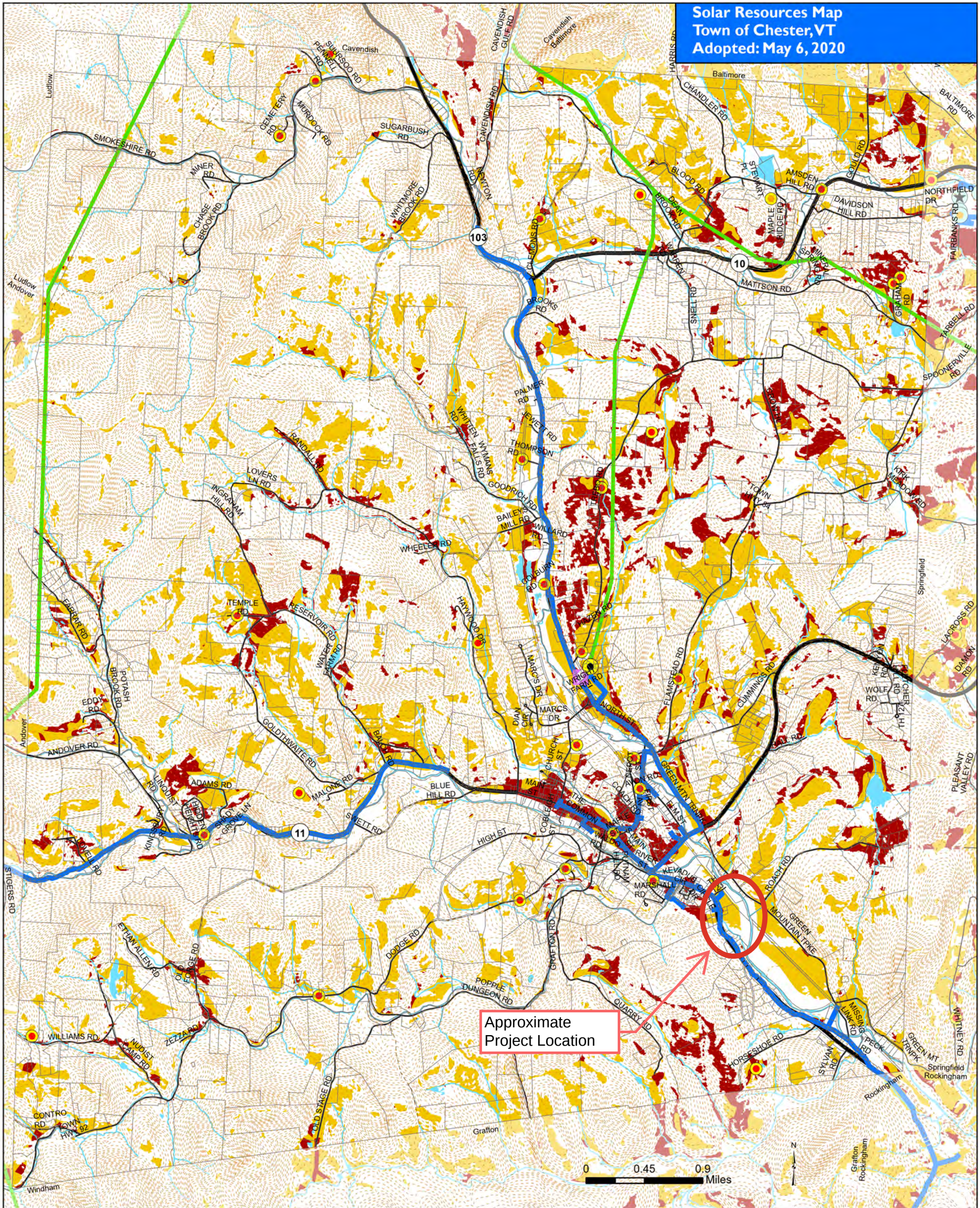
VT State Plane Meters, NAD 83

Map for planning purposes only.
Not for regulatory interpretation.

DRAFT Map drawn Feb 11, 2019



Solar Resources Map
Town of Chester, VT
Adopted: May 6, 2020



Approximate
Project Location

0 0.45 0.9
Miles

- ★ Business, Institution or Municipality with a capacity of 150kW or more
- ★ Business, Institution or Municipality with a capacity of 15kW or less
- ★ Business, Institution or Municipality with a capacity of 15.1kW - 150kW
- Residential, Capacity of 150kW or more
- Residential, Capacity of 15kW or less
- Residential, Capacity of over 15kW but less than 150kW
- ⚡ Substation
- ⚡ Electric Transmission Line
- ⚡ Three Phase Electricity Distribution Lines
- Prime solar resource
- Secondary solar resource
- ~ Rivers and Streams
- Lakes and Ponds
- Town Boundary
- ~ State Highway
- ~ Class 1, 2 and 3 Town Highway
- ~ Class 4 Town Highway
- ~ Forest Rd, Legal Trail, or Private Rd

This map shows the existing solar energy production according to capacity for electricity generation and organization type. This map also shows the potential for ground-mounted solar energy production considering

- Statewide analysis of solar potential
- Statewide, Regional and Local constraints which prevent or may impact development of solar energy generation facilities

The VT Public Service Board divides applications for a Certificate of Public Good by net metering system capacity: 15kW or less, over 15kW but less than 150kW, and 150kW or more.

Solar potential for ground-mounted systems was calculated to consider the following conditions: slope direction, slope steepness, and radiation values from ESRI solar analyst. For more info see <http://vcgi.vermont.gov/opendata/act174>

Known constraints include areas that should not be developed with renewable energy generation facilities. Possible constraints include areas that may impact the siting of renewable energy generation facilities, but do not necessarily prevent their development.

The Regional Energy Planning Standards are available at <http://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards>

Data sources: Solar Facilities (VT Energy Dashboard. Sites listed on Atlas on 02/03/2017), Prime and Secondary Solar Potential (VCGI 2017) (Regional Constraints and Town Constraints for TO BE DEFINED), Substations (BCRC 2015 and SWCRPC 2016), Three Phase Electricity Lines (BCRC 2015), Transmission Lines (RPC 2016), Waterbodies (VHD 2008), Roads (VTrans 2016), Town Boundary (VCGI 2012).

VT State Plane Meters, NAD 83 Map for planning purposes only. Not for regulatory interpretation.

Map drawn April 12, 2017

