

## APPENDIX 5. TOWN AND REGIONAL PLAN EXCERPTS

### CHITTENDEN COUNTY REGIONAL PLAN 2006

Overview p. 10.1

Energy planning and policies should be based on a solid foundation of information. Although information about the energy produced for sale to consumers is available, reliable information is lacking for entire categories of energy use (such as the energy generated by individual consumers for their own use or the energy saved by consumers who adopt energy conservation measures or who convert from one energy source to another).

Nonrenewable energy sources can have major drawbacks, such as rising costs and production and consumption methods that can have adverse impacts on human health, wildlife habitats, and the global climate. We can avoid or minimize these drawbacks by using energy more efficiently, by increasing our use of renewable energy sources, and by establishing a more energy-efficient land-development pattern.

Vermont's total energy consumption increased by more than 30 percent from 1980 to 2001...

Consumption of renewable energy sources increased by about one-fifth from 1980 to 2001.

Energy conservation is considered as part of the *Act 250* review of certain proposed developments in Vermont [10 VSA 6086 (a) (9) (F)]. Chittenden County and Vermont have demonstrated leadership in energy conservation and renewable energy (as demonstrated by CCRPC's publication in 1996 of *Outdoor Lighting Manual for Vermont Municipalities* 10-3 and Efficiency Vermont's programs and provision of energy information). We need to remain vigilant for new opportunities to take advantage of emerging technologies and practices.

#### Energy Production / Supply

Overview p. 10.8

Energy sources that are produced in Vermont include electricity, wood, wind, photovoltaic energy, and solar thermal energy... These sources provided only about one-third of the State's energy consumption in 2001...

p. 10.10

The production of electricity in Vermont in 2001 for sale to others (i.e., not including production by a household or enterprise for its own use) used a number of energy sources... Wind (less than one percent).

## p. 10.11

Electricity use may be reduced by employing strategies including cogeneration (i.e., using energy that is the byproduct of another process, such as the heat generated by machinery), distributed energy (i.e., energy production at or near end-users), conservation of electricity used, improved efficiency, and substitution of alternative energy sources (such as solar and wind power).

## p. 10.12

Areas in Chittenden County near Lake Champlain and in the highlands on the eastern side of the County are, *in general*, suitable for wind energy applications... According to the U.S. Department of Energy, areas with winds of at least seven meters per second (M/S) are suitable for advanced wind turbine technology under development today and areas with winds less than 5.6 M/S are unsuitable for wind energy development. Wind power can enhance Vermont's energy self-reliance, is relatively quiet, and has minimal impacts on air and water quality, which mostly relate to site design and development. However, the most viable sites often are also the most visible, raising concerns about aesthetics and scenic views. There is no reliable information on the use of wind energy in the County.

## p. 10.14

## Energy Policies

1. Chittenden County's households and employers should have access to diverse, reliable, affordable, and environmentally responsible energy supplies.
2. Energy production, transmission, and distribution infrastructure in Chittenden County should be efficient, reliable, cost-effective, and environmentally responsible.
4. Households and employers should, on a continual basis, be informed and encouraged to adopt energy-conservation and efficiency measures, as well as to use renewable energy sources.
9. Municipal land-use regulations should encourage the use of small-scale renewable energy sources as accessory uses to residential and nonresidential principal uses and should encourage larger-scale renewable energy sources as principal uses.

**NORTHWEST REGIONAL PLAN 2007-2012**

The region will continue to be a group of locally connected communities working toward common goals to address issues which will affect them into the next century. Communities will work together to ensure that long-term economic, social and environmental factors are balanced in the planning and decision-making process. This balance will ensure the region's continued growth and well-being by promoting a healthy and sustainable quality of life based on the following: Energy conservation, and increased, sustainable use of renewable energy resources and related

technologies which will increase energy self-sufficiency, availability, and affordability. ...

Energy conservation, and increased, sustainable use of renewable energy resources and related technologies which will increase energy self-sufficiency, availability, and affordability.

#### P 6.1

Power imported from Hydro Quebec is the second largest supplier of electric power. In 1990, the PSB approved a 30-year contract between a group of eight Vermont utilities, known as the Vermont Joint Owners (VJO), to purchase additional long-term baseload power from Hydro Quebec and to make it available at wholesale to the rest of Vermont's utilities. Most of the power imported from Hydro Quebec runs over major transmission wires (345 kV) to a converter station in the Town of Highgate (located west of Highgate Center and north of the Missisquoi River, see Figure 6.2) operated by the Vermont Electric Company (VELCO). The converter acts to synchronize power with the infrastructure used by CVPS and other Vermont electric utilities. The VELCO converter generates over 115,000 kV and serves the needs of one-fourth of Vermont's population. Much of the remaining Hydro Quebec power is brought into Vermont through direct transmission links with Quebec maintained by Vermont Electric Cooperative (VEC). When and if these two major sources of electricity become unavailable, a large block of Vermont's electric load will have to come from alternative sources.

#### P 6.4 -6.5

##### ALTERNATIVE ENERGY RESOURCES AND POTENTIAL

###### *Wind power*

Wind energy offers the prospect of creating an increasing share of electrical production with greatly reduced effects on air pollution compared to conventional generation methods. New technologies are now available to harness wind to produce power that is highly efficient and a viable alternative to other more traditional sources of power. Despite the fact that wind energy is clean and a relatively secure fuel source, the siting of wind turbines has raised questions about aesthetic impacts, noise, and effects on wildlife. It is the intent of this section, to provide developers, regulators, and landowners with an understanding of the sensitive nature of the placement of wind energy facilities and the statutory review process they undergo.

Wind power generation facilities can commonly include equipment, site conditions, or locations which raise concerns within a community, or the state as a whole. Research has shown for larger generation facilities, locations between 2,000 and 3,500 feet above sea level are ideal. Wind resource GIS maps are now available displaying Vermont's dominant wind patterns. Wind turbines intended for off-site generation are generally placed on towers ranging in height from 135 to 250 feet. Lighting that meets FAA requirements may be required for towers over 200 feet tall.

To lower construction and operating costs, the number of turbines on a typical Vermont site can range from as little as 5 to many as 40.

Wind generation facilities are land uses subject to local and/or state permitting requirements. Power generation facilities, as well as distribution lines which are connected to the power grid, are subject to review and approval by the Vermont Public Service Board (30 VSA Section 248) and are therefore preempted from municipal review. Under this law, prior to the construction of a generation facility, the Board must issue a Certificate of Public Good. A Section 248 review addresses environmental, economic, and social impacts associated with a particular project, similar to Act 250. In making its determination, the Board must give due consideration to the recommendations of municipal and regional planning commissions and their respective plans. Accordingly, it is appropriate that this Plan address these land uses and provide guidance to town officials, regulators, and utilities. Smaller wind generation facilities set up solely for owner consumption of power on-site are; however, within the jurisdiction of local zoning regulations.

Wind power generation appears to be a viable energy option according to industry experts who state that its future looks attractive. Accordingly, it is reasonable to assume that there will be proposals to site wind turbines in this Region. However, there is not a lot of high elevation land in the region (above 2,500 feet), and for the most part it consists of privately owned land in Montgomery and Richford. Because of this factor, much of any anticipated wind generation site development in this region is most likely to be the small scale, on-site facilities; however, communities and the region should understand utility-scaled facilities and where they may fit in the community. The development of site criteria to address environmental and community concerns is encouraged. Through a consensus building process, all stakeholders will have a better understanding of the issues surrounding these new land uses. This is particularly important to industry providers and regulatory agencies as it will make the process of getting a project underway more predictable.

While the benefits of wind power are substantial, the location of utility-scaled wind energy turbines and associated facilities can adversely interfere with scenic, natural, and historic resources. Much like other power generation facilities, not all wind generation sites are appropriate to every setting. Although currently critical to commercially viable wind generation sites, ridgelines are the more visible portions of the Region's landscape and aesthetically valued by many. Both the Vermont Environmental Board and the Public Service Board have identified upland areas and ridgelines as having particularly sensitive landscapes. The region and individual municipalities should understand the Section 248 review process, so that in the case a proposed commercial project, the local community will have maximum participation for a positive outcome.

P 6.7

2. Areas where there is a high expectation to viewing a natural or historically intact landscape should not be considered prime locations for these types of facilities.

Sensitive viewpoints include national or state recognized scenic vantage points or historic landmarks. Wind turbines should be located so they are not competing with these important scenic elements or focal points.

3. Site selection should not be limited to the power generators alone; other elements of the facility need to be considered as well. In many locations necessary site clearing and highly visible roadways can have greater visual impacts than the generator itself. These include access roads, site clearing, on-site power lines, substations, lighting, and off-site power lines. Minimal disturbance of the site shall be a planning objective. In planning for entire facilities, designers should take those steps generally available to mitigate its impact on scenic and historic resources and improve harmony with its surroundings.

4. Operating noise produced by power generation facilities can be a concern for persons living near generators, particularly if the noise is not masked by ambient or background noise. In the course of project planning, noise levels should be a consideration. Designers should take reasonable mitigation measures to minimize or eliminate significant noise impacts resulting from the construction or operation of the facility. Establishment of a noise setback for the facility from dwelling units, public places, and similar frequently inhabited areas should be employed. Sound levels outside of the setback area should not be annoying or interfere with activities such as speech and sleep.

5. Power generation facilities need to be sited so as not to destroy or significantly imperil necessary wildlife habitats, ecological systems, water and/or air quality, economic structures, scenic qualities, and cultural features. Approvals or permits for this use should not be granted unless evidence clearly establishes that these important features will not be unduly compromised. This implies that the designers have gathered information about habitats, ecological systems, scenic qualities existing in the project area and have taken reasonable measures to mitigate possible destruction or impairment of the resource. In particular, consideration shall be given to the effects of the project on birds and bears residing in the area and their migratory routes, impacts of human activities at or near habitat areas on the resource, and any loss of vegetative cover as well as food sources for critical habitats.

6. Power generation facilities deemed to be abandoned or unused should be removed by the owner/operators within a reasonable time from cessation of operations. Restoration or enhancement of the site to its natural state shall be the objective of this effort. To ensure facility removal and site restoration, regulators should have the option to require, as a condition of approval, that the permittee post a financial surety to cover the cost of removal and remediation of the landscape.

#### P6.8

Zoning bylaws control the type and density of development. Encouraging high density and diverse uses in and around existing built-up areas will lead to more

compact settlement patterns, thereby minimizing travel requirements. At the same time, zoning bylaws must be flexible enough to recognize and allow for the emergence of technological advancements which encourage decreased energy consumption, such as increased use of solar and wind-power and telecommunications technology.

Through setback and height requirements, zoning also controls the size and relative location of new structures. Chapter 117 permits communities to exempt moderately sized wind and solar energy devices from these restrictions. A zoning bylaw may allow for the consideration of solar access (exposure to sun) in reviewing projects at the local level.

p. 6.9 Policies

6.1 In the evaluation of all energy projects, those with the least adverse environmental, aesthetic, economic, and social impacts are preferred.

6.2 A broad range of options that could meet energy needs should be considered when evaluating energy-related projects, including conservation, efficiency and education, and those with the least adverse environmental, aesthetic, economic, and social impacts evaluated in the short and long term should be supported.

6.3 Efforts that reduce the energy demanded for transportation should be supported.

6.4 Efforts that reduce the emission of pollutants from energy production and/or consumption, particularly greenhouse gases and contributors to ozone depletion, should be strongly supported.

6.5 Promote least cost planning, or life cycle costing, which considers all costs of energy production and use, including environmental and social costs, from the origination of inputs to the disposal of outputs.

6.6 Generation, transmission and distribution lines or corridors should avoid adverse impacts on significant wetlands, plant and animal habitat, and recognized historic, natural, or cultural resources.

6.7 Support building standards that promote energy-efficiency. 6.2

6.8 Promote longterm ecological management and sustainable use of renewable energy resources in the Region.

6.9 Encourage locally produced renewable energy sources which create local jobs, stimulate investment in the Region, and have minimal environmental impact.

6.10 Encourage research and production of on-farm production of biomass for energy, with reasonable caution given to the introduction of invasive species and production of unmanageable wastes.

6.11 Support and encourage the development of energy systems that utilize locally produced biomass and gaseous by-products, such as the methane released by area landfills, industry wastes, and manure pits, for local and regional energy consumption.

6.12 Reduce the consumption of non-renewable energy resources.

6.13 Promote the redesign or retrofitting of existing hydroelectric power systems to improve efficiency and reduce environmental damage.

6.14 Promote hydroelectric power systems that do not disrupt riverine ecology.

- 6.15 Support and encourage communities to enable appropriately sited and scaled wind energy systems.
- 6.16 Growth should be clustered in areas served by existing infrastructure, with priority given to growth that occurs in designated growth centers.
- 6.17 Commercial strip development along transportation corridors should be discouraged in favor of clustered development.
- 6.18 Infill development that builds on land between existing nearby buildings should be encouraged.
- 6.19 Concentrate housing, employment and social services to reduce the demand for transportation.
- 6.20 Building should occur on south-facing slopes and be oriented toward the south to reduce heating costs.
- 6.21 Landscaping and topography should be used to minimize building heating and cooling needs.
- 6.22 Plans for generation, transmission and distribution lines should incorporate the following design principles:
  - 1. Rights of way shall not divide land uses, particularly agricultural lands and large contiguous forest parcels.
  - 2. Geographic features should be used to minimize the visual impacts of corridors. Corridors, lines and towers should not be placed on prominent geographic features such as ridgelines and hilltops.
  - 3. Placement and maintenance of utility lines should minimize the removal of vegetation
- 6.23 Encourage the private sector to develop energy conservation and renewable energy technologies.
- 6.24 Support financial incentive packages for or the act of retrofitting existing or developing new housing stock with more energy efficient materials.
- 6.25 Encourage and assist municipalities to adopt land use ordinances that facilitate energy conservation and reduced energy consumption.

**MILTON 2008 COMPREHENSIVE PLAN**

p. 4

Resource Use and Protection

Protect, preserve, maintain and enhance Milton’s natural, historical and cultural resources for the enjoyment and use of existing and future generations....Emphasis is placed on preservation of Milton’s scenic ridgelines and water resources including the Lamoille River and Lake Champlain watershed and wetlands.

p. 23

Goal 3.2: Promote Industrial and Large-Scale Commercial Development

p. 29

The Town should focus its efforts toward energy efficiency, energy conservation, land use planning, renewable energy resources and transportation.

p. 30

Renewable energy resources such as wood, solar energy, cogeneration, wind generation, biomass, and hydroelectricity are other sources of energy that may also help Milton reduce its dependence upon petroleum and other non-renewable resources. Recently, there have been wind generation proposals in Milton. In December of 2006 the owners of Georgia Mountain installed wind measurement equipment to determine the feasibility of this parcel for electrical power generation from wind energy. The measurement equipment will be installed for three years. There have also been other proposals for wind towers that would service individual homes and provide un-used energy back to the grid.

#### Energy Goals

4.1.1 Maximize energy efficiency, thereby meeting all desired end uses while consuming the least amount of energy possible.

4.1.2 Maximize energy conservation by searching for specific energy improvement areas and curtailing wasteful energy practices.

4.1.3 Facilitate renewable energy including, but not limited to wind, solar, wood and hydro including the existing Lamoille River dams.

p. 73

#### Conservation Areas

The Town of Milton has designated land at the highest elevations and other environmentally sensitive areas as conservation areas. Currently, these conservation areas have their own zoning designation called the "Forestry/Conservation/Scenic Ridgeline District." These areas have been delineated in and around Arrowhead Mountain, Cobble Hill, Georgia Mountain, and other high elevations in eastern Milton near the Westford boundary.

The current district boundaries are based upon topography. As a result, some portions of the land within the district may not include sensitive areas. Adequate information is not yet available to delineate the boundaries of this district with the accuracy necessary to ensure that they correspond exactly with the limits of sensitive areas.

Those portions of the Forestry/Conservation/Scenic Ridgeline District that do not contain significant development constraints should be viewed as transitional areas. Some conditional uses that are appropriate in the Agricultural/Rural Residential District should also be enabled in the Forestry/Conservation/Scenic Ridgeline District. Such conditional uses should be those that are low in intensity and that

take advantage of recreational opportunities. Such uses may include small country inns or bed and breakfast establishments.

At a future date, it may be possible to delineate the boundaries of the Forestry/Conservation/Scenic Ridgeline District so that they correspond more closely with sensitive areas. The delineation of these boundaries should occur in a comprehensive manner, and should seek to discover areas within the Town that not currently included with the district.

p.75

#### AESTHETIC RESOURCES

The Lower Lamoille River Basin Open Space Study prepared for the District 4 Environmental Commission by Husky Injection Molding Systems in 1997 contains a list of more than 20 scenic viewsheds that were identified on a cursory “windshield survey” conducted by Milton Planning Department Staff. These viewsheds are spread throughout the West Milton, East Milton, North Road, and Arrowhead Lake Areas. As part of

As part of the Open Space Study, a ranking of these viewsheds was prepared for Husky Injection Molding Systems by Dunn Associates. This selection and ranking of viewsheds in no way reflects the opinions of the Milton Planning Commission. Additional research is needed to fully identify and properly evaluate Milton’s aesthetic resources.

p. 97

#### EAST MILTON AREA

The East Milton Area is Milton’s other main rural area, and it also includes roughly one third of the entire town. Besides Georgia Mountain, other prominent natural features in this area include Milton Pond and Mallets Creek. The forested ridge that passes through this area is part of a geological formation known as the Hinesburg Thrust. On clear days, the Adirondack Mountains and Lake Champlain are visible from some of the higher elevations in this area.

...The East Milton area is primarily a low density residential area, with agricultural uses at the lower elevations and a few commercial businesses along Westford Road. Soil and topography pose development constraints in much of this area.

This area has the highest potential for resource utilization and the highest concentration of natural resources in need of protection...It is recommended to encourage agricultural uses, especially diversification. Other resource utilization activities include forestry, mineral extraction, and recreation.

Natural resource protection is of particular concern in this area. Natural resources addressed in this Plan include: mountains and ridgelines, lakes and rivers, floodplains, wetlands, high elevation areas, deer yards, endangered species habitats, and other unique natural areas.

It is the intent of this area that mostly low intensity, planned residential developments occur in this area, taking into account the need to provide for resource utilization activities and to protect natural resources...

## TOWN OF GEORGIA 2006 COMPREHENSIVE MUNICIPAL PLAN

p.25

### L. SCENIC RESOURCES

Georgia's gradual transition from mountain to lake provides an ideal location for scenic resources. It is often at the border of adjacent physiographic regions that the scenic qualities are most enhanced. The juxtaposition of farming, townscape, and forest within the Champlain lowlands enhances the scenic qualities of Georgia's natural features. While identifying specific viewsheds and vantage points, the town needs to pay special attention to sensitive areas. Sensitive areas are those locations that are highly visible, prominent, or important, and would be most affected by land cover or land use changes.

Several specific land features are noteworthy:

- ~ Goodrich Hill, Georgia Mountain, St. Albans Hill, and Bradley Hill. These forested slopes are prominent features, whose scenic quality are subject to degradation by development or cover change.
- ~ Lake Champlain Viewshed. The views from and the views to the lake are both important.
- ~ I-89 Viewshed. The interstate may be considered a scenic corridor.
- ~ Route 7 Viewshed. Particularly from Georgia Center north, this viewshed plays a key role in peoples' perception of the town.
- ~ Areas adjacent to Arrowhead Mountain Lake and Lamoille River.
- ~ Georgia Plains and the Lowlands Areas. The area between Middle Road/Cline Road and Route 7, transversed by Mill River, Polly Hubbard, Reynolds, Pattee Hill, and Georgia Plains Roads contains a characteristic and historic Champlain Valley landscape.
- ~ River and Stream Beds. These are also part of the visual landscape. While they are protected through state and federal legislation, they are nevertheless vulnerable to physical and thus visual alteration.

Scenic resources are important to a town for many reasons. The visual character of Georgia individually and the State of Vermont as a whole, make it an excellent place to live and visit.

Scenic Resource Goals and Objectives:

Goal:

To encourage the preservation of noteworthy scenic features.

Objectives:

- ~To encourage innovation in design and layout of development so that the visual impact can be minimized.

~ To encourage the use of vegetative buffers and other screening methods to help reduce the visual impact of development.

~To continue Town investment in a conservation fund to buy development rights from property owners who own land of importance to the community.

p.28

Geology and Topography Goals, Policies and Objectives:

Goals:

To consider geologic factors in future planning.

To protect private and public investment and maintain the natural environment through the consideration of topography and Geology when determining land use.

Objectives:

~ Geologic factors should be considered in planning to insure the proper use of land.

~ Development should be sited so as to avoid important geologic features and to permit the future extraction of valuable earth resources when needed.

~ Developments on ridges and hilltops should be discouraged and their adverse aesthetic and environmental impacts should be prevented.

~ Site modifications necessary for a particular project should be allowed but there should be no substantial change to natural drainageways.

p.30

Climate and Air Quality

The quality of the air we breathe is an essential requirement of continued good health and should be protected from degradation in the interest of the public good. Our climate has a great effect on our lives, including social, economic, natural resource, and energy considerations. As such, climatic factors should be considered in future planning to insure the appropriate and efficient provision of housing, services, energy needs, food production and the like.

Climate and Air Quality Goals, Policies, and Objectives:

Goal:

To consider climatic factors and to protect the quality of the air when planning for future development.

Objectives:

~ Climatic conditions prevalent in town should be considered when planning for future growth, including development, energy needs, siting, design, and construction of roads, utilities, and services.

p. 31

Water Resources

Arrowhead Mountain Lake was formed by the impoundment of water by the Central Vermont Public Service Corporation power dam at Milton Falls. The lake that was formed has provided significant new areas for wildlife over the years. The water levels fluctuate based on need for water in the plants turbines. The levels are

regulated by the State of Vermont and the Federal Government. Arrowhead Mountain Lake also provides a valuable source of water for the Georgia Dairy Industrial Park. Water is drawn from the Lake, treated at the Park, used for industrial processing, re-treated and discharged back into the lake.

p.43- 44

Utilities, Facilities and Town Services Goals, Policies and Objectives:

Policies:

- ~ Review projects based on their individual impact, as well as their conformance with the overall rate of growth and facility/service capability planned for the town.
- ~ Locate facility and service improvements in existing development areas and areas which are designated for future growth.

p.45

#### A. Present Land Use

Arrowhead Mountain Lake and its surrounding wetlands in the Champlain lowlands are another valuable resource, and are hosts for several important wildlife habitats. Much development has already taken place near the lake, especially in more recent subdivisions. Future development should pay more attention to the value of Arrowhead Mountain Lake as a resource for the town.

The foothills of the Green Mountains begin east of I-89 and Arrowhead Mountain Lake. Steep, wooded hillsides are a valuable scenic resource for the town, and are highly visible both from the highway and from the lowlands to the west. The forests also have potential commercial value, and should be managed wisely to that end. General soil and slope conditions are not favorable to extensive development. The area is also isolated from town services because of lack of roads.

#### Section VI. Energy

p. 52

Of all energy used in Vermont, it estimated that 80% is obtained from out of state sources. It is also estimated that over 85% of the money spent on those energy sources leaves the state of Vermont and provides jobs and profits for people elsewhere. Therefore, anything Vermonters can do to reduce their dependency on imported energy resources will also show significant benefit to the states economy.

p. 52

We should begin to look more seriously at alternative energy sources for our future needs. Emphasis should be placed on renewable energy sources such as wood, methane, ethanol, wind, solar, and hydro. Co-generation should also be considered where it is economically feasible to do so. As these energy sources become more viable, we should be able to reduce our dependency on dwindling fossil fuel resources and improve the environment at the same time.

p.53

Energy Goals, Policies and Objectives:

Goals:

To reduce the use of and dependence on expensive and polluting energy sources.

To promote energy efficient use and conservation of local and outside energy sources.

To promote the use of renewable energy sources, where appropriate.

Objectives:

~ To promote educational opportunities which increase energy awareness of students, local officials and townspeople.

~ To adopt appropriate land use policies which encourage conservation of energy sources for transportation.

~ To adopt appropriate land use policies which encourage conservation of energy sources relative to placement of buildings and land development.

~ To encourage the use of car and van pools for commuters and others.

~ To encourage the use of energy efficient designs in residential, commercial and industrial development.

Policy:

~ To consider energy costs and energy efficiency as a criteria for the purchase of Town equipment and facilities.