GLEBE MOUNTAIN GROUP

Preliminary Comments to Windham Regional Planning Commission

Regarding Glebe Mountain Wind Energy Proposal

I. Introduction

On December 23, 2005 Glebe Mountain Wind Energy, LLC, an affiliate of Catamount Energy Corporation, and Marubeni Power International Inc. ("Petitioner") provided notice of its intention to construct a 19 turbine, 47.5 megawatt (MW) wind energy project along Glebe Mountain ridge which forms the common boundary of the Towns of Londonderry and Windham, Vermont. The turbines will be 420 feet high, equipped with continuously flashing strobes and will extend 3.7 miles along the ridgeline. The project, as proposed, would be the largest wind turbine project ever constructed in Vermont.

The Windham Regional Planning Commission held a public hearing in Londonderry on January 26, 2006 and has invited interested persons to provide written comment regarding the Catamount proposal. The Windham Regional Planning Commission will consider these comments in connection with its initial evaluation of the project and will use the comments when preparing its recommendations to the Public Service Board.

Glebe Mountain Group is a not-for-profit corporation whose members reside or own property in the Glebe Mountain region. The Group was formed in response to concerns about the Catamount wind turbine project. Glebe Mountain Group has studied wind energy issues for three years with particular emphasis on the analysis of benefits and impacts of wind energy within the Vermont context.

Glebe Mountain Group believes that all reasonable efforts should be made to preserve and protect Vermont's natural resources. Glebe Mountain Group also believes that developers who propose large wind energy projects on Vermont mountain ridgelines should have the burden to demonstrate that there is a compelling justification to degradate fragile high elevation ecosystems and visually dramatic ridgelines for an energy source of questionable potential. Wind power must be placed in perspective and analyzed in the Vermont context.

Construction of massive wind turbine projects on Vermont ridgelines is a land use issue which has profound implications for Vermont. The development of large scale wind turbine projects is the most significant environmental issue facing Vermont in the last several decades. The decisions we make today could literally change the face of Vermont's landscape for generations to come.

The Regional Planning Commission has a unique role in this process as it is vested with responsibility to protect the natural resources of our region and promote the well being of our citizens through thoughtful planning and development. Glebe Mountain Group respectfully provides the following comments for consideration by the Windham Regional Planning Commission.

II. Local and Regional Significance of Glebe Mountain

The Public Service Board may not be aware of or fully appreciate the local and regional significance of Glebe Mountain.

The Public Service Board should understand that Catamount has chosen to construct its project on one of the most visually dominant and longest unfragmented ridgelines in southern Vermont. Glebe Mountain ridge is a fragile high elevation habitat above 2,500 feet in elevation which extends approximately 4 miles in a generally north-south direction. The ridgeline is highly visible for miles in all directions. The Londonderry Town Plan describes the Glebe Mountain ridgeline as '*the Town's paramount scenic resource'*. Glebe ridge is visible from several town-designated scenic roads and Vermont Routes 11 and 100 scenic corridors.

Glebe Mountain is the headwater area of Lowell Lake Brook (also known as Thompsonburg Brook), Middle Branch of the Williams River, Upper Saxtons River and Cobb Brook. Cobb Brook is a pristine stream designated as Class A(1) water, the very highest rating possible. In the Water Resources Board decision which classified Cobb Brook as Class A(1) water, the Board stated:

> *There are only approximately 50 pristine like streams of similar length in the entire State of Vermont. The brook is of a higher value than most of those streams and is relatively unique in that nutrients and sediments in excess of those attributable to natural conditions are essentially absent.*
>
> *The brook's exceptional water quality allows it to support a diverse aquatic community including a high proportion of pollution sensitive species typical of Vermont's headwater streams where pristine lake conditions have remained essentially intact.* Re: Petition to Reclassify Cobb Brook, Water Resources Board Decision (October 9, 1991) at 7

Cobb Brook feeds Hamilton Falls which is identified as a State natural area. Glebe Mountain has numerous wetlands at the very upper end of seasonal and small perennial streams which feed the aquifer of this most sensitive region.

Glebe Mountain has hundreds of acres of unfragmented forest land inhabited by large and small mammals and other wildlife of importance. The ecological resources map contained within the Windham Regional Plan identifies the entire Glebe Mountain ridgeline and its easterly and westerly slopes as bear production habitat. Also included along a substantial portion of the ridgeline of Glebe Mountain is a significant deer wintering area. The Glebe Mountain forest land is valued by naturalists, hikers, and hunters.

III. The Catamount Project is Contrary to the Land Use Planning Goals and Policies of the Windham Regional Plan, Londonderry Town Plan and the Windham Town Plan and Will Unduly Interfere with the Orderly Development of the Region

In order to receive a Certificate of Public Good from the Vermont Public Service Board, the project applicant must demonstrate that the project conforms with the criterion outlined at 30 V.S.A. §248(b)(1)–(10). In order to be in compliance with 30 V.S.A. §248(b)(1), the applicant must demonstrate that the project

> *"will not unduly interfere with the orderly development of the region with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of the municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality."*

The first PSB criterion requires consideration of the project's regional impact with due regard to the region's planning and development goals and policies.

A. <u>Vermont Planning and Development Act</u>

The Vermont Planning and Development Act, which authorized the creation of regional planning commissions, sets forth specific legislative planning goals which, pursuant to 24 V.S.A. §4348a, are to be implemented and incorporated into each regional plan. These specific legislative planning goals include identification, protection, and preservation of important natural and historic features of the Vermont landscape, including:

> (*a) significant natural and fragile areas; (b) outstanding water resources, including lakes, rivers, aquifers, shore lands and wetlands; (c) significant scenic roads, waterways and views; (d) important historic structures, sites or districts, archeological sites and archeological sensitive areas. 24 V.S.A. §4302(c)(5).*

The specific goals section of 24 V.S.A. §4302(c) further mandates that the regional plan be developed:

> *to maintain and improve the quality of air, water, wildlife, and land resources*

and further provides that

> *Vermont's air, water, wildlife, mineral and land resources should be planned for use and development according to the principles set forth in 10 V.S.A. §6086(a)*" [the 10 Criteria of Act 250] 24 V.S.A. §4302(c)(6).

It is important to note that the legislature has expressly recognized that one of the fundamental principles of regional planning is to encourage land use planning decisions to be made at the local and regional levels by those who may be most directly impacted by development. Thus, in the enabling legislation there appears the following

provision:

> *It is also the intent of the legislature that municipalities, regional planning commissions and state agencies shall engage in a continuing planning process that will further the following goals:*
>
> *(2) to encourage citizen participation at all levels of the planning process, and to assure that decisions shall be made at the most local level possible commensurate with their impact.* 24 V.S.A. §4302(b)(2)

B. Windham Regional Plan

Given the differences in resources, geography, historical development patterns and public opinion, each regional plan is intended to be different and intended to reflect the planning goals for that specific region. The Windham Regional Plan, prepared by the Windham Regional Planning Commission, specifically and unequivocally is intended to preserve and protect the *Resource Lands* and natural resources of the region. Selected excerpts from the Regional Plan are set forth in attached Appendix B.

The Regional Plan defines *Resource Lands* as follows:

> ***Resource Lands*** *are predominated by lands requiring special protection or consideration due to their uniqueness, irreplaceable and fragile nature, or important ecological function. Resource lands include fish and wildlife habitats, areas hosting state Natural Heritage of federally identified endangered and threatened species, unique and fragile natural areas, wetlands, shore lands, floodplains, aquifer recharge areas, steep slopes, lands over 2,500 foot elevation, ridgelines, essentially undeveloped forestlands having limited access to improved public roads and regionally significant scenic corridors and areas. Resource lands of special value should be preserved and protected to the greatest extent possible. Any development or land use in these areas should be designed to have a minimal impact on the resource. It is important to limit and manage human interaction in resource areas. Resource lands also include those areas that are currently in some form of legal conservation such as public ownership, private non-profit ownership for conservation purposes, or conservation easements. The most appropriate land uses for resource lands are conservation, forestry, recreation, and low impact, very low-*

density rural uses. (WRP at 23) (emphasis added)

Glebe Mountain and its high elevation habitat constitutes a Resource Land of special value which should be preserved and protected to the greatest extent possible.

In the *Natural Resources* section of the Regional Plan, the Plan identifies a number of resources which require special protection. A number of those resources are potentially impacted by Catamount's proposed project. Resources of special significance include permanent and intermittent streams, watersheds, wetlands, groundwater, forest resources, scenic resources and fragile areas above 2,500 feet. (WRPC at 32-43)

The Windham Regional Plan also sets forth a number of specific land use policies regarding the protection and preservation of regional resources. Unlike advisory language which often appears in plans, the policies are written to provide directives and are "*sufficiently mandatory to require or prohibit certain conduct"* Re: Times and Seasons, LLC, and Hubert K. Benoit, #3W0839-2-EB, Findings of Fact, Conclusions of Law, and Order (Altered) (November 4, 2005).

The land use policies for *Resource Lands* include the following directives:

1. *Ensure that new development reflects existing settlement patterns, is low impact and low intensity, and does not conflict with the resources, but rather sustains these natural resources.* (WRP at 101) (emphasis added)

2. *Ensure protection of fish and wildlife habitats, areas hosting state or federally identified endangered and threatened species, unique and fragile natural areas, wetlands, shore lands, floodplains, aquifer recharge areas, steep slopes, lands over 2,500 foot elevation, ridgelines, essentially undeveloped forest lands which have limited access to an improved public road, and regionally significant scenic*

corridors and areas. (WRP at 101) (emphasis added)

4. *Avoid extension of roads, energy transmission facilities and other services into and through Resource Lands.* (WRP at 102) (emphasis added)

With respect to *Surface Waters*, the Regional Plan includes the following policy directives:

1. *Maintain undisturbed buffers of vegetation along watercourses, lakes, ponds, wetlands and vernal pools 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.* (WRP at 103)

2. *Maintain or enhance existing chemical, physical and biological quality of the region's surface waters.* (WRP at 103)

With respect to *Groundwater*, the Plan includes the following policy provision:

1. *Maintain or enhance existing chemical, physical and biological quality of the region's groundwater.* (WRP at 104)

With respect to *Forest Resources*, the Plan includes the following policy statement:

2. *Discourage the fragmentation of large parcels of forest land for development or other conversation to nonforest uses.* (WRP at 105)

With respect to *Scenic Resources*, the Plan includes the following policy directives:

3. *The scale, siting, design and management of new development shall maintain or enhance the landscape and shall protect high quality scenic landscapes and scenic corridors.* (WRP at 106)

(emphasis added)

4. *Minimize visual impacts of communication towers and other high-elevation or ridgeline structures through co-location, design, siting, and color choice. Design and site communication and other high-elevation towers so that they do not require nighttime illumination. (*WRP at 106) (emphasis added)

7. *Discourage exterior area illumination of regionally prominent physical features and landscapes. Ensure that any such illumination will not significantly reduce the natural appearance of the nighttime landscape, will not be obtrusive in the viewshed and will not distract unduly from the night-time horizon or night sky. (*WRP at 106) (emphasis added)

With respect to *Natural Areas, Fragile Areas and Wildlife Resources*, the Plan includes the following policy directives:

1. *Protect Natural Areas, Fragile Areas, and critical plant and animal habitats. If necessary, protect these areas from indiscriminate publicity by mapping them only in very general terms.* (WRP at 106)

2. *Protect important ecosystems and maintain or enhance the habitat needs and travel corridors required by the Region's larger mammals. (*WRP 106)

3. *Protect Natural and Fragile Areas from development. When development is proposed near a natural or fragile area, a buffer strip designed in consultation with the appropriate state agency, must be designated and maintained between the development and natural or fragile area.* (WRP at 106) (emphasis added)

With respect to *Soils and Topography*, the Plan provides the following policy directive:

1. *Avoid intensive development (other than recreational trails and ski lifts) in areas predominated by slopes exceeding 25 percent or above 2,500 feet in elevation*; (WRP at 106)

The Windham Regional Plan and its policy directives, have been relied upon by the Vermont Environmental Board in several cases rejecting development plans for failure to conform with the land use planning goals and policies of the Regional Plan. In a recent case of particular relevance, Re: Peter S. Tsimortos, #2W1127-EB (August 29, 2003), the Environmental Board determined that the construction of a residence and clearing of 12.5 acres of land above 2,500 feet in elevation in Dover, Vermont, failed to conform with the Windham Regional Plan. The Environmental Board relied upon the policy directives which require the preservation and protection of *Resource Lands* and *Fragile Areas*. Excerpts from the Tsimortos decision are provided as follows:

> *The project, as it includes lands above 2,500 feet in elevation, is located in the lands described in the 'Resource Land' subsection of the Regional Plan's Land Use section, lands which the Regional Plan finds worthy of 'special protection'. Appropriate uses for these lands include 'conservation, forestry, recreation, and low impact, very low density rural uses'. The Plan's 'Resource Land policies' seek to 'ensure that new development reflects existing settlement patterns, is low impact and low intensity, and does not conflict with the resources, but rather sustains these natural resources' and to 'ensure protection of lands over 2,500 foot elevation.'...*
>
> *The project is not a conservation, forestry, recreation, or other low impact use. While it is certainly a very low density residential use, the Board questions whether it is a very low density rural use. But the Board's decision does not hinge alone on the project's impacts designated by the Regional Plan as 'Resource Lands'.*
>
> *More significant than the project's location in Resource Lands is its location in a 'Fragile Area' as defined by the Regional Plan: 'Areas above 2,500 feet in elevation constitute fragile areas in Vermont.' The Regional Plan's Policies for fragile areas state 'protect natural and fragile areas from development. When development is proposed near a natural or fragile area, a buffer strip designed in consultation with the appropriate state agency, must be designated and maintained between the development and natural or fragile area.'*

> *This project is contrary to the Plan's mandates as to fragile areas. The Regional Plan requires that, when development is proposed near a fragile area, a buffer strip between the development and the area 'must be designated and maintained'.* ***Here, the development occurred within the fragile area itself, a per se violation of the buffer requirement***." (#2W1127-EB at 23-24) (emphasis added)

The language relied upon by the Environmental Board in determining the project's nonconformance with the Windham Regional Plan was carried forward into the new Plan. The definitions of *Resource Lands and Fragile Areas* and the policy directives relating to both are identical in the present Windham Regional Plan and are fully applicable to this project.

C. Londonderry Town Plan

The Londonderry Town Plan contains a number of provisions and legally enforceable standards directed at the protection and preservation of the Town's most important natural resources. Relevant excerpts of the Plan are set forth in attached Appendix C.

The Londonderry Town Plan identifies three Resource Conservation Districts; Shoreland District, Resource Conservation Overlay District, and Flood Hazard Overlay District. Glebe Mountain is included in the Resource Conservation Overlay District.

> *Conservation and Resource overlay areas are those locations, which are environmentally fragile and aesthetically sensitive, and/or areas that contain natural resources such as forests that should be protected for long-term sustainable use. These areas include land characterized by steep slopes and prominent ridgelines, including high elevation land on Glebe Mountain and adjacent ridgelines, flood hazard areas, riparian areas, wetlands and shore land*. LTP at 12 (emphasis added)

The purpose of the Resource Conservation Overlay District is to protect forest and scenic resources, sensitive headwater streams and wildlife habitat at higher elevations and to prevent development on ridgelines, steep slopes, and shallow soils and in areas with poor access to public roads, municipal services and commercial centers. (LTP at 13)

The Londonderry Town Plan has policy directives and *Legally Enforceable Standards* which prohibit energy generation facilities of any size within the Resource Conservation Overlay District. Those standards are set forth below:

9. *Encourage the continuation of traditional land uses (e.g., forestry, farming, recreation) within conservation and resource protection areas, and ensure that development does not diminish the scenic and ecological values associated with these areas. To this end, <u>new commercial land uses and large scale and/or moderate to high-density development, including energy generation facilities of any size, are prohibited in the three resource conservation districts</u> and on other land characterized by one or more fragile natural features (e.g., critical wildlife habitat, wetlands, riparian buffers, steep slopes and ridgelines)*. (LTP at 14) (emphasis added)

10. *Notwithstanding Legally Enforceable Standard #9, the continued operation of Magic Mountain Ski Area as a commercial enterprise is encouraged within its existing trail and lift configuration. Any expansion of those facilities shall be carefully reviewed to prevent adverse impacts on identified resources.* (LTP at 15)

11. *<u>All land development</u>, excluding outdoor recreation, forest management and agriculture, <u>shall be sited to avoid</u> critical resource areas, including wetlands, floodplains, and <u>significant ridgelines including Glebe Mountain</u>*. (LTP at 15) (emphasis added)

In the section of the Plan entitled '*Natural Resources and Land Conservation*' the Plan provides in part as follows:

The Town's landscape is defined by wooded hillsides and undeveloped ridgelines and shore land. The welfare of the Town depends on protecting such resources, particularly the mountain and valley vistas of the wooded and undeveloped ridgelines, particularly on such prominent hillsides as

Glebe Mountain, that attracts so many residents and visitors... (LTP at 19)

The *Legally Enforceable Standards* for *Natural Resources and Land Conservation* include the following:

8. *The development of any structure extending more than 100 feet above the ground or 50 feet above vegetation growing at its base, whichever is less, is prohibited in the Resource Conservation Overlay District as such District is defined by the Town of Londonderry Zoning Bylaws and, if such land is not included in the Resource Conservation Overlay District, above the 1,500 elevation contour of Glebe Mountain.* (LTP at 20) (emphasis added)

9. *The construction of windmills with installed electrical generating capacity exceeding 5 kW per windmill in the Resource Conservation Overlay District as such District is defined by Town of Londonderry Zoning Bylaws and, if such land is not included in the Resource Conservation Overlay District, above the 1,500-foot elevation contour of Glebe Mountain is prohibited.* (LTP at 20) (emphasis added)

10. *Cutting trees to allow the construction of such windmills with installed electrical generating capacity exceeding 5 kW per windmill in the Resource Conservation Overlay District as such District is defined by Town of Londonderry Zoning Bylaws and, if such land is not included in the Resource Conservation Overlay District, above 1,500 foot elevation contour of Glebe Mountain is prohibited.* (LTP at 20) (emphasis added)

With respect to *Water Resources*, the Londonderry Town Plan provides a number of policy directives including the following:

1. *Protect ground and surface waters, steep slopes, shallow soils, areas supplying significant recharge areas for groundwater supplies and watersheds for future public water supplies.* (LTP at 22)

8. *Prohibit development, including road and driveway construction, on slopes with gradients greater than 25%.* (LTP at 23)

In the *Agriculture and Forest Resources* section of the Town Plan, there are policy directives and *Legally Enforceable Standards* which expressly prohibit wind generation facilities within the Resource Conservation Overlay District. Those provisions provide as follows:

> *Policies:*
>
> *11. Maintain the Resource Conservation Overlay District as an area in which forest management and outdoor recreation remain the predominate uses. Carefully manage residential uses to minimize adverse impacts on identified natural and scenic resources, and limit wind generation facilities exclusively to other than those serving as accessory uses to single-family homes*. (LTP at 25) (emphasis added)
>
> *Legally Enforceable Standards*
>
> *12. In the Resource Conservation Overlay District, wind generation facilities other than those serving as necessary uses to single-family homes are prohibited*. (LTP at 26) (emphasis added)

In the section of the Londonderry Town Plan described as *Scenic Areas*, the Plan provides in part as follows:

> *The natural landscape includes open space, working and non-working agricultural lands, managed and unmanaged forest land, as well as Glebe Mountain, Cobble Hill and other surrounding ridgelines. The Glebe Mountain ridgeline, which defines the eastern boundary of the Town, is not only the Town's paramount scenic resource, but also has regional significance. Given Glebe's geomorphic characteristics that provide near and distant scenic views throughout the mountain valley region, development on the ridgeline would irrevocably alter a highly visible, highly valued and highly visited landscape. Consequently, the Glebe Mountain ridgeline is included in the Resource Conservation Overlay District so as to carefully control development and prohibit all commercial activities other than forest management, recreation and the continued operation of Magic Mountain Ski Area.* (LTP at 26) (emphasis added)

There are several policies and a legally enforceable standard intended to preserve and protect the scenic areas of the Town. The *Legally Enforceable Standard* provides as follows:

> *5. Development shall be prohibited on ridges and peaks located within the Resource Conservation Overlay District, including, particularly on Glebe Mountain above the 2,000 foot elevation contour because of the prominence of Glebe Mountain. In other high elevation locations, development shall be carefully sited and screened to avoid undue adverse impacts to the scenic landscape.* (LTP at 27) (emphasis added)

The Londonderry Town Plan includes a section entitled *Fish and Wildlife Resources*. Within that section of the Plan is a policy directive which provides as follows:

> *4. Maintain the Shoreland District and Resource Conservation Overlay District as a means of protecting wildlife habitat in especially sensitive areas. (*LTP at 28)

The Londonderry Town Plan includes a section on *Energy*. The Plan identifies and describes several renewable energy resources including wind power. Several policy directives as set forth which include the following:

> *Policies:*
>
> *1. Support appropriate renewable energy generation in Londonderry, including bio-mass using local wood supplies, solar, and dispersed, small-scale wind and hydro-power sources. Large scale wind generation and hydro-power facilities, however, are discouraged and shall be prohibited within the Resource Conservation Overlay District and on the main stem of the West River, respectively.* (LTP at 43) (emphasis added)

D. Windham Town Plan

The Windham Town Plan contains a number of provisions intended to preserve and protect the Town's natural resources, outstanding water resources, significant scenic landscapes and its forest land. Relevant excerpts are included in attached Appendix D.

In the section of the Windham Town Plan entitled *Outstanding Water Resources and Wetlands*, the Plan provides in part as follows:

> *Windham's location at the headwaters of many of the areas brooks and rivers means that each headwater watershed is actually an outstanding water resource. The standard for all downstream water quality is established here at the beginning in Windham. Of particular note is the Cobb Brook watershed, a Class A1 stream, by recognition of the State of Vermont. Turkey Mountain Brook includes a spectacular gorge on its way downstream to Jamaica and encompasses another notable resource of Windham, namely Burbee Pond*. (WTP at 7)

Glebe Mountain is included within Windham's *Forest District*. The *Forest District* section of the Town Plan provides in part as follows:

> *It is the policy of the Town of Windham that development within these Forest Districts shall be limited to uses and activities which will not diminish the ecological function, scenic and natural beauty, and natural character of these land areas. Development and land use in these districts is limited to agricultural, forestry recreation and low density residential uses...* (WTP at 8-9) (emphasis added)

In Part IV of the Windham Town Plan, entitled 'Policies and Purpose' the Plan provides in part as follows:

> *It is the policy of the Town of Windham to identify, protect and preserve natural and historic features of the Vermont landscape, including, but not limited to:*

1. *Outstanding water resources and wetlands*
2. *Significant scenic lands, vistas and view sheds*
3. *Important historic structures, sites or archaeological sites*

These attributes must be considered to be the very essence of the aura of Vermont and the reason so many find Windham to be a highly desirable place to make ones home. Unspoiled natural vistas, birds and animals, night skies unspoiled by light pollution or visually prominent light sources, quiet country sounds, unspoiled streams, are becoming a unique treasure to be protected. (WTP at 11-12) (emphasis added)

In the section of the Plan entitled *Landscape Components*, the Plan provides:

Ridgelines and hilltops and their upper slopes are visible for great distances, and give the landscape form and coherence. Development may have a great visual impact and must be sited and landscaped to minimize incompatibility with the natural landscape. (WTP at 13)

In the *Water Resources* section of the Town Plan, the Plan states:

It is the policy of the town of Windham to protect and preserve in their natural condition its wetlands, water courses and shorelines...There are many headwaters of watersheds, or areas supplying recharge waters to aquifers in town. North Branch of Williams River, Middle Branch of Williams Branch, Saxtons River, Howe Brook, Wiley Brook, Stiles Brook, Tannery Brook. The town opposes lowering the water quality classifications on these listed headwaters and their tributaries...(WTP at 13)

There can be no question but that the Windham Regional Plan, Londonderry Town Plan and Windham Town Plan, considered both individually and collectively, mandate that fragile high elevation *Resource Lands, Fragile Areas and Scenic Resources* of regional significance are to be preserved and protected to the greatest extent possible against future development. The Windham Regional Plan includes Glebe Mountain within its definition of *Resource Lands* and *Fragile Areas* above 2,500

feet. The Regional Plan makes it very clear that any development within *Resource Lands* must be of a low impact, very low density use without nighttime illumination. Furthermore, the Plan expressly provides that *Natural and Fragile Areas* are to be protected from development.

The Londonderry Town Plan includes Glebe Mountain within its *Resource Conservation Overlay District* which is intended to protect the Town's most ecologically significant and sensitive areas. The Londonderry Town Plan expressly addresses wind generation projects and unequivocally directs that such projects are prohibited on Glebe Mountain within the *Resource Conservation Overlay District*. There can be no doubt but that Londonderry's Town Plan contains the strongest and the most specific legal directives possible regarding the protection and preservation of the Glebe Mountain ridgeline.

The Windham Town Plan expresses the clear intention to preserve and protect headwater areas, unfragmented forest land and significant scenic land. The Plan expressly limits development within the *Forest District* to low density use and activities that will not diminish the ecological function and scenic and natural beauty of the area.

When each of these plans are taken into account, we believe the only conclusion that one can reach is that construction of a wind generation facility on the scale proposed by Catamount on Glebe Mountain ridge is grossly inconsistent and contrary to the land use planning goals and policies expressed within the Windham Regional Plan and the plans of the two towns most directly affected. The project location, scale, visibility and environmental impacts are contrary to the land use planning goals and

policies of the region.

Based on Catamount's submission, we respectfully submit that the Windham Regional Planning Commission has sufficient evidence to find and should find and conclude that Catamount's proposed construction and operation of a 47.5 MW wind energy project along the 3.7 mile ridge of Glebe Mountain, with associated service roads, lay down areas, transmission lines and related construction and development activities will unduly interfere with the orderly development of the region.

We respectfully request Windham Regional Planning Commission to encourage Catamount to withdraw the proposed application.

IV. Project Scale and Land Disturbance

We ask Windham Regional Planning Commission to carefully consider whether a wind turbine project of the scale proposed by Catamount is appropriate for Vermont in general and the Glebe Mountain ridgeline in particular. Catamount proposes to erect 19 turbines along the entire 3.7 mile ridge of Glebe Mountain. The towers will be approximately 262 feet in height. The overall height of each turbine to top of the blade will be approximately 420 feet. Because the turbines selected by Catamount exceed 200 feet, current FAA regulations require that the turbine array be continuously lighted with two strobe type beacons on each turbine–white during the day and red at night.

When one compares the visibility, scale, and amount of land disturbance of the Catamount proposal against the Searsburg project, the differences are striking.

The Searsburg project consists of 11 turbines. The tower heights are 134 feet

and the total height of each turbine to the top of the blade is only 196 feet. The turbines are not lighted.

The Glebe Mountain turbines will be accessed by a service road which will extend from Route 11 to the top of the Mountain and run the entire length of the ridgeline. The total length of the service road will be in excess of 4 miles. The Searsburg service road is only 3,700 feet (.7 of a mile) and has only a 12 foot travel way. See: Searsburg PSB Docket #5823, Final Order (5/16/96), Finding No. 24, Finding No. 124

The Glebe service road will have a travel way of 35 feet with the addition of 2 foot shoulders on each side and guardrails beyond the shoulders for an overall width of 50 feet. See: Dufresne Henry "Typical Road Cross Sections". The applicant has represented that after completion of construction, the shoulder areas will be "revegetated" leaving a permanent service road with a travel way of approximately 16 feet in width.

Also to be constructed along the top of the Glebe ridgeline will be a 34.5 KV electrical transmission system consisting of transmission lines and poles extending the entire length of the ridge. The transmission circuits will connect the individual turbines and meet in the middle of the turbine array where circuits will then run underground to the CVPS distribution line near the base of Magic Mountain. The transmission line will then be installed above ground for one-half mile to the CVPS substation.

Catamount estimates that tree clearing for each turbine will be approximately 2.2 acres per turbine for a total of approximately 42 acres. The excavation and clearing

required for each turbine must also accommodate a crane pad at each turbine location large enough to accommodate a 200-400 ton class crane. Catamount estimates that the service road will require clearing of at least an additional 80 acres. Catamount further estimates that earth disturbance will consist of approximately 65 acres. Catamount has not provided any basis to confirm the accuracy of these estimates. Given the amount of clearing involved for the met tower and the type of terrain on which the road and turbines will be sited, the amount of land disturbance appears to be unrealistically conservative.

The Catamount project will require blasting of ledge and installation of concrete bunkers to hold each turbine. Catamount suggests the use of a "*spread footing mass foundation design*" which requires a poured slab of concrete reinforced with rebar. The amount of concrete to be used during construction will be so substantial that the applicant has suggested that it may construct a concrete batch plant on site.

Catamount's proposed service road will divide hundreds of acres of unfragmented forest land and wildlife habitat. Catamount may find it necessary to fence off the turbine corridor for security measures and protection of public safety. Literature has documented that turbines are capable of high velocity ice sheers extending more than 900 feet from the turbine blades. If a corridor is established along the ridgeline of Glebe Mountain, extending 900 feet to the east and 900 feet to the west of each turbine, extending the length of the 19 turbine array, the project has the potential to restrict access to more than 700 acres of land.

Glebe Mountain Group respectfully submits that a wind turbine project on the

scale proposed by Catamount will result in excessive land disturbance, unnecessary environmental impacts, forest fragmentation and restricted public access.

V. Visual Impact

The Catamount wind generation project is proposed to be located atop the 3.7 mile ridge of Glebe Mountain, which forms the common boundary of the Towns of Londonderry and Windham. The ridgeline is the most visually dominant feature of the regional landscape. The ridgeline of Glebe Mountain can be seen from a variety of viewing angles and locations, town-designated scenic roads and scenic corridors. The turbines are massively out of proportion to any structures currently existing within the viewshed of the project site. The turbines will be a complete distortion of the natural ridgeline.

The Windham Regional Plan has mandatory aesthetic directives providing that

> *new development shall maintain or enhance the landscape and shall protect high quality scenic landscapes and scenic corridors*
>
> and
>
> *discourage exterior area illumination of regionally prominent physical features and landscapes. Ensure that any such illumination will not significantly reduce the natural appearance of the nighttime landscape, will not be obtrusive in the viewshed and will not distract unduly from the nighttime horizon or night sky.* (WRP at 106)

The Windham Regional Plan also expressly provides that *Natural and Fragile Areas* are to be protected from development. (WRP at 106)

The Town of Londonderry, in its Town Plan, has identified the Glebe ridgeline as

"*the Town's paramount scenic resource*". The Londonderry Town Plan is unequivocal in its protection of the Glebe Mountain ridgeline and includes several *Legally Enforceable Standards*, which include the following:

> *New commercial land uses and large scale and/or moderate to high density development, including energy generation facilities of any size, are prohibited in the three Resource Conservation Districts...*(LTP at 14, Paragraph 9)
>
> *The development of any structure extending more than 100 feet above the ground or 50 feet above vegetation growing at its base, whichever is less, is prohibited in the Resource Conservation Overlay District...* (LTP at 20, Paragraph 8)
>
> *Development shall be prohibited on ridges and peaks located within the Resource Conservation Overlay District, including, particularly on Glebe Mountain above the 2,000 foot elevation contour because of the prominence of Glebe Mountain...* (LTP at 27, Paragraph 5)

The Windham Town Plan recognizes the importance of its ridgelines and expressly provides that any development must be sited to minimize incompatibility with the natural landscape. (WTP at 13) Additionally, the Windham Town Plan expressly provides that any development in the *Forest District* '*is limited to agricultural, forestry, recreation and low density residential uses."* (WTP at 8-9)

These and other provisions of the Windham Regional Plan, Londonderry Town Plan and Windham Town Plan, constitute clear written community standards intended to preserve the aesthetics and scenic beauty of the Glebe Mountain ridgeline and its surrounding area.

Violation of a clear written community standard constitutes, as a matter of law, an *'undue adverse aesthetic impact*' under the standards articulated in the '*Quechee Lakes*

Analysis' adopted by the Vermont Environmental Board and affirmed by the Vermont Supreme Court and applied as the governing standard for aesthetic impact analysis over the last two decades.[1]

In the Quechee decision, the Environmental Board noted that certain landscapes are particularly sensitive to aesthetic impacts:

> *[t]hese land forms tend to be visible from a wide area or they are seen by large numbers of people. These sensitive areas include ridgelines, steep slopes, shorelines and flood plains. Other features are sensitive because they are aesthetically unique; examples may include historic structures, wetlands and natural areas. In evaluating a project proposed in a sensitive area, the Board and District Commissions should give special attention in assessing whether the scenic qualities of these sites will be maintained.* Quechee at 19.

Following Quechee, a number of Environmental Board decisions have reaffirmed the policy that ridgelines deserve special protection because they are particularly sensitive to environmental harm and are visually dominant. As one decision stated, protection of ridgelines is important:

> *because of the particularly fragile nature of the ecology of our high mountain tops and because of their dramatic visibility and scenic importance to the State of Vermont.* Re: Green Mountain Power Corporation and U.S. Department of Energy, Declaratory Ruling #120 (Vermont Environmental Board, November 14, 1990)

[1]Quechee Lakes Corporation, Land Use Permit #3W0411-EB and #3W0439-EB, Findings of Fact, Conclusions of Law and Order (November 4, 1985). If a project will have an adverse affect on aesthetics or scenic and natural beauty of an area, the next step is to determine whether the adverse effect is "undue". The adverse affect is considered undue if a positive conclusion is reached regarding any of the following: 1) Does the project violate a clear, written community standard intended to preserve the aesthetic or scenic and natural beauty of the area? 2) Does the project offend the sensibilities of the average person? 3) Have the applicants failed to take generally available mitigating steps which a reasonable person would take to improve the harmony of the proposed project with its surroundings? The test is succinctly set forth in the case In re Petition of Tom Halnon, 174 Vt. (2002)

In the case of Gary Savoie d/b/a WLPL and Eleanor Bemis, #2W0999-EB (Reconsideration) (August 27, 1997), the Environmental Board denied an application for construction of a 110 foot communication tower on Bemis Hill in Athens, Vermont. The tower was denied for failure to conform with the Windham Regional Plan provisions regarding protection of ridgelines. The Environmental Board said:

> *Broadly stated, the purpose of the applicable provisions of the regional plan is to mitigate, or if possible eliminate, the negative visual impacts caused by certain telecommunications facilities. Such facilities, when they protrude above the ridgeline, are not only visible but incongruous with the scenic qualities associated with Vermont's mountain ridges. This Board has continually noted the importance of protecting the visual continuity of Vermont's prominent mountaintop ridgelines.* Savoie at 21. (emphasis added) See also: The Mirkwood Group and Berry Randall, #1 R0788-EB, Findings of Fact, Conclusions of Law and Order (Aug. 19, 1996); Petition of Tom Halnon, CPG NM #25 (March 15, 2001), affirmed, Vt Sup. Ct, Entry Order #2001-199 (August 20, 2002)

Since the enactment of Act 250, 30 years of environmental law has consistently reaffirmed the basic principle that Vermont's fragile high elevation habitats and mountain ridgelines are some of Vermont's most important natural resources worthy of special protection. We ask Windham Regional Planning Commission to consider the impact on the interpretation and administration of Vermont's environmental laws if we fail to preserve and protect our most sensitive ecosystems and visually dramatic mountain ridgeline areas. In the future, we question whether we will we be able to legitimately impose aesthetic restrictions on other types of commercial development if we make exceptions for placement of large-scale commercial wind power projects upon

Vermont's most fragile and visually sensitive areas.

In approving the Searsburg project, the Public Service Board was mindful of the scale of the project and its relative obscurity with respect to regional visual impacts. The Board stated in part as follows:

> *The relatively small size of the proposed project minimizes the overall impact on Vermont's ridgelines. The area is not particularly scenic on a regional basis, it is not a scenic corridor, and the necessary transmission corridor is well screened and avoids ridgelines, highly visible slopes and open areas.* (Searsburg, Docket #5823, Finding No. 37)

While there is a role for wind power in Vermont, Glebe Mountain Group believes that individual net metering projects and small scale community facility oriented generation are more appropriate for the Vermont landscape. Technological advances will soon allow individuals to access the benefits of wind power without the wholesale despoliation of mountain ridgelines.

VI. Meeting Future Power Demands in Most Cost Effective Manner, 30 V.S.A. §248(b)(2)

Under Vermont law Catamount must demonstrate that the proposed project meets the need for present and future demand for electrical energy which could not be provided in a more cost effective manner through energy conservation programs and other measures. 30 V.S.A. §248(b)(2) As a starting point for this type of analysis, the applicant must collect sufficient data from which there can be an accurate and reliable

determination of the net energy output of the project. The determination must take into account a number of factors including a thorough evaluation of the quality, duration, direction, and timing of wind resources throughout the year and over the life of the proposed project. A number of factors affect net production output including, but not limited to cold weather, icing, lightning, equipment failure, turbulence and array losses, and transmission losses.

In accurately determining the true cost of any energy produced by the facility, the applicant must factor a number of variables including capital investment costs, annual operating and maintenance costs, landowner lease payments, labor, and transmission costs. The determination of costs must also take into account such factors as federal and state subsidies including the Federal Production Tax Credit, accelerated depreciation schedules and state tax incentives.

Since wind production does not replace baseload generation, the applicant must consider the need and additional cost to purchase generation capacity and upgrade the distribution system to meet reliability requirements.

After the net power output and cost of the energy is determined, the applicant must demonstrate that the power produced by the project could not otherwise be provided in a more cost effective manner by energy conservation measures, alternative renewable energy technologies and other electricity supply options either cued or likely to come online and become available to Vermont to meet its energy needs.

Glebe Mountain Group believes that various methods of energy efficiency and demand side management (DSM) would provide all of the environmental benefits claimed for by the Catamount proposal at less cost to Vermont rate payers.

Some proponents of the Catamount project have suggested that Catamount's project and other wind turbine projects like it can replace existing baseload generation such as Vermont Yankee. These claims demonstrate a fundamental misunderstanding about wind energy generation and its limited role in the energy grid. We ask Windham Regional to critically examine these claims and determine whether any baseload generation presently providing power within or to the State of Vermont will be replaced by the Catamount project. Similarly, we request Windham Regional to critically examine how many, if any, wind turbine projects would have to be constructed within Vermont to displace any substantial source of baseload generation presently providing power to Vermont.

We believe the Regional Commission will conclude that wind power will not replace baseload generation. Wind power projects can provide energy but not capacity. Utilities must have a baseload generation capacity that they can call upon at any time to satisfy minimum reserve capacity regulatory requirements to meet their load requirement. Wind supplies only intermittent power so its power purchasers are unable to credit any of the wind projects rated capacity toward their minimum reserve capacity requirements. As a result, wind power production does not obviate the need to build or

purchase new power capacity to meet load requirements. The region will still need to build the same amount of nonwind capacity, with or without the Glebe Mountain project, in order to meet grid reserve margin requirements and ensure electricity reliability. Overall, the region will have to invest more capital to meet its electric needs with wind in the mix than without wind in the mix.

Regardless of the number of wind turbine projects developed over the course of the next several years, Vermont will still need to secure dependable and efficient baseload capacity to meet its future energy needs.

Glebe Mountain Group believes that when wind power is compared to other resource options, including energy efficient measures, the costs associated with development of the Catamount project far exceed any benefit to Vermont and its residents.

VII. Claimed Environmental Benefit

Proponents of the Catamount project argue that wind generation is a clean energy source that will help improve Vermont air quality and reduce our reliance on fossil fuels. The reality is that the Catamount project will have no impact on Vermont's air quality or the issue of fuel dependency.

We respectfully request Windham Regional Planning Commission to critically examine Catamount's claims of environmental benefit. The applicant should be

required to demonstrate that the proposed project will provide quantifiable environmental benefits to Vermont residents.

Most utility professionals will acknowledge that wind energy projects in Vermont will not have any impact on Vermont's air quality or the larger issue of global warming. Vermont's electric generation portfolio is among the most environmentally benign portfolios in the United States. Less than 1 percent of greenhouse emissions created in Vermont are attributed to electric generation. In an interview with the *Brattleboro Reformer*, David O'Brien, former Commissioner of the Public Service Department, stated:

> *Electric generation in-state [Vermont] produces only 0.8 (less than one percent) of the State's greenhouse gases, making it unlikely that renewable energy could prevent further pollution...Based on our portfolio, renewable energy isn't going to replace energy that is currently producing greenhouse gases.* Brattleboro Reformer (12/9/03)

Transportation and the coal burning plants of the Midwest are the primary sources of emissions which contribute to our acid rain and global warming.

If Catamount sells renewable energy credits or '*green tags'* on the emissions trading market, that will enable another power generator to meet its renewable energy regulatory requirements while enabling the power generator to continue operation without scaling back its production or achieving any reduction in emissions.

The benefit of cleaner air created by the reduction in fossil fuels, to the extent that it may occur, will occur outside of Vermont where marginal production that will be

displaced when the wind farm is generating electricity is located. When the Catamount facility is generating electricity, it will temporarily displace some energy produced somewhere else within the ISO-NE grid (most likely a natural gas fired facility).

It is the position of Glebe Mountain Group that the intermittent displacement of emissions at a natural gas fired facility somewhere else in New England is not of sufficient benefit to justify the degradation and development of the Glebe Mountain ridgeline.

IX. Catamount Must Complete All Studies Before Submittal of Its Petition to the PSB

Catamount has the legal obligation and responsibility to demonstrate through adequate documentation and only after thorough testing that the proposed project satisfies the environmental, economic and utility criterion of Act 248 and is in the best interest of Vermonters.

The Public Service Board should not accept Catamount's application until all studies are complete and accompanied by sufficient documentation and data to enable the PSB and other interested persons to independently evaluate the merits of the project.

In view of the profound consequences that a large wind energy project will have upon our region, we respectfully request Windham Regional Planning Commission to hold the project applicant to a very high standard and require from the applicant a level of academic rigor that has yet to be demonstrated. We request Windham Regional

Planning Commission to require the applicant to complete all testing and demonstrate that it has collected adequate data and compiled adequate documentation on all issues before acceptance of the application for review. The application should not be allowed to proceed as a "*work in process*" subject to further study, revision and evaluation as the project proceeds through the PSB hearing process.

Submittal of an incomplete application will place the towns and its citizens at a substantial disadvantage. The towns should not be forced to evaluate a very technical and substantial industrial enterprise without complete information.

We request that before submittal of the application, that the applicant complete all studies and gather all data and documentation reasonably appropriate and necessary for a full and critical evaluation of the project. Such studies and documentation should include, but are not limited to, the following:

- Comprehensive evaluation of wind resources on Glebe Mountain including wind speeds; wind directions; daily, monthly and seasonal patterns; turbulence intensity and duration.
- Sufficient data and documentation to accurately and reliably determine net power output of the project.
- Sufficient data and documentation to accurately and reliably determine the true cost of the project and the true cost of project energy to Vermont rate payers.
- Comprehensive environmental impacts studies including evaluation of impacts to surface water, water quality and groundwater.
- Complete studies and analysis of the natural conditions of

Thompsonburg Brook, Cobb Brook and other tributaries within the Glebe Mountain watershed.

- Development and implementation of a water quality monitoring plan to assure adherence with the Vermont Water Quality Standards and preservation of the natural condition of all streams and tributaries within the watershed.
- Comprehensive soils analysis with soil borings and rock borings.
- Comprehensive erosion control plan.
- Geotechnical analysis for blasting and a comprehensive blasting plan which will identify the frequency and sequences of blasting with calculations for peak particle velocity and air concussion.
- Determination of depth and amount of ledge to be blasted.
- Preblast geological survey to evaluate potential impacts of blasting upon groundwater, aquifer recharge and existing groundwater movement.
- Comprehensive visual impact analysis.
- Comprehensive noise impact analysis.
- Comprehensive electrical interference analysis.
- Comprehensive aviation interference analysis.
- Identification and mapping of all streams and intermittent tributaries within the Glebe Mountain watershed.
- Identification of all aquifer recharge areas.
- Identification and mapping of all wetlands.
- Analysis of existing storm water draining patterns and project impact.
- Comprehensive plant and botanical field studies and analysis.
- Comprehensive wildlife survey and wildlife habitat assessment of

the project site to include large mammal survey, small mammal survey, bird survey, bat survey, and insects.

- Identification of the spatial and temporal uses of air space by birds, bats and insects at the project site with analysis of migration patterns for a three year period.

- Black bear survey with evaluation of black bear habitat and evaluation of corridor.

- Analysis of habitat fragmentation impacts associated with the access road and transmission corridor.

- Identification and mapping of all land disturbance.

- Identification of all equipment to be used in connection with construction activities.

- Identification of all hazardous materials with containment systems and spill protocols.

- Analysis of property based externalities and land use values affected by the project.

- Analysis of public access restrictions.

- Analysis of any transmission line upgrades needed for the proposed project.

IX. Conclusion

The construction of large scale industrial wind energy projects on Vermont ridgelines is one of the most significant environmental issues to face Vermont in decades. The decisions we make regarding such projects will literally change the Vermont landscape for generations to come.

The Catamount project will make a minimal contribution to the energy supply, will not improve Vermont air quality, and will not displace building any new generating capacity. The intermittent displacement of emissions at a natural gas fired facility somewhere else in New England is not of sufficient benefit to justify the degradation of a natural resource of such local and regional significance. If such limited benefits outside Vermont's borders provide sufficient justification to place an industrial wind turbine project on Glebe Mountain then Vermont's mountain ridgelines are destined to become the wind farms of New England.

Vermont is the envy of other states who have compromised their beautiful landscapes through misguided land use and energy policies. We do not have to embrace large scale wind power projects in Vermont to show that we are committed to a healthy environment. We can continue to support energy efficiency initiatives, development of renewable energy technologies, and promote wind energy projects on a scale appropriate for Vermont and consistent with preservation and protection of our natural resources.

Preservation of our fragile high elevation habitats and protection of our mountain ridgelines is the greatest environmental legacy that we can leave to future generations of Vermonters.

Respectfully submitted,

GLEBE MOUNTAIN GROUP

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APPENDIX

VERMONT PLANNING AND DEVELOPMENT ACT

24 V.S.A., Chapter 117: Municipal and Regional Planning and Development

Selected excerpts:

§4302. Purpose; goals

(b) It is also the intent of the legislature that municipalities, regional planning commissions and state agencies shall engage in a continuing planning process that will further the following goals:

* * * * * * *

(2) To encourage citizen participation at all levels of the planning process, and to assure that decisions shall be made at the most local level possible commensurate with their impact.

* * * * * * *

(c) In addition, this chapter shall be used to further the following specific goals:

* * * * * * *

(5) To identify, protect and preserve important natural and historic features of the Vermont landscape, including:

(A) Significant natural and fragile areas;
(B) Outstanding water resources, including lakes, rivers, aquifers, shore lands and wetlands;
(C) Significant scenic roads, waterways and views;
(D) Important historic structures, sites or districts, archeological sites and archeological sensitive areas.

(6) To maintain and improve the quality of air, water, wildlife and land resources.

(A) Vermont's air, water, wildlife, mineral and land resources should be planned for use and development according to the principles set forth in 10

V.S.A. §6086(A) [the ten criteria of Act 250].

(7) To encourage the efficient use of energy and the development of renewable energy resources.

(8) To maintain and enhance recreational opportunities for Vermont residents and visitors.

(A) Growth should not significantly diminish the value and availability of outdoor recreational activities.

(B) Public access to noncommercial outdoor recreational opportunities, such as lakes and hiking trails, should be identified, provided, and protected wherever applicable.

* * * * * * *

§4345a. Duties of regional planning commissions

A regional planning commission created under this Chapter shall:

(1) Promote the mutual cooperation of its municipalities and assist and advise municipalities, compacts and authorities within the region to facilitate economic development programs for the appropriate development, improvement, protection and preservation of the region's physical and human resources.

* * * * * * *

(5) Prepare a regional plan and amendments that are consistent with the goals established in section 4302 of this title, and compatible with approved municipal and adjoining regional plans. When preparing a regional plan, the regional planning commission shall:

* * * * * * *

(D) identify areas of regional significance. Such areas may be, but are not limited to, historic sites, earth resources, rare and irreplaceable natural areas, recreation areas and scenic areas;

* * * * * * *

(14) Appear before the public service board to aid the board in making determinations under 30 V.S.A. §248.

APPENDIX B

WINDHAM REGIONAL PLAN
(adopted December 2001)

Selected excerpts:

The Windham Regional Commission

The Windham Regional Commission (WRC) is a voluntary association of 27 towns, formed in 1965, subsequently constituted by the State Legislature, and now operating under the Vermont Municipal and Regional Planning and Development Act (24 V.S.A. Chapter 117). (WRP at 2)

* * * * * * *

Purpose and Use of the Windham Regional Plan

The purpose of the Windham Regional Plan (the plan) is to provide guidance for change in the Windham Region. The Plan reflects shared values and concerns of the people who live in the 27-town Region and it discusses issues facing the Region with statements of policy, maps, and recommended actions for the WRC, state agencies and towns. Based on a set of regional goals, the plan sets long-term policies for the Region and identifies action needed to further those goals and policies. (WRP at 2-3)

* * * * * * *

Regional Goals and Relationship to Vermont Planning Goals

* * * * * * *

- To plan development so as to maintain the Region's historic settlement pattern of compact villages and urban centers separated by rural countryside; (WRP at 5)

* * * * * * *

- To maintain and improve the quality of air, water, wildlife, and land resources in the Region; (WRP at 5)

- To identify, protect, and preserve regionally important natural and historic features of the Vermont landscape; (WRP at 5)

* * * * * * *

- To encourage energy conservation and efficiency, the development of renewable energy resources, and the availability of a reliable and sufficient energy supply; (WRP at 6)

* * * * * * *

- To maintain and enhance recreational opportunities for both residents and visitors in keeping with the carrying capacity of natural resources and public facilities. (WRP at 6)

Regional Priorities

* * * * * * *

Natural Resource Protection

Water Quality – Protecting surface and groundwater while providing for appropriate growth and development remains a priority for the Region. While surface water quality has improved in recent years, acid precipitation, non-point source pollution and groundwater contamination continue to threaten water quality. Increased local, regional and national efforts are needed to overcome these threats to water quality.

Scenic Resources – Among the region's most valuable resources are its natural beauty and its attractive towns and villages. Important scenic areas must be identified and protected.

Air Quality – Clear air is essential to a healthy environment. Certain types of development and the cumulative effects of various air emissions can degrade air quality. We must do our best to ensure that air leaving the region for use by others is of good quality. (WRP at 6)

Land Use

Settlement Pattern – Maintaining the region's pattern of compact villages and downtown areas separated by undeveloped countryside is of paramount importance, and inappropriate land use decisions that threaten this settlement pattern must be avoided. New development should be guided so that it is compatible with existing community character and other land use concerns. Sound land use planning is needed at both the town and regional levels. (WRP at 7)

* * * * * * *

Regional Land Use

Future growth will be governed by natural resource constraints, public and private investment decisions, the policies of town plans and this Regional Plan, and local regulations that are adopted to implement town plans. The

following guidelines help to coordinate and guide change and development in the Region. (WRP at 16)

* * * * * * *

Resource Protection

Areas and resources requiring extra protection and preservation efforts include aquifers, drinking water source protection areas, wetlands, floodplains, important forest resources, pristine waters, important fish habitats, shore lands, prime agricultural soils, steep slopes, and areas prone to erosion, habitat areas for threatened or endangered plant and animal species, other critical and necessary wildlife habitats, historical and archeological resources, and scenic vistas. (WRP at 16)

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Land Use Categories

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Resource Lands: Resource lands are predominated by lands requiring special protection or consideration due to their uniqueness, irreplaceable and fragile nature, or important ecological function. Resource lands include fish and wildlife habitats, areas hosting state Natural Heritage of federally identified endangered and threatened species, unique and fragile natural areas, wetlands, shore lands, floodplains, aquifer recharge areas, steep slopes, lands over 2,500 foot elevation, ridgelines, essentially undeveloped forestlands having limited access to improved public roads and regionally significant scenic corridors and areas. Resource lands of special value should be preserved and protected to the greatest extent possible. Any development or land use in these areas should be designed to have a minimal impact on the resource. It is important to limit and manage human interaction in resource areas. Resource lands also include those areas that are currently in some form of legal conservation such as public ownership, private non-profit ownership for conservation purposes, or conservation easements. The most appropriate land uses for resource lands are conservation, forestry, recreation, and low impact, very low-density rural uses. (WRP at 23) (Emphasis added).

* * * * * * *

Natural Resources

Protection of natural resources begins with an understanding of the complex balance of energy, ecosystems, and all living organisms. This interconnected web of life-support systems makes the sustainability of

natural resources both a global and a local issue. Rapid consumption, misuse, or degradation can deplete and destroy both renewable and non-renewable natural resources.

The Windham Region is fortunate to have a wealth of valuable natural resources. Extensive forested lands, river valleys, upland streams, and wetlands create an ecosystem in the Region that sustains numerous plant and animal communities in addition to supporting human habitation. This interconnected ecosystem of humans, animals, plants, earth, air and water can be sustained through careful resource use and preservation.

Surface Waters

Surface waters are predominant landscape features throughout the Region, often determining both the location and form of regional settlement. Surface waters include rivers, permanent and intermittent streams, lakes, ponds, vernal pools and wetlands. The Region's abundant surface water is a valuable resource providing:

- Aquatic and wildlife habitat;
- Recreational opportunities;
- Scenic enjoyment;
- Riverine aquifer recharge;
- Water for drinking and irrigation;
- Hydroelectric generation; and
- Assimilation of properly treated waste.

Watersheds

The majority of the Windham Region is located within the Connecticut River basin with small portions located in the Hudson River and Lake Champlain basins. These basins contain many rivers and tributaries, each with their own unique values and uses. (WRP at 32)

* * * * * * *

Wetlands

The Region's wetlands are vital for their abilities to recharge groundwater, regulate and filter surface water flow, store water, mitigate floods, and provide aquatic and wildlife habitat. Consequently, they require careful

protection...(WRP at 33)

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Water Quality

Under Section 303(d) of the Federal Clean Water Act, states are required to monitor surface water quality and to publish the results periodically. The most recent report for Vermont, dated July 6, 2000 shows the great majority of surface waters in the WIndham Region to be in good condition... (WRP at 33)

* * * * * * *

Pollution

The primary causes of non-point source water pollution have been identified as construction activity near shore lands and the removal of riparian vegetation. Riparian buffers are important for removal of chemical pollutants and sedimentation from runoff, preventing them from entering surface waters... (WRP at 35)

* * * * * * *

Groundwater

Groundwater provides the primary supply of potable water for most of the Region. Despite its high resource value, it remains a poorly understood resource. Groundwater moves beneath the ground through aquifers, which are underground water bearing formations of sand, gravel and fractured rock. Due to Vermont's geology, groundwater is often unpredictable as it travels through a maze of cracks in bedrock formations. It can infiltrate rock fractures and travel quickly in unknown directions for long distances, or break out to the surface in a short distance.

Groundwater occurs in the unconsolidated sediment of streams and buried valleys and in bedrock fractures. While groundwater potential in areas of unconsolidated sediment is generally favorable, wells producing water from rock fractures usually have low yields (ranging from two to 15

gallons per minute). The Region's mountains and uplands have either exposed bedrock or bedrock covered by a thin layer of glacial till with low permeability; in these areas bedrock fractures are the primary source of groundwater. (WRP at 35-36)

* * * * * * *

Air Quality

Air in the Region generally meets national ambient air quality standards, although for the pollutant ozone, the standard sometimes is met by a slim margin. Regarding clarity of the atmosphere, the Vermont Agency of Natural Resources has noted that visual range in Vermont–as measured by the number of days with visibility greater than 40 miles–is declining.

The Region's air quality is impacted by both local and distant sources of air pollution. Local sources include discharges from industries, residential activities, and significantly from non-point sources such as automobile operation. (WRP at 37)

* * * * * * *

Noise Pollution

Unpleasant or otherwise unwanted sound that travels through the air creates another type of pollution. Noise pollution may be caused by road traffic, airplanes, recreational vehicles, construction and industrial equipment, personal sound equipment, and yard equipment. Both humans and wildlife can be negatively affected by noise pollution. (WRP at 37)

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Forest Resources

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A Multi-Valued Resource

Forests play a major role in the ecological, economic, and social health of

the Region. As a major component of our landscapes, forests form the environmental setting for human activity, furnish habitat for wildlife, and contribute to water and air quality. (WRP at 38)

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Regional Forest Ecology

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We must reconcile forest uses directly serving economic ends with the need for large, undeveloped and relatively undisturbed, and interconnected blocks of forest that can meet the habitat needs of wide-ranging wildlife while minimizing human-wildlife conflicts...(WRP at 38-39)

* * * * * * *

Fragmentation

Fragmentation of the forested landscape can be caused by any number of types of development. Subdivision of land and construction of new homes and businesses and their attendant infrastructure create smaller, divided, even isolated parcels that are too small or inaccessible to be managed or harvested effectively or efficiently. Sales by long-term industrial owners may add to this trend. Fragmentation is especially harmful to wildlife as habitats and habitat elements are eliminated or separated. (WRP at 39)

* * * * * * *

Scenic Resources

The region enjoys exceptional scenic quality. Mountain landscapes, farm landscapes, historic villages and towns, ridgelines, the night sky and nighttime landscapes, shorelines, and scene views and corridors are all highly vulnerable to development. Scenic resource protection measures available to the Region's towns include:

- purchase of scenic lands;
- scenic easements, or acquisition of development rights;
- review of the scenic impact of public investment activities;
- designation of scenic roads;
- public education; and
- regulation through zoning and subdivision regulations and the Act 250 development review process.

Maintaining scenic quality requires coordination of these techniques. Many structures such as utility poles, telecommunication towers, gas stations and streetlights are visually incongruous with our scenic landscape. Careful planning and design will provide development opportunities without adversely affecting value of the landscape. (WRP at 40)

Sky Glow

Light pollution or "sky glow" is a cumulative and increasing problem, especially near the urban clusters...(WRP at 40)

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Natural Areas, Fragile Areas and Wildlife Resources

Natural and fragile areas are landscape features with ecological, educational, scenic and contemplative value. They provide ecological preserves of relatively unaltered environments that are important to wildlife and the natural heritage of the Region. (WRP at 41)

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Lands Above 2,500 Feet

Although not formally designated as such, areas above 2,500 feet in elevation are also fragile areas in Vermont. Lands above 2,500 feet are especially vulnerable natural environments because of their generally thin soils, steep slopes, sensitive vegetation, important wildlife habitats and greater than average precipitation. Some 24,800 acres (4 percent) of the Windham Region are above 2,500 feet in elevation. (WRP at 41) (Emphasis added).

* * * * * * *

Remote Forested Areas

The mountainous, forested landscape remote from community centers is the stronghold for the Region's large mammals, which include black bear,

moose, deer, bobcat, fisher, coyote, otter and beaver. Completing the forest ecosystem are the smaller mammals, reptiles, amphibians, game birds, raptors, and many valued songbirds and insects that depend on the Region's diverse forest species. A critical state and regional issue is the maintenance of large tracts of connected forestland to support these species. Certain deer wintering areas and bear habitat are regionally significant necessary wildlife habitat 9those habitats needed for a species to continue to thrive within that area). For wintering deer, low-lying softwood stands with southern exposures provide critical shelter from deep snow and cold temperatures. Stands of mature beech and oaks, accessible wetlands, and newly regenerated soft mast areas provide important feeding habitats for the black bear. Bear travel corridors supply a necessary link between feeding and breeding areas. These areas are particularly important since food sources and supplies vary from season to season and from year to year. New roads, guardrails, and construction of homes and other forms of development, as well as indiscriminate timber cutting and outbreaks of tree disease, endanger both the quantity and quality of these important wildlife habitats.

Soils and Topography

Soil Characteristics

... Many of the Region's soils can be shallow, unstable, highly erodible, wet or poorly drained. Wet soils may cause basement flooding and failure of footings, foundations, underground piping and septic systems. Road construction on wet sites can be damaging and prohibitively expensive. Drainage of excessively wet soils is often not an acceptable solution because of expense, rate of failure and potential for environmental damage. Any of these features alone, or in combination with steep slopes, are critical factors in determining appropriate land use in the Region. (WRP at 42)

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Natural Resource Maps

Watershed Map - The Glebe Mountain ridgeline is a headwater area for Cobb Brook, Turkey Mountain Brook, Middle Branch of the Williams River, Upper Saxtons River, and Mid West River.

Water Resources Map - The entire length of Glebe Mountain is shown as watershed of Class A(1) waters.

Ecological Resources Map - The entire Glebe Mountain ridgeline and its easterly and westerly slopes are shown as bear production habitat. Also included along the ridgeline of Glebe Mountain is a significant deer wintering area. Hamilton Falls is identified as a State natural area.

Steep Slopes Map - The ridgeline of Glebe Mountain is identified as having slopes greater than 25 percent for most of its entire length.

Energy

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Wind Power

In 1997, Green Mountain Power (GMP) developed a utility-owned wind-generating station in Searsburg, consisting of 11 wind turbines with combined capacity of six megawatts. The project has been a catalyst for further wind power development in New England. Recent estimates suggest that Vermont has the wind potential to satisfy as much as 10 percent of the state's electricity needs (*Fueling Vermont's Future, 1998,* Vermont Department of Public Service). Wind power is clean and renewable, but turbine placement can be difficult and controversial for reasons of aesthetics, impacts on natural areas and the need for turbine placement at approximately 2,800-3,300 feet of altitude. (WRP at 66)

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Regional Energy Needs

The "southern loop" of Central Vermont Public Service's transmission facilities currently operates at near maximum capacity. The loop consists of 75 miles of transmission lines connecting Bennington and Brattleboro with the southern Vermont ski areas (extending as far north as Bromley). Involved Region towns include Winhall, Stratton, Londonderry, Jamaica, Townshend, Newfane, Dummerston, and Brattleboro.

The two major tie-ins to the loop (the Woodford Road substation in Bennington and the Vernon Road substation in Brattleboro) are distant from the areas of growing electrical demand. If either substation were to fail under peak conditions, the other would be unable to compensate. Central Vermont Public Service added transformer capacity at both substations in 1995, the first such improvement since the early 1970's. Future growth on the loop will necessitate an update in facilities between substations. (WRP at 66-67)

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Current Issues

Issues currently being considered at the state, regional and local levels include: locating and facilitating where major transmission or system upgrades are needed, encouraging conservation programs, such as demand-side management, and encouraging the consideration of biomass generation or wood chip burning. Identifying local power needs and the use of unconventional methods of energy production and conservation– with a focus on renewable energy sources and localized generation. For example, looking at the electrical grid to find high use areas and potential sources closer to the point of use. (WRP at 67)

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Implementation
Putting the Regional Plan Into Action

2) The WRC will participate in state review processes such as Public Service Board Section 248 hearings, Waste Facilities Review Board, Water Resources Board and others, giving particular attention to the policies of this Plan and the approved town plans of member towns. (WRP at 96)

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Development Review

Town and regional plans include provisions that address major projects, new development and land development issues. Usually, as one of the criteria for the issuance of a permit decision, proposed developments must conform town and regional plans. In the process of development review, the WRC will assist decision-makers regarding regional issues addressed in this Plan. (WRP at 97)

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The WRC's development review process will be conducted in accordance with the following guidelines:

1) The WRC shall review projects of regional importance and will consider the provisions of town plans and the regional plan in this review. (WRP at 97)

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3) A WRC Project Review Committee shall be made up of a core group of Regional

Commissioners and shall seek the assistance of the Regional Commissioners from the town where the development is being proposed and any other involved town. The Committee will review projects that may have regional importance, that might contribute to cumulative impacts, that are precedent setting, and others referred to the Committee for review by staff or a member town. The Committee will prepare testimony on major projects and development review issues and may refer recommendations to the full Commission for approval. (WRP at 97)

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Windham Regional Plan Policies

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Land Use Policies

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Resource Lands

1. Ensure that new development reflects existing settlement patterns, is low impact and low intensity, and does not conflict with the resources, but rather sustains these natural resources. (WRP at 101)

2. Ensure protection of fish and wildlife habitats, areas hosting state or federally identified endangered and threatened species, unique and fragile natural areas, wetlands, shore lands, floodplains, aquifer recharge areas, steep slopes, lands over 2,500 foot elevation, ridgelines, essentially undeveloped forest lands which have limited access to an improved public road, and regionally significant scenic corridors and areas. (WRP at 101)

3. Support protection of green space, particularly along streams and rivers, and other important lands that are valued for trails, open space, wildlife habitat and scenic enjoyment. (WRP at 102)

4. Avoid extension of roads, energy transmission facilities and other services into and through Resource Lands. (WRP at 102)

5. Construct corridors for new energy transmission facilities only when needed and then adjacent to and parallel to existing operational energy transmission facility corridors. Minimize their visual impact on ridgelines, slopes and open areas, and avoid important natural and historic resources. (WRP at 102)

6. Oppose the fragmentation of wildlife habitat by protecting wildlife corridors that join large tracts of resource land. (WRP at 102)

Economy Policies

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11. Promote the economy through tourism activities that emphasize the character of the Region itself: its beauty, culture, history, wildlife and outdoor recreation. (WRP at 103)

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Natural Resources Policies

Surface Waters

1. Maintain undisturbed buffers of vegetation along watercourses, lakes, ponds, wetlands, and vernal pools 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. (WRP at 103)
2. Maintain or enhance existing chemical, physical, and biological quality of the Region's surface waters. (WRP at 103)

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4. Maintain Class I wetlands in their natural condition. Ensure that any permitted alterations to Class II and Class III wetlands do not significantly diminish their functional, ecological, or aesthetic values. Wetland mapping prepared by the National Wetlands Inventory, showing Class I and II wetlands, available in digital GIS format for each town, should be field-checked and verified. (WRP at 103)

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6. Support identification, recognition and appropriate management of waters with exceptional natural, ecological, recreational, cultural, or scenic values. (WRP at 104)

7. Support surface water classification and management strategies which are consistent with the municipal and regional land use planning objectives for the affected watershed, and which will effectively maintain existing water quality. (WRP at 104)

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Groundwater

1. Maintain or enhance existing chemical, physical and biological quality of the Region's groundwater. (WRP at 104)

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Forest Resources

Resource Protection

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2. Discourage the fragmentation of large parcels of forestland for development or other conversion to non-forest uses. (WRP at 105)

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Scenic Resources

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3. The scale, siting, design and management of new development shall maintain or enhance the landscape and shall protect high quality scenic landscapes and scenic corridors. (WRP at 106)
4. Minimize visual impacts of communication towers and other high-elevation or ridgeline structures through co-location, design, siting, and color choice. Design and site communication and other high-elevation towers so that they do not require nighttime illumination. (WRP at 106)

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7. Discourage exterior area illumination of regionally prominent physical features and landscapes. Ensure that any such illumination will not significantly reduce the natural appearance of the nighttime landscape, will not be obtrusive in the viewshed and will not distract unduly from the night-time horizon or night sky." (WRP at 106)

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Natural Areas, Fragile Areas and Wildlife Resources

1. Protect Natural Areas, Fragile Areas, and critical plant and animal habitats. If necessary, protect these areas from indiscriminate publicity by mapping them

only in very general terms. (WRP at 106)

2. Protect important ecosystems and maintain or enhance the habitat needs and travel corridors required by the Region's larger mammals. (WRP at 106)

3. Protect Natural and Fragile Areas from development. When development is proposed near a natural or fragile area, a buffer strip designed in consultation with the appropriate state agency, must be designated and maintained between the development and natural or fragile area. (WRP at 106)

4. Support state, federal, and conservation group acquisition of land and/or conservation easements to protect critical wildlife habitats and encourage designation of State Natural and Fragile Areas for significant features and resources.

5. Support community, regional, and state programs and incentives that encourage private and public landowners to recognize the economic importance of protecting, maintaining and enhancing fish and wildlife habitats and ecosystems. (WRP at 106)

Soils and Topography

1. Take special precautions on slopes to avoid environmental damage, including negative consequences associated with erosion and landslides.

- Minimize areas of earth disturbance, grading and vegetation clearing on slopes over 15 percent;

- Avoid intensive development (other than recreational trails and ski lifts) in areas predominated by slopes exceeding 25 percent or above 2,500 feet in elevation; (WRP at 106)

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2. Use detailed site studies to determine suitability for development where steep slopes occur with shallow soils. Ensure that all development proposals on such soils provide and conform to an erosion control plan for construction phases of the development and a site drainage plan. (WRP at 107)

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Community Resources Policies

Public Water Supplies

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5. Limit land use within source protection areas to those uses that pose no threat of contamination to public water supplies. (WRP at 107)

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Private On-Site Water Supplies

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2. Ensure that new development does not impact existing private on-site water supplies. (WRP at 107)

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Energy Policies

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3. Support programs such as Efficiency Vermont in its goals to reduce energy costs with cost-effective energy efficiency measures, using conservation as a source. (WRP at 113)

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5. Balance improved conservation measures and the development of new generation and transmission to ensure adequate future energy supplies, requiring utilities to improve the efficiency of procedures and assist customers in conservation. (WRP at 113)

6. Ensure that the state monitors the effects of restructuring of electric utilities. Protect the interests of rural communities and their residents in the proposed restructuring of electric utilities. (WRP at 113)

APPENDIX C

LONDONDERRY TOWN PLAN
(adopted August 29, 2005)

Selected excerpts:

Purpose of the Town Plan

The establishment of a Town Plan is accomplished through a continuing community planning process considering the vision of its citizens, elected officials and local organizations. Londonderry's Town Plan establishes goals and objectives for responsible growth and development based upon a public commitment to preservation of natural resources, historic settlement patterns, the vitality of the north and south villages, and quality of life for those who chose to live here.

The plan serves at least two functions: First, it is a planning tool to guide decision-making by the townspeople and their municipal government, particularly the Select Board. For example, the Plan should be considered in adopting municipal budgets and it should guide the consideration and adoption of amendments to the zoning and subdivision ordinances. Second, the clearly stated, mandatory provisions of this plan are intended to be legally enforceable standards as provided by Act 250 (10 V.S.A. §6000, *et seq.*) and Section 248 (30 V.S.A. §248). The plan identifies some, but not necessarily all, such standards with three asterisks (***) and/or by labeling them "Legally Enforceable Standards". Whether or not such standards are identified as such, all clearly written mandatory provisions in this plan are intended to be legally enforceable.

In addition to any other regulatory provisions that may be applicable, such enforceable standards shall be considered as aesthetic standards for and applicable to any construction within the Town of Londonderry. Such enforceable standards are to be interpreted broadly and without exception to protect the mountain and valley vistas, wooded hillsides and undeveloped ridgelines in the Town of Londonderry including, especially, on the prominent hill and ridgeline that is Glebe Mountain. No mitigation measures or interpretations shall be accepted by any regulatory body to overcome prohibitions stated in such standards. (LTP at 3)

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Statement of Goals and Objectives

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5. **Natural Resources** – Identify sustain and enhance the significant natural, historic and land resources, including its forests, agricultural lands, lakes, rivers, wetlands, air quality, wildlife, shore lands, aquifers, scenic vistas, roads, views, historic and archeological sites (public or privately owned).

6. **Energy Conservation** – Encourage efficiency and conservation of energy and pursue appropriate development of renewable energy resources, such as wind, solar, wood and waterpower.

7. **Recreational Opportunities** – Maintain and improve recreational opportunities for Vermonters and their guests, including public access to forests, lakes, rivers, trails and other non-commercial recreational areas. (LTP at 10)

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Land Use

Londonderry residents and property owners have overwhelmingly stated a desire that the Town maintain its rural character while seeking to develop additional and better paying employment opportunities. To this end, the Town's Land Use Goals, Plan and Regulations should seek the best possible approaches to provide for responsible economic health while maintaining the rural character of the Town. Maintaining rural character includes preserving farmlands, woodlands, undeveloped open space, natural stream banks and lake/pond shorelines, and ridgelines together with supporting land-based and outdoor activities and concentrating growth in specified growth centers. (LTP at 11)

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The primary objective and challenge of Londonderry's land use plan is to retain its rural character and compact villages while providing an appropriate economic and employment base for its citizens. The Town should direct commercial development in the designated commercial areas, retaining large open spaces and agricultural uses among the commercial areas as well as open spaces among residential development. Additionally, Londonderry's land use plans must provide for a sustainable forestry base, recreational opportunities, public and quasi-public facilities, and recognize the need to provide space for and protect flood plains, wetlands, ridgelines and conservation and fragile areas. (LTP at 12)

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Londonderry's Land Use Plan area designations are described as follows and shown on the land use map (Section VI).

Conservation and Resource Overlay Areas are those locations, which are environmentally fragile and aesthetically sensitive, and/or areas that contain natural resources such as forests that should be protected for long-term sustainable use. These areas include land characterized by steep slopes and prominent ridgelines, including high elevation land on Glebe Mountain and adjacent ridgelines, flood hazard areas, riparian areas, wetlands and shore land. (LTP at 12) (emphasis added)

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Resource Conservation (RC) Overlay District. The purpose of the Resource Conservation Overlay District is to protect significant forest and scenic resources, sensitive headwater streams and wildlife habitat at higher elevations and to prevent development on ridgelines, steep slopes, and shallow soils and in areas with poor access to public roads, municipal services and commercial centers. (LTP at 13)

****

Resource Conservation Districts

Policies:

1. Encourage land use that is consistent with the maintenance of the Town's rural character and historic settlement patterns.

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Legally Enforceable Standards

9. ***Encourage the continuation of traditional land uses (e.g., forestry, farming, recreation) within conservation and resource protection areas, and ensure that development does not diminish the scenic and ecological values associated with these areas. To this end, new commercial land uses and large scale and/or moderate to high-density development, including energy generation facilities of any size, are prohibited in the three resource conservation districts and on other land characterized by one or more fragile natural features (e.g., critical wildlife habitat, wetlands, riparian buffers, steep slopes and ridgelines). (Emphasis added)

10. ***Notwithstanding Legally Enforceable Standard #9, the continued

operation of Magic Mountain Ski Area as a commercial enterprise is encouraged within its existing trail and lift configuration. Any expansion of those facilities shall be carefully reviewed to prevent adverse impacts on identified resources.

11. ***All land development, excluding outdoor recreation, forest management and agriculture, shall be sited to avoid critical resource areas, including wetlands, floodplains, and significant ridgelines including Glebe Mountain. (LTP at 14 -15) (emphasis added)

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Natural Resources and Land Conservation

The Town of Londonderry has a wide variety of natural resources. The Town's clean air and water and pleasing mountain and valley vistas are recognized as critically important resources. Indeed, the Town's landscape is defined by wooded hillsides and undeveloped ridgelines and shore land. The welfare of the Town depends on protecting such resources, particularly the mountain and valley vistas of the wooded and undeveloped ridgelines, particularly on such prominent hillsides as Glebe Mountain, that attract so many residents and visitors. If Londonderry does not protect such vistas, wooded hillsides and undeveloped ridgelines, property values in the Town will decline, harming current landowners and the Town's tax base, and well paying jobs serving the needs of residents and visitors will be lost as those people are attracted elsewhere. (LTP at 19)

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Policies:

1. Support the protection of significant natural and fragile areas. (LTP at 19)

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4. Support access to all public natural areas.

5. Support the conservation of contiguous forest and agricultural tracts, discouraging fragmentation and support voluntary conservation practices, including the enrollment in use value programs and conservation easements.

6. Maintain water quality at levels that support all existing and designated uses of surface waters. (LTP at 19)

****

Legally Enforceable Standards

8. ***The development of any structure extending more than 100 feet above the ground or 50 feet above vegetation growing at its base, whichever is less, is prohibited in the Resource Conservation Overlay District as such District is defined by the Town of Londonderry Zoning Bylaws and, if such land is not included in the Resource Conservation Overlay District, above the 1,500 elevation contour of Glebe Mountain. (LTP at 20) (emphasis added)

9. ***The construction of windmills with installed electrical generating capacity exceeding 5 kW per windmill in the Resource Conservation Overlay District as such District is defined by Town of Londonderry Zoning Bylaws and, if such land is not included in the Resource Conservation Overlay District, above the 1,500-foot elevation contour of Glebe Mountain is prohibited. (LTP at 20) (emphasis added)

10. ***Cutting trees to allow the construction of such windmills with installed electrical generating capacity exceeding 5 kW per windmill in the Resource Conservation Overlay District as such District is defined by Town of Londonderry Zoning Bylaws and, if such land is not included in the Resource Conservation Overlay District, above 1,500 foot elevation contour of Glebe Mountain is prohibited. (LTP at 20) (emphasis added)

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Water Resources

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Wetlands – Defined as those areas that are inundated by surface or groundwater sufficient to support vegetation and/or aquatic life that depend on saturated or seasonally saturated areas for growth and reproduction. Such areas include marshes, swamps, potholes, sloughs, river and lake overflows, mud flats, bogs and ponds. Wetlands benefits include fish and wildlife habitat, flood and erosion protection, pollution

filtration, ground water recharge, and sites for education, recreation and scenic enjoyment. Wetlands are shown on the Vermont Wetlands inventory, but accuracy for local conditions should be reviewed on an individual case basis. (LTP at 21)

****

Surface Waters – Surface waters include rivers, permanent and intermittent streams, lakes, ponds, vernal pools, and wetlands, often determining both the location and form of development. These waters are an abundant and valuable resource providing habitat, recreation, drinking water and irrigation, aquifer recharge, hydroelectric generation, and scenic enjoyment. Surface waters are subject to degradation from a variety of sources, including the loss of riparian buffers, failed or inadequate septic systems, storm water runoff from parking lots, roads and other types of development, and erosion from land clearing and development activities, especially on steep slopes.

Groundwater. Groundwater provides 100% of the potable water for homes and businesses in Londonderry through a combination of private wells and springs and several small community well system. In addition, groundwater helps to maintain water levels in local rivers and streams. Groundwater is susceptible to degradation from a variety of land uses, including poorly designed or failed septic systems, leaking underground gasoline tanks, and the spreading–either intentionally or by accident–of various chemical and hazardous materials on the ground. (LTP at 22)

****

Water Resource Policies:

1. Protect ground and surface waters, steep slopes, shallow soils, areas supplying significant recharge areas for groundwater supplies and watersheds for future public water supplies. (LTP at 22)

2. Require that the storage and transportation of hazardous chemicals does not pollute water resources. (LTP at 22)

3. Support town, state and national regulations to maintain and enhance water quality. (LTP at 22)

4. Require that water resources be maintained in a natural state. (LTP at 22)

5. Maintain appropriate undisturbed buffers of vegetation along watercourses, lakes, ponds, wetlands, and vernal pools 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. (LTP at 22)

6. Ensure that new development is sited and suitably screened to avoid visibility as viewed from Lowell Lake, Lily Pond and Gale Meadow Pond. (LTP at 23)

7. Require that any construction project that disturbs five or more acres of soil submit an erosion and sediment control plan. (LTP at 23)

8. Prohibit development, including road and driveway construction, on slopes with gradients greater than 25%. (LTP at 23)

9. Require that any construction that creates more than one acre of impervious area submit an erosion and sediment control plan. (LTP at 23)

10. Encourage strategies to protect water resources such as conservation easements, purchase of development rights and land trusts. (LTP at 23)

11. Protect groundwater from contamination from failed or poorly designed septic systems, the application or disposal of hazardous materials, and inappropriate development in water supply source protection areas (SPAs). (LTP at 23)

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Agriculture and Forest Resources

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Policies

1. Protect agricultural and forested lands. (LTP at 25)

****

11. Maintain the Resource Conservation Overlay District as an area in

which forest management and outdoor recreation remain the predominate area. Carefully manage residential uses to minimize adverse impacts on identified natural and scenic resources, and limit wind generation facilities exclusively to other than those serving as accessory uses to single-family homes. (LTP at 25)

Legally Enforceable Standards

12. ***In the Resource Conservation Overlay District, wind generation facilities other than those serving as necessary uses to single-family homes are prohibited. (LTP at 25-26) (emphasis added)

****

Scenic Areas

The rural character of Londonderry is composed of a scenic natural landscape with traditional New England settlement patterns and architectural designs that are of critical importance to the community's identity.

The natural landscape includes open space, working and non-working agricultural lands, managed and unmanaged forest land, as well as Glebe Mountain, Cobble Hill and other surrounding ridgelines. The Glebe Mountain ridgeline, which defines the eastern boundary of the Town, is not only the Town's paramount scenic resource, but also has regional significance. Given Glebe's geomorphic characteristics that provide near and distant scenic views throughout the mountain valley region, development on the ridgeline would irrevocably alter a highly visible, highly valued and highly visited landscape. Consequently, the Glebe Mountain ridgeline is included in the Resource Conservation Overlay District so as to carefully control development and prohibit all commercial activities other than forest management, recreation and the continued operation of Magic Mountain Ski Area.

Londonderry's dams and waterways, long and short-range views, scenic roadways and scenic corridors also contribute to the rural character of the community. Boynton, Hell's Peak, Mansfield, Middletown, Reilly, Under Mountain and Winhall Hollow Roads are Town-designated Scenic Roads while Vermont Route 11 and 100 are State-designated Scenic Corridors. These scenic and historic resources are indicated on the maps in Section VI.

The Town recognizes the irreplaceable value of all these resources and the need to protect them as they serve to preserve local heritage, while enhancing the rural environment, economy and way of life for citizens and visitors.

Scenic Area Policies

1. Maintain natural and man-made features that are of local scenic, cultural and historic significance and protect them from activities that impair their integrity, character and/or quality. (LTP at 27)

2. Encourage landowners to consider the Town's heritage and natural resources when developing their property through careful design and siting of all structures, access and parking lots, utility installation, lighting and landscaping. (LTP at 27)

3. Encourage cluster development to avoid fragmentation of larger parcels of land, retain open space, conserve agricultural and forestland and maintain scenic values. (LTP at 27)

4. Encourage compatible and responsible use of lands adjacent to or including areas of scenic, historical, educational, architectural, or archaeological value. (LTP at 27)

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Legally Enforceable Standard

5. ***Development shall be prohibited on ridges and peaks located within the Resource Conservation Overlay District, including, particularly on Glebe Mountain above the 2,000 foot elevation contour because of the prominence of Glebe Mountain. In other high elevation locations, development shall be carefully sited and screened to avoid undue adverse impacts to the scenic landscape. (LTP at 27) (emphasis added)

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Fish and Wildlife Resources

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Policies

1. Plan development to minimize impact on significant wildlife habitat and encourage retention and improvement of wildlife habitats. Utilize the most current Agency of Natural Resources "Significant Habitats Map" (SHM) in planning process and for current site-specific data. Note that SHM maps only show approximate locations and are intentionally general to protect sensitive species and the interests of landowners. (LTP at 28)

2. Encourage protection of wildlife resources as an economic benefit to the Town. (LTP at 28)

3. Protect riparian corridors for wildlife habitat, as well as water quality. (LTP at 28)

4. Maintain the Shoreland District and Resource Conservation Overlay District as a means of protecting wildlife habitat in especially sensitive areas. (LTP at 28)

****

Energy Conservation

Vermont's energy conservation efforts in recent years have focused on Demand Side Management (DSM) to increase energy efficiency, reduce energy demand and, in effect, increase available energy supplies. In 1990, under order of the Public Service Board, all electric utilities were required to develop a variety of demand side management programs for their customers, which have since been consolidated into one statewide energy efficiency utility, Efficiency Vermont. (LTP at 41)

****

Renewable Energy

Renewable energy resources that may be available in Londonderry include wood, limited wind, solar and hydropower. The extent to which these sources can be harnessed and used to replace fossil fuels is not clear; however rising fuel prices, new technologies and the availability since 1998 of net metering which allows utility customers with small-scale renewable energy systems to sell excess power generated back to the utility may promote increased use of renewable sources.

Each of the four forms of renewable energy cited, however, may conflict in whole or in part with other policies of this plan and must be carefully evaluated. Non-commercial energy generation facilities (i.e., net metered facilities and facilities that are not connected to the regional power grid) generally pose the potential for fewer impacts than larger scale commercial projects. (LTP at 42)

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- Wood (LTP at 42)

- Solar Power (LTP at 42)

- Hydropower (LTP at 43)

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Wind Power. Wind power, like hydro and solar power, is an energy source that is not depleted with use. Wind power is now receiving a significant amount of attention statewide for utility and small-scale electrical generation. In contrast to wind power's potential as a naturally recurring resource, commercial wind power generation facilities pose potential negative impacts. In Londonderry, these potential impacts include:

- aesthetic impacts associated with facility siting in highly visible, high elevation areas;
- wildlife impacts including direct impacts and secondary impacts, such as habitat fragmentation and disturbance
- impacts to significant natural or cultural features in the vicinity
- water quality impacts associated with development located at high elevations and on steep slopes and shallow soils;
- quality of life and health impacts related to noise and lighting;
- surface water runoff and soil erosion associated with site clearing and development, including road access;
- safety hazards associated with blade speed, breakage and ice throw;
- economic impacts associated with potential for diminished real estate values and regional tourism
- and insignificant community benefit from such facilities.

The nature of commercial windmill development requires such facilities to be developed at higher elevations, generally along ridgelines with elevations of 2,000-3,500 feet. In Londonderry, the most feasible generation sites also correspond with the areas identified as being among the most important lands for protection including the Town's most sensitive ecological areas, most wild and unfragmented recreation land, and most prominent aesthetic landmarks, which are highly visible from designated natural areas,

scenic roads, historic sites and historic districts. These lands have been included within the town's Resource Conservation Overlay District since the current zoning bylaw was adopted in 2000. As with hydropower, scattered, small-scale generation facilities provide greater potential for local residents to benefit from wind energy without imposing the negative impacts described above on the community. While the concept is interesting and technology is advancing, further research and greater understanding of projects on this scale is needed. (LTP at 43)

Energy Policies:

1. Support appropriate renewable energy generation in Londonderry, including bio-mass using local wood supplies, solar, and dispersed, small-scale wind and hydro-power sources. Large scale wind generation and hydro-power facilities, however, are discouraged and shall be prohibited within the Resource Conservation Overlay District and on the main stem of the West River, respectively. (LTP at 43) (emphasis added)

2. Maintain the Town's scenic resources and Resource Conservation Overlay District by protecting them from commercial energy generation and new transmission facilities. (LTP at 44) (emphasis added)

3. Encourage any potential commercial energy facilities to be within the areas deemed most suitable. (LTP at 44)

4. Support the use of energy efficient automobiles, appliances, heating units, lighting and other powered devices. (LTP at 43-44)

APPENDIX D

WINDHAM TOWN PLAN
(adopted September 7, 2004)

Selected Excerpts:

Statement of Policy & Purpose:

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The Windham Town Plan reflects the planning commission's perception of the trends and pressures affecting our town. It is a guide to future growth and development of land. We want to maintain Windham's natural resources and physical features. Growth, which is good for the town should enhance the social, environmental, cultural, and economic values of our rural community. The ability of the taxpayers to support the town on a sound financial basis must be taken in consideration. (WTP at 2)

****

Outstanding Water Resources and Wetlands:

Windham's location at the headwaters of many of the areas brooks and rivers means that each headwater watershed is actually an outstanding water resource. The standard for all downstream water quality is established here at the beginning in Windham. Of particular note is the Cobb Brook watershed, a Class A1 stream, by recognition of the State of Vermont. Turkey Mountain Brook includes a spectacular gorge on its way downstream to Jamaica and encompasses another notable resource of Windham, namely Burbee Pond. (WTP at 7)

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Significant Scenic Landscapes and Views:

Numerous secluded vistas and open views dot Windham's landscape. A listing of the more accessible landscape and views follows:

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- The view of the West Windham Valley including Cobb Brook from near the intersection of West Windham Road (TH #20) and Toad Road (TH #22) looking in any direction. (WTP at 8)

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Forest Land/Forrest Districts:

Most of the land has returned to second or third generation forests. Four forest districts were established as can be seen on the town land use and zoning maps. These forest districts are irreplaceable natural assets that deserve special protection. It is the policy of the Town of Windham that development within these Forest Districts shall be limited to uses and activities which will not diminish the ecological function, scenic and natural beauty, and natural character of these land areas. Development and land use in these districts is limited to agricultural, forestry recreation and low density residential uses, as specified in the WIndham Zoning Regulations, adopted May 1, 2001, which is incorporated by reference as a part of this Plan. (WTP at 8-9)

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Policies and Purpose: Preservation of Rare and Historic and Irreplaceable Natural Lands, Scenic and Historic Features and Resources; Development & Future Growth:

It is the policy of the Town of Windham to identify, protect and preserve natural and historic features of the Vermont landscape, including, but not limited to:

1. Outstanding water resources and wetlands
2. Significant scenic lands, vistas and view sheds
3. Important historic structures, sites or archaeological sites

These attributes must be considered to be the very essence of the aura of Vermont and the reason so many find Windham to be a highly desirable place to make ones home. Unspoiled natural vistas, birds and animals, night skies unspoiled by light pollution or visually prominent light sources, quiet country sounds, unspoiled streams, are becoming a unique treasure to be protected. (WTP at 11-12)

****

Landscape Components:

Ridgelines and hilltops and their upper slopes are visible for great distances, and give the landscape form and coherence. Development may have a great visual impact and must be sited and landscaped to minimize incompatibility with the natural landscape. (WTP at 13)

****

Water Resources:

It is the policy of the town of Windham to protect and preserve in their natural condition its wetlands, water courses and shorelines. (WTP at 13)

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...There are many headwaters of watersheds, or areas supplying recharge waters to aquifers in town. North Branch of Williams River, Middle Branch of Williams River, Saxtons River, Howe Brook, Wiley Brook, Stiles Brook, Tannery Brook. The town opposes lowering the water quality classifications on these listed headwaters and their tributaries...(WTP at 13)

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Energy Element:

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Programs that increase energy conservation awareness and educate the community in contemporary methods including insulation are recommended. (WTP at 19)

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Windham recognizes the need for alternative energy sources and would recommend that the existing Vermont Electric Power Company Transmission Corridor could accommodate other uses such as a gas pipeline.

The town encourages all building construction to utilize current technology, such as wind and solar power, to conserve energy. Cord wood is readily available and the use of emission restricted stoves and furnaces, is encouraged. The town's previously stated policies of containing electric lines in existing corridors and access ways should help discourage random energy consuming development from spreading. (WTP at 19)