

RICHMOND TOWN PLAN



Resources

Food



Energy

OBJECTIVES & STRATEGIES FOR FUTURE DEVELOPMENT

May 2012

Acknowledgements

This report and draft language has been prepared for the

Richmond Panning Commission

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Project Overview

The Town of Richmond received a 2011 Municipal Planning Grant from the Vermont Department of Economic, Housing and Community Development, in preparation for an update the 2007 Richmond Town Plan, to evaluate plan objectives (policies) and implementation strategies in three key areas: **natural resources, agriculture and energy**. A planning consultant was hired to work with town staff and the Planning Commission to:

- Review associated sections of the 2007 plan – including current goals, objectives and implementation strategies.
- Collect and summarize more recent information – including plans, studies, data, and municipal programs undertaken or completed since the 2007 plan was adopted.
- Hold three community forums – one for each area under consideration – for public input on what should (or should not) be included in the updated town plan.
- Develop an initial draft of updated objectives and strategies that reflect ongoing trends, current municipal and state initiatives, and new areas of concern based on community input.
- Develop draft bylaw language for Planning Commission consideration to implement recommended plan objectives.

Work on this project also reflects the Planning Commission’s recent, substantive rewrite of the town’s land use regulations, which are now in the adoption process. In addition to significant redistricting, the proposed zoning and subdivisions regulations also incorporate:

- New natural resource protection standards under zoning and subdivision regulations;
- Density averaging (lot size flexibility) for larger subdivisions in rural zoning districts;
- Energy generation facility standards for accessory energy facilities subject to local regulation;
- New farm business and agritourism standards intended to support an expanded farm-based economy; and
- Substantial updates to the town’s flood hazard area regulations resulting in part from new digital Flood Insurance Rate Maps (DFIRMs) issued for the community by the Federal Emergency Management Agency, and also local flooding associated with Tropical Storm Irene in August 2011.

Given that the statutory intent of these regulations under the Vermont Planning and Development Act (24 V.S.A. Ch. 117) is to implement Richmond Town Plan, proposed

bylaws were reviewed as part of this project to ensure that draft plan policies and community standards are consistent with and support proposed changes to the regulations.

Draft policies, community standards and implementation strategies included in this report were developed by the town's planning consultant with input from town staff, but have not yet been carefully reviewed or vetted by the Planning Commission. These are intended for consideration as the Planning Commission begins its work on the Richmond Town Plan.

Other key considerations in updating town plan policies, objectives and implementation strategies include:

- Conformance with state planning goals under the Vermont Planning and Development Act (24 V.S.A. § 4302),
- Community involvement, especially in defining local objectives and priorities,
- Use of the town plan as the policy basis for municipal initiatives, bylaw amendments, capital improvements and land, energy and resource conservation programs, and
- Use of town plan policies or objectives in the review of development under local and state regulatory proceedings – including DRB, Act 250, and Public Service Board (Section 248) reviews.

State planning goals for natural resource conservation, agriculture and farmland preservation, energy conservation and renewable energy resources – as highlighted for each section below – were presented in community forums for discussion, along with more specific findings and recommendations from recent state planning initiatives.

Input from the three community forums held by the Planning Commission, as also summarized in this report, helped identify issues or areas of concerns to be addressed in the plan update, under new or amended plan objectives as incorporated in attached drafts. Additional public involvement during the update process will be needed to more clearly define community objectives and implementation priorities.

Recommendations from local studies and reports – and recent town initiatives and votes – were also considered in updating plan objectives and implementation strategies, to ensure that they incorporate and support existing and proposed municipal initiatives.

Finally, the plan's current objectives were reviewed and updated in light of recent state decisions and court opinions, for use in local and state regulatory proceedings. Plan policies must be clearly stated, consistent and applicable to a specific area or resource in order to be given weight in local and state development review, as necessary to determine a

project’s conformance with the municipal plan. As such, draft objectives are restated in a more active voice (as directives) rather than a passive voice (as suggestions). For clarity, they incorporate more detail (e.g., parenthetical definitions) as available. A glossary of key terms (e.g., consistent with bylaw definitions) is also a suggested for inclusion in the updated plan for use in this context.

In addition to natural resource, agriculture and energy objectives, draft “community standards” for energy facility development – presented specifically for consideration in Vermont Public Service Board proceedings (Section 248) – are also attached for local consideration. These represent detailed local standards for energy development that is exempt from local regulation but, as defined in the plan, are meant to be given due consideration by the PSB in their review of new energy facilities.

The attached draft objectives and implementation strategies are presented for further, careful consideration by the Planning Commission – with the understanding that additional review and editing will be needed to adapt proposed language to best meet local needs, and that some objectives and strategies may not be suitable for local adoption. As such, associated implementation tasks have not yet been prioritized or assigned to responsible parties, as recommended for the implementation section of the updated plan.



Natural Resources

State Planning 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, shorelands and wetlands;
 - (C) significant scenic roads, waterways and views;
 - (D) important historic structures, sites or districts, archaeological sites and archaeologically sensitive areas.
- (6) To maintain and improve the quality of air, water, wildlife 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(s) [Act 250].
- (10) To provide for the wise and efficient use of Vermont’s natural resources and to facilitate the appropriate extraction of earth resources and the proper restoration and preservation of the aesthetic qualities of the area.

In addition, the town plan must include “a statement of policies on the preservation of rare and irreplaceable natural areas, scenic and historic features and resources” (24 V.S.A. §4382).

Current Town Plan

The “Natural Resources” section of the 2007 Richmond Town Plan (Section 5) includes comprehensive, descriptive information about the town’s known and mapped natural resources, and a number of related observations (findings), objectives (policy and strategy statements) and implementation measures (recommended actions).

Several categories or types of natural resources are identified in the narrative, and some are more specifically defined – but not all are included or addressed in related observations, objectives, or implementation strategies. This reflects both available information and community priorities when the plan was last updated.

Key observations found in this section clearly outline and help define community concerns regarding local development patterns, land consumption and fragmentation, and the impact these are having on air and water quality and the town’s natural and scenic resources. Some observations are based on now dated information, but still remain valid with respect to long-term trends. These observations provide the context for related plan objectives and recommended implementation strategies.

Natural resource objectives in the current plan are, for the most part, very generally stated – e.g., they “encourage” land conservation and “promote” a viable agricultural sector and appropriate regulations to protect and improve water quality. As such, they offer general guidance to the town, e.g., for conservation program areas and bylaw development, but do not establish clear community standards for use in evaluating the impacts of proposed development on the town’s natural resource base.

The natural resource section includes a number of broadly stated implementation strategies – e.g. with regard to open space planning, land conservation, and bylaw development – that support a wide range of activities and programs. It also includes several more specific recommendations – e.g., for a proposed riparian buffer zone, expanded groundwater regulation, and ridgeline protection.

Recent Activities

A number of resource-related studies have been undertaken since the town plan was last updated in 2007. Several focus on water quality and river corridor management, reflecting regional and state priorities in this area. Of particular note are current initiatives to identify, map and regulate development within Fluvial Erosion Hazard Areas (FEHAs) – as also referenced in the town’s adopted 2010 All-Hazards Mitigation Plan? Stream channel studies that provide the scientific basis for FEHA and river corridor mapping have been completed to date for local tributaries of the Winooski River, including the Huntington River. Fluvial erosion hazards are not addressed in the current town plan – sample language has been provided by the Chittenden County Regional Planning Commission for incorporation in the updated plan.

Resource-Related Plans, Studies:

- *Mid-Winooski Watershed Phase I Stream Geomorphic Assessment (2007)* –mapping report, data
- *Town of Richmond Phase I Geomorphic Assessment (2007)*– tributary mapping report, data
- *2006 Huntington River Study (2007)* – water quality monitoring report, recommendations
- *Huntington River Corridor Plan Update (2009)* – management recommendations
- *Invasive Plant Management Plan, Richmond Silver Maple-Ostrich Fern Floodplain Forest (2010)*
- *All-Hazards Mitigation Plan (2010)* – recommendations for flood, fluvial erosion hazards
- *FEMA Digital Flood Insurance Rate Maps (DFIRMs, 2011)* – updated flood hazard area maps
- *Vermont Habitat Blocks and Wildlife Corridors: GIS Analysis (draft, 2011).*

Related Implementation Studies, Projects:

- *Conservation Reserve Fund Policy Report, Recommendations (2008)*
- *Richmond Tomorrow: Options for Implementing Our Town Plan (2009)*
- *Richmond Zoning and Subdivision Regulations (2012 Draft)*

Richmond also has new digital Flood Hazard Insurance Rate Maps (DFIRMs) issued by the Federal Emergency Management Agency. These maps incorporate revised base flood elevation data, resulting in the expansion of some mapped floodplain areas. The accuracy of the new flood maps is still being evaluated locally, especially in the wake of Tropical Storm Irene which flooded the town's low-lying areas, including portions of Richmond Village. The Planning Commission has prepared a detailed update of the town's flood hazard area regulations, which further limit new development in flood hazard areas, as part of its comprehensive overhaul of the town's zoning and subdivision regulations.

Other river-related projects resulting in specific recommendations include a river corridor management plan for the Huntington River, water quality assessments of the Huntington and Winooski Rivers, and the preparation of a 5-year invasive species management plan for conserved floodplain forests along the Winooski River.

Most recently the town, in collaboration with neighboring communities and the Vermont Natural Resources Council, has been evaluating regional forest land use and cover – including Richmond's remaining large tracts of contiguous, undeveloped forestland – as necessary to conserve and protect critical wildlife habitat, connecting travel corridors and road crossing areas from further fragmentation.

Implementation studies related to natural resource conservation include recommended changes to the town's Conservation Reserve Fund policies and program, and suggested bylaw updates to better protect the town's rural character – some of which have been incorporated by the Planning Commission in proposed zoning and subdivision regulations now in the hearing process.

In addition to the studies listed above, several infrastructure studies were also completed over the past five years for village stormwater management, and for pedestrian, sidewalk and streetscape improvements. These include recommended implementation measures for stormwater management on town land – e.g., “green infrastructure” or “Low Impact Development” (LID) measures such as rain gardens – and for street trees and other landscaping improvements.

Community Input

Highlights of the current town plan's natural resource policies and recommendations, and of more recent initiatives in this area, were presented in a community forum held on February 16th, 2012. Several areas of concern were raised by forum participants that are not covered under the current plan – including climate change (mitigation, adaptation, community resiliency), hydrofracturing (shale oil and natural gas), and a desire to better

protect primary agricultural soils and agricultural land from incompatible development. The need for additional data, definitions and clear plan policies or community standards was also discussed. Forum participants offered several recommendations specific to the plan update, summarized as follows:

Content – add or update information and associated policies on:

- Climate change, including climate adaptation, mitigation and community resilience.
- Flood and fluvial erosion hazard areas – reference new maps.
- Protecting scenic roads, ridgelines.
- Protecting primary agricultural soils, and land currently in production.
- Protecting existing sand and gravel resources for future use.
- Limiting resource fragmentation (farm and forest land, wildlife habitat, etc.).
- Local potential for hydrofracturing – prohibit in town (note: state ban now in effect).
- Regional/landscape conservation efforts – to include coordination with neighboring communities to address resources that extend beyond town boundaries.

Implementation Measures:

- Consider both regulatory and nonregulatory conservation strategies and programs.
- Incorporate benchmarking, or an annual implementation program assessment process.
- Define priorities for implementation (strategies, steps, programs).
- Review and update the town’s conservation management fund policies, program.
- Develop an open space protection plan.
- Conduct Land Evaluation and Site Assessments (LESAs) for farm and forest parcels to set priorities for farm and forest land conservation (conservation fund, bylaws, etc.).
- Continue water quality assessment and monitoring work.
- Complete additional geomorphic assessments and mapping in support of river corridor management. Consider the adoption of fluvial erosion hazard area bylaws.
- Update culvert and bridge standards to manage increased stormwater runoff.
- Consider securing a long-term source of sand and gravel for municipal use.
- Inventory and map wildlife habitat and travel corridors, best management practices.
- Inventory and map scenic resources (ridgelines, roads); update 2006 view shed analysis.
- Support invasive species monitoring and remediation programs; re-evaluate town management practices (e.g., mowing) to limit the spread of invasive species.
- Consider a local tax abatement program for forest and farmland.

Recommendations

Based on this information, the Planning Commission discussed some initial changes to the plan's natural resource objectives and implementation strategies – including options for addressing fluvial erosion hazards – as incorporated in the attached draft. Draft objectives are also crafted to support proposed bylaw amendments, and to strengthen community participation in state development review proceedings. As noted, these have been restated and clarified to provide more direct guidance – especially for consideration in local and state development review. These should be reviewed and edited as needed for clarity, and for consistency with other plan objectives.

Also attached is draft bylaw language for a “Fluvial Erosion Hazard Overlay District” (generally following the same format as proposed flood hazard area regulations) – as strongly recommended by the state and regional planning commission, and as referenced in Richmond's adopted All-Hazards Mitigation Plan. This language is adapted from existing state models and a more recent New Hampshire FEHA model, and also incorporates related statutory definitions for river corridor protection that were added to Chapter 117 (24 V.S.A § 4303) under 2012 legislation. This language should be reviewed by ANR's River Management Program for consistency with any new state recommendations for river corridor protection prior to local adoption. FEHA (River Corridor Protection) maps must now, by law, be displayed in the Richmond Town Office and on the municipal web site.

Also strongly recommended for inclusion in the updated plan– particularly for this section:

- a glossary that defines key terms, and
- the incorporation (by reference) of natural resource maps intended for use in development review (e.g., one or more “Significant Resource” Maps).

Local Food System (Agriculture)

State Planning Goals

- (1) To plan development so as to maintain the historic settlement pattern of compact village and urban centers surrounded by rural countryside.
- (9) To encourage and strengthen agricultural and forest industries.
 - (A) Strategies to protect long-term viability of agricultural and forest lands should be encouraged and should include maintain low overall density.
 - (B) The manufacture and marketing of value-added agricultural and forest products should be encouraged.
 - (C) The use of locally-grown food products should be encouraged.
 - (D) Sound forest and agricultural practices should be encouraged.
 - (E) Public investment should be planned so as to minimize development pressure on agricultural and forest land.

In addition, the town plan must indicate “those areas proposed for... agriculture (using the agricultural lands identification process established in 6 V.S.A. § 8)...and open spaces reserved for other conservation purposes” (24 V.S.A. § 4382).

Current Town Plan

Agriculture is addressed in the 2007 Richmond Town Plan under several sections – Natural Resources, Historic Resources, Economic Development and Land Use – reflecting the importance of farming, and the traditional agricultural landscape, to this largely rural community. Farming is discussed in relation to its historic significance, its substantial share of the local land base, and its importance for local food production, open space preservation and the town’s scenic and rural character. Critical concerns identified in the 2007 plan – the loss of farms and the conversion of farmland to nonfarm uses – remain valid today. As observed in the plan:

Economic pressures threaten sustainable farm and forest industries. We cannot assume that farmers, large landowners or their heirs will continue to keep their properties intact; despite the many natural, aesthetic, economic and other benefits those properties give to our town.

The focus of the current plan is largely on retaining the agricultural land base, with recommendations for employing creative development techniques – such as building envelopes, planned unit and planned residential development, clustering, fixed area and sliding scale zoning, overlay districts, conservation subdivision design, and the transfer of development rights – that allow for development while also conserving working farmland.

Farm, Food-Related Plans, Studies:

- *Richmond Area Creative Communities Report* (VT Council for Rural Development, 2007)
- *Richmond Barn Census* (UVM, 2009)
- *Farm to Plate: Vermont 10-Year Strategic Plan* (VT Sustainable Jobs Fund, 2011)
- *Richmond Farmers Market Survey (2012)*

Related Implementation Studies, Projects:

- *Conservation Reserve Fund Policy Recommendations* (2008)
- *Richmond Harvest Festival* (Annual)
- *Farm to School Program* (Richmond Schools)
- *Richmond Tomorrow: Options for Implementing Our Town Plan* (PlaceSense 2009)
- *Richmond Local Food Summit* (2010)
- *Richmond Zoning and Subdivision Regulations* (2012 Draft)

Recent Activities

The Planning Commission’s updated regulations incorporate a number of plan recommendations for creative ways to conserve farmland – especially under proposed subdivision and planned unit development provisions. These include density averaging to provide flexibility in sizing residential lots – allowing for the creation of larger residential lots that may also continue to support active farming operations – and the designation of building envelopes that limit farmland encroachment by restricting structures and parking areas to a portion of a lot. As noted earlier, the regulations also include provisions for agritourism and on-farm businesses intended to better support the local farm economy. They do not currently address farmworker housing.

Studies conducted since 2007 also highlight the importance of farming, farmland and farm buildings to the community’s historic and rural character. The Richmond Land Trust’s Monitor Barn Project predates the 2007 plan, but the barn now hosts the VYCC, a new CSA program, a bank of solar collectors, and an expanding number of community functions. An initial survey of Richmond’s other farm buildings ([Richmond Barn Census](#)) was conducted in 2009 by UVM’s Historic Preservation Program, as part of the Vermont Division for Historic Preservation’s Barn Census Program. This survey represents an important first step in preserving other threatened, historic agricultural buildings – but it’s up to the town to take the next steps, including an evaluation of their historic significance for potential nomination to state and federal historic registers.

Public forums held in association with VCRD’s 2007 Creative Communities Project expanded the discussion of local agriculture beyond conserving the town’s working farmland, to also

highlight the need for better access to healthy, locally grown food. The importance of the Richmond Farmers Market and local restaurants to the town’s food economy is noted in the VCRD report, along with initial recommendations for a “buy local” campaign. Also suggested – providing support for home-based producers, promoting new markets, developing local food processing facilities, and community composting of food and yard waste. A harvest festival that celebrates local agriculture – one of three recommended priorities for supporting the local economy—is now hosted annually by the Richmond Elementary Farm to School Program. A local “Food Summit” was held in 2010.

The growing emphasis locally, and statewide, on local food reflects complementary trends in both farming and food consumption—a dramatic increase in the number of smaller farms, including community supported agricultural operations (CSAs) that market directly to local consumers, and the growing desire among consumers for locally grown food. A 2012 survey conducted by the Richmond Farmers Market indicates that people come to the seasonal market to support local business (92%), to buy their groceries (75%), because it’s family friendly (48%) and for local entertainment and activities (37%). Market vendors come from Richmond (65%), Huntington (24%), and other surrounding communities.

Vermont’s sustainable agriculture movement – incorporating diversified farming, local food production and consumption, and value-added processing – was also recognized by the state in its 2009 “Farm to Plate” (F2P) Initiative, which resulted in the [2011 Farm to Plate Strategic Plan](#) – a 10-year plan to further develop Vermont’s food system. The primary goals of this state initiative are to:

A food system *encompasses all of the resources (e.g., land, soil, crops, equipment), activities (e.g., growing, harvesting, researching, processing, packaging, transporting, marketing, consuming, and disposing of food), and people (e.g., farmers, bakers, policy-makers) involved in providing nourishment to people and many kinds of animals.— F2P Plan*

1. Increase economic development in Vermont’s food and farm sectors.
2. Create jobs in the food and farm economy.
3. Improve access to healthy local foods.

The ultimate purpose of the F2P Plan is “to encourage policies and strategic investments that accelerate the movement toward strong local and regional food systems.” As in local discussions, this more comprehensive approach extends beyond the agricultural land base, but incorporates long-term access to farmland as a critical food system component.

RICHMOND’S LOCAL FOOD SYSTEM		
Suppliers/Services	1	Farm equipment repair
Farmers/Producers	15	CSA (4), dairy (2), maple (3), nursery (1), berry (1), horse(2)
Community Garden	0	Has been discussed, for Richmond Village residents
Food Producers/Processors	7	Specialty food producers, bakery
Distributors	3	CSA delivery/pickup sites, wholesaler (1)
Food Outlets (Nonprofit)	5	Richmond Farmers Market, food shelf, schools
Food Outlets (Retail)	6	Farm store, grocery , bakery, specialty, convenience stores
Restaurants	6	VT Fresh Network (2), Share the Harvest (2)
Organizations (Farm/Food)	8	NOFA, Farm Bureau, Grange, VYCC, VLT, RLT, VFN, RFM

The current town plan does not address Richmond’s more comprehensive food system. An initial inventory of local food system components was conducted in preparation for the Planning Commission’s agricultural community forum, along with an updated map showing the location of the town’s existing farms, primary agricultural soils, and farmland currently enrolled in the state’s Use Value Appraisal Program.

Community Input

The community forum on local agriculture and food, held on April 18th, 2012, covered a variety of topics, including:

- Food system planning considerations under the state’s Farm to Plate Initiative,
- References to local agriculture in the 2007 Richmond Plan,
- Highlights from recent studies (VCRD Creative Economy, UVM Barn Census, etc.)
- Components of the local food system,
- Distribution of farms, primary agricultural soils and land in current use (map),
- Proposed zoning regulations addressing farm-based businesses and farmland conservation, and
- Other regulatory tools that could be used to conserve farmland.

Forum participants – including several local farmers – raised a number of issues for consideration in the updated town plan:

- The need to better define “sustainable agriculture” and “prime farmland” – just because a soil is a particular type does not mean it’s good for farming.
- Farmland in the floodplain is already protected from development –more regulation may not be needed.

- Farmland should continue to be assessed and taxed based on its use value – though there was general agreement that, given the state’s current use program, a local tax abatement program is not needed.
- Greater access to farmland is needed—farmland is expensive, especially for beginning farmers. It’s very difficult to purchase land in the area, including conserved farmland. Renting is often the best option for beginning farmers, but even long-term leases are not secure – the land may end up getting subdivided and sold.
- Permanent farmland conservation, however, may be short-sighted – should be addressed one generation at a time. Permanent conservation limits options for future generations, and makes it difficult to sell off building lots. The money received through the sale of development rights is not available to future generations.
- High cost of locally produced food – higher price points are needed for farmers to realize a fair return, but may limit food affordability, accessibility (for lower income households) and the market for local food. Need to address the gap.
- The Richmond market area is saturated, given the current number of small farms – the market for local products has held at 5% for several years. Need to better understand consumer preferences, and also access regional markets.
- There are more CSAs, and more competition among smaller farms in Chittenden County than elsewhere in the state.
- Richmond Farmers Market is an important outlet– but it’s seasonal, and parking remains an issue.
- It’s difficult for small producers to capture economies of scale– can’t sell wholesale or through local distributors because there’s not enough supply (also an issue for local schools); need more aggregation, processing and distribution options – e.g., a Richmond food hub, freezing and canning facilities on vacant lots in the village – that allow for year-round sales. VYCC noted, however, that their frozen food CSA did about half the volume they expected.
- Value-added production is important – farmers need to be able to process products on farm and locally.
- The dairy industry needs massive infrastructure changes – lack of land, handling facilities for inputs (e.g., grain, soybeans) and for processing – dairy is perishable and it’s hard for dairy farmers to do their own bottling or processing.
- The local logistics for intensive grazing operations are also difficult (access to enough land, road crossings, etc.).

Agriculture/Food System Policy, Implementation Suggestions:

- Look at agriculture more holistically – e.g., in relation to primary agricultural soils, local biodiversity, wildlife habitat and movement, and water quality improvements.
- Develop a method to establish priorities for farmland conservation – e.g., a local Land Evaluation and Site Assessment (LESA) to assess and rank farm parcels for conservation based on soils and other site characteristics.
- Establish a local food council or committee to work with UVM extension, local producers, distributors and food outlets to help define and expand the local market (e.g., identify consumer preferences), access regional markets, and develop facilities for processing, value-added production, distribution and year-round sales.

Recommendations

The Planning Commission, in follow-up to this forum, agreed that the plan should include a food system component, and a new implementation strategy calling for the creation of a food committee – especially to find ways to get local food to families in need. They also indicated that, with regard to agriculture, “less is more” for specific policy direction.

An “agricultural overlay district” was initially suggested to conserve farmland on existing as well as subdivided parcels but, given this feedback from the Planning Commission, the attached draft regulations instead incorporate suggested provisions for “Conservation PUDs” (conservation subdivision design standards) that apply only to new subdivisions in rural zoning districts. This is proposed as a natural extension of the Planning Commission’s recommendations for density averaging, and incorporates many of the Commission’s proposed PUD standards specific to rural (R-3 and R-10) zoning districts.

The conservation design process more specifically gives priority to farmland – and potentially to other natural, historic and scenic features – in subdivision design and layout. It also allows for the protection of conserved farmland (or open space) under separately delineated “conserved lots” that may be subject to easements, limits on further subdivision and development, management plans, etc. – while still allowing for low density residential development on building lots. Conserved lots could then be included in a farmland registry for access by local farmers.

Draft provisions to accommodate farm housing as accessory to an active farming operation are also included, to complement to the Commission’s proposed agribusiness regulations. These are based in part on current state definitions and programs (e.g., VHCB policies for conserved land), and on ordinances from elsewhere in Vermont and other parts of the country.

Energy

State Planning Goals

- (1) To plan development so as to maintain the historic settlement pattern of compact village and urban centers surrounded by rural countryside
- (4) To provide for safe, convenient, economic and energy efficient transportation systems that respect the integrity of the natural environment, including public transit options and paths for pedestrians and bicyclers.
- (7) To encourage the efficient use of energy and the development of renewable energy resources.

In addition, the energy element of the municipal plan must include “a statement on policy on the conservation of energy, including programs, such as thermal integrity standards for buildings, to implement that policy, a statement of policy on the development of renewable energy resources, and a statement of policy on patterns and densities of land use likely to result in conservation of energy” (24 V.S.A. § 4382).

Current Town Plan

Richmond’s current town plan—as most municipal plans – includes an abbreviated energy section that, by necessity reflects the limited information available on local energy use, but also includes general objectives and strategies consistent with state planning goals to:

- encourage energy efficient consumption and construction,
- promote energy-efficient land use and development patterns,
- consider energy efficient transportation alternatives (walking, cycling, ridesharing, and public transit) and
- encourage the use of community renewable energy resources.

The current plan calls for tracking municipal energy use and investing in energy efficiency improvements that offset energy expenses. It also directs the Planning Commission to develop a policy for net-metered renewable energy projects – including wind energy projects – that are regulated by the Vermont Public Service Board and, as such, are exempt from local regulation. The intent of the policy would be to guide municipal participation in the PSB’s Section 248 review process – and help determine whether the town should support or oppose a particular project before the board.

Recent Activities

Energy Plans:

- *Vermont Comprehensive Energy Plan* (VT Dept. Public Service, 2011)
- *VELCO Long-Range Transmission Plan* (2012 Draft)

Local Energy Initiatives, Projects:

- *EPA Community Challenge* (2008)
- *EPA Energy Star Partnership Agreement* (2010)
- *Richmond Elementary School Bond – Efficiency Improvements* (2010)
- *Camels Hump Middle School Solar Installation Project* (2011)
- *Smart Grid Presentation* (2011)
- *Initial PACE District vote* (2012)
- *Natural gas service installation, Richmond Village* (2012)
- *Richmond Zoning and Subdivision Regulations* (2012 Draft)

Energy planning, and renewable energy development, have taken off since the 2007 plan was drafted – fueled by aggressive federal and state programs and tax incentives that promote both energy efficiency and large and small scale renewable energy development. In 2011 the Vermont Department of Public Service released its updated [Comprehensive Energy Plan](#) – with the primary goal of obtaining 90% of the state’s energy, including energy used in transportation, from renewable energy sources by 2050.

Renewable energy development, though generally supported, has not been without controversy – utility scale wind on ridgelines, commercial biomass facilities and large solar arrays have divided some host communities – in part because they have no direct ability to regulate the impacts of proposed energy development on the community. The state also not yet adopted specific facility siting standards – some, but not all Act 250 criteria (e.g., primary agricultural soils) are considered. The PSB does, however, give due consideration to municipal plan policies for resource conservation and development. As noted earlier, this requires plan policies (local community standards) that are clear, consistent, and specific to the area or resource being considered.

Other proposals before the PSB – including the merger of Green Mountain Power and Central Vermont Public Service, the introduction of “smart grid” technology and metering systems, and the update of the state’s transmission infrastructure plan (now underway) – may all affect local utility services, and energy facility development.

The local energy landscape has changed as well. Richmond has had an active and effective Town Energy Coordinator and Energy Committee for several years. As a result the town has conducted energy audits of municipal buildings and facilities, completed several efficiency retrofits, and adopted one of the first, comprehensive municipal energy policies (including no idling policies) – all prior to 2007 when the plan was last updated. Since that time the town has signed an EPA Energy Star Buildings Partnership Agreement (2010) and, in 2012 held an initial vote to establish a local Property Assessed Clean Energy (PACE) district. Richmond also now has a local citizens group – the Richmond Climate Action Network – to help with community education and outreach.

Natural gas lines are now being installed in Richmond Village. The town has also experienced a significant amount of small-scale, renewable energy development. According to information compiled in the [Vermont Renewable Energy Atlas](#), there are at least 33 renewable energy installations in town – all but two net-metered –including new solar arrays at the Monitor Barn and the Camels Hump Middle School. The town has the capacity to host another 1600 solar installations – based only on existing structures. Richmond’s open farmland could also support larger solar arrays – similar to those found in South Burlington and Ferrisburgh, and as now proposed in Charlotte. The potential for large-scale wind is more limited –an estimated 364 acres of ridgeline with sufficient wind speed – though these areas may extend into neighboring communities.

The Planning Commission, in support of local renewable energy development, has included energy generation facility provisions (by class) under its proposed regulations, for accessory and off-grid facilities that can be regulated under local zoning bylaws. Proposed redistricting also supports a more compact, energy efficient pattern of development.

Community Input

The community forum to identify and discuss local energy issues for consideration in the town plan update was held on March 21st, 2012. Information was presented regarding current town plan energy objectives and strategies, state plans and programs, recent local energy development and initiatives, and the importance of the town plan in the PSB review process. Advocates for local energy efficiency programs and renewable energy development were well-represented, and well-informed, offering a variety of suggestions for Planning Commission consideration, summarized as follows.

Energy Policy and Implementation Recommendations:

- Richmond should continue to lead on local energy policies – begin with municipal energy efficiency programs – lighting, etc.
- Energy policies must be considered in relation to climate change, as discussed in the session on natural resources.
- Energy conservation and energy efficiency should be the first order of business – consider raising the bar for energy efficient construction and development. Need to reduce electric loads for cooling and heating.
- Establish efficiency-related bonuses or standards under local regulations – e.g., allow for expedited review, density bonuses, consider a “fee-bate” approach.
- Promote weatherization, efficiency retrofits, renewable installations – e.g., through state programs, and a local PACE district.
- Policies should support small-scale renewable energy development – including geothermal and solar hot water.
- More concern regarding impacts of large-scale energy production – especially wind and woody biomass – on the community and community resources, including forestland, ridgelines and wildlife habitat. Less concern regarding impacts of solar arrays on primary agricultural soils and farming operations – can be removed.
- Standards – Plan policies for new energy development should address: access protection (e.g., solar, wind), facility setbacks, placement of solar panels on municipal buildings, facilities; and the potential impacts of larger facilities on the community, property owners and local resources. Utility/power lines should be buried in the village.
- Transportation – need to allow charging stations, expand the park-and-ride facility, add bicycle trails along roads, add a trail and bus route along Route 2; consider a no-idling ordinance; consider a local free-bicycle system; and explore a commuter train through Richmond. Encourage transportation options (walking, biking, etc.).
- Bylaws –should be updated to require energy audits at the time of sale, increase lot coverage allowances, protect access to renewable resources, require that site plans and subdivisions incorporate renewable energy design (e.g., building orientation, group net-metering), and require more energy efficiency, clustered/village development.
- PSB – The town should develop a policy for participation in PSB proceedings for net-metered projects – including general notice to the community (beyond abutters); need to advocate for checks and balances in the PSB process, for all parties; and also need to be able to address facility development in neighboring communities that may affect Richmond.

Recommendations

The Planning Commission, in reviewing the minutes from the public forum, noted that some suggestions – such as a density bonus for more energy efficient development – were included in earlier drafts of the proposed regulations, and had not been well-received. Others could be difficult to mandate under local plan policies.

Commission members did supported additional research into ways to protect resource access for solar and wind installations – to include looking at examples from other parts of the country. They also expressed general support for:

- Providing energy efficiency information to applicants.
- Exploring ways to expand public notice of PSB proceedings for net-metered projects (e.g., through the town’s web site) – with some concern regarding the potential costs to the community.
- Installing solar arrays on pastureland rather than cropland, and minimizing encroachments on primary agricultural soils.
- Conducting a scenic resource inventory, including ridgelines and other areas of interest in relation to potential ridgeline development.
- Retiming the Route 2/Jericho traffic light to reduce idling.
- Installation of a multi-use path to the Exit 11 park-and-ride facility, and paths separate from the Cochran and Jericho Roads.

There was not sufficient time remaining in the project to flesh out specific energy objectives, strategies and community standards (a similar project in Waitsfield took a full year of review). In addition to suggested objectives and implementation strategies, model “community standards” – proposed as a plan addendum – are also included for Planning Commission review and possible adaptation as appropriate for local use. Draft bylaw language includes renewable energy access standards, as requested by the Planning Commission, also based on model language developed for the Southern Windsor County Regional Planning Commission, as included in their 2011 [Energy Policies and Standards Guide](#).



Resources

Food



Energy

Draft Plan Objectives and Implementation Strategies

Natural Resources
Local Food System
Energy

Draft Plan Addendum:
Community Energy Standards

NATURAL RESOURCE OBJECTIVES & STRATEGIES

DRAFT OBJECTIVES

1. Maintain Richmond's traditional settlement pattern of clustered, higher density development within the town's compact, village center and outlying rural hamlets, surrounded by working farms and forests, and conserved natural resource areas.
2. Employ a variety of complementary non-regulatory and regulatory techniques to conserve Richmond's most significant natural and scenic resources and working farm and forest land, and to avoid or mitigate the adverse impacts of future land subdivision and development on these resources.
3. Establish a rate, pattern and density of development that minimizes adverse impacts to Richmond's natural and scenic resources and working lands. Locate the majority of new development within designated areas supported by municipal and community infrastructure, and on land that is physically suited for its intended use.
4. Avoid the extension of municipal infrastructure, including water and sewer lines, utilities and street lighting, outside of planned infrastructure service areas to maintain a pattern of compact development, to avoid strip development and to minimize the subdivision, fragmentation and development of productive farm and forest lands, primary agricultural soils, and other mapped natural resource and environmentally sensitive areas.
5. Educate Richmond residents and landowners as to the effect of human activities on the town's natural environment and human health, and provide places and opportunities for local residents to recreate and experience the natural environment.
6. Conserve and regulate land as necessary to protect critical ecological resource values and functions, and for public outdoor recreation and education.
7. Exclude [restrict] development within environmentally sensitive areas, including:
 - areas of very steep slope (>30% over any 100-ft horizontal section),
 - soils that are classified by the US Natural Resource Conservation Service as poorly drained (hydric), highly erosive, or shallow in depth to bedrock or the seasonal high water table,
 - surface waters, wetlands and associated riparian areas,
 - public water supply recharge areas (mapped Source Protection Areas),
 - mapped flood, fluvial erosion and other known hazard areas,
 - habitat that supports rare, endangered or threatened species habitat, and
 - exposed ridgelines and hilltops that are highly visible from public vantage points, [*including specify*].

8. Conserve and manage the town's finite earth resources, including mapped sand, gravel, rock and mineral deposits, as necessary to secure affordable, long-term supplies of building construction and road materials.
9. Ensure that extraction and quarrying operations will not have an undue adverse effect on air quality, local drainage patterns, ground and surface waters, wetlands, critical wildlife habitat, adjoining properties and uses, noise levels, traffic and road conditions, and public infrastructure in the vicinity of the project.
10. Facilitate sustainable local and community-based development of the town's renewable energy resources – including solar, wind, micro-hydro and biomass resources – to the extent that such development meets adopted community standards and guidelines for energy facility development.
11. Exclude energy facility development, biofuel harvesting and resource extraction operations in locations where the adverse impacts of such operations on air and water quality, long-term forest health, primary agricultural soils, critical wildlife habitat, historic and scenic resources, adjoining properties and uses, public highways and other community infrastructure and services cannot be avoided or adequately mitigated [*Specify exclusion areas*].
12. Promote viable, sustainably-managed farming and forestry operations in support of local food and fuel production, and as a way to maintain open space and conserve natural resources on private lands.
13. Limit the fragmentation and conversion of the town's remaining farmland, including primary agricultural soils, to nonagricultural use, and ensure that conserved farmland remains available to existing and future farmers.
14. Discourage the further fragmentation of remaining large (> 50+ [25+] acre) contiguous, undeveloped tracts of forestland, and preserve access to these areas as necessary for sustainable forest resource management.
15. Limit and regulate the upgrade and conversion of temporary logging roads into permanent development roads, driveways, trails and utility corridors as necessary to limit forest fragmentation, conversion and development, and the introduction of exotic and invasive species.
16. Promote a mosaic of habitat types and ensure that core habitat areas (e.g., nesting and breeding areas, deer wintering areas, mast stands, vernal pools) are adequately buffered from incompatible development and connected by wildlife travel corridors, as necessary to enhance biological diversity and sustain critical habitat functions.

17. Avoid, or as necessary minimize and mitigate the adverse impacts of development on critical wildlife habitat in accordance with recommended state mitigation and management guidelines for particular habitat types, in consultation with the Richmond Conservation Commission and the Vermont Department of Fish and Wildlife.
18. Protect and more securely establish populations of rare, threatened and endangered species which, because of their precarious status, require an enhanced degree of habitat protection to ensure their continued survival.
19. Avoid the introduction and limit the spread of invasive, exotic species that crowd out, destroy or otherwise harm the town's native species and communities – through active management on municipal and public lands, landowner education, and landscaping restrictions under local regulations.
20. Manage and regulate land development as needed to protect and improve the quality of Richmond's surface and ground water and community water supplies. Monitor water quality as necessary to protect public health and recreational use of public waters.
21. Maintain or establish naturally vegetated riparian buffers of sufficient width, based on site-specific slope and soil conditions, necessary to minimize surface water runoff, stream bank and shoreline erosion, sedimentation and pollution.
22. Ensure that new development incorporates existing natural features (e.g., topography, drainage, vegetation, wetlands, riparian areas) into site planning and subdivision design, as necessary to minimize the extent of site disturbance and to provide "green infrastructure" that retains and enhances natural site functions, particularly for onsite stormwater management, retention and infiltration.
23. Strengthen community resiliency to mitigate, adapt and respond to the effects of a changing climate, including anticipated increases in rainfall, stormwater runoff, and severe weather events.
24. Avoid, or as necessary mitigate hazards to life and property associated with flooding, fluvial erosion and other natural hazards. Regulate and limit [avoid] new development within known hazard areas as required to minimize risks to life, property and public infrastructure, and public costs associated with disaster response and recovery.
25. Plan for and promote clustered, energy efficient development and transportation options (e.g., for walking, biking, public transit and use of alternative fuels) that improve air quality and reduce greenhouse gas emissions – by reducing energy consumption, vehicle miles traveled, and the use of fossil fuels for transportation and heating.
26. Protect unimpaired views of the night sky, and strictly limit light pollution from outdoor lighting – including sky glow, light trespass and glare – especially within the town's rural and undeveloped areas, in public recreation areas, in scenic upland areas, and in critical wildlife habitat areas.

DRAFT IMPLEMENTATION STRATEGIES

1. Continue to identify, inventory and map Richmond’s natural, cultural and scenic resources in cooperation with Richmond landowners, neighboring communities, and conservation organizations, and establish clear priorities for their conservation, for consideration in public and private land stewardship programs, incorporation in resource management and open space plans, and in the review of proposed development. These may include, but not be limited to:
 - Land use/cover mapping,
 - Groundwater recharge area mapping,
 - Wildlife and wildlife habitat inventories,
 - Wetland inventories,
 - Stream geomorphic assessments and river corridor mapping,
 - Scenic resource inventories (roads, viewsheds)
 - Existing and proposed trail corridors,
 - Historic resource inventories and register listings
2. Identify existing and potential threats to Richmond’s natural, cultural and scenic resources and, with extensive community and landowner involvement, develop river corridor management, resource conservation, and open preservation plans.
3. Provide guidance to local residents, applicants, architects, builders, landscapers and other interested parties on preferred land development, conservation and stewardship methods to protect Richmond’s critical natural, historic and scenic resources.
4. Collaborate with local conservation organizations, state agencies, and Richmond property owners to promote enforcement and adherence to environmental regulations that maintain and improve air and water quality, protect wildlife and other natural resources and conserve farm and forest land.
5. Secure funding to support local land and resource conservation efforts, including reauthorization and annual funding of the Richmond Conservation Reserve Fund to provide seed money for conservation projects. Update Conservation Reserve Fund policies and priorities as recommended in the 2008 Trust for Public Land Report.
6. Monitor the effects of state and local regulations on local development patterns (e.g., through GIS land use mapping and build-out analyses, landowner surveys, and the review of permitted development), and recommend changes in zoning or subdivision regulations as necessary to retain the rural character of the town.
7. Re-evaluate the capacity of existing road and stormwater management infrastructure and facilities, including local bridges and culverts, to handle projected increases in stormwater runoff associated with severe storm events. Update design specifications under local policies and ordinances as needed.

8. Consider stormwater management improvements on town property as recommended in ANR and University of Vermont site assessments and reports.
9. Implement recommendations for hazards mitigation included in the 2011 Richmond All-Hazards Mitigation Plan.
10. Explore fluvial erosion hazard mitigation options including posting the fluvial erosion hazards area map(s) and explanation on the town web site, using the map to design new investments in the Capital Budget to reduce impacts of fluvial erosion on town infrastructure, or creating a Fluvial Erosion Hazard Area (FEHA) Overlay District.
11. Develop, in association with the Vermont Urban and Community Forestry Program, a street tree plan for Richmond Village, as recommended in 2009 and 2010 Bicycle and Pedestrian Feasibility Studies, and consider options for establishing a town or community forest in the vicinity of Richmond Village for the benefit of town residents.
12. Adopt and demonstrate “best practices” for land stewardship, resource conservation, landscaping and stormwater management on town-owned and controlled property, such as using native species for landscaping, removing invasive species, controlling roadside drainage and erosion, and using rain gardens and other low impact techniques to manage stormwater.
13. Develop plans, in consultation with local landowners and community groups, for a town-wide system of interconnected public trails or walking paths that link to regional path networks, and that connect the village center with rural hamlets and outlying natural areas and public recreation land. Prepare and adopt an official map (under 24 V.S.A. § 4421) of existing and planned trail corridors for consideration under the town’s capital improvement program, and in development review proceedings.
14. Evaluate and update Richmond zoning and subdivision regulations and other applicable town ordinances, with extensive community input, as needed to comply state and federal laws, to protect public health and safety, to improve air and water quality, to maintain and enhance critical natural, historic and scenic resource values and functions, to conserve farm and forest land and natural and public recreation areas, and to promote compact development patterns that promote efficient use of land and the protection of critical resources, open space and Richmond’s rural character. These revisions may include but not be limited to:
 - modification of district uses and lot dimensional requirements,
 - new resource-based or hazard area zoning districts (e.g., a fluvial erosion hazard area overlay district),
 - provisions to protect ground water quality and recharge areas,
 - provisions to protect undeveloped upland areas and ridgelines,
 - provisions to protect scenic resources, including scenic roads and viewsheds,

- “dark sky” provisions for outdoor lighting to limit light pollution,
- expanded application of Planned Unit Development (PUD) provisions,
- conservation subdivision design requirements for specified zoning districts,
- additional incentives such as density bonuses in exchange for the incorporation of resource conservation, energy efficiency, and renewable energy facility development in site plan or subdivision design,
- stormwater management provisions that incorporate Low Impact Development (LID) techniques to manage stormwater onsite;
- Transfer of Development Right (TDR) provisions that allow for the market-based transfer of development density from rural resource (sending) areas to village and other designated development (receiving) areas.

LOCAL FOOD SYSTEM OBJECTIVES & STRATEGIES

OBSERVATIONS (in addition to current)

1. Richmond's farms and food producers contribute much to the town's rural character, and create economic value through the production, preparation, processing, distribution and sale of food and agriculture products.
2. There is a direct connection between access to healthy food and community health – including rates of diet-related diseases such as diabetes, heart disease, and obesity.
3. Local, sustainable food production for local consumption helps build a more vibrant, healthy community, strengthens the local economy, and reduces waste, soil erosion and water pollution, and the use of nonrenewable energy resources.
4. Area farmers have indicated that the existing market for locally produced food is saturated. Additional options and outlets are needed for value-added production, food processing (e.g., flash freezing), aggregation, storage and year-round distribution.

Food System – The interconnected activities that get food from the farm to the plate, including growing, processing, preparing, buying and disposing of food.

DRAFT OBJECTIVES

1. Maintain Richmond's traditional settlement pattern of clustered, higher density development within the town's compact village center and outlying hamlets, surrounded by a rural countryside that includes working farms and farmland.
2. Preserve Richmond's traditional rural landscape, including its historic farmsteads, barns, and open agricultural lands. Allow for the adaptive reuse of historic farm structures, including historic barns, for compatible uses that maintain their historic integrity and character, so they remain viable structures that contribute to farm-based income.
3. Establish a rate, pattern and density of development that conserves and minimizes adverse impacts to the town's working farm and forest land. Avoid the extension of municipal infrastructure, including water and sewer lines, outside of planned service areas to minimize the subdivision and development of productive farmland.
4. Advance agriculture as the highest and best use of productive farmland and primary agricultural soils, and the principal use of agricultural parcels. Minimize the fragmentation and conversion of remaining farmland to nonagricultural uses.
5. Ensure that farmland is available and affordable for future farming and food production. Employ a variety of strategies to conserve large, contiguous tracts of productive

farmland, while also respecting the rights of landowners to develop, manage and improve their holdings.

6. Support landowners who are pursuing the permanent protection of their land through local, state, and national programs, including financing assistance through the Richmond Conservation Reserve Fund.
7. Promote a viable agricultural sector in support of local food production, and as a way to maintain open space and conserve natural resources on private land.
8. Encourage sustainable methods of food production that maintain healthy water supplies, build soil, improve nutrient management and reduce the carbon footprint associated with local food production.
9. Emphasize state right-to-farm laws in planning for and regulating nonfarm development. Protect and buffer farmland and active farming operations from incompatible residential, commercial and industrial development.
10. Avoid unnecessarily limiting on-farm operations and farm-based businesses. Allow for on-farm value-added production and sales, composting operations, training and education programs, and compatible agricultural tourism.
11. Provide options for housing as accessory to active farming operations for permanent and seasonal farmworkers, guest workers, students and interns.
12. Increase local food self-sufficiency and access to affordable, locally produced food for all Richmond residents, through local food production, farm stands and CSAs, the Richmond Farmers Market, community gardens, school meal programs, the Richmond Pantry, and local retail outlets and restaurants.
13. Expand local and regional markets for locally produced food. Encourage value-added food production, including food processing, storage and distribution facilities that give local producers access to a wider range of market outlets and enable greater year-round consumption of local food.
14. Divert food and farm waste from landfills for use in producing compost, fertilizer, feedstock and other agricultural products, through expanded residential (backyard), school and on-farm composting, commercial food waste collection services, and participation in the Chittenden County Solid Waste Management District's composting program.
15. Celebrate the importance and contribution of local farms and farming to Richmond community.

DRAFT IMPLEMENTATION STRATEGIES

1. Inventory, map and monitor the town's farm and food sectors, to include:
 - The number, type and location of existing farms,
 - The number of people employed in farming and food-related businesses,
 - Primary agricultural soils and farmland currently in production,
 - Farmland that is permanently conserved or enrolled in the state's use value appraisal (current use) program,
 - Food processing, storage and distribution facilities that serve area farmers,
 - "Food Asset Mapping" to include the locations of grocery stores, community gardens, farm stands, food assistance programs, farm- and food-related businesses and community organizations.
2. Establish, in consultation with area farmers and conservation organizations, a system for determining local priorities for farmland preservation – for example using a Land Evaluation and Site Assessment (LESA) process developed by the USDA Natural Resource Conservation Service to identify, evaluate and rank farm parcels in relation to local conservation priorities.
3. Incorporate farmland preservation priorities in the development of local resource conservation or open space plans.
4. Update and expand the 2009 UVM Barn Census for Richmond (part of the Vermont Barn Census project), in cooperation with local property owners, to identify historic farm structures, properties and rural landscapes for potential listing on state and national historic registers.
5. Secure funding to support farmland conservation efforts, including reauthorization and annual funding for the Richmond Conservation Reserve Fund. Update Conservation Reserve Fund policies and priorities as recommended in the 2008 Trust for Public Land Report.
6. Conduct a "Cost of Community Services Study" to examine in depth the fiscal impacts and benefits of farmland conservation and open space preservation to inform local planning, zoning and land conservation policies and decisions.
7. Provide information and support for farmland enrollment in the state's Use Value Appraisal Program and ensure, under local development regulations, that subdivided farm parcels remain eligible for continued enrollment. Consider a local tax abatement program for productive farmland.
8. Create a local farmland access registry, including a listing of farmland that has been conserved under state and local conservation programs, and the town's development

regulations (e.g., in association with planned unit development), that may be available for sale or lease to existing or new farmers. Identify municipal land suitable for potential lease to farmers. Coordinate with regional or state farmland access programs.

9. Establish a local food council or committee to work with local farmers and food-related businesses and outlets to expand the local food sector and increase access to locally produced food.
10. Convene local farmers and food producers to identify business needs and opportunities — such as potential processing and distribution facilities or transportation needs — and work with town and state officials, farm organizations and neighboring towns to address those needs.
11. Conduct a “Community Food Assessment” that examines a cross-section of food sector issues, including access to farmland, agricultural trends, food access and availability, diet-related health trends, and links between local and regional food systems.
12. Develop and promote a “buy local” program (e.g., in association with the state’s Buy Local Campaign and the Vermont Fresh Network) to support the local farm and food economy, and to expand access to locally produced food and farm products. Develop maps, directories and web site information that highlight local farms, farm products, agritourism and food-related businesses and outlets.
13. Work with the Richmond Farmers Market to address parking issues at Volunteers Green, and to consider options and potential facilities for hosting a year-round farmers market.
14. Determine local interest in developing a community garden in or within walking distance of Richmond Village or in other more densely settled areas of town. Evaluate town and other public properties for community garden space.
15. Work cooperatively the school district to expand local “Farm to School” programs and school gardens, and to support the annual Richmond Harvest Festival.
16. Adopt a town ordinance that allows, subject to appropriate restrictions, the raising of chickens and bees on residential properties.
17. Continue to review the town’s land use regulations to determine their impact on farm-based production, sales and value-added endeavors, and to require that new residential development does not interfere with or inhibit new and traditional agricultural and forestry operations. Develop regulatory standards for farmworker housing.
18. Continue, with public input, to explore creative development techniques to conserve farmland, allow for “infill farming” in rural residential areas, and to accommodate

community or residential food production under local land use regulations. These may include, but not be limited to:

- Agricultural overlay districts,
- Variations on fixed area based zoning,
- Conservation subdivision design,
- Provisions for the transfer of development rights (TDRs), and
- Provisions for resident or community garden space in residential subdivisions and multi-family housing development.

ENERGY OBJECTIVES & STRATEGIES

DRAFT OBJECTIVES

1. Ensure the long-term availability of safe, reliable and affordable energy supplies to meet the needs of the town and neighboring communities.
2. Reduce municipal energy consumption and costs, community reliance on fossil fuels and foreign oil supplies, and greenhouse gas emissions that contribute to climate change – through increased energy and fuel efficiency, energy conservation, and active transition to alternative fuels and renewable energy sources.
3. Sustainably develop Richmond’s renewable energy resources and local distributed energy generation capacity – including municipal and community generation and supporting smart grid technology – consistent with adopted plan policies and community energy facility and siting standards.
4. Avoid or if necessary minimize the adverse impacts of energy development on public health, safety and welfare, the town's historic and planned pattern of development, environmentally sensitive areas, and Richmond’s most highly valued natural, cultural and scenic resources, consistent with adopted plan policies and community standards for energy development, resource protection and land conservation.
5. Ensure that new energy facility development within or that may affect the Town of Richmond must conform to adopted community standards for energy facility siting and development to receive municipal support or approval.
6. Require patterns and standards of development that promote greater energy efficiency, and reduce transportation energy demand, vehicle miles traveled, fossil fuel consumption and greenhouse gas emissions. To this end:
 - a. Accommodate the majority (more than 50%) of new development, including higher density mixed use, pedestrian-friendly residential and commercial development within designated zoning districts [*specify*], to be supported by existing and planned infrastructure, sidewalks, and public transit services; and avoid infrastructure extensions and auto-dependent sprawl outside of these districts.
 - b. Concentrate (cluster) new development outside of village areas in locations (e.g., hamlets, industrial parks, PUDs) that can physically support energy efficient, pedestrian-oriented development to be served by common or shared parking areas and walkways, and accessed by existing or planned bike lanes, public paths or transit routes.

- c. Locate all municipal and community facilities open to the public in Richmond Village [or *designated village districts*], within walking distance of the village center, or in locations that are accessible by public transit.
7. Require, at minimum, that all new development is designed and constructed to meet state energy standards, through siting and building design, material selection and the use of energy-efficient lighting, heating, venting and air conditioning systems, and provide incentives for energy efficient development that exceeds minimum state standards.
8. Ensure that energy demand resulting from new development does not exceed the capacity of existing and planned generation, transmission and distribution systems. Development with high energy demand shall maximize energy efficiency, incorporate on-site generation, or undergo project phasing in relation to planned system upgrades as necessary to mitigate anticipated service or facility impacts.
9. Promote community energy literacy, and provide information to local residents, businesses and developers about available energy assistance and incentive programs, state energy codes and energy system permitting requirements.
10. Minimize the impacts of potential fuel shortages on emergency services, critical public functions, and local residents and businesses.

DRAFT IMPLEMENTATION STRATEGIES

1. Participate in long-range regional and utility planning, in collaboration with neighboring communities, the Chittenden County Regional Planning Commission, and area utilities, to ensure that adopted plan policies and community standards are identified and considered in future energy planning and development. This may include participation in public forums or hearings for the:
 - Vermont Comprehensive Energy Plan (VT Department of Public Service),
 - Vermont Long-Range Transmission Plan (VT Electric Power Corporation),
 - Utility Integrated Resource Plans (Green Mountain Power Corporation, Washington Electric Cooperative)
 - Vermont Public Service Board Dockets (plans, policies, procedures), and the
 - Chittenden County Regional Plan (Energy Element).
2. Develop a comprehensive energy action plan as recommended in the 2007 Richmond Energy Conservation Policy.

3. Evaluate existing and proposed municipal policies, programs and regulations for their effect on municipal energy use, and revise as needed to promote reduced energy consumption, increased energy efficiency, and the sustainable development and use of local renewable energy resources.
4. Make energy use and fuel efficiency primary considerations in municipal construction projects, equipment and vehicle purchases and facility operations. Accordingly the town, through its Energy Coordinator and Energy Committee will:
 - a. Continue to conduct baseline energy studies and periodic energy audits or assessments of municipal buildings and facilities to identify efficiency improvements that will reduce energy consumption and costs.
 - b. Track municipal energy use and costs (e.g., through the EPA's free Energy Star® Portfolio Manager), and develop an overall energy budget to manage the town's energy consumption, which may include the addition of local generating capacity.
 - c. Continue to implement energy efficiency measures for existing and future town facilities as opportunities arise, and incorporate priority efficiency improvements (e.g., facility retrofits, renovations, and equipment upgrades) in the town's capital budget and program.
 - d. Develop municipal procurement and purchasing policies that incorporate life-cycle costing for future purchases, and that emphasize products that are energy efficient (e.g., Energy Star® rated), available locally, durable, recyclable, nontoxic, and manufactured with post-consumer recycled material.
 - e. Continue to update facility lighting with more energy efficient fixtures and, in association with Efficiency Vermont and local utilities, to evaluate options to improve the efficiency and reduce the costs of local street, pedestrian, parking lot and public space lighting.
 - f. Explore group or bulk purchasing options for energy-efficient products and equipment.
 - g. Consider performance contracting with an independent energy service company to finance and install energy efficient retrofits or municipal renewable energy systems.
 - h. Review and update the 2007 Town of Richmond Energy Conservation Policy as needed with regard to, facility maintenance and operation policies, building temperature, heating and air conditioning guidelines, electrical equipment use guidelines, interior and exterior lighting guidelines, and the use of energy management devices (e.g., sensors, timers).
 - i. Develop municipal vehicle purchase, maintenance and use policies, including minimum fuel efficiency standards and alternative fuel vehicles as available.
 - j. Develop telecommuting policies for selected employees to work from home; and provide incentives for municipal employees to live in town, to reduce commuting distances.
5. Collaborate the with Richmond Climate Action Network, adjoining municipalities, the Chittenden County Regional Planning Commission, and area utilities and service

providers to promote community energy literacy, and to provide information about available energy assistance and incentive programs, state energy codes and energy system permitting requirements.

6. Provide all applicants for development with available information on energy efficient, siting, construction and state residential and commercial energy efficiency codes. Develop a toolkit on energy efficiency development.
7. Develop and implement a Property Assessed Clean Energy (PACE) Program as approved by Richmond voters in 2012, and consider other available incentives (e.g., tax credits, property tax exemptions), to help finance or offset the cost of eligible efficiency, weatherization and renewable energy projects that meet adopted community standards.
8. Participate in Public Service Board (Section 248) review of new and upgraded generation and transmission facilities, including renewable energy facility development, as necessary to ensure that adopted community priorities and standards are given due consideration in PSB review. For regional projects, this may include joint participation with other affected municipalities and the Chittenden County Regional Planning Commission.
 - a. Develop policies and guidelines for municipal participation in PSB Section 248 proceedings that reflect levels of participation or formal intervention in relation to the type, location, scale, and magnitude of a proposed project, and its potential benefits and impacts to the community.
 - b. Explore options to provide community notice of PSB proceedings for all net-metered projects, e.g., through the Town's web site, or Front Porch Forum.
 - c. Hold one or more publicly noticed informational meetings, and/or a public vote as the basis for formal municipal intervention in PSB proceedings.
9. Identify and map those areas of town that are – and are not – suitable for the siting and development of renewable energy facilities and resources, including the town's scenic ridgelines and viewsheds, in conformance with adopted plan policies and community standards.
10. Pursue local generation capacity on municipal property, and actively assist in the planning and development of community-based renewable energy development that conforms to adopted plan policies and community energy facility siting and development standards.
11. Work with the Chittenden County Regional Planning Commission and area transit providers to maintain and expand existing transit service, and to continue to identify, plan for and develop needed transit routes and facilities, including state and municipal

park-and-ride facilities. Local rideshare or volunteer driver programs also should be considered.

12. Adopt and incorporate "complete street" principles in public works standards and under local bylaws and ordinances to ensure that planned public highway improvements and new development roads are designed to safely accommodate all users – including pedestrians, cyclists and transit riders.
13. Collaborate with neighboring towns, the Chittenden County Regional Planning Commission, and local landowners to plan for, maintain and develop an interconnected regional recreation path network, for recreation and to provide additional transportation options for local residents.
14. Work with the Chittenden County Regional Planning Commission and area utilities to establish the regional infrastructure needed to support alternative fuel vehicles (e.g., charging stations), to include one or more publicly accessible, centrally located sites in Richmond.
15. Work in cooperation with local agencies, emergency service providers and regional suppliers to develop emergency contingency plans that ensure access to critical energy supplies and measures to reduce nonessential energy consumption in the event of an abrupt energy shortage.
16. Review, update and amend the Richmond Land Use Regulations as needed to:
 - Require development patterns that continue to concentrate growth in designated areas and locate residential development near work and shopping areas.
 - Allow for expanded home-based businesses and cottage industries, especially in rural zoning districts, that provide opportunities for local residents to work from home.
 - Incorporate expanded infrastructure and connectivity standards under site plan and subdivision review for pedestrian, bicycle and transit facilities, including requirements for bicycle racks or storage areas for all facilities that are open to the public and for multi-family housing development.
 - Reduce or eliminate parking requirements for uses that maintain programs or facilities to reduce employee commutes in single occupancy vehicles, and for residential, business and community development projects that are located within walking distance of shared or public parking facilities or public transit stops.

- Review and update as needed, existing zoning definitions and standards pertaining to small onsite renewable energy systems (energy generation systems) as accessory structures to the principal use of the property.
- Allow for waivers, subject to conditional use review, for onsite renewable energy systems that cannot functionally be sited to meet minimum district setback or maximum district height requirements.
- Protect solar and wind access for existing and permitted renewable energy systems from subsequent development on adjoining lots.
- Include standards for energy efficient and green energy development, including standards that promote or require clustered development, and incorporate access to renewable resources (e.g., solar, wind, woody biomass) and net-metered renewable energy systems in subdivision and site plan design.
- Provide incentives (e.g., waivers, density bonuses) for energy efficient construction that exceeds minimum state standards, that maximizes access to renewable energy resources (e.g., solar orientation), or that incorporates individual or group net-metered renewable energy systems in subdivision design.

PLAN ADDENDUM:

Community Standards for Energy Facility Siting and Development

These draft community standards are adapted for Richmond from model standards prepared for the Southern Windsor County Regional Planning Commission.¹ These standards in effect substitute for bylaw standards, given that municipalities cannot regulate energy facilities that require Public Service Board review. The Planning Commission should review these very carefully for inclusion in the Richmond Town Plan.

Note: The following standards are intended for consideration in the development of local bylaws, where applicable, and in the municipal review of energy projects before the Public Service Board. The PSB must find that a proposed 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." For determinations of scenic impact, the PSB uses the Act 250 "Quechee Test" which considers in part whether a project violates a "clear, written community standard intended to preserve the aesthetics or scenic beauty of an area"—and more specifically the project area. For consideration in regulatory proceedings, municipal policies or "community standards" should be specific in their application, clearly stated, and internally consistent. For example, no clear direction is provided by general statements to protect scenic ridgelines and to support wind development.

The language used is also important. In this context "shall" and "must" carry more weight as specific mandates, than "should" or "may" which may be interpreted as recommendations or guidelines. Because the municipality has no direct authority, "should"—as a recommendation to the PSB for consideration—may be appropriate, but for added clarity, in certain cases "shall" "must" or similar language may be needed. The following standards should be reviewed very carefully for local application and use.

These community standards are to be considered in undertaking municipal energy projects and programs, in updating the town's bylaws to address renewable energy development subject to local regulation, and in the review of new or upgraded energy facilities and systems by the town and the Public Service Board under 30 V.S.A. § 248 (Section 248 review).

Facility Development

1. **Priorities.** The following forms of energy development will be considered for support by the Town of Richmond, in order of priority:

¹ Energy Policies & Standards: A Guide for Southern Windsor County Communities, June 2011.
<http://swcrpc.org/wp/wp-content/uploads/2011/10/SWCRPC-Model-Energy-Policies-and-Standards.pdf>

- a) Increased system capacity through state, utility and municipally-supported energy efficiency and conservation programs.
 - b) Small, onsite distributed energy projects, including Individual and group net-metered renewable energy projects and community-based projects that conform to municipal policies and standards.
 - c) In-place upgrades of existing facilities, including existing transmission lines, distribution lines and substations as needed to reliably serve the town and region.
 - d) New commercial, utility-scale energy facilities, including new transmission and distribution lines, substations, hydro dams, wind and solar farms, co-generation facilities and biomass plants.
2. **Plan Conformance.** New commercial, utility-scale generation facilities and proposed system upgrades, should be identified in or be consistent with the Vermont Comprehensive Energy Plan, the Vermont Long-Range Transmission Plan and the utility's Integrated Resource Plan (IRP). A new facility should be considered only after potential alternatives, including increased energy efficiency, distributed energy systems, and existing facility upgrades are evaluated and found to be insufficient to meet system reliability needs or projected demand.
 3. **Benefits.** A demonstrated public need that outweighs adverse impacts to local residents and resources must be documented for municipal support of new, large-scale utility projects located within or which may otherwise affect the Town of Richmond. Facility development must benefit town residents, businesses, and property owners in direct relation and proportion to the impacts of the proposed development.
 4. **Impacts.** New generation, transmission, and distribution facilities must be evaluated for consistency with community and regional development objectives, and to avoid undue adverse impacts to public health, safety and welfare, and significant cultural, natural and scenic resources identified by the community.
 5. **Decommissioning.** All facility certificates or permits should specify conditions for system abandonment and decommissioning, including required sureties for facility removal and site restoration to a safe, useful, and environmentally stable condition. All hazardous materials and structures, including foundations, pads and accessory structures, must be removed from the site.

Facility Siting

1. **Preferred Areas.** New generation and transmission facilities, including utility corridors, shall be sited in locations that reinforce the community's traditional and planned patterns of growth, of a compact village center surrounded by a rural countryside, including working farm and forest land. The following areas have been identified by the town as suitable for the development of larger, utility-scale renewable energy and transmission facilities, consistent with this pattern of development, based on the municipal review of state energy plans, municipal participation in state energy plan development, an analysis of available renewable energy resources, technical facility requirements, and municipal resource conservation and development goals and objectives:

Note: The town should identify and map those areas suitable for large-scale energy development, as identified from the review of planned facility upgrades, to be referenced in the municipal plan, and/or from a community-wide inventory and mapping project. This could also include specifying suitable zoning districts, as appropriate.

2. **Exclusion (Prohibited) Areas.** Because of their distinctive natural, historic or scenic value, and their special significance to the community, energy facility development shall be excluded from [prohibited within] and will not be supported by the town in the following locations, as mapped by the municipality: [List – which may include some of the areas or resources noted below or, as noted above, could also reference certain zoning districts.]

- Floodways [Special Flood Hazard Areas] shown on Flood Insurance Rate Maps (FIRMs) on file at the Richmond Town Office – except as required for hydro facilities.
- Fluvial erosion hazard areas shown on Fluvial Erosion Hazard Area (FEHA) or River Corridor Protection maps on file at the Richmond Town Office – except as required for hydro facilities.
- [Class 1 and 2] Wetlands shown on Vermont State Wetlands Inventory (VSWI) maps, or identified through site analysis.
- Rare, threatened or endangered species habitat or communities.
- The following ridgelines above ____ feet in elevation: [list]
- [Other as identified and mapped by the municipality.]

Site design must incorporate a buffer area of sufficient width to protect the resource values and integrity of an excluded area.

Note: Any areas where utility development should be restricted should be clearly stated and mapped. For example, a general statement that "wind towers should not be located on scenic ridgelines" does not provide enough guidance to determine which ridgelines are of particular scenic value to the community. It's important to also identify which ridgelines are considered scenic.

Conserved Areas. All new generation, transmission, and distribution facilities, including net-metered systems, shall be sited and designed to avoid or, if no other reasonable alternative exists, to otherwise minimize and mitigate adverse impacts to the following natural, cultural and scenic areas and resources identified by the community, consistent with related community standards:

- Richmond Village Historic District, and other landmarks, sites and structures listed, or eligible for listing, on state or national registers.
- Public parks and recreation areas, including state and municipal parks, forests and trail networks.
- [State-designated] downtown, village and growth centers [or specified zoning districts or areas].
- State or federally designated scenic byways, and municipally designated scenic roads and viewsheds.
- Special Flood Hazard Areas identified on National Flood Insurance Program Flood Insurance Rate Maps (FIRMs) – except as required for hydro facilities.

- Public and private drinking water supplies, including mapped source protection areas.
- Primary agricultural soils mapped by the U.S. Natural Resource Conservation Service.
- Necessary wildlife habitat identified by the state or through site analysis, including core habitat areas, migration and travel corridors. [Should more specifically reference any mapped resources.]
- Undeveloped ridgelines, headwaters and upland areas above [_____] feet in elevation, including:[list]
- [Other locally designated natural, cultural, and scenic resources as identified and mapped by the municipality].

Note: The above lists are based on commonly noted areas of concern – they should be tailored to identify locally significant resources.

Public Health, Safety and Welfare

1. **Setbacks.** Except for transmission and distribution lines and hydro facilities, all energy facilities, including generation facilities, substations, net-metered facilities and accessory or ancillary structures, shall meet minimum setback requirements for the zoning district(s) in which they are located. In addition:
 - Net-metered and off-grid wind generation facilities must be set back from all property lines, public right-rights-of-way and overhead utility lines at least [1.1 -1.5] times the total facility height, as measured from the ground to the tip of the rotor blade at its highest point [unless easements are obtained from abutting property owners].
 - Large-scale wind generation facilities [> 100, 500 kW], including wind farms, must be set back at least [1,000-1,500 feet] from all occupied buildings in existence or permitted at the time of application [unless easements are obtained from abutting property owners].
 - Setback distances should be increased as necessary to mitigate adverse impacts to public health and safety, and to adjoining properties, rights-of-way, utility lines and uses, from potential equipment failure, noise, glare, shadowing or ice throw.

Note: Common setback requirements for wind facilities are intended to accommodate fall or tilt-down zones and to help mitigate noise and visual impacts, which decrease with distance. The setbacks for larger facilities also help mitigate low frequency noise and vibration, shadow flicker, blade shear and ice throw. Ranges commonly found in model bylaws are provided. Note also, however, that Public Service Department guidance in this area recommends setbacks of 1.1 times the tower height or less as determined from risk-based analyses, where this standard can't be met. The PSD has determined that greater setbacks are not necessary to address noise or other nuisances or hazards.

2. **Height.** Zoning district height limitations, where applicable, should be waived for renewable energy facilities as allowed under 24 V.S.A. § 4414, and as specified in the zoning bylaw. However:

Note: Wind facility installations typically exceed maximum district height limits under zoning, as required for operation. Turbine effectiveness increases with height – especially with distance above trees, buildings and other obstructions that generate turbulence. While most model bylaws limit the height of "smaller" systems – in part to limit their visibility and avoid FAA lighting requirements (200+ feet) – many also allow for clearance above existing obstructions. At minimum, bylaws should include height exceptions for off-grid wind systems regulated by the town. If the bylaws don't include specific height standards, small roof-mounted wind facilities (with rotors less than 20 feet in diameter) and solar facilities (less than 10 feet high) cannot be regulated (under 24 V.S.A. § 4412). Also note that the Public Service Board has determined – as a rebuttable presumption – that wind facilities 150 feet or less in height will not have an undue adverse visual impact.

- A net-metered wind facility must not exceed [120 - 150] feet in height, or [30 - 40] feet in height above obstructions located within 300 feet of the rotor, whichever is greater, as measured vertically from the ground to the tip of the rotor blade at its highest point.
 - The minimum ground clearance for a wind turbine must be a minimum of 30 feet, as measured vertically from the ground to the tip of the rotor blade at its lowest point.
 - A ground-mounted solar panel must not exceed [15-20] feet in height, as measured vertically from the ground to the top of the structure at its highest point.
 - A roof- or building-mounted wind facility must not, as mounted, extend above the roofline more than [10 - 30] feet, as measured vertically from the roofline to the highest point of the facility, unless it is determined that additional height is necessary to provide clearance for safe operation, or to limit turbulence from surrounding structures.
 - Roof-mounted solar installations must not exceed district height limits, unless height incentives (e.g., additional floors) are provided under local regulations to promote the use of roof-mounted systems in high density [downtown, commercial] zoning districts.
 - Roof-mounted systems are exempt from any mechanical equipment screening requirements under local bylaws [except within the Richmond Village Historic District].
3. **Access.** New generation and transmission facilities shall be sited to minimize the need for and extent of new access roads and utility corridors.
- Existing highways and access roads shall be used to access facility sites wherever physically feasible. Highway access approval from the municipality is required to access a town highway.
 - For large-scale projects that may impact town highways and traffic in the vicinity of the project during construction or operation, existing base-line traffic and road conditions shall be documented by the facility developer, to the satisfaction of the municipality. A traffic impact study also may be required, as specified under town bylaws. The facility developer shall be responsible for any highway improvements required to accommodate the project, and for repairing any damage to town highways resulting from the project.
 - Facility access roads and utility corridors must be shared wherever physically feasible, and located to minimize site disturbance, resource fragmentation, the extension or creation of

edge habitat into previously undisturbed areas, and related adverse visual and environmental impacts.

- All facilities shall be secured from unauthorized public access as necessary to ensure public safety.

4. **Equipment.** All facility equipment shall be designed, installed, operated and maintained to protect against structural or equipment failure that could endanger public safety.

- All facility equipment must be certified as meeting accepted industry safety, interconnection and performance standards as established by the National Electrical Code, Institute of Electrical and Electronic Engineers, Underwriters Laboratories, the American National Standards Institute (ANSI), or other accepted testing and certification facilities. For small wind facilities, this may include equipment certified by the Small Wind Certification Council (under AWEA Standard 9.1–2009)
- All wind turbines shall be equipped with automatic breaking, governing or feathering systems to prevent uncontrolled rotation, overspeeding, and excessive pressure on the tower structure, rotor blades, and turbine components. Net-metered wind systems must meet Vermont Public Service Board technical specifications.

5. **Emergency Services.**

- For installations of [100 - 500] kW or more, facility site plans, schematics, emergency response plans, and contact information must be filed with and reviewed by the Richmond Fire Department and other emergency responders. Emergency contact information must also be displayed onsite, in a prominent location.
- a. Roof-mounted installations must be installed with adequate clearance to provide safe roof access by firefighters.

6. **Noise.** Audible noise generated by a new or upgraded facility shall not exceed the lesser of [45-60 dB(A)] or 5 dB(A) above the ambient noise level, as measured at the property line.

Note: Noise is a common issue in the review and siting of wind facilities, but other energy facilities – including transmission lines and substation equipment – can also generate audible "corona" noise from electrical discharges. For wind facilities, the American Wind Energy Association (AWEA) model bylaw recommends local standards or a maximum sound level of 60 db(A) as measured at the exterior of an occupied building, but many model ordinances specify 45 to 55 dB(A) at the property line, especially in rural settings where ambient sound levels are more typically around 35 dB(A). Some, as noted above, also specify a maximum increase in sound level over the ambient (background) level. These levels should be reviewed in relation to other adopted community noise standards.

Vermont has yet to enact statewide community noise level standards – noise is left to municipalities to regulate – but for large-scale wind projects the Public Service Board has set a precedent of 45 db(A), averaged over an hour, outside of an occupied residence. Tonal noise and low frequency sound levels and vibrations are often also cited concerns for large installations. Noise impacts decrease with distance, and can often be addressed through increased setbacks or equipment modifications.

7. **Interference.** Energy facility operation must not create conditions that reduce or interfere with public or private television, radio, telemetry, or other electromagnetic communication signals. No new or upgraded facility shall interfere with public safety communication systems.

Resource Conservation

1. **Environmentally Sensitive Areas.** New or relocated facilities, including generation facilities, utility corridors, access roads and accessory structures, must be sited to avoid to the extent technically feasible, very steep slopes (>30%), mapped floodways, fluvial erosion hazard areas, [Class I, II] wetlands and, except for stream crossings, mapped surface waters and riparian buffer areas. In order to minimize the environmental impacts of facility development:
 - b. Existing facilities should be upgraded on site, or within an existing utility corridor, unless it is demonstrated that this is not technically feasible, or that another location will have less environmental impact. Expanded access and utility corridors adjacent to existing corridors are preferred over new locations.
 - c. New high elevation facilities > _____ feet in elevation [Act 250: 2,500 feet] must be designed, managed and regularly monitored to avoid or as necessary mitigate adverse impacts to headwaters and other surface waters, in conformance with state water quality, anti-degradation and stormwater management standards.
 - d. New hydro facilities, including micro-hydro generation, must maintain sufficient flow (run of river) to avoid undue adverse impacts to water quality, local fisheries, and aquatic and riparian habitat.
2. **Farm and Forest Land.** New generation and transmission facilities must be sited to avoid the fragmentation of, and undue adverse impacts to the town's working landscape, including large tracts of undeveloped forestland, open farm land, and primary agricultural soils mapped by the U.S. Natural Resource Conservation Service.
 - Generation and transmission facility development must not result in the clear cutting or fragmentation of large tracts of undeveloped forestland, including core forest habitat areas mapped by the state or municipality. Facilities should be sited and/or clustered at the edge of timber stands and core forest habitat, along property boundaries, and in otherwise disturbed areas.
 - Forest biomass used for energy use must be sustainably managed and harvested in a manner that preserves critical forest habitat and long-term forest health.
 - In agricultural areas, energy facilities, including wind towers, solar panels, and accessory structures, are to be located and clustered on the least productive portion of the site – in nonagricultural areas, along field and forest edges, or on otherwise disturbed areas –to avoid fragmenting open farm fields, and to minimize facility encroachment on primary agricultural soils. Off-site mitigation should be required where necessary to mitigate the impacts of facility development on primary agricultural soils.

- New access roads and utility corridors must be kept to a minimum, shared where technically feasible, and located along forest and field edges, or in otherwise disturbed areas, as necessary to minimize site disturbance, resource fragmentation, and visual impacts, and to limit the introduction of edge habitat and invasive species. Access roads constructed along or within agricultural fields should be at the elevation of the field.
 - A new or expanded generation, transmission and distribution facility on or in the vicinity of an operating farm shall not interfere with regular farming operations or accepted agricultural practices. Facilities located in agricultural areas must be fenced as necessary to prevent livestock access, consistent with landowner agreements. Site restoration after decommissioning must allow for continued agricultural use.
3. **Wildlife.** New or expanded facilities must be designed, constructed and operated without significant impacts to wildlife and necessary wildlife habitat, including core habitat areas, migratory routes and travel corridors, and to state or federally listed rare, threatened and endangered species as mapped or identified through site investigation.
- Baseline data and ongoing monitoring and mitigation should be required as recommended by the Vermont Agency of Natural Resources.
4. **Scenic Resources.** All new generation, transmission, and distribution facilities, including net-metered systems, shall be sited and designed to avoid or, if no other viable alternative location exists, to minimize and mitigate undue adverse visual impacts to the community's scenic resources as viewed from public rights-of-way, public vantage points and adjoining properties, and particularly within or as viewed from designated scenic byway corridors, historic districts, and scenic roads and views mapped by the municipality.
- Utility scale and commercial generation and transmission facilities, including substations, should be upgraded or expanded onsite or within existing utility corridors wherever technically feasible, before new locations are considered, unless it can be demonstrated that the new location will have less visual impact than the current location.
 - New commercial, utility-scale generation and transmission facilities must be sited to avoid [prominent] locations within designated [mapped] scenic areas, including designated scenic byway corridors, historic districts, and locally designated scenic roads and views [scenic overlay districts]. These include: [list] Locations in the vicinity of these areas should be considered only if adverse visual impacts can be mitigated sufficiently to protect their scenic value.
 - Generation facilities, utility lines, accessory structures and access roads must be located outside of or on the periphery of scenic views or viewsheds so that they do not become predominant focal points. The apparent scale or size of the facility may be reduced by locating it as far from public vantage points as possible. The facility must not extend above the background horizon line, as viewed from public vantage points [except as required for operation].
 - Landscaping, screening and selective line burial must be employed as necessary to preserve scenic views of particular importance to the community.

- Ground-mounted facilities must be sited or screened so that they are not highly visible from adjoining properties. Net-metered wind facilities must be sited to minimize their visual impacts on neighboring residential and public properties, as recommended in the Vermont Public Service Department's publication "Siting a Wind Turbine on Your Property." A system rated under these guidelines must score no more than "minimal impact" on residential and public properties.
 - All structures must be designed using context-sensitive, non-reflective materials, unobtrusive colors, and textures that will blend the facility into its natural setting or surrounding environment. Wind facilities are to be finished in a neutral, non-reflective color (e.g., matte gray, off-white or white) so that they blend into a range of sky conditions.
 - Lighting must be the minimum required for safe facility operation, and incorporate energy-efficient, shielded light fixtures that are cast downward to minimize light trespass, glare and sky glow.
 - Large-scale wind projects (200 feet or more in height) must be sited and designed to minimize the need for and amount of facility lighting and marking as required by the Federal Aviation Administration (FAA) – i.e., to incorporate an FAA-approved Obstacle Collision Avoidance System (preferred) or an FAA- approved lighting alternative that results in the least amount of visual disturbance.
 - Energy generation facilities that include multiple installations (e.g., wind and solar farms) should include equipment of uniform design. For wind facilities this includes uniform tower type, height, number of blades, and direction of blade rotation. Towers or solar arrays should be clustered to the greatest extent feasible, while maintaining technical separation distances, to minimize their visual and environmental impacts.
 - Onsite electrical connections should be buried to the extent technically and physically feasible, except where connected to an above ground transmission or distribution system.
 - No energy facility shall be used for purposes of advertising or display. Signs should meet local sign regulations, and be limited to required warning and safety signs and, for larger facilities, signs that identify the facility, the operator, and emergency contact information.
5. **Historic Sites and Structures.** Facility siting, construction and operation shall not cause significant adverse impacts to historical or cultural resources, including the Richmond Village Historic, state or federally listed historic sites and structures, and locally significant cultural resources identified in the Richmond Town Plan. This also includes previously unidentified archaeological sites discovered during site construction or operation.
- Consistent with guidelines published by the U.S. Secretary of the Interior and the Vermont Division for Historic Preservation, new or expanded generation, transmission and distribution facilities must be sited and designed so that they do not:
 - Require the demolition of a historic structure or disturb known or discovered archaeological sites.

- Result in physical or structural damage, a significant visual intrusion, or pose a threat to the use of a historic structure.
 - Result in damage to or the removal of historic landscape features.
 - Create a significant visual intrusion into public views of a historic building, group of buildings, or historic landscape, especially as identified in the municipal plan.
 - Cause visual intrusion into a hillside that serves as a backdrop to a historic site or structure.
 - Create a focal point that would disrupt or distract from elements of a historic landscape.
 - Result in a significant intrusion in a rural historic district or historic landscape with a high degree of integrity.
 - Significantly impair a vista or viewshed from a historic resource that is a significant component of its historic character and history of use.
 - Visually overwhelm a historic setting, by being dramatically out of scale.
 - Isolate a historic resource from its historic setting, or introduce incongruous or incompatible uses, or new visual, audible or atmospheric elements.
- Net-metered systems located within historic districts or mounted on historic structures must meet the Secretary of the Interior's Standards for Rehabilitation, including specific standards for the retention of historic character, and for compatible additions and exterior alterations (e.g., see ITS Number 52, *Incorporating Solar Panels in a Rehabilitation Project*), and the following related standards:
 - The historic character of listed properties and structures is to be retained and preserved. Facility placement and design must not detract from the historic character of the site, or destroy historic landscaping features and materials.
 - Ground installations are preferred to roof-mounted installations on historic structures. To the extent functionally feasible, a ground-mounted system shall be installed in a location that minimize its visibility, such as a side or rear yard, and screened from the view of public rights-of-way and adjoining properties.
 - Roof-mounted systems may be placed on new construction, non-historic buildings and additions.
 - Solar panels should be integrated into the design of new construction or infill projects within the historic district to ensure cohesive design within the district's historic context.
 - Solar panels and other roof- or wall-mounted structures must not be placed on the primary building facade(s), including a street-facing wall or roof, unless there is no other suitable location on the site or structure.
 - Roof- or building-mounted systems on a historic structure must not physically damage the structure, alter its character-defining features (e.g., roof lines, dormers, cupolas and chimneys), or visually obstruct significant architectural features such as overlaying windows or architectural detailing.

- Roof-mounted Installations are to be placed below and behind parapet walls and dormers, on rear-facing roofs, where feasible. Panels are to be mounted flush with and at the same angle as the existing roof surface, parallel with the roofline.
- On a flat roof, a panel or wind systems must be set back from the roof edge as necessary to minimize its visibility. Solar panels must not be visible above the roofline of the primary facade. Panels and mounting systems must be compatible in color to established roofing materials to minimize their visibility.
- System installation systems must be reversible and not damage the historic integrity of the building. Attachment points should be minimized and allow for future system removal.



Resources

Food



Energy

Draft Bylaw Language

Fluvial Erosion Hazard Area Regulations
Conservation PUD Standards
Farm Housing Standards
Renewable Energy Access Standards

FLUVIAL EROSION HAZARD AREA REGULATIONS

The adoption of fluvial erosion hazard area (FEHA) regulations, in addition to flood hazard area regulations, is strongly recommended by the Vermont Agency of Natural Resources –and was almost made mandatory by the Vermont Legislature in 2012, in the wake of Tropical Storm Irene. As it stands an increasing number of state funding program incentives will be tied to the existence of locally adopted FEHA regulations. FEHA regulations are also recommended for consideration in Richmond’s 2010 All Hazards Mitigation Plan, as adopted by the Select Board and approved by FEMA.

There are a number of ways to incorporate fluvial hazard area regulations under local bylaws – depending on where they are located in relation to mapped flood hazard areas and locally required stream setbacks. If they fall within these areas, they can be regulated in association with these features through amended flood hazard bylaws or stream setback requirements that encompass the fluvial erosion hazard area – i.e., the mapped river corridor. Since FEHAs often fall outside of these areas, they are commonly regulated under a separate overlay district. The following draft regulations are based on the format followed for the Planning Commission’s proposed flood hazard area regulations under the new bylaws; and incorporate modified state model language, more recent model language from New Hampshire, and relevant new (2012) statutory definitions under 24 V.S.A. § 4303. Any FEHA bylaw language considered for adoption should be reviewed by Vermont River Management for consistency with state program recommendations prior to adoption.

2.15 Fluvial Erosion Hazard Overlay District

2.15.1 Statutory Authority and Effect

In accordance with the Act (§§ 4424, 4411 and 4414) and 10 V.S.A. Chapter 49, Fluvial Erosion Hazard Overlay District regulations are hereby established for those areas of Richmond within mapped Fluvial Erosion Hazard Areas (FEHAs) that are at risk of damage or loss due to fluvial erosion. As such:

- a) All Development within the Fluvial Erosion Hazard Overlay District, unless specifically exempted from municipal regulation under the Act or as specified under Subsection 2.15.7, requires a Zoning Permit from the Town of Richmond.
- b) Development must comply with the provisions of the Fluvial Erosion Hazard Overlay District and other underlying or applicable zoning districts. If a conflict exists between the provisions of the Fluvial Erosion Hazard Overlay District and another zoning district, the more restrictive shall apply.
- c) The provisions of Section 2.15 shall not in any way limit the need for Development to comply with other relevant sections of these Regulations, including shoreline and flood hazard area regulations under Sections 2.13 and 2.14, or with other municipal, state or federal laws, rules and regulations. Where this section imposes a greater restriction than another regulation, the provisions of this section shall take precedence.
- d) **Warning of Disclaimer of Liability** – These regulations do not imply that land outside of this overlay district or development permitted within this district will be free from fluvial erosion hazards. These regulations shall not create liability on the part of the Town of Richmond or any town official or employee for damages that may result from reliance on or any decision lawfully issued under these regulations.

2.15.2 Statement of Purpose

The purposes of the Fluvial Erosion Hazard Overlay District are to:

- a) Protect public health, safety and welfare, and public and private property, from fluvial erosion hazards;
- b) Implement related goals, policies, and recommendations of the Richmond Town Plan and Richmond “All-Hazards Mitigation Plan” as most recently adopted, and supporting river corridor protection plans;
- c) Address fluvial erosion hazards in the existing built environment, and minimize or prevent future fluvial erosion hazards;
- d) Limit new development within mapped FEHAs to minimize property loss and damage due to fluvial erosion, including hazards resulting from stream bank failure, avulsion and the downstream movement of material and debris;
- e) Avoid or minimize the disruption of commerce, the loss of public infrastructure and tax base, and significant public expenditures and demands on public services that may result from fluvial erosion;
- f) Protect mapped river and stream corridors that are highly sensitive to channel erosion and bank failure due to naturally occurring channel migration and adjustment;
- g) Allow rivers and streams to re-establish and maintain their natural equilibrium, and thereby avoid the need for costly and environmentally degrading stream channelization and bank stabilization measures; and
- h) Manage all development within mapped FEHAs and river corridors so that the town, its residents, and businesses qualify for federal disaster recovery funds, federal and state hazard mitigation funds, and state incentive programs as may be available.

2.15.3 Fluvial Erosion Hazard Overlay District

Fluvial Erosion Hazard Overlay District regulations shall apply to all land and Development within mapped [*highly sensitive*] Fluvial Erosion Hazard Areas (FEHAs), as shown the Fluvial Erosion Hazard Area Map(s) for the Town of Richmond, prepared in accordance with state-accepted stream geomorphic assessment and mapping protocols. The current Fluvial Erosion Hazard Area Map(s) on file and displayed at the Richmond Town Office is hereby incorporated by reference and declared to be part of these Regulations.

2.15.4 District Boundary Determinations

- a) **Administrative Determination** – The Zoning Administrative Officer shall determine if an area proposed for Development is located within a Fluvial Erosion Hazard Area as shown on current Fluvial Erosion Hazard Map(s). In making this determination:
 - 1) The information presented on the Fluvial Erosion Hazard Area Map shall be presumed accurate. The Zoning Administrative Officer shall review information provided by the Applicant under Section 2.14.12 to identify the location of proposed development in reference to district boundaries and other features shown on the Fluvial Erosion Hazard Map. The Zoning Administrative Officer may require additional site information from the applicant as necessary to make this determination.

- 2) If uncertainty exists with respect to the location of a district boundary, the location shall be determined by the Zoning Administrative Officer in consultation with the Vermont Agency of Natural Resources, River Management Program.
 - 3) A jurisdictional determination by the Zoning Administrative Officer shall be issued in writing within 30 days of the date that a complete application, including all requested information, is filed by the Applicant; or within 30 days of the expiration of the time the application is referred to the Agency of Natural Resources, River Management Program under Section 2.15.12.
- b) **Jurisdictional Appeals** – An administrative determination by the Zoning Administrative Officer may be appealed to the DRB within 15 days of the date of issuance. It is the responsibility of the appellant on appeal to document that the proposed activity is not within a mapped Fluvial Erosion Hazard Area, as documented by a qualified fluvial geomorphologist or professional engineer from geomorphic study field data and GIS mapping.
- c) The DRB shall hear the appeal in accordance with Section 4.3.1, and shall make its determination in conformance with the following:
- 1) A copy of the notice of appeal shall be forwarded to the Vermont Agency of Natural Resources River Management Program, accompanied by a written request for a formal boundary determination from the River Management Program in accordance with Section 2.15.12.
 - 2) The Applicant shall information for review by the DRB and the River Management Program as necessary to document that the proposed development is located outside of the mapped Fluvial Erosion Hazard Area.
 - 3) For purposes of these Regulations, a letter of boundary determination from the Vermont Agency of Natural Resources River Management Program shall constitute proof of the location of an existing or adjusted Fluvial Erosion Hazard Area boundary for use in establishing whether the proposed Development is within or outside of the Fluvial Erosion Hazard Area.
 - 4) A jurisdictional determination by the DRB under this section may be appealed to the Environmental Division of Superior Court within 30 days of the date of issuance.

2.15.5 Definitions

[Note: These definitions include both definitions found in VANR's model bylaws, and related definitions included in 24 V.S.A. Ch. 117 as amended in 2012.]

For the purposes of Fluvial Erosion Hazard Area regulation under Section 2.15, the following definitions shall apply in addition to the definitions in Article 5, and shall supersede Article 5 definitions if present in both sections.

Avulsion – The geomorphic process in which an active stream channel shifts location or creates a new active channel. This process can occur very rapidly during a catastrophic flow event, or more gradually over time.

Channel (Stream, River) – The area of a stream that contains continuously or periodic flowing water that is confined by banks and contained in within a defined streambed.

Channel (Bank full) Width – The width of a stream channel when flowing at a bank full discharge – the water stage that first overtops its natural banks. This flow in Vermont, on average, represents a 1.5-year storm event.

Development – For purposes of fluvial hazard area regulation, the construction, reconstruction, relocation, enlargement or structural alteration of a building, other structure or supporting infrastructure including utilities, roads and driveways and parking areas; any mining, dredging, filling, grading, paving, excavation or other alteration of the land surface; and any outdoor storage of equipment or materials.

Equilibrium (State of, Condition) – The width, depth, meander pattern, and longitudinal slope of a stream channel that occurs when water flow, sediment, and woody debris are transported by the stream in such a manner that it generally maintains its dimensions, pattern, and slope without unnaturally aggrading or degrading the channel bed.

Fill – Any placed material that changes the natural grade or contour, increases the elevation, or diminishes the flood storage capacity of a site.

Fluvial Erosion – The erosion or scouring of stream beds and banks by the action of water which, as accelerated during high flow conditions, can be harmful to life, property and infrastructure.

Fluvial Erosion Hazard Area (FEHA) – A stream channel and the area adjacent to the channel that is subject to fluvial erosion processes or other channel adjustments, as delineated on the current Fluvial Erosion Hazard Area Map(s) for the municipality. See also River Corridor Protection Area.

Improvement – Any reconstruction, enhancement, or addition to a structure or supporting infrastructure, including retaining walls, utilities, roads, driveways, parking areas and other impervious surfaces. For the purposes of these regulations, this definition excludes the improvement of a structure to comply with existing municipal or state health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions.

River Corridor – Land area adjacent to a river or stream that is required to accommodate the dimensions, slope, planform, and buffer of a naturally stable channel and that is necessary for the natural maintenance or natural restoration of a dynamic equilibrium condition and to minimize fluvial erosion hazards, as delineated by the Vermont Agency of Natural Resources in accordance with river corridor mapping protocols and procedures.

River Corridor Protection Area – The area within a delineated river or stream corridor subject to fluvial erosion that may occur as a river establishes and maintains the dimension,

pattern, and profile associated with its dynamic equilibrium condition and that would represent a hazard to life, property, and infrastructure placed within the area. See also Fluvial Erosion Hazard Area.

Stream (River) – The full length and width, including bed and banks, of any watercourse (stream, river, brook, branch) which experiences perennial flow. For purposes of these regulations, “stream” [also includes any intermittent stream with a distinct stream channel, but] excludes constructed drainage ways, water bars, swales, and roadside ditches.

Stream (River) Bank – The natural physiographic feature that contains a stream within its channel. The stream bank is distinct from the streambed, which is normally wetted and provides a substrate that supports aquatic organisms.

Top of Bank (or Slope) – The height or vertical elevation along a stream bank where an abrupt change in slope is evident, and the stream at or above its average annual high water stage is able to overflow the bank and enter its floodplain. For a steep-banked stream that has little or no floodplain, the top of bank may be the same as the **Top of Slope** – the break in slope adjacent to the stream bank.

2.15.6 Required Permits and Approvals

A Zoning Permit issued by the Zoning Administrative Officer is required for all Development within the Fluvial Erosion Hazard Overlay District except as exempted under 2.15.7. Development that requires conditional use approval by the DRB under Section 2.15.10 must be approved by the DRB prior to the issuance of a Zoning Permit. All Zoning Permits issued shall include a written statement that all other necessary local, state and federal permits must be obtained, and copies filed with the Zoning Administrative Officer, before site work, installation or construction work may begin.

2.15.7 Exempt Uses and Activities

The following uses or activities are exempt from the requirements of this overlay district; however the Zoning Administrative Officer may require documentation that other required permits and approvals have been obtained and are on file at the Richmond Town Office:

- a) Normal maintenance and repair of an existing structure that involves no improvements, additions, expansions or relocations within the district.
- b) Normal maintenance and repair of existing utilities and infrastructure (e.g., water and wastewater systems, driveways, roads, bridges and culverts, and stormwater drainage systems), that involve no improvements, extensions or relocations within the district.
- c) At-grade lawns, gardens and landscaping located outside of required riparian buffer areas that do not include or involve grading, fill, terracing, retaining walls or other structures.
- d) Accepted Management Practices (AMPs) for forestry and silviculture, as defined by the Commissioner of Forests, Parks and Recreation, excluding structures, landing and storage areas.
- e) Accepted Agricultural Practices (AAPs) as defined by the Vermont Agency of Agriculture, Food, and Markets; however, no new or expanded farm structures, or manure, fertilizer or pesticide storage structures shall be constructed within the Fluvial Erosion Hazard Area Overlay District as specified under Section 4.07 the AAPs.

- f) Power generation, transmission and telecommunications facilities regulated by the Vermont Public Service Board under 30 V.S.A. § 248.
- g) The replacement, relocation or upgrade of an existing water or wastewater system serving an existing structure or use, as approved by the Vermont Department of Environmental Conservation.
- h) State-owned roads and infrastructure, including improvements, replacements, relocations and new construction.

2.15.8 Prohibited Uses and Activities

The following uses and activities are specifically prohibited within the Fluvial Erosion Hazard Overlay District:

- a) New development, including new principal and accessory structures, additions, septic and water supply systems, and other infrastructure and utilities, except as specified under Sections 2.15.9 and 2.15.10.
- b) Junk and salvage yards.
- c) The storage of floatable materials, chemicals, fertilizers, pesticides, explosives, flammable liquids, and other toxic or hazardous materials.
- d) Outdoor storage of equipment and materials, except as accessory and incidental to an existing residential use.
- e) New paved parking areas and other paved surfaces.
- f) New fuel and propane storage tanks.
- g) Fill, except as necessary to elevate existing structures above the base flood elevation.

2.15.9 Permitted Uses Requiring Administrative Review

The following development, as allowed within the underlying zoning district, requires administrative review and a zoning permit issued by the Zoning Administrative Officer to confirm that it meets applicable district standards under Section 2.15.11:

- a) The removal of a structure or building in whole or in part from within the overlay district.
- b) Minor additions or improvements to an existing principal structure which, after the effective date of these regulations (*date*):
 - 1) Do not decrease the structure's existing setback distance from the stream channel, as measured horizontally from the nearest point of the structure to the top of bank or top of slope as applicable; and
 - 2) Cumulatively, in total, increase the structural footprint within the overlay district by no more than 500 square feet.
- c) New or replacement accessory structures, or additions or improvements to existing accessory structures within the overlay district that are not intended for human occupation and which, after the effective date of these regulations (*date*):
 - 1) In total have a combined footprint area of no more than 500 square feet;
 - 2) At a minimum, do not decrease the setback distance from the stream channel established by the existing structure nearest to the stream channel on the lot, as measured horizontally from the nearest point of the structure to the top of bank, or top of slope as applicable.

- 3) Are located within 50 [100] feet of the existing principal structure.
- d) Expansion or relocation of an at-grade, unpaved parking area to serve an existing or allowed use that, as expanded or relocated, has a total area of no more than 500 square feet within the district.
- e) Unpaved pedestrian or recreation paths that do not exceed five feet in width and do not require or involve grading or filling.
- f) A temporary or periodic use or activity that does not include or require permanent structures or infrastructure.
- g) Replacement or relocation of a propane or fuel tank to serve an existing structure or use.
- h) Minor fill or alterations that are incidental to landscaping and gardening activities and do not alter site grades, elevations, contours or drainage patterns.

2.15.10 Conditional Uses Requiring DRB Review

- a) **Conditional Uses** – The following development, including uses and activities as allowed within the underlying zoning district, is subject to conditional use review and approval by the DRB under Section 4.3.7 and the requirements of this section prior to the issuance of a zoning permit:
 - 1) Site work, including grading or excavation [and removal of vegetation] that alters the grade or drainage pattern of the land.
 - 2) Fill as necessary to elevate an existing structure above the base flood elevation as required within Special Flood Hazard Areas under Section 2.14, or as otherwise authorized by the state.
 - 3) Replacement or relocation of a nonconforming principal structure, or a nonconforming accessory structure with a footprint greater than 500 square feet.
 - 4) Infrastructure and utility replacements, relocations, extensions or improvements as necessary to serve existing structures and uses.
 - 5) Roads, driveway, bridge or culvert relocations, extensions or improvements.
 - 6) New or improved at-grade parking areas that, in total, exceed 500 square feet in area within the district, as necessary to serve existing or allowed structures and uses.
 - 7) Public facilities which are functionally dependent on their proximity to water.
 - 8) Outdoor recreation facilities, excluding permanent structures.
 - 9) Stream crossings, stream bank stabilization, stream channel restoration and flood control projects.
 - 10) Stormwater management projects and improvements.
 - 11) Temporary structures as approved for special or periodic events which are removed immediately following each event.
- b) **Review Standards** – In addition to conditional use requirements and standards under Sections 4.3.7 and 4.5, for development within this district the DRB must also find that:

- 1) No reasonable alternative location for the proposed development exists outside of the Fluvial Erosion Hazard Overlay District;
 - 2) The proposed development meets the requirements of Section 2.15.11 of these regulations;
 - 3) The proposed development will not increase the susceptibility of the property to loss or damage from fluvial erosion;
 - 4) The proposed development will not increase the risk of damage to other properties or public infrastructure due to fluvial erosion, including damage from material or debris that may be swept into the stream channel during high flow events; and
 - 5) The proposed development will not cause an undue burden on public services and facilities, including roads, bridges, culverts, and emergency services, during and after fluvial erosion events.
- c) **Conditions of Approval** – Conditions of DRB approval for development within this overlay district may include, but not be limited to, one or more of the following preventative or corrective measures on that portion of the property within the FEHA, as necessary to accommodate the proposed development and minimize existing or potential fluvial erosion hazards:
- 1) The establishment through natural regeneration of fully vegetated riparian buffer areas no less than 50 feet in width as measured from the top of bank, to slow flood waters and stabilize soils and surface materials.
 - 2) Additional plantings of native riparian vegetation equivalent in area to that of impervious surfaces located on the lot within the district.
 - 3) Removal of impervious surfaces.
 - 4) Stormwater management improvements that maximize onsite stormwater infiltration and minimize stormwater runoff from the site.
 - 5) Stream channel and bank stabilization or restoration measures as recommended by the River Management Program or a qualified fluvial geomorphologist or professional engineer.
 - 6) Removal of existing barriers to flow, including channel constructions, berms, and other types of impoundments, as recommended by the River Management Program or a qualified geomorphologist or professional engineer.

2.15.11 Development Standards

All development within the Fluvial Erosion Hazard Overlay District, unless exempted from these regulations under Section 2.15.7 above, shall meet the following standards, as applicable to the proposed use or activity:

- a) New development may be located within the Fluvial Erosion Hazard Overlay District only if it cannot reasonably be located outside of the district on the same lot, or on another lot in common ownership.
- b) All development within this district shall be set back from the stream channel to the maximum extent physically and functionally feasible. At minimum all development,

except for that which is functionally dependent on its proximity to water, shall meet the more restrictive of the following as applicable:

- 1) Setback requirements under Section 2.12 Shoreline Protection Overlay District;
 - 2) The minimum setback distance established by an existing structure on the lot nearest the stream channel. No development shall decrease the setback distance from the stream bank as measured horizontally from the nearest point of the existing structure to the top of bank (or slope) as appropriate.
- c) Site work, including excavation, grading and the removal of vegetation, shall not increase the potential for channel avulsion within the FEHA.
 - d) Fill is allowed within the FEHA only to elevate an existing structure above the base flood elevation, as required under Section 2.13, or as otherwise authorized by the state for structures or activities allowed within the FEHA, including stream crossings. Fill shall not decrease the existing distance between the structure and the top of bank.
 - e) New stream crossings within the FEHA shall be allowed only if it is determined by the Development Review Board that a new crossing is necessary for routing or to provide public or emergency vehicle access, and that there are no other viable routes or locations for a stream crossing outside the FEHA or within an existing utility or road corridor in the FEHA. Stream crossings shall be located and designed to minimize fluvial erosion and flooding hazards both up- and downstream from the crossing area.
 - f) Bridges and culverts shall be located, designed, sized, installed and regularly inspected and maintained to minimize both fluvial erosion and flooding hazards.
 - g) Utilities, to the extent physically and functionally feasible, shall be located within shared utility and road corridors that are sited to minimize their footprint or extent within the FEHA. Utility lines and connections serving individual properties in this district, including water, sewer, power, telephone, and cable lines, shall be buried.
 - h) All motor vehicles and recreational vehicles parked or stored within this district shall be registered and road-ready.
 - i) Documentation that all municipal, state and federal permits and approvals have been obtained shall be required before the start of construction, or prior to the issuance of a certificate of occupancy under Section 4.2.2.

2.15.12 Administration

- a) **Application Submission Requirements** – In addition to other required application materials and fees, applications for development within the Fluvial Erosion Hazard Overlay District shall include the following:
 - 1) A written description of the type and purpose of the proposed development, to include an explanation of why the development must be located within the mapped

FEHA rather than in an alternative location outside of the FEHA, and a description of proposed prevention, correction or mitigation measures intended to avoid or minimize fluvial erosion hazards.

- 2) A location map showing the property in relation to local topography, drainage and surface waters, Fluvial Erosion Hazard, Shoreline and Flood Hazard Overlay District boundaries, adjoining properties, and the nearest public road.
- 3) A site plan of the property, drawn to scale that clearly shows: surface waters, wetlands and riparian buffers; all overlay district boundaries; areas of proposed site disturbance, including pre- and post-development grades and drainage mapped at 2-foot contour intervals; and the locations of all existing and proposed structures and improvements, including building footprints, parking areas, roads, driveways, other impervious surfaces, utilities and infrastructure, and associated rights-of-way and easements.
- 4) Measurements, as indicated on the site plan, of the shortest horizontal distance from the proposed development to the mapped FEHA boundary, the centerline of the mapped stream channel, the top of bank (or slope) of the stream channel, and the nearest public road right-of-way.
- 5) Measurements, as indicated on the site plan, of the area(s) of impervious surface within the mapped FEHA.
- 6) A project review sheet issued by the state's Regional Permit Specialist that identifies required state and federal permits and approvals.
- 7) Other information deemed necessary by the Zoning Administrative Officer, the DRB, or the Vermont River Management Program to determine project conformance with district requirements, to be provided and paid for by the applicant.

b) Application Referral Requirements –

- 1) The Zoning Administrative Officer shall refer all applications for development determined under Section 2.14. to be within the Fluvial Erosion Hazard Overlay District to the Vermont Agency of Natural Resources River Management Program, in accordance with 24 V.S.A. § 4424. No municipal permit or approval shall be issued until comments and recommendations have been received from the state, or thirty days have elapsed from the date of referral, whichever is sooner.
- 2) If the applicant is seeking approval for development that involves the alteration or relocation of a watercourse, copies of the application shall also be submitted to adjacent communities, the Stream Alteration Engineer at the Vermont Agency of Natural Resources, and the Army Corps of Engineers. A Zoning Permit may be issued only following receipt of comments from the Vermont Agency of Natural Resources, or the expiration of 30 days from the date the application was mailed to the Vermont Agency of Natural Resources, whichever is sooner.

- 3) State comments and recommendations shall be incorporated as applicable in written municipal findings and determinations.
- c) Certificates of Occupancy – The applicant shall submit an as-built plan for development in this overlay district, and document for development that all required municipal, state and federal permits have been obtained, and that the development has been completed as approved, prior to the issuance of a certificate of occupancy by the Zoning Administrative Officer under Section 4.2.2.
 - d) Zoning Administrative Officer Records – The Zoning Administrative Officer shall properly file and maintain a record of:
 - 1) All zoning permits, DRB approvals, waivers and variances issued for development within the Fluvial Erosion Hazard Overlay District, as covered by these regulations;
 - 2) The location, after the effective date of these regulations, of permitted development and improvements within the overlay district, and the total area of existing and permitted impervious surfaces on lots developed under these regulations, for consideration in preparing updated geomorphic assessments, fluvial erosion hazard area maps and river corridor protection plans.

CONSERVATION PUD STANDARDS

This language is suggested as a partial substitute for the existing PUD provisions under 3.6.7 for the R-3 and R-10 zoning districts to 1) specify a conservation design process that gives priority to resource protection within subdivision layout and design and to 2) allow for the creation of separate, unsubdivided “conserved lots” for designated open space. These could also be applied more specifically within a separate forest or farm overlay district that also serves to limit and guide development on existing lots.

3.6.7 Conservation PUD Standards for the R-3 and R-10 Zoning Districts

A Conservation PUD is required for any subdivision in the Rural-3 or Rural-10 district that subdivides a parcel of land of 10 [25] or more acres, or that results in the creation of four or more lots, including a retained lot, from any parcel in existence as of [effective date].

a) **Purpose** - The purposes of a Conservation PUD are to:

- i. Maintain Richmond’s traditional settlement pattern of compact development surrounded by open, largely undeveloped rural land.
- ii. Preserve the rural and scenic character of the town’s rural zoning districts, including undeveloped forested slopes and ridgelines, farmsteads, open fields, and significant natural, historic and scenic resources.
- iii. Provide flexibility in subdivision design to ensure that new development is integrated into the agricultural and forested landscape.
- iv. Minimize the parceling [parcelization] and fragmentation of the town’s working farm and forest land [and sand and gravel deposits].
- v. Advance agricultural as the highest and best use of productive farmland and primary agricultural soils.
- vi. Maintain limited access to upland forests as necessary for sustainable forestry, wildlife and water resource management and passive outdoor recreation.
- vii. Avoid the subdivision and fragmentation of Primary Conservation Areas that are not physically suited for development.
- viii. Minimize, to the greatest extent physically feasible, the subdivision, fragmentation, and adverse impacts of development on Secondary Conservation Areas.
- ix. Clearly identify Primary and Secondary Conservation Areas, including “conserved lots” on master [design] plans and subdivision plats, and in associated legal documents, as conserved open space.
- x. Maintain conserved open space under single or common joint ownership and management.

b) **Applicability**– A Conservation PUD must meet applicable subdivision and PUD standards, as well as the standards for Conservation PUDs under 3.6.7. The overall density of development allowed within a Conservation PUD shall be determined as specified under 3.6.4.

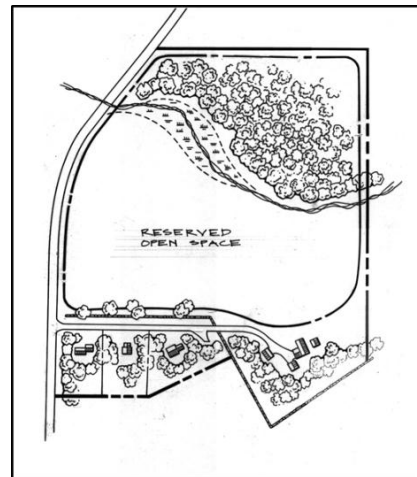
c) **Conservation Areas** – For purposes of these regulations:

[Note: These areas should be reviewed in relation to local conservation priorities and the inventory and mapped information available to applicants and the DRB to support and

guide the conservation design process. Those areas intended for conservation should be very clearly defined, identified and/or mapped in advance – with the understanding that field verification may also be required.]

- ii. **Primary Conservation Areas** are those conservation areas to be excluded from development and designated as open space under (e), including mapped flood and fluvial erosion hazard areas, surface waters, [Class 1 and 2] wetlands and associated setback and buffer areas, and areas of very steep slope (>30%).
 - iii. **Secondary Conservation Areas** are those conservation areas that, to the maximum extent feasible, shall be excluded from development as designated as open space under (e), including areas of steep slope (15% to 30%), open fields, primary agricultural soils, large forested blocks (25+ [50+] acres), critical wildlife habitat and travel corridors, water supply source protection areas, and ridgelines and hilltops visible from public vantage points, including public roads.
- d) **Conservation PUD Design Process** – A conservation subdivision [development] plan is required for all Conservation PUDs that is designed according to the following ----step process, in order to give priority to primary and secondary conservation areas in subdivision design and layout:

- i. **Step 1. Designate Open Space** – Identify and delineate all primary and secondary conservation areas to be excluded from development and designated as open space under subsections (c) and (d). Other site features of significance, including existing trail networks, logging and farm roads, and historic sites and structures (e.g., cellar holes, stone walls, and fences lines) should be identified and incorporated in subdivision design.



- ii. **Step 2. Identify Potential Development Areas** –Identify potential development areas to exclude primary conservation areas and to minimize, to the extent feasible, development encroachment within secondary conservation areas.
- iii. **Step.3 Locate Building Envelopes** – Identify proposed building envelopes (sites) within potential development areas, in accordance with Section 3.5.6 and open space and resource conservation standards under subsections (e) through (g) below. Building envelopes shall also be delineated for existing principal and historic buildings or complexes (e.g., farmsteads) on the property. A buffer at least 100 feet wide shall be maintained between building envelopes and adjoining conservation areas unless modified or waived by the DRB as necessary to address physical site limitations and development constraints.
- iv. **Step 4. Lay Out Infrastructure** – Lay out access roads, driveways and utility lines serving proposed building sites to avoid primary conservation areas, and to

minimize the fragmentation of and encroachment within secondary conservation areas according to applicable resource conservation standards under subsections (e) through (g).

v. **Step 5. Draw Lot Lines** –Draw contiguous building lot lines to incorporate building envelopes, to avoid the subdivision (parcelization) and fragmentation of primary conservation areas and, to the extent feasible, of secondary conservation areas, and to meet applicable resource conservation standards under subsections (e) through (g). Lot lines shall be drawn to minimize building lot area, and to maximize the area of designated open space incorporated within conserved lots. Accordingly, within a Conservation PUD: [*Note: a maximum building lot size is generally recommended for this purpose.*]

- 1) Building lots shall not exceed one (1) acre in the R-3 District and two (2) acres in the R-10 District unless modified or waived by the DRB as necessary to address physical site limitations and development constraints (e.g., to accommodate onsite water and septic systems).
- 2) Conserved (open space) lots may vary in area and configuration as necessary to encompass conserved resources, accommodate their intended use, and to maintain contiguous tracts of open space within and beyond subdivision boundaries.

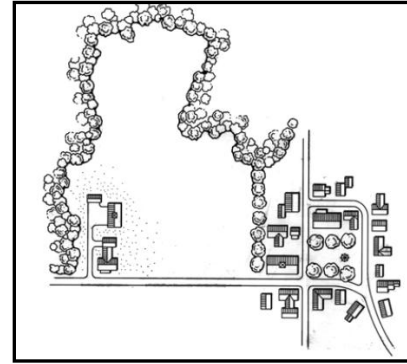
e) **Open Space Requirements** - The area, location, size and shape of conserved areas set aside as designated open space shall be approved by the DRB, in accordance with the following:

- i. A minimum of 60% of the project area shall be designated as open space.
- ii. Designated open space shall incorporate primary and secondary conservation areas and, to the maximum extent feasible given existing site features and development constraints, be included within conserved lots separate from designated building lots, to be held under single or joint ownership and management.
- iii. The location, shape, size and character of designated open space shall be suitable for its context and intended use or purpose. A single, contiguous area of open space is preferred unless the DRB agrees that multiple, non-contiguous open space areas would better protect the specific resources or features of a particular property and/or allow for a better overall development pattern on the site.
- iv. Designated open space shall be located to conform with and extend conservation areas sharing similar characteristics or natural features and resources on adjacent parcels.
- v. Provisions shall be made to enable open space designated for a specific or restricted use or purpose (e.g., agriculture, forestry, recreation, wildlife habitat, source protection areas, etc.) to remain suitable for that use or purpose. Management plans may be required by the DRB as necessary to ensure the long-term protection and management of designated open space areas, including conserved lots.
- vi. Road rights-of-way, driveway and utility easements, and parking areas shall not be located within secondary conservation open space areas, unless the applicant can demonstrate to the satisfaction of the DRB that there are no other functional

locations, and they will not fragment, disrupt or detract from the values for which the open space is intended. Wastewater treatment and stormwater management facilities that require, incorporate or establish open space areas, may be counted as open space.

- vii. Access to conserved farm and forest land, including existing or proposed farm, logging, forest or park service roads, and to existing and planned public trails and recreation areas, shall be incorporated in conservation subdivision design.
 - viii. Unpaved walking paths or recreation trails may be located within designated open space areas to access recreation areas and conserved resources, but must be designed and located to avoid undue adverse impacts to conserved resources.
- f) **Preservation of Open Space** – Designated open space areas within Conservation PUDs shall be conserved in accordance with the following principles:
- i. If the majority of the parcel to be subdivided and developed includes currently productive agricultural land, the acreage set aside shall be of a quality, size and configuration that makes continued agricultural use possible unless the DRB determines that doing so would result in undue adverse impacts to primary conservation areas identified on the parcel.
 - ii. If the parcel to be developed is largely forested, forest fragmentation, wildlife habitat and travel corridor disturbance and site clearing for development should be kept to a minimum, and the acreage set aside should be of a quality, size and configuration necessary for sustainable long-term forest management and to maintain contiguous tracts of unbroken forest habitat.
- g) **Preservation of Farmland** – Building lots and envelopes shall be configured to conserve primary agricultural soils and productive fields or pastures to the greatest extent feasible. Such lands incorporated in conservation subdivision design shall be designed to do one or more of the following:
- i. Preserve working farmland by locating building sites, access roads, and utilities along the edges of fields, pastures and woodlots. Building locations within or adjacent to tree lines and wooded field edges are required. When such siting is not possible, building lots shall be clustered and located on the least productive land. Roads, driveways and utilities serving the subdivision should share corridors that follow existing site features such as tree lines, walls, fence lines and hedgerows, between farm fields and proposed building sites. Building envelopes shall be located to provide a vegetated buffer at least 100 feet in width between agricultural and residential or other nonagricultural uses.
 - ii. Replicate a traditional Vermont farmstead complex, characterized by a variety of building scales reminiscent of the appearance of a principal dwelling and a mix of barns and other agricultural buildings located within a compact area surrounded by open farmland.

- iii. Replicate a traditional Vermont hamlet, characterized by a concentration of primarily residential structures, located at a road intersection or around a central green, bounded by farm or forest land. Principal buildings shall be oriented towards roads, one another and/or the common green.



- h) **Preservation of Forestland** – Conservation PUDs to be located in largely forested areas shall be designed to maintain the appearance of an unbroken forested canopy outside of the development area and to blend new development into the landscape as viewed from off-site. Lots, building envelopes, road and utility corridors, and driveways shall be configured to minimize fragmentation of forest blocks, conserve critical wildlife habitat and travel corridors, and to provide for the sustainable, ongoing management of forest resources to the greatest extent feasible. PUDs located in forested areas shall substantially comply with the following:
 - i. Building lots must be clustered and located near existing roads, outside of wildlife travel corridors and crossing areas. Building locations near, but not highly visible from, existing roads are required.
 - ii. Building envelopes shall be located downslope from prominent ridgelines and hilltops, so that site clearing and buildings do not extend up to or above the tree canopy or ridgeline as viewed from a public road, or trail or other public vantage point.
 - iii. Building lots, lot coverage and envelopes shall be minimized.
 - iv. Access roads, driveways and utilities must share corridors that are sited to avoid fragmenting core forest areas, critical wildlife habitat and travel corridors. Development access roads, utilities and driveways shall not extend beyond designated building lots.
 - v. A forested buffer at least 100 feet in width shall be maintained around the perimeter of development areas.
 - vi. Clearing at the edge of public roads shall be limited to the minimum necessary to create a driveway or private road entrance with adequate sight distance and proper drainage control.
 - vii. Clearing for building sites, parking and lawn areas, access roads and utilities is limited to designated building envelopes and shared road and utility corridors.
 - viii. Site clearing outside of a building envelope to create a narrow view corridor between trees or beneath the existing tree canopy is limited to selective pruning of lower tree branches and shrubs and the removal of small (<4" diameter at breast height) and dead trees.
 - iii. Landscaping within cleared areas shall incorporate existing vegetation and/or feature additional woody vegetation planted primarily in undisturbed, naturalistic groupings. Landscaping shall primarily consist of native species. Landscaping must comply with Section 3.2.2., Landscaping and Screening.
 - iv. Buildings located on forested slopes shall be sited and constructed to minimize their visibility from public vantage points, through the use of setbacks, natural screening, and natural, non-reflective building materials and colors that blend into the

surrounding landscape. Outdoor lighting shall be mounted, shielded and directed downward so that it is not visible beyond the building envelope.

- i) **Preservation of Rural Character** –Conservation PUDs shall be designed to be compatible with the rural character of the R-3 and R-10 Districts. To this end, PUDs shall comply with the following:
- i. Existing vegetation patterns shall be preserved outside the building envelope to the greatest extent feasible. Maintenance of open fields and pastures may be required as a condition of approval. Limits may be placed on clearing outside building envelopes as a condition of approval.
 - ii. Development shall be designed to fit into the existing landscape to the greatest extent feasible by following natural features such as landform, water features and/or the shapes of fields or pastures, or woodlots.
 - iii. Existing site features such as hedgerows or fence lines shall be preserved to the greatest extent feasible, and incorporated into the development plan. Preservation of structures of exemplary historic, aesthetic, or agricultural value may be required as a condition of approval.
 - iv. Signs used to identify a residential development are prohibited.
 - v. Street lighting shall only be installed where site-specific safety conditions warrant. The DRB may place conditions on the type, location, mounting height, intensity and design of any outdoor lighting as necessary to limit the visibility of outdoor lighting off the property, and light pollution including sky glow, light trespass, and glare.
 - vi. Natural materials and muted colors that blend into the background (e.g., not stark white) should [shall] be used for visible engineering structures. Such structures may include curbing, culverts, walls, roads, parking areas, and outlet structures. An engineered structure does not include principal or accessory structures.

FARM HOUSING STANDARDS

Examples of farm housing ordinances and bylaws from other parts of the country and from Vermont (e.g., Hinesburg, South Hero) were reviewed in developing this language. In all cases, farm housing is defined as accessory to a principal agricultural use in order to accommodate on-farm housing – in particular farmworker housing – and to avoid the need to subdivide residential lots from farm parcels under zoning district requirements that could require taking more farmland out of production than necessary to accommodate farm housing. In some areas (rare in Vermont) farm housing is the only type of housing allowed within an exclusive agricultural district.

As drafted this allows for both farm dwellings (owner occupied) and farmworker housing on an active farm without the need to subdivide the farm parcel, subject to conditional use review by the DRB. Site plan review may be also be appropriate – but could result in a legal challenge as applied to a single or two-family farm dwelling. Building envelope requirements are intended to reflect zoning district building lot requirements, in the event that the farm ceases operations, and farm housing is subdivided and/or converted to a principal or nonfarm use. Some regulations specify that only mobile homes may be used to house farmworkers onsite, to be removed from the property if and when farming operations cease – also an option, but this may not provide sufficient housing, e.g., for groups of seasonal farmworkers, farm interns, etc. Some out-of-state ordinances also include tents and RVs (e.g., farm tent camps) in the definition of farm housing, especially to house large numbers of temporary seasonal or migrant farmworkers – but I don't know that this is applicable in Vermont.

Section 3.8._ Farm Housing

For purposes of these regulations, farm housing, including a farm dwelling or farmworker housing as defined under Article 5, shall be considered accessory to an active agricultural operation that is the principal use of the property. Farm housing may be allowed subject to conditional use [site plan] review and approval by the DRB under Section 4.3 and the following standards:

- a) Farm housing shall be located on a farm parcel [of 10 acres or more], or immediately adjacent to and in the same ownership as the farm parcel.
- b) No more than one single- or two-family farm dwelling shall be allowed per active farming operation under the provisions of this section. Farmworker housing shall be allowed only as necessary to accommodate the total number of seasonal and year-round farm employees specified in the application.
- c) No land subdivision or subdivision approval under Sections 3.5 and 4.3 is required, however farm housing and associated accessory structures and parking areas must be located within a designated building envelope approved by the DRB that meets the following standards:
 - i. The building envelope shall be located within or adjacent to an existing farmstead (compact cluster of farm buildings) where one exists, and have frontage on [or share a common access to] a public highway.
 - ii. The building envelope shall not exceed the minimum residential lot size for the district in which it is located or one [two] acre[s], whichever is the lesser.

- iii. The building envelope shall be sited and configured to exclude required setbacks areas, mapped flood and fluvial erosion hazard areas and to avoid or as necessary minimize impacts to farm fields, and especially to primary agricultural soils.
 - iv. For farmland under an agricultural easement through the Vermont Housing Conservation Board, the building envelope shall conform to the areas identified on the farm plan approved by the VHCB that have been reserved for farm labor housing, and for existing or future house site exclusions.
 - d) Farm housing and associated accessory structures and uses shall:
 - i. Be located within designated building envelopes approved by the DRB.
 - ii. Meet setback and height requirements for the zoning district(s) in which they are located.
 - iii. Comply with all applicable federal, state and municipal health and safety regulations, and fair housing requirements.
 - iv. Be maintained by the farm owner or operator in such a manner so as not to constitute a zoning violation or a health or safety hazard.
 - e) Off-street parking for farm housing shall be provided within a designated building envelope or shared parking area on the property as follows:
 - i. Parking for farm dwellings shall meet minimum parking requirements for residential dwellings under Section 3.2.4.
 - ii. Parking for farmworker housing shall be provided at a ratio of one parking space per four farmworkers housed on the property.
 - f) In addition to application requirements under Section 4.4, the application for farm housing shall:
 - i. Include a site plan, drawn to scale, that shows the type(s) and location(s) of farm housing and associated building envelopes in relation to other structures, lot lines, parking areas, road rights-of-way, and mapped primary agricultural soils in the vicinity of the proposed housing;
 - ii. Document that there is sufficient potable water supply and wastewater system capacity to serve proposed farm housing;
 - iii. For farmworker housing, specify the number of farm employees to be housed, and
 - iv. Include an affidavit, signed by the applicant, that farmworker housing will be used only to house persons employed for agricultural purposes and their families.
 - g) Farm housing shall be allowed only as accessory to an active farming operation to be retained in common ownership, as specified in the conditions of DRB approval and the zoning permit issued by the Zoning Administrative Officer. Farm housing may be subdivided or converted to a principal, nonfarm use only if farming operations cease and it is found to meet current municipal regulations, including use, lot, density and dimensional requirements for the district in which it is located, as applicable to a principal [or grandfathered] structure and use. Municipal permits and approvals shall be obtained prior to subdivision, conversion to, or conveyance as a principal structure or use.

Definitions:

These include variations on some state terms and definitions, as noted.

Farm Dwelling – A single or two-family dwelling that is occupied by the owner or operator of an active agricultural operation and is located on or immediately adjacent to the farm parcel. For purposes of these regulations, a farm dwelling is considered accessory to the principal agricultural use of the property. See also Farm Housing.

Farm Housing – A farm dwelling or farmworker housing that is accessory to an active farming operation, and is located on or immediately adjacent to a farm parcel in common ownership.

Farm Parcel (Lot) – A parcel of land that is in or has been conserved for agricultural use as part of an active agricultural operation.

Farmstead – A compact cluster [complex] of farm structures, including farm housing, located on or immediately adjacent to a farm parcel.

[Note: Farmstead is a common term for a farm or, in this context, farm buildings. VHCB, for purposes of inclusion or exclusion in configuring farmland conservation/ easement areas, defines a farmstead complex to include the house, farm buildings and related infrastructure. The farmstead, including existing residences, is generally (but not always) excluded from an easement area. House sites or homesteads, but not farm buildings and farmworker housing as defined by the state (below), are also excluded under the state's Use Value Appraisal Program for agricultural properties.]

Farmworker (Employee) – An individual employed by a farm owner or operator for farming operations. This includes a seasonal, part-time or full-time farm employee [and, for purposes of these regulations, may also include a farm intern, student or apprentice].

[State: "An individual employed by a farm employer for farming operations (9 V.S.A. § 4469a).]

Farmworker Housing – Housing controlled and provided by the owner or operator of an active farming operation solely for occupancy by seasonal or year-round farm employees and employee households [for no payment other than the farm employee's labor]. For purposes of these regulations, farmworker housing is considered accessory to the principal agricultural use of the property, and may consist of an accessory apartment, a single, two-family or multi-family dwelling, or group living quarters (e.g., a dormitory or bunkhouse). See also Farm Housing.

[State definition of Farm Employee Housing (for purposes of tenancy and termination): Housing owned or controlled by the farm employer, whether located on or off the farm premises, and provided for the occupancy of the farm employee and the farm employee's family or household members for no payment other than the farm employee's labor. Payment of utility and fuel charges paid by the farm employee does not affect the designation of housing provided as a benefit of farm employment (9 V.S.A. § 4469a).]

RENEWABLE ENERGY ACCESS STANDARDS

Recognizing that Richmond’s proposed regulations incorporate new provisions for “Energy Generating Systems,” I’ve adapted this model bylaw language, prepared for the Southern Windsor County Regional Planning Commission, for consideration by the Planning Commission in updated land use regulations. Vermont has not yet adopted specific solar or wind easement provisions in statute, but this language, based on provisions found in regulations from other parts of the country – is specially enabled under 24 V.S.A. § 4414 (6):

Any municipality may adopt zoning and subdivision bylaws to encourage energy conservation and to protect and provide access to among others, the collection or conversion of direct sunlight, wind, running water, organically derived fuels, including wood and agricultural sources, waste heat, and geothermal sources...

Southern Windsor County’s model bylaws also include provisions for incorporating renewable energy facilities in subdivision and site plan design.

Source:

[Energy Policies & Standards: A Guide for Southern Windsor County Communities](#)

Southern Windsor County Regional Planning Commission, June 2011

*Note: “Renewable energy access” can be generally defined as “the availability of, or unobstructed access to, a renewable energy resource.” Access provisions most commonly apply to solar access rights, under state solar access laws and local regulations, but it can also be applied to wind and other renewable energy resources. Vermont has not yet adopted specific resource access or easement statutes but § 4414(8) of Chapter 117 (Access to renewable energy resources) allows municipalities to “adopt zoning and subdivision laws to encourage energy conservation **and to protect and provide access to**” renewable energy resources. Bylaws must establish associated standards of review. The above language is intended to provide minimum access protection for existing installations that predate adjoining development. This in effect freezes the building envelope on an adjoining property to that in existence at the time a system was installed, without specifically requiring a recorded easement. It gives system owners some redress under the regulations, if impacted by adjoining development.*

General Regulation – Access to Renewable Energy Resources

Access Protection. New development, including new structures, additions, landscaping, fencing and screening, shall not be located in a manner that obstructs solar or wind access to existing or permitted renewable energy installations on adjoining properties.

Waivers. In order to protect access to wind and solar energy resources, the DRB may, for development under appeal or subject to site plan, conditional use or subdivision review:

1. Increase required setback distances from side or rear property lines as necessary to preserve solar or wind access for an existing renewable energy facility on an adjoining property.
2. Reduce minimum required setback distances for the siting of a new renewable energy facility on a property as necessary to access onsite solar or wind energy resources, as allowed under 24 V.S.A. § 4414(8). Accordingly, the [AMP] may reduce required setback distances by no more than [50% - 90%] if it finds that:
 - a. The reduction is the minimum necessary to access solar or wind energy required for efficient and cost-effective system installation, maintenance and operation.
 - b. There are no other viable sites on the property to locate the facility, consistent with technical requirements, and other applicable municipal siting requirements under these regulations [and related plan energy facility siting standards].
 - c. Adverse impacts to the adjoining property, including but not limited to safety hazards, noise impacts, visual impacts, shadow flicker or glare, can be adequately mitigated through siting, equipment modifications, landscaping or screening. For wind towers, an easement from the adjoining property owner may be required as necessary to address potential physical encroachments on the adjoining property in the event of tower collapse.