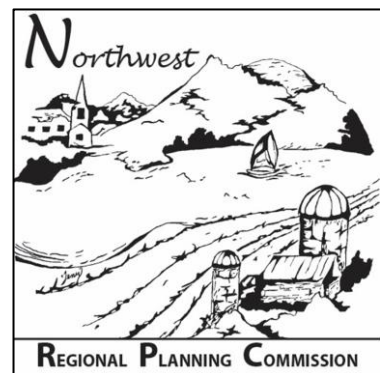


MUNICIPAL ENHANCED ENERGY PLANNING IN VERMONT

Best Practices and Resources



Northwest Regional Planning Commission
on behalf of Vermont Association of Planning & Development Agencies

I. Introduction

The intent of this guide is to help municipalities develop an enhanced energy plan as enabled by 24 V.S.A. §4352. This is accomplished by providing an outline of the different required elements of an enhanced energy plan. The outline is complemented by summaries of best practices and lists of resources that municipalities can consult while developing their own plan. The best practices discussed in this guide are based on the experience of regional and municipal planners during the first round of municipal enhanced energy plan development in the summer of 2017.

II. Plan Preparation

Before beginning to develop an enhanced municipal enhanced energy plan, it is important to generally understand the requirements of the plan. It is also important that the municipality take time to properly organize its efforts:

- **Understand Requirements.** Enhanced Energy Planning is an optional process. It is recommended that municipal officials and volunteers take time to understand what is required to complete enhanced energy planning by reviewing state statute (24 V.S.A. 4352) and the Vermont Department of Public Service’s (DPS) “Introduction to Act 174 Regional and Municipal Energy Standards” (see link below).
- **Review Existing Municipal Plan.** Review the existing municipal plan to understand what the plan currently does to address the already required energy element in 24 V.S.A. §4382. Also review land use and transportation elements to better understand how these elements connect to the requirements of enhanced energy planning.
- **Build Consensus.** Before beginning the project, it is important to build general consensus among municipal boards (Selectboard, Planning Commission, Conservation Commission, Energy Committee, etc.) about the need to develop an enhanced energy plan.
- **Determine Responsibilities.** Take time to determine which municipal board will be primarily responsible for developing the plan. In most communities the Planning Commission, Energy Committee, or an ad hoc committee have taken the lead in developing the municipal enhanced



Figure 1 - Act 174 Meeting in Hyde Park, VT

energy plan. Once a municipal board has been designated, determine how other municipal boards and the community in general will be kept informed during plan development.

- **Develop Project Schedule.** Develop a tentative project schedule to guide plan development and to ensure that important deadlines are met. Consider allocating at least 3 to 9 months to complete drafting a municipal enhanced energy plan.

- **Stand Alone Plan or Integrated Plan.** Determine if the enhanced energy plan will be “integrated” into the existing municipal plan or if the enhanced energy plan will be a “stand alone” plan that will be referenced in the existing municipal plan.
- **Consult with Regional Planning Commission (RPC).** Consulting early in plan development with your RPC can better ensure a successful project. Ask your RPC for a general summary of the Regional Energy Plan to better understand regional energy policy. Investigate what resources and technical assistance the RPC may be able to provide to the municipality.

Plan Preparation Resources:

- 24 V.S.A. § 4352. Optional determination of energy compliance; enhanced energy planning: (<http://legislature.vermont.gov/statutes/section/24/117/04352>).
- Vermont DPS – *Introduction to Act 174 Regional and Municipal Energy Standards*: http://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/Act_174/Standards%20Overview.pdf
- Vermont DPS - *Guidance for Municipal Enhanced Energy Planning Standards*: http://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/Act_174/Municipal%20Guidance_Final.pdf

III. Analysis and Targets

Municipal enhanced energy plans are required to contain an analysis of current energy resources, needs, scarcities, costs, and problems across all energy sectors, including electric, thermal, and transportation. Municipalities are also required to create targets for future energy use across all energy sectors. Creating all this data can be a tall task, but there are a lot of resources available to help municipalities meet the requirements in statute. Here are some recommended steps that municipalities can take to develop their energy analysis:

- **Review RPC Data.** RPCs have developed analysis data and target data for all municipalities in Vermont. **Per the DPS “determination” standards, a municipality that uses analysis and target data developed by the RPC will automatically be presumed to meet the standards in statute.**

While some municipalities may choose to not use RPC data, it is recommended that RPC data at least be consulted by every municipality to gain a general idea about the type of energy resources, needs, scarcities, costs, and problems that currently exist in the municipality and an understanding of the scale of future targets. Take time to ensure that all municipal board members understand the data provided.

- **Add Graphics.** Use graphics and other visuals (tables, maps) to display the municipal analysis and targets. This may make some data easier for citizens to understand and interpret. Contact your RPC for ideas and examples.

- Optional: Conduct Your Own Municipal Analysis.** There are several tools and resources that have been developed by DPS to help a municipality to conduct its own analysis ([see links below](#)). These tools include written explanations of how municipalities can meet the “determination” standards and Excel spreadsheets that can be used by the municipality to auto-calculate analysis and target data.

The Vermont Community Energy Dashboard, developed by the Energy Action Network (EAN), is another tool that can be utilized to

help municipalities understand their current energy use and develop their own target data. Another approach would be for the municipality to refine or supplement the data provide by the RPC. Some communities have decided to integrate specific data available to them documenting municipal and school energy consumption and costs with data provided by the RPC. Municipalities may also choose to develop their own unique methodologies provide analysis and target data. Regardless of the municipality’s approach, it is important that the municipality be able to fully explain the methodology used and the data created to develop the analysis and targets.

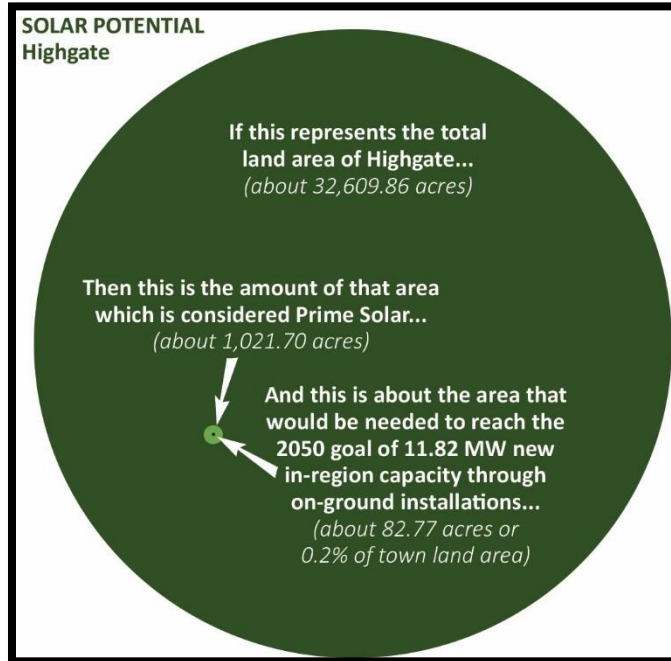


Figure 2 - A Figure Used in the Highgate Municipal Plan

Analysis and Target Resources:

- RPC Analysis and Target Data: See Appendix B
- Vermont DPS – *Analysis and Targets Aid – Municipality*, Vermont DPS – *Municipal Consumption Template*, and Vermont DPS – *Generation Scenarios Aid*:
<http://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards>
- Vermont Community Energy Dashboard: <http://www.vtenergydashboard.org/>

IV. Pathways (Implementation)

After current energy use and generation has been analyzed, and targets for future energy use and generation established, municipalities must develop different “pathways” to achieve the identified targets. Pathways are actions that the municipality can actively perform during the plan timeline to



implement the plan. When developing municipal pathways, the municipality should keep the following in mind:

- **Municipal Capacity.** Pathways should be within the municipality’s capacity to accomplish during the plan timeline. Municipalities may want to establish short-term, mid-term, and long-term pathways dependent on municipal capacity. Municipalities should keep in mind that they must provide evidence that they are “engaged in a process to implement their plan” if seeking regional approval of their plan under 24 V.S.A. 4350. Regional approval of the plan is required in order for the municipal plan to receive “determination” under 24 V.S.A. 4352.
- **Municipal Jurisdiction.** Municipalities should be mindful to include pathways that are within their jurisdiction to accomplish or influence either on their own or within the cooperation of other regional and statewide partners (RPCs, Efficiency Vermont, public utilities, etc.).
- **Delegate Responsibility.** It is recommended that municipalities delegate implementing pathways to specific municipal boards. By assigning responsibility to a specific board, pathways are more likely to be followed and accomplished by the municipality in the future.
- **Integrate into Capital Budgeting.** For municipalities that undertake capital budgeting, it may make sense to integrate pathways from the enhanced energy plan into the municipal capital budget. This will help the municipality properly fund pathways that may require some capital expenses.

Pathways Resources:

- Vermont DPS - *Guidance for Municipal Enhanced Energy Planning Standards*: http://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/Act_174/Municipal%20Guidance_Final.pdf
- Vermont Community Energy Dashboard: <http://www.vtenergydashboard.org/>
- Example Municipal Pathways: See Appendix A

V. Mapping

Municipal energy mapping is another required element of municipal enhanced energy planning. There are several required municipal energy maps that must be created to meet the DPS determination standards. The maps generally are required to show electrical energy generation potential (e.g. solar generation potential) and “constraints” to electrical energy generation (e.g. floodplains, wetlands, etc.). The intention of the maps is to act as a planning tool that will provide the municipality, citizens, and developers with a better idea about where new electrical energy generation facilities may or may not be located within the municipality.

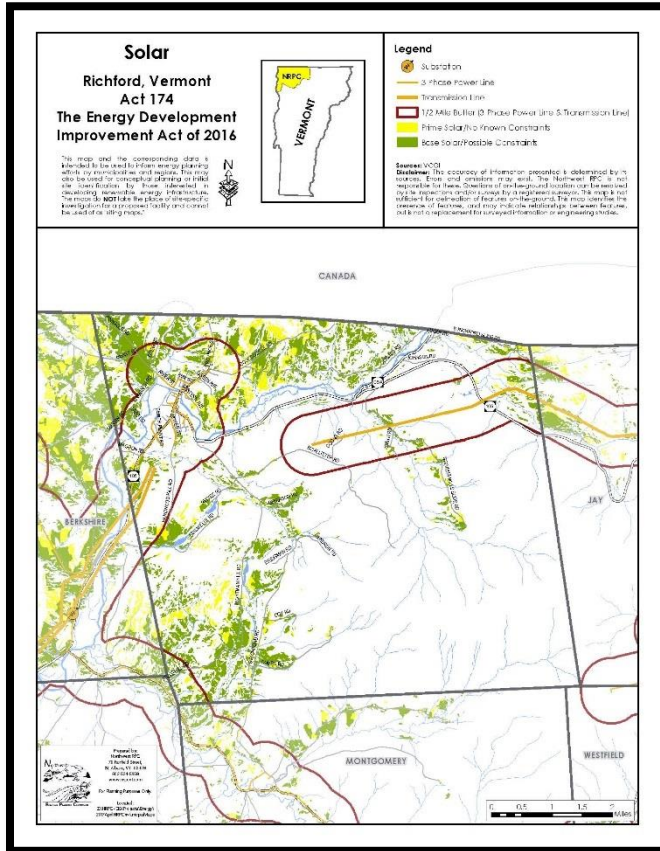


Figure 3 – Example Municipal Map Created by a RPC - Richford, VT

- **Review RPC Maps.** RPCs have developed municipal energy maps for all municipalities in Vermont. **Per the DPS determination standards, if a municipality that uses municipal energy maps developed by the RPC the municipality will automatically be presumed to meet the standards.**

While some municipalities may choose to not use RPC-developed maps, it is recommended that RPC-developed maps be reviewed by every municipality to gain a general idea about the type of energy resources and natural resources constraints that exist in the municipality and to ensure compliance with the Regional Energy Plan maps.

- **Develop Municipal “Preferred Locations,” “Constraints” and/or “Unsuitable Areas.”** Municipalities are enabled to develop additional preferred locations and unsuitable areas. Preferred

locations are areas where the municipality has determined that future renewable energy generation is highly encouraged. Unsuitable areas, areas that are not suited for future renewable generation, can be identified only if municipal land use policies applicable to other forms of development in this area are similarly prohibitive of other types of development.

When discussing unsuitable areas, it is also important for a municipality to consider the “scale” of a renewable facility. An area within a municipality (e.g. a conservation land use district) may be unsuitable for large-scale renewable facilities, but may be able to accommodate “residential” or small-scale renewable facilities. This differentiation may depend upon the language within a municipality’s land use policies.

Municipal “constraints” can also be incorporated on the maps. Municipal constraints are areas where the municipality has determined that additional renewable generation facilities should likely not be located, typically because of the existence of one or several types of natural resources located on the property. Municipally-identified constraints, like municipal “unsuitable areas,” can be identified only if land use policies applicable to other forms of development are similarly restrictive. See the DPS determination standards for the list of constraints identified by DPS. Contact your RPC for any constraints specifically identified by the RPC. Appendix A contains links to several Town Plans where municipal constraints have been identified.

Mapping Resources:

- RPC Municipal Energy Mapping Data: See Appendix B
- Vermont Community Energy Dashboard: <http://www.vtenergydashboard.org/>
- Vermont Center for Geographic Information - Act 174 – Energy Planning Mapping Standards: <http://vcgi.vermont.gov/opendata/act174>

VI. Plan Adoption and “Determination”

Once a draft of the municipal enhanced energy plan has been completed it is recommended that the municipality take the following steps before local adoption of the plan and submission to DPS or the RPC for a “determination of energy compliance:”

- **Review for Consistency with Municipal Plan.** Review the draft enhanced energy plan or plan element for consistency with the remainder of municipal plan. Address any inconsistencies before beginning the plan adoption process.
- **Build Local Support.** Actively seek input on the draft enhanced energy plan from citizens, public utilities, businesses, and other local stakeholders. Use social media, Front Porch Forum, email list serves, etc. to spread the message about the plan. Address community concerns and build local support before proceeding to local adoption of the plan.
- **Request Preliminary RPC Review.** Request that the RPC perform a preliminary review of the proposed enhanced energy plan before the plan is locally adopted. This will provide the RPC with an opportunity to comment on the local plan and an opportunity for the municipality to understand any outstanding issues that should be addressed in the local plan before adoption. DPS has also offered to review municipal enhanced energy plans that will be submitted directly to DPS before July 1, 2018 (available only for those municipalities located in a Region without a regional enhanced energy plan).

Plan Adoption and “Determination” Resources:

- DPS - *Municipal Plan Determination Checklist* and Plans Submitted for a Determination of Energy Compliance: <http://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards>
- DPS – Plans Submitted for a Determination of Energy Compliance (example determination decisions): <http://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards>

VII. Appendix A: Pathway Examples

The following are examples of pathways developed so far by municipalities in Vermont. The examples are organized generally by the corresponding municipal determination standards. The most effective municipal pathways are those that your municipality can develop itself to meet the individualized needs of your community. A full list of links to municipal plans referenced in Appendix A can be found at the end of the appendix.

Municipal Determination Standard #6: Does your plan's energy element contain a statement of policy on the conservation and efficient use of energy?

- The town should routinely provide information on the state mandated Residential Building Energy Standards to all building permit applicants, and take steps to require and verify that all new residential building meets those standards. - Bennington
- Encourage new municipal and other town buildings to meet LEED standards and encourage current structures to become more energy efficient. – Waterbury
- Partner with existing organizations to provide education and assistance on the development of “stretch codes” for residential and commercial building standards. – Waterbury
- Incorporate weatherization/energy efficiency projects into the municipal Capital Budget and Program. - Ludlow
- Increase education on renewable energy and energy efficiency including weatherization through activities such as workshops or community forums. – Waterbury
- Consider participation in the Property Assessed Clean Energy (PACE) program to support the development of renewable energy. – Stowe
- Coordinate with Efficiency Vermont and state low-income weatherization programs to encourage residents to participate in weatherization programs available to Fairfax residents. - Fairfax
- Inform residents about Efficiency Excellence Network (EEN) contractors by providing links to EEN information through the municipal website. – Ludlow
- Pursue energy audits at municipal buildings focusing on weatherization work at older buildings such as the town office building. - Bennington
- Conduct periodic energy audits of all municipal buildings and implement the recommendations as appropriate. – Stowe
- The Town of Holland intends to investigate the creation of a Community-owned methane digester that could provide renewable electrical generation to VEC, while making use of on-farm resources. Such a facility can most appropriately co-exist with the Town's pastoral landscape, while helping to eliminate greenhouse gases. The Town could pursue a 50% or more shareholder stake in such a project, and the development of a facility could be dependent on the support of 65% or more of the Town's voting population in a binding referendum. – Holland
- The Town will help facilitate increased use of heat pumps and wood/wood pellet furnaces in Holland residences through educational events for residents, to which manufacturers of renewable energy heating systems will be invited. – Holland
- Review, update, and implement street lighting plan town-wide using efficient light fixtures and renewable energy, as feasible. - Londonderry

- Promote weatherization of Ripton homes through CVOEO and through access to low-interest loans. - Ripton

Municipal Determination Standard #7: Does your plan’s energy element contain a statement of policy on reducing transportation energy demand and single-occupancy vehicle use, and encouraging use of renewable or lower-emission energy sources for transportation?

- Actively support expansion of intercity bus travel, including the new direct bus connection to the Amtrak rail station in Rensselaer. Work with the Bennington Area Chamber of Commerce and local businesses to ensure that the services are well publicized and that stop and transfer locations are convenient, comfortable, and attractive. – Bennington
- Work with transit providers to identify possible future park & ride locations that will support areas with current or future development density. – Waterbury
- Extend sidewalks and other types of bicycle and pedestrian facilities to under-served areas and areas of new development within and adjacent to the Village of Waterbury. – Waterbury
- Continue to pursue sidewalk, recreation path, bicycle lanes, public parking and transit projects in part to reduce local transportation energy use. – Stowe
- Maintain roads in order to better accommodate travel by bicycles. For example, this includes paving/overlays to maintain a smooth roadway surface as well as sweeping to remove sand, dirt and trash multiple times a year. – Ludlow
- Provide incentives for employees who commute using methods alternative to single occupancy vehicles, e.g. walking, biking, public-transit, and carpooling. - Ludlow
- Continue to install electric vehicle charging stations when development or redevelopment of municipally owned property occurs. – Waterbury
- Create and promote a Community Carpool forum through the town website to connect people with compatible routes such as: Elmore to Copley Hospital, Elmore to Stowe and Elmore to Montpelier. – Elmore
- Review municipal road standards to ensure that they reflect the “complete streets” principles. - Fairfax
- Host a “show and tell” day featuring different EVs and giving people interested in purchasing them an opportunity to talk with fellow community members who own them. – Sudbury
-

Municipal Determination Standard #8: Does your plan’s energy element contain a statement of policy on patterns and densities of land use likely to result in conservation of energy?

- Expand water and wastewater capacity in the village to allow for compact development. - Fairfax
- Consider providing incentives (e.g. density bonuses) to developments located in an area identified as appropriate for growth that exceed the state’s energy code. – Ludlow
- Plan and advocate for access to public transit, especially during the permit review process for all larger developments. – Ludlow
- Elmore should consider applying for Village Center designation for its village district. – Elmore

- Update local bylaws to require that new development include pedestrian and bike-friendly infrastructure and connect to the existing and planned pedestrian and bike networks. – Sudbury
- Promote a working landscape outside of designated growth and residential areas, e.g., by working with land trusts and landowners of farm and forest tracts to conserve key parcels of land. – Sudbury
- The Town should consider requiring a reimbursable fee (as part of a zoning permit) to ensure that developers properly file their Residential Building Energy Standard Certificate. – Braintree

Municipal Determination Standard #9: Does your plan's energy element contain a statement of policy on the development and siting of renewable energy resources?

- Promote municipal solar, school solar, and community solar or other renewable energy projects on town, village, or state land and take steps to help viable projects move forward. – Waterbury
- Obtaining feedstock for heating systems from local sources supports regional economic development and renewable energy goals. The town should work with the regional development corporation, the Bennington County Sustainable Forestry Consortium, and other organizations to support existing forest products businesses and new businesses involved in managing forest lands, trans-orting and processing woody biomass for home, business, or institutional applications, and should assist with locating sites for manufacturing facilities (especially production of wood pellets). – Bennington
- Identify potential locations throughout the community that could benefit from district heating projects based on building density, proximity to resources such as biomass, or status as a use by right where applicable. – Waterbury
- The town should continue to look for opportunities to develop small hydro projects to support efficient municipal operations. Additional commercial-scale hydroelectric generation is limited due to the fact that the only existing dam sites (other than the Paper Mill dam) are located on Paran Creek in North Bennington Village, between Lake Paran and the Walloomsac River (Figure 5). The town supports efforts by North Bennington, Bennington College, and involved property owners to develop the hydro potential at that series of small dams on Paran Creek. – Bennington
- Explore opportunities for an online wood marketplace for community members to access locally-source and renewable wood products. – Londonderry
- Continue to maintain a community-based wood bank in the REAP woodshed. – Ripton
- Investigate possible locations for a Ripton community-based grid-tied solar array capable of up to 150 kW for residents to purchase shares of solar-based electricity. - Ripton
- Explore opportunities to install small hydro facilities concurrent with repair from flood events affecting Route 125 in the Ripton village area. - Ripton

Other Pathways

- Create an Elmore Energy Committee to pursue conservation projects. – Elmore
- Review and maintain the Building Inspection, Code Enforcement, and Fire Safety Ordinance to incorporate any changes to national rooftop solar installation methods and standards. - Fairfax
- Continue to provide firefighters with training in fighting fires on structures that have solar installed on the roof. – Fairfax

- The town should support K-12 schools to bring energy ideas and solutions into the classroom by working with organizations such as Vermont Energy Education Program (<http://veep.org>) – Braintree

Municipal Plan Links

Links to example municipal enhanced energy plans are below. Please note some of the municipal enhanced energy plans referenced may still be in draft form, may be subject to change, and may not always be immediately accessible via the internet.

Town of Bennington: Town of Bennington (<http://benningtonvt.org/>) and/or Bennington County Regional Commission (<http://www.bcrvct.com/>) websites.

Town of Braintree: Town of Braintree (<http://www.braintreevt.com/>) and/or Two-Rivers Ottauquechee Regional Commission (<http://www.trorc.org/>) websites.

Town of Elmore: Town of Elmore (<https://www.elmorevt.org/>) and/or Lamoille County Planning Commission (<http://www.lcpcvt.org/>) websites.

Town of Fairfax: Town of Fairfax (<http://www.fairfax-vt.gov/>) and/or Northwest Regional Planning Commission (<http://www.nrpcvt.com/>) websites.

Town of Holland: Northeastern Vermont Development Association (<http://www.nvda.net/>) website.

Town of Londonderry: Town of Londonderry (<http://www.londonderryvt.org/>) and/or Windham Regional Commission (<http://www.windhamregional.org/>).

Town of Ludlow: Town and Village of Ludlow (<http://www.ludlow.vt.us/>) and/or Southern Windsor Regional Planning Commission (<http://swcrpc.org/>) websites.

Town of Ripton: Town of Ripton (<https://www.riptonvermont.org/>) and/or Addison County Regional Planning Commission (<http://acrpc.org/>) websites.

Town of Stowe: Town of Stowe (<http://www.townofstovevt.org/>) and/or Lamoille County Planning Commission (<http://www.nrpcvt.com/>) websites.

Town of Sudbury: Rutland County Regional Planning Commission (<https://www.rutlandrpc.org/>) website.

Town of Waterbury: Town of Waterbury (<https://www.waterburyvt.com/>) or Central Vermont Regional Planning Commission (<http://centralvtplanning.org/>) websites.

VIII. Appendix B: Regional Planning Commission Links

- Addison County Regional Planning Commission: <http://acrpc.org/>
- Bennington County Regional Commission: <http://www.bcrpcvt.com/>
- Central Vermont Regional Planning Commission: <http://centralvtplanning.org/>
- Chittenden County Regional Planning Commission: <http://www.ccrpcvt.org/>
- Lamoille County Planning Commission: <http://www.lcpcvt.org/>
- Northeastern Vermont Development Association: <http://www.nvda.net/>
- Northwest Regional Planning Commission: <http://www.nrpcvt.com/>
- Rutland Regional Planning Commission: <https://www.rutlandrpc.org/>
- Southern Windsor County Regional Planning Commission: <http://swcrpc.org/>
- Two Rivers-Ottawaquechee Regional Commission: <http://www.trorc.org/>
- Windham Regional Commission: <http://windhamregional.org/>