

Norwich PC Solar Siting Subcommittee
Regular Meeting – Tuesday, November 14, 2023 6:30pm

To be held via Zoom only:

Topic: Solar Siting Subcommittee

Time: Tuesday, November 14, 2023, 6:30 PM Eastern Time (US and Canada)

<https://us02web.zoom.us/j/84563923987>

Meeting ID: 845 6392 3987

888 475 4499 US Toll-free

1. Approve Agenda
2. Public comments for Items not on the Agenda
3. Correspondence:

Vermont Natural Resources Council: “Community Planning Toolbox”
(<https://vnrc.org/community-planningtoolbox/tools/overlay-districts>)

Scenic Overlay Districts - Charlotte (case study)

Forest Fragmentation

Historic Preservation

Design Review Regulations

(Clement submission)

Vermont State Statutes (Laaspere submission)

Maps: Norwich solar energy potential map created by TRORC in 2017; Ridgeline view analysis dated 6 - 2009 (Town of Norwich - archival)

4. Continue discussion on the topic of ridgeline and scenic resources
5. Approval of 10/17/2023 minutes
6. Adjourn

Community Planning Toolbox



KEY TOPICS

- [Toolbox Home](#)
- [Issues](#)
- [Tools](#)
- [Case Studies](#)

Overlay Districts

Tools

In brief

An overlay district is a common tool for establishing development restrictions, or extending development incentives, on land within a defined geographic area or characterized by specific physical features or site conditions. Adopted as part of a zoning bylaw, overlay districts are superimposed over one or more underlying conventional zoning districts in order to address areas of community interest that warrant special consideration such as historic preservation, or protection of a particular natural resource like shorelands or wildlife travel corridors.

Summary

Vermont planning statutes (§4414(2)) specifically authorize municipalities to adopt overlay districts to “*supplement or modify the zoning requirements otherwise applicable in underlying districts in order to provide supplementary provisions for areas such as shorelands and floodplains, aquifer and source protection areas, ridgelines and scenic features, highway intersection, bypass, and interchange areas, or other features described in section 4411 of this title.*”

Overlay district boundaries are drawn around resource areas that have been identified for special consideration. The most common application of overlay districts in Vermont are flood hazard districts, where certain types of land use and development are required to comply with site and building standards if the property is located within a mapped flood hazard area. Other common types of overlay districts include:

- **Natural Resource** – often utilized to protect hillside development, farmland, watershed protection and stream and wildlife corridors.
- **Historic Preservation** – examples include historic district design standards.
- **Design Review** – utilized to ensure new development fits into the existing community character. Examples include highway corridors and central business districts.
- **Public Safety** – often associated with airport hazard zones, fire safety zones and geologic hazard zones.
- **Development Incentives** – examples include parking districts, that reduce parking requirements in compact, mixed use areas, or Transit Oriented Development (TOD) Overlay Districts that grant incentives for compact, mixed use development within walking distance of transit stops.

The “special considerations” for development in an overlay district usually include different standards of review – for example, further limits on allowed uses, conditional use review of uses that require only administrative review in the underlying district, and/or district standards that apply to all uses in the overlay district. These supplement and are applied in addition to the underlying district’s standards.

Overlay districts are particularly well-suited for protecting **wildlife corridors** – which include forested areas that allow animals to travel from one large forest block to another in an attempt to meet their nutrition and mating needs. Large forest blocks may be protected in a single forest district, but the small patches of forest that link wildlife habitat sometimes fall outside those boundaries (and across multiple underlying zoning districts) and therefore need additional protection.

Related Issues

[Community Design](#)

[Forest Fragmentation](#)

[Historic Preservation](#)

[Working Lands](#)

[Wildlife Corridor Protection](#)

Related Tools

[Design Review Regulations](#)

Related Case Studies

[Meadowland Overlay District-Warren](#)

[Scenic Overlay Districts-Charlotte](#)

[Wildlife Corridor Overlay Zone – Shrewsbury](#)

Resources

“Balancing Development and Conservation,” *Well Grounded: Using Local Land Use Authority to Achieve Smart Growth*, by John R. Nolan. See “A. Overlay Zoning” in Chapter 6, p. 209-213.

“**Overlay Districts,**” *Community Strategies for Vermont’s Forests and Wildlife: A Guide for Local Action*. Chapter 14, p. 50.

Vermont Planning Statutes. This link provides the legal framework for overlay districts as referenced in the Vermont Planning Statute.

This tool contains supplemental information and detailed case studies related to *The Roadscape Guide*.

Views to the Mountains: A Scenic Protection Manual was developed based on the Roadscape Guide for Essex and Jericho. This resource includes detailed information on how to do a scenic roadway assessment and recommendations for regulatory and non-regulatory ways to protect the landscape. It is available in three parts: [Part I](#), [Part II](#), [Part III](#)

Scenic Overlay Districts – Charlotte

Case Studies

Community overview

Located between Middlebury and Burlington along the Route 7 Corridor, the nearly 3,500 town residents enjoy the hills and ridges overlooking Lake Champlain. The community is actively engaged in keeping the productive Champlain Valley soils in farming. The result is a variety of agricultural activities that include orchards, dairies, berry farms, a winery, apiaries and community supported agriculture (CSA). Among the community motivations for protecting farmland and open space is maintaining the scenic views along important highway corridors, including Route 7.

Tools you can use

[Scenic overlay district – Charlotte](#)

The Champlain Valley Greenbelt Alliance, a non-profit organization, was formed to create greenbelts along major road corridors in Vermont, with an initial focus on the Route 7 corridor from Shelburne to Middlebury. They began by conducting a visual analysis of the Route 7 corridor to determine the strengths of the area – the location of scenic views and gateways to the region’s hamlets and towns, areas appropriate for development and those more suited for protection. Their analysis highlighted the many intact agricultural areas and scenic views in Charlotte. They offered to help draft a scenic overlay district for the Route 7 corridor through Charlotte, and the Town’s Planning Commission agreed to incorporate the draft overlay into the updated zoning bylaws.

Charlotte’s Scenic Overlay District provides additional development review guidelines for building placement within the Route 7 corridor. They determined district boundaries based on topography, views to the mountains on both sides of the road and property boundaries. The Scenic Overlay District and Access Management policies helped change residents and land owners’ expectations, and enabled the community to retain the features of the road that are unique and special.

Lessons Learned

- Be clear on what landscape features your community wishes to protect, and outline the threats to that landscape and objectives of the district.
- When developing district boundaries, ensure that the community’s intent and resource it seeks to protect match what is on the land.
- Ensure that the language is landowner friendly, straightforward and easy to administer.

Related Issues

- [Community Design](#)
- [Historic Preservation](#)
- [Productive Farms](#)
- [Scenic Road Corridors](#)
- [Working Lands](#)

Related Tools

- [Overlay Districts](#)

This case study contains supplemental information related to [*The Roadscape Guide*](#).

Forest Fragmentation

Issues

In Brief

Over 100 years ago, approximately 75 percent of Vermont's landscape was clear cut for pasture, timber, potash and fuel. Since that time, the land has healed and the forest has returned – approximately 80% of Vermont is now forested. While Vermont's forests no longer face the prospect of clearing for agriculture as they did 100 years ago, today Vermont's forests face a new threat: forest fragmentation, which is the result of scattered, poorly planned rural subdivision and development.

The issue

Vermont's forest covered hills and mountains are a key component of the state's identity. Vermonters value forests for a multitude of reasons: they provide wildlife habitat, clean water, recreational opportunities, and thousands of jobs in the forest products sector. From sugar making to leaf peeping, hiking, hunting, watching wildlife, or managing a woodlot, the opportunities to use and enjoy Vermont's forests are endless.

In order to continue to enjoy the benefits offered by the forest, it is crucial that large forest blocks remain intact. When forestland is broken up into smaller parcels it is referred to as "parcelization" and the result is typically an increase in the number of people who own the original piece of land. This land ownership pattern can result in new housing and infrastructure development (roads, septic, utility lines, etc.). When this development occurs, it "fragments" the landscape and, depending on the location and scale, can negatively affect plant and animal species, wildlife habitat (called habitat fragmentation), and water quality. It can also affect the contiguous ownership and management of forest parcels, and thus the availability of tracts of forestland that are large enough to contribute to Vermont's rural economy.

Though it can be hard to notice on a day-to-day basis, the parcelization in Vermont is increasing. For example, the number of parcels in the state increased from approximately 315,000 in 2004 to 322,000 in 2016, with the increase occurring predominately in smaller parcel sizes.[1] Much of this parcelization is associated with residential development, which happens incrementally, only a few lots at a time.[2] Additional drivers of parcelization include rising property taxes, the increasing average age of private forest landowners and the lack of estate planning, suburbanization, and inadequate land use planning.

[1] Tracking Parcelization Over Time: Updating the Vermont Database to Inform Planning and Policy. September 2018. Full report available at: <https://vtforesttrends.vnrc.org/reports>.

[2] VNRC studied subdivision trends in 22 communities and found that the average subdivision resulted in between 2.1 and 3.9 lots (including the original parcel). For more information, please

see “Phase II: Informing Land Use Planning and Forestland Conservation Through Subdivision and Parcelization Trend Information” (VNRC, 2014).

Many communities are seeking ways to ensure their forests remain intact and continue to provide a variety of benefits, such as ecosystem services (i.e. water retention during high precipitation events), habitat for wildlife, recreational opportunities, and jobs in the forest products and tourism sectors. Municipal land use plans, zoning bylaws, and subdivision regulations can play a key role in ensuring that our forests remain intact. There are also many non-regulatory tools that communities can utilize to protect their forestlands.

In addition, smart growth principles encourage a settlement pattern defined by the contrast between compact, mixed-use villages and centers and the surrounding rural landscape. Our forests are a key part of our rural landscape. By encouraging smart growth, Vermont can ensure a healthy future for our forests.

Strategies for maintaining large, intact forest blocks include:

- Guide development to maintain a settlement pattern defined by the contrast between compact, mixed-use village centers and the surrounding rural landscape;
- Establish or expand a conservation, forest or natural resource overlay zoning District;
- Adopt a road or trail policy or ordinance to ensure that the forested lands in your town are not unduly fragmented;
- Reach out to landowners who have not yet conserved their forested lands, or enrolled their forested parcel in the Current Use program;
- And, many more!

For more information, see the Related Tools and Case Studies (below).

Vermont needs large, intact forest blocks

Maintaining large forest blocks helps to protect water quality, mitigate climate change through carbon sequestration, and promote healthy and resilient wildlife populations. Large connected forest blocks allow wildlife to meet their daily needs, and they keep populations strong by enabling genetic flow or diversity. Consider these facts:

- The average “home” range for a black bear is 19,200 acres!
- In general, large blocks of forest support a wider diversity of wildlife species than small fragmented blocks.
- Vermont is situated in the middle of important habitat linkages that allow wide ranging animals to travel between Vermont and northern New Hampshire, Maine and Quebec’s Gaspé Peninsula, and the Adirondacks in northern New York.

Related Tools

Historic Preservation

Issues

In brief

Historic preservation is not just the protection of old buildings. It is the preservation of a community's history – the ties that bind us together culturally and aesthetically. If we ignore our architectural history, abandon our remarkable downtowns and villages, or lose a rural viewshed, we diminish our legacy and may be missing, or destroying, economic opportunities. This is true in Vermont where our economic brand is closely tied to our historic landscape. Protecting, enhancing and promoting our historic buildings, views and culture involves a variety of strategies that can be used to not only preserve buildings, but provide housing options, optimize past investments and increase economic opportunities.

The issue

Well before the passage of the National Historic Preservation Act in 1966, citizens around the nation worked to save historic buildings and landmarks in their communities. Historic preservationists were among the first to question the impacts of rapid development on our cities, towns and natural environment. Over the years, the concept of historic preservation has grown and expanded. While initial efforts focused on saving individual buildings from being torn down, today there is a realization that historic preservation activities affect, and are affected by, land use decisions.

When looking at our communities from a holistic land-use perspective, the goals of both smart growth and historic preservation clearly overlap. Donovan Rypkema, a consultant on historic preservation economics, has outlined twenty reasons why historic preservation is an important tool to implementing smart growth principles. The full twenty reasons can be found in the link below in the resources, but highlights include:

- **Public Investment and Infrastructure:** Generally, historic buildings are located where public infrastructure, like sewer and water, already exist. By building in suburban and rural areas, communities not only bear the cost of building new infrastructure and services, they ignore past investments.
- **Economic Opportunities:** Rehabilitating historic buildings to house people, businesses and shops enhances the local tax base and maximizes the use of existing infrastructure. Historic architecture, diverse neighborhoods and scenic vistas are just a few of the assets that a community can build upon for successful and long-term economic revitalization.
- **Job Creation:** As a general rule, new construction is 50 percent labor and 50 percent materials. Rehabilitation, on the other hand, is 60 to 70 percent labor. Generally, the labor comes from local community members, while the materials can come from out of state. The paychecks from these workers generally go towards local goods and

services. Thus, there is a greater positive impact to the local economy with rehabilitation than with new construction.

- **Environmental Protection:** Preserving instead of demolishing our inventory of historic buildings reduces construction waste. No new land is consumed during rehabilitation.

Vermont has long understood the link between preservation and smart growth. Government agencies, non-profit organizations and businesses have been active in working to conserve our state's history both in urban and rural settings. The [Downtown Historic Tax Credit](#) and [designation programs](#) are a result of these efforts. In 2007, Vermont was recognized for this hard work as one of three finalists for the Tourism for Tomorrow Awards in the Destination Award category for its work promoting and supporting downtown revitalization.

There are tools available for those communities interested in preserving their community's character and building their historic resources. These include:

Related Tools

- [Adaptive Re-use](#)
- [Historic Preservation Regulations](#)

Related Case Studies

- [Adaptive Re-use-Waitsfield](#)

Resources

[Vermont Land Use Planning Implementation Manual: Historic Preservation](#). This provides more detailed information on historic preservation and related tools.

[Economics, Sustainability and Historic Preservation](#) by Donovan Rypkema, a nationally known consultant on historic preservation economics.

Design Review Regulations

Tools

In brief

Vermont's unique character is defined by many elements, including the contrast between the built and natural environments, the human scale of our downtowns, villages and neighborhoods, and our architectural heritage. As our communities grow, especially those that encourage smart growth involving high densities and compact settlement patterns, careful attention to building design is an important means of building public support and ensuring that new development enhances community character. An efficient design review process, with clear design standards, is an effective way to achieve that.

Summary

The most common type of design review district in Vermont encompasses downtowns, village centers and historic neighborhoods – areas where new building design should be harmonious with a well established building pattern. Some communities have chosen to designate areas defined by scenic landscapes, such as agricultural areas or wooded hillsides and ridgelines, where it is important that new development should settle into the landscape with minimal disturbance.

Regardless of the context or purpose of the district, common elements of design review include:

- a description of the district, in the form of *“a report describing the particular planning and design problems of the proposed district and setting forth a design plan for the areas which shall include recommended planning and design criteria to guide future development”* (§4414(1)(E));
- a review process, often involving an advisory committee to assist the review board with the review of applications and interpretation of the standards; and
- clear design standards, often supported by design guidelines that explain or illustrate the design concepts that the standards are intended to achieve.

Design review standards have been used to promote compatible architecture and adherence to good urban design principles in downtowns, village centers, established neighborhoods and hamlets. Design review has also been applied to scenic landscapes, including areas defined by the relationship of buildings to farm and forest land, and where scenic vistas have been identified as an important community resource.

Related Issues

- [Community Design](#)
- [Strip Development](#)

Related Case Studies

- [Village Design Guidelines-Manchester](#)

Resources

[Vermont Land Use Planning Implementation Manual: Design Review](#). This provides more detailed information on design review.

[Vermont Planning Statutes](#). This link provides the legal framework for subdivision regulations as referenced in the Vermont Planning Statutes.

From: Jaan Laaspere <laaspere.planning@gmail.com>

Sent: Wednesday, November 8, 2023 10:07 AM

To: Kris Clement <kclemwp6@gmail.com>; Ernie Ciccotelli <ernieciccotelli@gmail.com>; Pam Mullen <PMullen@norwich.vt.us>

Subject: Solar siting regs

In preparation for our meeting next week, I followed the trail of Vermont statutes in an attempt to answer the question: what can a municipality regulate relative to the visual impact of ground mounted PV systems? Here are my notes from this exploration.

Pam, please include this in the packet for the 11/13/23 solar siting meeting.

Jaan

Roof mounted systems up to 500kW are always considered preferred sites and must meet only electrical interconnect requirements.

From my non-lawyer review of state regulations governing solar projects, it appears municipalities can require screening and visual mitigation for ground mounted PV systems, providing these requirements do not have the effect of prohibiting the installation of a solar project.

24 VSA 4413 g - (b) A bylaw under this chapter shall not regulate electric generation facilities, energy storage facilities, and transmission facilities regulated under 30 V.S.A. § 248 or subject to regulation under 30 V.S.A. § 8011.

30 VSA §248 - CPG for new gas & electric investments

(B) With respect to a ground-mounted solar electric generation facility, the facility shall comply with the screening requirements of a municipal bylaw adopted under 24 V.S.A. § 4414(15) or a municipal ordinance adopted under 24 V.S.A. § 2291(28), and the recommendation of a municipality applying such a bylaw or ordinance, unless the Commission finds that requiring such compliance would prohibit or have the effect of prohibiting the installation of such a facility or have the effect of interfering with the facility's intended functional use.

24 V.S.A. § 4414 (15) Solar plants; screening. Notwithstanding any contrary provision of sections 2291a and 4413 of this title or 30 V.S.A. chapter 5 or 89, a municipality may adopt a freestanding bylaw to establish screening requirements that shall apply to a ground-mounted plant that generates electricity from solar energy. In a proceeding under 30 V.S.A. § 248, the municipality may make recommendations to the Public Utility Commission applying the bylaw to such a plant. The bylaw may designate the municipal body to make this recommendation. Screening requirements and recommendations adopted under this subdivision shall be a condition of a certificate of public good issued for the plant under 30 V.S.A. § 248, provided that they do not prohibit or have the effect of prohibiting the installation of such a plant and do not have the effect of interfering with its intended functional use.

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[Please note that this email message, along with any response or reply, is considered a public record, and thus subject to disclosure under the Vermont Public Records Law (1 V.S.A. §§ 315-320)]

parc

SOLAR POTENTIAL

Suitability

- Substations
- 3 Phase Power Lines
- Transmission Lines
- Structures w/1ac buffer

Conserved

- Public Cons
- Private Cons

Prime

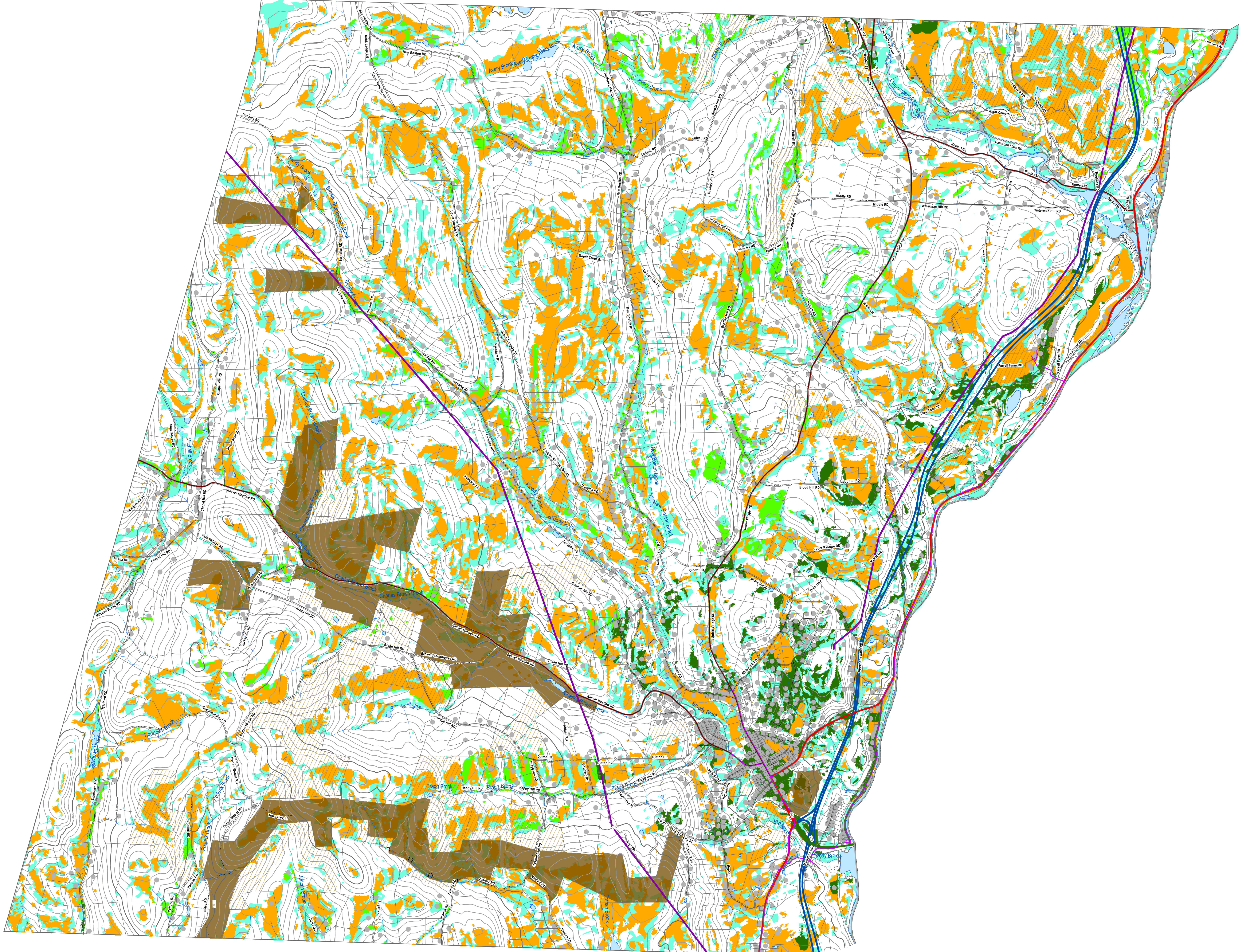
Constraints

Prime 1m 3phase

RAW solar

Solar Energy Potential NORWICH

This map was created as part of a Regional Energy Planning Initiative.
Created: 2017

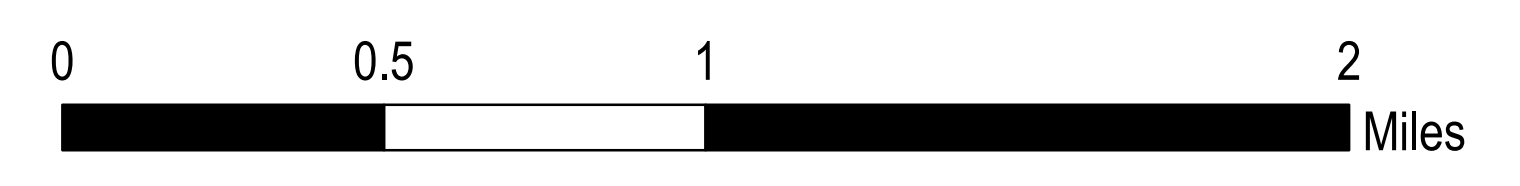
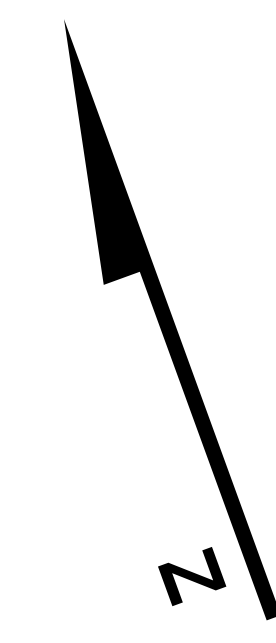


Solar
This map shows areas of potential electricity generation from solar energy. It includes areas with good access to solar radiation and also considers other conditions that may limit the feasibility of solar energy development. These limiting factors are referred to as constraints. Areas of prime solar potential exist where the natural conditions make development feasible and no constraints are present.

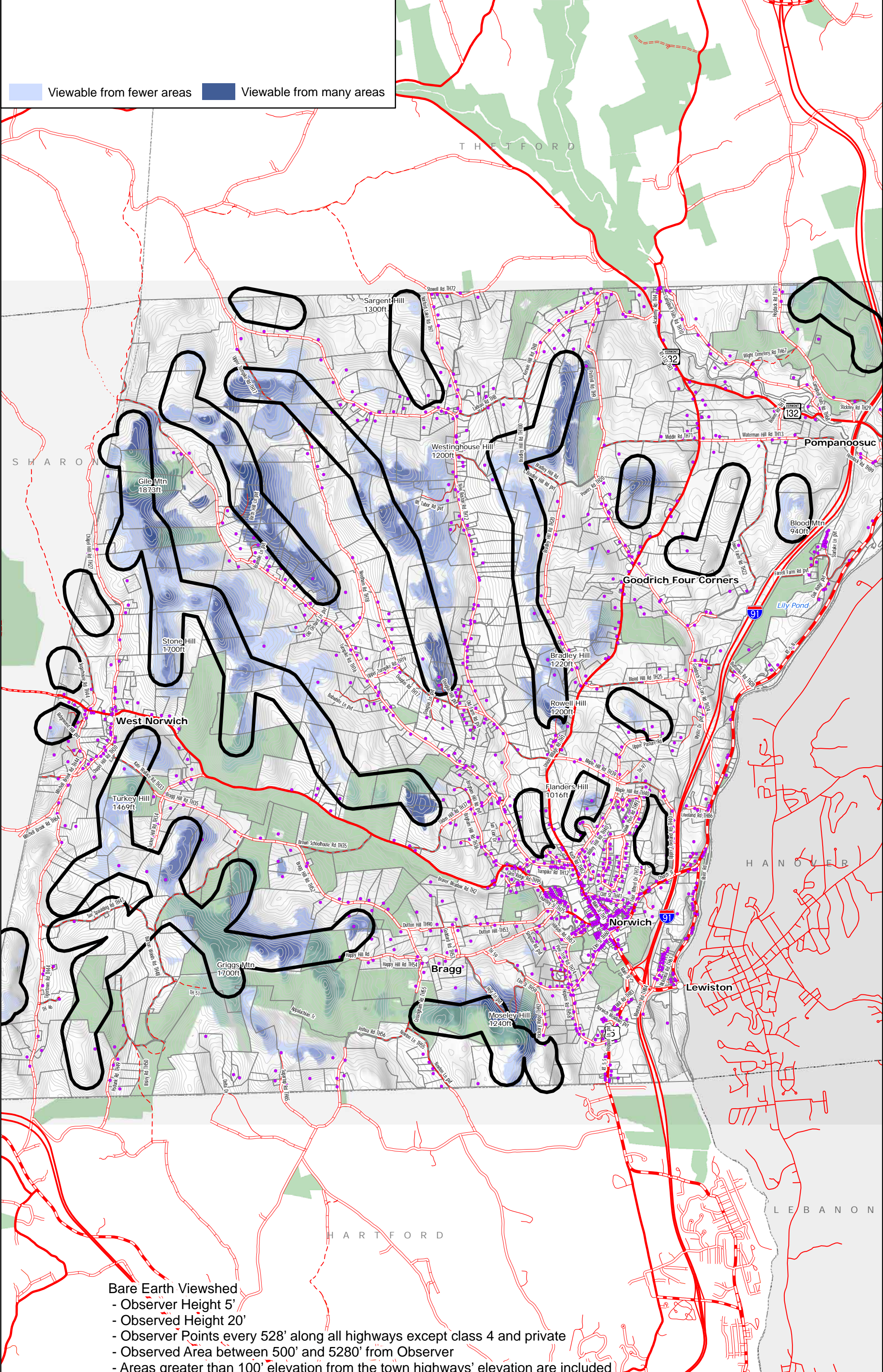
These maps are designed to initially identify areas and follow-up on-site work is required to verify the areas are feasible for projects. They are subject to revision and are NOT intended to green-light or fast-track projects.

DARK GREEN Prime: No Constraints within 1 mile 3 phase power
GREEN Prime: No Constraints no known or possible constraints present
ORANGE Constraints: no known but at least one or more possible constraints
BLUE GREEN Raw potential: with constraints

- Known Constraints**
 Vernal Pools (confirmed and unconfirmed layers)
 DEC River Corridors
 FEMA Floodways
 State-significant Natural Communities and Rare, Threatened, and Endangered Species
 Wilderness Areas, including National Wilderness Areas
 Class 1 and Class 2 Wetlands (VSWI and advisory layers)
- Possible Constraints**
 Agricultural Soils (VT Agriculturally Important Soil Units)
 FEMA Special Flood Hazard Areas
 Protected Lands (Updated 07/26/2016.)
 Act 250 Agricultural Soil Mitigation areas
 Deer Wintering Areas
 ANR's Vermont Conservation Design Highest Priority Forest Block Datasets
 Forest Blocks - Connectivity
 Forest Blocks - Interior
 Forest Blocks - Physical Land Division
 Hydric Soils
- TRORC Unsuitable areas (included in known constraints)**
 FEMA Floodways
 Wilderness Areas, including National Wilderness Areas
 Class 1 Wetland



Viewable from fewer areas Viewable from many areas



Bare Earth Viewshed
 - Observer Height 5'
 - Observed Height 20'
 - Observer Points every 528' along all highways except class 4 and private
 - Observed Area between 500' and 5280' from Observer
 - Areas greater than 100' elevation from the town highways' elevation are included

Norwich PC Solar Siting Subcommittee

October 17, 2023 Minutes

DRAFT

Members present: Ciccotelli, Clement, Laaspere

Public participating: Alec Orenstein [DRB], Craig Layne [NCC, until 7:00], Kathleen Shepherd

Meeting started at 6:35

1. Approved Agenda
2. Public comment for items not on the agenda - none
3. Correspondence – packet materials related to the agenda item on ridgeline and scenic. No other correspondence was received.

4. Scenic Resources and Ridgeline Protection

The discussion explored solar siting topics as they interacted with current regulations relating to ridgeline protection and scenic resources.

Laaspere reported on information from Peter Gregory at TRORC that very few towns in our area have specific ridgeline and scenic zoning regulations. Pomfret and Woodstock have ridgeline regulations which were put in place many years ago. Several towns have discussed creating scenic regulations, but these have not been implemented.

To discuss or adjudicate specific cases relating to ridgelines and scenic resources, it is critical to know exact physical boundaries and have practical tools for the public and the DRB. Clement asked specifically for high resolution maps which included parcel boundaries as well as the boundaries of the various zoning overlays like ridgelines. Laaspere will continue the effort underway at the PC to locate and upgrade the format of the town planning and zoning maps.

We discussed the definition of a ridgeline area, noting that the visual dimensions mentioned specifically in our current regulations relating to forest cover, visual difference from surroundings, glare, etc. are only a subset of what is important about a ridgeline. Other key dimensions include contiguous forest blocks, erosion control, and climate resiliency.

There is a clear relationship between scenic resources and ridgelines, since both relate to views and what can be seen from where. Our listed scenic resources are primarily public roads. These are identified as important because of what can be seen from these roads. The ridgelines are regulated for their visual impact primarily as seen from public roads.

Several areas needing clarification and better definition were discussed. For example, in our current bylaws the terms “structure” and “development” are not completely defined. These definitions are important as they relate to solar installations such as ground mounted structures. For example, does cutting trees qualify as development? Are ground mounted PV arrays structures?

The topic of solar siting was combined with ridgelines and scenic resources for a fruitful discussion exploring various examples. Orenstein from the DRB provided feedback on the ability to review a recent ridgeline proposal using the current regulations. In his view, it was relatively straightforward to go down the list and make sure the proposal was in compliance. We discussed whether there would be any change in this review if such a proposal had included a ground mount solar component.

There is clearly a subjective component to evaluating the visual impact of scenic resources and solar installations. Even the Quechee test brings up the judgment of “the sensibilities of an average person.” Are solar installations visually positive, negative, or neutral?

State regulations provide an important context to any conversation of solar siting. We need to understand the exact constraints on a municipality when regulating solar siting. The next meeting packet will include the details of Vermont law 5.100 which defines categories of net-metering systems and related requirements. Much of our discussion revolved around PV systems under 15 KW.

It was noted that our plan and bylaws must be seen as living documents and updated to include changes in state law and available technology. In 2009 it was warranted to have a section on small wind installations, but with no mention of PV. We need to stay current with both state constraints and new development pressures.

It was agreed that this fruitful discussion was worth continuing, and it will be the main agenda item for the next meeting.

5. Approved minutes of August 24, 2023 & September 19, 2023

Unanimous

Next meeting will be November 14 at 6:30 on Zoom and will continue discussion on the topic of ridgeline and scenic resources as related to solar siting.

6. Adjourned at 8:40

Minutes submitted by Jaan Laaspere