Vermont
Enhanced Energy Planning

Do "Towns Have More Say"?

To Do or Not To Do?
If Not, What?

Weathersfield Planning Commission Discussion about Enhanced Energy Planning, March 25, 2019
https://youtu.be/QT6j6py-uPI

March 25, 2019

Vermonters for a Clean Environment

by Annette Smith, Executive Director
www.vce.org, vce@vce.org

789 Baker Brook Road • Danby • Vermont • 05739 • 802.446.2094

HOW DID WE GET HERE?

Energy Generation Siting Policy Commission

2012-2013

https://sitingcommission.vermont.gov/

Meetings & Videos:

1. Oct. 31, 2012 https://vimeo.com/52605432
2. Nov. 14, 2012 https://vimeo.com/53672205
3. Nov. 30, 2012 https://vimeo.com/54658854
4. Dec. 6, 2012 https://vimeo.com/55135478
5. Dec. 19, 2012 https://vimeo.com/56073156
6. Jan. 11, 2013
   - Part 1 https://vimeo.com/57341440
   - Part 2 https://vimeo.com/57294940
   - Part 3 https://vimeo.com/57299560
7. Jan 23, 2013, Public Hearing #1, Brattleboro https://vimeo.com/58268759
8. Feb. 12, 2013, Public Hearing #3, Lowell https://vimeo.com/59684535
9. April 3, 2013, Public Hearing #4, Rutland https://vimeo.com/63448105

Public Hearings, Transcripts, Presentations and Deliberative Sessions

https://sitingcommission.vermont.gov/publications-presentations-and-meeting-notes

Act 56, Additions to Section 248

Allows Municipal Solar Screening Bylaw or Ordinance

2015

(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.

https://legislature.vermont.gov/statutes/section/30/005/00248

Some Adopted Municipal Solar Siting Ordinances

Woodstock
https://townofwoodstock.org/wp-content/uploads/2013/11/Town-of-Woodstock-Supporting-Plan-Standards-for-the-Protection-of-the-Scenic-Byways-and-Vistas-and-the-Siting-of-Solar-Energy-Facilities.pdf

Bennington
http://benningtonvt.org/wp-content/uploads/2012/11/ARTICLE-29-SCREENING-OF-SOLAR-FACILITIES.pdf

Whiting
https://drive.google.com/file/d/0B_xiUwy6Djr5UnNOeGFaNGlUSGdRMVhzV0FkcWZzeXBZN2NR/view

Salisbury
https://www.townofsalisbury.org/vertical/sites/%7B59D8C83C-9968-4A65-BB2B-00DE19899066%7D/uploads/Solar_siting_bylaws_012616.pdf

Fairfax
http://www.fairfax-vt.gov/vertical/sites/%7BA7F085CD-5C79-4CCF-8878-6AF1EF4F216C%7D/uploads/GMSPs_Bylaw_-_Fairfax_-_Final_9-19-16.pdf

Panton
https://www.pantonvt.us/uploads/3/1/6/7/31673701/panton__interim_bylaw_second_draft_11-5-16.pdf

Shelburne
http://shelburnevt.org/DocumentCenter/View/1907/Solar-Ordinance-Version-4?bidId=

Cornwall
http://cornwallvt.com/minutes/select/solarscreeningbylawnotice.pdf

North Hero
http://www.northherovt.com/uploads/Solarsiting.Bylaws.approved.18.03.06.pdf

Act 56, Additions to Section 248

Establishes Setbacks

2015

(s) This subsection sets minimum setback requirements that shall apply to in-state ground-mounted solar electric generation facilities approved under this section, unless the facility is installed on a canopy constructed on an area primarily used for parking vehicles that is in existence or permitted on the date the application for the facility is filed.

(1) The minimum setbacks shall be:

(A) from a State or municipal highway, measured from the edge of the traveled way:

(i) 100 feet for a facility with a plant capacity exceeding 150 kW; and

(ii) 40 feet for a facility with a plant capacity less than or equal to 150 kW but greater than 15 kW.

(B) From each property boundary that is not a State or municipal highway:

(i) 50 feet for a facility with a plant capacity exceeding 150 kW; and

(ii) 25 feet for a facility with a plant capacity less than or equal to 150 kW but greater than 15 kW.

(2) This subsection does not require a setback for a facility with a plant capacity equal to or less than 15 kW.

(3) On review of an application, the Commission may:

(A) require a larger setback than this subsection requires;

(B) approve an agreement to a smaller setback among the applicant, the municipal legislative body, and each owner of property adjoining the smaller setback; or

(C) require a setback for a facility constructed on an area primarily used for parking vehicles, if the application concerns such a facility.

(4) In this subsection:

(A) "kW" and "plant capacity" shall have the same meaning as in section 8002 of this title.

(B) "Setback" means the shortest distance between the nearest portion of a solar panel or support structure for a solar panel, at its point of attachment to the ground, and a property boundary or the edge of a highway's traveled way.

HOW DID WE GET HERE?

Act 56 Solar Siting Task Force

2015-2016

https://solartaskforce.vermont.gov/

Meetings and Videos

1. July 28, 2015 https://youtu.be/FF7Z9-TJRw8
2. Sept. 17, 2015 https://youtu.be/9_r5uI0Wxks
3. Oct. 22, 2015 https://youtu.be/K9RcYzVUxRg
4. Nov. 3, 2015 https://youtu.be/qXKBhpIsgX8
5. Nov. 13, 2015 https://youtu.be/7SYAXN3IR2o
6. Dec. 3, 2015 https://youtu.be/xf4sLmVPUcE
7. Dec. 17, 2015 https://youtu.be/-_GfP5lHISk
8. Jan. 5, 2016 https://youtu.be/qqcnYx9YHGU
9. Jan. 12, 2016 https://youtu.be/0wqeW2teeqY
10. Jan. 21, 2016 https://youtu.be/25zqetw28p0

Announcements and Meetings

https://solartaskforce.vermont.gov/announcements-meetings

Task Force Materials

https://solartaskforce.vermont.gov/materials

Rejected Quotas

HOW DID WE GET HERE?

2016 Green Vest Energy Rebellion

Jan. 20 Testimony on VLCT Municipal Day

Senate Natural Resources & Energy Committee
https://youtu.be/jorTgzD8NhA
House Natural Resources & Energy Committee
1. https://youtu.be/ZEJLsoLcm7k
2. https://youtu.be/T5rly4cAaac
3. https://youtu.be/rcN5PG80DGg
4. https://youtu.be/5ps4x36v0FI

Senate Health & Welfare Committee
https://youtu.be/3KtIBXyD7w4

House Fish, Wildlife & Water Resources Committee, March 21, 2016
1. https://youtu.be/RcTFqeLMrA4
2. https://youtu.be/xp9zo2Y3sfw

Veto Session 2016

over S.230 which became Act 174

HOW DID WE GET HERE?

Act 174 Working Group

2016

https://puc.vermont.gov/public-participation/act-174-working-group

Meetings and Videos

1. Aug. 5, 2016 https://youtu.be/hRLVrgYdB_k
2. Aug. 25, 2016 https://youtu.be/R0XMfDY_N0o
   Part 2, Public Comment https://youtu.be/fkzuBZapPco
3. Sept. 8, 2016 https://youtu.be/zFnmRAXmmVg
4. Sept. 22, 2016 https://youtu.be/Qn4XENYNa0A
5. Oct. 6, 2016 https://youtu.be/_zwWdt7ppvs
6. Oct. 20, 2016 https://youtu.be/crTyF7KVAIw
7. Nov. 3, 2016 https://youtu.be/skzzHmDFwo4
8. Nov. 17, 2016 https://youtu.be/qwjhyBo5jfA
9. Dec. 6, 2016 https://youtu.be/IZb2xbpAEqA

HOW DID WE GET HERE?

Act 174 Enhanced Energy Planning

"Towns Have More Say"

2016 to the present

https://publicservice.vermont.gov/content/act-174-recommendations-and-determination-standards

Standards established by Commissioner of Public Service

Regions and Municipalities Cannot Deny Any Technology — by Statute

Mandatory for Regional Planning Commissions
- Three Pilot RPCS — Bennington, Two Rivers-Ottauquechee, Northwest
- All Eleven RPCs now have DPS Compliant Plans

Voluntary for Municipal Planning Commissions
- Three Town Plans Submitted to DPS for Compliance
  - New Haven Denied
  - Benson Approved
  - Sudbury Approved

All RPCs now approved to certify compliance of Municipal Enhanced Energy Plans

Vermont Enhanced Town Energy Plans

https://www.vapda.org/vermont-enhanced-town-energy-plans/

ACRPC
None currently

BCRC
Bennington
Sunderland

CVRPC
None currently

CCRPC
Richmond

LCPC
Elmore
Stowe

NVDA
Brighton

NRPC
Bakersfield
Fairfax
Franklin
Highgate
Montgomery
Richford
Swanton

RRPC
Benson
Sudbury

SWCRPC
None currently

TRORC
Braintree

WRC
Londonderry
Westminster

(undated)

SWCRPC as of August 2018

TOWN ENERGY PLANNING
http://swcrpc.org/energy/

The SWCRPC has a contract that enables us to continue assisting towns with local energy planning. This effort will involve providing local technical assistance with municipal energy planning in accordance with Act 174 and the related standards developed by the Department of Public Service.

As of August 2018, Ludlow is the only municipality that has an adopted enhanced energy plan. It is included within the Ludlow Municipal Plan and it can be downloaded from Ludlow's website.

Other towns are currently working on draft or final draft enhanced energy plans, including Andover, Chester, Reading, Springfield, and Windsor. Baltimore is currently reviewing a draft solar siting policy at this time. Below are draft energy plans as well as data and maps for each town:

Andover final draft enhanced energy plan
Baltimore
Data and Maps
Draft Solar Siting Policy
Cavendish data and maps
Chester draft enhanced energy plan
Ludlow adopted enhanced energy plan (see 2017 Municipal Plan)
Reading rough draft enhanced energy plan
Springfield draft enhanced energy plan
Weathersfield data and maps
West Windsor data and maps
Windsor rough draft enhanced energy plan

THE INCENTIVE TO DO AN ENHANCED ENERGY PLAN

Due Consideration

vs.

Substantial Deference

at the PUC for Electric Generation Siting *Only*

Does Not Apply to Transportation or Heating even though Municipalities seeking enhanced planning designation must include those topics

*Act 250 requires **compliance** with town plans.*

WHAT IS THE PUC LOOKING FOR IN MUNICIPAL PLANS?

https://puc.vermont.gov/sites/psbnew/files/doc_library/5100-PUC-nm-effective-07-01-2017_0.pdf

Clear, Written Community Standard. In order to find that a project would violate a clear, written community standard, the Commission must find that the Project is inconsistent with a provision of the applicable town or regional plan that:

(1) Designates specific scenic resources in the area where the project is proposed. Statements of general applicability do not qualify as clear, written community standards. For example, the general statement that "agricultural fields shall be preserved" would not qualify because the statement does not designate specific resources as scenic. The statement "the agricultural fields to the west of Maple Road are scenic resources that must be preserved" would qualify because it designates specific resources as scenic.

(2) Provides specific guidance for project design. For example, the statement "only dwellings, forestry, and agriculture are permitted within the Maple Road scenic protection area" would be a clear standard because it states with specificity what type of development is permitted. The statement "all development in the Maple Road scenic protection area must maintain the rural character of the area" would not be a clear standard because it does not state with specificity what type of development is permitted.

Standard Sizes, Programs and Acreage of Solar Arrays in Vermont

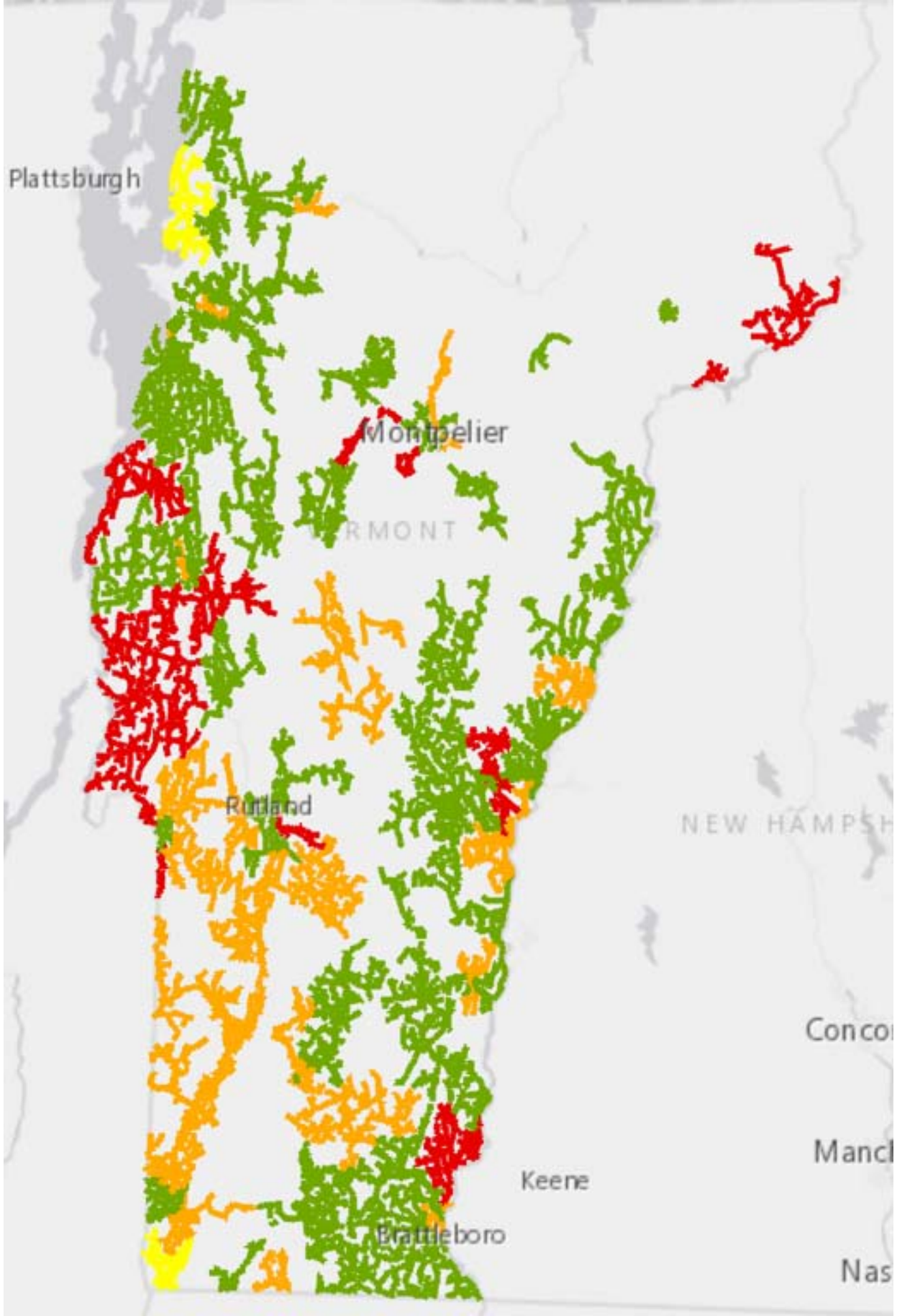
Net-Metered — *highest cost — >15 cents/kWh*
— 150 kW ~1 acre or less
— 500 kW ~ 3 - 5 acres

Standard-Offer — *cost driver ~ 8 - 10 cents/kWh*
— 2.2 mW ~ 9 - 15 acres

Utility Scale — *lowest cost — < 8 cents/kWh*
— 4.99 mW ~ 16 - 32 acres
— 20 mW ~100+ acres

VCE White Paper on Vermont's Energy Policies
http://vce.org/VCE_White_Paper_UnderstandingVermontEnergyPolicies_09August2018.pdf

Green Mountain Power Solar Map



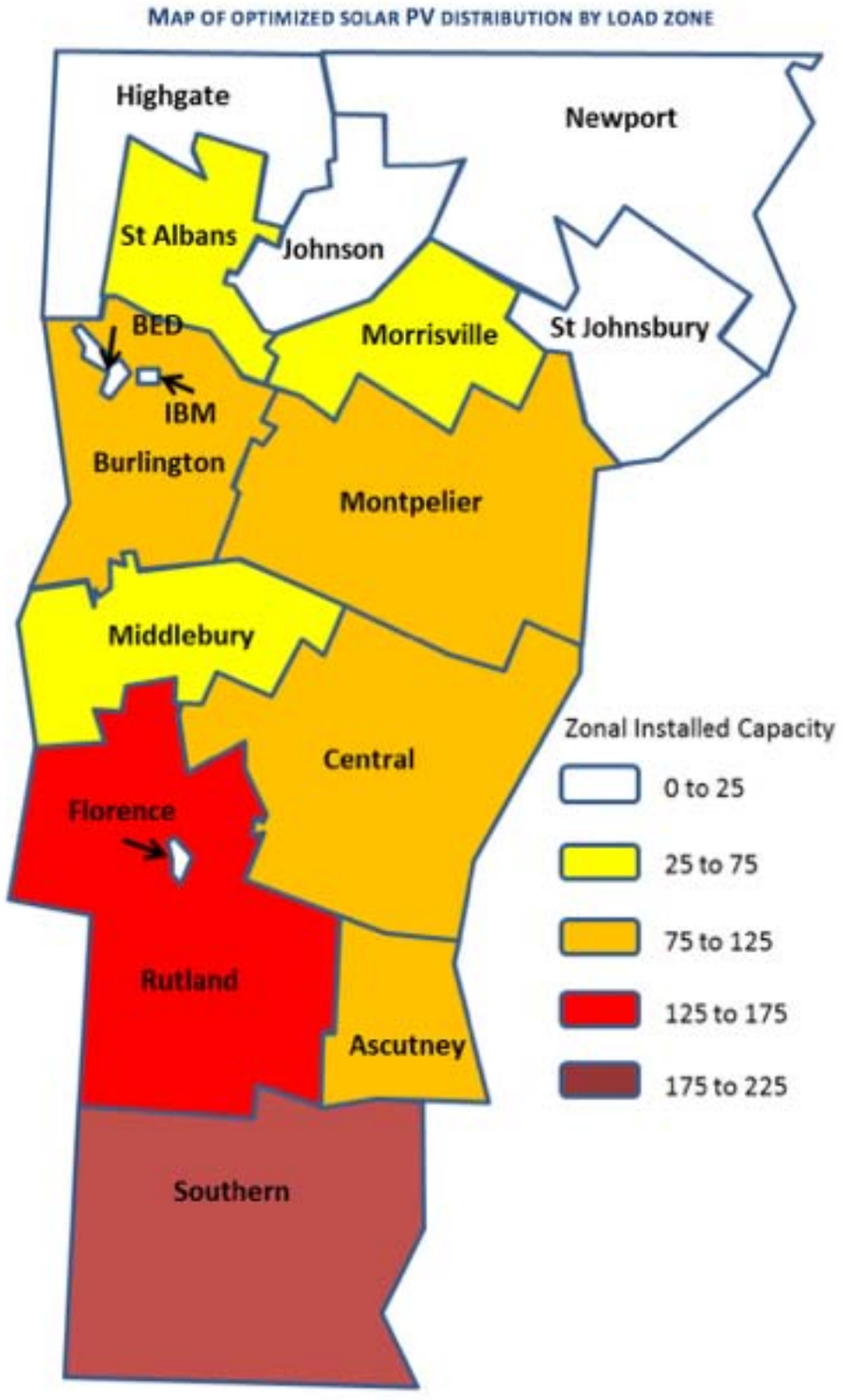
GMP Solar Map 2.0

DG Circuit Capacity Per Substation Nameplate Rating

- Unrated
- Substation transformer with at least 20% capacity remaining
- Substation transformer with less than 20% capacity remaining
- Substation transformer with less than 10% capacity remaining
- Due to system limitations, interconnections on this circuit may experience higher costs and delayed interconnections

http://gmp.maps.arcgis.com/apps/webappviewer/index.html

2018 VELCO Long-Range Transmission Plan

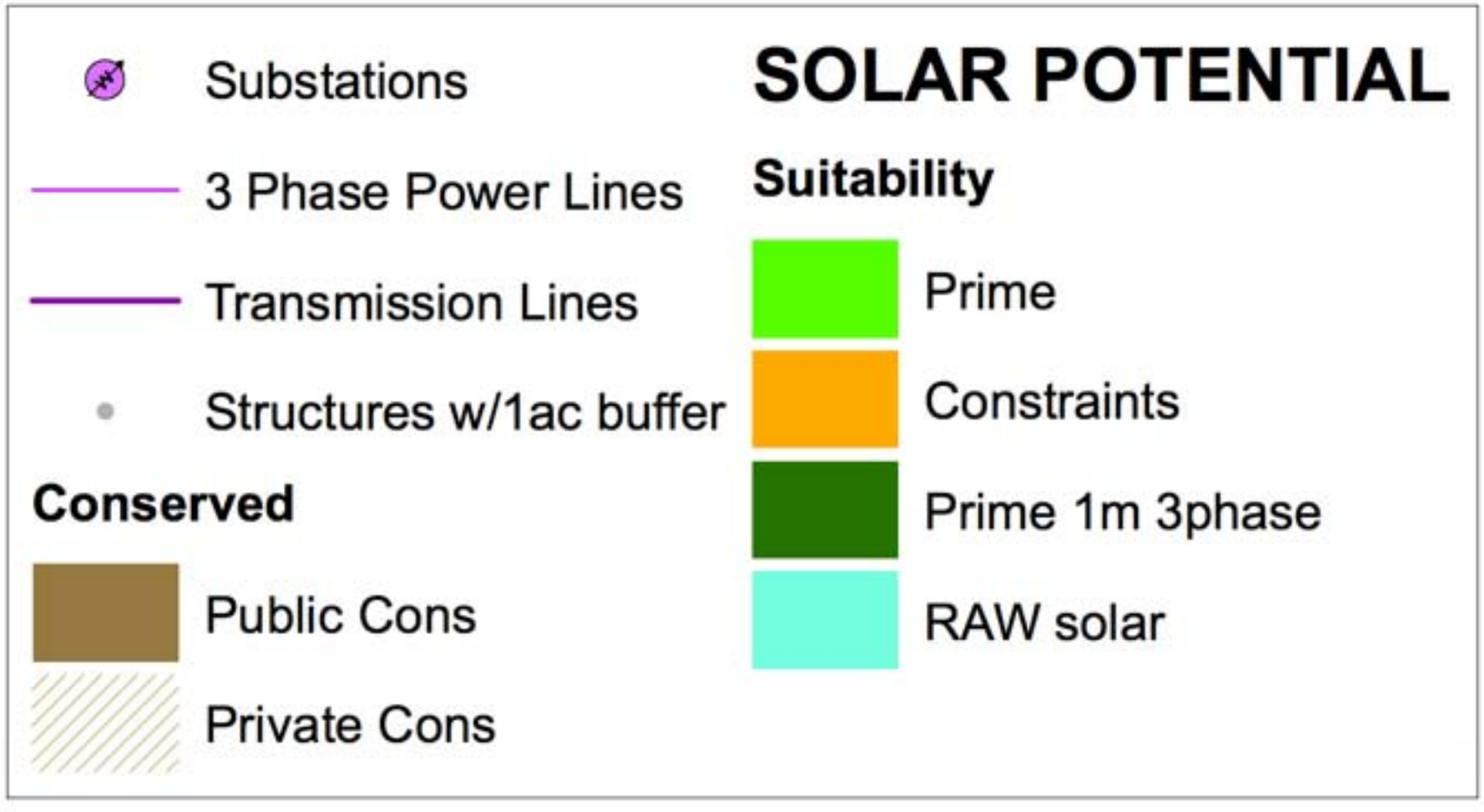


Enhanced Energy Planning for Solar

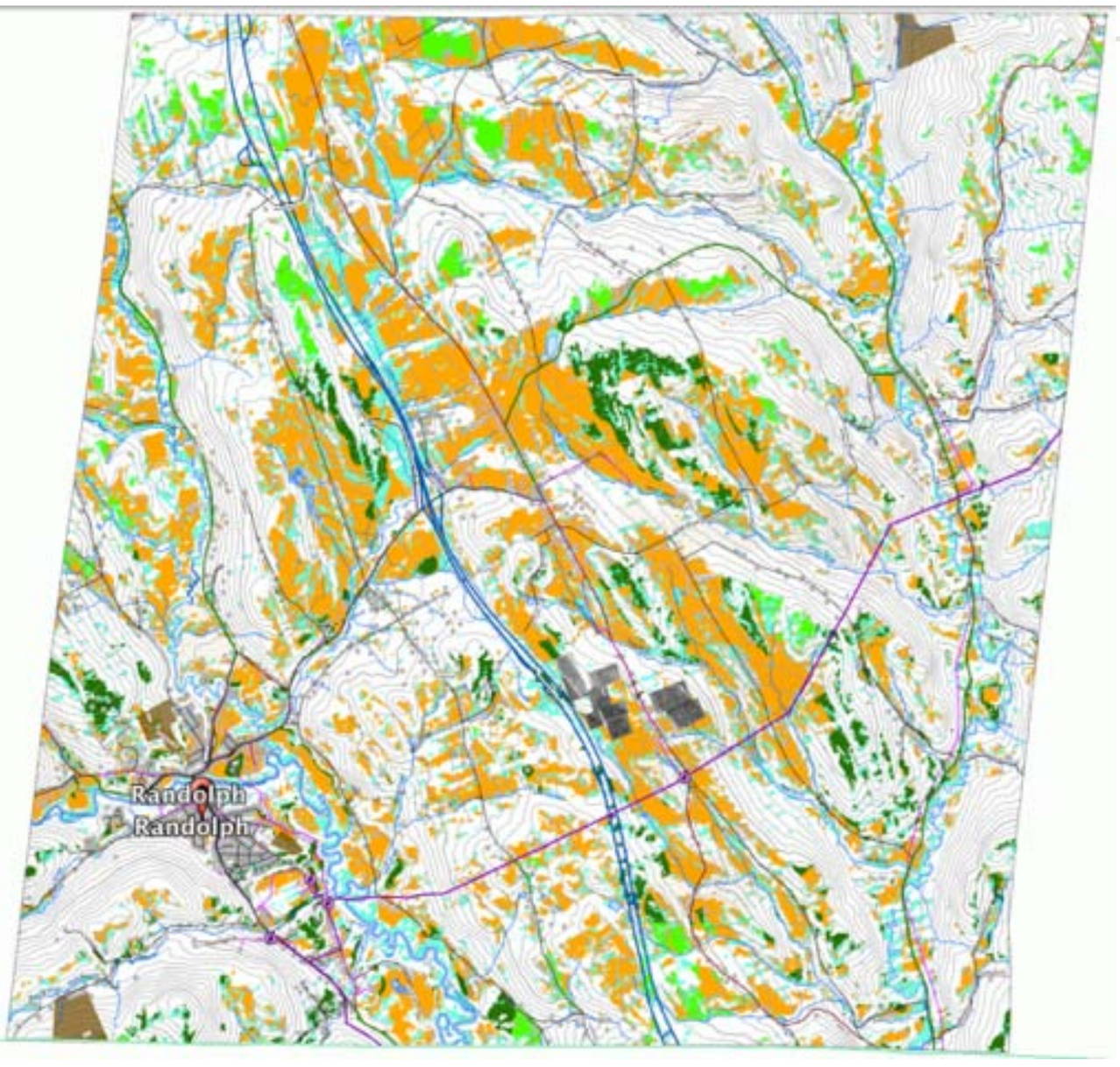
Identifying Preferred Sites, One Approach

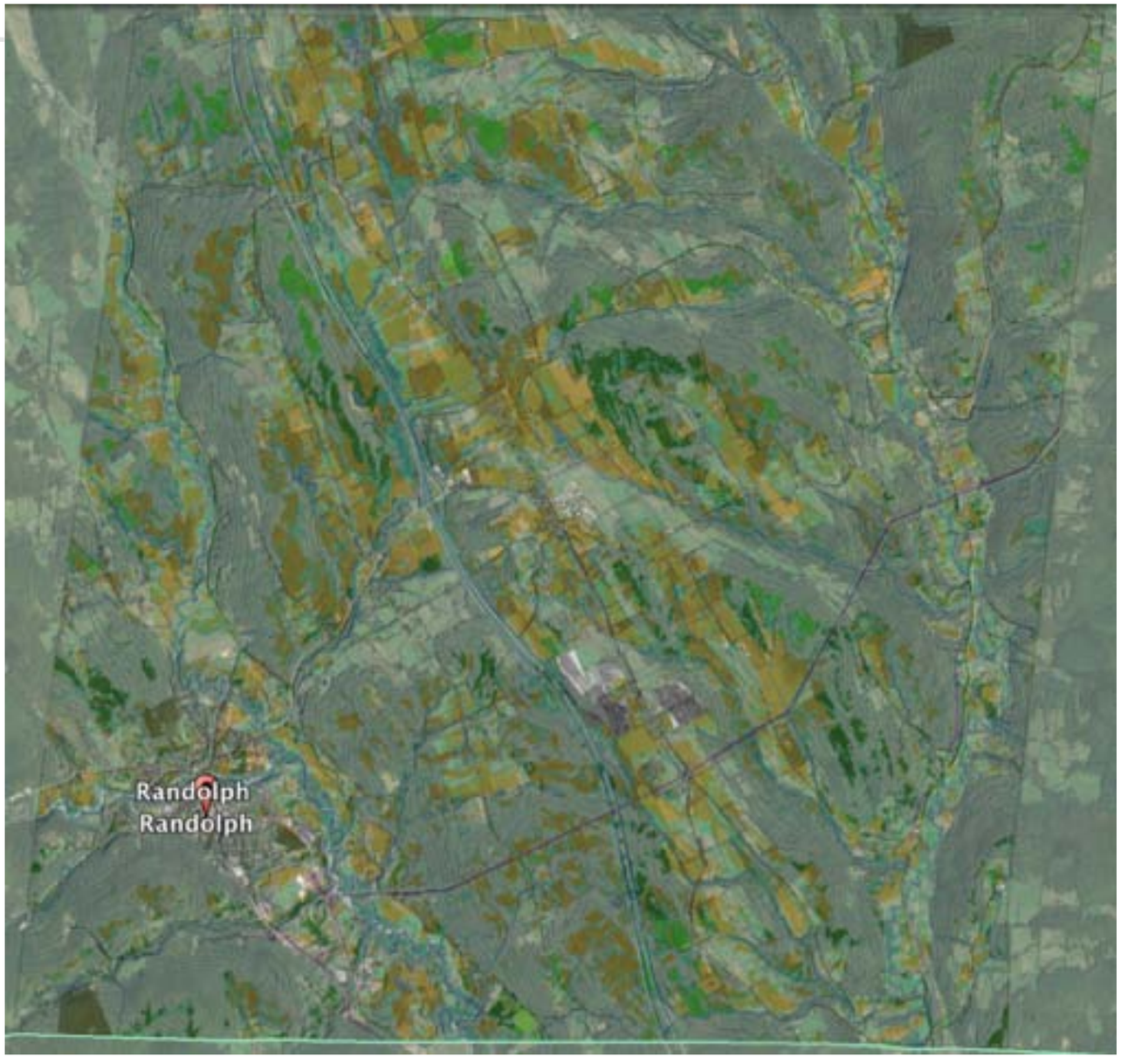
b. Areas that are considered prime solar potential on the Solar Energy Potential map of this Town Plan is considered preferred.

c. Areas that are mapped with constraints on the Solar Energy Potential map of this Town Plan will be conditionally approved by joint letter of the Planning Commission and Selectboard.

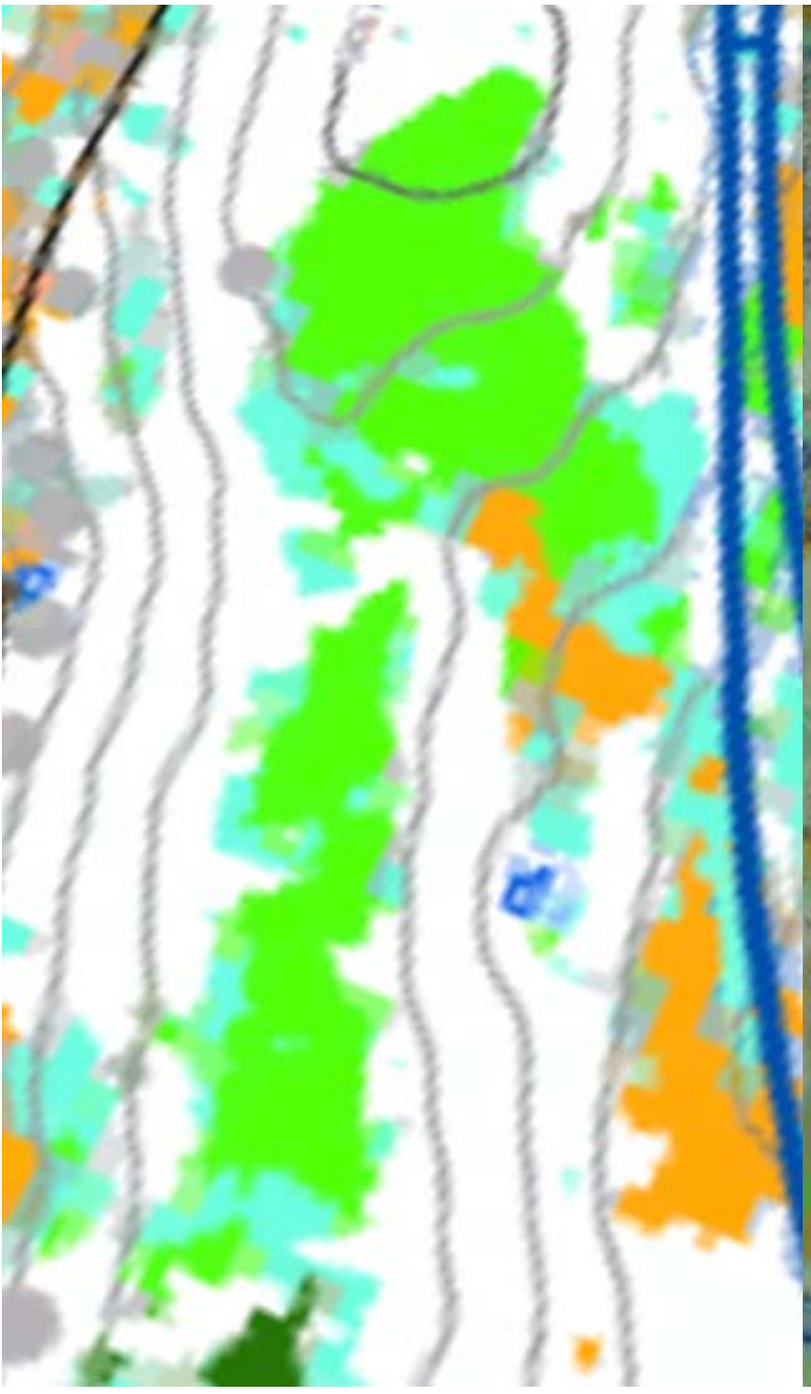


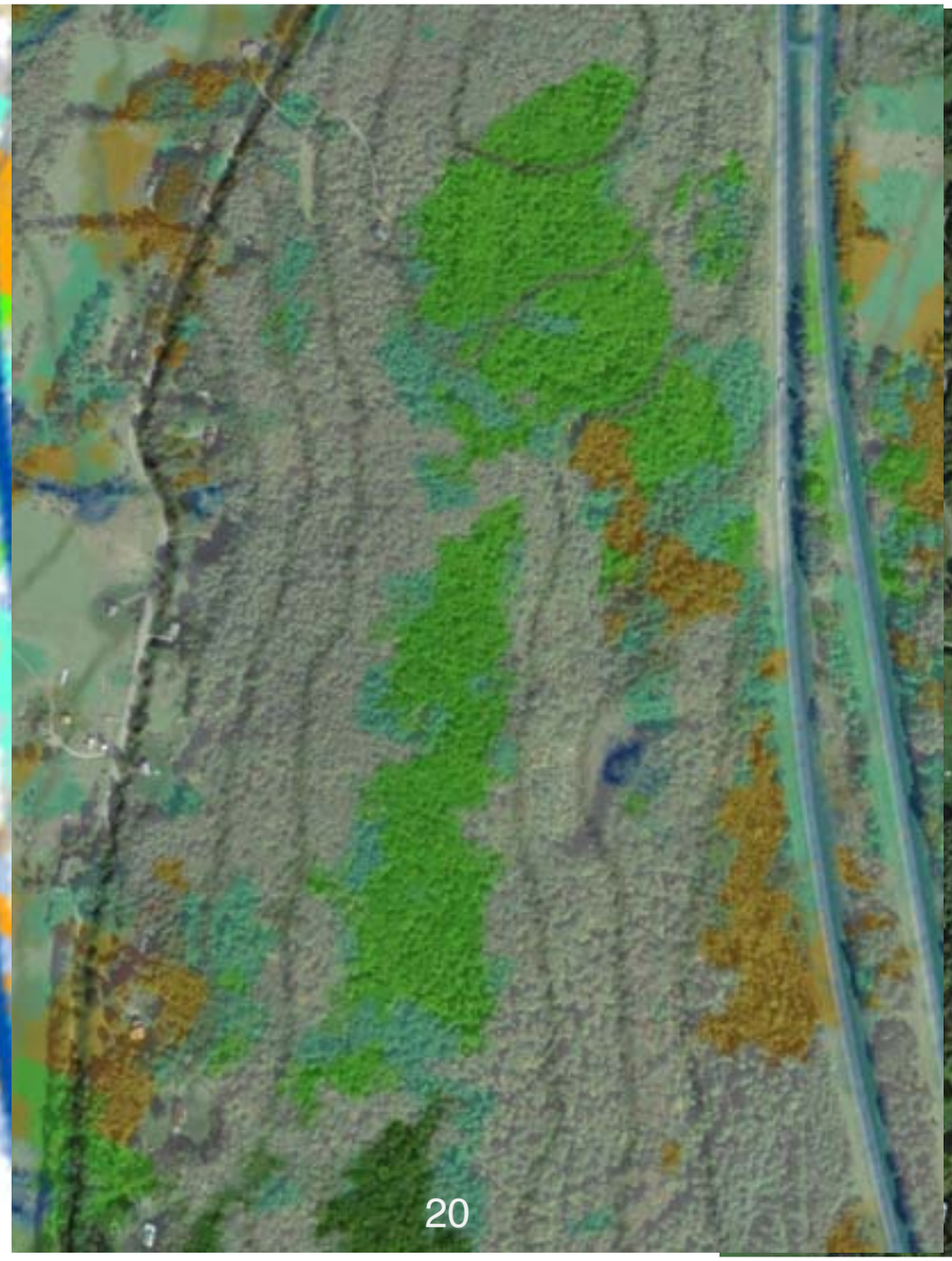
“Prime” Solar in Light Green



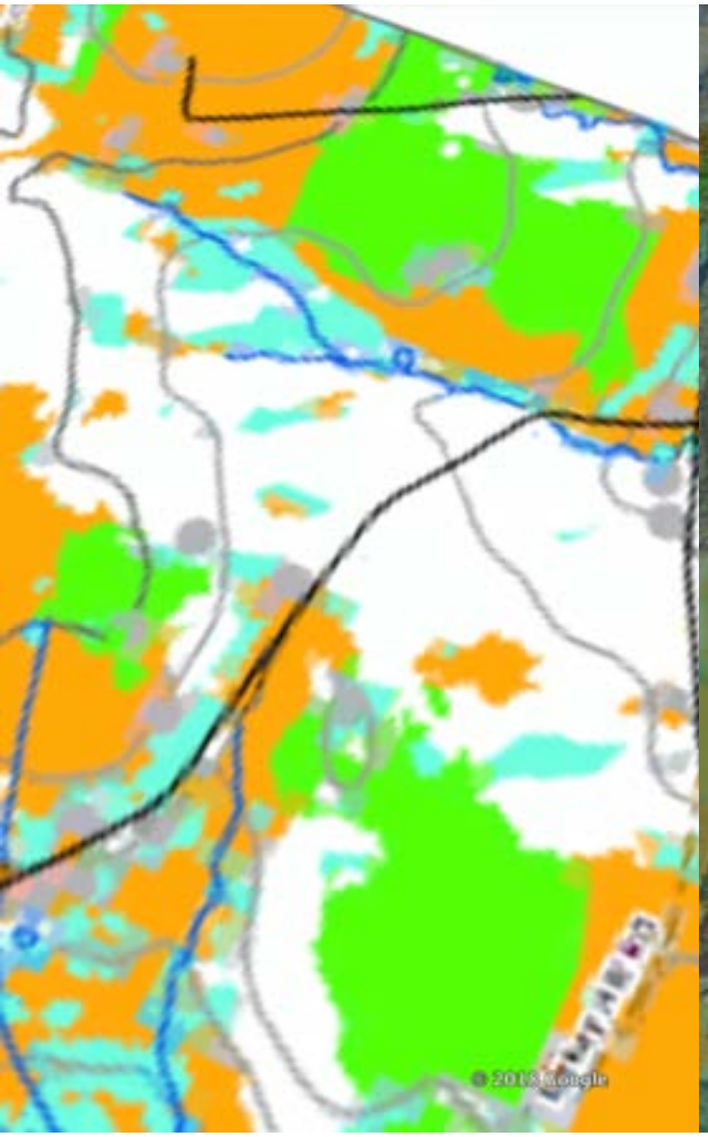


“Prime” Solar Sites Forested

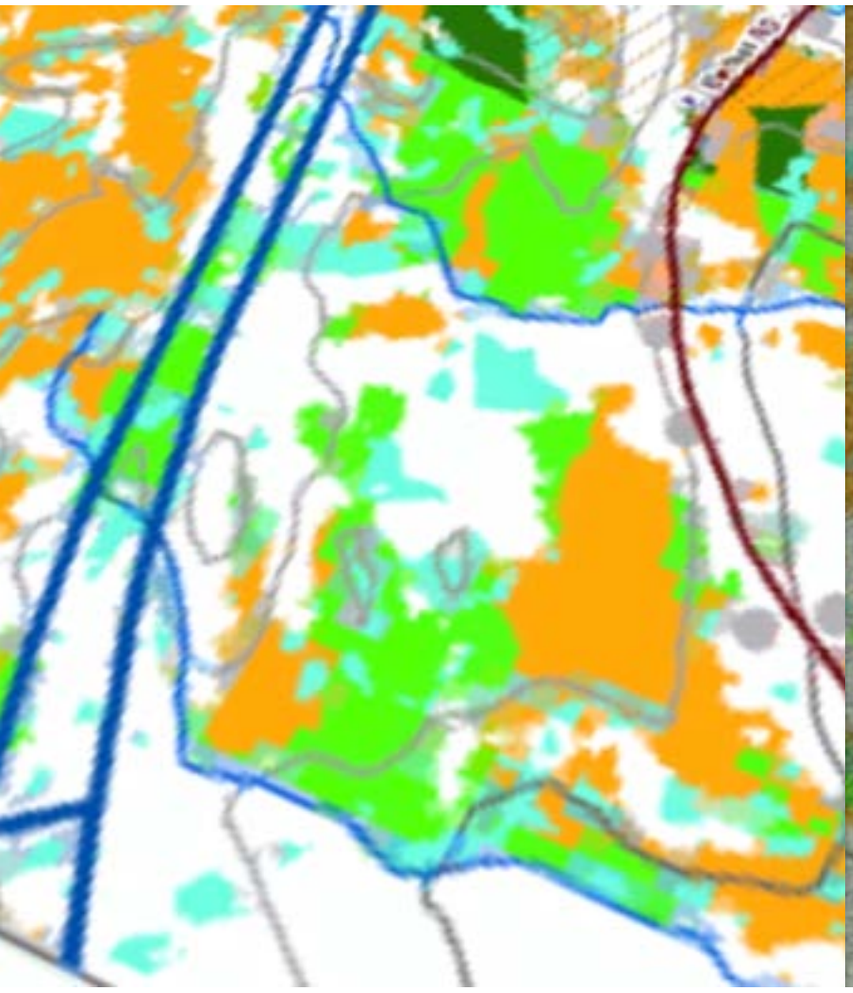


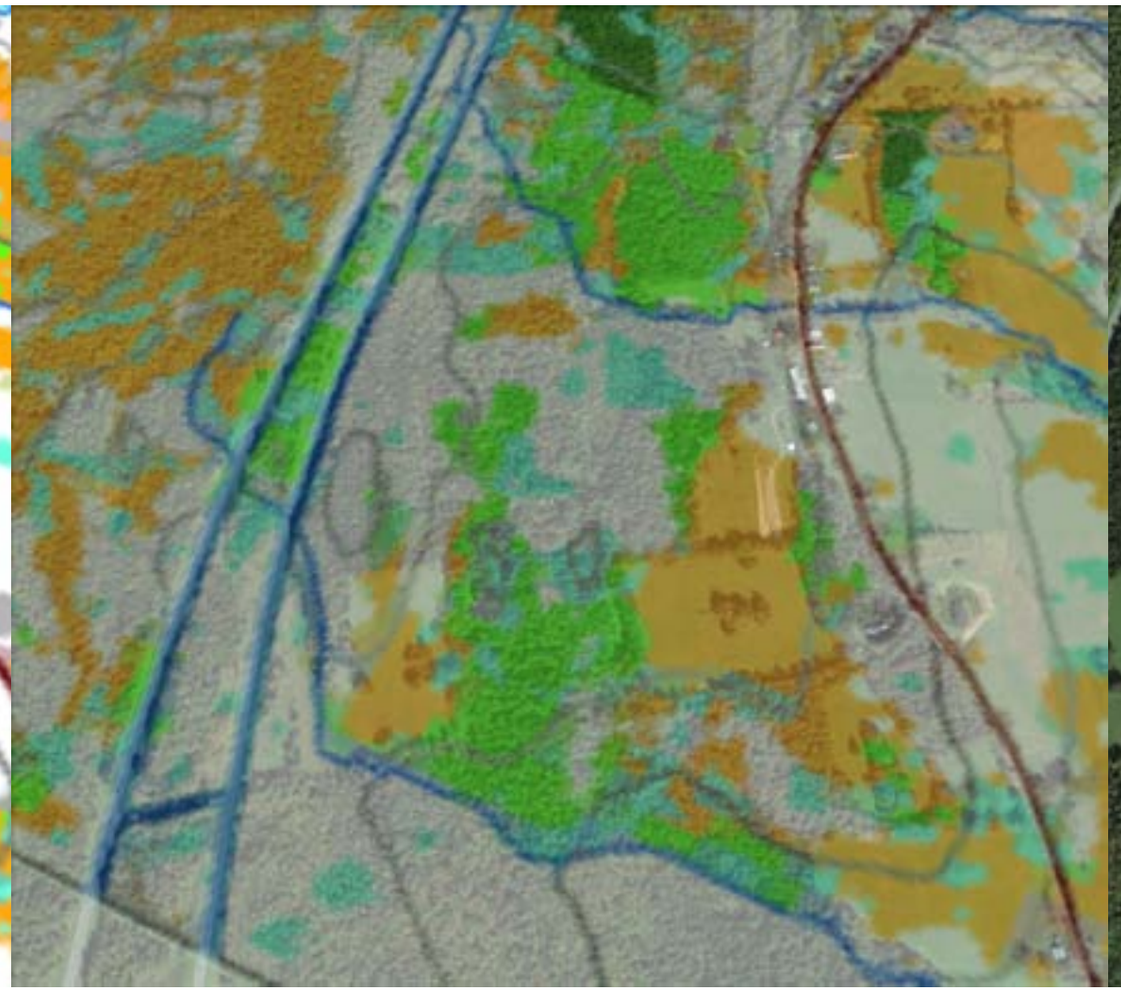


“Prime” Solar Sites Forested



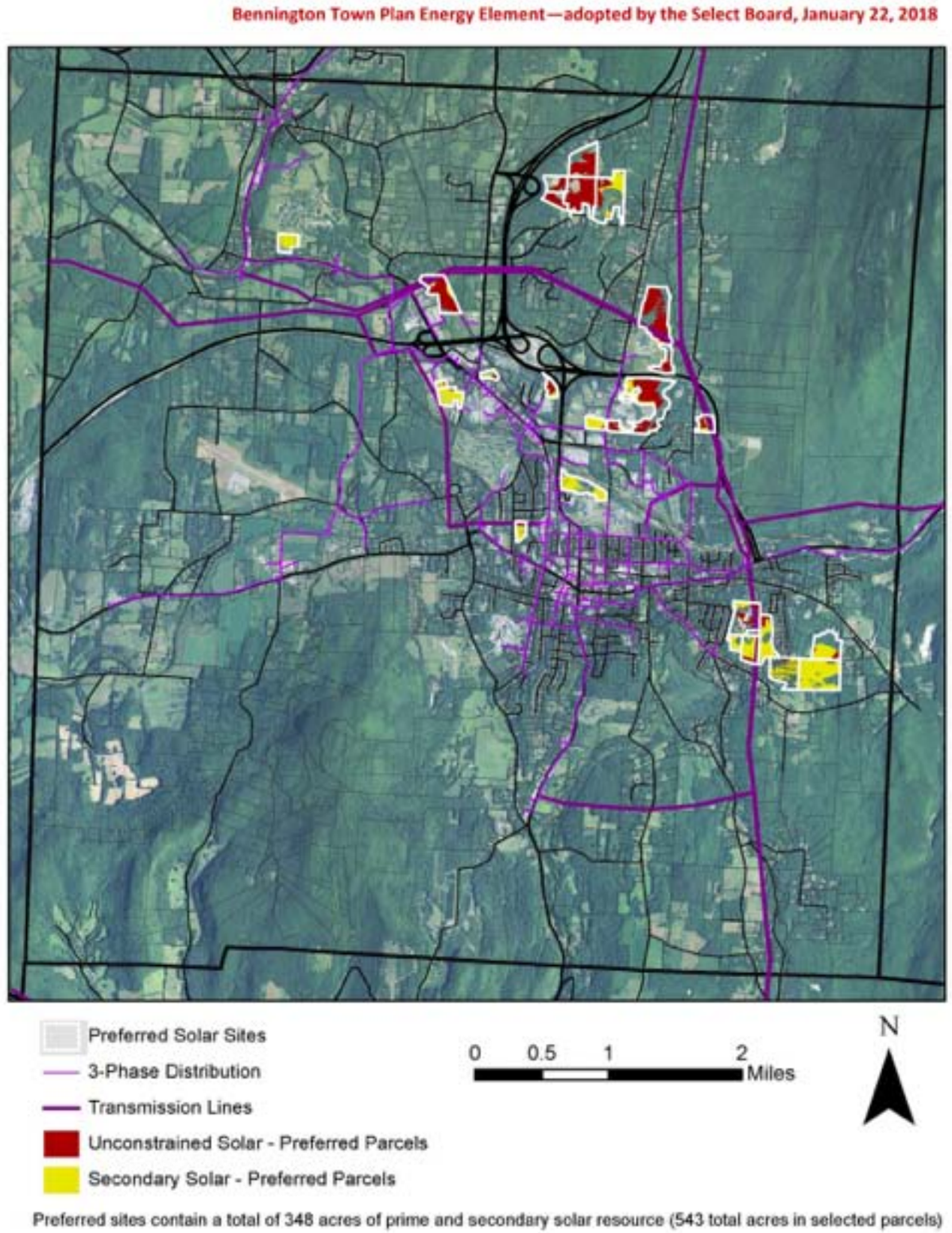
“Prime” Solar Sites Forested





Preferred Sites Mapping

Another Approach



Map 8-4. Preferred sites—suitable for development of small, community, and larger (utility) scale solar generation projects.

Also developers can seek Preferred Sites joint letters from the Town Select Board, Planning Commission and Regional Planning Commission

SUDBURY LOCALLY PREFERRED AREAS MAP

LOCALLY PREFERRED LOCATIONS

Based on RRPC Energy Committee

Sudbury, Vermont

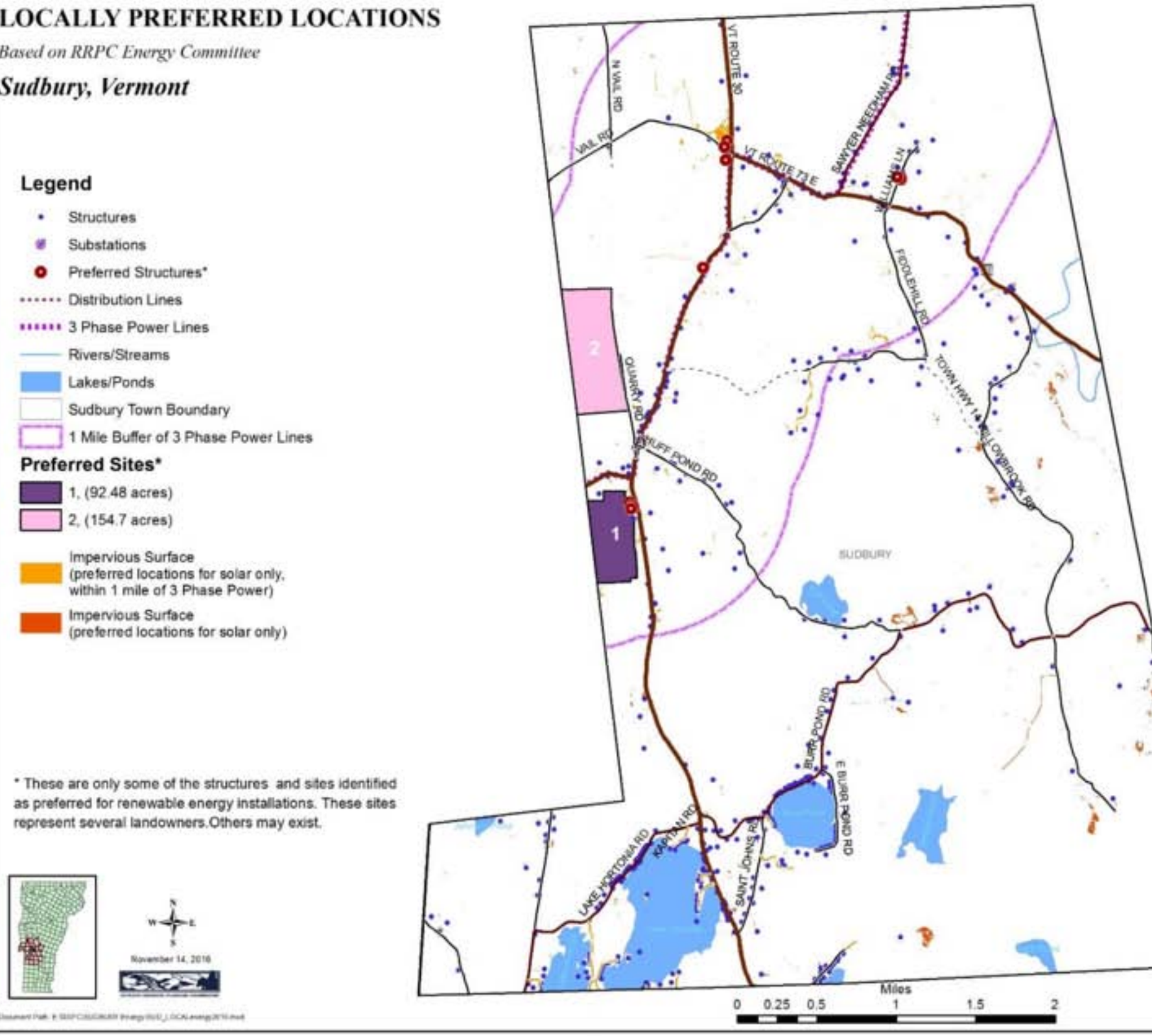
Legend

- Structures
- Substations
- Preferred Structures*
- Distribution Lines
- 3 Phase Power Lines
- Rivers/Streams
- Lakes/Ponds
- Sudbury Town Boundary
- 1 Mile Buffer of 3 Phase Power Lines

Preferred Sites*

- 1, (92.48 acres)
- 2, (154.7 acres)
- Impervious Surface (preferred locations for solar only, within 1 mile of 3 Phase Power)
- Impervious Surface (preferred locations for solar only)

* These are only some of the structures and sites identified as preferred for renewable energy installations. These sites represent several landowners.Others may exist.

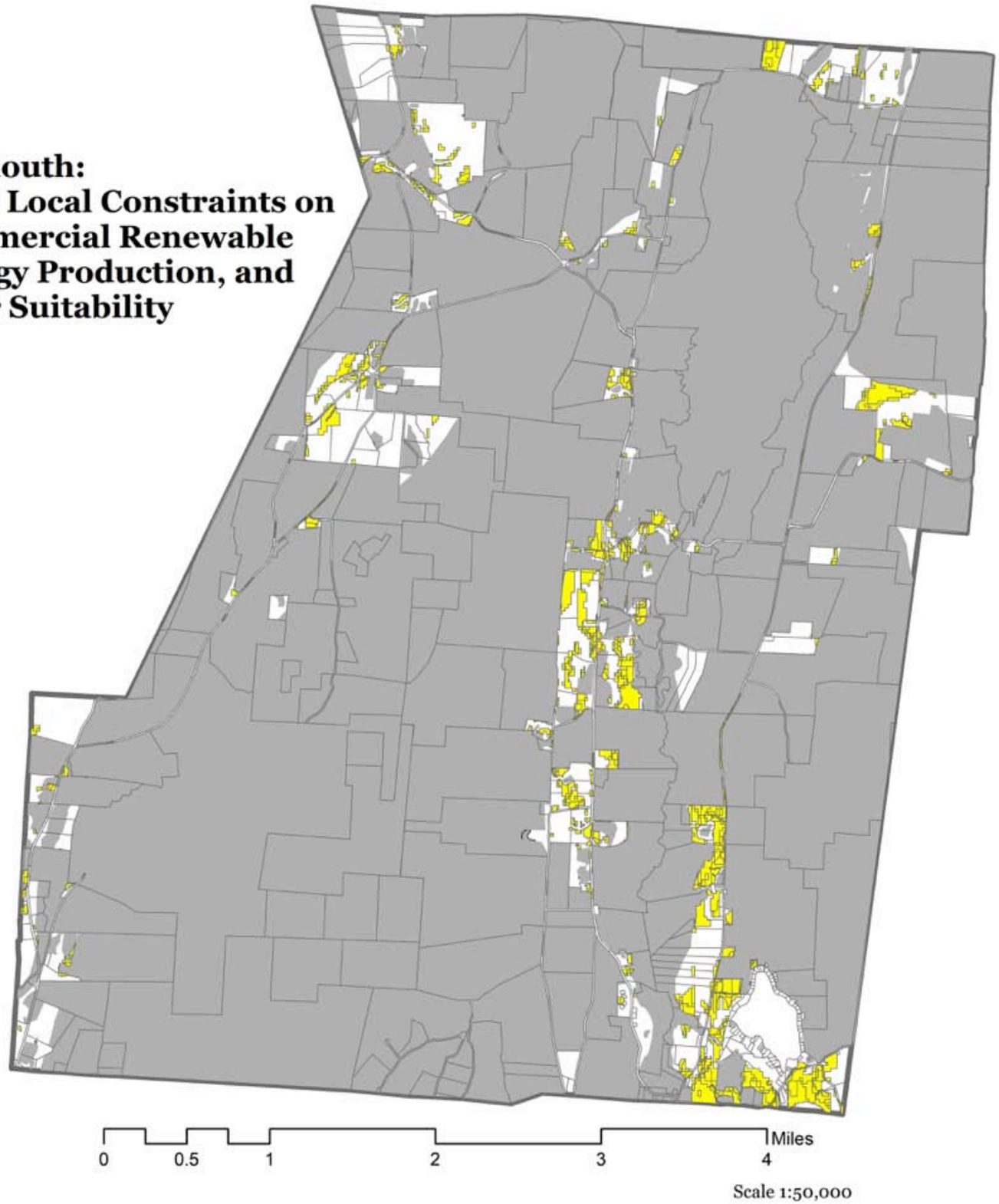


November 14, 2016

Draft by one individual

Not Work Product of Tinmouth Planning Commission

Tinmouth:
Total Local Constraints on Commercial Renewable Energy Production, and Solar Suitability

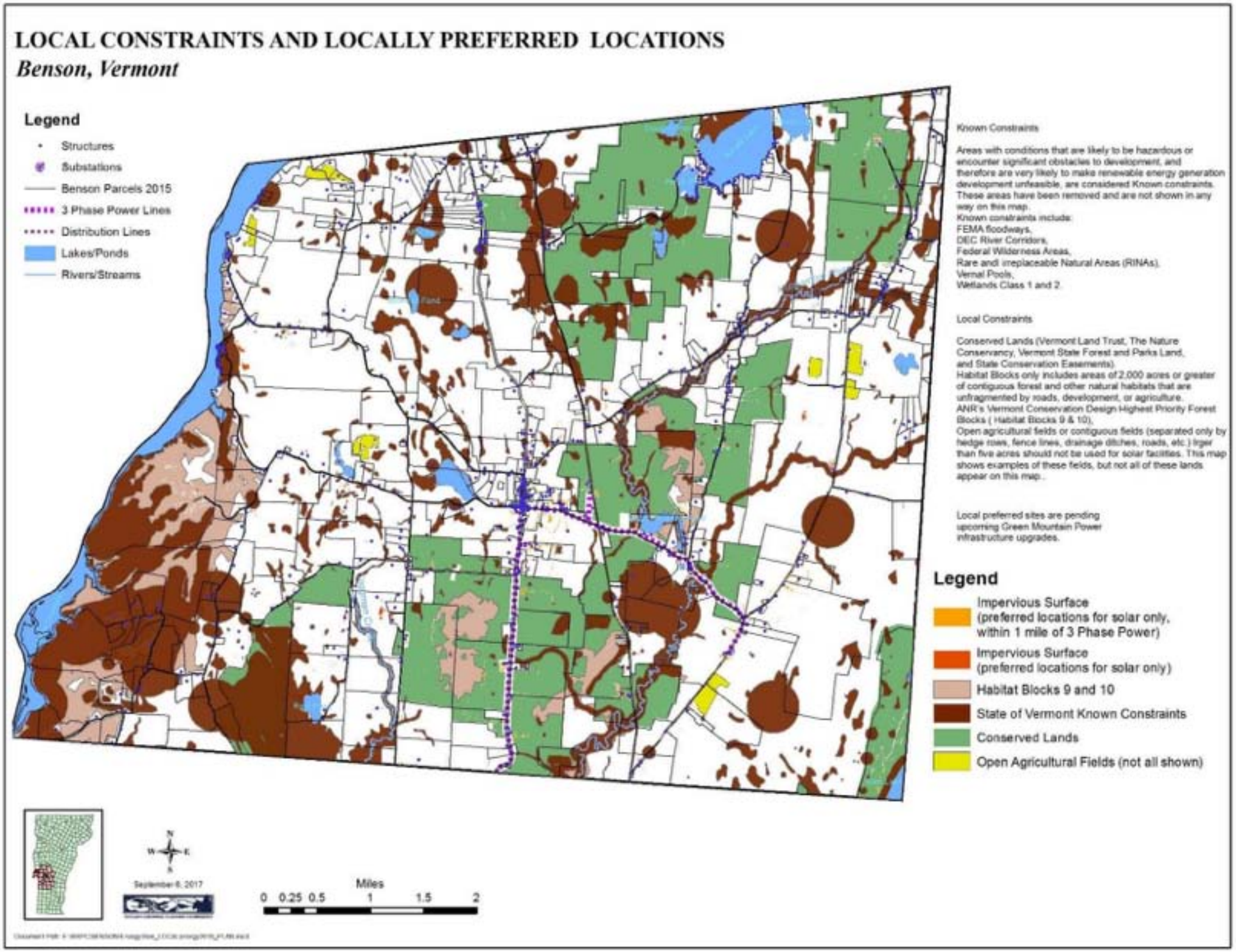


Prepared by R. A. Lloyd, April 20, 2017

VLT/Local Constraints

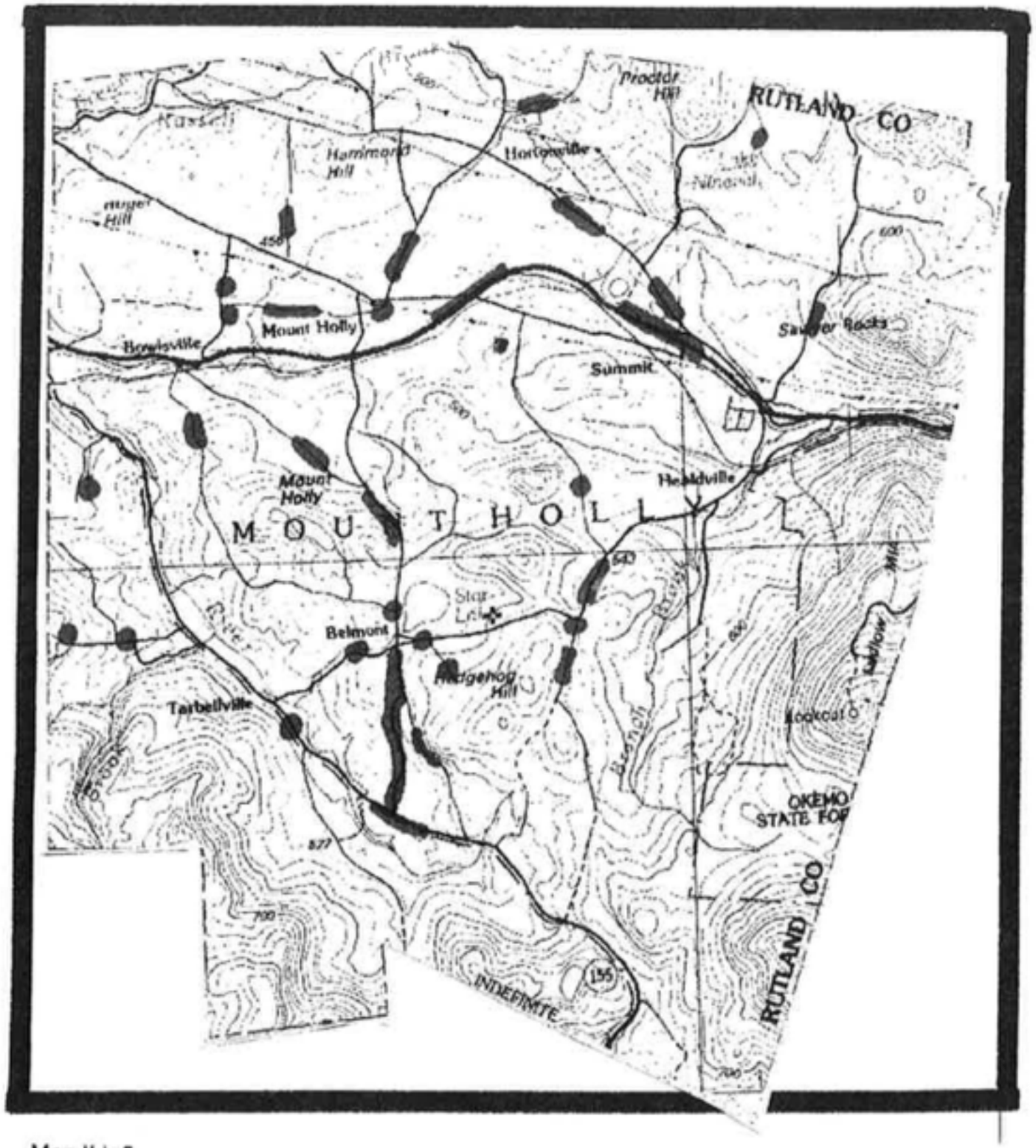
Preferred Sites

Yet Another Approach



Unsuitable and Local Constraints Areas and Preferred Areas Map

What about this approach to identifying scenic resources the town wants to protect?



Map II b 5

SCENIC ROADS and VISTAS
Working Group of the Planning Commission, 2003

Southern Windsor County Regional Energy Plan

Adopted

June 25, 2018

Southern Windsor County Regional Planning Commission

Efficiency Vermont has also made available electricity consumption data for 2014 through 2016 at the town-level. Below is a summary of the average residential electricity consumption in 2015 for each town:

- Baltimore 8,224 KWh
- West Windsor 7,315 KWh
- Weathersfield 7,211 KWh
- Springfield 6,921 KWh
- Windsor 6,731 KWh
- Chester 6,689 KWh
- Reading 6,565 KWh
- Andover 6,465 KWh
- Cavendish 6,255 KWh
- Ludlow 5,491 KWh

Figure 9. Map of Regional Zip Codes. Data organization regarding electricity consumption was based upon the zip codes outlined above.

Weathersfield

Population

Total Population[i] (2015):	2,794
Proj. Annual Avg. Growth Rate[ii]:	↓ 0.00162
Population Density:	63.2 persons/ square mile

Households

Owner-Occupied Units[iii]:	1,104
Renter- Occupied Units[iii]:	149
Total Households[iii]:	1,427
Avg. Household Size[iii]:	2.25 people/ household

Businesses[iv]

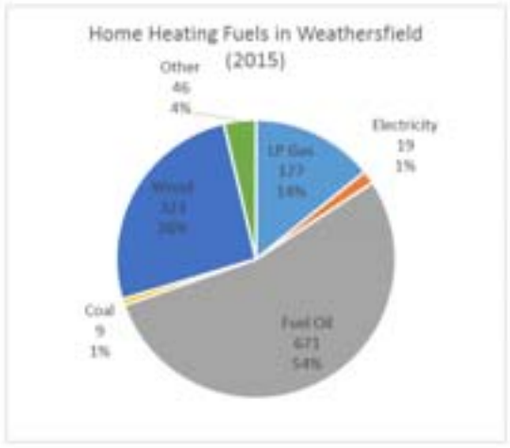
Total businesses in Weathersfield:	76
Employees working in Weathersfield:	363
Average wage:	$39,427

Heating

Residential[i] (see figure)

Businesses[v]:

Estimated avg. building space:	3,659 sq. ft.
Total energy use:	10.1 billion BTUs
Estimated total annual cost:	$240,047
Avg. annual cost per business:	$3,159

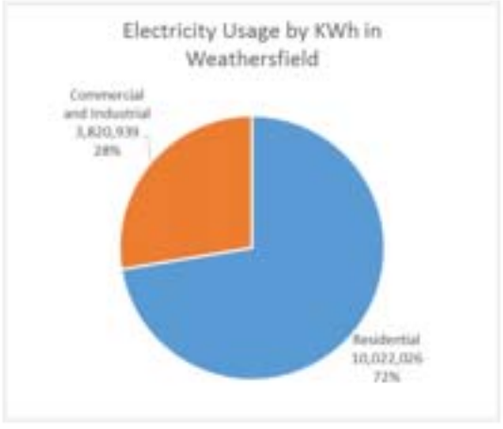


Transportation

Number of vehicles:	2,633
Estimated vehicle miles traveled:	31.9 million
Estimated gal. fuel used per year:	1.7 million
Estimated fuel cost per year:	$3.9 million
Residents driving alone to work:	81%
Average commute time:	24 minutes

Electricity Use

Electricity Usage in 2015[vi]	(see figure)
Avg. Residential Usage:	7,211 KWh
Total Usage (2014-2016):	↑ 35,048 KWh ↑ 0.25%



swcrpc.org/wp-content/uploads/2018/08/Data-Summary-Weathersfield.pdf

Energy Generation

Existing Renewable Energy Generation

Solar	39 sites	137.2 KW	168,238 MWh
Wind	0	0	0
Hydro	0	0	0
Biomass	0	0	0

Renewable Energy Generation Targets[vii]

2015 (Baseline)	168.2 MWh
2025	5,453 MWh
2035	10,906 MWh
2050	21,811 MWh

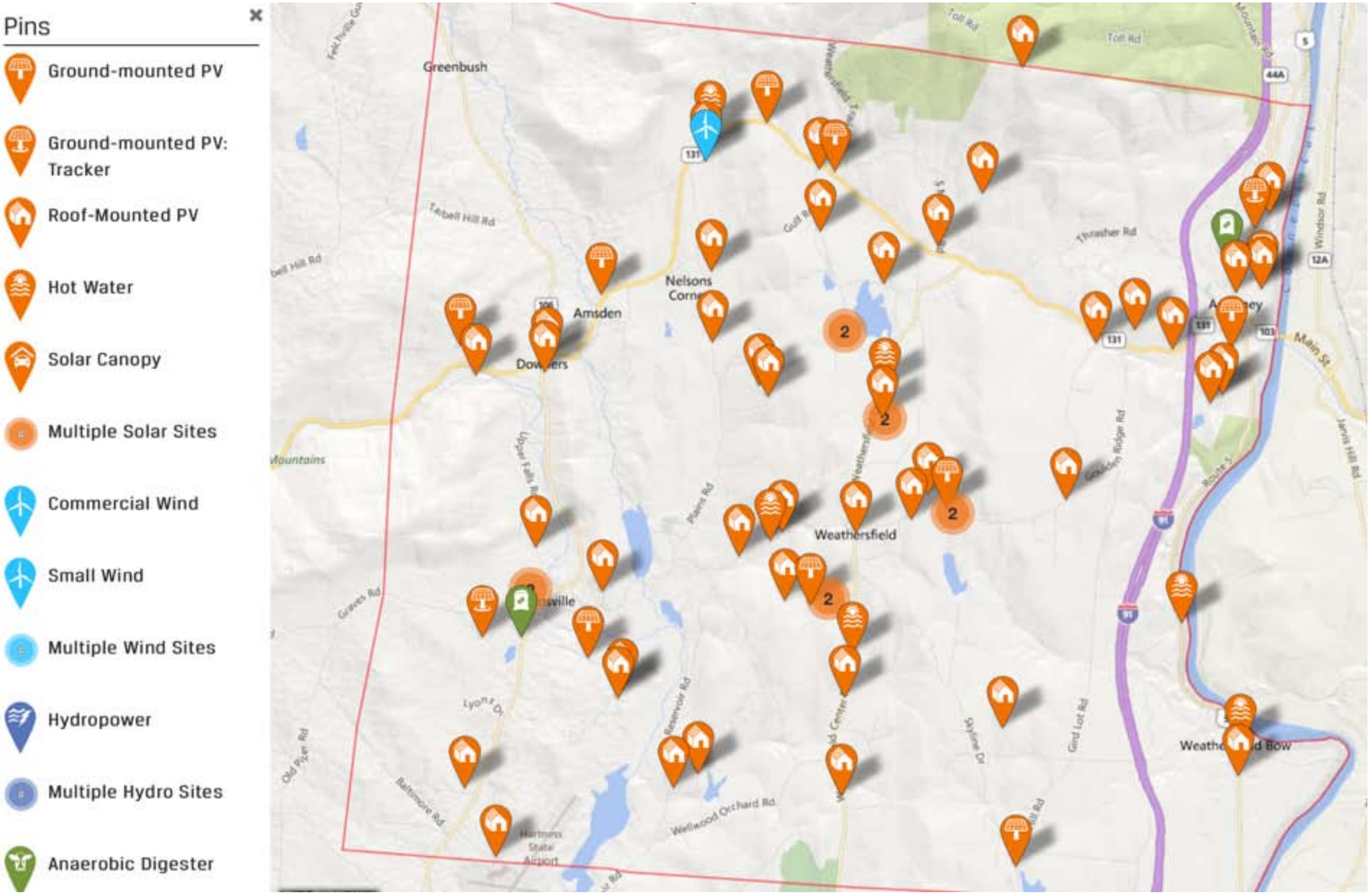
Potential for Renewable Energy Generation[viii]

Rooftop Solar	2.11 MW	2,588 MWh
Ground-Mounted Solar	349.4 MW	428,504 MWh
Wind	107.9 MW	330,821 MWh
Hydro	0.207 MW	725 MWh

http://swcrpc.org/wp-content/uploads/2018/08/Data-Summary-Weathersfield.pdf

Vermont Energy Atlas

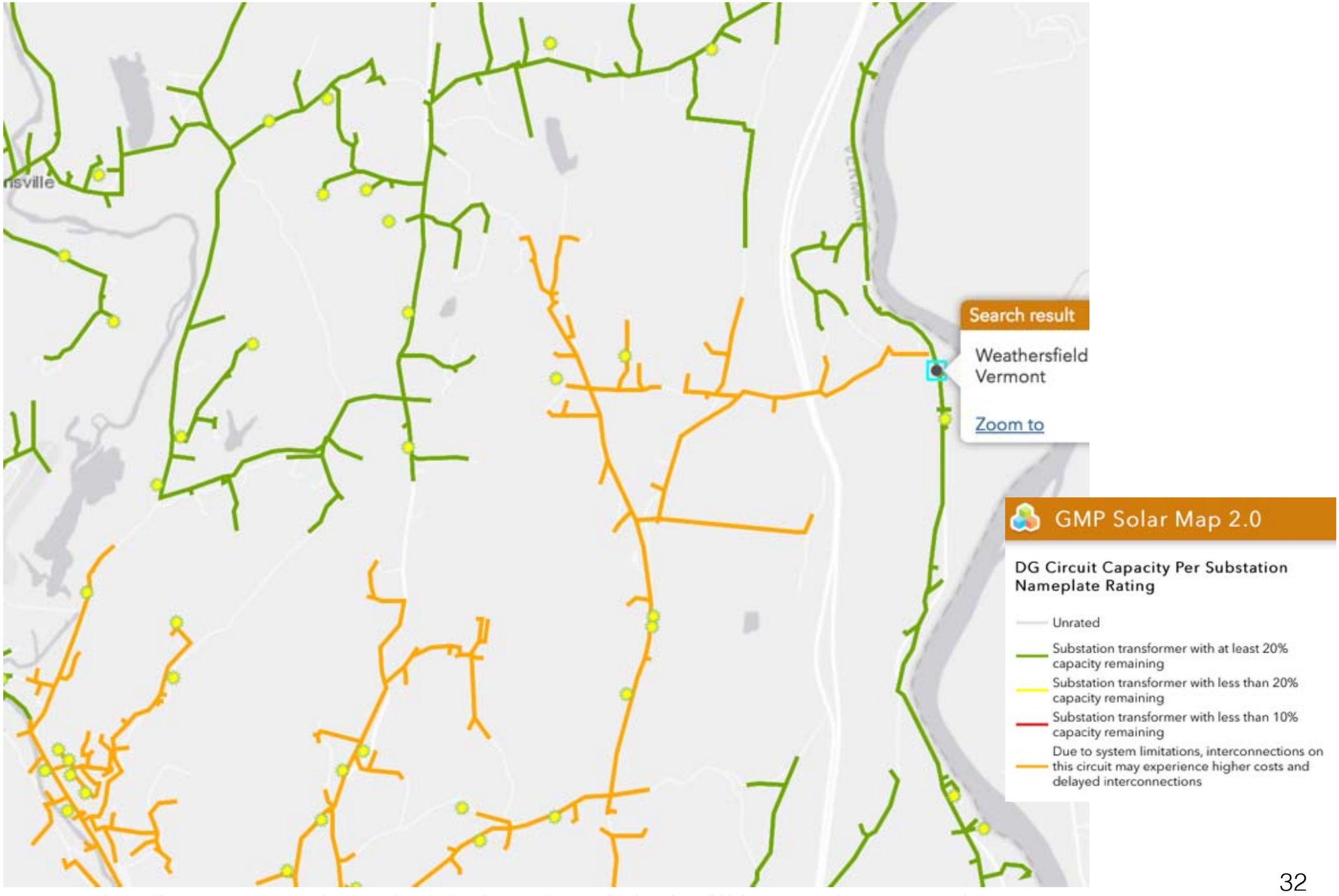
Weathersfield



https://www.vtenergydashboard.org/energy-atlas

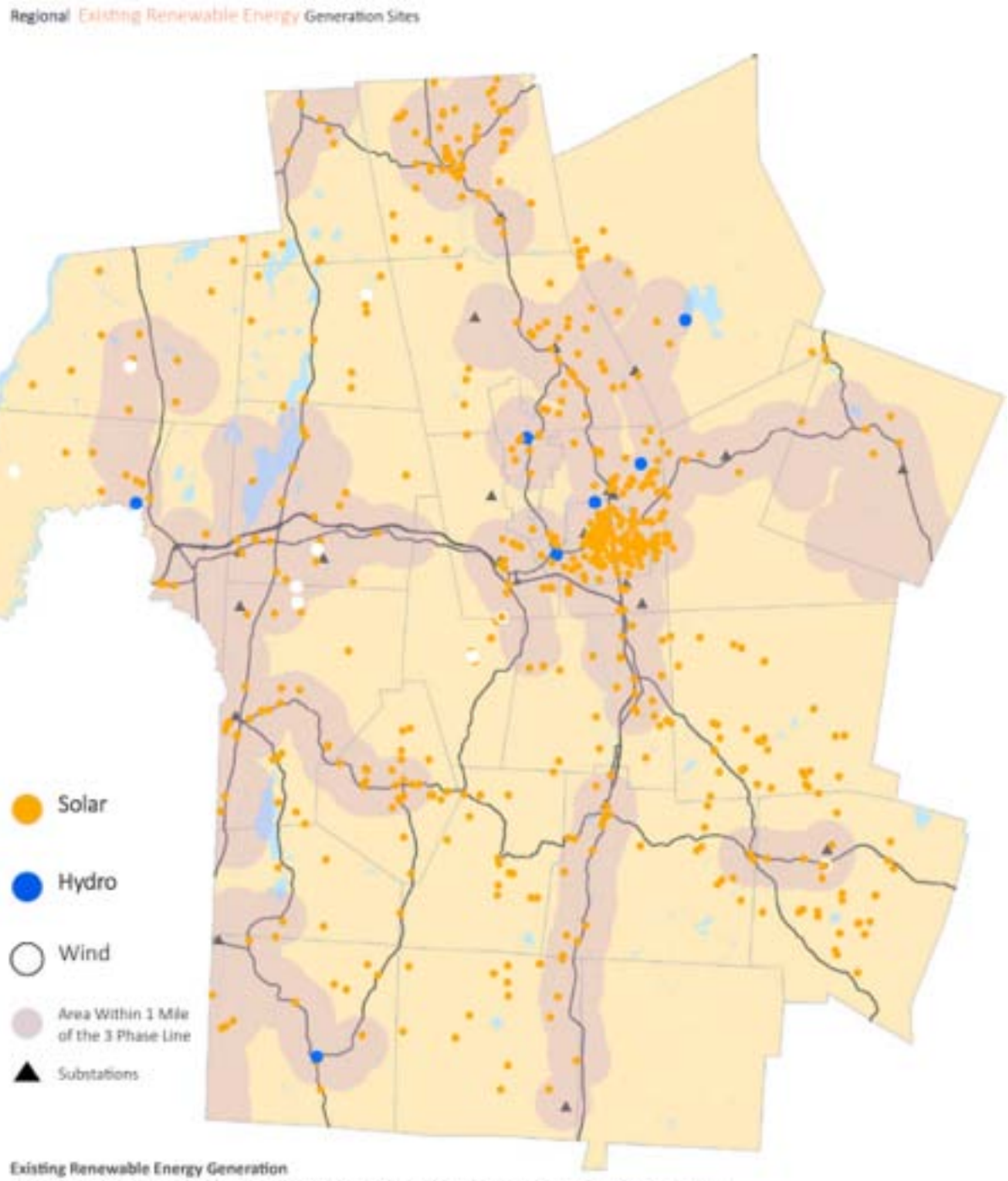
Green Mountain Power Solar Map

Weathersfield



http://gmp.maps.arcgis.com/apps/webappviewer/index.html?id=4eaec2b58c4c4820b24c408a95ee8956

Identify locations of substations and 3-phase Power Lines



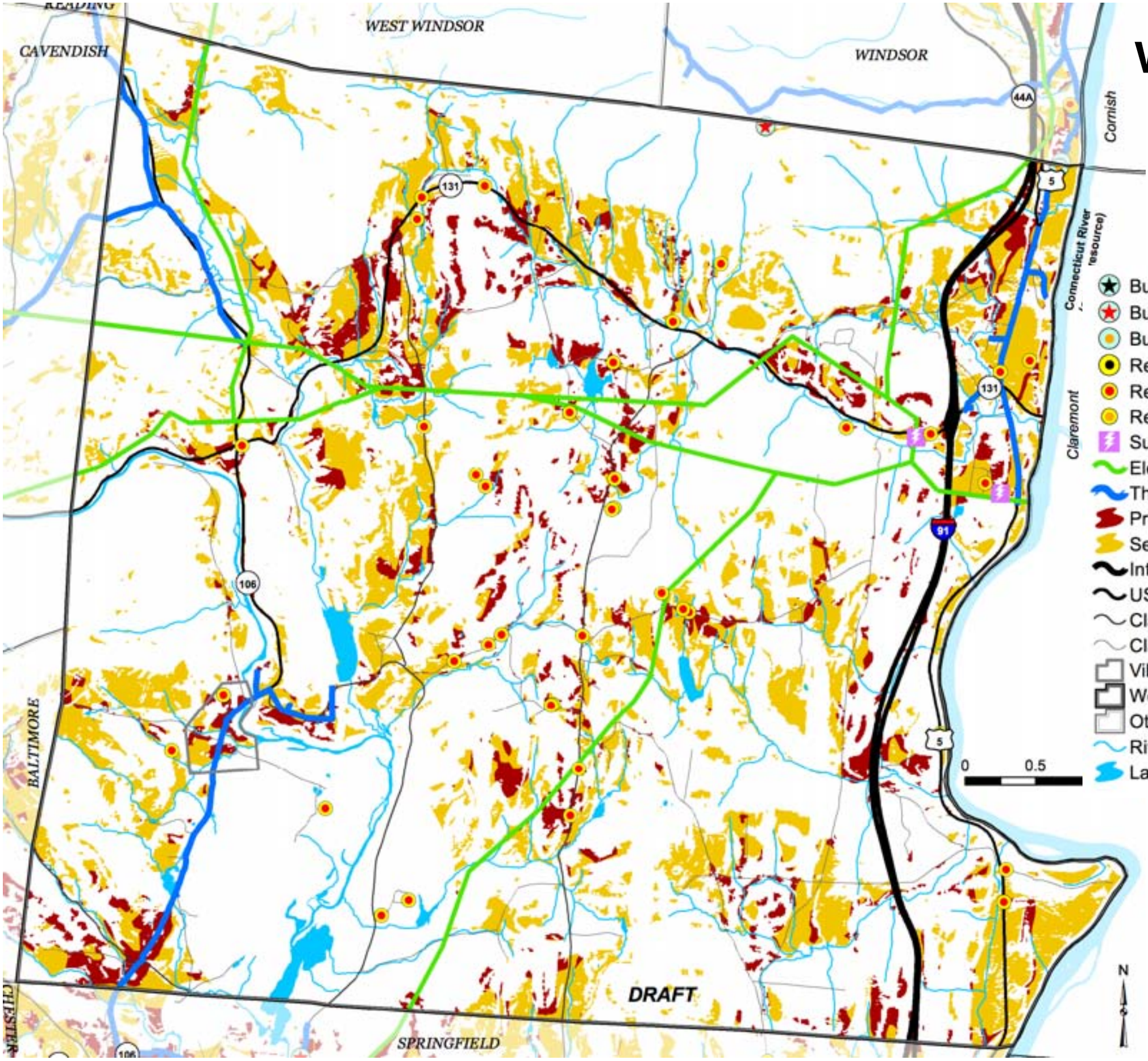
https://publicservice.vermont.gov/sites/dps/files/documents/Pubs_Plans_Reports/Act_174/RRPC/Rutland%20Regional%20Plan%20Adopted%20June%2019_%202018.pdf

Agency of Natural Resources Atlas

Weathersfield Deer Wintering Areas and Habitat Blocks

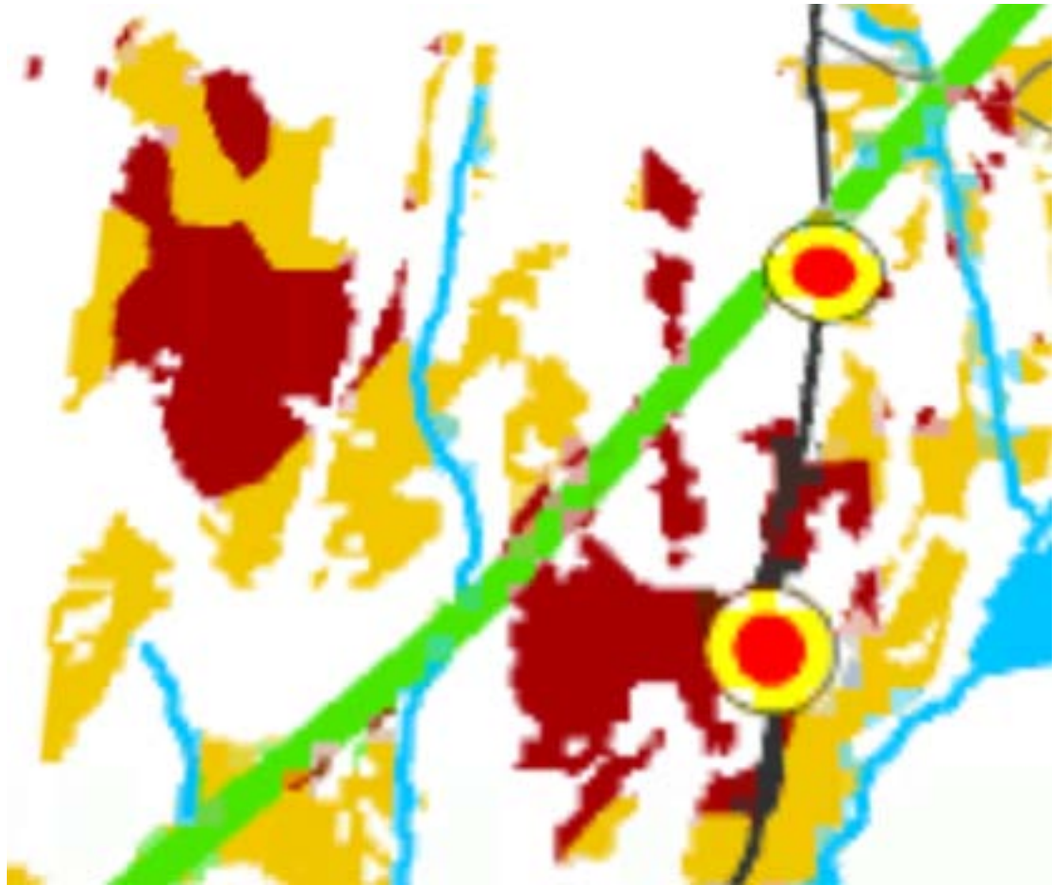
https://anrmaps.vermont.gov/websites/anra5/

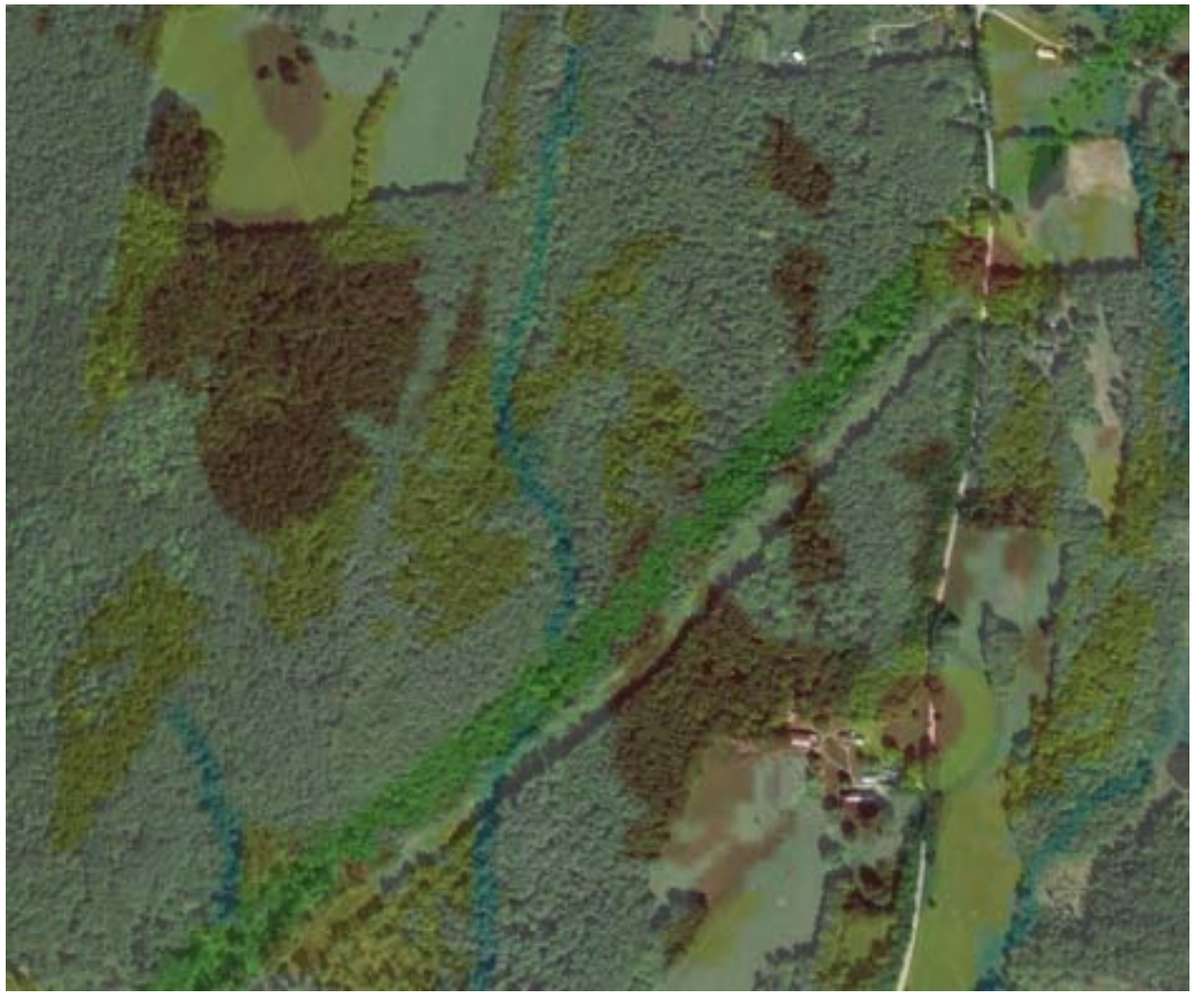
Weathersfield Solar Resources Map

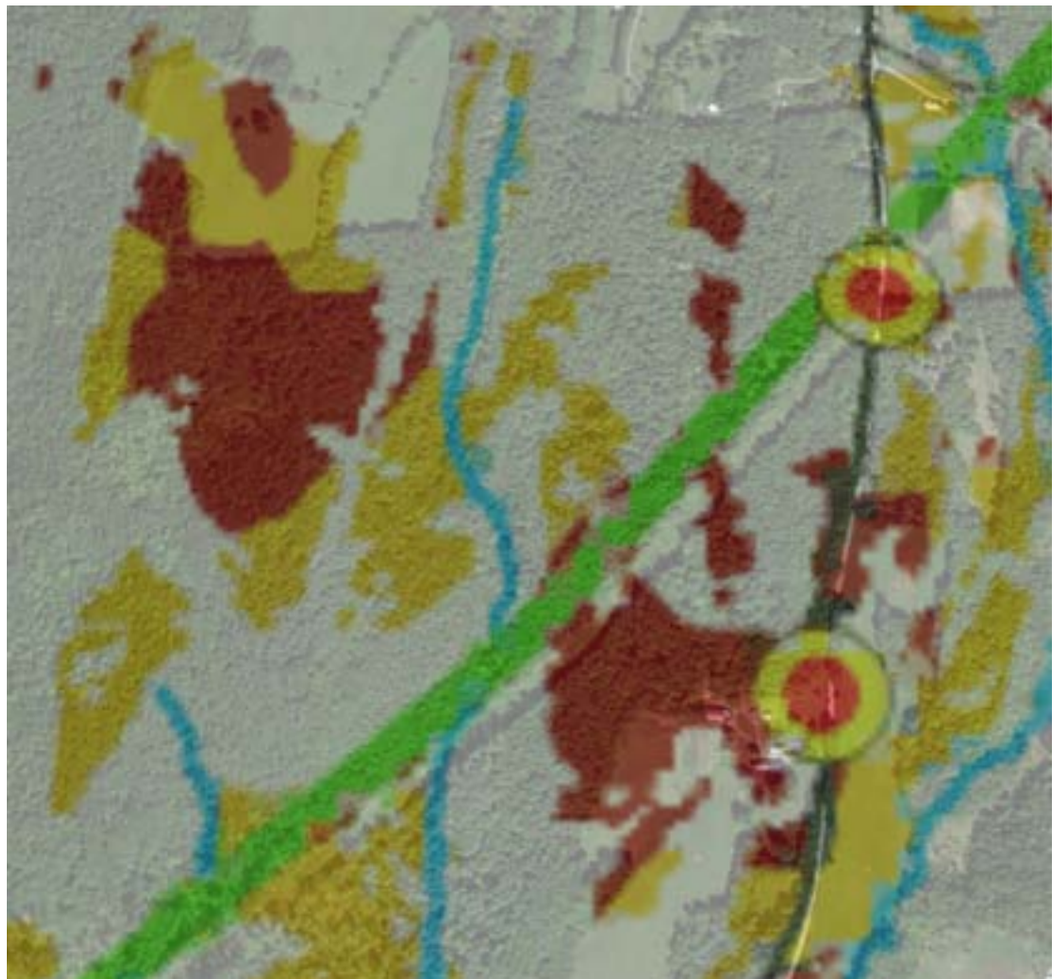


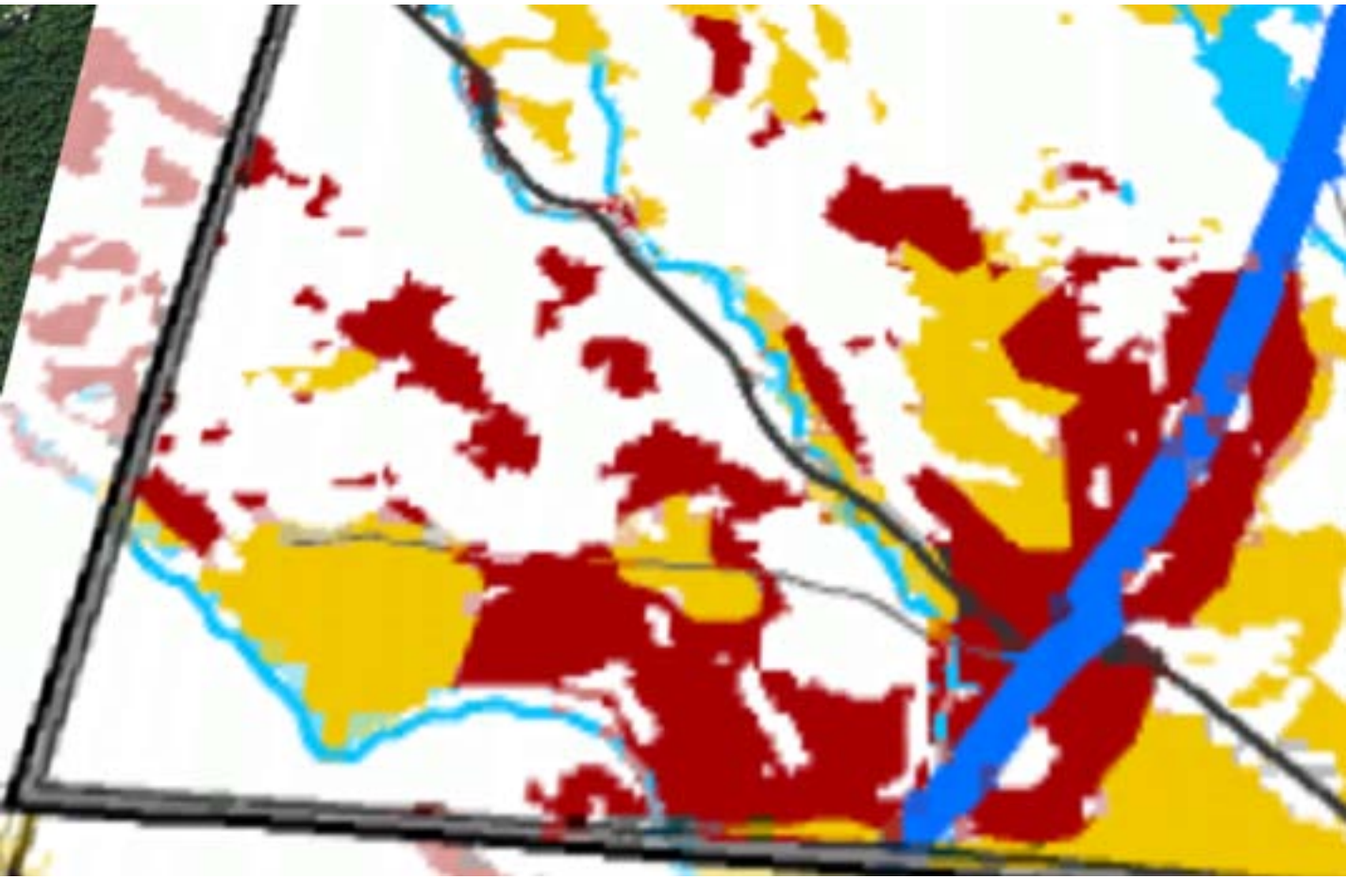
Download
Google Earth
Overlay
www.vce.org/Weathersfield Solar.kmz

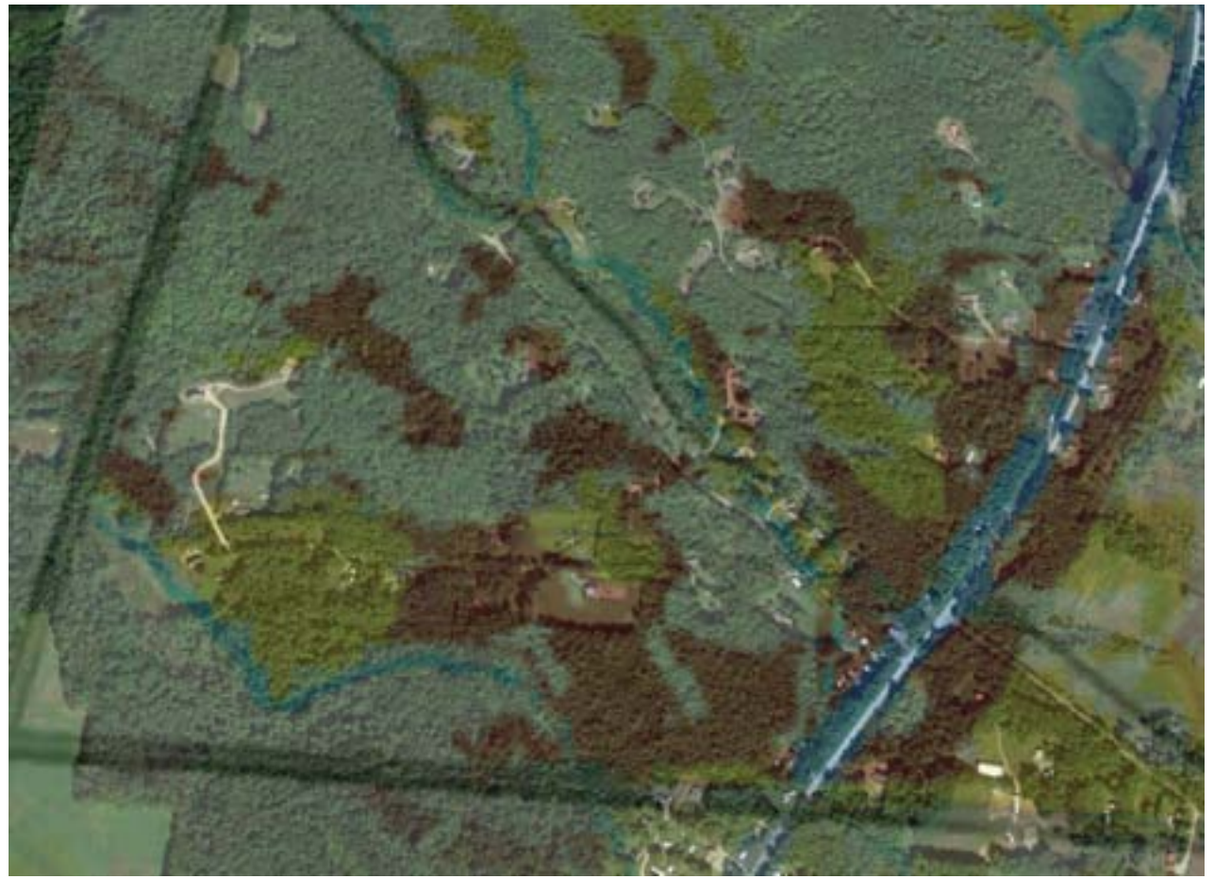
Weathersfield “Prime” Solar

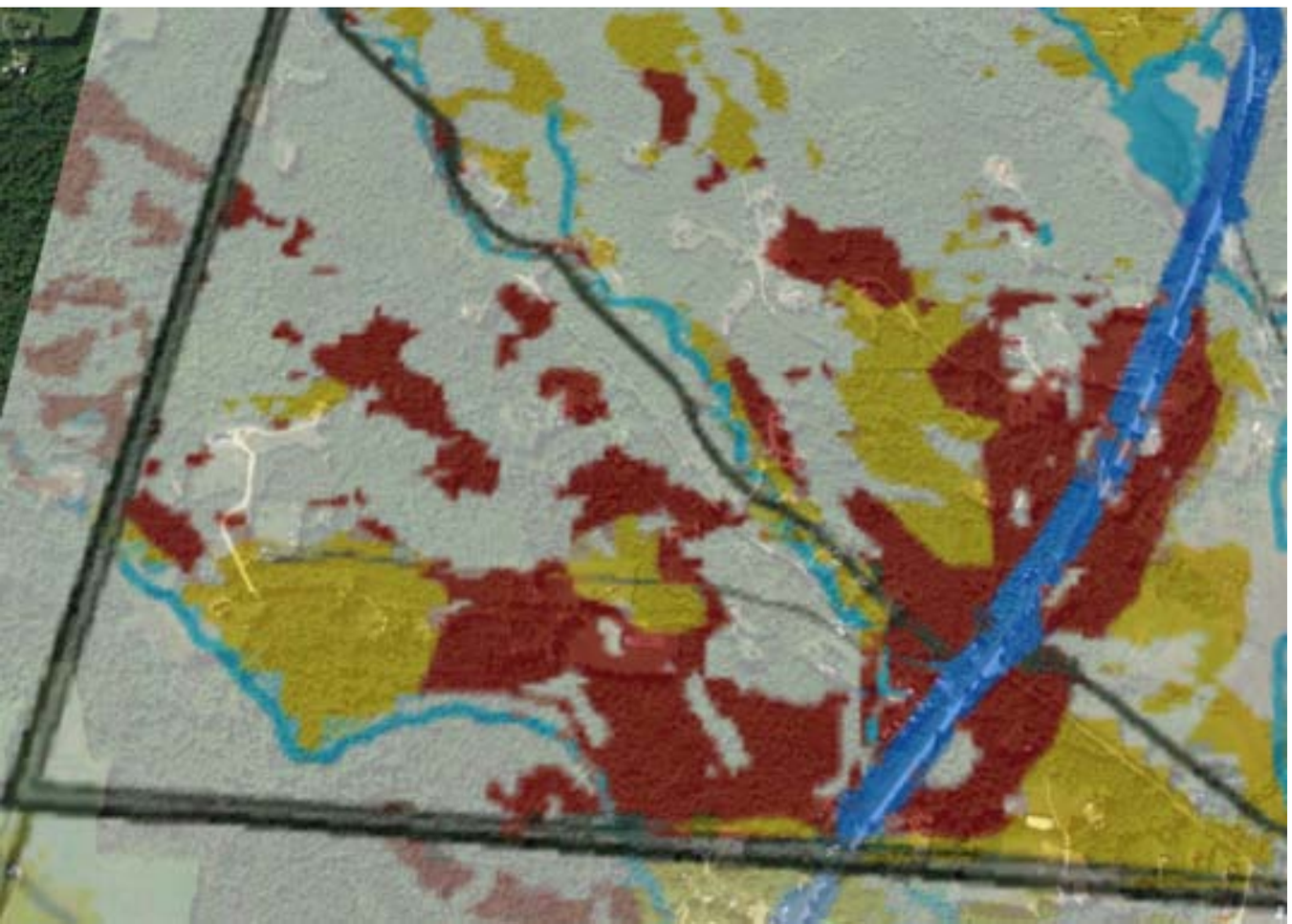


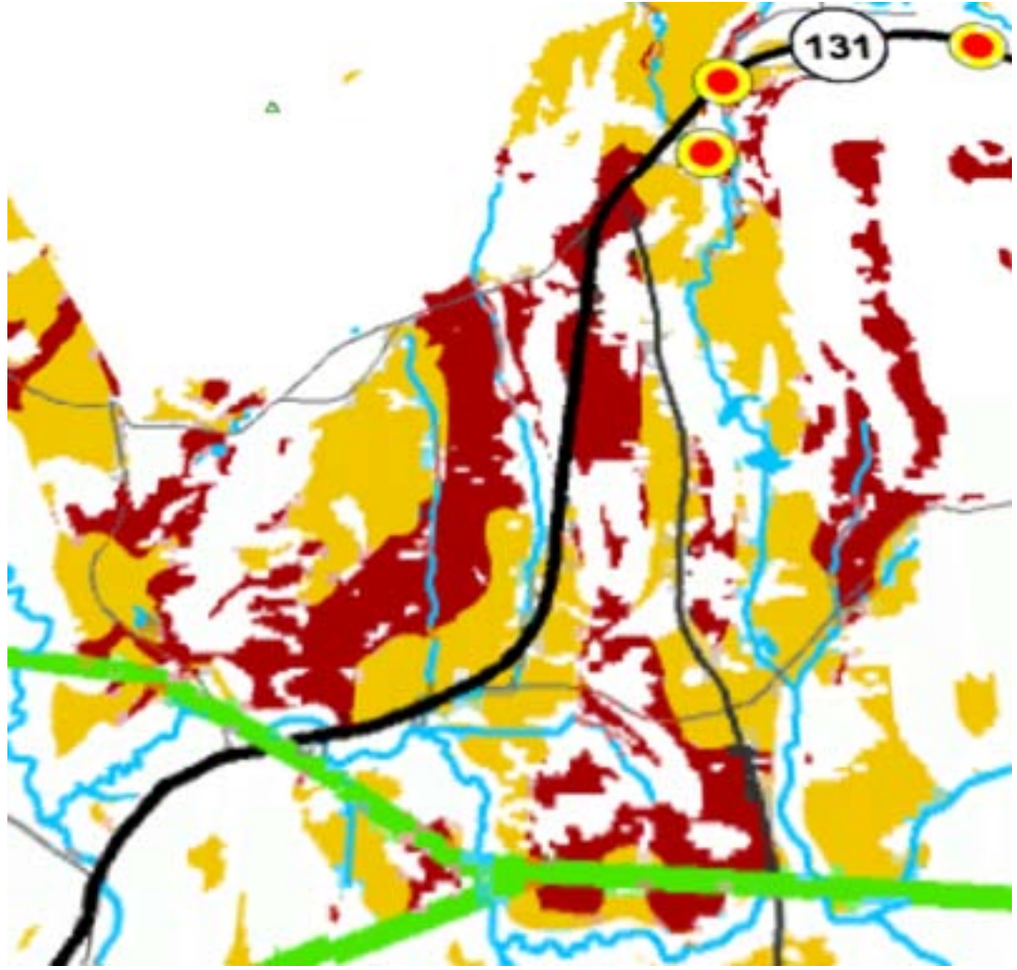


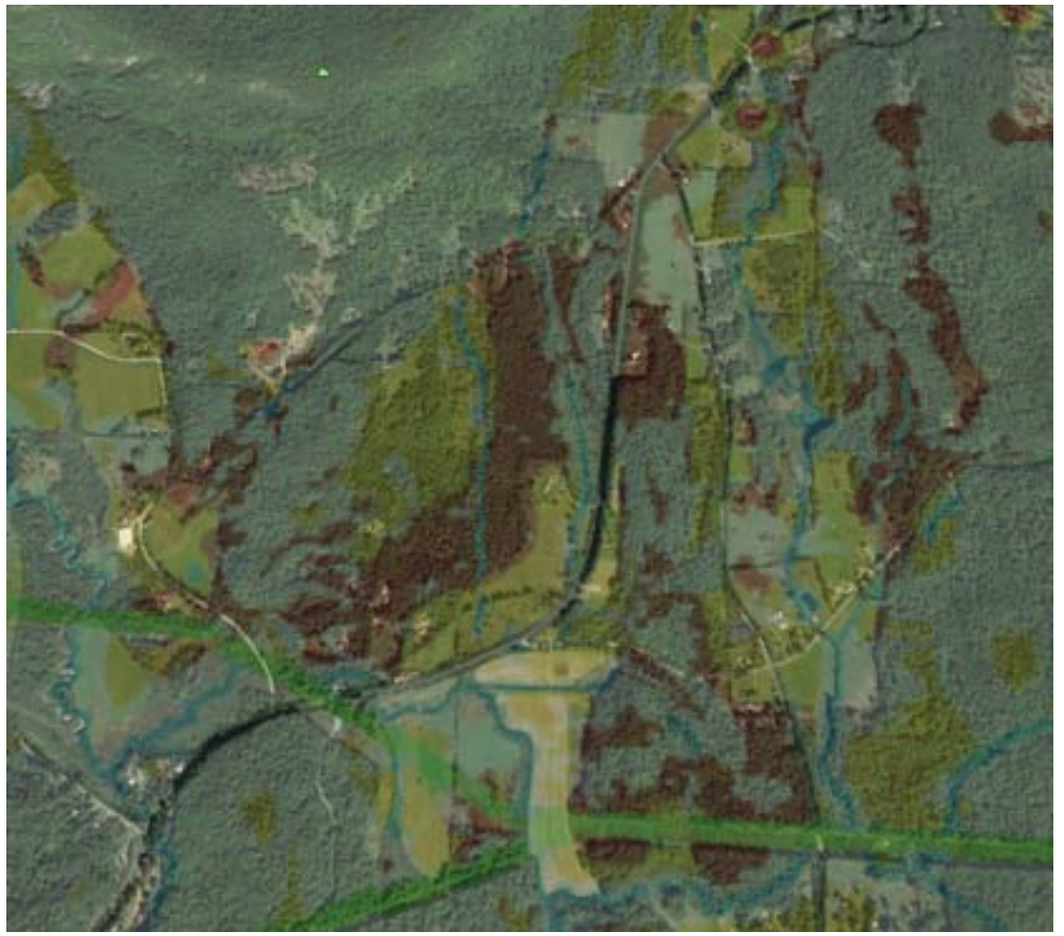


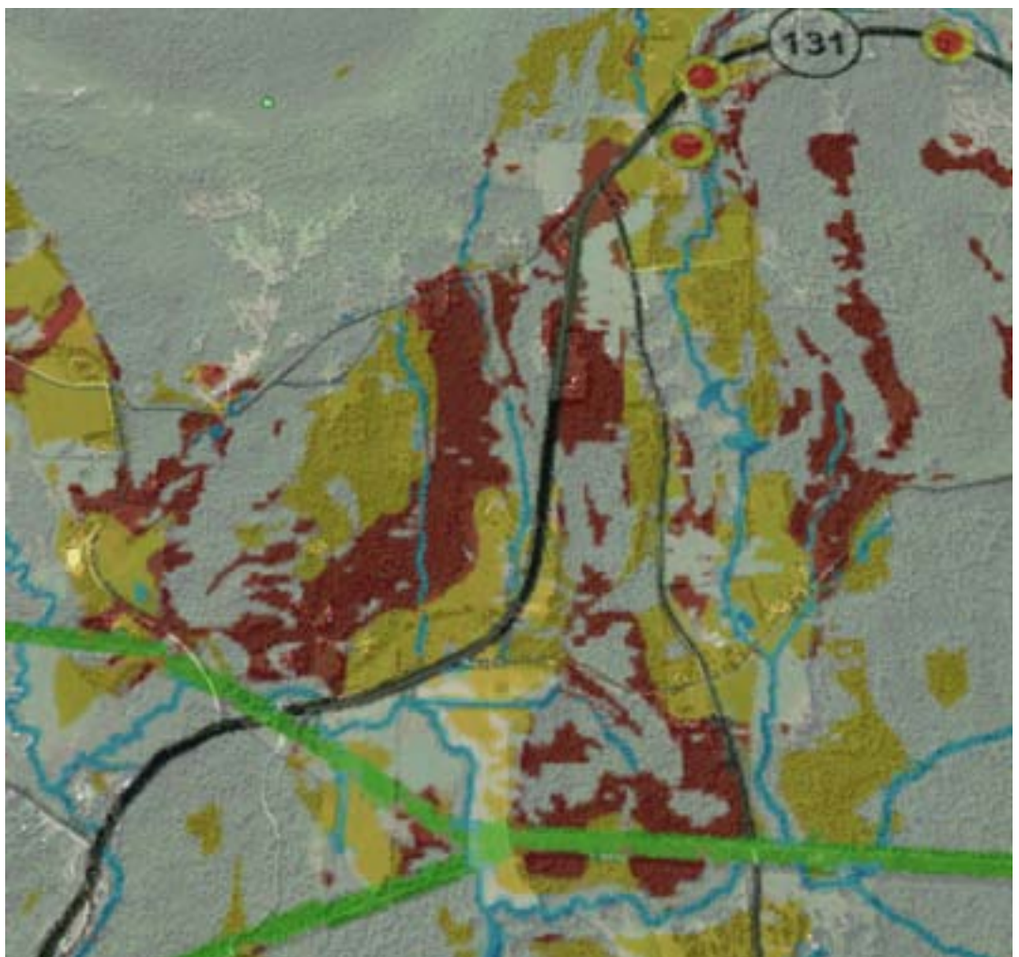




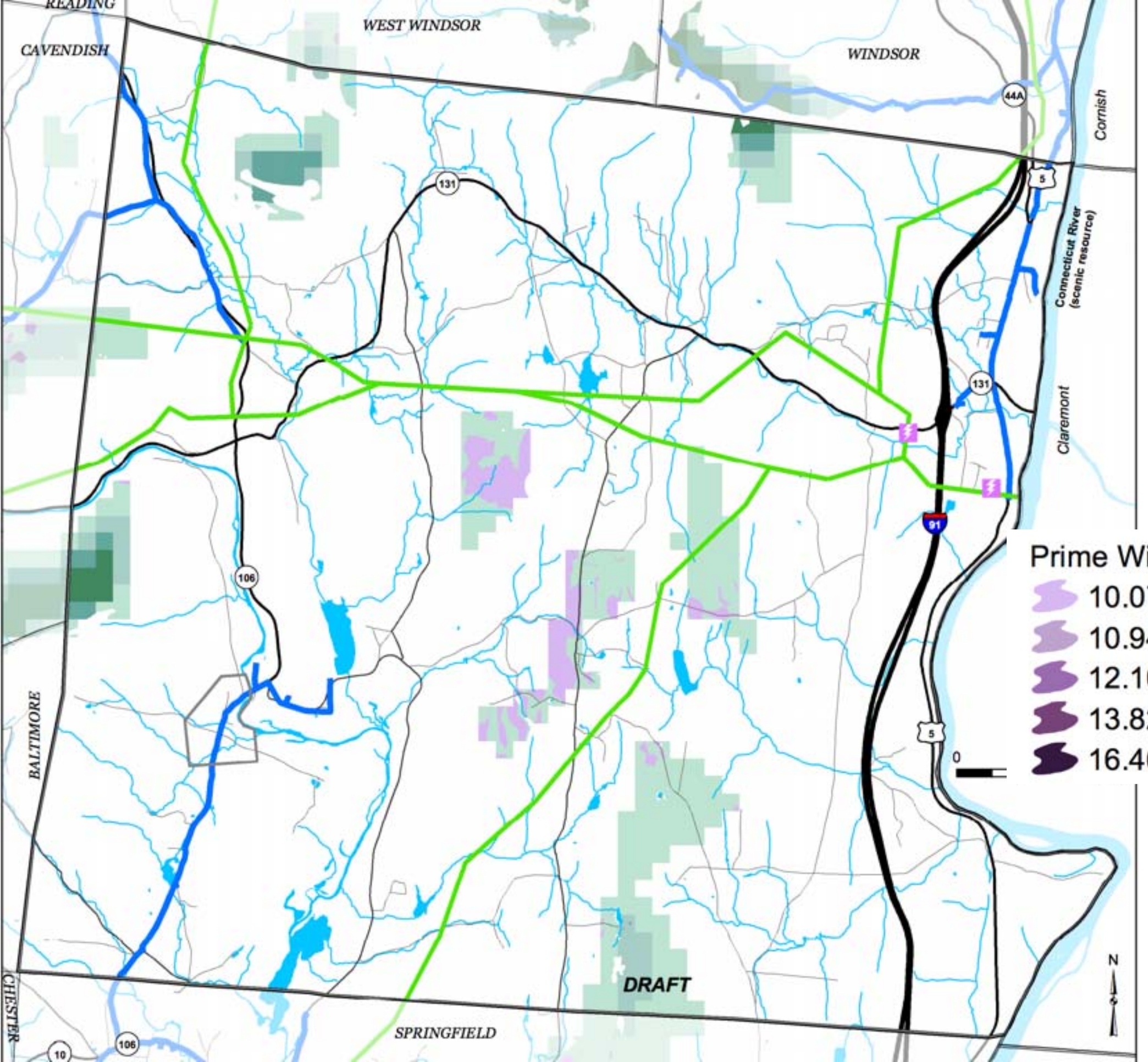



131




131

Weathersfield Wind Resource Map



Download Google Earth Overlay www.vce.org/WeathersfieldWind.kmz

SOLUTIONS?

Is there a better way to site energy generation in Vermont?

Ideas?

A NEW PROCESS FOR ENERGY SITING

VCE is proposing a new process for siting energy projects, one that encourages people to work together rather than fight. The current "contested case" has no place for cooperation and collaboration. VCE proposes to change that. There is no reason why community members, planners, town government, developers, utilities and regulators cannot work together to site the energy that Vermonters consistently say we want. Vermonters want to be a part of the process and we want to see clear benefits.

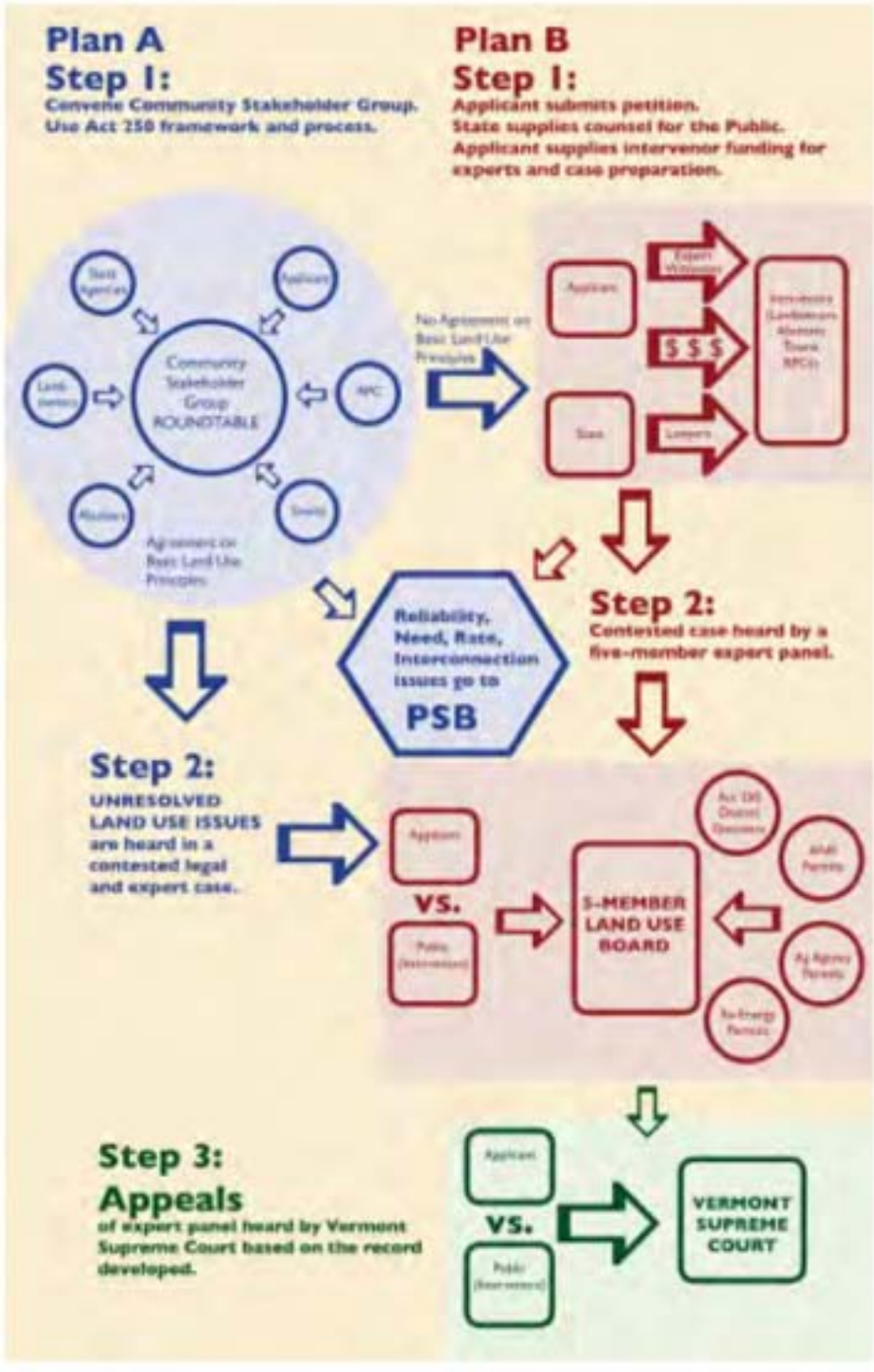
Plan A = Collaboration
Using the Act 250 infrastructure, stakeholders meet to discuss whether to work together or fight. If collaboration is chosen, the rules of stakeholder processes come into play, with joint fact finding and mutual gains negotiations.

Plan B = Contested Case
If parties choose to fight, the state and applicants put up Intervenor Funding shared among parties for lawyers and experts.

A new 5 member land use panel is created and hears all contested cases including appeals of ANR, Agriculture, and Act 250 permits. In all cases, the state's and applicant's Intervenor Funding assures that the issues receive fair and full consideration.

This "carrot and stick" approach uses Intervenor Funding to encourage developers to come up with good proposals and collaborate on the local and regional level to assure good siting, community benefits, in compliance with the state's goals.

The Public Service Board retains the duties of utility regulation including rates, interconnection, and need.



There is one de novo contested case, with one on-the-record appeal to the Vermont Supreme Court.

http://www.vce.org/PSB:PUC:Act250_RegulatoryReform.pdf

Videos of Interest to Planners

Dec. 12, 2016 Rutland RPC DPS Planning Workshop
https://youtu.be/gMIBEOsFiZw

Jan. 10, 2017 Two Rivers-Ottauquechee RPC and Vermont Fish Wildlife, Fragmentation and Connectivity, Bradford
https://youtu.be/NyYORzovPYU

June 6, 2017 Town of New Haven Energy Plan Hearing with DPS
https://youtu.be/G8TISmbjFSM

June 12, 2018 1st PUC Preferred Sites Workshop (Net-Metering)
https://youtu.be/spnstCxEM8Y

June 28, 2018 Worcester PC/SB Preferred Solar Site Discussion
https://youtu.be/WAnWTEiRVLY

July 19, 2018 2nd PUC Preferred Sites Workshop (Net-Metering)
https://youtu.be/MjurdFMI7BQ

July 19, 2018 Central Vermont RPC Energy Plan Hearing with DPS
https://youtu.be/4Y4RM7G9OtI

Jan. 24, 2019 Central Vermont Regional Planning Commission Presentation by Utilities
https://youtu.be/OKe5a1mdeNk

PUC Informal Discussions with Parties

Videos

August 17, 2018 VPPSA
https://youtu.be/BtRYtBlmWjw

Sept. 21, 2018 WEC & VEC Member Owned Utilities
https://youtu.be/1hzw3qjvtZ4

Oct. 4, 2018 Regional Planning Commissions
https://youtu.be/Ea49KLQjlso

Oct. 30, 2018 Pro Se Parties
https://youtu.be/ysWhNwDe-P8

Jan. 11, 2019 Burlington Electric Department
https://youtu.be/QmJLG9J-OcI

Mapping Resources

GMP Solar Map
http://gmp.maps.arcgis.com/apps/webappviewer/index.html?id=4eaec2b58c4c4820b24c408a95ee8956

Vermont Energy Dashboard
https://www.vtenergydashboard.org/energy-atlas

Electric Vehicle Registration Map
https://www.driveelectricvt.com/Media/Default/docs/maps/dev-map-jan-2017.pdf

Vermont ANR Natural Resources Atlas
https://anrmaps.vermont.gov/websites/anra5/

VCE Resources

VCE Compilation of Photos of Solar Projects in Vermont — very large file
http://vce.org/GOODandBAD_SOLAR.pdf

Excerpts from PSB Solar Decisions that Refer to Regional and Municipal Plans
http://vce.org/Excerpts%20from%20PSB%20solar%20decisions.pdf

VCE Comments to Act 174 PSB Working Group, 2016
http://vce.org/1234.pdf

VCE White Paper on Vermont's Energy Policies, March 2018
http://vce.org/
VCE_White_Paper_UnderstandingVermontEnergyPolicies_09August2018.pdf