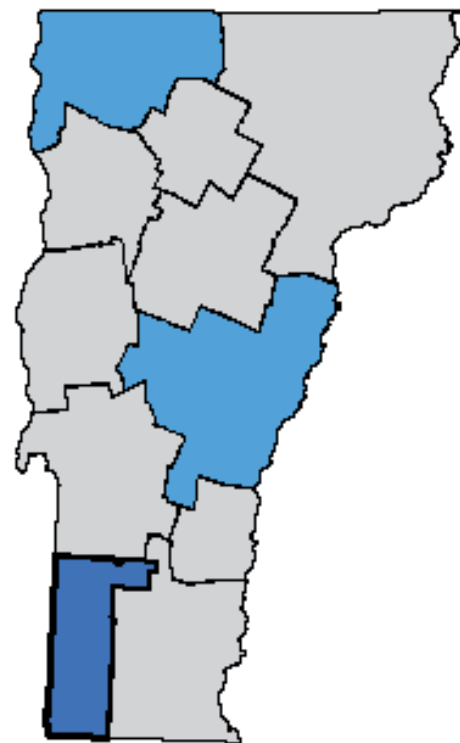
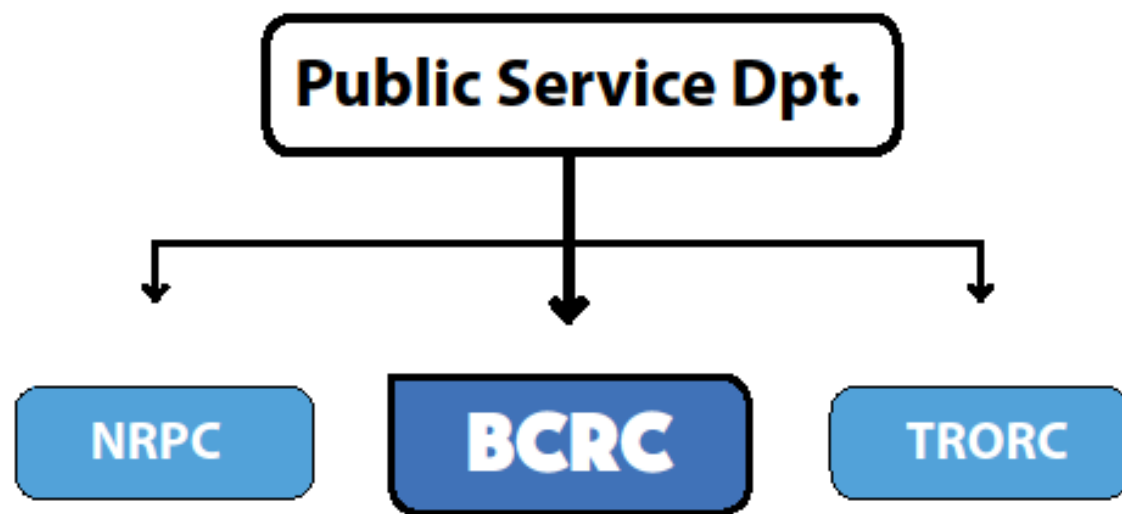


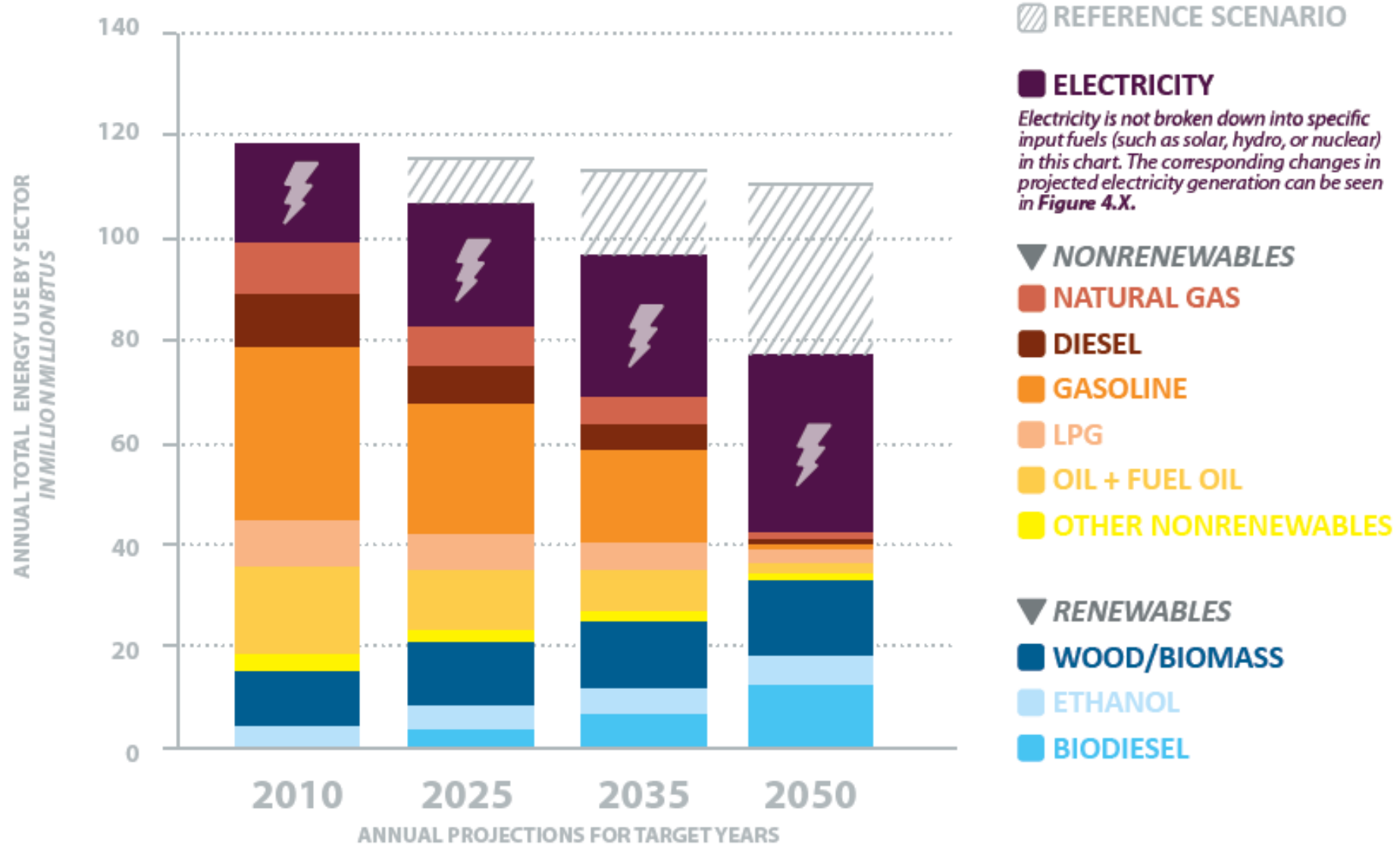
REGIONAL PLANNING INITIATIVE

The PSD is funding three of Vermont's Regional Planning Commissions to create region-specific energy plans that sync with state goals. BCRC is the project lead. Initial plans will serve as pilots for all other regions.

First three plans will be completed in 2016.



Vermont Energy Demand by Fuel Type: 2010 - 2050



How do we get there?

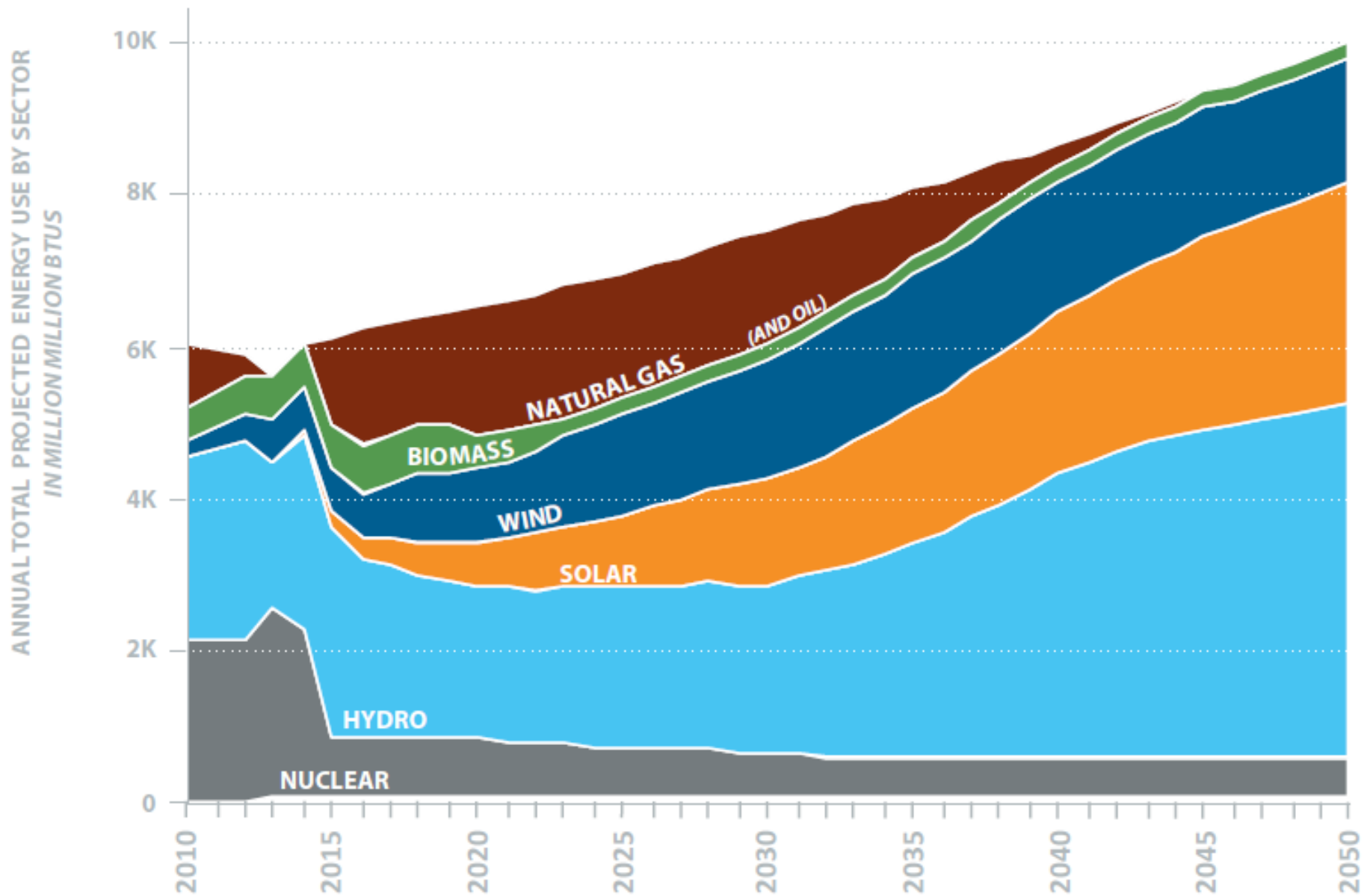
Strategies developed considering existing resources and programs, ideas from stakeholders and experts in the field, and local input.

- **Thermal:** improving building stock, **changing and improving heating systems** and fuels.
- **Transportation:** reducing the amount of driving and **transforming the vehicle fleet**.
- **Electricity:** continuing efforts at conservation and **new generation from renewables**.





Vermont

Electricity Demand: 2010 - 2050



NEW IN-STATE ELECTRICITY GENERATION 2010 – 2050

	YEAR	ELECTRICITY CONSUMPTION (GWh)	NEW HYDRO (MW)	NEW WIND (MW)	NEW SOLAR (MW)
VERMONT 	2010	5,623	-	-	-
	2025	6,991	25	200	445
	2035	8,073	50	400	926
	2050	10,044	93	400	1,647
BCRC REGION 	2010	318	-	-	-
	2025	381	1	16	24
	2035	421	1	28	48
	2050	473	1	28	85

Deriving Estimates for New Solar Generating Capacity by Town

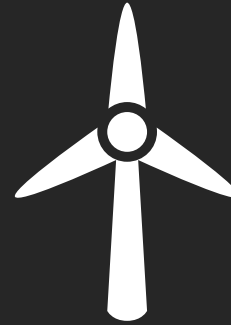
	2014 Population	Prime Solar (Acres)	Prime Solar in one mile of 3-phase (Acres)	Solar Installations (Count, 2015)	Existing Solar Capacity (KW, 2015)	2050 Goal, New Capacity (MW)
Arlington	2,404	589	409	10	63.8	5.3
Bennington	15,633	2,009	1,624	46	425.4	28.4
Dorset	2,055	1,013	806	17	233.3	6.9
Glastenbury	7	12	0	0	0	0.0
Landgrove	199	1,325	233	2	8.2	1.6
Manchester	4,356	1,380	1,348	23	478.9	12.7
Peru	363	1,343	991	4	29.7	6.1
Pownal	3,506	726	303	6	2,240.0	3.9
Rupert	640	596	327	5	55	2.6
Sandgate	528	153	0	0	0	0.7
Shaftsbury	3,580	1,943	538	17	114.3	7.4
Stamford	887	231	178	3	10.6	2.1
Sunderland	911	1,167	997	1	4.3	6.8
Woodford	300	126	22	1	3.2	0.5

Renewable Energy Resource Mapping



Solar

Topography of land analyzed based on slope and direction (azimuth) conducted in GIS for ground-mounted solar.



Wind

Digitally modeled wind speed (based on topography) analyzed at 3 hub heights



Hydro

Existing dams analyzed for potential capacity based on Community Hydro report. No new dams considered.



Biomass and Geothermal

Land coverage used to determine location/area of harvestable wood and location of soil and water resources best suited for geothermal energy production.

② Determined “constraints”, classified as Level 1 or Level 2

Level 1 Constraints

Conditions which would likely make development unfeasible.

These were removed entirely.

- Floodways & River Corridors
- Federal Wilderness
- Rare and Irreplaceable natural areas
- Vernal Pools
- Class 1 and 2 Wetlands

Level 2 Constraints







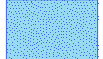
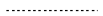

Conditions which could impact development, but which would not necessarily prevent it.

These are shown on maps in color (where they overlap).

- Agricultural Soils (all ag-rated soils)
- Habitat Blocks (ANR class 9 and 10)
- Hydric Soils
- Conserved Lands
- Special Flood Hazard Areas
- Deer Wintering Areas
- Class 3 Wetlands

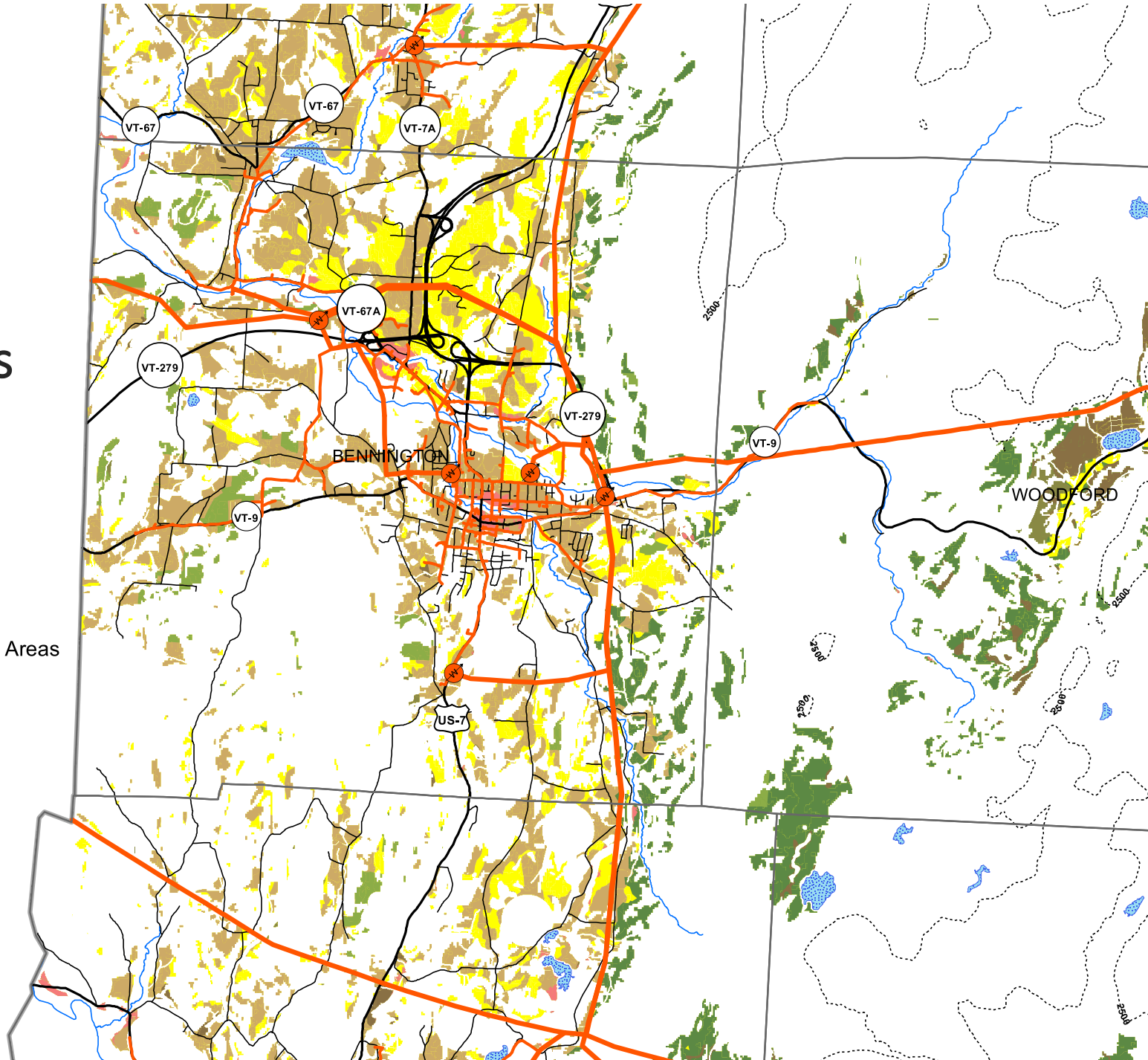
SOLAR MAP

- Prime Solar = Yellow
- Includes Level 2 Constraints

-  Substations
-  3 Phase Power Lines
-  Transmission Lines
-  Major Roads
-  Secondary Roads
-  Rivers/Streams
-  Lakes/Ponds
-  2,500 Ft Elevation
-  Prime Solar Potential - No Level 1 or Level 2 Constraints

Level 2 Constraints

-  Class 3 Wetlands
-  Deer Wintering Areas
-  Special Flood Hazard Areas
-  Conserved Lands
-  Hydric Soils
-  Habitat Blocks *
-  Agricultural Soils **



SOLAR MAP

ADDITIONAL CONSIDERATIONS = REGIONAL CONSTRAINTS

FOR BCRC:

1. PRIME AGRICULTURAL SOILS SPECIFICALLY IDENTIFIED
(all ag. soils are mapped as level 2 constraints)
2. SCENIC/HISTORIC DISTRICT AREA
3. LOCALLY IDENTIFIED CONSTRAINTS AND OPPORTUNITIES

WHAT ABOUT ROOFTOP SOLAR??

Residential structures in BCRC Region: **14,000**

If 50% are oriented properly and structurally compatible, and 50% of those choose to install systems at an average of 4KW capacity, that's...

14 MW

Small Commercial Structures (less than 40K sq ft): **2,000**

If 50% are oriented properly and structurally compatible, and 50% of those choose to install systems at an average of 20KW capacity, that's...

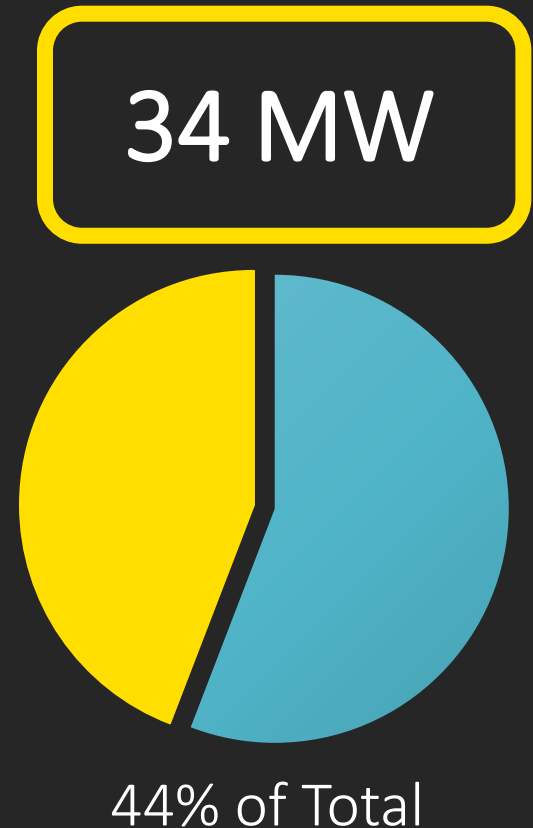
10 MW

Large Commercial Structures (greater than 40K sq ft): **100**

If 50% overall choose to install systems at an average of 200KW capacity, that's...

10 MW

ESTIMATE FOR TOTAL
ROOFTOP POTENTIAL:



**THIS IS THE
AMOUNT OF
LAND AREA
IN THE
BCRC REGION**

(about 370,00 acres, or 575 sq. miles)

**THIS IS THE
AMOUNT OF
THAT AREA
WHICH IS
CONSIDERED
"PRIME SOLAR."**

(about 14,000 acres)



**AND THIS IS ABOUT
THE AMOUNT OF
AREA THAT WOULD
BE NEEDED TO REACH
OUR 2050 GOAL OF
85 MW ADDITIONAL
IN-REGION CAPACITY.**

(about 800 acres)

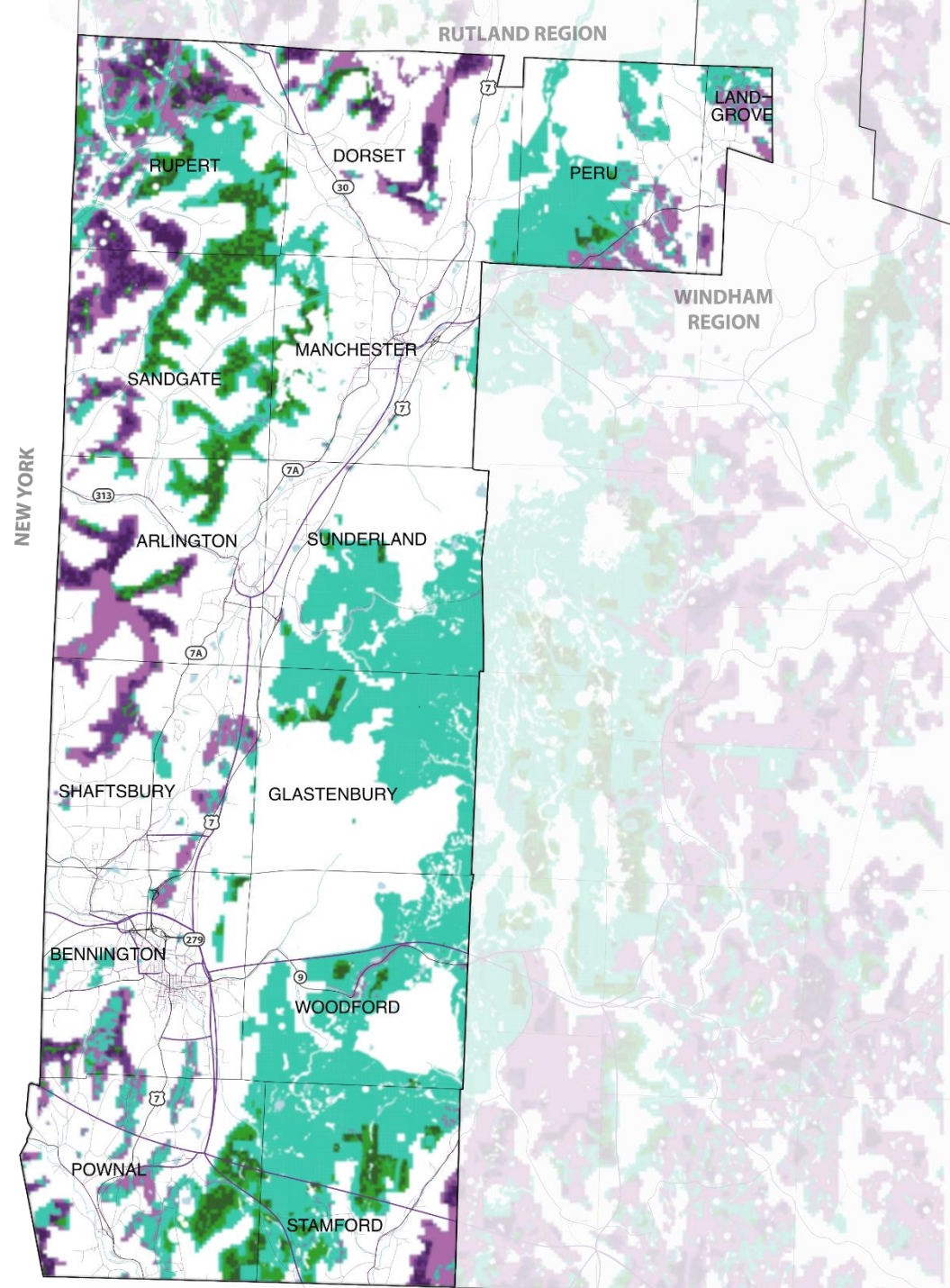


Wind Energy

1 PRIME WIND

2 BASE WIND

Darker areas = higher potential



Wind Energy

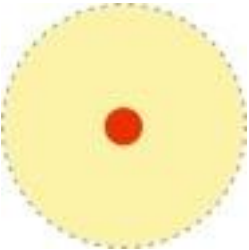
1

PRIME WIND

2

BASE WIND

Darker areas = higher potential



1KM RESIDENTIAL BUFFER

