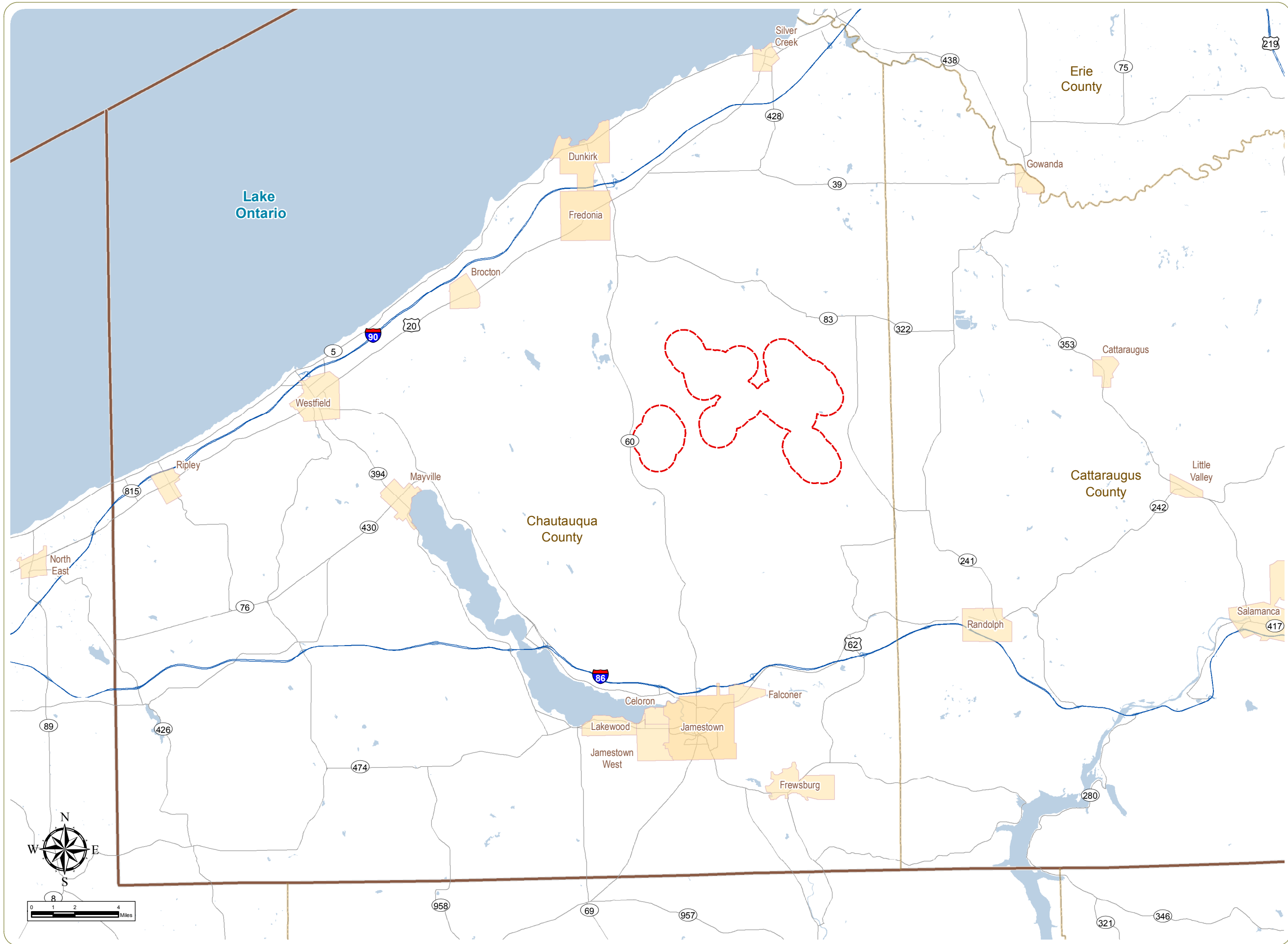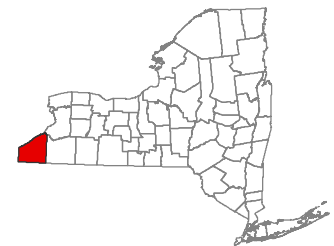# Figures

Cassadaga Wind Project

Towns of Arkwright, Charlotte, Cherry Creek, and Stockton
Chautauqua County, New York

Figure 1: Regional Project Location

May 2016

☐ 1,360-meter Study Area

Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" Map Service and ESRI StreetMap North America, 2008. 2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

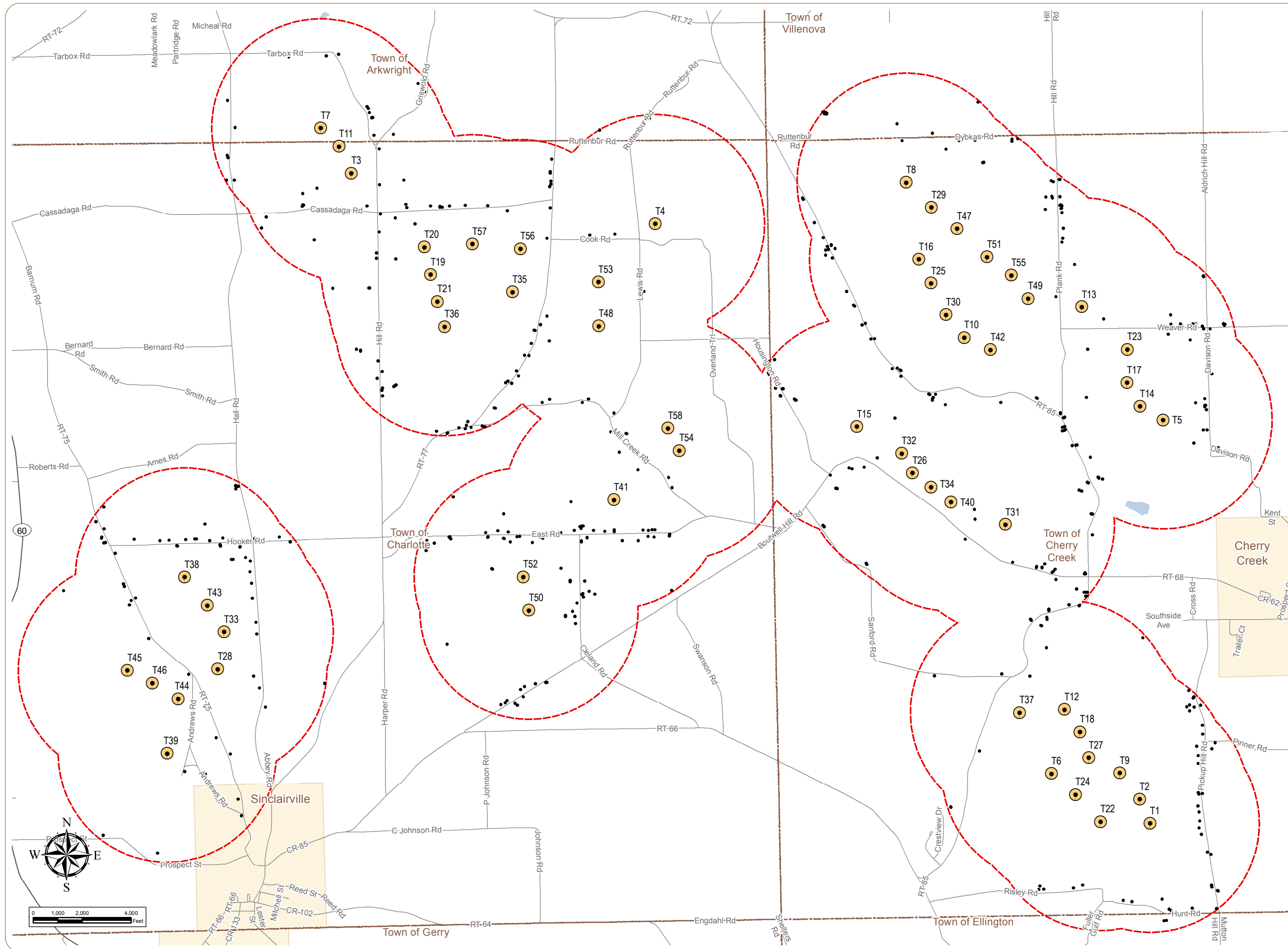edr everpower
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Cassadaga Wind Project

Towns of Arkwright, Charlotte, Cherry Creek, and Stockton
Chautauqua County, New York

Figure 2: Proposed Turbine Layout

May 2016

- • Receptor
- ⊙ Wind Turbine
- - - 1,360-meter Study Area

Notes: 1. Basemap: ESRI StreetMap North America, 2008.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Figure 3: Projected Shadow Flicker

May 2016

- • Residence < 30 hours/year
- ○ Participant > 30 hours/year
- ● Non-Participant > 30 hours/year
- ◉ Wind Turbine
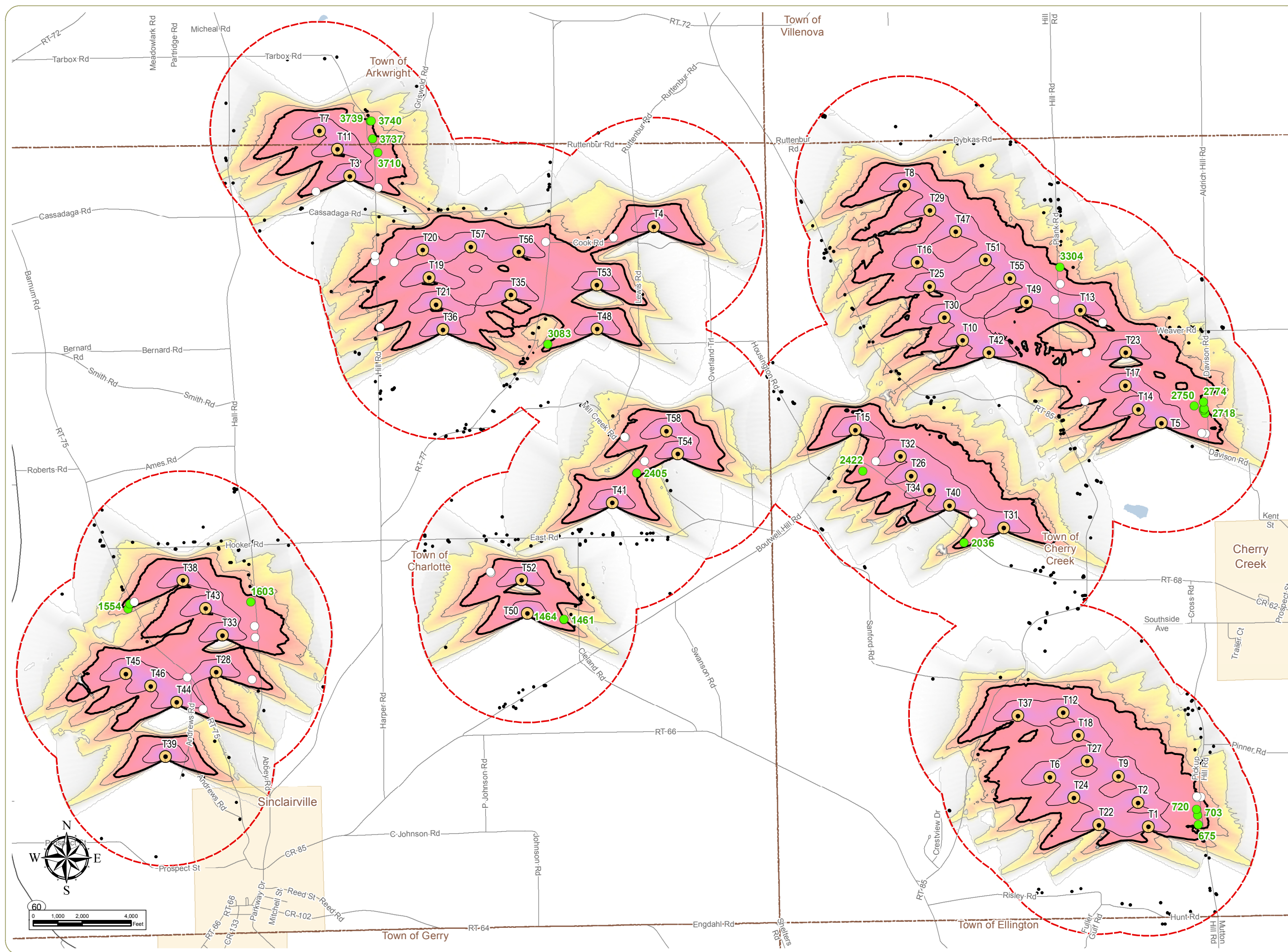- ⬚ 1,360-meter Study Area

Shadow Flicker Isolines

0 hours/year
10 hours/year
20 hours/year
30 hours/year
100 hours/year

Shadow Flicker (hours/year)

- < 1
- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 100
- > 100

Notes: 1. Basemap: ESRI StreetMap North America, 2008.
2. This is a color graphic. Reproduction in grayscale may misrepresent the data.
3. Shadow-flicker areas and isolines were created using WindPRO 2.9.285 software and associated Shadow module. The model is based on a "worst case" scenario where the model assumes that there are no clouds, the wind conditions allow for continuous turbine operation, the turbine is always directly between the receptor and the sun, and the turbine is always perpendicular to the sun. These calculations do not take into account the actual location and orientation of windows, or the screening effects associated with existing, site-specific conditions and obstacles such as trees and/or buildings.

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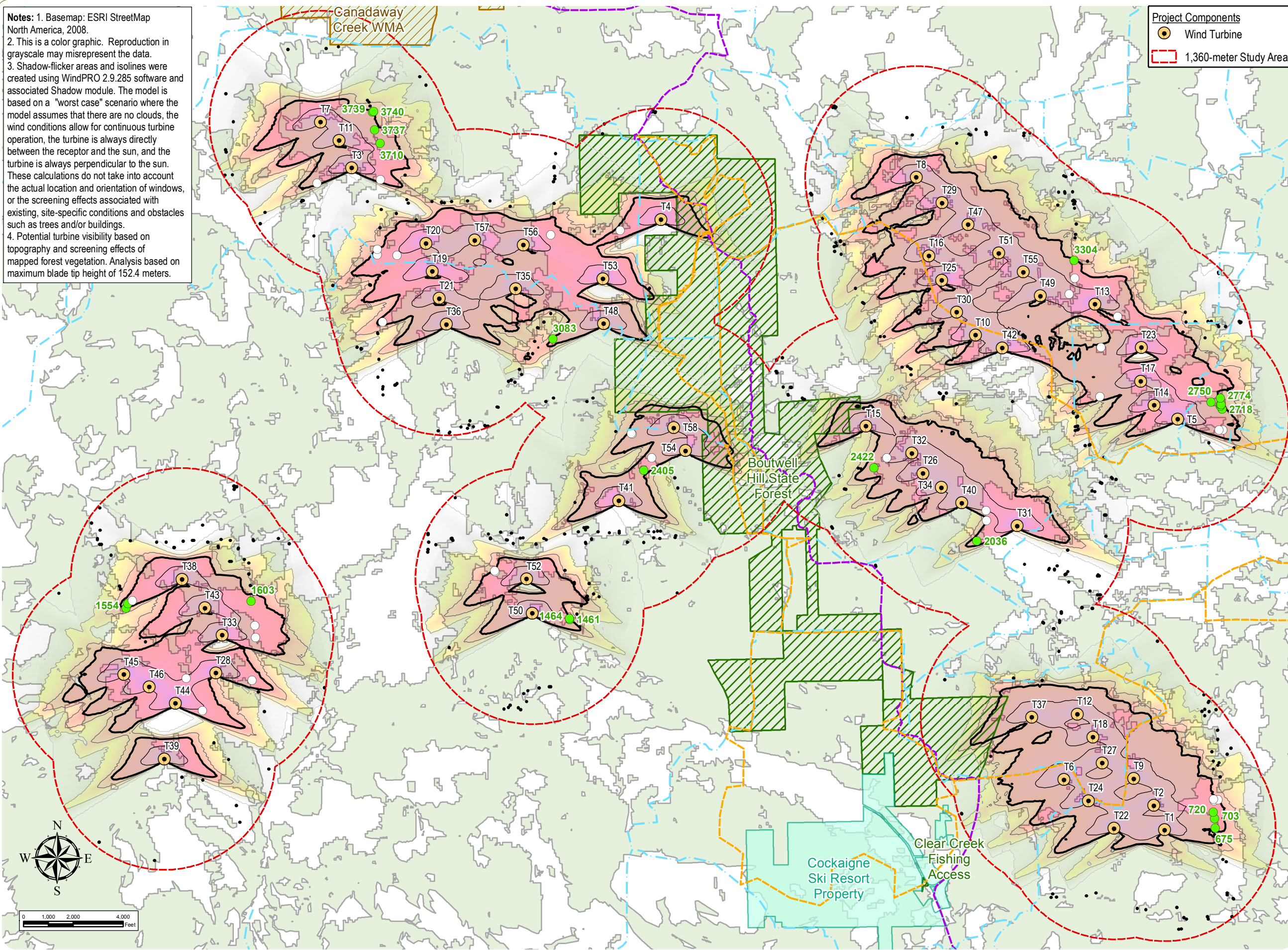
Figure 4: Project Visibility & Potential Impact On Recreational Areas — Cassadaga Wind Project, Towns of Arkwright, Charlotte, Cherry Creek, and Stockton, Chautauqua County, New York. May 2016.

Attachment A
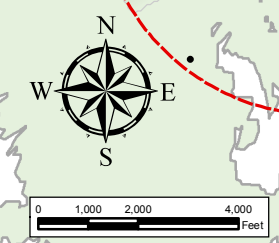
Wind Rose and Sunshine Data

Table A1. Wind Rose Data

SECTOR	N	NNE	NE	ENE	E	ESE	SE	SSE
Frequency	2.59	2.46	2.17	2.94	2.28	2.66	4.03	6.22
Hours of Operation	227	215.5	190.1	258	199.73	233	353	544.9

SECTOR	S	SSW	SW	WSW	W	WNW	NW	NNW
Frequency	9.21	9.82	10.50	9.87	10.85	11.34	8.55	4.51
Hours of Operation	807	860	920	865	950	993	749	395

Source: Wind rose data provided by Cassadaga Wind LLC

Table A2. Sunshine Probability Data[1]

Month	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Sunshine Probability[2]	0.31	0.38	0.46	0.51	0.56	0.65	0.67	0.64	0.57	0.50	0.29	0.27

[1]Source: NOAA Comparative Climatic Data for the United States through 2012 – Buffalo, NY Weather Station.
[2]Defined by NOAA as the total time that sunshine reaches the surface of the earth, expressed as the percentage of the maximum amount possible from sunrise to sunset with clear sky conditions.