

# Future Generation LLC

Massachusetts Wind Working Group

March 30<sup>th</sup>, 2011

By

Keith Mann

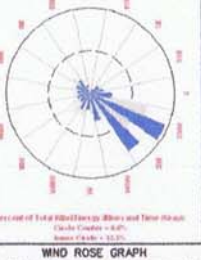
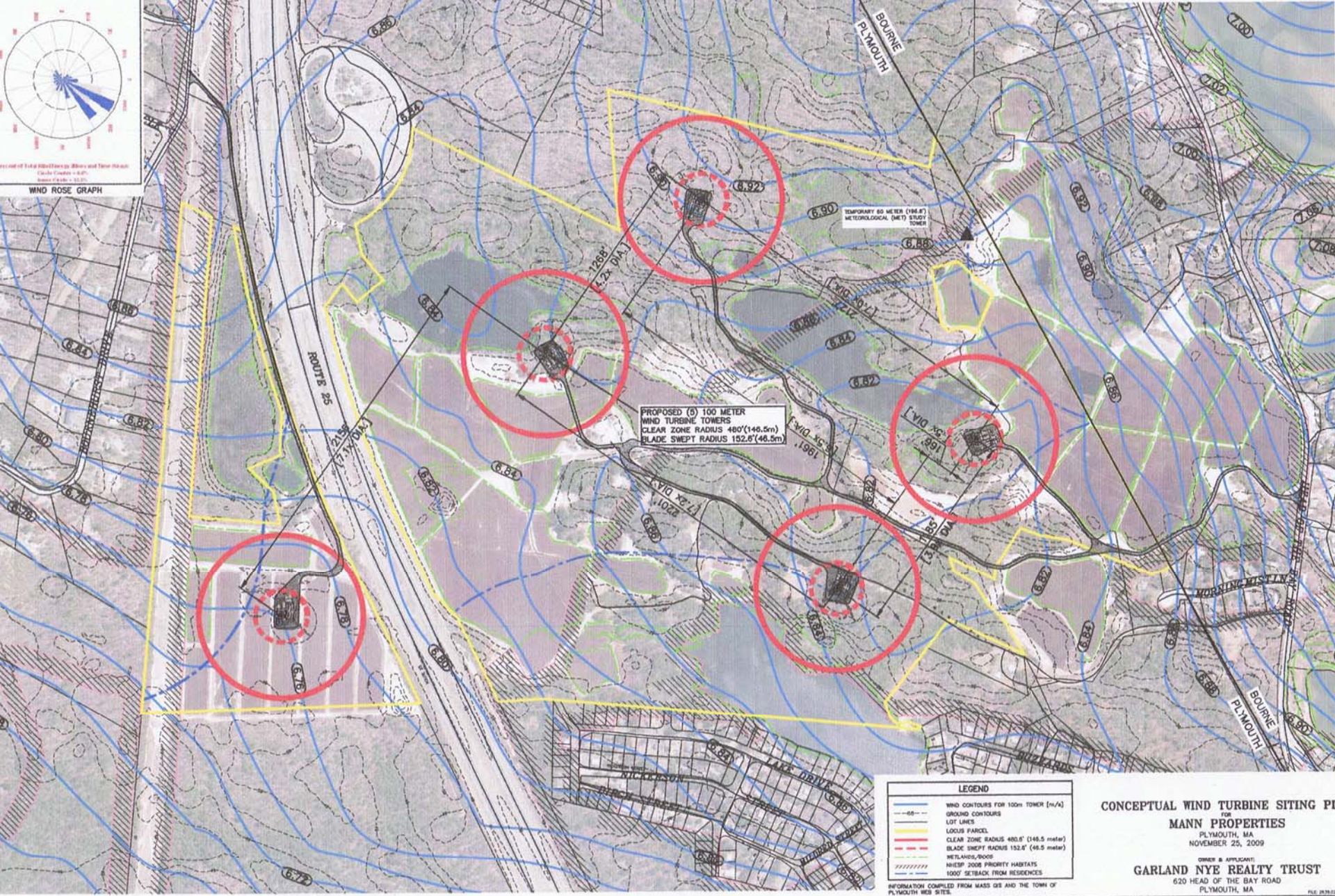
# Project Overview

Combined effort of Property Owners

FGW - 10 MW Project on 380 Acre Farm

NGW – 17.5 MW Project on about 400Acres

Efficiencies of three property owners



PROPOSED (5) 100 METER WIND TURBINE TOWERS  
 CLEAR ZONE RADIUS 480'(146.5m)  
 BLADE SWEEP RADIUS 152.6'(46.5m)

TEMPORARY 80 METER (196.8') METEOROLOGICAL (MET) STUDY TOWER

- LEGEND**
- Wind Contours for 100m Tower (m/s)
  - Ground Contours
  - Lot Lines
  - Locust Parcel
  - Clear Zone Radius 480.0' (146.5 meter)
  - Blade Swept Radius 152.6' (46.5 meter)
  - Wetlands/Boys
  - NHESP 2006 Priority Habitats
  - 1000' Setback from Residences

**CONCEPTUAL WIND TURBINE SITING PLAN FOR MANN PROPERTIES**  
 PLYMOUTH, MA  
 NOVEMBER 25, 2009

OWNER & APPLICANT:  
**GARLAND NYE REALTY TRUST**  
 620 HEAD OF THE BAY ROAD  
 PLYMOUTH, MA

**Atlantic** DESIGN ENGINEERS, L.L.C.  
 P.O. Box 1051, Sandwich, MA 02563 (508) 888 - 9282

Designed by:	SCALE	NO.	BY	DATE	REVISION
Drawn by:	SCALE 1" = 200'	1			
Checked by:	SCALE 1" = 200'				
Survey data by:					
Approved by:					

# Single largest Challenge...

## Local Permitting!

- Press Release
- Public Out Reach
- Community TV
- Small Group meetings
- Individual Meetings
- Town Hearings

# Offers Made to the Neighborhood

- \$100 K Mitigation Escrow Account
- Noise Complaint Protocol
- Green Energy Rebates
- Investment Notes

## **FUTURE GENERATION WIND NOISE COMPLAINT PROTOCOL**

**Purpose:** Upon receipt of a noise complaint from a concerned neighbor, to evaluate compliance of the wind energy facility (Facility) with the DEP's noise criteria. If an exceedance is identified, the response will include an evaluation of mitigation options that can bring the Facility into compliance with respect to the Residence. The criteria are provided by DAQC Policy 90-001 which includes an increase in the broadband sound level by more than 10 dBA above ambient or a pure tone condition.

**Methodology/Protocol:** Upon receipt of a complaint not previously addressed, the following scope of work will be performed:

- 1) Obtain receptor noise measurements at the Residence under appropriate conditions and over a sufficient period of time to establish daytime and nighttime Facility operational sound levels correlated to various wind speeds. Attended measurements will include a qualitative determination of whether or under what conditions the project sound dominates the ambient field.
- 2) If the Facility sound does not dominate the ambient field, then additional measurements will be made as technically appropriate to identify the Facility contribution to the receptor location sound field.
- 3) Compile and analyze the results of the field measurements and prepare a report that compares the measured levels to the appropriate Facility ambient baseline levels. The evaluation of compliance with the DEP criteria will be made at various wind speeds (including the wind speed at the time of the complaint) to determine Facility compliance with respect to the Residence.
- 4) If the report indicates that the Facility is not in compliance with respect to the Residence, the report will also identify appropriate mitigation measures that can bring the Facility into compliance.

### **Schedule:**

- Complete within two (2) weeks of receipt of complaint field noise measurements with turbines operating.\*
- Complete analysis and report within two (2) weeks of completion of all of the field measurements.

\*The schedule is dependent on available conditions such as wind, weather, or other ambient sources that are necessary to complete the noise evaluation.

<b>Flicker Zone</b>				
	A	20-30 Hrs /Yr	\$	500
	B	10-20 Hrs /Yr	\$	300
	C	0-10 Hrs /Yr	\$	100

<b>Nonprevailing Wind Zone</b>				
<b>91 Degrees East to 359 Degrees North</b>				
Zone	Distance	Zone \$ Value	20 Year	
T 5			Cummulative Value	
A	1600	\$ 750	\$	15,000
B	1700	\$ 650	\$	13,000
C	1800	\$ 550	\$	11,000
D	1900	\$ 450	\$	9,000
E	2000	\$ 350	\$	7,000
F	2100	\$ 250	\$	5,000
G	2200	\$ 150	\$	3,000
H	2300	\$ 50	\$	1,000

<b>Prevailing Down-Wind Zone</b>				
<b>360 Degrees North to 90 Degrees East from Turbine</b>				
Zone	Distance	Zone \$ Value	20 Year	
T 5			Cummulative Value	
A	1600	\$ 1,500	\$	30,000
B	1700	\$ 1,300	\$	26,000
C	1800	\$ 1,100	\$	22,000
D	1900	\$ 900	\$	18,000
E	2000	\$ 700	\$	14,000
F	2100	\$ 500	\$	10,000
G	2200	\$ 300	\$	6,000
H	2300	\$ 100	\$	2,000

# Other Challenges...

## Mass DOER RFP

- Out of State, High Capacity Factors
- No accounting for distribution costs
- More efficient turbines not available in time for ITC Grant
- Need for Massachusetts Wind Developers Coalition?