



Meridian Associates, Inc.

Renewable Energy
Department

IMLD/ISD Wind Turbine Project

Presented By:
Jonathan J. Markey, P.E.

Ipswich Wind Turbine Projects



Ipswich School Department

- Proposed 600 kW Turbine
- Situated next to High School/Middle School to reduce amount of power purchased

Ipswich Municipal Light Department

- Proposed 1.5 MW Turbine
- End of Town Farm Rd.
- Generated clean renewable energy for sale to Ipswich rate payers

Challenges to ISD Project Sited at the MS/HS



- Extrapolated Wind Data Based on Town Farm Road Site
- Thorough Planning Scenarios Need to be Evaluated
- Potential Significant Permitting Associated with Surrounding Residential Density
- Neighborhood Issues
- Tight Scheduling for Borrowing

IMLD Project Challenges



- **No CREBS Bonds Awarded**
- **Less Favorable Project Economics**
- **Required Upgrades to Town Farm Road Electrical Infrastructure**

Birth of the Joint Project



- ISD brings ZERO interest CREBs (\$1,600,000)
- IMLD Brings:
 - A Better Defined Project
 - A Site with “Known” Permitting Requirements
 - Wind Data for Site
 - Human Resources and Expertise to Manage Project After Construction

Joint Project Overview



- 1.5 – 1.65 MW Turbine
- Town Farm Road
- Managed by IMLD
- Capital Contributions Define
 - Energy Output Sharing
 - O&M Cost Sharing

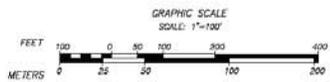
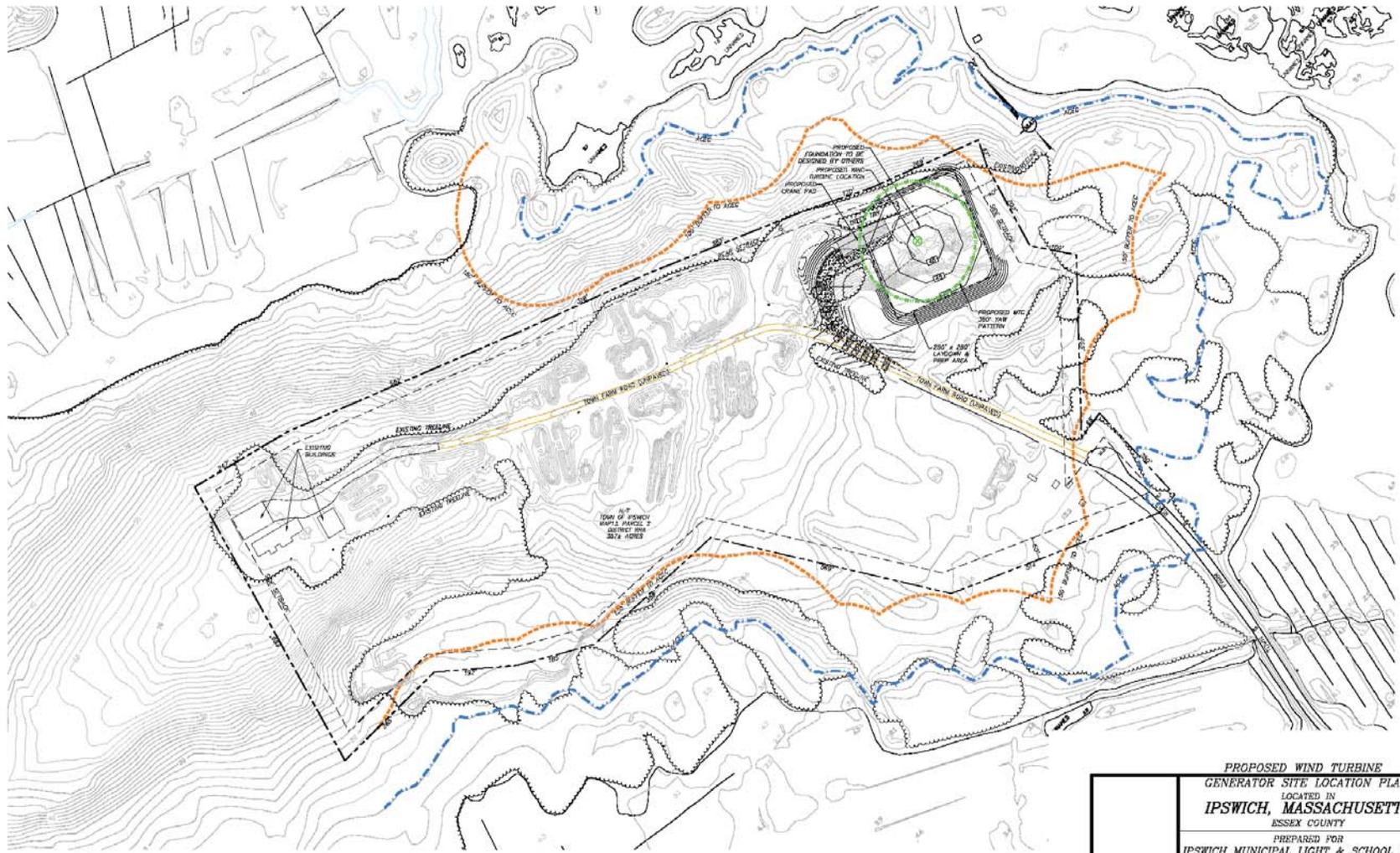
Locus map



Project Impacts



- **Environmental Impacts:** Town will save approx. 1,950 tons of annual carbon emissions
- **Visual Impacts:** Wind Turbine generator distance visible from Great Neck, which is approx. 1.6 miles away.
- **Noise Impacts:** Massachusetts DEP regulates noise emissions. No new noise sound source can raise noise levels more than 10db over the existing ambient sound level
- **Air Traffic Impacts:** The Federal Aviation Association (FAA) and the Massachusetts Aeronautics Commission (MAC) have approved the project
- **Impact on Birds and other Wildlife:** Bat and Avian Study completed by Derosa Environmental Consulting concluded the project would not adversely affect the resident or migrant bird and bat populations of the Ipswich area



DWG: 4591SITE.dwg
(DATE: 4/24/06) (REV: 4/24/06)

REVISIONS			
NO.	DATE	DESCRIPTION	BY

**PROPOSED WIND TURBINE
GENERATOR SITE LOCATION PLAN**
LOCATED IN
IPSWICH, MASSACHUSETTS
ESSEX COUNTY

PREPARED FOR
IPSWICH MUNICIPAL LIGHT & SCHOOL DEPT.
SCALE: 1" = 100' DATE: SEPTEMBER 4, 2008

MERIDIAN ASSOCIATES
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SHEET No. 3 OF 5 PROJECT No. 4591



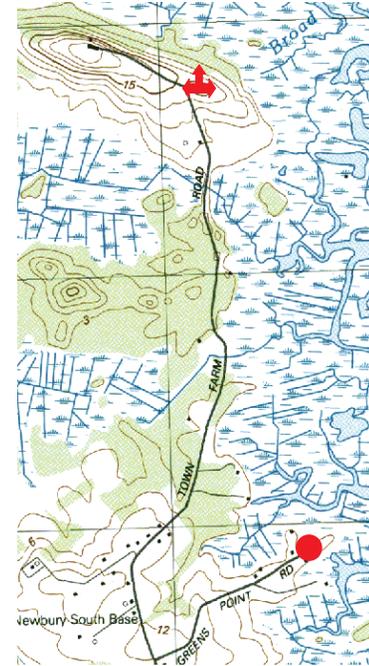
Pointer 42°41'35.10" N 70°47'59.50" W

Streaming 100%

Eye alt 19589

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Image MassGIS, Commonwealth of Massachusetts EOE
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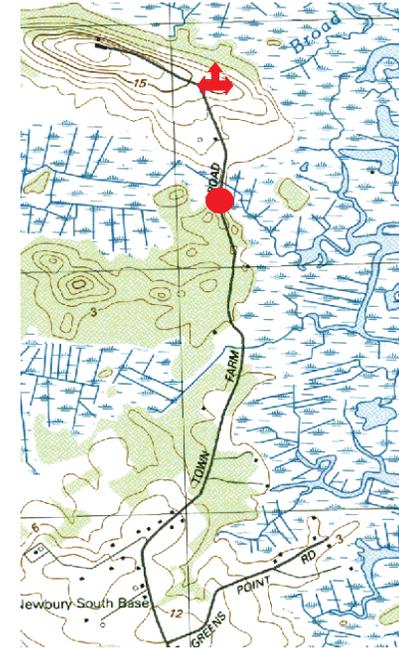
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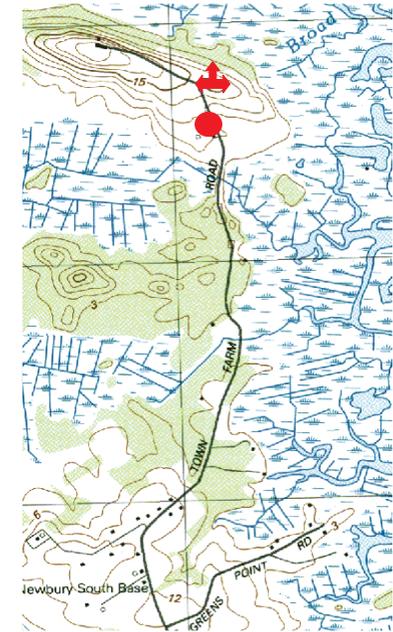
-  Wind Turbine Generator
-  Photo Location



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-  Photo Location



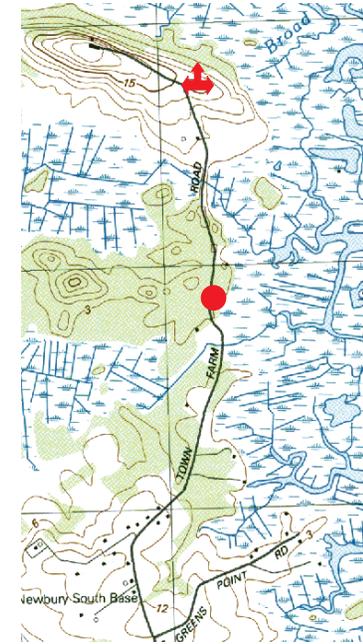
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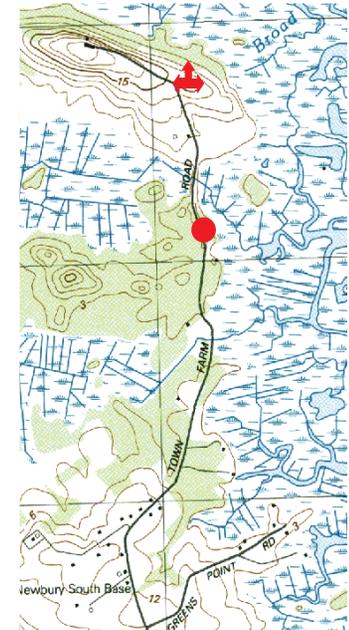
Wind Turbine Generator



Photo Location



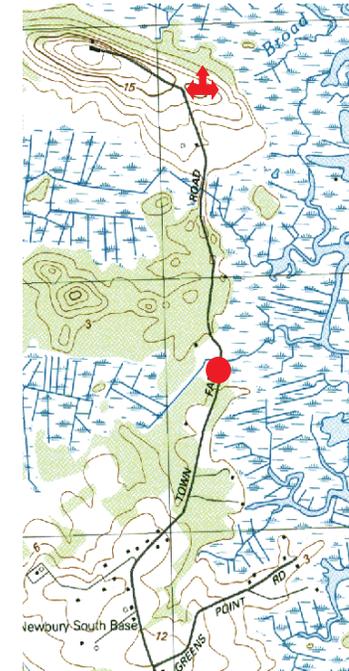
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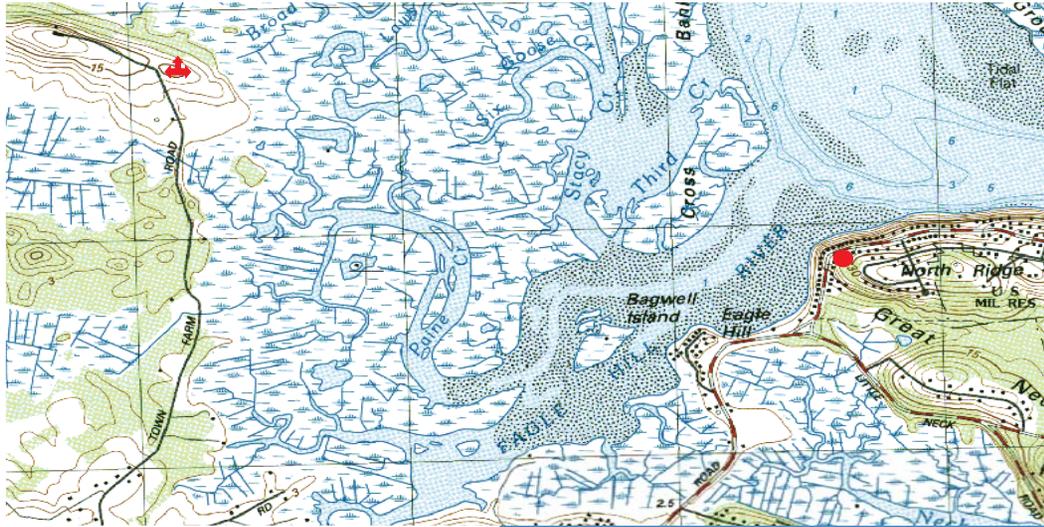
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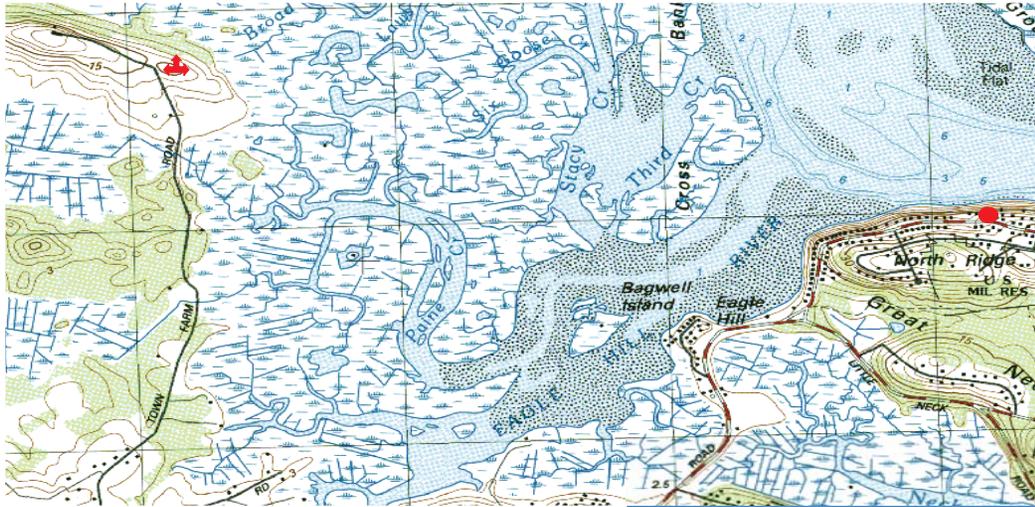


Wind Turbine Generator



Photo Location





Wind Turbine Generator



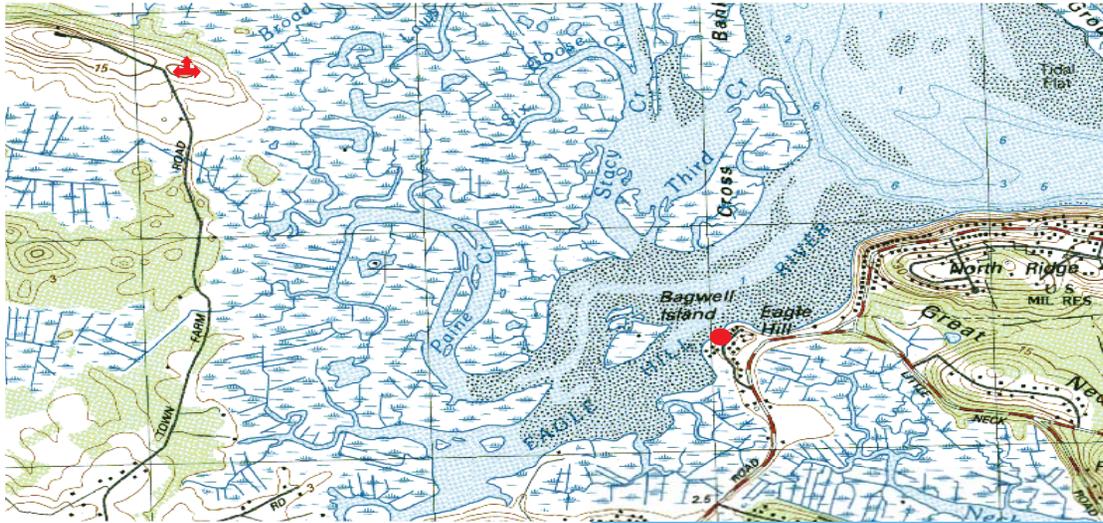
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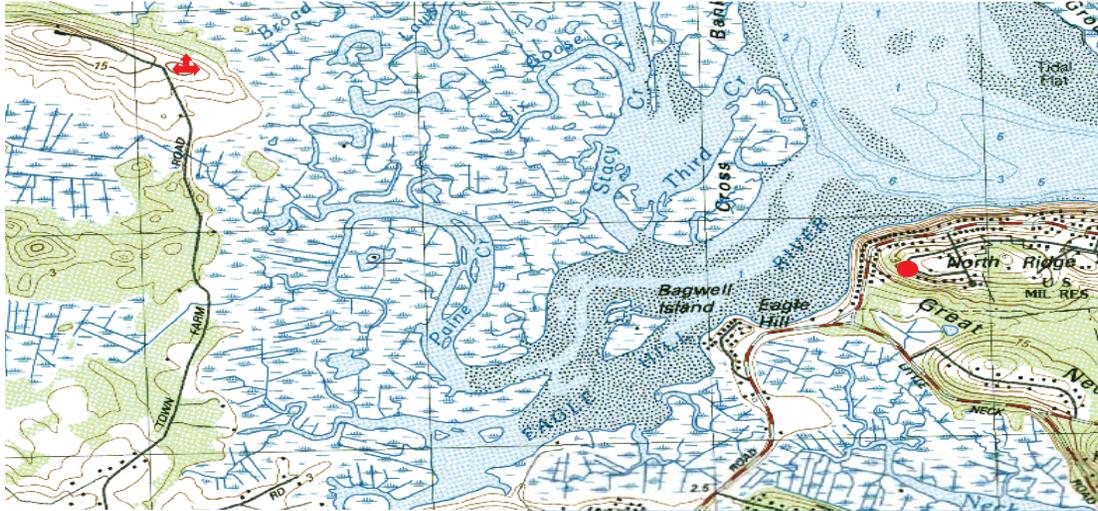


Wind Turbine Generator



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Questions?

