



MASSACHUSETTS
TECHNOLOGY
COLLABORATIVE

Municipal Wind Turbine Site Survey Application

RENEWABLE ENERGY TRUST

MTC is pleased to invite applications for a Municipal Wind Turbine Site Survey (Site Survey) from qualified municipalities in the Commonwealth of Massachusetts. The Site Survey provides qualified municipalities (see Eligible Applicants/Projects, below) with a preliminary assessment of the potential for wind generation on municipally owned sites. The goal of the Site Survey is to help municipalities identify sites that might be appropriate for a wind project, to assess the advantages, disadvantages, and potential fatal flaws of each site, and to provide recommendations as to which sites could be worthy of further analysis. The Site Survey also identifies potential sites for wind resource monitoring should the project continue to that stage.

The Site Survey assesses the potential both for community wind projects designed primarily to serve on-site load, and for larger multi-turbine projects intended to export power to the benefit of the host community. While higher wind speeds (typically in excess of 14.5 mph, 6.5 meters/sec) provide better project economics, a site with slightly lower wind speeds may be acceptable if there is a large on-site electric load (e.g. a wastewater treatment plant).

The Site Survey is a prerequisite for application for the Community Wind Collaborative Wind Turbine Feasibility Analysis. Although it is not a requirement for MTC's Large Onsite Renewables Initiative, it may be helpful in the grant application evaluation process.

Eligible Applicants/Projects

- Open to Massachusetts municipalities whose residents pay into the Renewable Energy Trust
- Proposed sites must be municipally owned (no private or state lands)
- Proposed sites must have an estimated wind speed of 13.4 mph (6.0 m/s) or greater at a height of 70 meters based on the TrueWind model (see footnote 2, below). For wind speeds lower than 14.5 mph (6.5 m/s), presence of a large energy load is preferable.
- The municipality must appoint a primary contact to coordinate and accompany the wind technical expert on the site visit.

Site Survey Process

A Site Survey is an analysis of one or more potential sites for wind development. Site Surveys are conducted by technical experts retained by MTC. These experts collect and analyze existing data on the sites, and may also perform a site visit to assess the potential for wind development at each site.

MTC provides the Site Survey as a grant to qualified municipalities. The Site Survey includes:

- A desktop analysis to determine whether the proposed sites are of sufficient size and windiness to warrant a detailed site survey;
- A site visit, conducted by an expert in wind energy development, to view sites that appear to be feasible based on the desktop analysis. Site visits typically last up to 3 hours, depending on the location and proximity of the sites. The wind development expert may suggest visiting sites other than those identified on the application. NOTE: The wind development expert will not perform a site visit if the desktop analysis finds that none of the proposed sites warrant a detailed site survey; and
- A Site Survey Report, issued approximately 45 days after the site visit, which summarizes information gained from the desktop analysis, the site visit, the municipality, and other existing public data sources.

The Site Survey Report provides the municipality with initial information about which municipal sites may be appropriate for a wind energy project and at what scale, as well as information about appropriate locations for installation of wind monitoring equipment. The report may also help guide the municipality to appropriate MTC initiatives and other resources.

MTC staff will review the Site Survey Report at a meeting with municipal representatives to help them determine whether they wish to further pursue a municipal wind project, and if so, at what site and size.

Instructions

- Read the description of the MTC Municipal Wind Turbine Site Survey, which is available [here](#).
- Fill out all requested information on the following pages. Use additional sheets if necessary. Note: Applications will not be reviewed unless all sections are complete.
- Submit all required documentation with this application.
- Do not submit confidential information as part of this application. MTC will treat all Municipal Wind Turbine Site Survey applications as public documents.
- Mail one hard copy and one electronic copy (on a CD-ROM) of the application and all supporting documentation to:
Community Wind Collaborative
MTC - Innovation Center
75 North Drive
Westborough, MA 01581

Application Review

- MTC will review complete applications on a first come first served basis to determine whether they meet eligibility criteria. Fully completed, eligible applications will be placed in a queue. Submission of a complete application does not assure that a Site Survey will be offered.
- MTC will make Site Survey services available to eligible applicants on a first come, first served basis, subject to the receipt by MTC of a complete and conforming application, wind technical expert availability, and the funding levels approved by the MTC Board of Directors, as they may be modified from time to time.

MUNICIPAL WIND TURBINE SITE SURVEY APPLICATION COVER PAGE

Applicant's Contact Information

Site Survey applicants must identify a single project contact who is employed by the town and authorized to speak on behalf of the municipality on matters relating to the Municipal Wind Turbine Site Survey. Additionally, the contact must be available to accompany the wind development expert on the site visit.

Name: Rocco Longo	Title: Town Administrator
Street address: 870 Moraine St	
City, ZIP: Marshfield, MA 02050	Location title: ¹ Town Hall
Phone number(s): 781 834 5563	
E-mail address: rlongo@townofmarshfield.org	
Fax number:	

Application and Attachments

Please make sure the following documentation is provided. Place a check in the appropriate box once attached.

- Municipal Wind Turbine Site Survey Application
- TrueWind detail sheet for each site offered for consideration (see footnote 2)
- Map indicating parcel boundaries for each site (e.g. assessor's map)
- By-law, if applicable
- Other Documents (if applicable):

Application Approval

This application must be read and signed by the head of the governing body for the municipality (Town Council, Mayor, Chairman of the Board of Selectmen, etc.). By signing this application, the municipality accepts Site Survey services offered by MTC as described on the first page of this application. The applicant understands that the Site Survey is intended, in part, to help municipalities determine whether it is reasonable to pursue a wind project on municipally-owned property. The provision of a survey is not an implied or express commitment by MTC to provide subsequent funding, services or other support for wind development under any MTC program. The Municipality acknowledges that MTC shall have no liability for the wind development expert's provision of, or failure to provide, the Municipal Wind Turbine Site Survey.

Name:	Title:
Signature:	Date:

¹ Indicate title of the street address provided; for example "Town Hall."

Site Information

Use this space to identify potential sites for a municipal wind energy project. Potential sites must be owned and controlled by the municipality or a municipal board, authority or agency. In addition, a potential site should have open or clearable space sufficient to support the construction and operation of a tall piece of machinery, and should have strong winds, a sizable on-site load, or both (see Eligible Applicants/Projects, above).

Please provide all the information requested for each site. You may wish to consult with municipal planning boards, conservation commissions, historic commissioners, etc. for information on each site. The table and the following site information request forms provide space for up to three sites; if you wish to propose more sites, please download additional forms [here](#), fill out the required fields, and attach the forms to the application. The wind development expert may recommend additional sites for consideration based on its desktop analysis, or as a result of the site visit.

Town name: Marshfield		Electric Utility: N Star		
Town Administrator: Rocco Longo		Utility Contact:		
		Site #1	Site #2	Site #3
Site name:	<i>Example: Wastewater Plant</i>	Carolina Hill	Rexhame Beech	Marshfield High School
Street address	<i>2823 Tonney Rd. Norton, MA</i>	Off Eames Way	325 Standish St	167 Forest St.
General Site description and current land use	<i>Wooded area of about 2 acres between treatment plant and Grey Street.</i>	Wooded area Area Between Main St [3A] Ferry St and Plesant St	Beach area At the end of Standish St	School Sports Fields
Lat. & Long²	<i>42.6435 70.6286</i>	42.12261 N 70.7288 W	42.12227 N 70.6791 W	42.1089 N 70.7397 W

Please check this box if the Municipality has included additional site information request forms. Attach all documents at the end of the Municipality's application.

² For latitude and longitude please refer, for instance, to topozone.com. Please use NAD 83 coordinates.

Example site - The following is an example of the type of information MTC is requesting. Please complete all fields as accurately as possible.

Site name: Wastewater Treatment Plant

General site description and current land use: Wooded area of about 2 acres between treatment plant and Grey Street.

Latitude: 42.6435

Longitude:³ 70.6286

Street address: 2823 Tonney Road, Nonton, MA 02211

Who owns and who maintains site control over the property: Owned by the Town of Nonton, controlled by the Board of Water Commissioners

Elevation (feet): 153 Feet

Total size of parcel: 7 Acres

Predicted annual wind speed at 70 meters height (meters/second):⁴ 6.5 m/s

Description of vegetation on site: 50% cleared, 20% brush, 30% trees

Buildings on parcel: Treatment facility

Annual energy consumption: 5000 MWh

Portion of the site that can be cleared: NW corner

Soil type (ledge, rocky, soil, clay, etc.): Sandy soil

Road access to site: Paved road to parking lot. About 100 ft of small trees between road and clearing.

Description of surrounding parcels: State Forest to the south, residential area to the east. Closest building is landscape company on adjacent parcel to the north <600 feet.

Proximity of nearest residence (feet): About 1,000 feet

Proximity to airports: 3.6 miles Hiawatha regional airport

Zoning: R-1 Residential

Wetland status on parcel and surrounding parcels: None

Other land use restrictions (conservation land, watershed, Article 97, etc.): None

Designation by the Massachusetts Natural Heritage & Endangered Species Program as a Core Habitat or a Supporting Natural Landscape: Yes, the entire area is designated as Core Habitat.

³ For Latitude and Longitude please refer, for instance, to topozone.com at the highest resolution (1:25,000). Please use NAD 83 coordinates.

⁴ Please use the TrueWind Solutions map. See <http://truewind.teamcamelot.com/ne/> and print a copy of the detail sheet for each location.

Site #1 – Please fill out the following fields as completely as possible. If the Municipality has more than three sites please download the site information request form [here](#), fill out the required forms and attach the additional forms to your application.

Site name: Carolina Hill

General site description and current land use: Wooded Area

Latitude: 42.1271 N

Longitude: 70.7256 W

Street address: off Eames Way

Who owns and who maintains site control over the property: Town of Marshfield

Elevation (feet): 234

Total size of parcel: 3.5 Acres

Predicted annual wind speed at 70 meters height (meters/second): 6.5 to 7.5

Description of vegetation on site: 25%Cleared 75% Trees

Buildings on parcel: Water Tower and Pump House

Annual energy consumption: ??

Portion of the site that can be cleared: As Necessary

Soil type (ledge, rocky, soil, clay, etc.): Loamy Sand

Road access to site: Eames Way improved unpaved road

Description of surrounding parcels: South, West and East Conservation Commission / north Town and undeveloped

Proximity of nearest residence (feet): 2200

Proximity to airports: 3.42 miles

Zoning: R1 -Residential Rural

Wetland status on parcel and surrounding parcels: None

Other land use restrictions (conservation land, watershed, Article 97, etc.): None

Designation by the Massachusetts Natural Heritage & Endangered Species Program as a Core Habitat or a Supporting Natural Landscape: Priority habitat of rare species and also estimated habitat of rare wild life

Site #2

Site name: Rexhame Beech

General site description and current land use: Water Front/Beach

Latitude: 42.1227 N

Longitude: 70.6791 W

Street address: 325 Standish St

Who owns and who maintains site control over the property: Town of Marshfield

Elevation (feet): 12

Total size of parcel: 40.5 acres

Predicted annual wind speed at 70 meters height (meters/second): 6.0 to 6.5

Description of vegetation on site: Brush

Buildings on parcel: Concession Stand

Annual energy consumption: ???

Portion of the site that can be cleared: As Necessary

Soil type (ledge, rocky, soil, clay, etc.): Sand

Road access to site: Standish St paved road and parking lot

Description of surrounding parcels: undevelopable town land beach, dunes and marsh

Proximity of nearest residence (feet): 800

Proximity to airports: 1.75

Zoning: R3 -Residential Water Front

Wetland status on parcel and surrounding parcels: 345 feet to nearest wet land

Other land use restrictions (conservation land, watershed, Article 97, etc.): ???

Designation by the Massachusetts Natural Heritage & Endangered Species Program as a Core Habitat or a Supporting Natural Landscape:

Site #3

Site name: Marshfield High School

General site description and current land use: Cleared land location of High School

Latitude: 42.1089 N

Longitude: 70.7397 W

Street address: 167 Forest St

Who owns and who maintains site control over the property: Town of Marshfield School Dept.

Elevation (feet): 101

Total size of parcel: 80 Acres

Predicted annual wind speed at 70 meters height (meters/second): 6.0 to 6.5

Description of vegetation on site: Grass

Buildings on parcel: 11

Annual energy consumption: ????

Portion of the site that can be cleared:

Soil type (ledge, rocky, soil, clay, etc.): Loamy Sand

Road access to site: Pave road and parking lot

Description of surrounding parcels: Residential

Proximity of nearest residence (feet): 1050

Proximity to airports: 3.46

Zoning: ??

Wetland status on parcel and surrounding parcels: none

Other land use restrictions (conservation land, watershed, Article 97, etc.): none

Designation by the Massachusetts Natural Heritage & Endangered Species Program as a Core Habitat or a Supporting Natural Landscape: none

Wind Turbine Project Interest

To the extent possible, please identify the community’s wind energy development goals and the type of project(s) it envisions. This information will help the wind development expert assess each site’s potential for development of a wind project consistent with the community’s goals and interests.

Why is the municipality interested in wind power?	Reduce the cost of energy for the town government
<p>What kind of a project does the town envision?</p> <ul style="list-style-type: none"> ≈ <i>Power used onsite or sold into the electric grid?</i> ≈ <i>One or multiple turbines?</i> ≈ <i>250 kW(≤180 ft, generating energy for about 80 households), 600kW(≥240 ft, about 200 households), 1.5 MW (≥350 ft, about 500 households).</i> 	<p>Power to be sold to the Electric grid.</p> <p>Size of project:</p> <p>Carolina Hill 1+ turbines 1 to 1.5 MW</p> <p>Rexhame Beech 1 turbine 600kW to 1 MW</p> <p>High School complex 1 turbine 1 MW</p>
<p>Are you considering public ownership (e.g., water authority owns and operates project), or private ownership (e.g., a third party owns and operates the project on leased town land)? If considering public ownership, describe possible financing options.</p>	
Describe public input/outreach relating to municipal wind to date.	
Does the municipality have a by-law governing wind energy projects? If yes, please attach a copy.	Not yet