



# Renewable Energy Research Laboratory

Department of Mechanical and Industrial Engineering  
University of Massachusetts  
160 Governor's Drive  
Amherst, MA 01003-9265

Phone: 413-545-4359  
Fax: 413-577-1301  
[www.ceere.org/rerl](http://www.ceere.org/rerl)  
[rerl@ecs.umass.edu](mailto:rerl@ecs.umass.edu)



## Data Update for Thompson Island, Boston Harbor, MA April 2006

Prepared for  
Massachusetts Technology Collaborative  
75 North Drive, Westborough, MA 01581

By Chris Elkinton

### Monthly Data Summary for April 2006

This update summarizes the monthly data results for the Thompson Island monitoring site in Boston Harbor, MA, at 42° 18' 56" N, 71° 0' 40" W (NAD 83). More information on the sensors and site can be found at [http://www.ceere.org/rerl/rerl\\_resourcedata.html](http://www.ceere.org/rerl/rerl_resourcedata.html).

| Height | Wind Speed |           | Turbulence Intensity | Prevailing Wind Direction | Power Law Shear Exponent |
|--------|------------|-----------|----------------------|---------------------------|--------------------------|
|        | Mean [m/s] | Max [m/s] |                      |                           |                          |
| 40 m   | 6.40       | 15.59     | 0.13                 | 90, E                     | 0.04                     |
| 25 m   | 6.23       | 14.75     | 0.15                 | 90, E                     |                          |

The data can be found at the Renewable Energy Research Laboratory web site:  
[www.ceere.org/rerl/rerl\\_resourcedata.html](http://www.ceere.org/rerl/rerl_resourcedata.html).

Additional information about interpreting the data presented in this report can be found in the Fact Sheet, "Interpreting Your Wind Resource Data," produced by RERL and the Massachusetts Technology Collaborative (MTC). This document is found through the RERL website:

[www.ceere.org/rerl/about\\_wind/RERL\\_Fact\\_Sheet\\_6\\_Wind\\_resource\\_interpretation.pdf](http://www.ceere.org/rerl/about_wind/RERL_Fact_Sheet_6_Wind_resource_interpretation.pdf).

### Data Recovery

All raw wind data are subjected to a series of tests and filters to identify data that are faulty or corrupted. The gross percentage of data recovered (ratio of the number of raw data points received to data points expected) and net data recovered (ratio of raw data points which passed all QA control tests to data points expected) are shown below.

|                          |        |
|--------------------------|--------|
| Gross Data Recovered [%] | 100.00 |
| Net Data Recovered [%]   | 89.37  |

### Maintenance Issues and Changes to Site Configuration

The following maintenance/equipment problems occurred during April 2006, and the following corrective action was taken:

- The primary anemometer at 40 m height, called Anem40a, failed on November 10, 2005. This failure is the primary cause of the lower than normal Net Data Recovery percentage. The secondary anemometer at 40 m, called Anem40b, is now the only sensor contributing to the mean wind speed at 40 m. The failed sensor will be replaced during the next service visit.

### Monthly Data Time Series

Seen below is a graph of wind speed at Thompson Island for the month of April 2006, at the highest anemometer height of 40 m.

