

## WIND TURBINE ALTERNATIVES REPORT # 2

### General Overview

Our August 12, 2013 briefing attempted to document from existing resources, the town-wide impacts and/or benefits as well as neighborhood impacts/benefits associated with the options outlined in the Wind Turbine Options Report (WTOP) as well as other limited alternatives. This briefing also attempts to include key thresholds required to implement each of the options to assist the Board in making a long-term decision about wind turbine operations for implementation early in the last quarter of this calendar year. It is developed with respect for the fundamental fiduciary responsibility of the Board in moving forward operationally with the Town-owned wind turbines, given the clear determination of the public in the recent municipal election declining to support by a decisive margin the necessary action to cease operation of these turbines.

In the interest of encouraging informed review and discussion, further reflecting community sensitivity, the Board of Selectmen has delayed a definitive decision for multiple years. The time for making key operational decisions relative to the wind turbines has now arrived. A decision must be made soon or the **TOWN** is in jeopardy of having decisions made by others. The Town has three lawsuits pending with others on the horizon. There is an expanding risk that a court order will potentially take control of the matter and the Town will be left with no reasonable and effective options. Whatever decision is made, the Board of Selectmen will have to take the lead, with assistance as required, to advance the decision with the community and the neighbors. This is clearly in the community's best interest.

Given the legal challenges and the Town's desire to explore potential resolutions with concerned neighbors, Town Counsel has advised that any responsible resolution should include a component seeking to address the concerns of neighbors, in part, through the Town's acquiring certain sound easements and working toward a resolution of pending litigation.

On August 12, 2013 the Board of Selectmen voted to affirm the following process:

- BOS Requested that staff further detail and articulate the mitigation options for
  - 20 Hour Operation for Both Turbines
  - 16 Hour Operation for Wind 1 and 24 Hour Operation for Wind 2
  - 20 Hour Operation Wind 1 and 24 Hour Operation Wind 2
  - Full Operation Both Turbines
  
- As per Town Counsel, responsible resolution must include a mitigation component
  
- Preferred alternatives include production exceeding 80%, staff will suggest a package of mitigation options – Only in these cases do wind turbine revenues support the creation of a reasonable mitigation fund.
  
- The anticipated timetable for implementation includes an operational decision in September with implementation beginning in October, 2013.

## Sound/Acoustic Easements

The Town of Falmouth has one measured sound exceedance located at 211 Blacksmith Shop Road as reported in the Massachusetts Department of Environmental Protection, (MassDEP) May 2012 sound monitoring report voluntarily requested by the Town. The WTOP found the most promising noise mitigations option(s) to be interior sound insulation with a likely 3-9 dBA reduction in sound and sound masking to reduce amplitude modulation (see page 11 WTOP). Further, MassDEP has recognized the voluntary sale of a property and/or execution of an acoustic easement or other related interests in real estate at an impacted location as viable mitigation tools that have been used in other cases where sound exceedances were found. We have already established that operating alternatives where wind turbine production exceeds 80% is necessary to generate revenue sufficient to fund Acoustic Easements or other interests in real estate.

In analyzing information related to noise complaints, the data clearly indicates that distance matters. Three (3) of five (5) homes within ¼ mile of Wind 1 logged complaints (60%) and four (4) of eleven (11) homes within ¼ mile of Wind 2 logged complaints (36%). In the combined area for Wind 1 and Wind 2 from the quarter mile to one-third of a mile distance nine (9) of thirty-six (36) homes logged complaints (25%). Noise complaints clearly diminish significantly with distance.

A sound easement acquisition plan is an affirmative response to the complaints of neighbors and those who may reside near the Town's turbines in the future. In some cases modest curtailment of operations is proposed as mitigation. The Board of Selectmen's decision on the duration of operation will determine acquisition funds available; curtailment if selected may be affirmatively acknowledged as a mitigation proposal. The Estimated Financials\* illustrate that more consistent operations result in more funds for economic consideration to acquire sound/acoustic easements.

To resolve this matter through economic consideration a minimum initial contribution of \$520,000 to a fund established for the acquisition of acoustic easements and exploration of settlement of existing claims is recommended to be supplemented by other funding sources as may be feasible. The Town's contribution to the fund will be offset, over time, by revenues generated by wind turbine operations. Given the collaboration with the State and specifically the MassCEC in securing and locating Falmouth's wind turbines, the Commonwealth of Massachusetts will be asked for a contribution to the fund.

A Town-appointed facilitator/representative is recommended to address the details of all matters related to the distribution of these funds, excluding those matters currently involved in active litigation with the Town. The fund may be distributed, in part, or in whole for whatever purpose results in the recipient's agreement to release the Town now and in the future.

We recommend that up to 25%-33% of above-defined revenue after expenses for the time period from 2015 -2025 be made available for this purpose. The Town must be sufficiently conservative to ensure that annual funding needs are met given the vagaries of the wind and renewable energy markets and the potential for unconventional and mechanically demanding operational hours. Further, the wind turbines are a very large municipal project planned and constructed with municipal dollars with an expectation that it will provide tangible long term Town benefits. The reserve fund for each operating scenario below is estimated based upon 25% of projected revenue after expenses, and this could be adjusted upward to 33% if the Board of Selectmen so determine.

Adding to the complexity of revenue certainty is the planned expansion of the Wastewater Treatment Facility. Upon completion of this expansion, the demand for electricity is projected to increase by 50% thereby decreasing the overall revenue available. This expansion project is estimated to commence operations in the 2018-2019 time-frame. While not specifically illustrated in the Estimated Financials\* on site consumption of energy will result in an estimated reduction in projected net revenue for the time-period from 2019 to 2025 by approximately \$360,000.

In response to the Board's consideration of a possible additional sound study, the MassCEC will make available a sound study protocol to be available to the Town. Lastly, time control for flicker is recommended as a potential strategy for Wind II only when it is operating without any other time-of-day control. This is critical, as the wind turbine operating system was designed for a single, time-of-day adjustment.

#### Basic Recommended Operating Plan

It is recommended that the Board establish a fund and explore the appointment of a representative to effectuate the purpose of the fund, which may also include efforts to reach a settlement of claims concerning the operation of the turbines in addition to the acquisition of sound easements. Further,

- The Town's actions may include curtailment
- Flicker curtailment is not recommended in addition to time of day curtailment
- Fund revenue is determined by the characteristics of each operating plan
- The Town shall request a contribution from the State/State agencies and others
- MassCEC sponsored Sound Study
- Establish a zone for sound /acoustic easements, suggested to consider all homes within 1/3 mile of turbines with impact diminishing by distance
- Homeowners grant sound/acoustic easement and execute a release of all claims
- A facilitator/representative will have the authority to negotiate individually with each party
- Facilitator limited only by the funds available, and may negotiate and effectuate;
  - Voluntary Sale
  - Sound easements and release of claims
  - Compensation may be used at the discretion of the owner

Only the operating alternative details or variances to the recommended Basic Operating Plan are noted below in each of the four alternatives adopted by the Board of Selectmen on August 12, 2013.

### **1). 20 Hour Operations Both Turbines**

**Understanding/Assumptions:** The Board will pursue operations including a four hour curtailment period for each turbine. The four hour curtailment for Wind I shall be assumed to fully address the one DEP measured exceedance at Blacksmith Shop Road. No additional action (such as voluntary home purchase or a sound easement) is required to meet existing DEP noise guidelines.

- Includes 8 hours total of curtailment per 24-hour day
- Flicker curtailment is not recommended in addition to this time of day curtailment
- The cost of the time of day curtailment is approximately **(\$160,000)** in Calendar Year 2015
- Approximately **(\$1.8 Million reduction)** from full operation (2014 -2025)
- \$520,000 (25%) initial funding to be supplemented by others as feasible

### **2). Wind 1 -16 Hour Operation/Wind 2 - 24 Hour Operation**

**Understanding/Assumptions.** The Board will adopt an eight hour curtailment period for the Wind I turbine. The eight hour curtailment for Wind I shall be assumed to exceed the minimum needed to address the one DEP measured exceedance at Blacksmith Shop Road. No additional mitigation (voluntary sale or sound easement) is required to meet existing DEP noise guidelines.

- Includes 8 hours total of curtailment per 24-hour day
- Flicker curtailment is available as a potential consideration on Wind 2 only.
- The cost of time of day curtailment is approximately **(\$130,000)** in Calendar Year 2015
- Approximately **(\$1.5 Million reduction)** from Full Operation (2014 -2025)
- \$590,000 (25%) initial fund to be supplemented by others as feasible

### **3). Wind 1 20 Hour Operation/Wind 2 - 24 Hour Operation**

**Understanding/Assumptions:** The Board will adopt a four hour curtailment period for the Wind 1 turbine and full 24-hour operations for Wind 2. The four-hour curtailment for Wind I shall be assumed to address the one DEP measured exceedance at Blacksmith Shop Road. It shall be assumed that no additional mitigation is required to meet existing DEP noise guidelines.

Curtailment shall be an affirmative response to the complaints of neighbors.

- Includes 4 total hours of curtailment per 24-hour day
- Flicker curtailment is available as a potential consideration on Wind 2 only.
- The cost of time of day curtailment is approximately **(\$65,000)** in 2015
- Approximately **(\$745,000 reduction)** from Full Operation (2014 -2025)
- \$780,000 (25%) initial fund to be supplemented by others as feasible.

### **4). Full Operation**

**Understanding:** Both turbines will be operated at all times of day. Mitigation of sound at 211 Blacksmith Shop Road will be required to meet existing DEP noise guidelines.

- Flicker curtailment possible for Wind 2.
- \$968,000 (25%) initial fund to be supplemented by others as feasible

### **Next Action Steps**

1. Board of Selectmen choose a definitive Operating Plan in September, 2013; Implementation effective in October, 2013
2. Appoint a Facilitator/Representative
3. Initiate the establishment of the previously described fund; October 2013 – December 2013
4. Town Meeting Actions
  - Board of Selectmen Authorize Special Town Meeting
  - Appropriation to the Fund
  - Amend Special Legislation if necessary
5. Seek additional contributions from the State and others as is feasible to supplement the fund
6. Seek Confirmation of 0% Interest and Loan Forgiveness
7. Seek Confirmation REC Relief and agreeable terms