Solar Array Build

Prepared for the Town of Boxford

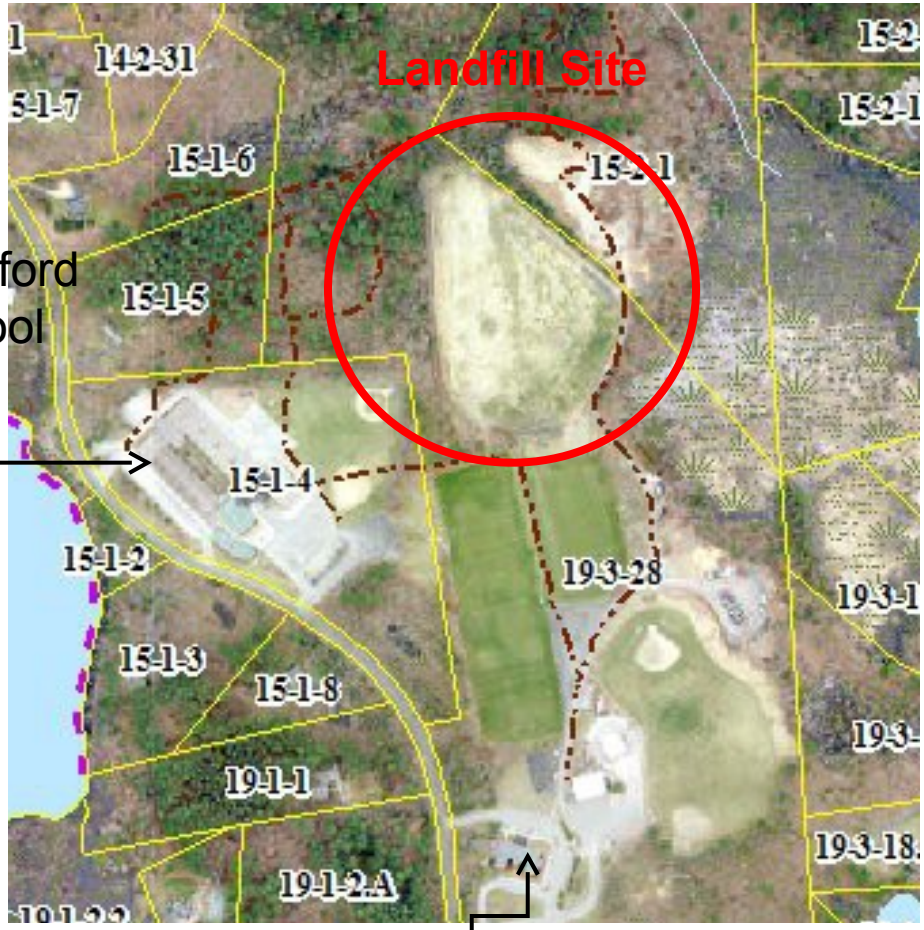
By Sustainability Committee

March 2014

Progress of Solar Array has accelerated with the establishment of the Sustainability Committee

Feb 2011	Merrimack Valley Planning Commission's feasibility study confirms support of 500kW installation on Boxford's closed landfill
Feb 2013	Sustainability Committee established with Charter to move ahead with Solar Project – Greg Netland (Chair), Marc Aronson, Yu Ching Buehler, Joe Hill, Lauren Laplante-Rottman
Present	• RFP Completed and distributed March 5th • Board of Health is completing landfill closure with Mass DEP • Winning Bidder selected on May 6th
On-going	Sustainability Committee has met with town officers and committees as well as several experts to discuss feasibility, timing, and permitting – Discussed interconnection and net metering with National Grid – Committee has hired a consultant to help us proceed with the RFP process as well as refine to exact costs and benefits

Project Plan Overview



Summary

- Build 500kW* Solar Array on the Landfill site behind town hall
- Recommend land lease with Power Purchase Agreement (PPA)

Benefits

- Maximize monetary benefit of an otherwise unusable tract of land
- Minimize both up front capital and on-going maintenance costs

*** May produce up to 690kW**

Two Options for Solar Project

Option 1 – Develop, Own and Maintain project

Option 2 – Lease Land and Purchase Power at reduced rate from a 3rd party

Option 1 – Develop/Own/Maintain

- High Upfront Costs (est. $1.5M)
- Municipalities may not be able to take advantage of all tax incentives
- Financial Risk
- Town assumes all on-going maintenance and costs
- Town is not set up to be a power company
  - Requires technical management of project, own, operate, etc.

Option 2 – Lease Land/Purchase Power

- Most Common Approach – 99% of projects in MA
- Low upfront investment of time/resources
  - Long term lease of 20 years, buy-out option after 8 years
  - Additional Revenue from land lease and taxes
  - Savings from reduced cost of power
- Developer covers upfront capital expenditures and fees*
  - Site planning and build (estimated $2.20/Watt), ~ $1.1M
  - Interconnection to the grid, National Grid estimates ~ $500K
- Developer maintains all Solar Array facilities
  - Panels and supports
  - Controls and regulating equipment
  - Electrical line extension to the grid
- Tax Credits benefit the town
  - Developer can take advantage of Tax credits not available to the town
    - 30% Federal tax credit and 5 year MACRS Depreciation
  - Developer then monetizes credits for the benefit of the town

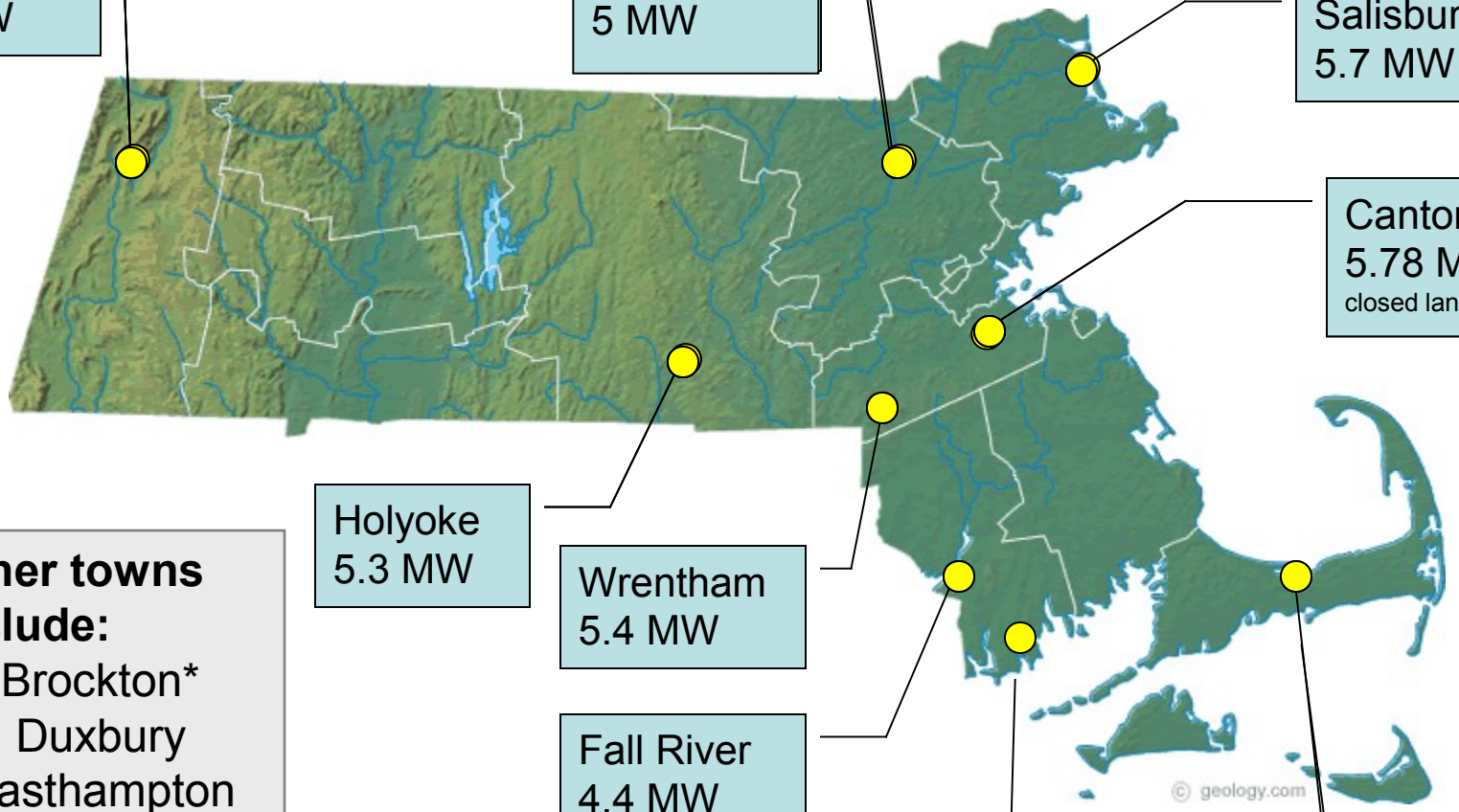
* Numbers provided are estimates; actual numbers will be negotiated at time of contract award

The solar array provides the Town of Boxford with potential for multiple new income streams

Revenue Stream/ Savings Opp'y	Annual	20 year outlook
Electricity savings	$25k to $37k	$500k to $740k
Land lease revenue	$12.5k to $0.5k	$250k to $10k
Tax revenue	$12.5k	$250k

✓ **Additional benefit of being an environmental conscious community…priceless**

Through our Developer, we can leverage experiences from the many similar Solar Projects in Massachusetts



Pittsfield
4.9 MW

Westford
5 MW

Salisbury
5.7 MW

Canton
5.78 MW (on closed landfill)

Holyoke
5.3 MW

Wrentham
5.4 MW

Fall River
4.4 MW

Dartmouth (leader)
9.28 MW

Barnstable
4.9 MW

Other towns include:

Brockton*
Duxbury
Easthampton
Easton
Holbrook
Ludlow

Solar arrays on landfills are common and safe

Nov 2013 - Sudbury turns on 1.5-megawatt solar array at former landfill

Source: http://www.metrowestdailynews.com

Across MA to date there are…

- 46 projects approved
  - Total 86MW
- 17 projects operational
  - Total 26MW

Timetable of actions and target dates to secure a developer owner

May 13/14	Town Meeting Approval of Warrant Article
June - August	Final negotiations with winning bidder
July - September	Begin Process for Zoning variance with ZBA
July - September	Pursue post closure permitting with BOH and DEP
July – September	Get project into National Grid Pipeline
Sept-Dec	Begin Interconnection work
Spring 2015	Commence construction of solar array