

SELECTMEN'S MEETING  
Monday, February 23, 2015  
Selectmen Meeting Room  
7:00 PM

**AGENDA**

**PUBLIC COMMENTS**

Public comments are allowed for up to 10 minutes at the beginning of each meeting. Each speaker is limited to 3 minutes for comment. Members of the Board will neither comment nor respond, other than to ask questions of clarification. Speakers are encouraged to notify the Selectmen's Office at 781-698-4580 if they wish to speak during public comment to assist the Chairman in managing meeting times.

**SELECTMAN CONCERNS AND LIAISON REPORTS**

**TOWN MANAGER REPORT**

**ITEMS FOR INDIVIDUAL CONSIDERATION**

- |  |         |
|--|---------|
| 1. Grant of Location - Verizon - Lowell Street (5 min.)  | 7:00 PM |
| 2. Approve Bond Sale (5 min.)  | 7:05 PM |
| 3. Discussion of Appointed Committee's Compliance with Open Meeting Law Minutes Posting Requirements (10 min.) | 7:10 PM |
| 4. Accept Deposit of Fill for Community Housing at Busa Farm Parcel (15 min.)                                  | 7:20 PM |
| 5. School Building Project Discussion (20 min.)  | 7:35 PM |
| 6. Solar Update - Hartwell Avenue (30 min.)  | 7:55 PM |
| 7. Article Presentations/Positions (20 min.)   | 8:25 PM |
| 1. Article 43 - Amend General Bylaws - Demolition Delay  |         |
| 8. Approve FY2016 Recommended Budget (10 min.)   | 8:45 PM |
| 9. Approve Veterans Services District Agreement with Bedford (5 min.)  | 8:55 PM |
| 10. Approve Library Union Collective Bargaining Agreement (5 min.)   | 9:00 PM |
| 11. Designation of Public Safety Official regarding Declaration to Recess Town Meeting (5 min.)                | 9:05 PM |

**CONSENT AGENDA**

- |  |         |
|--|---------|
| 1. Commitment of Water and Sewer Charges | 9:10 PM |
| 2. Consent Agenda                        | 9:10 PM |

**EXECUTIVE SESSION**

**ADJOURN**

*Hearing Assistance Devices Available on Request  
All agenda time and the order of items are approximate and subject to change.*

# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**                      **PRESENTER:**                      **ITEM NUMBER:**

2/23/2015                      Joe Pato                      I.1

**AGENDA ITEM TITLE:**

Grant of Location - Verizon - Lowell Street (5 min.)

**SUMMARY:**

See attached paperwork

**RECOMMENDATION / SUGGESTED MOTION:**

Motion to approve the petition of Verizon to install a new pole, T9/E9, on Lowell Street and remove an existing one, T9.

**FOLLOW-UP:**

Engineering Division

**APPROXIMATE TIME ON AGENDA:**

7:00 PM

**ATTACHMENTS:**

Description	Type
☐ Grant of Location - Verizon - Lowell Street	Backup Material

# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**

February 23, 2015

**STAFF:**

William P. Hadley, Director

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**ITEM NUMBER:**

**SUBJECT:**

Verizon

Lowell Street. – Install one JO Pole (T9/E9) on the southwesterly side of Lowell Street and remove one SO Pole, T9.

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**EXECUTIVE SUMMARY:**

The Department of Public Works/Engineering Division has reviewed the petition, plan and order for Verizon to install one JO Pole (T9/E9) on the southwesterly side of Lowell Street about 85' northwesterly from the centerline of Haskell Street at a point approximately 30' northwesterly of Pole T9 which is to be removed.

This pole installation is necessary in order to remove an aerial trespass at #48 Lowell Street.

A public hearing is required and abutters have been notified. Since this petition appears to be in order, we recommend that approval be granted.

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**FINANCIAL IMPACT:**

None

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**RECOMMENDATION / SUGGESTED MOTION:**

Motion to approve the petition of Verizon to install a new pole, T9/E9, on Lowell Street and remove an existing one, T9

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**STAFF FOLLOW-UP:**

Engineering Division

**PETITION FOR JOINT OR IDENTICAL POLE LOCATIONS**

To the Board of Selectmen

Of **LEXINGTON**, Massachusetts

**VERIZON NEW ENGLAND INC.** and **NSTAR ELECTRIC COMPANY** request permission to locate poles, wires, cables and fixtures including the necessary anchors, guys and other such sustaining and protecting fixtures to be owned and used in common by your petitioners, along and across the following public way or ways:

**Lowell Street:**

Install one JO Pole (T9/E9) on the southwesterly side of Lowell Street to a point approximately 30' northwesterly of its current location. The current SO Pole, T9, is to be removed. The new location of said Pole T9/E9 is to be at a point approximately 85' northwesterly from the centerline of Haskell Street.

1 JO Pole to be installed  
1 SO Pole to be removed  
1 JO Pole to remain

Wherefore they pray that after due notice and hearing as provided by law, they be granted joint or identical locations for and permission to erect and maintain poles, wires and cables, together with anchors, guys and other such sustaining and protecting fixtures as they may find necessary, said poles to be erected substantially in accordance with the plan filed herewith marked - **VERIZON No. 1A0KF9T**, Dated January 15, 2015.

Also for permission to lay and maintain underground laterals, cables and wires in the above or intersecting public ways for the purpose of making connections with such poles and buildings as each of said petitioners may desire for distributing purposes.

Your petitioners agree that space shall be reserved and maintained for the limited purpose of attaching one-way low voltage fire and police signaling wires owned by the municipality or governmental entity for public safety purposes only.

**VERIZON NEW ENGLAND INC.**

By *Kelly-Ann Condon*  
Kelly-Ann Condon, Right of Way Specialist, UCS

**NSTAR ELECTRIC COMPANY**

By *William D. Linn*  
Right of Way Supervisor

**ORDER FOR JOINT POLE LOCATION**

The Board of Selectmen of the Town of Lexington, Massachusetts **ORDERED:**

That permission be and is hereby granted **VERIZON NEW ENGLAND INC. and NStar Electric Company** joint or identical locations for and permission to erect and maintain poles and their respective wires and cables to be placed thereon, together with anchors, guys and other sustaining and protecting fixtures as said Companies may deem necessary, in the public way or ways as requested in petition of said Company dated the 15<sup>th</sup> day of January, 2015.

**Lowell Street:**

Install one JO Pole (T9/E9) on the southwesterly side of Lowell Street to a point approximately 30' northwesterly of its current location. The current SO Pole, T9, is to be removed. The new location of said T9/E9 is to be at a point approximately 85' northwesterly from the centerline of Haskell Street.

1 JO Pole to be installed  
1 SO Pole to be removed  
1 JO Pole to remain

All construction under this order shall be in accordance with the following conditions:

Poles shall be of sound timber, and reasonably straight, and shall be set substantially at the points indicated upon the plan marked – **VERIZON No. 1A0KF9T**, Dated January 15, 2015 filed with said petition.

There may be attached to said poles by Verizon New England Inc. not to exceed 20 wires and 5 cables and by said NStar Electric Company such wires, cables and fixtures as are necessary in its business and all of said wires and cables shall be placed at a height in compliance with the National Electrical Safety Code.

Also that permission be and hereby is granted said **VERIZON NEW ENGLAND INC. and NStar Electric Company** to lay and maintain underground laterals, cables and wires in the above or intersecting public ways for the purpose of making connections with such poles and buildings as it may desire for distributing purposes.

I hereby certify that the foregoing order was adopted at a meeting of the Board of Selectmen of the Town of Lexington, Massachusetts, held on the \_\_\_\_\_ day of \_\_\_\_\_, 2015.

\_\_\_\_\_  
Clerk of Selectmen

We hereby certify that on \_\_\_\_\_, 2015, at \_\_\_\_\_ o'clock \_\_\_\_ M., at Lexington, Massachusetts, a public hearing was held on the petition of **VERIZON NEW ENGLAND INC. and NStar Electric Company** for permission to erect the line of wires, cables, poles fixtures and connection described in the order herewith recorded, and that we mailed at least seven days before said hearing a written notice of the time and place of said hearing to each of the owners of real estate (as determined by the last preceding assessment for taxation) along the ways or parts of ways upon which said Company is permitted to construct the lines of said Company under said order. And that thereupon said order was duly adopted.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Selectmen of the Town of  
Lexington, Massachusetts

**CERTIFICATE**

I Hereby certify that the foregoing is a true copy of a location order, and certificate of hearing with notice adopted by the Board of Selectmen of the Town of Lexington, Massachusetts, on the \_\_\_\_\_ day of \_\_\_\_\_, 2015 and recorded with the records of location orders of said Town, Book \_\_\_\_\_, Page \_\_\_\_\_. This certified copy is made under the provisions of Chapter 166 of General Laws and any additions thereto or amendments thereof.

Attest:

\_\_\_\_\_  
Town Clerk

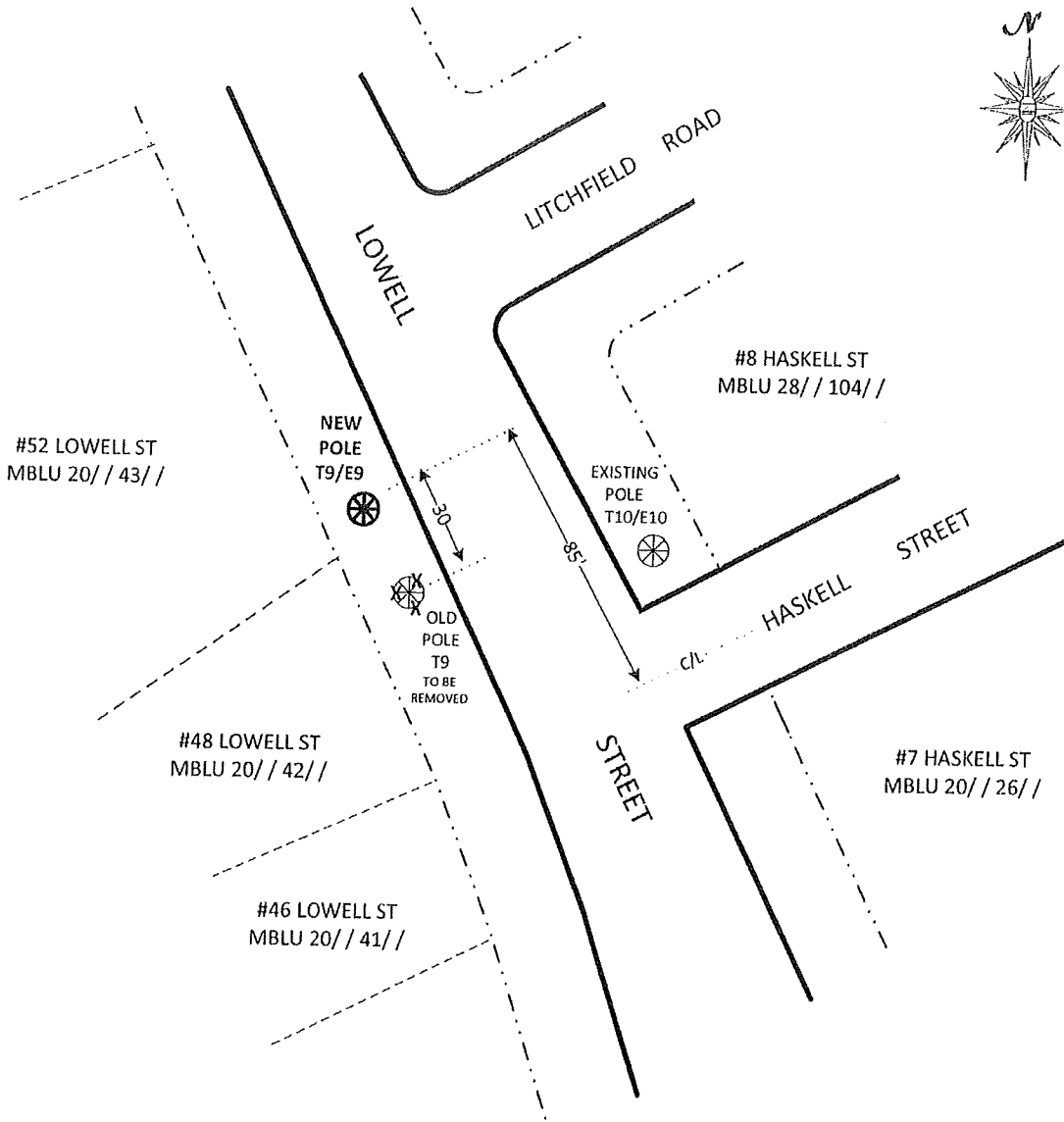


# PETITION PLAN

MUNICIPALITY LEXINGTON VZ N.E. Inc. No. 1AOKF9T

VERIZON NEW ENGLAND INC. AND NSTAR ELECTRIC COMPANY DATE: January 15, 2015

SHOWING PROPOSED POLE INSTALLATION ON LOWELL STREET



ONE JO POLE TO BE PLACED  
 ONE SO POLE TO BE REMOVED  
 ONE JO POLE TO REMAIN

**NOT TO SCALE**

## LEGEND

- |  |   |  |                  |
|--|---|--|------------------|
|  | EXISTING JOINTLY OWNED POLE TO REMAIN           |  | EDGE OF PAVEMENT |
|  | EXISTING SOLELY OWNED POLE TO BE REMOVED        |  | EDGE OF ROADWAY  |
|  | PROPOSED NEW JOINTLY OWNED POLE TO BE INSTALLED |  | PROPERTY LINE    |

## NOTICE TO ABUTTERS

February 4, 2015

You are hereby notified that a public hearing will be held in the Selectmen's Meeting Room, 2nd Floor, Town Office Building, of the Town of Lexington, Massachusetts, on **Monday, February 23rd** at **7:00 p.m.** upon the proposal of Verizon to install one pole and remove another in the following public way of said Town:

### **Lowell Street:**

Install one JO Pole (T9/E9) on the southwestern side of Lowell Street about 85' northwest from the centerline of Haskell Street at a point approximately 30' northwest of Pole T9 which is to be removed.

By:

*Tricia Malatesta*

Engineering Aide  
Department of Public Works/Engineering

Please direct inquiries to:  
Kelly-Ann Condon (508) 330-7703

Copies to:

UC Synergetic  
Kelly-Ann Condon  
Rights of Way Agent  
21 Oxford Road  
Mansfield, MA 02048

McGarvie Nominee Trs  
Douglas and Gay McGarvie TRS  
48 Lowell Street  
Lexington, MA 02420

Jonathan and Elizabeth Ludlow  
46 Lowell Street  
Lexington, MA 02420

Colin and Diana South  
51 Lowell Street  
Lexington, MA 02420

Krishnamoorthy and Durga  
Subramian  
7 Haskell Street  
Lexington, MA 02420



# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

<u>DATE:</u>	<u>PRESENTER:</u>	<u>ITEM NUMBER:</u>
2/23/2015	Rob Addelson	I.2

### AGENDA ITEM TITLE:

Approve Bond Sale (5 min.)

### SUMMARY:

On February 19, 2015, the Town sold \$23,573,000 of general obligation bonds and two bond anticipation notes in the amounts of \$487,061 and \$1 million. The bond issue was comprised of multiple purposes shown on the attached page titled, Authorization of the Bonds and Use of Proceeds and included \$10,950,000 in refunding bonds to refund April 2006 Library bonds, February 2008 Fiske Harrington Bonds and February 2008 Public Service Building Facility Bonds. The difference between \$23,573,000 referenced above and the \$23,768,000 shown on the attached is attributable to the application of premium bid to the Estabrook and Bridge/Bowman bonds, which reduced the ultimate amount of bonds sold. The refunding will save the Town \$698,694 over the remaining life of the refunding bonds. The bond anticipation notes of \$487,061 and \$1 million are for financing of the Concord Avenue sidewalk project and Cary Memorial Building renovation, respectively.

Moody's conducted a credit review of the Town in anticipation of this bond sale and affirmed the Town's Aaa rating, the highest rating that can be obtained by a municipality. A copy of that rating is attached.

Nine bids were submitted for the bonds. The bids, based on a calculation of the true interest cost (TIC) - which takes into consideration the amount of the issue, its term, coupon rates and any premium bid - ranged from a high of 1.96% to a low of 1.84%. The low bidder was J.P. Morgan Securities. A component of the low bid was a premium payable to the Town of \$1,175,254. \$270,949, \$29,651, \$151,061, and \$723,594 of the premium are attributable to the general fund, wastewater, exempt, and CPA debt, respectively. \$138,033 of the exempt premium will be recommended to be applied to construction financing of the Bridge/Bowman and Estabrook projects at the 2015 annual town meeting. Three bids were submitted for the \$487,061 bond anticipation note ranging from a high of 0.5% to a low of 0.3% by Peoples United. Four bids were submitted for the \$1 million bond anticipation note ranging from a high of 0.47% to a low of 0.32% also from Peoples United. No premium was bid on the notes. The Board of Selectmen will be asked to vote to accept the bid for the bonds by J.P. Morgan Securities, and the bids for the bond anticipation notes by Peoples United.

### RECOMMENDATION / SUGGESTED MOTION:

See attached vote.

### FOLLOW-UP:

### APPROXIMATE TIME ON AGENDA:

7:05 PM

### ATTACHMENTS:

## Description

- Authorization
- Moody's Bond Rating
- Bond/Note Vote

## Type

- Backup Material
- Exhibit
- Exhibit

Principal and interest payments on securities deposited with DTC will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from Town or its paying agent, on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC (nor its nominee), the issuer of such securities or its paying agent, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the issuer of such securities or its paying agent, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as depository with respect to securities held by it at any time by giving reasonable notice to the issuer of such securities or its paying agent. Under such circumstances, in the event that a successor depository is not obtained, physical certificates are required to be printed and delivered to Beneficial Owners.

The Town may decide to discontinue use of the system of book-entry-only transfers through DTC (or a successor securities depository). In that event, physical certificates will be printed and delivered to Beneficial Owners.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the Town believes to be reliable, but the Town takes no responsibility for the accuracy thereof.

#### Authorization of the Bonds and Use of Proceeds

This Issue (1)	Purpose	Original Bond Authorization	Bond Anticipation Notes Outstanding	M.G.L. Chapter 44, Section	Date of Authorization	Article Number
\$ 71,000	Bikeway Reconstruction	\$ 175,000	\$ 70,000 (4)	7(25)	5/2/2007	31I
188,000	DPW Facility (2)	25,180,000	188,000 (4)	7(3)	4/25/2007	36
21,000	Drainage Improvements	260,000	16,000 (4)	7(1)	4/26/2010	12H
22,000	Dam Repair	270,000	22,000 (4)	7(7)	3/30/2011	10A
451,027	Bridge & Bowman Schools (1)(3)	21,670,000	59,000 (4)	7(3A)	11/14/2011	2
37,000	Culvert Repairs	325,000	37,000 (4)	7(1)	4/11/2012	12D
54,000	Stormwater Management System Planning	65,000	54,000 (4)	7(22)	4/11/2012	12F
220,000	Dam Repairs	260,000	195,000 (4)	7(7)	4/11/2012	12G
35,000	Pump Station Upgrades	100,000	35,000 (4)	7(1)	4/11/2012	14B
250,000	Wastewater System Improvements	1,000,000	250,000 (4)	7(1)	4/1/2013	12A
101,247	Classroom Furniture	201,387	101,387 (5)	7(9)	4/1/2013	13B
57,000	Storm Drainage Improvements/NPDES Compliance	184,845	10,000 (4)	7(1)	4/10/2013	10K
25,100	DPW Equipment	640,000	25,100 (4)	7(9)	4/10/2013	10L
62,000	Watershed Stormwater Management Study Implementation	390,000	62,000 (4)	7(1)	4/10/2013	10O
200,000	Hartwell Ave. Infrastructure Planning	600,000	200,000 (4)	7(22)	4/10/2013	10Q
315,000	Sidewalk Improvements and Easements	600,000	315,000 (4)	7(6)	4/10/2013	10R
47,000	High School Overcrowding- Phase III	362,000	47,000 (4)	7(3A)	4/10/2013	14F
140,000	School Print Shop Renovation	312,000	140,000 (4)	7(3A)	4/10/2013	14L
6,569,000	Cary Memorial Building Upgrades	8,241,350	3,286,000 (4)	7(3A)	3/24/2014	2
988,000	School Technology	1,100,000	870,000 (4)	7(28)	4/9/2014	13B
1,582,973	Estabrook School (1)(3)	39,742,248		7(3A)	4/2/2012	2
189,000	VOIP Phone System	591,000		7(9)	4/11/2012	12P
200,000	Center Streetscape Improvement Planning	600,000		7(22)	4/9/2014	10A
14,000	Dam Repair Planning	150,000		7(22)	4/9/2014	10I
400,000	Sidewalk Improvements and Easements	400,000		7(6)	4/9/2014	10H
142,000	Ambulance Replacement	185,000		7(9)	4/9/2014	10M
392,153	DPW Equipment	428,440		7(9)	4/9/2014	10B
39,500	LHS Heating System Upgrade	75,000		7(22)	4/9/2014	14B
10,930,000	Refunding (1)			S. 21A		
<u>\$ 23,743,000</u> (1)			<u>\$ 5,982,487</u>			

(1) Preliminary, subject to change.

(2) The Town voted to exempt this purpose from the limitations of Proposition 2 ½ on June 5, 2007 (Question 2).

(3) The Town voted to exempt this purpose from the limitations of Proposition 2 ½ on January 24, 2012 (Questions 1 & 2).

(4) This issue will retire a like amount of bond anticipation notes maturing February 27, 2015.

(5) This issue, along with \$140 of revenue funds, will retire a like amount of bond anticipation notes maturing February 27, 2015.

# MOODY'S

## INVESTORS SERVICE

### New Issue: Moody's assigns Aaa to Lexington, MA's \$23.8M GO Bonds; MIG 1 to \$1.5M GO BANs

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Global Credit Research - 12 Feb 2015

#### Affirms Aaa on \$114.2M of outstanding GO debt

LEXINGTON (TOWN OF) MA  
Cities (including Towns, Villages and Townships)  
MA

#### Moody's Rating

ISSUE		RATING
General Obligation Bond Anticipation Notes, Series A		MIG 1
<b>Sale Amount</b>	\$487,000	
<b>Expected Sale Date</b>	02/18/15	
<b>Rating Description</b>	Note: Bond Anticipation	
General Obligation Bond Anticipation Notes, Series B		MIG 1
<b>Sale Amount</b>	\$1,000,000	
<b>Expected Sale Date</b>	02/18/15	
<b>Rating Description</b>	Note: Bond Anticipation	
General Obligation Municipal Purpose Loan of 2015 Bonds		Aaa
<b>Sale Amount</b>	\$23,768,000	
<b>Expected Sale Date</b>	02/18/15	
<b>Rating Description</b>	General Obligation	

#### Moody's Outlook STA

NEW YORK, February 12, 2015 --Moody's Investors Service has assigned a Aaa rating to the Town of Lexington's (MA) \$23.8 million General Obligation Municipal Purpose Loan of 2015 Bonds and a MIG 1 rating to the General Obligation Bond Anticipation Notes, consisting of \$487,000 Series A (dated February 27, 2015 and payable March 27, 2015) and \$1 million Series B (dated February 27, 2015 and payable June 15, 2015). Concurrently, Moody's has affirmed the Aaa rating on \$114.2 million of outstanding general obligation debt. The outlook is stable.

#### SUMMARY RATING RATIONALE

The Aaa long-term rating reflects the town's sizeable and affluent tax base, stable financial position with healthy reserves, and manageable debt burden.

The MIG 1 rating reflects the town's strong long-term credit characteristics, ample liquidity and sufficient management of takeout risk given a demonstrated history of accessing the short-term market for multiple note and bond sales over the past five years.

#### OUTLOOK

The stable outlook represents the town's conservative fiscal management including formalized policies, budget forecasting and multi-year capital planning. The outlook also includes our expectation that the town will continue to benefit from a history of voter support for debt exclusions.

## WHAT COULD MAKE THE RATING GO DOWN

- Trend of operating deficits resulting in reserve declines
- Material growth in debt burden absent of Proposition 2 ½ overrides
- Significant declines in the tax base or deterioration of the demographic profile

## STRENGTHS

- Sizeable and wealthy tax base with continuing economic development
- Stable financial position with healthy reserves
- History of voter support for Proposition 2 ½ operating overrides and debt exclusions

## CHALLENGES

- Large future capital needs and rising education costs due to increasing enrollment

## RECENT DEVELOPMENTS

Recent developments are incorporated in the Detailed Rating Rationale.

## DETAILED RATING RATIONALE

### ECONOMY AND TAX BASE

Lexington's sizeable \$9.3 billion tax base will remain healthy due to new commercial growth and a stable residential sector with strong property values. Located in Middlesex County, Lexington is a wealthy suburb of Boston (Aaa stable). The town's tax base is primarily residential (88% of 2015 assessed value) with a moderate commercial and industrial presence (11%). Equalized values have been stable, growing at a compound annual rate of 1.3% over the past five years, including a healthy 7.7% increase in fiscal 2015. New growth exceeded \$3 million annually from 2011 through 2014, and was \$2.9 million in fiscal 2015, exceeding management's predictions. The town benefits from its proximity to the metro region and growing life science industry with approximately 27 firms located in the town who collectively employ 2,800 people, which is equal to approximately 30% of total employment, exclusive of town employees. The town's second largest employer, Shire Pharmaceuticals (1,275 employees currently), recently announced that it will relocate over 500 jobs from Pennsylvania to Lexington, its US operational headquarters. Current and future economic development efforts are focused in multiple areas throughout Town with particular emphasis on the Hartwell avenue corridor, which includes a parcel that was granted a tax increment financing (TIF) designation. The town's unemployment rate of 3.6% as of November 2014 remains well below the commonwealth (5.2%) and nation (5.5%). Wealth and income levels are strong with per capita and median family incomes representing 236% and 242% of the nation, respectively. Housing values in the town are strong as evidenced by a robust equalized value per capita of \$295,293 (330% of the US median).

### FINANCIAL OPERATIONS AND RESERVES

The financial position will continue to remain healthy given a history of conservative budgeting practices, prudent expenditure management, and sound reserve levels. Fiscal 2014 audited results reflect the town's ninth consecutive operating surplus, and the available General Fund balance (unassigned, assigned, and committed) has increased to \$48.1 million, or a sound 25% of revenues. The unassigned portion remains healthy at \$25.8 million, or 13.5% of revenues. The fiscal 2015 General Fund budget increased 5% from 2014 primarily due to rising education and debt service costs. The budget is balanced with a 4.1% tax levy increase and \$10.3 million free cash appropriation. Over six months into the fiscal year, management reports that revenues and expenditures are stable. Although the town has not exceeded its snow and ice removal budget, management reports that any overage will be assessed in the Spring. Management prudently budgets \$300,000 in the succeeding year's budget to address any deficit from the preceding year. Additionally, Massachusetts municipalities have the ability to carry snow and ice deficits into the succeeding year, though a tax increase enacted to cover the shortfall must remain within the levy limitations imposed by Proposition 2 ½ .

Lexington derives the majority of its revenues from property taxes (77% in fiscal 2014) and collections remain very strong at above 99%. State aid, including aid for education, comprised 15% of 2014 revenues. The town's largest expenditure is education (55.5% of 2014 operating expenditures), followed by insurance (12.2%), debt service

(7.6%), and public safety (6.4%).

#### Liquidity

The town's net cash position at the close of fiscal 2014 was \$51.9 million, an estimated 27% of General Fund revenues.

#### DEBT AND PENSIONS

Lexington's net direct debt burden, currently at 1.2% of equalized value, will increase over the near term due to planned borrowing in support of capital projects, primarily for school related renovation and expansion. Despite this, we believe that the debt will remain manageable given the town's rapid rate of principal amortization (87.7% within 10 years), and successful track record of passing Proposition 2 ½ debt exclusions. Approximately 57.7% of the town's outstanding debt, including the current issue, is excluded from the tax levy cap. Future debt plans include renovations to the fire and police stations, as well as substantial improvements and additions to the town's schools due to increasing enrollment. The town is currently conducting feasibility studies to determine the total costs and will apply to the Massachusetts School Building Authority for partial reimbursement of the school projects. In anticipation of growing debt service costs, the town has designated stabilization reserves to partially offset the growing capital needs and rising debt service costs. The current balance in this fund is \$8 million, and the town plans add approximately \$8.5 million in 2016, which is net of funds allocated to mitigate debt service payments that year. Debt service in fiscal 2014 represented 7.6% of expenditures.

#### Debt Structure

All of Lexington's debt is fixed rate and amortization of principal is rapid, with 87.7% repaid within ten years.

#### Debt-Related Derivatives

Lexington has no derivatives.

#### Pensions and OPEB

Lexington maintains a single employer defined benefit pension plan for substantially all town employees, with the exception of teachers and certain school administrators who are covered under the state plan. The town's annual required contribution (ARC) for the plan was \$4.8 million in fiscal 2014, or a manageable 2.5% of General Fund expenditures. The town's adjusted net pension liability (ANPL), under Moody's methodology for adjusting reported pension data, is \$92.6 million, or 0.49 times General Fund revenues. Moody's uses the adjusted net pension liability to improve comparability of reported pension liabilities. The adjustments are not intended to replace the town's reported liability information, but to improve comparability with other rated entities.

The town funds its OPEB liability primarily on a pay-as-you-go basis and contributed \$6.2 million in fiscal 2014, representing 52.7% of its \$11.8 million ARC. The town also established an OPEB trust fund, which has a current balance of \$5.8 million, and it is proposed that \$1.9 million be added in 2016. The total unfunded liability is \$128.3 million as of June 30, 2013, the most recent valuation report. Total fixed costs for fiscal 2014, including pension, OPEB and debt service, represented \$21.9 million, or 11.5% of expenditures.

#### MANAGEMENT AND GOVERNANCE

Massachusetts cities and towns have an institutional framework score of 'Aa' or strong. The primary revenue source for Massachusetts municipalities is property taxes which are highly predictable and can be increased annually as allowed under the Proposition 2 ½ levy limit. Expenditures are largely predictable and cities have the ability to reduce expenditures.

Town management employs conservative budgeting and financial management as evidenced in several formal fiscal policies and long-term planning for capital expenditures.

#### KEY STATISTICS

Fiscal 2015 full valuation: \$9.3 billion

Fiscal 2015 full valuation per capita: \$295,293

Median Family Income as % of U.S.: 241.6%

Fiscal 2014 Available General Fund Balance as % of Revenues: 25%

5-Year Dollar Change in Available General Fund Balance as % of Revenues: 15.6%

Fiscal 2014 Cash Balance as % of Revenues: 27%

5-Year Dollar Change in Cash Balance as % of Revenues: -7.2%

Institutional Framework: Aa

5-Year Average Operating Revenues / Operating Expenditures: 1.02x

Net Direct Debt as % of Full Value: 1.2%

Net Direct Debt / Operating Revenues: 0.6x

3-Year Average ANPL as % of Assessed Value: 1.1%

3-Year Average ANPL / Operating Revenues: 0.6x

#### OBLIGOR PROFILE

Lexington is a town with a population of approximately 31,400 located in eastern Massachusetts, approximately 11 miles northwest of Boston (Aaa stable).

#### LEGAL SECURITY

The majority of the 2015 GO bonds are secured by a limited tax pledge as debt service is subject to the levy limitations of Proposition 2 ½. However, debt service for approximately \$2.2 million of the 2015 GO bonds has been voted exempt from the limitations of Proposition 2 ½.

The notes are secured by a limited tax pledge as debt service is subject to the levy limitations of Proposition 2 ½.

#### USE OF PROCEEDS

Bond proceeds in the amount of \$11 million will refund a portion of the town's General Obligation Bonds dated April 1, 2006 and February 15, 2008 currently outstanding for estimated net present value savings of \$621,000, or 5.5% of refunded maturities, with no extension of final maturities. Bond proceeds in the amount of \$12.8 million will finance various capital projects.

The Series A note proceeds will finance sidewalk improvements and the Series B note proceeds will finance upgrades to the Cary Memorial Building.

#### PRINCIPAL METHODOLOGIES

The principal methodology used in the general obligation rating was US Local Government General Obligation Debt published in January 2014. The principal methodology used in the bond anticipation note rating was US Bond Anticipation Notes published in April 2014. Please see the Credit Policy page on [www.moodys.com](http://www.moodys.com) for a copy of these methodologies.

#### REGULATORY DISCLOSURES

For ratings issued on a program, series or category/class of debt, this announcement provides certain regulatory disclosures in relation to each rating of a subsequently issued bond or note of the same series or category/class of debt or pursuant to a program for which the ratings are derived exclusively from existing ratings in accordance with Moody's rating practices. For ratings issued on a support provider, this announcement provides certain regulatory disclosures in relation to the rating action on the support provider and in relation to each particular rating action for securities that derive their credit ratings from the support provider's credit rating. For provisional ratings, this announcement provides certain regulatory disclosures in relation to the provisional rating assigned, and in relation to a definitive rating that may be assigned subsequent to the final issuance of the debt, in each case where the transaction structure and terms have not changed prior to the assignment of the definitive rating in a manner that would have affected the rating. For further information please see the ratings tab on the issuer/entity page for the respective issuer on [www.moodys.com](http://www.moodys.com).

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INVESTORS SERVICE

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VOTE OF THE BOARD OF SELECTMEN

I, the Clerk of the Board of Selectmen of the Town of Lexington, Massachusetts (the “Town”), certify that at a meeting of the board held February 23, 2015, of which meeting all members of the board were duly notified and at which a quorum was present, the following votes were unanimously passed, all of which appear upon the official record of the board in my custody:

Voted: That in order to reduce interest costs, the Treasurer is authorized to issue refunding bonds, at one time or from time to time, pursuant to Chapter 44, Section 21A of the General Laws, or pursuant to any other enabling authority, to refund all of the Town’s (i) \$9,403,000 General Obligation Bonds dated April 1, 2006 and maturing on April 1 in the years 2017 through 2021, inclusive, in the aggregate principal amount of \$475,000 (the “Refunded 2006 Bonds”) and (ii) \$24,143,000 General Obligation Bonds dated February 15, 2008 and maturing on February 15 in the years 2019 through 2028, inclusive, in the aggregate principal amount of \$10,810,000 (the “Refunded 2008 Bonds”, and collectively with the Refunded 2006 Bonds, the “Refunded Bonds”) and that the proceeds of any refunding bonds issued pursuant to this vote shall be used to pay the principal of and interest on the Refunded Bonds and costs of issuance of the refunding bonds.

Further Voted: that the sale of the \$23,573,000 General Obligation Municipal Purpose Loan of 2015 Bonds of the Town dated February 26, 2015 (the “Bonds”), to J.P. Morgan Securities LLC at the price of \$26,275,095.04 is hereby approved and confirmed. The Bonds shall be payable on February 15 of the years and in the principal amounts and bear interest at the respective rates, as follows:

<u>Year</u>	<u>Amount</u>	<u>Interest Rate</u>	<u>Year</u>	<u>Amount</u>	<u>Interest Rate</u>
2016	\$1,928,000	2.00%	2023	1,785,000	4.00%
2017	1,970,000	3.00	2024	1,775,000	4.00
2018	1,930,000	4.00	2025	1,770,000	4.00
2019	2,980,000	4.00	2026	1,050,000	4.00
2020	2,855,000	4.00	2027	970,000	4.00
2021	1,875,000	4.00	2028	890,000	3.00
2022	1,795,000	4.00			

Further Voted: to approve the sale of a \$487,061 0.30 percent General Obligation Bond Anticipation Note, Series A of the Town dated February 27, 2015, and payable March 27, 2015 (the “Series A Note”), to People’s United Bank at a price of 100% of par.

Further Voted: to approve the sale of a \$1,000,000 0.32 percent General Obligation Bond Anticipation Note, Series B of the Town dated February 27, 2015, and payable June 15, 2015 (the “Series B Note”, and together with the Series A Note, the “Notes”), to People’s United Bank at a price of 100% of par.

Further Voted: that in connection with the marketing and sale of the Bonds, the preparation and distribution of a Notice of Sale and Preliminary Official Statement dated February 11, 2015, and a final Official Statement dated February 19, 2015 (the “Official Statement”), each in such form as may be approved by the Town Treasurer, be and hereby are ratified, confirmed, approved and adopted.

Further Voted: that in connection with the marketing and sale of the Notes, the preparation and distribution of a Notice of Sale and Preliminary Official Statement dated February 11, 2015, and a final Official Statement dated February 19, 2015, each in such form as may be approved by the Town Treasurer, be and hereby are ratified, confirmed, approved and adopted.

Further Voted: that the Bonds shall be subject to redemption, at the option of the Town, upon such terms and conditions as are set forth in the Official Statement.

Further Voted: to authorize the execution and delivery of a Refunding Escrow Agreement to be dated February 26, 2015, among the Town, U.S. Bank National Association as Refunding Escrow Agent and Paying Agent for the Refunded 2008 Bonds, and The Bank of New York Mellon Trust Company, N.A., as Paying Agent for the Refunded 2006 Bonds.

Further Voted: that the Town Treasurer and the Board of Selectmen be, and hereby are, authorized to execute and deliver continuing and significant events disclosure undertakings in compliance with SEC Rule 15c2-12 in such forms as may be approved by bond counsel to the Town, which undertakings shall be incorporated by reference in the Bonds and Notes, as applicable, for the benefit of the holders of the Bonds and Notes from time to time.

Further Voted: that we authorize and direct the Town Treasurer to establish post issuance federal tax compliance procedures in such form as the Town Treasurer and bond counsel deem sufficient, or if such procedures are currently in place, to review and update said procedures, in order to monitor and maintain the tax-exempt status of the Bonds and Notes.

Further Voted: that each member of the Board of Selectmen, the Town Clerk and the Town Treasurer be and hereby are, authorized to take any and all such actions, and execute and deliver such certificates, receipts or other documents as may be determined by them, or any of them, to be necessary or convenient to carry into effect the provisions of the foregoing votes.

I further certify that the votes were taken at a meeting open to the public, that no vote was taken by secret ballot, that a notice stating the place, date, time and agenda for the meeting (which agenda included the adoption of the above votes) was filed with the Town Clerk and a copy thereof posted in a manner conspicuously visible to the public at all hours in or on the municipal building that the office of the Town Clerk is located or, if applicable, in accordance

with an alternative method of notice prescribed or approved by the Attorney General as set forth in 940 CMR 29.03(2)(b), at least 48 hours, not including Saturdays, Sundays and legal holidays, prior to the time of the meeting and remained so posted at the time of the meeting, that no deliberations or decision in connection with the sale of the Bonds or the Notes were taken in executive session, all in accordance with G.L. c.30A, §§18-25, as amended.

Dated: February 23, 2015

\_\_\_\_\_  
Clerk of the Board of Selectmen

AM 46098264.1

# **AGENDA ITEM SUMMARY**

## **LEXINGTON BOARD OF SELECTMEN MEETING**

**DATE:**

2/23/2015

**PRESENTER:**

Joe Pato

**ITEM NUMBER:**

I.3

**AGENDA ITEM TITLE:**

Discussion of Appointed Committee's Compliance with Open Meeting Law Minutes Posting Requirements (10 min.)

**SUMMARY:**

Ethan Handwerker requested time on the Selectmen's agenda to discuss OML issues.

Review status of recent open meeting law (OML) complaints and discuss the adequacy of OML compliance by appointed boards and committees.

**RECOMMENDATION / SUGGESTED MOTION:**

**FOLLOW-UP:**

Selectmen's Office

**APPROXIMATE TIME ON AGENDA:**

7:10 PM

# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**                      **PRESENTER:**    **ITEM NUMBER:**

2/23/2015                      Brian Kelley; Dave Eagle, LexHab    I.4

**AGENDA ITEM TITLE:**

Accept Deposit of Fill for Community Housing at Busa Farm Parcel (15 min.)

**SUMMARY:**

The Town/LexHab has been offered a gift of approximately 2500 cu. yds. of fill for the portion of the Busa Farm site that has been allocated for two affordable housing structures (2 three-unit structures). This fill is needed before LexHab can construct the units. Mr. Kelley will provide this fill from his site at the intersection of Woburn St. and Lowell St. where the construction of condo units is planned. Because the Busa site has not yet been deeded to LexHab, the Board of Selectmen is asked to consider whether to accept this gift.

The deposit of this fill will require a permit by the Zoning Board of Appeals, under the Town's General By-laws. The hearing on this permit is scheduled for February 25. The Town Manager has sent a letter to the Zoning Board of Appeals that includes recommended conditions to be included in the permit by the ZBA, should the Selectmen wish to accept this gift (attached).

**RECOMMENDATION / SUGGESTED MOTION:**

Move to (accept) (not accept) (defer action) of the gift of up to 2500 yards of fill at the affordable housing site at the Town's Busa Farm property on Lowell Street, subject to the issuance of a permit by the Zoning Board of Appeal.

**FOLLOW-UP:**

Town Manager's Office

**APPROXIMATE TIME ON AGENDA:**

7:20 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> Letter to Zoning Board of Appeals	Backup Material
<input type="checkbox"/> ANR Plan of Site	Backup Material



*Town of Lexington*  
Town Manager's Office

Carl F. Valente, Town Manager  
Linda Crew Vine, Deputy Town Manager

Tel: (781) 698-4540  
Fax: (781) 861-2921

February 13, 2015

Zoning Board of Appeals  
Lexington, MA

Re: Permit Application – Earth and Fill Removal, February 26, 2015

Dear Members of the Board:

I am writing regarding the application for a permit the Zoning Board of Appeals (ZBA) will be considering at its February 26, 2015 meeting, whereby the applicant, Brian Kelley, is requesting approval to deposit a maximum of 2500 cu. yds. of fill on Town-owned property, known as the Busa farm parcel for community housing, located on Lowell Street (parcel 2A, map/parcel 20/38).

Since the Town will be the intended recipient of this fill, I request that the permit include the following conditions, should the Board of Appeals approve this application:

1. That the applicant receive written approval from the Lexington Board of Selectmen to accept the deposit of the fill on this property for the purposes of aiding in the development of community housing at the Busa Farm parcel. The Selectmen are currently scheduled to take up this matter at the Board's meeting on February 23, 2015.
2. That prior to the first instance of fill being brought to the site, that the applicant comply with any requirements to be established by the Town Manager or Board of Selectmen regarding:
  - Testing of the fill;
  - Gradient plan;
  - Planned access to the site;
  - Soil erosion controls;
  - Plan for keeping Lowell Street and other access points free of debris;
  - Name and contact phone number of individual responsible for the delivery of the fill; and
  - Attendance at a pre-construction meeting with Town staff.
3. That the applicant provide the Building Commissioner's Office with a log of the amount of fill delivered to the site, by date and time.
4. That the applicant provide the ZBA with the estimated number of trucks, size of trucks and hours of operations for the delivery of this fill.
5. That the applicant spread and compact the fill on the site, as determined by the Town's representative. If the fill is to be stockpiled, that it be in a location approved by the Town.
6. That the applicant meet with the Town's Development Review Team (DRT) prior to the ZBA hearing, to present to the DRT plans for this work. Further, that the applicant agree to meet any



additional conditions established by the DRT, as communicated to the applicant by the Town Manager.

Thank you for your consideration in this matter.

Very truly yours,

Carl F. Valente  
Town Manager

C: Board of Selectmen  
David Eagle, LexHab  
Karen Mullins, Director, Community Development  
Brian Kelley, Applicant

Attachment: ANR Plan showing location of the site



# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**                      **PRESENTER:**                      **ITEM NUMBER:**  
2/23/2015                      Joe Pato                      I.5

**AGENDA ITEM TITLE:**

School Building Project Discussion (20 min.)

**SUMMARY:**

Review draft consensus document developed by the Chairs +1 "mini summit". Identify areas of agreement and areas of concern not articulated in the draft.

The Permanent Building Committee and the Department of Public Facilities have been asked to revise the schedule of requested funding for Special Town Meeting to correspond to this consensus request, but that information is not yet included in the draft document. We expect this to be available at the February 25 Budget Summit.

**RECOMMENDATION / SUGGESTED MOTION:**

**FOLLOW-UP:**

**APPROXIMATE TIME ON AGENDA:**

7:35 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> Draft School Building Project Consensus Plan	Cover Memo

# School Building Project Consensus Plan

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Draft for the 25 February 2015 Lexington Budget Summit

## Introduction

This document describes the draft consensus position of the Lexington Budget Summit (Board of Selectmen, School Committee, Appropriation Committee, and Capital Expenditure Committee) regarding Article 2 of the March 2015 Special Town Meeting #1.

This Article will request initial funding to develop various school building projects in response to ongoing and future overcrowding issues in the Lexington Public School (LPS) System. The projects cover school buildings serving grades Pre-K, K-5, and 6-8, and may include pre-fabricated classrooms, brick and mortar additions, and/or a new elementary school building. Total costs are estimated to be on the order of \$100 to \$120 million. A debt exclusion vote will be required to finance the costs of design and engineering work, as well as the actual construction.

This document is the result of the discussions of a working group of the Budget Summit composed of 2 members from each committee and will be formally presented to the Board of Selectmen and the School Committee in advance of the next Budget Summit on February 25.

## Basic Assumptions

Enrollment growth has been growing at approximately 2% per year for the past seven years and it is causing overcrowding in existing school facilities now. This growth is expected to continue for several more years, bringing even greater pressure to a strained school system.

The LPS System requires expanded school facilities to properly meet its educational mandates, and to limit the need for expensive out-of-district placements.

The long-term goals for the public school system are to:

- keep school buildings moving towards their optimal usage,
- minimize disruptions to students,
- avoid extremes of over- or under-utilization.

The Town must pursue these goals in a fiscally responsible manner, and without ignoring other vital capital projects, e.g. public safety buildings.

The requested appropriation will be based on a flexible plan that allows the Town to begin by spending some of the requested funds to study a set of alternatives in depth. Some options may be modified or eliminated during this process. In late summer or early fall, the School Committee and the Board of Selectmen will coordinate the refinement of the plan and then the Board of Selectmen will approve additional spending from the original appropriation. Depending on the project, that additional spending will advance the work into the design document or the

construction and bid document phases. The results of this process will inform the request for funds at a fall Special Town Meeting.

Input from the Department of Public Facilities and the Permanent Building Committee is expected throughout this process – for both facility planning and for advice on timing needed to execute desired projects.

## **Planning Process**

The Town must carefully manage its spending in light of the uncertainty around future needs in the school system. Our process for school planning will be to keep a close eye on long-range trends, while limiting definitive construction plans to a 3-year window. We will monitor this plan continually, and re-assess the plan annually.

## **Leased Modular Classrooms**

We will avoid using leased modular classrooms (lifespan of 5 to 10 years), since they are expensive and provide only short-term solutions to what we see as a long-term problem.

## **Pre-Fabricated Classrooms**

Adding pre-fabricated classrooms with a lifespan of 20+ years at Bridge, Bowman, Fiske, Diamond, and Clarke will help to alleviate current overcrowding in those schools, and in some cases provide a separate music room as mandated by a recent change in School Committee policy.

The populations at Bridge and Bowman will be lowered once new classrooms are available at other schools. At that time, their pre-fabricated classrooms will be adapted for other school system needs such as in-house special education programs. These new uses will not significantly increase pressure on core spaces.

We will start by doing feasibility and design work for all the pre-fabricated classrooms. In order to bring them online quickly, the Town may opt to proceed with construction and bid documents for some or all of these locations prior to a fall Special Town Meeting. This will be contingent on a review of the engineering studies and would be initiated by a request of the School Committee, a review of the funding needs by the financial committees, with final approval from the Board of Selectmen.

## **Bricks and Mortar**

The existing Maria Hastings elementary school requires significant repairs. It is also burdened with sub-standard sized classrooms, and its 8 modular classrooms are well past their intended lifespan. Constructing a new school on the site (a la Estabrook) is the preferred solution. The new school should be designed with up to 9 more classrooms than the existing facility (including modularity), assuming that the site and resulting traffic circulation can accommodate that size. The request only covers a feasibility study for a new building on the Hastings site.

In the fall, if the feasibility study shows that a new Hastings School can be constructed on the site, then a construction proposal for Hastings (and any other components determined to be necessary and desirable) will be brought to Town Meeting and a debt exclusion vote will be presented to the voters at the end of the year or early in 2016.

Pre-K is a standalone program that requires 15,000 square feet. It is currently hosted at Harrington with a satellite program at Old Harrington. Relocating the entire Pre-K program to a new building would allow the four Pre-K classrooms at Harrington to be refurbished for use as K-5 classrooms. Filling these four K-5 classrooms would bring the school's population to the brink of the school's core capacity.

We will study the feasibility of building a new Pre-K, and if a site is identified we will proceed to the design documents phase. We would then develop a plan for the minor refurbishments needed at Harrington.

The architectural consultant firm SMMA has proposed a complicated renovation at (new) Harrington that incorporates an expanded Pre-K and an enlarged cafeteria and gym. This proposal is expensive considering the number of new classrooms that would result, and it requires moving three geothermal wells. This plan will not be studied.

Contingency funding is included for exploring options at Harrington and Fiske if the preferred plan for a larger Hastings proves to be infeasible. At Harrington and Fiske we have the option to develop feasibility studies for expansion.

Based on the analysis by DiNisco Design, the Estabrook site is not considered suitable for expansion.

For the two Middle Schools, the topography at Diamond is more suitable to an extension, and we would rather do construction at only one Middle School. We will perform a feasibility study for adding a single large extension at Diamond. We will also study an extension at Clarke in the event that the Diamond site cannot accommodate the needs of the school system on its own.

## Redistricting

The School Committee will explore redistricting plans that would shift school density away from more crowded schools on the eastern side of town towards Estabrook at the northwest end of town. If deemed practical, such a plan will be implemented as soon as possible.

Given the volatility of students moving into and out of the school system throughout town, plans that are not traditional in Lexington should be explored. For example, adding "buffer zones" at district boundaries might allow districts to adapt by placing *new* students into either of two adjoining districts. These buffer zones would be large enough to accommodate volatility, but not so large as to require unreasonable bus routes.

The benefits of any redistricting plan are based on untested assumptions. The School Committee will initiate a technical redistricting study to identify workable plans, so that policy discussions can occur later this year.



- 📄 Cadmus - Incentives and Timing Questions
- 📄 Expected Net Savings
- 📄 Expected Net Savings - Windrow Turner
- 📄 Health Benefits

- Backup Material
- Backup Material
- Backup Material
- Backup Material





***Solar Task Force Update***  
***Board of Selectmen Review***

February 23, 2015

# *Hartwell Solar Update*

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- We are requesting the Board of Selectmen's support for moving to the next stage of the ground mount solar process
  - Concluding Power Purchase Agreement negotiations with our selected vendor
  - We will report back for agreement approval after financial & legal review has been completed.



# *Hartwell Solar Update*

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- Ground mount & Solar canopies
  - Current Size 2.25 MW over 4.5 acres
- Economics
  - Solar returns range from \$9 million to \$17.7 million
  - Composting net increases from \$0.5 to \$6.4 million
- Stakeholder Review Status
  - ✓ DPW Operational Review
  - ✓ Police Review
  - ✓ Conservation Commission
  - Finance Review - initial meetings conducted
  - Legal Review – initial review conducted



# Proposed Project Overview



- 31% of Town electricity demand
- 68 million lbs. of emission reductions
  - 83 million miles of driving
- Health Benefits
  - \$2.2 to \$8.4 million



# Current Operations



- A. Residential drop-off
- B. Police firing range
- C. Household Hazardous Waste & Regional Cache
- D. DPW material storage
- E. Landscaper drop-off
- F. Arlington & Lexington curbside compost



# Operational Assessment

---

- Review conducted by Langdon Environmental
  - ✓ All current operations can continue with the purchase of a windrow turner to augment composting ops
    - ✓ Lexington residential yard waste drop off & composting
    - ✓ Landscaper yard waste drop off
    - ✓ Lexington curbside composting
    - ✓ Arlington curbside composting
    - ✓ DPW material storage, street sweepings, storm management
    - ✓ DPF construction material
    - ✓ Police firing range
    - ✓ Household Hazardous Waste drop off
    - ✓ Regional emergency cache site



# Operational Assessment

---

- ✓ New Police firing range can be relocated and expanded without limiting Town's ability to continue all ongoing ops
  - ✓ Statement from Police Chief provided in BoS package
- ✓ Future site operational flexibility includes additional 0.75 to 1.5 acres of flexible space provided by windrow turner
- ✓ Can maintain all existing revenue streams with incremental revenue potential or site flexibility
- ✓ Reduced operating costs will provide an annual increase in positive cash flow to Town based on conservative assumptions
- ✓ Windrow turner will improve odor control



# *Operational Assessment*

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- Solar Canopies
  - ✓ Designed with required clear heights and spacing to accommodate current site uses (federal highway standards)
  - ✓ Final layout based on detailed geotechnical analysis and foundation design and will be compliant with code including wind and snow loading requirements
  - ✓ System sizes may be adjusted to accommodate operational requirements





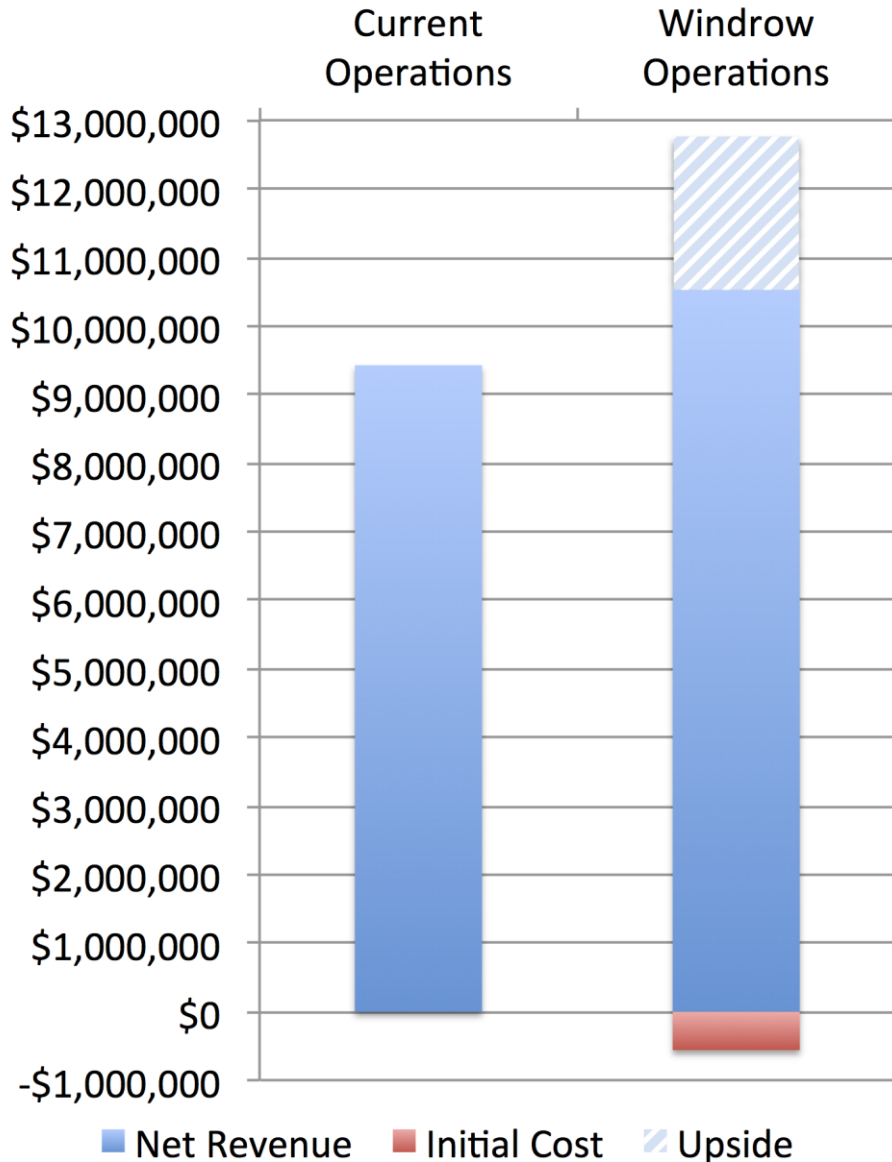
# *Windrow Turner Benefits*

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- Lower total life cycle operating costs
- Improved turning and aeration process
- Accelerates processing time
- Almost 2x more compost per acre
- May eliminate need for grinding; further improving positive net cash flow
  - Up to \$1.7 million additional cash flow
- Continue to receive all current leaf and yard waste, including material from Arlington
- All current revenue streams maintained with lower operating costs and significant upside potential



# Cumulative Cash Flow Composting Facility



- \$500,000 initial cost for windrow turner
- Windrow turner operating and replacement costs included in operations cost estimates
- Upside based on potential for additional operating savings & does not include additional revenue potential



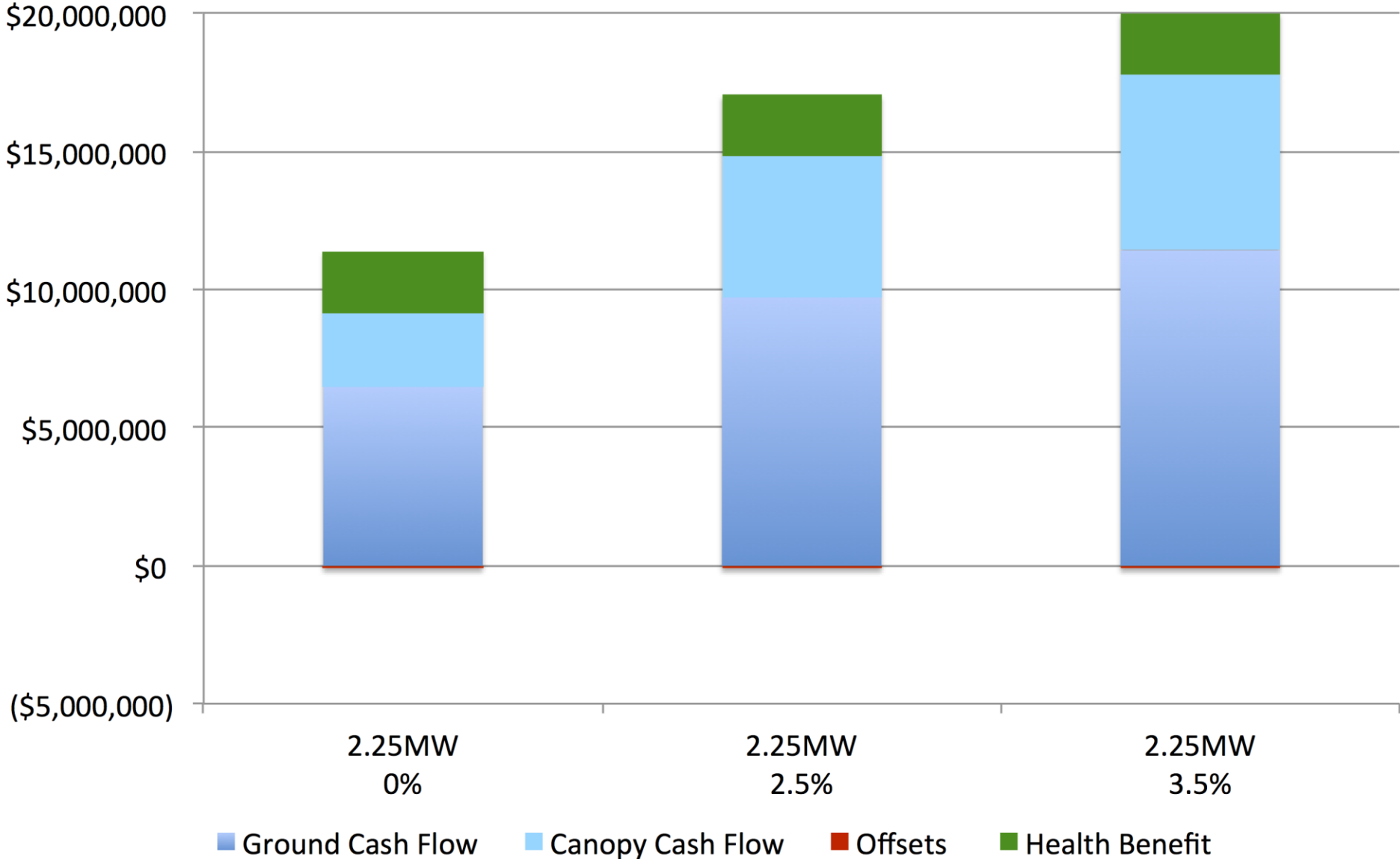
# Site Preparation

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- Construction of storage bins
  - \$175,000 estimated cost will be covered by vendor under current PPA rate
- Relocation of compost materials
  - Work performed by vendor and covered under current PPA rate
- Debris removal
  - \$100,000 estimated cost will be covered, if needed, by an incremental \$0.003 / kWh added to PPA rate
- All site preparation costs covered by vendor



# Ground & Canopy Solar Net Benefit with Windrow Turner



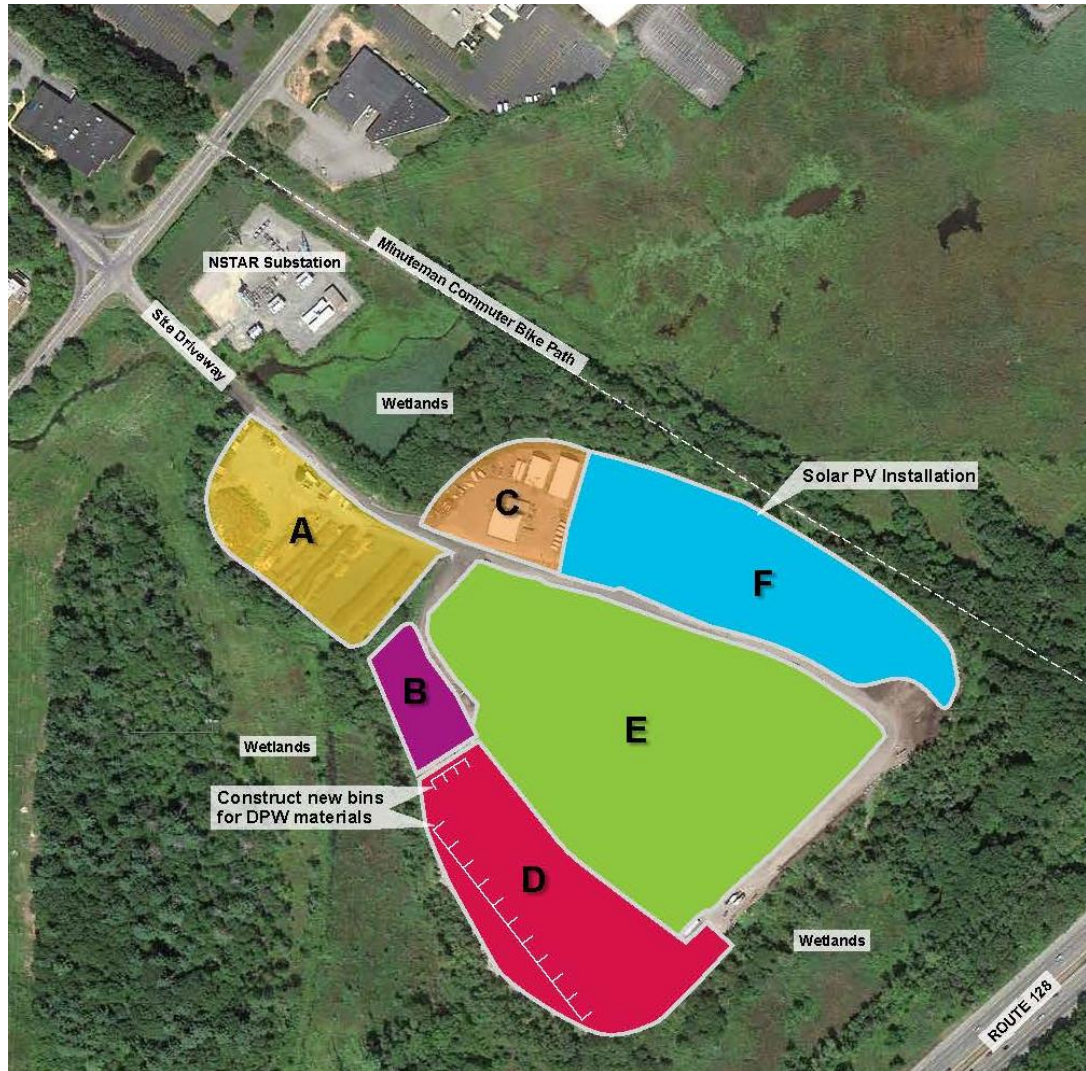
# Phase 1 Layout



- A. Residential drop-off
- B. Police firing range
- C. Household Hazardous Waste & Regional Cache
- D. DPW material storage
- E. Arlington, Lexington, & Landscaper drop-off
- F. 1.25 MW Solar



# Potential Phase 2 Layout



- A. Residential drop-off
- B. Expanded and relocated Police firing range
- C. Household Hazardous Waste & Regional Cache
- D. DPW material storage
- E. Arlington, Lexington, & Landscaper drop-off
- F. 1.25 MW Solar



# *Hartwell Solar Next Steps*

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- We are requesting the Board of Selectmen's support for moving to next stage of the ground mount solar process.
  - Concluding Power Purchase Agreement negotiations with our selected vendor
- We will report back for agreement approval after financial & legal review has been completed.



# Questions

- Have we looked at other sites? – Yes
  - Rooftop RFQ process reviewed all Town rooftops
    - Solar is installed on all possible Town roofs
    - Currently provides 14% of Town electricity
  - Rooftop RFQ reviewed all Town parking lots
    - Selected vendor with highest interest in developing canopies
    - Smaller solar canopies were found to be non-economic

Parking Lot	Address	Carport System Capacity (kW DC)	Estimated Output (kWh), year 1
Lexington High School	251 Waltham St	563	686,860
Bowman Elementary School	9 Philip Rd	0	0
Clark Middle School	17 Steadman Rd	179	218,380
Bridge School	55 Middleby Rd	280	341,600
Diamond Middle School	99 Hancock	300	366,000
Hastings Elementary School	2618 Mass Ave	0	0
Fiske School	55 Adams St	151	184,220
Harrington Elementary School	328 Lowell St	142	173,240
Estabrook School	117 Groove St	150	183,000
Samuel Hadley Public Service Building- Department of Public Works	201 Bedford St	90	109,800
Central Administration Building	146 Maple St	180	219,600
<b>Total</b>		<b>2,035</b>	<b>2,482,700</b>





# Questions

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- Have you looked at other sites? – Yes
  - 15 acre site on Hartwell Avenue is primarily wetlands
  - Other Town owned open space
    - Statement from ConCom provided in BoS package
    - Statement from LexFarm provided in BoS package
    - Statement from Greenways Corridor Committee provided
  - Composting facility is best 4 acre plus site for solar
    - Mass incentives not available for forested or open space
    - Wetlands approvals difficult at best
    - Flood zone land requires Army Corps approval
    - Conservation land requires BoS, Town Meeting, Mass approval
    - Non-economic to develop under power lines for several reasons



# Questions

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- Background on Environmental Benefit calculation
  - Recent studies show solar panels produce 20x their embedded energy over lifetime
  - Natural gas plant net energy ratio is only 7x (Scientific American)
  - Fossil fuel power plants emission calculations do not include embedded energy to construct plant or to extract, drill, process, and transport fuel to plant.
  - Fossil fuel environmental analysis does not include water impact.
  - Solar at Hartwell will have only positive environmental impact as there will be no reduced composting



# Questions

- Background on environmental benefit
  - Federal government requires agencies to consider value of reducing emissions in all decisions
  - Stanford study finds environmental benefit of reducing emissions 4 times higher than federal assessment
    - \$220 per metric ton vs. federal \$58 / metric ton

- We calculate actual MA CO<sub>2</sub>e emissions per kWh
- Our assessment uses 2.5% Average column
- Health Benefit Calculator provided

Federal Social Cost of CO<sub>2</sub>, 2010 – 2050

Discount Rate	2.5%	3.0%
Year	Avg	95th percentile
2010	\$52	\$90
2015	\$58	\$109
2020	\$65	\$129
2025	\$70	\$144
2030	\$76	\$159
2035	\$81	\$176
2040	\$87	\$192
2045	\$92	\$206
2050	\$98	\$221



# Questions

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- Will solar make an environmental difference?
  - Electricity consumption our largest source of greenhouse gas emissions – currently 44% of our emissions. Reducing electricity emissions is our number one priority.
  - Installing this 2.25 MW of solar will reduce the Town's electricity use and related emissions by 31%.
  - This array will reduce overall Town's emissions by 13.6% - a huge step in the right direction.



# Questions

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- Site flexibility options
  - We are gaining site flexibility with windrow turner
  - We can accommodate all current uses plus solar and still have additional space left over
  - We do not give up any ability to laydown material
  - Remove ground mount solar early
    - Total Project \$51K positive cash flow in Year 6
    - Total Project \$2.7 million positive cash flow in Year 10
  - Remove ground mount and canopies early
    - Total Project \$826K positive cash flow in Year 10
  - Kevin Batt provided memo to Town Manager on contract termination provisions



# *Solar Agreement Overview*

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- What happens if our vendor goes bankrupt?
  - SolarCity is the largest and best financed solar developer in the country. But in the event they go out of business – the solar array would still continue to generate revenue for us. We would not lose any money in that event.
  - The solar array would be an attractive asset for another solar company. Almost certainly another vendor would be willing to take over our agreement on the same terms. If not we would inherit a free solar array and free electricity from that point on.



# *Solar Agreement Overview*

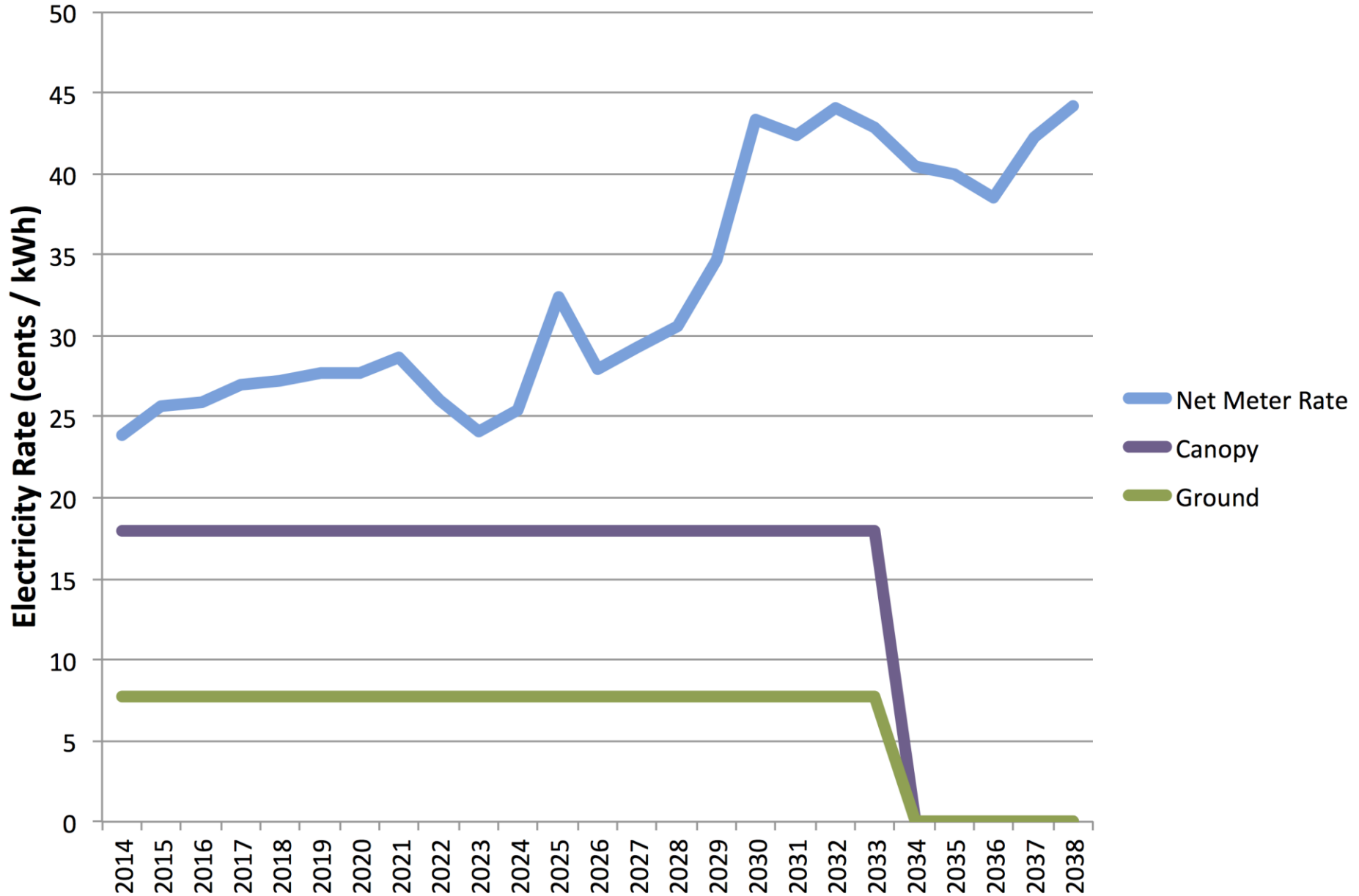
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- SolarCity will install, own, operate, & maintain PV solar energy systems at composting facility all at no upfront cost to Town
- Lexington will purchase all electricity generated at a negotiated 20 year rate
- Our rate for solar energy will be less than the utility's electricity rate, creating savings for the Town.



# Solar Rate vs Net Meter Projection

(based on historical trends)





# ***Solar Agreement Overview***

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- SolarCity will pay Lexington an annual PILOT (payment in lieu of taxes) of \$58,344
- SolarCity will provide Lexington with a production guarantee and take SREC market risks.
- Lexington's economic value will have a \$9 million economic benefit if utility rates stay flat for next 25 years and \$14.7 million if rates stay at historical averages, \$18 million if rates rise 1% faster.



# *Solar Agreement Overview*

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- Change of law?
  - The agreement has a change of law provision that allows us to renegotiate or walk away if there is a material change to the value of the net meter credits.
- Timing
  - Federal tax credits expire in 2016. \$2 to \$3 million of our expected value comes from those tax credits.
  - We are approaching net meter caps and utilities are working to establish policies for new systems later this year that would be disadvantageous for our current project.



## Langdon Environmental LLC

241 Boston Post Rd., West  
Marlborough, Massachusetts 01752

February 20, 2015

Mr. Michael Singer  
Brightfields Development LLC  
40 Walnut Street, Suite 301  
Wellesley, Massachusetts 02481

Mr. William Hadley  
Director of Public Works  
Samuel Hadley Public Services Building  
201 Bedford Street  
Lexington, Massachusetts 02420

Subject: Analysis of Costs and Revenues  
Proposed 1.25 MW Ground Mount Solar Development  
Hartwell Avenue Landfill Site, Lexington, MA

Dear Messrs. Singer and Hadley:

Over the past several months, Langdon Environmental, LLC (Langdon) has been working with Brightfields, LLC and the Town of Lexington to review both operation and financial implications of installing a solar photovoltaic (PV) system on a portion of the Hartwell Avenue Landfill site. Please note that the following analysis is based on the preferred alternative – the installation of a 1.25 MW installed capacity solar PV system along the northern side of the site (parallel to the Minuteman Commuter Bike Path) along with the installation of two 500 KW solar canopies on other areas of the Hartwell Avenue Site. Based on numerous discussions and meetings, the results presented in this letter includes the purchase of a windrow turner to augment the future leaf and yard waste composting operations.

The following analysis provides a summary includes:

1. A summary of a site analysis that demonstrates that all the current Lexington operations can be accommodated with the installation of the proposed solar PV system in its proposed location. Additionally, if the Town elects to construct a new police firing range at a future date, the proposed solar installation will not further limit the Town's ability to continue all ongoing operations. The analysis presents estimated costs associated with both site preparation and operational improvements.
2. Estimates of the revenues and offsetting operational costs for each of the three current sources of leaf and yard waste materials to the site – curbside collected materials from the Town of Arlington and Lexington and deliveries from local landscapers.
3. Estimates of revenues and offsetting operational costs for the future leaf and yard waste composting operations after the installation of the solar PV system. This alternative includes the addition of a windrow turner to allow additional leaf and yard waste materials to be

accommodated within the available remaining area after installation of the proposed 1.25 MW solar PV system.

In addition to the 1.25 MW ground mount solar array, there is a proposal to install two solar PV canopy systems over the front drop-off area and the existing Minuteman Regional Household Hazardous Waste (HHW) facility. These canopy systems can be designed with the required clear heights and column spacing to accommodate the current site uses being performed in these areas with minimal reconfiguration. *Please note that the final layout of these solar canopies will be based on a detailed geotechnical analysis and foundation design. Once this work has been completed, final operational and layout plans for the canopies will be completed.* Figures showing the preliminary conceptual location of these canopy systems provided by Brightfields are attached to this letter.

Based on this analysis, Langdon has concluded that the 1.25 MW installed solar PV system in conjunction with the addition of a windrow turner and changes to the Town's current operations can be accommodated at the site with minimal impact on the level of services currently offered by the Town assuming the improvements outlined below are implemented.

## Site Analysis

As shown schematically on the attached Figure 1, the Hartwell Avenue Landfill site is currently used for a wide variety of municipal and regional uses. Based on detailed discussions with the Town and Langdon's familiarity with site operations, Langdon has developed two additional Figures showing the revised Town operations areas after the 1.25 MW solar facility is installed. The first future schematic (Figure 2) shows the operations with the police firing range (Area B) in its current location. The second schematic (Figure 3) shows a potentially reconfigured police firing range (Area B) relocated to an area currently utilized for public works material storage and processing and filling of the existing range area. Note that the attached Figure 3 assumes that the existing police firing range footprint is filled and re-used for the relocated material storage and processing operations.

## Site Preparation

To accommodate the proposed solar PV system, several changes to current Town operations will need to be implemented. The costs for these tasks have been incorporated into the Town's Solar Revenue Model. These operational changes and associated costs are in addition to those associated with the composting operation which are discussed below.

To free up space for the proposed solar PV system, the Town will be required to revise their current operations for the storage and processing of soil and similar materials along the southern side of the site (Area D on Figure 1). The materials currently stored at this location include street sweepings and catch basin cleanings stockpiled prior to off-site disposal; a significant pile (estimated at 25,000 cy's) of miscellaneous construction soils and debris from town projects; a stockpile of loam and finished compost; and numerous bins and storage piles for construction materials regularly needed by public works operations.

In order to provide the proposed space for the 1.25 MW solar PV system, the Town will need to revise these storage and processing operations both to limit their footprint but also to allow for expansion of the central composting area (Area E on Figure 1). To meet these requirements, Langdon recommends implementation of the following site improvements:

- Construct a series of bins to increase the efficiency of the storage of construction materials as well as excess soils from Town projects, street sweepings and catch basin cleanings. These bins would be offset from the edge of the slope and would be approximately 350 feet in length. The existing bins and storage materials would all be removed and relocated to these new structures. The approximate location of the new bins are shown as Area D on Figures 2 and 3.
- Coordination for the removal of the existing stockpile of soil and debris from Town operations. The Town currently has a Memorandum of Understanding with a private vendor to remove all of these materials within three years at no cost to the Town (one year of this period has already been completed). In order to accommodate the installation of the new bins, the remainder of the current stockpile after the contractor removes this year's materials has to be either relocated on-site or removed.
- Removal of the existing piles of street sweepings and catch basin cleanings to an appropriate off-site disposal location.
- Development of a plan to relocate any existing composting windrows off of the area proposed for the solar PV installation to Area E on Figure 1.

Based on numerous meetings and discussions, Langdon has developed estimated costs attributable to the solar PV installation for site preparation presented in Table 1.

**Table 1**  
**Summary of One-Time Site Development Costs to Accommodate**  
**Proposed 1.25 MW Solar PV Installation**

Cost Item	Estimated Cost	Basis
Relocation of Soil/Debris Pile	\$100,000	Allowance based on 16,000 cy's remaining after this year's processing and \$6.25 per cy to relocate and process.
Construction of Bins for Future Material Storage	\$175,000	500 linear feet (lf) of new bins at \$350 per lf
Relocation of compost windrows from area proposed for solar PV	\$0	Work to be performed by solar developer.
<b>TOTAL ONE-TIME SITE PREPARATION COSTS</b>	<b>\$275,000</b>	

Notes:

1. Changes in composting costs and revenues are annual costs and not included above.
2. Costs for disposal of street sweepings and catch basin cleanings are Town operational costs and not attributable to the solar PV installation.
3. The Estimated Costs presented above are currently in the Solar Revenue Model being presented to the Town.

### ***Future Site Operational Flexibility***

Due to the Hartwell Avenue site's existing large operating area, the Site is able to support Town construction projects by providing temporary storage of soils and materials. In the past, the Site has allowed for temporary storage of Town-generated construction materials which has resulted in avoided costs for disposal of excess soils and the eliminated the need to purchase new soils at the end of construction. Based proposed modifications to the leaf and yard waste composting operations, the proposed new operations could potentially include approximately 0.75 to 1.5 acres of flexible space for this purpose should it be needed in the future.

### **Current Operating Revenues and Costs for Composting Operations**

The proposed location of the 1.25 MW solar PV system will require relocation of the area that is currently used by the Town to process the leaf and yard waste collected at curbside by Lexington's contractor as well as the curbside yard waste delivered to the site by the Town of Arlington under an intermunicipal agreement. Based on discussions with Town staff and information developed by the Town Department of Public Works (DPW) on current costs and revenues of the on-going composting operations, Langdon has developed a baseline for the three major leaf and yard waste sources. Please note that Langdon has assumed in all cases that the leaf and yard waste delivered by Lexington residents and composted at the site entrance (Area A on Figures 1, 2 and 3) will continue to be handled in small windrows near the point where it is dropped off.

For the purposes of this analysis, Langdon relied on the revenues and costs for the most recent full fiscal year (2014) as provided by the DPW. The analysis relies on costs developed by the Town in evaluating the tipping fees to be charged to the Town of Arlington. In general, operational costs such as turning windrows that are associated with all materials were prorated based on the percentage of each material source. A summary of the quantities of each source and the associated revenues and costs is presented in Tables 2 and 3. A summary of the net revenues for each source of materials is presented in Table 4.

### **Estimated Future Revenues and Costs for Composting**

Installation of the 1.25 MW solar PV system would entirely utilize the approximately 4.5 acres currently used for composting leaf and yard waste collected from curbside in Lexington and Arlington (see Area F on Figures 2 and 3). Based on the reconfiguration of the public works storage area into bins and the removal of the existing stockpile (discussed above), there will be a total of approximately 8-acres of area remaining available for composting (see Figures 2 and 3).

**Table 2**  
**Summary of Current Estimated Operating Costs for Leaf and Yard Waste Composting by Material Source (2014)**  
**Hartwell Avenue Landfill Leaf and Yard Waste Composting Operations**

	Basis for Costs		Annual Estimated Costs by Material Source (Volume)				Other
	Vendor	Lexington Equipment and Labor	Lexington Curbside (10,000 cy)	Landscaper (36,000 cy)	Arlington Curbside (17,000 cy)	TOTAL COSTS	
Grinding	Town provided cost for both Lexington and Arlington curbside materials. Costs allocated by quantity.	Town provided cost of \$9,300 for loader and operator to feed grinding machine for Arlington (based on 65 hours). Lexington curbside costs proportional by volume.	\$22,600	\$0	\$38,300	<b>\$60,900</b>	Landscaper materials are not ground. Does not include grinding of wood chips and Christmas trees.
Windrow Turning	No vendor costs	Total cost for annual windrow turning is 1,200 hours at \$142.78 per hour (from Town). Each source allocated proportional share of total costs based on volume.	\$27,100	\$97,700	\$46,100	<b>\$170,900</b>	
Screening Costs	No vendor costs	\$125 per hour for screener at \$60/cy/HR for finished compost. Raw compost volume assumed reduced by 70% in finished product	\$4,800	\$17,100	\$8,100	<b>\$30,000</b>	Does not include disposal of screenings.
Administrative Costs	No vendor costs	Town estimate of \$11,600 for Arlington materials made proportional for landscaper materials by volume.	\$0	\$24,600	\$11,600	<b>\$36,200</b>	Assumed no administration costs for Lexington curbside materials.
<b>TOTALS</b>			<b>\$54,500</b>	<b>\$139,400</b>	<b>\$104,100</b>	<b>\$298,000</b>	

Note: Numbers rounded to nearest \$100.

**Table 3**  
**Estimated Current Revenues from Each Leaf and Yard Waste Composting by Material Source (2014)**  
**Hartwell Avenue Landfill Composting Operations**

Material Source	Annual Volume (2014)	Percent of Total Volume	ANNUAL ESTIMATED GROSS REVENUES		
			Disposal Fee Payments (Note 1)	Product Sale Revenue (Note 2)	Total Gross Revenues
Lexington Curbside	10,000	16%	\$ -	\$ 48,000	\$ 48,000
Landscaper Materials	36,000	57%	\$ 161,000	\$ 171,000	\$ 332,000
Arlington Curbside	17,000	27%	\$ 113,000	\$ 81,000	\$ 194,000
<b>TOTAL</b>	<b>63,000</b>	<b>100%</b>	<b>\$ 274,000</b>	<b>\$ 300,000</b>	<b>\$ 574,000</b>

Notes

1. Disposal Fee Payments based on sticker and punch card sales for landscaper materials and contract payment amount for Arlington curbside.
2. Product Sale Revenue for each source is based on proportion of total product sale revenues to total volume.
3. Lexington curbside does not include avoided costs if transported to an out-of-town disposal facility.

**Table 4**  
**Estimated Current Net Revenues from Each Leaf and Yard Waste Material Source (2014)**  
**2014 – Hartwell Avenue Landfill Composting Operations**

Material Source	Annual Volume (cy's)	Percent of Total Volume	ANNUAL ESTIMATED TOTALS		
			Gross Revenues	Operating Costs	Net Revenues (See Note)
Lexington Curbside	10,000	16%	\$ 48,000	\$(54,500)	\$(6,500)
Landscaper Materials	36,000	57%	\$ 332,000	\$(139,400)	\$192,600
Arlington Curbside	17,000	27%	\$ 194,000	\$(104,100)	\$89,900
<b>TOTAL</b>	<b>63,000</b>	<b>100%</b>	<b>\$ 574,000</b>	<b>\$(298,000)</b>	<b>\$276,000</b>

Note: Net revenues do not include avoided cost for out-of-town disposal of Lexington curbside collected leaf and yard waste. All costs rounded to nearest \$100.



Currently, the Town uses approximately 11.2 acres to compost 63,000 cy's of leaf and yard waste annually. This is approximately 5,625 cy's per acre of as-delivered leaf and yard waste used. Note that the total volume is based on the leaf and yard waste as received and it will significantly decrease in volume during the initial stages of composting. Using this incoming volume (before the start of initial decomposition), the composting operations over 8 acres could accept approximately 45,000 cy's of leaf and yard waste –equal to the existing total volume of the current Lexington curbside and landscaper-delivered materials. In other words, the Town could continue to operate in the current manner and accept all of the existing materials except for those currently delivered by Arlington.

Larger composting operations such as the one operated by the Town at the Hartwell Avenue site often utilize specialized windrow turning equipment to process organic materials more efficiently. Windrow turners are expensive to purchase (up to \$500,000) but have the following advantages:

- Windrow turners allow the windrows to be spaced significantly closer together that results in an increase to the cubic yard of material that can be processed per acre;
- Windrow turners improve the turning and aeration process thus accelerating the time needed to create a finished product downward from a year to between 6 to 8 months,
- Windrow turners may eliminate the need for grinding of materials as is now done for the curbside collected materials, and
- Finally, windrow turners will improve odor control.

For planning purposes, Langdon assumed that the use of a windrow turner could increase the volume of compost able to be processed on a single acre to between 8,000 cy's to 10,000 cy's per acre. Therefore, with the addition of a windrow turner, the Town could, at a minimum, continue to receive all of the current leaf and yard waste, including the materials currently received from the Town of Arlington. Because the total volume of materials would remain the same, Langdon has assumed that the total gross revenues currently generated from landscapers and the Town of Arlington would not change.

Based on the maximum potential density of leaf and yard waste at 10,000 cy's per acre, the Town could continue to accept the current 63,000 cy's over 6.3 acres and keep between 0.75 to 1.5 acres available for the intermittent storage of soils or other materials from Town construction projects. Alternatively, the Town could potentially increase the total amount of leaf and yard waste accepted at the site assuming an adequate market exists at a reasonable fee.

The use of a windrow turner will require the purchase of a new piece of equipment as well as different operating costs than the current composting approach. The anticipated costs for this are summarized below in Table 5. Please note that these costs are based on continuing the current quantity of incoming leaf and yard waste (63,000 cy's per year) so the current gross revenues will remain the same.

**Table 5**  
**Summary of Future Annual Costs for Operation of Windrow Turner**

Operational Item	Cost Item	Subtotal Cost	Basis
Grinding of Curbside Collected Materials	Vendor and Town Costs	\$50,000	Allowance for potential grinding of compost material in future. May not be required.
Windrow Turning and Maintenance	Windrow Turner Labor	\$14,200	Turner handles 2,000 cy's per hour. Turning once per week for first 4-weeks and 2 turns per month for remaining time (14 turns total). Six-months to create finished product. Town supplied \$32.13 per hour for labor.
	Windrow Turner Operation & Maintenance	\$44,200	Same turning frequency as above. Hourly operations and maintenance assumed \$100 per hour.
	Front End Loader	\$35,700	250 hours per year for clean-up at \$142.78 per hour (town supplied)
Finished Product Screening	Screening and processing of finished compost	\$39,400	Same costs as current operations (see Table 2)
Administrative Costs	Costs to administer Arlington contract and landscaper program	\$36,200	Same costs as current operations (see Table 2)
Turner Replacement Costs	Set aside funds to replace windrow turner	\$46,000	Assume \$500,000 replacement cost. Ten year life with salvage value equal to 20% of purchase price. 4% interest rate.
<b>Subtotal – Estimated Annual Operating Costs</b>		<b>\$265,700</b>	
<b>Current Annual Operating Costs (Table 2)</b>		<b>\$298,000</b>	
<b>Net Annual Decrease in Operating Costs</b>		<b>\$32,300</b>	

Note: Assumes that the Town continues to accept and process the current quantity of leaf and yard waste (63,000 cy's per year). All numbers rounded to nearest \$100.

## Conclusions

The following are the conclusions of the site assessment and cost analysis work performed by Langdon for the potential installation of a 1.25 MW solar PV system at a portion of the Hartwell Avenue Landfill site parallel to the Minuteman Commuter Bike Path including the addition of a windrow turner to the ongoing leaf and yard waste composting operations:

- The area proposed for installation of the 1.25 MW solar PV system can be accommodated with the proposed modifications to current Town operations with minimal impacts to the current services provided by the facility, assuming the purchase of the windrow turner

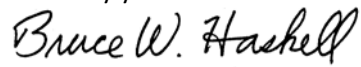
To continue current town services and the current services, the Town will need to construct a series of bins to store town materials and relocate and remove the current stockpile of miscellaneous soil and associated debris from the site. The total one-time costs for this work is estimated at \$275,000 as summarized in Table 1.

Mr. Michael Singer  
Mr. William Hadley  
February 20, 2015  
Page 9

- The remaining area for leaf and yard waste composting after installation of the solar PV system can continue to accept and process the current amount of materials provided the Town purchases and operates a windrow turner. The evaluation of the solar PV system should include a \$500,000 initial purchase price for a windrow turner. Initial estimates of the operating costs for the windrow turner indicate an overall decrease the current operating costs by an estimated \$32,300 per year, including putting funds aside for the future replacement of the windrow turner in ten years.

Please do not hesitate to contact me at my office at (508) 630-0351 or mobile phone at (617) 875-3693 if you have any questions or require anything further.

Sincerely yours



Bruce W Haskell, P.E.  
Langdon Environmental LLC

cc: Robert Beaudoin, Lexington

# Summary of Current Site Uses of Hartwell Avenue Landfill Site and Future Anticipated Changes After Installation of 1.25 MW Solar Photovoltaic System

February 20, 2015

FINAL

Section Designation	General Description of Area Activities	Specific Activities and Services to Town	Current Area Used	Future Change with Installation of 1.25 MW Ground-Mounted Solar PV System	Financial Impacts		Attached Table Reference
					Initial Costs	Annual Recurring Costs	
A	Residential Drop-off and Administration Facilities	Residential Drop-off of cardboard, scrap metal, reusable bicycles, Universal Waste shed for mercury items and batteries. Residential drop off of brush and yard waste Landscape drop-off for brush with periodic chipping for removal/re-use Administration for sales of compost products and tracking of other materials Pick-up for compost bins Composting of residentially delivered leaf and yard waste (approximately 3,000 cy's) Bins for unscreened compost and wood chips for Lexington residents	3 Acres	None (Note: Design of proposed solar canopies will be done to accommodate continued existing operations).	None	None	N/A
B	Police Firing Range	Active Police firing and practice range including facility and associated vehicle parking	0.5 Acres	None Future Relocated Range can be accommodated	None	None	N/A
C	Regional Facilities	Minuteman Household Hazardous Waste (HHW) facility – 8 regional collections per year NERAC Regional Cache DPW Equipment Storage	1.3 Acres	None Overall site design needs to accommodate queuing of HHP residential vehicles (Note: Design of proposed solar canopies will be done to accommodate continued existing operations).	None	None	N/A
D	Miscellaneous Public Works Storage	Receipt, stockpiling and processing of numerous materials generated by public works including existing miscellaneous soil and debris pile; granite; asphalt; and steel plating. Storage in bins of materials for public works including gravel, cold patch, stone, and parks materials. Processing and stockpiling of loam (from off-site sources) and processing with finished compost. Screening and final processing of site-generated compost. Historically used for storage of Town-generated construction materials (e.g. Estabrook School).	6.2 Acres	Existing stockpile of crushed materials (soil and debris) has to be removed on an expedited schedule.	\$100,000	None	Table 1
				Construction of new bin system for storage of public works materials	\$175,000	None	Table 1
E	Landscape Drop-off and Leaf and Yard Waste Composting	Area for landscapers with permits to drop-off leaf and yard waste with composting windrows (approximately 36,000 cy's per year). Stockpiling of catch basin cleanings and street sweepings for off-site disposal. Loading dock and CRT storage	6.4 Acres	Relocation of street sweepings, catch basin cleanings and CRT container to new bins.	No Cost	None	N/A
				Purchase and Operation of Windrow Turner to process existing landscaper and curbside collected materials	\$500,000 to purchase windrow turner	Net reduction in annual operating costs of estimated \$32,300	Table 5
F	Curbside Collected Drop-off and Leaf and Yard Waste Composting	Area for leaf and yard waste compost from curbside collection vehicles from both Lexington (10,000 cy's) and Arlington (17,000 cy's) to be unloaded, ground and composted.	4.8 Acres	Operations entirely relocated to Area E with Windrow Turner	Included above	Included above	Included Above
				Relocation of existing compost materials to new expanded Area E	\$0	None	Cost for relocation by solar developer
Miscellaneous	Roadways and Access to Operations	On-site loop road for drop-off and delivery of materials and all other activities. Does not include site access driveway.	3 Acres	Some revisions to existing access road network to accommodate bins and relocated materials	None	None	N/A
<b>TOTAL SITE OPERATING AND ROADWAY AREA</b>			<b>25.2 Acres</b>				

Note: Location F shown highlighted in blue above is the area proposed for installation of the 1.25 MW ground-mounted solar installation.

**Table 1**  
**Summary of One-Time Site Development Costs to Accommodate**  
**Proposed 1.25 MW Solar PV Installation**

Cost Item	Estimated Cost	Basis
Relocation of Soil/Debris Pile	\$100,000	Allowance based on 16,000 cy's remaining after this year's processing and \$6.25 per cy to relocate and process.
Construction of Bins for Future Material Storage	\$175,000	500 linear feet (lf) of new bins at \$350 per lf
Relocation of compost windrows from area proposed for solar PV	\$0	Work to be performed by solar developer.
<b>TOTAL ONE-TIME SITE PREPARATION COSTS</b>	<b>\$275,000</b>	

Notes:

1. Changes in composting costs and revenues are annual costs and not included above.
2. Costs for disposal of street sweepings and catch basin cleanings are Town operational costs and not attributable to the solar PV installation.
3. The Estimated Costs presented above are currently in the Solar Revenue Model being presented to the Town.

**Table 2**  
**Summary of Current Estimated Operating Costs for Leaf and Yard Waste Composting by Material Source (2014)**  
**Hartwell Avenue Landfill Leaf and Yard Waste Composting Operations**

	Basis for Costs		Annual Estimated Costs by Material Source (Volume)				Other
	Vendor	Lexington Equipment and Labor	Lexington Curbside (10,000 cy)	Landscaper (36,000 cy)	Arlington Curbside (17,000 cy)	TOTAL COSTS	
Grinding	Town provided cost for both Lexington and Arlington curbside materials. Costs allocated by quantity.	Town provided cost of \$9,300 for loader and operator to feed grinding machine for Arlington (based on 65 hours). Lexington curbside costs proportional by volume.	\$22,600	\$0	\$38,300	<b>\$60,900</b>	Landscaper materials are not ground. Does not include grinding of wood chips and Christmas trees.
Windrow Turning	No vendor costs	Total cost for annual windrow turning is 1,200 hours at \$142.78 per hour (from Town). Each source allocated proportional share of total costs based on volume.	\$27,100	\$97,700	\$46,100	<b>\$170,900</b>	
Screening Costs	No vendor costs	\$125 per hour for screener at \$60/cy/HR for finished compost. Raw compost volume assumed reduced by 70% in finished product	\$4,800	\$17,100	\$8,100	<b>\$30,000</b>	Does not include disposal of screenings.
Administrative Costs	No vendor costs	Town estimate of \$11,600 for Arlington materials made proportional for landscaper materials by volume.	\$0	\$24,600	\$11,600	<b>\$36,200</b>	Assumed no administration costs for Lexington curbside materials.
<b>TOTALS</b>			<b>\$54,500</b>	<b>\$139,400</b>	<b>\$104,100</b>	<b>\$298,000</b>	

Note: Numbers rounded to nearest \$100.

**Table 3**  
**Estimated Current Revenues from Each Leaf and Yard Waste Composting by Material Source (2014)**  
**Hartwell Avenue Landfill Composting Operations**

Material Source	Annual Volume (2014)	Percent of Total Volume	ANNUAL ESTIMATED GROSS REVENUES		
			Disposal Fee Payments (Note 1)	Product Sale Revenue (Note 2)	Total Gross Revenues
Lexington Curbside	10,000	16%	\$ -	\$ 48,000	\$ 48,000
Landscaper Materials	36,000	57%	\$ 161,000	\$ 171,000	\$ 332,000
Arlington Curbside	17,000	27%	\$ 113,000	\$ 81,000	\$ 194,000
<b>TOTAL</b>	<b>63,000</b>	<b>100%</b>	<b>\$ 274,000</b>	<b>\$ 300,000</b>	<b>\$ 574,000</b>

Notes

1. Disposal Fee Payments based on sticker and punch card sales for landscaper materials and contract payment amount for Arlington curbside.
2. Product Sale Revenue for each source is based on proportion of total product sale revenues to total volume.
3. Lexington curbside does not include avoided costs if transported to an out-of-town disposal facility.

**Table 4**  
**Estimated Current Net Revenues from Each Leaf and Yard Waste Material Source (2014)**  
**2014 – Hartwell Avenue Landfill Composting Operations**

Material Source	Annual Volume (cy's)	Percent of Total Volume	ANNUAL ESTIMATED TOTALS		
			Gross Revenues	Operating Costs	Net Revenues (See Note)
Lexington Curbside	10,000	16%	\$ 48,000	\$(54,500)	\$(6,500)
Landscaper Materials	36,000	57%	\$ 332,000	\$(139,400)	\$192,600
Arlington Curbside	17,000	27%	\$ 194,000	\$(104,100)	\$89,900
<b>TOTAL</b>	<b>63,000</b>	<b>100%</b>	<b>\$ 574,000</b>	<b>\$(298,000)</b>	<b>\$276,000</b>

Note: Net revenues do not include avoided cost for out-of-town disposal of Lexington curbside collected leaf and yard waste. All costs rounded to nearest \$100.

**Table 5**  
**Summary of Future Annual Costs for Operation of Windrow Turner**

Operational Item	Cost Item	Subtotal Cost	Basis
Grinding of Curbside Collected Materials	Vendor and Town Costs	\$50,000	Allowance for potential grinding of compost material in future. May not be required.
Windrow Turning and Maintenance	Windrow Turner Labor	\$14,200	Turner handles 2,000 cy's per hour. Turning once per week for first 4-weeks and 2 turns per month for remaining time (14 turns total). Six-months to create finished product. Town supplied \$32.13 per hour for labor.
	Windrow Turner Operation & Maintenance	\$44,200	Same turning frequency as above. Hourly operations and maintenance assumed \$100 per hour.
	Front End Loader	\$35,700	250 hours per year for clean-up at \$142.78 per hour (town supplied)
Finished Product Screening	Screening and processing of finished compost	\$39,400	Same costs as current operations (see Table 2)
Administrative Costs	Costs to administer Arlington contract and landscaper program	\$36,200	Same costs as current operations (see Table 2)
Turner Replacement Costs	Set aside funds to replace windrow turner	\$46,000	Assume \$500,000 replacement cost. Ten year life with salvage value equal to 20% of purchase price. 4% interest rate.
<b>Subtotal – Estimated Annual Operating Costs</b>		<b>\$265,700</b>	
<b>Current Annual Operating Costs (Table 2)</b>		<b>\$298,000</b>	
<b>Net Annual Decrease in Operating Costs</b>		<b>\$32,300</b>	

Note: Assumes that the Town continues to accept and process the current quantity of leaf and yard waste (63,000 cy's per year). All numbers rounded to nearest \$100.



BRIGHTFIELDS DEVELOPMENT, LLC  
 Evaluation of Alternative Uses for  
 Hartwell Avenue Landfill Site

**Figure 1  
 Current Site Uses**


 SCALE  $\frac{0 \text{ Meter}}{0 \text{ Feet}}$  |  $\frac{30}{100}$  |  $\frac{61}{200}$  |  $\frac{92}{300}$

Prepared by: 

November 2014

Area	General Activity Description	Area (Acres)
A	Residential and Municipal Drop-off Area including Residential Leaf and Yard Waste Composting	3
B	Police Firing Range	0.5
C	HHW Facility, Equipment Storage and Emergency Management	1.3
D	Public Works Material Storage and Processing	6.2
E	Commercial Yard Waste Drop-off and Composting	6.4
F	Arlington and Lexington Curbside Compost	4.8
Other	Roadways and Slopes	3





February 19, 2015

**VIA EMAIL**

**To:** Mark Sandeen  
Dan Voss

**From:** Michael Singer  
Principal  
Brightfields Development, LLC

**CC:** William Hadley  
Director of Public Works  
Town of Lexington, MA

**Subject:** Permitting Summary and Update  
Proposed 1.25 MW Ground Mount and 1 MW Solar Canopies  
Hartwell Avenue Compost Facility, Lexington MA

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As requested, the memorandum provides a brief update on the permitting progress and path forward for the 2.25 MW proposed solar arrays proposed for the Hartwell Avenue Site. As you are aware the closure of the landfill was completed under the Massachusetts Contingency Plan (MCP), and greatly minimizes Massachusetts Department of Environmental Protection's involvement in this project. The environmental permitting of the Site will be handled by a private Massachusetts Registered Licensed Site Professional (LSP) who will opine directly on the suitability of solar re-use for the Site. A Post-Closure Use Permit (PCUP) issued by the DEP will not be required.

Key Site attributes are as follows:

- Site has RTN 3-21522 closed under MCP with Activity and Use Limitation (AUL) in 2009.
- Site was a landfill capped with 2 feet of fill. Town then brought in an additional 6 to 10-foot construction and demolition (C&D) debris above cap.
- Site is a Tier 1C site under MCP, meaning there was significant contamination and also surrounded by sensitive environmental receptors.
- Contaminants of concern included Lead, PAH's and TPH.
- There was some spot removal, but AUL still exists, meaning no residential development would be permitted.
- The site could be developed for passive uses (including solar), with preparation of a Soil Management Plan (SMP).
- Any soil disturbances (>20 cubic yards) would require a Release Abatement Measure (RAM). This would require submittal of a plan that details the testing, management and disposal of excavated impacted soils.

We have begun working with an LSP and feel that the path forward is clear and quantifiable. Once we have formal site control, we will engage our consultant and move forward with the RAM and the SMP (as noted above). We anticipate that this work can be completed in approximately 3 months. Additional investigative work will likely be required to complete the final design of the canopies and their associated foundations.

In addition to the work being completed by the LSP (outlined above), Brightfields will move ahead and begin working with the Town and the State on the additional permitting items:

#### **Storm Water Evaluation and Design**

- Evaluate Current Site Conditions
- Determine Existing Peak Discharge/Run-Off Volumes
- Evaluate the Efficacy of the Existing Storm Water Control System
- Model Post-Construction Flows
- Determine any required Changes to the Storm Water Control System
- Estimate Improvements in Storm water Quality/Quantity based on upgraded control system

#### **Storm Water Permitting**

- Complete Review of National Pollutant Discharge Elimination System (NPDES) Construction Permit
- Define Limits of Work

#### **Project Notification Form (MHC)**

- Review and Submit - Massachusetts Historical Commission Review
- Review and Submit - MHC Form Completion and Filing (If Applicable)

#### **Endangered Species Acts (MESA Checklist)**

- Review of Mapped Habitat of Rare or Endangered Species
- Completion of MESA Filing Requirements (If Applicable)

#### **Determination of Applicability and Wetlands Notice of Intent (NOI)**

- Review Completed Request for Determination of Applicability
- Oversight of the Completion of Wetlands NOI
- Identify All Work Areas within Buffer Zone Including Conduit/Pole Runs, Access Roads

#### **Massachusetts Environmental Protection Act (MEPA) Environmental Notification Form**

- Review MEPA Project Thresholds

#### **Municipal/Local – Site Plan Approval**

- Complete Town Plan Set
- Draft Submittal to Town – Design Review Team
- Meet with Critical Town Agencies
- Revise Town Plan Submittal Set
- Attend Planning Board Meetings
- Final Submittal and Approval

**Municipal/Local - Building Permit**

- Prepare Building Permit Application
- Prepare Stamped Drawings
- Complete Inspections and Affidavits required by Town
- Oversee Permit Close-Out and Certification

**Municipal/Local - Electrical Permit**

- Prepare Electrical Permit Application
- Prepare Stamped Drawings

**Oversee Permit Close-Out and Certification**

Based on our numerous conversations with key Town personnel, a preliminary meeting with the Town's Design Review Team, and our experience permitting similar projects in Massachusetts and around the country, we are confident that this process can be completed successfully in a timely and efficient manner. We will continue our collaborative approach with all Town stakeholders as we work towards groundbreaking and through to project completion.

## Lynne Pease

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**From:** Mark Sandeen <mark.sandeen@sustainablelexington.org>  
**Sent:** Friday, February 20, 2015 10:48 AM  
**To:** Lynne Pease  
**Subject:** FW: PPA Provision re: early termination of solar facility  
**Attachments:** Solar City PPA Provision re. relocation of solar system or termination by Town (A0293710xB0BA5).docx

Kevin Batt's statement for the board.

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**From:** Kevin Batt <[kbatt@AndersonKreiger.com](mailto:kbatt@AndersonKreiger.com)>  
**Date:** Wednesday, February 11, 2015 6:23 PM  
**To:** Carl Valente <[cvalente@lexingtonma.gov](mailto:cvalente@lexingtonma.gov)>  
**Cc:** Mark Sandeen <[mark.sandeen@sustainablelexington.org](mailto:mark.sandeen@sustainablelexington.org)>, Dan Voss <[voss.dan@gmail.com](mailto:voss.dan@gmail.com)>, Mina Makarious <[mmakarious@AndersonKreiger.com](mailto:mmakarious@AndersonKreiger.com)>, 40b <[40b@andersonkreiger.com](mailto:40b@andersonkreiger.com)>  
**Subject:** PPA Provision re: early termination of solar facility

Carl,

Mark asked me to send an email that could be transmitted to Michelle and other BOS members concerning the PPA provision with Solar City that would allow the Town to take back the area of the landfill for a different use.

If the Town wanted to take back the property and its decision did not coincide with a purchase option date (7<sup>th</sup>, 11<sup>th</sup> or 16<sup>th</sup> anniversaries), the attached provision would apply:

- The Town could seek to have the facility relocated, at Town expense and covering lost revenues;
- If no other space could be made available to relocate, the Town could recover the licensed area but at the cost of termination payment ( this would be for an approximate purchase price, but without the benefit of keeping the system if this happened at any time other than the dates set for the purchase option to be exercised). While this option would be costly, it does allow the Town to recover the licensed area for another use.

-----  
Kevin D. Batt  
ANDERSON & KREIGER LLP  
One Canal Park, Suite 200  
Cambridge MA 02141  
t: 617-621-6514  
f: 617-621-6614  
[www.andersonkreiger.com](http://www.andersonkreiger.com)

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1. **Relocation of System.**

If Purchaser ceases to conduct business operations at and/or vacates the Premises or is prevented from operating the Systems at the Premises prior to the expiration of the Term, or otherwise directs the removal of the Systems, or any part thereof, from the Licensed Area, Purchaser shall have the option to provide Seller with a mutually agreeable substitute premises located within the same Utility district as the terminated System or in a location with similar Utility rates and Insolation. Purchaser shall provide written notice at least sixty (60) days but not more than one hundred eighty (180) days prior to the date that it wants to make this substitution. In connection with such substitution, Purchaser shall execute an amended agreement that shall have all of the same terms as this Agreement except for the (i) Effective Date; (ii) License, which will be amended to grant rights in the real property where the System relocated to; and (iii) Term, which will be the remainder of the Term of this Agreement and such amended agreement shall be deemed to be a continuation of this Agreement without termination. Purchaser shall also provide any new purchaser, owner, lessor or mortgagee consents or releases required by Seller or Seller's Financing Parties in connection with the substitute facility. Purchaser shall pay all costs associated with relocation of the Systems or any part thereof, including all costs and expenses incurred by or on behalf of Seller in connection with removal of the System from the Licensed Area and installation and testing of the System at the substitute location and all applicable interconnection fees and expenses at the substitute location, as well as costs of new title search and other out-of-pocket expenses connected to preserving and refiling the security interests of Seller's Financing Parties in the Systems. Seller shall reasonably estimate the amount of Net Metering Credits that would have been delivered to Purchaser during the period of time the Systems is not in operation due to the relocation and shall invoice Purchaser for such amount and any associated lost or recaptured Environmental Incentives and lost sales (and penalties payments associated with the same) of associated Environmental Attributes in accordance with Section 7. Seller shall remove the System from the vacated Licensed Area prior to the termination of Purchaser's ownership, lease or other use of such Licensed Area. Seller will not be required to restore the Licensed Area to its prior condition. Seller shall promptly pay Purchaser for any damage caused by Seller during removal of the System, but not for normal wear and tear. If the substitute location has inferior Insolation as compared to the original Licensed Area, Seller shall have the right to make an adjustment to Exhibit 1 such that Purchaser's payments to Seller are the same as if the System were located at the original Licensed Area. If Purchaser is unable to provide such substitute location and to relocate the Systems as provided, any early termination subject to an early Termination fee paid by Purchaser, in accordance with the Purchaser Termination Schedule attached as Exhibit \_\_\_\_.

## Lexington's Solar Timeline

Governor Patrick Signs Green Communities Act in 2008

**September 2009** - Lexington Board of Selectmen decide to pursue Green Communities Application. Lexington secures Green Communities Technical Assistance Grant.

**April 2010** - Board of Selectmen and Town Meeting unanimously adopt solar energy "as of right siting" bylaw to promote the creation of new large-scale ground-mounted solar photovoltaic installations on Hartwell Avenue which have rated nameplate capacity exceeding 250 kW (DC) or more. Simultaneously Town adopts an expedited application and permitting process under which as-of-right energy facilities may be sited within the municipality.

**May 2010** – Lexington becomes one of the first five Green Communities in Massachusetts.

**June 2010** – Lexington Board of Selectmen appoints Sustainable Lexington Committee with a charter to advise Selectmen on programs designed to enhance Lexington's long term sustainability and resilience in response to environmental, resource, and energy challenges.

**January 2012** – Sustainable Lexington conducts Town wide survey and solar energy assessment of Town properties to determine best sites for solar. Presents results to Town Staff and Energy Conservation Committee. Survey identifies potential for 3MW solar installation at Hartwell Avenue site as by far the largest solar potential in Town.

**August 2012** – Lexington Solar Task Force formed with support from Board of Selectmen, Town Staff, Energy Conservation Committee, Appropriation Committee, Capital Expenditures Committee, and Sustainable Lexington based on Town's rooftop and ground mount solar potential.

**Fall 2012** – Lexington Solar Task force conducts peer review of other Massachusetts municipalities' solar energy projects. Determines that 51 Massachusetts municipalities have economically viable and operational solar facilities up and running. Survey finds that the majority of operational solar projects in 51 municipalities utilize long-term agreements with 3<sup>rd</sup> parties to procure solar electricity. Determines Lexington bylaw change is needed to allow Town to enter into these types of contracts.

**Fall 2012** – Town staff hires Cadmus as 3<sup>rd</sup> party owners agent to validate solar energy technical and economic assessment conducted by Sustainable Lexington and Solar Task Force.

**Winter 2013** – Cadmus completes technical and economic assessment of Lexington's solar energy potential – validating Solar Task Forces' earlier assessment. Town hires Cadmus to assist in development of rooftop and ground mount RFPs.

**March 2013** – Board of Selectmen and Town Meeting unanimously adopt solar energy procurement bylaw, which would allow the Town to enter into long-term agreements for the purpose of installing solar energy facilities and purchasing solar electricity. Board of Selectmen and Town Meeting were informed that Solar Task Force had determined that Town of Lexington could generate up to 66% of Town's electricity with a combination of school rooftops and ground mount arrays at Hartwell Avenue.

**Spring 2013** – Solar Task Force and Cadmus prepare draft RFP for rooftop and ground mount systems. DOER and Town staff start review of draft RFP and evaluation criteria.

**June 2013** – Massachusetts announces surprise end to SREC program due to over subscription. Initial 400 MW target over subscribed by 50%. Follow on program yet to be determined. Cadmus

advises against releasing RFP. Does not believe the Town will get any responses until new incentives are announced due to financing uncertainty. All previous economic viability assessments are no longer valid. Large solar energy projects stall for six month due to financing uncertainty.

**September 2013** – Sustainable Lexington presents potential for installing 3 MW of solar energy at Hartwell Facility to Economic Development Advisory Committee and receives positive feedback.

**January 2014** – Massachusetts releases draft SREC II regulations and March / April 2014 as the expected start date of the new program.

**Q1 2014** – Cadmus advises Request for Qualifications (RFQ) process instead of RFP process to move forward during period before formal start of SREC II program. Town Manager and DOER review and approve Draft RFQ. Town Staff and Board of Selectmen approve issuance of RFQ for rooftop school and municipal buildings and another RFQ for ground mount installation at Hartwell Avenue based on 12 acres potential.

**March 2014** - Rooftop and Ground Mount RFQs released. Lexington hosts site visits for interested vendors for both sites. Rooftop RFQ asks all vendors to evaluate solar canopy parking lot potential in addition to rooftop solar potential.

**April 2014** – SREC II program officially starts. Town receives RFQ responses from rooftop and ground mount vendors. Town of Lexington sends additional questions to vendors after reviewing RFQs. Sustainable Lexington presents update to Town Meeting that Solar Energy Task Force is working towards installing 5.6 MW solar on school rooftops and Hartwell Avenue.

**May 2014** – Lexington selection team selects short list of 4 ground mount vendors and conducts face to face interviews with short list vendors. Lexington selection team selects another short list of 2 vendors based on results of face to face interviews. Remaining 2 vendors were asked to provide revised proposals to Town designed to maximize economic value per acre. Both vendors conducted detailed site inspections to support their revised proposal process.

**June 2014** – Massachusetts announces intention to end to SREC II incentive program with the expected passage of HB 4185 in July 2014 – which would end distribution credit for virtual net metering projects (Distribution credit was 39% of the economic value of our solar projects.) This provision would have ended the economic viability for all of Lexington's solar energy projects.

Solar Task Force meets with Lexington's representatives on Beacon Hill to explain likely impact of the utility's proposed net metering legislative proposals – No solar on Town property. Dramatic reduction of energy efficiency programs.

**July 2014** – Remaining two vendors submit revised proposals. Town of Lexington conducts face to face interviews to review revised proposals. HB 4185 is narrowly defeated – allowing Lexington's solar projects to continue for another year.

**August 2014** – Selection team conducts on site visits of vendors' other ground mount landfill facilities in Scituate, Barnstable and Mashpee. Selection team selects final vendor.



## Solar Incentives

**Federal Incentives** - The solar 30% federal tax credit will expire December 31, 2016. Our project will need to be installed and interconnected and commercially operational by December 31, 2016 to qualify for the tax credit.

Our developer's finance partners are unwilling to take on any project that does not have a completion date of March 31, 2016 in order to give them the safety margin they need in case there are delays in the project.

Most construction timelines for a project of this size take 9 months. That gives us about 3 or 4 months to get the agreement signed so construction can begin. Once we pass that window - the project's economic return will take a dramatic turn for the worse. It is almost certain that the solar canopies would be eliminated, if not the whole project.

Delaying this project beyond that time window - is effectively choosing to turn down about \$2 to \$2.5 million dollars of federal money for the Town.

**State Incentives** - Prior to 2010 Massachusetts was providing an upfront rebates to solar power owners based on the size of system installed. This rebate was eliminated in favor of the Solar Carve Out Program in March of 2010. Under the new program, solar owners were issued Solar Renewable Energy Certificates (SRECs) for every 1 MWh of electricity generated by the solar energy system for the first ten years the system was in production. The value of the SRECs was not guaranteed, but set by market price.

In June of 2013, Massachusetts shocked everyone by announcing the immediate termination of the SREC program, since solar installations had surprisingly exceeded the governor's goal of 400 MW.

In December of 2013, Massachusetts announced an SREC II program, that provided lower value solar installations.

Rooftop projects like our schools - would only get 90% of an SREC for every 1 MWh of electricity generated, and landfills/brownfields - would only get 80% of an SREC for every 1 MWh of electricity generated, and they basically eliminated incentives for forested and agricultural land.

In June of 2014, Massachusetts DOER shocked everyone again by announcing the intention to pass legislation that would terminate the SREC II program - which they proposed would be replaced by a substantially lower incentive program called the declining block program which paid over 15 years instead of 10 years. As the name implies, the value of the program would decline each year of the program.

**Net Metering** - In 2008, the Green Communities Act established that solar energy owners would be paid the full retail rate for the electricity they produced. They also established the right for facilities such as our landfill site to "virtual net meter" - basically the ability produce electricity at a site where there isn't a lot of energy demand and then to export that power to the grid for use at another location. Both of these provisions of the Green Communities Act are absolutely essential to the economics of both our rooftop and landfill solar energy systems.

In June of 2014, as part of the legislation that planned to eliminate the SREC II program, the utilities included provisions in the proposed legislation that would end the ability for Lexington to virtual net meter the solar electricity we produced at full retail rate. The legislation eliminated the distribution credit portion of the net meter credit. This had the effect of lowering the Town's virtual net meter rate by 37% to a rate lower than the price we had to pay our developer for the solar electricity generated from our rooftops.

I met with Lexington's legislative staffs (Barrett, Kaufman, Donnelly) to help them understand that hugely negative impact this legislation would have on Lexington's municipal projects.

In July of 2014, the legislature narrowly avoided passing this legislation that would have eliminated the possibility of doing a project on Hartwell Avenue.

Fast forward to today - Utilities across the country are successfully changing net meter rates with the goal of eliminating solar energy (and energy efficiency) as a competitors to their monopoly positions. Massachusetts utilities are already lobbying heavily in another attempt to eliminate virtual net metering, distribution credits and SREC incentives.

Lots of people think that since solar panel prices have been declining - that declining prices will make up for the reduced incentives.

Meanwhile the price of solar panels has declined from \$9 a watt in 2008 to about \$0.75 a watt today. The majority of the cost of solar is today what is called the Balance of System - basically the cost of materials, labor, engineering, interconnection costs, permitting, etc...

Even if we were able to get our solar panels for free, we wouldn't be able to make up for the reduced incentives.

It is extremely unlikely that we will ever have the tremendous value of incentives available for installing solar in Lexington ever again.

## Lynne Pease

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**From:** Mark Sandeen <mark.sandeen@sustainablelexington.org>  
**Sent:** Friday, February 20, 2015 10:23 AM  
**To:** Lynne Pease  
**Subject:** Background material  
**Attachments:** 436817, Solar Energy, Yue.pdf

Lynne,

Some members of the Board of asked for information on the environmental impact of solar energy compared to alternatives.

Here is one of many recent studies showing that a typical solar energy module requires 1.5 years to generate the amount of energy required to manufacture the panels.

Since 30 years is an industry accepted useful life of those panels, that means the net energy or energy return on investment (EROI) factor is 20x for solar panels.

Scientific American conducted an EROI net energy survey that calculated a 7x EROI for electricity generated by natural gas.

By way of comparison they found a factor of 40x for hydro power, 20x for wind power, and 18x for coal power, 7x for natural gas electricity, and 5x for nuclear power.

(It turns out that enriching uranium ore can be an incredibly energy intensive process.)

Mark

---

**From:** "Lexington ILL Dept." <[lexill@minlib.net](mailto:lexill@minlib.net)>  
**Date:** Thursday, February 19, 2015 12:18 PM  
**To:** Mark Sandeen <[mark.sandeen@verizon.net](mailto:mark.sandeen@verizon.net)>  
**Subject:** article you requested

Hi, Mark: Here's the Yue article.

Best,

[Jean Williams](#)

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**ISSN:** 0038-092X



**Volume:** 105 **Issue:**

**Month/Year:** July 2014**Pages:** 669-678

**Article Author:** Yue, Dajun et al

**Article Title:** Domestic and overseas  
manufacturing scenarios of silicon-based  
photovoltaics...

**Imprint:** Phoenix, Ariz. : Association for Applied

**ILL Number:** 143158683



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# Domestic and overseas manufacturing scenarios of silicon-based photovoltaics: Life cycle energy and environmental comparative analysis

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Received 10 May 2013; received in revised form 29 March 2014; accepted 11 April 2014

Available online 21 May 2014

Communicated by: Associate Editor S.C. Bhattacharya

## Abstract

While life cycle assessment (LCA) has been recognized as an invaluable tool to assess the energy and environmental profiles of a photovoltaic (PV) system, current LCA studies are limited to Europe and North America. However, today most PV modules are outsourced to and manufactured in non-OECD countries (e.g., China), which have a substantially different degree of industrialization and environmental restriction. To investigate this issue, we perform a comparative LCA between domestic and overseas manufacturing scenarios illustrated by three kinds of silicon-based PV technologies, namely mono-crystalline silicon, multi-crystalline silicon and ribbon silicon. We take into account geographic diversity by utilizing localized inventory data for processes and materials. The energy payback time, energy return on investment and greenhouse gas (GHG) emissions for both scenarios are calculated and analyzed. Compared to the domestic manufacturing scenario, the energy use efficiency is generally 30% lower and the carbon footprint is almost doubled in the overseas manufacturing scenario. Moreover, based on the LCA results, we propose a break-even carbon tariff model for the international trade of silicon-based PV modules, indicating an appropriate carbon tariff in the range of €105–€129/ton CO<sub>2</sub>.

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**Keywords:** Life cycle assessment; Silicon-based photovoltaics; Manufacturing; Renewable energy

## 1. Introduction

Concerns about climate change, waste pollution, energy security and resource depletion are driving society to search for more sustainable approaches of energy supply. Among the various alternatives (e.g., wind, nuclear), photovoltaics (PV) are considered one of the most promising sustainable energy solutions (Darling et al., 2011). PV systems generate electricity directly from solar radiation,

which is so abundantly available that the Earth receives enough solar energy every hour to meet the world's annual energy needs (EPIA, 2011). Furthermore, PV systems produce electricity with no air emissions during operation and have a very low carbon footprint throughout the life cycle stages, thus providing superior environmental performance compared to traditional fossil-fuel-based electricity generation technologies. Silicon-based PV (Si-PV) technologies receive the most attention, both because they were the first to be commercialized and because they have the largest market share (Fraunhofer, 2012; IEA, 2012). Thin-film PV technologies represent a substantially smaller market

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share, and current materials available for thin-film PVs will eventually run up against daunting resource limitation challenges (Feltrin and Freundlich, 2008; Fthenakis et al., 2009b; Keshner and Arya, 2004). Next-generation technologies such as organic PVs are emerging as promising alternatives, but there are still several crucial obstacles to overcome before large-scale implementation can be achieved (Günes et al., 2007; Peet et al., 2009; Yue et al., 2012). Therefore, for the purpose of this study, we only focus on the life cycle energy and environmental analysis of Si-PV technologies.

When measuring the energy and environmental performance of a product system, the life cycle assessment (LCA) methodology is usually employed. LCA takes into account the direct and indirect impacts throughout the entire life cycle of the product, including material sourcing, manufacturing, operation, transportation, disposal, etc. As illustrated by many authors, LCA is recognized as an invaluable tool to assess the energy and environmental profiles of a PV product system (Fthenakis and Kim, 2011). In early life cycle studies, researchers reported a wide range of primary energy consumption and greenhouse gas (GHG) emissions for Si-PV systems. Besides the inherent uncertainty in data collection, the adoption of different assumptions and allocation rules by individual LCA practitioners is considered as the main cause. Alsema (2000) estimated that the total energy requirements for mono-crystalline silicon (mono-Si) and multi-crystalline (multi-Si) frameless modules to be 5700 and 4200 MJ/m<sup>2</sup>, respectively. He found the energy payback time (EPBT) to be 2.5–3 years and life cycle GHG emission to be 46–63 g CO<sub>2</sub> eq./kWh for roof-top installations for multi-Si PV. He considered Southern European conditions with an irradiation of 1700 kWh/(m<sup>2</sup> yr) and a performance ratio of 0.75. The module efficiencies were assumed to be 14% for mono-Si and 13% for multi-Si, respectively. Meijer et al. (2003) reported a slightly higher energy demand of 4900 MJ/m<sup>2</sup> for multi-Si modules, which corresponds to an EPBT of 3.5 years. They assumed the conversion efficiency of 14.5% under the irradiation of 1000 kWh/(m<sup>2</sup> yr). Jungbluth (2005) reported an EPBT of 3–6 years and GHG emissions of 39–110 g CO<sub>2</sub> eq./kWh under the Swiss average insolation of 1100 kWh/(m<sup>2</sup> yr), depending on configuration of different PV systems (i.e., façade, slanted-roof, and flat-roof). Their results were based on the assumption that the 300 µm-thick mono-Si and multi-Si PV modules operated with conversion efficiency of 14.8% and 13.2%, respectively.

The PV industry has developed rapidly over the past decade, and therefore material inventory and LCA results have also been updated as new technologies become available. Researchers have (Alsema and De Wild-Scholten, 2006; Fthenakis and Alsema, 2006) reported EPBTs of 1.7–2.7 years and GHG emissions of 30–45 g CO<sub>2</sub> eq./kWh for South-European locations based on the life cycle inventory (LCI) data representative for the technology status in 2004–2005. These studies covered mono-Si, multi-Si

as well as ribbon-Si PV technologies for rooftop installations with conversion efficiency of 14%, 13.2% and 11.5%, respectively. Recently, several reports have (De Wild-Scholten, 2009; Fthenakis et al., 2009a) updated these estimates based on the latest technologies involving thinner modules and more efficient processes. Comparing with the 2004–2006 production processes, they reported that the EPBT decreased by 25–40% and the GHG emissions decreased by 30–40% for roof-top installed mono-Si, multi-Si and ribbon-Si PV modules. However, the corresponding LCI data are not yet in the public domain.

Although extensive life cycle studies for Si-PV technologies exist, most of them focus on manufacturing in Europe and North America; the results may not accurately reflect the energy and environmental impact of Si-PV modules made outside these areas. According to the IEA annual report (IEA, 2012), the cumulative installed PV capacity reached 63.6 GW in 2012, of which the greatest proportion (about 60%) was installed in Germany and Italy alone. The United States shared slightly more than 6% of the total capacity worldwide, and China accounted for about 5%. Despite the fact that Europe and the United States are leading the research and development of PV technologies, the majority of the PV modules are manufactured in Asia (about 80%). China alone accounts for 62% of the total production worldwide. European manufacturers produced about 10% of the PV modules, and only 4% of PV modules were made in the United States. These figures indicate that most PV modules are manufactured overseas but installed in Europe and North America, which is driven by factors such as lower labor and material costs and greater vertical integration in China. However, as a non-OECD country, China has a vastly different energy and industry structure with more lenient environmental restrictions. Therefore, the energy and environmental profiles of PV modules made in China can be distinctive from those manufactured in Europe or North America. It is important to conduct a life cycle study that explicitly considers the overseas manufacturing scenario and utilizes country-specific LCI data for processes and materials, which is the focus of this work.

The major novelties of this work are summarized as follows:

- Comparative life cycle study of Si-PV modules considering domestic and overseas manufacturing scenarios.
- Calculations based on country-specific LCI data for processes and materials.
- Break-even carbon tariff model based on LCA results.

Our analysis will be presented as follows. First, we will briefly introduce the LCA methodology and define the domestic and overseas manufacturing scenarios. Then, the life cycle boundary and inventory will be specified, followed by the analysis of energy and environmental profiles using certain indicators. Based on the LCA results, we propose a break-even carbon tariff model as a complementary analysis.

## 2. Life cycle stages and inventories

Life cycle assessment (LCA) is a well-structured quantitative tool aimed at evaluating the material and energy flows and the associated environmental impacts throughout a product's life cycle from raw material acquisition through production, use, end-of-life treatment, recycling and final disposal (i.e., cradle-to-grave). Leaving practitioners with a lot of choices without affecting the validity of the LCA results, ISO 14040 (ISO, 2006a) and ISO 14044 (ISO, 2006b) provide principles and framework for LCA including: (a) goal and scope definition, (b) inventory analysis, (c) impact assessment, and (d) interpretation. However, the LCA methodology still leaves the individual practitioner with a range of choices for assumptions that can affect the validity of the LCA results. In order to retain consistency, quality and credibility of our findings, we adopt the methodology guidelines reported by IEA (IEA, 2011a, 2011b), which represent a consensus among the authors, PV LCA experts in the United States, Europe, and Asia, for assumptions on PV performance, process input and emissions allocation, methods of analysis, and reporting of the results.

In general, LCA methods can be categorized into three types, namely process-based methods, input–output (I/O) analyses, and hybrid LCA methods. Process-based methods are bottom-up methods and can provide more specific information for the process under study. I/O analyses are a top-down approach, which use public data from I/O tables to evaluate the environmental impacts at the sector-level resolution. Hybrid LCA attempts to integrate I/O analysis with process-based methods to quantify both the direct and indirect impacts (Finnveden et al., 2009). As recommended by the guidelines, we employ the conventional process-based LCA instead of the I/O or hybrid methods, because of the relative maturity of process-based LCA and our interest in detailed product-level LCA. The major stages along the manufacturing of the three Si-PV modules are illustrated in Fig. 1, which is modified from that presented in the work by Fthenakis et al. (2008). As shown in Fig. 1, the three types of Si-PV modules differ in the technology for cell manufacturing, where mono-Si, multi-Si and ribbon-Si technology correspond to the pathway at the top, middle and bottom, respectively. Note that we are not

considering the balance of system (BOS) in this work. We employ a “cradle-to-grave” life cycle boundary for the life cycle study. The production of Si-PV modules starts with the mining of quartz sand. The silica in the quartz sand is then reacted in an electric arc furnace using carbon electrodes with wood, charcoal and coal to produce “metallurgical grade” silicon (MG-Si, at least 98% purity). The MG-Si can be further purified into “electronic grade” (EG-Si, 9 N purity) or “solar grade” silicon (SoG-Si, 6 N purity) to meet the more stringent requirement in the electronics and solar industries. This is typically accomplished via either the “Siemens” process or the “modified Siemens” process. In the Siemens process trichlorosilane gas decomposes and deposits additional silicon onto silicon rods at 1100–1200 °C, while in the modified Siemens process silane is used as feedgas instead and the decomposition temperature is kept at about 800 °C (Aulich and Schulze, 2002). Apart from the conventional routes, a number of novel processes are being developed (e.g., Fluidized Bed Reactor process).

The source of SoG-Si usually involves a mixture of EG-Si, off-spec EG-Si and dedicated SoG-Si. Historically, off-spec EG-Si and silicon scraps from the production of EG-Si were the primary sources for the PV industry, but with the large growth in demand from the PV industry, the relative importance of dedicated SoG-Si has been increasing. Manufacturing of mono-Si and multi-Si wafers involves the production of silicon ingots, followed by wafer sawing. On the other hand, ribbon-Si wafers are directly pulled or cast from liquid silicon, thus a much higher material efficiency can be achieved because sawing losses are avoided. The cell manufacturing and subsequent module assembly processes are essentially identical for the three types of Si-PV technologies. Ethylene–vinyl acetate and glass sheets are used to encapsulate the PV modules and provide protection from the physical elements during operation. Aluminum frames are usually employed for additional strength and easy mounting. In our study, we investigate the production of Si-PV modules with 60 solar cells of 156 mm × 156 mm. The nameplate capacity is 224, 210 and 192 W<sub>p</sub> for mono-Si, multi-Si and ribbon-Si modules, respectively. The module area is assumed to be 1.60 m<sup>2</sup>.

Different from conventional LCA studies, we are considering two geographically diverse manufacturing scenarios

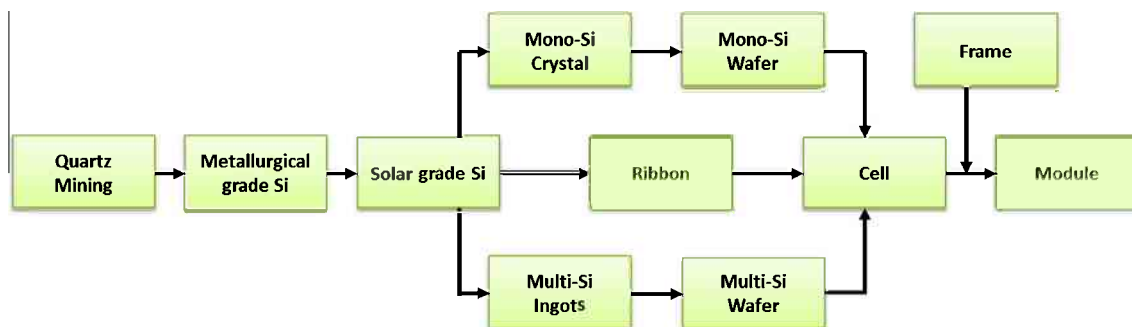


Fig. 1. Flow diagram from raw acquisition to manufacturing stages of Si-PV modules.

in our life cycle energy and environmental comparative analysis. In the domestic manufacturing scenario, we assume that the Si-PV modules are made and installed in Southern Europe. In the overseas manufacturing scenario, we assume that the Si-PV modules are made in China, then exported to and installed in Europe. In both scenarios, we consider installation in Europe, because Europe is the major market for PV modules worldwide, as mentioned in the Introduction. Similarly, we select China as an example of overseas manufacturing, because China has the largest production capacity of PV modules in the world. Note that some European manufacturers also purchase intermediate products (e.g., ingots, wafers and cells) from vendors in places like China. However, we only consider the two most representative scenarios mentioned above for illustration of our comparative life cycle study.

The LCI data of the three kinds of PV modules and corresponding background processes employed for the domestic manufacturing scenario are derived from Ecoinvent database v2.2 (ecoinvent, 2010), which is the most widely used life cycle database in the world. Since China has a different degree of industrialization and environmental restrictions compared to Europe, country-specific LCI data must be used for the overseas manufacturing scenario. In this work, we employ the Chinese Life Cycle Database (CLCD) v0.8 (IKE and SCU-ISCP, 2013), which is available in the software eBalance v4.0 (IKE, 2013). CLCD is a national background life cycle database consisting of about 600 LCI datasets for key materials and chemicals, energy carriers, transport, and waste management, which is based on a consistent core life cycle model and represents the combination of various technologies in the Chinese market. Conveniently, CLCD employs the same data format (Ecospond) as that in Ecoinvent, which facilitates the comparative life cycle study. Since the LCI data for Si-PV modules are not directly available in CLCD v0.8, we build life cycle models in eBalance v4.0 for the overseas manufacturing scenario based on the unit process raw (UPR) data provided in Ecoinvent v2.2, assuming the same manufacturing technologies apply to China. This assumption is valid because the UPR data in Ecoinvent v2.2 represent mixed data including some Asian companies, and many European and American companies have been building production lines in China. Therefore, by employing region-specific data from Ecoinvent and CLCD, we capture the differences in technology level, industrial structure, energy efficiency, electricity mix, etc. in the domestic and overseas manufacturing scenarios.

The LCI data derived from CLCD are considered comparable with those from the Ecoinvent database in terms of two aspects. First, the up-to-date Ecoinvent database is integrated in and compatible with CLCD. During the data collection of CLCD, domestic production is distinguished from imported parts. The Ecoinvent database is applied to represent the production outside of China. Production in China is further broken down by process technology and factory scale to collect data and set up models. By

weighted average market share in China, the market average technology data are calculated in CLCD. In most unit processes, raw material consumption data are primarily from Chinese industry statistics or technical literature; the main emission data are from the China Pollution Source Census; partial emissions data are derived from chemical equilibrium calculations. Some process data are from cooperative factories, modified as an estimation of industrial average rather than factory-specific data. Second, during the development of CLCD, the data quality assessment method based on the raw data's uncertainty and the data quality control method based on sensitivity analysis are applied according to the methodologies in Ecoinvent for data quality check, evaluation and control. However, we note that Ecoinvent alone is not sufficient for evaluating the overseas manufacturing scenario, because very limited LCI data for China are available in Ecoinvent compared to those in CLCD.

In this study, we define the functional unit as “1 m<sup>2</sup> module area”. We note that some life cycle studies use “1 piece of PV module” as the functional unit, of which the LCI data are usually different (IEA, 2011a). In the following sections, we will look into the energy and environmental profiles of Si-PV modules by assessing the relative indicators for both scenarios based on the LCI data.

### 3. Life cycle energy profile

#### 3.1. Energy payback time

Since PVs are considered as one of the primary alternatives for energy supply, it is of significant importance to understand the energy profile of Si-PV technologies. The most frequently employed metric is the energy payback time (EPBT), which indicates the time needed to compensate for the total primary energy (renewable and nonrenewable) required throughout the life cycle of an energy supply system. Primary energy is defined as the energy embodied in natural resources that has not undergone any anthropogenic conversion and needs to be converted and transported to become usable energy. The total demand, valued as primary energy, during the life cycle of a product is also called the cumulative energy demand (CED), which includes the direct uses as well as the indirect or grey consumption of energy due to the use of construction materials, raw materials, consumables, etc. Based on the LCI data for both the domestic and overseas scenarios, the CED results for the three kinds of Si-PV modules are summarized in Fig. 2. The infrastructure and internal transport to manufacture Si-PV modules are accounted for in the calculation, while international shipping from China to Europe is not included for a fair comparison. However, we note that the stage of international shipping can be easily added to the overseas manufacturing scenario, since it is independent of the other stages or processes. This addition would, of course, add to the EPBT and adverse environmental impact of PV panels manufactured overseas.



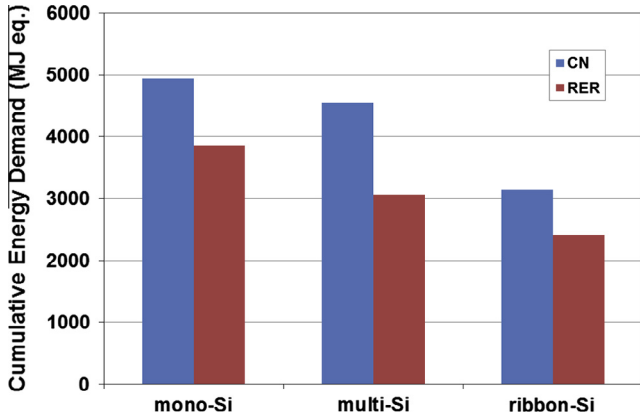


Fig. 2. Cumulative energy demand (CED) results (CN: China, RER: Europe).

As can be seen, in both scenarios, mono-Si technology requires the highest CED and the ribbon-Si technology requires the least. The differences mainly stem from the different processes for ingots and wafer production. For example, ribbon-Si wafers are produced directly from purified liquid silicon, thus avoiding the material as well as energy losses in wafer sawing. Compared to the domestic manufacturing scenario, the overseas manufacturing scenario involves a significantly higher CED, which is 28%, 48% and 30% higher for mono-Si, multi-Si and ribbon-Si modules, respectively. Two of the most important factors underlying these differences are electricity mix and energy efficiency. China generates 80% of its electricity from coal, while renewable energy resources (e.g., hydro-power plants) have a larger share in Europe. Moreover, the large share of coal in energy generation also causes the efficiency level in China to stand below the world average (ABB, 2010).

Knowing the CED, we can calculate the EPBT according to the following formula,

$$EPBT = \frac{CED}{E_{agen}/n_G} \quad (1)$$

where  $E_{agen}$  stands for the annual electricity generation and  $n_G$  represents the grid efficiency, which is the average primary energy-to-electricity conversion efficiency at the demand side. We note that, in both scenarios, the Si-PV modules are assumed to be installed in Europe. Thus the denominator in Eq. (1) is the same for both scenarios. In our calculation, we consider the Southern European condition with irradiation of 1700 kWh/(m<sup>2</sup> yr) and a performance ratio of 0.75. The module efficiency for mono-Si, multi-Si and ribbon-Si modules is 14.0%, 13.2% and 12.0%, respectively. The annual electricity production  $E_{agen}$  is equal to the product of irradiation, performance ratio, and module efficiency. The average conversion efficiency  $n_G$  is assumed as 0.31 for Europe. The EPBT estimates for both scenarios are presented in Fig. 3.

The EPBT of PV modules made in Europe have EPBTs of 1.9, 1.6 and 1.4 years for mono-Si, multi-Si and

ribbon-Si technologies, respectively. However, the PV modules made in China have the EPBTs of 2.4, 2.3 and 1.8 years for mono-Si, multi-Si and ribbon-Si technologies, respectively. As can be observed from the stacked column chart, the production of purified silicon is the most energy intensive part in the life cycle of Si-PV modules, which can occupy up to 47% of the EPBT for multi-Si modules. The substantial role of Si feedstock is rooted in the fact that acquisition of SoG-Si feedstock involves a large amount of electricity consumption (e.g., Siemens and modified Siemens processes). As a consequence, the different electricity mix and energy efficiency leads to the increase in EPBT in the overseas manufacturing scenario. Compared to the primary energy consumption associated with electricity use, the differences in other materials are less affected. For example, the differences in primary energy consumption for manufacturing glass and aluminum for module assembly contribute to a relatively insignificant increase in the EPBTs. The results indicate that the largest energy-saving potential lies in the Si feedstock acquisition phase, which can be achieved by development of new technology, higher usage of dedicated SoG-Si instead of EG-Si for Si-PV manufacturing, etc. To narrow the gap of CED and EPBT between the domestic and overseas manufacturing scenarios, a cleaner electricity mix in China is critical, which calls for the employment of more sustainable energy production systems such as Si-PVs themselves. Many countries have adopted policy mechanisms to encourage increased use of renewable energy generation, such as feed-in tariffs and direct subsidies to end users. However, note that the EPBTs presented in Fig. 3 represent the technology status as of 2004–2006, for which detailed LCI data are in the public domain. Current technologies should have lower EPBTs due to the use of novel purification processes for SoG-Si production and thinner wafer thickness. Also, the EPBTs are expected to continue decreasing in the future, though with ever decreasing marginal returns.

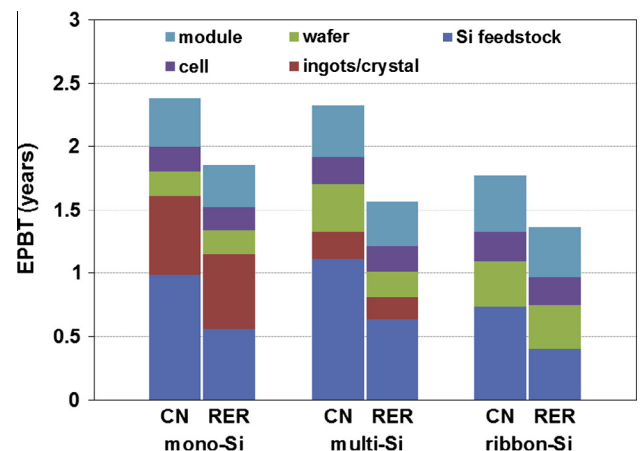


Fig. 3. Energy payback time (EPBT) results (CN: China, RER: Europe).

### 3.2. Energy return on energy investment

Besides the EBPT, it is crucial to measure the energy return on investment (EROI) of an energy production process for the sake of its long-term viability (Raugei et al., 2012). The traditional way of calculating the EROI of PVs is given as follows (Lloyd and Forest, 2010). According to Eq. (2), the value of EROI indicates how much electricity, valued as primary energy, can be returned for the investment of one unit of primary energy. We note that some researchers compute the EROI without prior conversion of the generated electricity into its primary energy equivalent, resulting in a difference by the factor of  $1/n_G$ .

$$\text{EROI} = \frac{\text{lifetime}}{\text{EPBT}} = \frac{\text{lifetime} \cdot E_{\text{agen}}/n_G}{\text{CED}} \quad (2)$$

In this life cycle study, we assume the lifetime of the three kinds of PV modules to be 30 years, in alignment with typical commercial guarantees. Based on the previous results on EPBTs, we present the EROIs for different Si-PV technologies and manufacturing scenarios in Fig. 4.

The calculated EROIs for Si-PV modules manufactured in Europe are 16.1, 19.1 and 22.0 for mono-Si, multi-Si and ribbon-Si technologies, respectively, while the EROIs for Si-PV modules made in China are 12.6, 12.9 and 16.9 for mono-Si, multi-Si and ribbon-Si technologies, respectively. As the EROIs are all greater than 1, the energy production over the Si-PV modules' lifetime is larger than the initial energy investment in the manufacturing process. Therefore, the larger EROI indicates higher net power generation potential. Because the EROI metric has a negative correlation with EPBT, ribbon-Si technology has the highest EROI among the three kinds of Si-PV modules. Comparing the EROI between the domestic and overseas manufacturing scenarios, we can see that the EROIs for Si-PV modules made in China are much lower than those made in Europe. This provides another perspective of the efficiency in energy use. For example, by burning 1 ton of coal

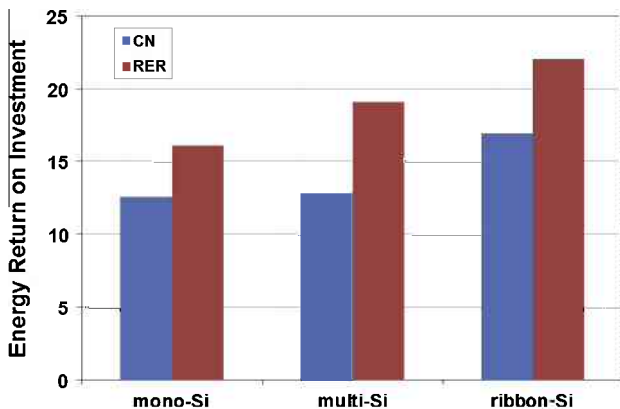


Fig. 4. Results of energy return on energy investment (CN: China, RER: Europe).

in Europe, one can achieve a higher electricity return from PVs than doing the same in China. Therefore, we can conclude that the domestic manufacturing scenario is favored for alleviating the resource depletion crisis.

### 4. Life cycle carbon footprint

A central advantage of PV technologies, in the context of increasing attention associated with anthropogenic climate change, is that they have an extraordinarily low carbon footprint with almost no greenhouse gas emissions (GHG) during operation, thus providing significant environmental benefits compared to traditional fossil-fuel or even nuclear technologies. Carbon footprint is usually measured by the amount of greenhouse gas emissions during the life cycle of the PV system, which involves direct emissions from manufacturing processes and various activities, as well as indirect emissions embedded in the materials and infrastructures. In this life cycle study, we estimate the carbon footprint as the equivalent amount of  $\text{CO}_2$  that has the same global warming potential (GWP) measured over an integrated time horizon of 100 years, using the most recent global warming potential factors published by IPCC (Forster and Ramaswamy, 2007; IPCC, 2007). The major emissions include  $\text{CO}_2$  (GWP = 1),  $\text{CH}_4$  (GWP = 25),  $\text{N}_2\text{O}$  (GWP = 298) and chlorofluorocarbons (GWP = 4750–14400), etc. Based on the discussion above, the carbon footprint can be calculated using the following formula,

$$CF = \frac{\sum_{i \in \text{GHG}} \lambda_i \cdot CE_i}{E_{\text{agen}}} \quad (3)$$

where  $CF$  stands for the life cycle carbon footprint of the PV system. Index  $i$  represent the species of emissions that belong to the GHG family.  $\lambda_i$  is the GWP factor corresponding to species  $i$ .  $CE_i$  is the cumulative emissions (direct and indirect) of species  $i$  during the life cycle of the system.  $E_{\text{agen}}$  is the annual generation of electricity, as mentioned before. The total weighted GHG emission is normalized by the annual generation of electricity, because we are interested in establishing the environmental cost, or carbon footprint price, that we pay per kWh electricity generated from the energy production process. Following this approach, we present the carbon footprint results for the three kinds of Si-PV technologies under both scenarios in Fig. 5.

The carbon footprint of the modules made in Europe is 37.3, 31.8 and 28.5 g  $\text{CO}_2\text{-eq./kWh}$  for mono-Si, multi-Si and ribbon-Si technology, respectively. However, the carbon footprint of the modules manufactured in China is 72.2, 69.2, and 54.3 g  $\text{CO}_2\text{-eq./kWh}$  for mono-Si, multi-Si and ribbon-Si technology, respectively. These results indicate that the carbon footprint of Si-PV modules in the overseas manufacturing scenario have almost doubled compared to the domestic manufacturing scenario. Since the manufacturing of Si-PV modules is an

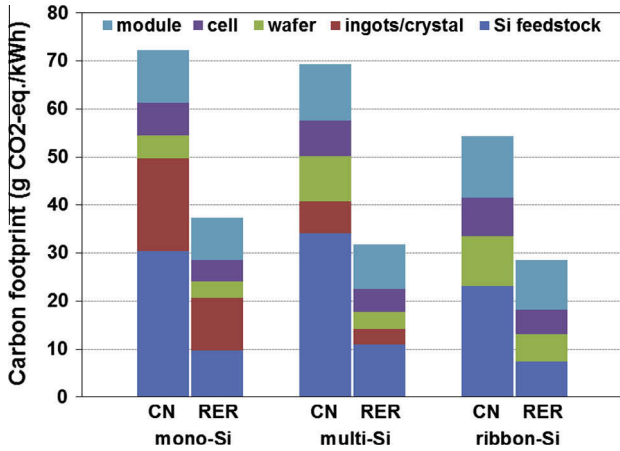


Fig. 5. Results of carbon footprints of Si-PV modules (CN: China, RER: Europe).

electricity-intensive process, most of the carbon footprint can be traced back to the generation of electricity. As mentioned before, China uses a large amount of coal for electricity generation, which is the least climate-friendly fossil fuel because of its high carbon intensity. Therefore, in comparison with Fig. 3, we can observe a similar profile between the EPBT and carbon footprint. Since the current Si-PV capacity in China is relatively small, large-scale installation of Si-PV production systems in China has great potential to restructure the electricity mix, which in return will help to reduce the carbon footprint and increase energy efficiency.

### 5. Break-even carbon tariff model

We propose a break-even carbon tariff model for Si-PV modules based on the previous calculation. As an essential part of post-Kyoto international climate negotiations, the “carbon tariff”, a means of carbon-based border tax adjustments, has been proposed to level the playing field by the United States, European Union and other OECD countries as a policy tool to protect competitive advantages of domestic industries (Bao et al., 2013; Kuik and Hofkes, 2010; van Asselt and Brewer, 2010). Furthermore, according to the Copenhagen accord, several participating countries are launching a carbon tax on their domestic industries to fulfill the pledged emission reduction targets (Meng et al., 2013; Zhang and Baranzini, 2004). However, the legality of carbon tariff policy under the WTO framework is still under discussion, while the carbon tax is currently only accepted in a few countries and localities. Since the focus of this work is on comparative life cycle studies of domestic and overseas manufacturing scenarios for Si-PV modules, we are not performing a comprehensive simulation and analysis for carbon-pricing policies covering all the sectors. The following carbon tariff break-even model is designed to provide insights on the economic impact of Si-PV carbon footprints.

$$\begin{aligned} & (Cost_{CN,raw} + Ctax_{CN} \cdot CF_{CN}) + (Ctar_{CN-RER} \cdot CF_{CN}) \\ & = (Cost_{RER,raw} + Ctax_{RER} \cdot CF_{RER}) \end{aligned} \quad (4)$$

where  $Cost_{A,raw}$  stands for the raw price excluding any carbon prices of Si-PVs manufactured in region A.  $Ctax_A$  is the carbon tax rate in region A.  $CF_A$  represents the carbon footprint of Si-PV modules made in region A.  $Ctar_{A-B}$  is the carbon tariff for Si-PV modules imported by region B from region A. The terms in the first bracket indicate the Si-PV module price in China after a carbon tax. Similarly, the terms in the third bracket indicate the Si-PV module price in Europe after a carbon tax. By inserting the terms in the second bracket, we set the cost of domestic and overseas manufacturing scenarios equal. Therefore,  $Ctar_{A-B}$  is called the break-even carbon tariff. Note that the anti-dumping tariff, which is another means of border tax adjustments to protect domestic industries, is not included in the calculation (ITA, 2012). This model establishes a simple relationship among the local manufacturing cost, carbon tax, carbon footprint, and cross-border carbon tariff. The calculated break-even value can serve as reference for setting future carbon tariffs. Imposing this carbon tariff will drive the overseas Si-PV manufacturers to reduce their carbon footprint and make the domestic Si-PV manufacturers more competitive in the marketplace, thus leading to more sustainable Si-PV manufacturing.

The raw costs of Si-PV modules made in Europe and China are 1.12 and 0.81 €/W<sub>p</sub>, respectively. These data are derived from typical spot market prices at the end of 2011 (Wissing, 2012; Xu et al., 2012). Instead of investigating each Si-PV technology individually, we take the average according to their share in global annual PV installation by technology at the end of 2011 (Fraunhofer, 2012), which are 46%, 53% and 1% for mono-Si, multi-Si and ribbon-Si technologies, respectively. This analysis suggests that the average carbon footprint for Si-PV modules is 1.32 and 2.70 kg CO<sub>2</sub> eq./W<sub>p</sub> for domestic and overseas manufacturing scenarios, respectively (see Appendix A for detailed calculations). Here, we normalize the carbon footprint in terms of watt-peak (W<sub>p</sub>), which is often employed as a measure of the nominal power of a photovoltaic solar energy device.

Knowing the raw prices and carbon footprints of Si-PV modules, we perform a scenarios analysis by varying the values of carbon tax in both domestic and overseas manufacturing scenarios. We assume that the carbon tax in China ranges from 0 to €10/ton CO<sub>2</sub>, because China started levying a carbon tax in 2012 at ¥10/ton CO<sub>2</sub>, and plans to increase the tax to ¥50/ton CO<sub>2</sub> by 2020 (Xinhua, 2013). We assume that the carbon tax in Europe ranges from 0 to €30/ton CO<sub>2</sub>, since different levels of carbon tax programs were launched in European countries (CTC, 2013). The results are presented in Fig. 6.

In Fig. 6, the X-axis is the carbon tax rate imposed in Europe, and the Y-axis is the break-even carbon tariff.

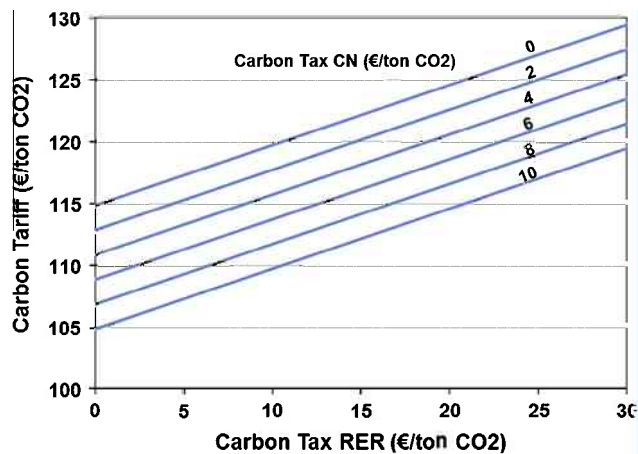


Fig. 6. Break-even carbon tariff.

The series of lines correspond to different levels of carbon tax rate imposed in China ranging from 0 to €10/ton CO<sub>2</sub>. A linear relationship between region-specific carbon taxes and break-even carbon tariff can be observed from the figure. The lowest carbon tariff is €105/ton CO<sub>2</sub> if carbon tax is absent in Europe while China has a carbon tax of €10/ton CO<sub>2</sub>. The highest carbon tariff is €129/ton CO<sub>2</sub> if carbon tax is absent in China while Europe has a carbon tax of €30/ton CO<sub>2</sub>. When carbon tax is absent in both China and Europe, the break-even carbon tariff is about €115/ton CO<sub>2</sub>. As an approximation of the current situation, the carbon tax rate in China and Europe is estimated to be €2 and €20/ton CO<sub>2</sub>, respectively. This corresponds to a break-even carbon tariff of €123/ton CO<sub>2</sub>. Considering the current trend towards stricter environmental restrictions, we expect the carbon tax rate both in China and Europe to increment upward in the future. In year 2020, the break-even carbon tariff may reach €119/ton CO<sub>2</sub>, corresponding to the carbon tax rate of €10 and €30/ton CO<sub>2</sub> for China and Europe, respectively.

Since the major parameters of the Si-PV technologies including conversion efficiency, wafer thickness, and material utilization are continuously improving, the above LCA and related calculations may not accurately represent the current or future data, warranting timely updates of these indicators. The comparative analysis reveals a significant difference in the energy and environmental impacts between domestic and overseas manufacturing scenarios. But, as China is adopting stricter energy and environmental policies, energy use efficiency and emission control in China are expected to improve, thus narrowing the difference in EPBT and carbon footprint between the two scenarios.

## 6. Conclusion

In this work, we conducted a life cycle energy and environmental comparative analysis using region-specific LCI databases, and investigated the domestic and

overseas scenarios for manufacturing three types of silicon-based photovoltaic (Si-PV) modules. Since China is the largest PV module producer in the world, while Europe is the largest consumer, we assert that the overseas manufacturing scenario better reflects the current status of the Si-PV supply chain. The results show that the Si-PV modules manufactured in China consume 28–48% more primary energy resources than their counterparts made in Europe, which indicates that the actual energy payback time (EPBT) of the installed PV modules were underestimated. Furthermore, the greenhouse gas (GHG) emissions embedded in Si-PV modules corresponding to the overseas manufacturing scenario were twice as much as those associated with the domestic scenario. This finding suggests that though lower cost of Si-PV modules could be achieved in the overseas manufacturing scenario, the contribution to the risk of global warming is actually doubled. The results of energy return on investment (EROI) also indicate that the relatively higher energy use efficiency in the domestic manufacturing scenario would be beneficial to the relief of the energy depletion crisis. In addition to the conventional energy and environmental analysis, we propose a carbon tariff break-even model, which establishes the correlation between local manufacturing cost, carbon footprint, carbon tax, and cross-border carbon tariff. It can provide reference for setting cross-border carbon tariffs and help to drive toward more sustainable of Si-PV manufacturing. We find that the break-even carbon tariff would be in the range of €105–€129/ton CO<sub>2</sub> as the carbon tax rate in China and Europe ranges from 0 to €10/ton CO<sub>2</sub> and to €30/ton CO<sub>2</sub>, respectively.

## Acknowledgements

The authors gratefully acknowledge the financial support from the Institute for Sustainability and Energy at Northwestern (ISEN). This work was performed, in part, at the Center for Nanoscale Materials, a U.S. Department of Energy, Office of Science, Office of Basic Energy Sciences User Facility under Contract no. DE-AC02-06CH11357. We are also grateful to IKE Environmental Technology Co. Ltd. for providing part of the life cycle inventory data from the Chinese Life Cycle Database (CLCD) for the life cycle energy and environmental analysis of the overseas manufacturing scenario.

## Appendix A. Calculation of average carbon footprint

According to the given nameplate capacity and module area, we can first calculate the capacity per functional unit. Then the average carbon footprint can be calculated according to the given market shares. Detailed calculations are given in the following table; the last two rows show that the average carbon footprint for Si-PV modules made in China and Europe is 2.70 and 1.32 kg CO<sub>2</sub> eq/W<sub>p</sub>, respectively.

	Mono-Si	Multi-Si	Ribbon-Si	Unit	Ref. #
Nameplate capacity	224	210	192	$W_p$	A1
Module area	1.6	1.6	1.6	$m^2$	A2
Capacity per area	140.00	131.25	120.00	$W_p/m^2$	A3 = A1/A2
Carbon footprint CN	386.71	349.55	249.25	$kg\ CO_2\ eq/m^2$	A4
Carbon footprint per capacity CN	2.76	2.66	2.08	$kg\ CO_2\ eq/W_p$	A5 = A4/A3
Carbon footprint RER	199.75	160.44	130.64	$kg\ CO_2\ eq/m^2$	A6
Carbon footprint per capacity RER	1.43	1.22	1.09	$kg\ CO_2\ eq/W_p$	A7 = A6/A3
Market share	46	53	1	%	A8
Average carbon footprint CN	<b>2.70</b>			$kg\ CO_2\ eq/W_p$	A9 = $\sum A5 \times A8$
Average carbon footprint RER	<b>1.32</b>			$kg\ CO_2\ eq/W_p$	A10 = $\sum A7 \times A8$

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## MEMORANDUM

TO: Mark Sandeen, Chair, Sustainable Lexington Committee

CC: Carl Valente, Town Manager

FROM: Karen Mullins, Conservation Administrator

DATE: February 18, 2015

RE: Solar Array and Conservation Land

Thank you for reaching out to me recently to investigate the feasibility of installing a ground mounted solar array, covering greater than 4 acres in area, on conservation land within Lexington.

Per our discussion, conservation land falls under the care, custody and control of the Conservation Commission for natural resources and watershed protection purposes pursuant to G.L.Ch. 40, § 8C. Further, conservation land is provided permanent environmental protection status under Article 97 of the state Constitution and can only be diverted to another use by the following: a majority vote of the Conservation Commission, and a two-thirds vote of the town meeting, followed by a two-thirds vote of the state Legislature. The disturbance of permanently protected undeveloped conservation land to install a ground mounted solar array, covering greater than 4 acres in area, could be considered a diversion of conservation land to another use under Article 97 of the state Constitution, and would thus require the votes described above.

In addition to your question regarding conservation land, you inquired about the feasibility of installing such a solar array on undeveloped town-owned land off Hartwell Avenue, shown as Lot 2 on Assessors Map 80. According to available plans and GIS map references, this subject lot contains extensive protected wetland resource areas, including bordering vegetated wetlands, bordering land subject to flooding, and riverfront area. Because of this, installation of such a solar array would be subject to both the Massachusetts Wetland Protection Act and Lexington's Wetland Protection Code and would require a Notice of Intent filing and a permit from the Conservation Commission. As part of the Conservation Commission's review, the Commission would consider the project plans and details to determine whether the project complied with the performance standards of the Commission's regulations. However, based on the large size of the proposed solar array and the extensive protected wetland resource areas on the lot, compliance with the performance standards of the wetland protection regulations would be very challenging.

Please do not hesitate to contact the Conservation Commission or me if there are further questions during this process.

Dear Mark,

You asked me for my opinion on the feasibility of placing solar farm installations on Town Conservation land or other open space parcels. I am happy to share with you what I have learned as Chair of the Greenways Corridor Committee (GCC) as we have explored the possibility of establishing additional trail connections on various parcels of Town owned land, Conservation or otherwise.

My understanding regarding the management of Town Conservation land is that it would require an affirmative vote of Town Meeting followed by a vote in favor by the State Legislature to reverse the protected status of land designated as Conservation land in order to allow any construction other than trail improvements to take place, let alone something on the scale of a solar farm. It goes without saying that approval and recommendation by the Town's Conservation Administrator followed by that of the Conservation Commission, as custodians of the Town's Conservation holdings, would be necessary to bring such a matter before Town Meeting. And I am not going to even speculate on the likelihood of generating sufficient voter support in the town to support such an action.

As we on the GCC have discovered over the last couple of years, the Town does own other parcels of undeveloped land that do not have Conservation status, but most are either wetlands or wooded in nature. The challenge in considering building on wetlands, especially wetlands lying within the 100 year flood plain, is that State and Federal Army Corps of Engineers wetlands protective zoning restrictions pretty much preclude most development possibilities due to the high cost of remediation. And it goes without saying that the challenge in considering wooded parcels is that the land would need to first be cleared, this action itself contributing negatively to the planet's greenhouse gas equation leaving aside the costs involved.

I think it is fairly safe to say that most any open space of any size in Lexington that is free of trees is either a playing field, park, active farmland, or meadowland under Conservation status.

Which brings us back to the Town's Recycling facility on Hartwell Avenue as the only reasonable sized land parcel in town that might be considered for a solar farm installation that would not entail the regulatory hurdles outlined above.

I hope this has been useful in your quest. Please do not hesitate to contact me if you have further questions.

Keith Ohmart, Chair  
Greenways Corridor Committee



## Lynne Pease

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**From:** Mark Sandeen <mark.sandeen@sustainablelexington.org>  
**Sent:** Friday, February 20, 2015 10:45 AM  
**To:** Lynne Pease  
**Subject:** FW: Firing Range

Chief Corr's statement for the Board.

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**From:** Carl Valente <cvalente@lexingtonma.gov>  
**Date:** Friday, February 6, 2015 4:52 PM  
**To:** Mark Sandeen <mark.sandeen@sustainablelexington.org>  
**Subject:** FW: Firing Range

Mark,

Per our discussion – from Chief Corr.

Carl

Carl F. Valente  
Town Manager  
1625 Massachusetts Avenue  
Lexington, MA 02420  
781 698-4545 (*new direct phone number as of March 2014*)  
781 861-2921 (*fax*)

*(When writing or responding please understand that the Secretary of State has determined that emails are a public record and, therefore, may not be kept confidential.)*

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**From:** Mark Corr  
**Sent:** Friday, February 06, 2015 4:50 PM  
**To:** Carl Valente  
**Subject:** RE: Firing Range

Good afternoon,

I do not have any new maps in front of me but they had previously left sufficient space with DPW operations being moved.

Mark

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## Lynne Pease

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**From:** Mark Sandeen <marksandeen@gmail.com>  
**Sent:** Friday, February 20, 2015 10:50 AM  
**To:** Lynne Pease  
**Subject:** Solar at Lexington Community Farm

Here is LexFarm's statement regarding the potential for putting solar at the farm.

----- Forwarded message -----

**From:** Ken Karnofsky <[kenkarno@gmail.com](mailto:kenkarno@gmail.com)>  
**Date:** Sun, Feb 15, 2015 at 5:46 PM  
**Subject:** Solar at Lexington Community Farm  
**To:** Mark Sandeen <[marksandeen@gmail.com](mailto:marksandeen@gmail.com)>

Mark,

I understand that you are evaluating suitability of open space in Lexington for siting solar arrays to generate clean power for the Town. While LexFarm supports the goal of solar-generated power for the town, unfortunately the land that LexFarm is leasing for use as a community farm is not suitable for solar installation. The property has limited tillable acreage, and reducing it further would be inconsistent with the mission of a sustainable community farm. The remaining land is needed for access to the fields or is located close to wetlands (Arlington Reservoir).

Regards,  
Ken Karnofsky  
President, LexFarm Board of Directors

**Subject:** RE: Lexington Solar Project - Board of Selectmen's Meeting  
**Date:** Sunday, January 25, 2015 5:38:41 PM Eastern Standard Time  
**From:** Miles Hovis  
**To:** Mark Sandeen

Yes, having home office in SF has its advantages, in addition to its challenges...

I've run some iterations to ground. First off, good news: we've managed to fit the \$175k allowance for the bins into both iterations – 1.25 and 2.5 MWdc – through some shifts in site prep allowance. So we're covered there.

Second, on top of the \$175k, I've plotted out an adder for increments for \$100k up to \$500k (so \$675k total non-project site work) for the 2.5 MWdc option. The cost adder is \$0.003/kWh (three-tenths of a cent) per \$100k of rubble removal cost, over and above the \$0.0975/kWh base PPA with PILOT. As you say, it's likely to be a non-cost (or even some revenue), but this way we're covered in any remotely rational scenario.

Let me know if you have any questions.

Thanks!

Miles

Miles Hovis | Project Development Manager | SolarCity | T: 704.813.4027 | [mhovis@solarcity.com](mailto:mhovis@solarcity.com) | [www.solarcity.com](http://www.solarcity.com)

HIC 168572 / MA Lic. 1136MR

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**From:** Mark Sandeen [<mailto:mark.sandeen@sustainablelexington.org>]  
**Sent:** Sunday, January 25, 2015 5:12 PM  
**To:** Miles Hovis  
**Subject:** Re: Lexington Solar Project - Board of Selectmen's Meeting

You dog you... skating out of town before the storm of the century...  
I wish I had business in sunny California as well.

The financial loose end that would be great to close – is the issue we discussed last time about creating an index on the PPA price to deal with the rubble pile costs.

Has your team run those numbers yet? If not, you might want to consider adding another point on the curve - \$150K, \$300K, \$450K, \$600K. I know we think it is probably going to be zero – and certainly much lower than \$600K, but..... They were talking about \$800K before Mike brought them back to earth.

I'm assuming the index number would apply only to the ground mount PPA rate – since the canopies do not have any effect on the rubble pile.

Mark

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**From:** Miles Hovis <[mhovis@solarcity.com](mailto:mhovis@solarcity.com)>  
**Date:** Sunday, January 25, 2015 4:56 PM  
**To:** Mark Sandeen <[mark.sandeen@sustainablelexington.org](mailto:mark.sandeen@sustainablelexington.org)>  
**Subject:** RE: Lexington Solar Project - Board of Selectmen's Meeting

Thanks, Mark. I've actually had to change my flight plans to SF next week to avoid the snow, and I'll be relying on my good friends at Brightfields to represent the team at tomorrow's BoS meeting, as necessary. My flight is at 11:30 a.m. tomorrow.

Would you like to jump on the phone tonight or tomorrow to tie off any loose ends on the financial model before the meeting?

Thanks,

Miles

Miles Hovis | Project Development Manager | SolarCity | T: 704.813.4027 | [mhovis@solarcity.com](mailto:mhovis@solarcity.com) | [www.solarcity.com](http://www.solarcity.com)

HIC 168572 / MA Lic. 1136MR

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**From:** Mark Sandeen [<mailto:mark.sandeen@sustainablelexington.org>]  
**Sent:** Sunday, January 25, 2015 4:49 PM  
**To:** Caitlin McSherry; Miles Hovis; Lyle Rawlings ([lyle@advancedsolarproducts.com](mailto:lyle@advancedsolarproducts.com)); Dan Voss ([voss.dan@gmail.com](mailto:voss.dan@gmail.com)); William Hadley ([whadley@lexingtonma.gov](mailto:whadley@lexingtonma.gov)); Robert Beaudoin ([rbeaudoin@lexingtonma.gov](mailto:rbeaudoin@lexingtonma.gov))  
**Cc:** John Hanselman; Mike Singer; Bruce Haskell ([bhaskell@langdonenv.com](mailto:bhaskell@langdonenv.com)); Ronald Kelly  
**Subject:** Lexington Solar Project - Board of Selectmen's Meeting

The current plan is that the Board of Selectmen meeting is still on for tomorrow night.

They are planning to hold the meeting if the forecast in the morning is for "normal" snowfall amounts prior to 9:30PM tomorrow night. We will have the final word by mid-morning.

The current agenda has us up at 7:45PM, but they are planning to rearrange the schedule to have the solar agenda item start closer to 7:00, so those who are traveling from outside Lexington can get home sooner.

[http://www.egovlink.com/public\\_documents300/lexington/published\\_documents/meeting%20postings/2015----Jan-Feb%20Agenda/2015-01-26-BOS.pdf](http://www.egovlink.com/public_documents300/lexington/published_documents/meeting%20postings/2015----Jan-Feb%20Agenda/2015-01-26-BOS.pdf)

If this meeting is canceled or postponed, the next full Board of Selectmen meeting is currently scheduled for February 9th.

Talk to you tomorrow,  
Mark

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This email has been scanned for email related threats and delivered safely by Mimecast.  
For more information please visit <http://www.mimecast.com>

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**Subject:** RE: Proposed PPA Pricing

**Date:** Thursday, November 13, 2014 9:52:06 AM Eastern Standard Time

**From:** Miles Hovis

**To:** Mark Sandeen

**CC:** Dan Voss, JOHN B.HANSELMAN, Mike Singer, Ronald Kelly

Mark,

Please see the table below for parameters and assumptions. Per the relevant line below, we've assumed that the Town will waive local building and electrical permitting fees, as this is a project for the Town, as Needham did for their landfill project. Our interconnection fee assumption is also based on our experience with the Needham project – a similar grid-direct interconnection in NSTAR-NEMA territory.

Please let me know what else you would like to see to make your presentation.

Thanks,

Miles

	Maximum	Option 1	Option 2	Carport
<b>System Size (kWdc)</b>	3,683.79	1,004.67	1,251.72	1,004.67 or 500
<b>SREC Factor</b>	0.8	0.8	0.8	1
<b>Specific Yield (kWh/kWp)</b>	1283	1274	1275	1183
<b>PILOT Rate</b>	\$0	\$0	\$0	\$0
<b>Lease Rate</b>	\$0	\$0	\$0	\$0
<b>Term (All Agreements)</b>	20	20	20	20
<b>Tilt</b>	20 degrees	20 degrees	20 degrees	6 degrees
<b>Utility Upgrades Fee Assumption</b>	\$150,000			
<b>Environmental Permits &amp; Civil Engineering Assumption</b>	\$125,000			
<b>Local AHJ Permits Assumption</b>	\$0			
<b>PPA rate (\$/kWh)</b>	\$0.0685	\$0.08	\$0.0775	\$0.18
<b>PPA escalation rate (%/Year)</b>	0%	0%	0%	0%

Miles Hovis | Project Development Manager | SolarCity | T: 704.813.4027 | [mhovis@solarcity.com](mailto:mhovis@solarcity.com) | [www.solarcity.com](http://www.solarcity.com)

HIC 168572 / MA Lic. 1136MR

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**From:** Mark Sandeen [mailto:mark.sandeen@sustainablelexington.org]

**Sent:** Thursday, November 13, 2014 8:31 AM

**To:** Miles Hovis

**Cc:** Dan Voss; JOHN B.HANSELMAN

**Subject:** Re: Proposed PPA Pricing

John and Miles,

I will need to know the proposed first year production in kWh for each of the proposed arrays including the carports.

Please provide this information at your earliest opportunity.

Thanks,  
Mark

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**From:** Miles Hovis <[mhovis@solarcity.com](mailto:mhovis@solarcity.com)>  
**Date:** Wednesday, November 12, 2014 7:21 PM  
**To:** Mark Sandeen <[mark.sandeen@sustainablelexington.org](mailto:mark.sandeen@sustainablelexington.org)>  
**Cc:** Dan Voss <[voss.dan@gmail.com](mailto:voss.dan@gmail.com)>, John Hanselman <[jhanselman@brightfieldsllc.com](mailto:jhanselman@brightfieldsllc.com)>  
**Subject:** RE: Proposed PPA Pricing

Mark,

Thank you for your patience while I wrangled with home office.

For the three options currently under consideration, we have established these PPA rates:

1.25 MWdc = \$0.0775/kWh, 0% escalation, 20 years  
1.0 MWdc = \$0.08/kWh, 0% escalation, 20 years  
3.7 MWdc = \$0.0685/kWh, 0% escalation, 20 years

As discussed, these rates assume \$0 in revenue to the Town in the form of lease and PILOT payments. Final pricing will be adjusted to account the ultimate contractual amounts specified within those agreements:

The carports are proving difficult to model, due to the custom nature and unusual installation environment. As my Structured Finance team noted this afternoon, this may well be the first solar canopy structure installed on a capped landfill, ever, anywhere. Much will depend on the minimum height of the canopy structure and the type of foundation system MA DEP will allow us to employ. Our current estimates place the carport rates in the \$0.18/kWh range, 0% escalation, for 20 years. If you'd prefer, we can apply an escalator to sculpt down the starting rate in line with projected utility rate increases.

Please let me know if you have any questions as you prepare your presentation for the Selectmen.

Thank you,

Miles

Miles Hovis | Project Development Manager | SolarCity | T: 704.813.4027 | [mhovis@solarcity.com](mailto:mhovis@solarcity.com) | [www.solarcity.com](http://www.solarcity.com)

HIC 168572 / MA Lic. 1136MR

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**From:** Mark Sandeen [<mailto:mark.sandeen@sustainablelexington.org>]  
**Sent:** Wednesday, November 12, 2014 2:26 PM  
**To:** Miles Hovis  
**Subject:** Re: Proposed PPA Pricing

Excellent!

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**From:** Miles Hovis <[mhovis@solarcity.com](mailto:mhovis@solarcity.com)>  
**Date:** Wednesday, November 12, 2014 2:19 PM  
**To:** Mark Sandeen <[mark.sandeen@sustainablelexington.org](mailto:mark.sandeen@sustainablelexington.org)>  
**Cc:** Dan Voss <[voss.dan@gmail.com](mailto:voss.dan@gmail.com)>

**Subject:** RE: Proposed PPA Pricing

Absolutely, Mark. I'll have those finalized and over to you within the hour.

Miles Hovis | Project Development Manager | SolarCity | T: 704.813.4027 | [mhovis@solarcity.com](mailto:mhovis@solarcity.com) | [www.solarcity.com](http://www.solarcity.com)

HIC 168572 / MA Lic. 1136MR

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**From:** Mark Sandeen [<mailto:mark.sandeen@sustainablelexington.org>]

**Sent:** Wednesday, November 12, 2014 2:18 PM

**To:** Miles Hovis

**Cc:** Dan Voss

**Subject:** Proposed PPA Pricing

Miles,

Could you send through the proposed PPA pricing we should be using to prepare our briefing for the Board of Selectmen?

As we discussed – I'd like to see PPA prices for the 1MW, 1.25MW and 4MW ground mount systems.

I would like to see separate pricing for the solar canopy options of 500kW and 1MW.

Thank you,  
Mark Sandeen

## Lynne Pease

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**From:** Mark Sandeen <mark.sandeen@sustainablelexington.org>  
**Sent:** Friday, February 20, 2015 1:20 PM  
**To:** Lynne Pease  
**Subject:** FW: Solar Incentives and Timing

Lynne,

I don't know if the package has gone out already – but this just came in a few minutes ago – from the Town's 3rd party solar owner's agent.

Very few organizations understand the solar marketplace better than Cadmus.

Mark

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**From:** Danielle Burns <[Danielle.Burns@cadmusgroup.com](mailto:Danielle.Burns@cadmusgroup.com)>  
**Date:** Friday, February 20, 2015 11:53 AM  
**To:** Mark Sandeen <[mark.sandeen@sustainablelexington.org](mailto:mark.sandeen@sustainablelexington.org)>, "Daniel R E Voss ([dvoss@rivermoorsystems.com](mailto:dvoss@rivermoorsystems.com))" <[dvoss@rivermoorsystems.com](mailto:dvoss@rivermoorsystems.com)>  
**Cc:** David Beavers <[David.Beavers@cadmusgroup.com](mailto:David.Beavers@cadmusgroup.com)>  
**Subject:** Solar Incentives and Timing

Hi Mark and Dan,

Thanks for your question concerning incentives and timing for solar projects. The short answer is that it is key to secure incentives *as soon as possible*. Time is of the essence for the following reasons:

1. The federal Investment Tax Credit (30%) is set to sunset on 12/31/16. This incentive is a huge economic benefit that allows Brightfields/SolarCity to offer Lexington a favorable PPA rate.
2. Uncertainty in net metering incentive structure. As of 2/20/15, approximately 104 MW of capacity remains in the NSTAR public cab. However, legislation has been previously proposed (House Bill 4185) which would have significantly lowered the economic value of net metering (due to removal of a distribution credit). Proposals for subsequent legislation altering net metering are uncertain (e.g., limitations on virtual net metering), but have the potential to change the economic value of net metering for the Town of Lexington.
3. Pending legislative proposal from the Solar Net Metering Task Force in MA. The Task Force will be presenting solar incentive recommendations in March 2015 that could substantially change the incentive structure in MA. Although the structure of the revised incentive(s) is unclear at this time, a step-down in incentives offered is inevitable. For example, SREC-II incentives will likely end or change substantially after 7/31/15.
4. Uncertainty regarding incentives can negatively impact the solar market. Cadmus has seen viable solar projects stopped because of incentive uncertainty (e.g., from SREC-I to SREC-II). Cadmus advised the Town of Lexington to delay release of their solar RFQ by 6 months to ensure that there was more certainty in the market. Unfortunately, any further delays would likely result in the tabling of Lexington's solar project (due to the sunset of the federal ITC).
5. Substantial timeline to develop a solar project. Lexington should be sure to allow appropriate time for the Selectmen to approve the EMS (2 months); prepare the site and receive utility and regulatory approvals (4-6 months); and bring the project online (~12 months from Selectmen approval). This places the solar project online in about mid-February 2016. Again, time is of the essence.



In conclusion, the federal and state incentives for solar are likely as good as they are going to get, and Lexington should move forward expeditiously to ensure that it receives the best possible economic value for this solar project.

Please let me know if you have any questions or concerns.

Regards,  
Danielle

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**Danielle Burns** (formerly Poulin) | Senior Analyst  
The Cadmus Group, Inc.  
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Office: 617.673.7169 | Fax: 617.673.7369  
[www.cadmusgroup.com](http://www.cadmusgroup.com)



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# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**                      **PRESENTER:**                      **ITEM NUMBER:**  
2/23/2015                      Joe Pato                                      I.7

**AGENDA ITEM TITLE:**

Article Presentations/Positions (20 min.)

**SUMMARY:**

Attached is a table with all of the articles listed to be used to take positions on all of the articles for the Annual Town Meeting and the two Special Town Meetings.

I have left a message for the proponent for Article 43, asking if they could come to your meeting to provide information on the purpose of the article. I have not heard from them so they may be away. I have left the item on the agenda in case I hear from them on Monday and they can attend.

**RECOMMENDATION / SUGGESTED MOTION:**

**FOLLOW-UP:**

**APPROXIMATE TIME ON AGENDA:**

8:25 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> 2015 Specials and Annual Town Meeting Warrant	Cover Memo
<input type="checkbox"/> Article Position Table	Backup Material



ARTICLE	FINANCIAL ARTICLES (continued)	PRESENTATION	JP	PK	NC	MC	SB	AC	CEC	SC
Article 8	<p>Appropriate the FY2016 Community Preservation Committee Operating Budget and CPA Projects:</p> <ul style="list-style-type: none"> <li>a) Conservation Meadow Preservation Program</li> <li>b) Parker’s Revenge Site Restoration</li> <li>c) First Parish Church Restoration Historic Structure Report</li> <li>d) Cary Memorial Building Records Center Shelving</li> <li>e) Battle Green Streetscape Improvements</li> <li>f) Community Center Sidewalk Design</li> <li>g) Cary Memorial Building Sidewalk Enhancement</li> <li>h) Community Center Preservation Restriction Endowment</li> <li>i) Park and Playground Improvements</li> <li>j) Park Improvements – Athletic Fields</li> <li>k) Park and Playgrounds ADA Accessibility Study</li> <li>l) Parks Improvements – Hard Court Resurfacing</li> <li>m) Lincoln Park Field Improvements – Phase 3</li> <li>n) Minuteman Bikeway Culvert Rehabilitation</li> <li>o) Grain Mill Alley Design Funds</li> <li>p) Minuteman Bikeway Wayfinding Signs – Design Funds</li> <li>q) Lower Vine Brook Paved Recreation Path Reconstruction</li> <li>r) Community Preservation Fund Debt Service</li> <li>s) Administrative Budget</li> </ul>									













# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**      **PRESENTER:**

2/23/2015 Carl F. Valente, Town Manager; Rob Addelson, Assistant Town  
Manager for Finance

**ITEM  
NUMBER:**

I.8

**AGENDA ITEM TITLE:**

Approve FY2016 Recommended Budget (10 min.)

**SUMMARY:**

Selectmen to consider the operating, enterprise and capital budgets to be included in the FY2106 Recommended Budget (i.e., Brown Book) to be submitted to Town Meeting and the financial committees.

See attached information explaining proposed changes to the Preliminary Budget.

**RECOMMENDATION / SUGGESTED MOTION:**

1. Move to approve the FY2016 Operating Budget as presented. Further, to (approve) (defer) the Town Manager's proposed creation of the Office of Land Use, Inspectional Services and Economic Development, to be comprised of the Planning, Building Commissioner/Zoning Enforcement, Conservation, Health and Economic Development offices.
2. Move to approve the FY2016 Enterprise Fund Budgets as presented. Further, to approve the Town Manager's proposed creation of the Department of Recreation and Community Programs.
3. Move to (approve) (defer) the FY2016 Capital Budget as presented, with the exception of the School Facilities Master Planning projects.

**FOLLOW-UP:**

Finance will complete the FY2016 Recommended Budget and Financing Plan (Brown Book) for electronic distribution on February 27 and hard copy distribution the following week.

**APPROXIMATE TIME ON AGENDA:**

8:45 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> Proposed Changed to the FY2016 Recommended Budget and Financing Plan	Backup Material
<input type="checkbox"/> Summary of Revenues and Expenditures; Revenue Summary	Exhibit
<input type="checkbox"/> FY2016 Recommended Operating Budget	Exhibit
<input type="checkbox"/> Recommended FY2016 Enterprise Fund Budgets	Exhibit
<input type="checkbox"/> FY2016 Recommended Capital Budget	Exhibit



## Town of Lexington Town Manager's Office

Carl F. Valente, Town Manager  
Linda Crew Vine, Deputy Town Manager

Tel: (781) 698-4540  
Fax: (781) 861-2921

### Proposed Changes to the FY2016 Recommended Budget and Financing Plan

The following are the proposed changes to the FY16 budget:

#### Operating Budget:

- Facilities Budget:** The School Committee, at its meeting on February 24<sup>th</sup>, will be acting on Pat Goddard's request to add a \$108,500 vehicle with aerial lift for use by the electrician. Mr. Goddard believes this vehicle is of higher priority than other capital projects and, therefore, has recommending reducing the following capital projects, so as not to increase the overall cash capital budget:
  - Interior painting: (\$24,169)
  - Diamond Middle School Backboard Motors: (\$25,300)
  - LHS Bike Racks: (\$31,531)
  - Electrician's Van: (\$30,000)Further, the Facilities Budget has been increased by approximately \$26,000 to reflect the lease costs for the standard modular classrooms proposed for the Fiske School, although this may change once the final School Facilities Master Plan is approved.
- Health Insurance Budget:** Increased by approximately \$530,000 to reflect a 7.5% increase in premiums. The White Book version of the budget has included a 5% increase. Final GIC rates will be approved on March 4.
- Minuteman High School:** Reduced by \$97,186 to reflect the final assessment.
- Library Budget:** Updated salary figures to reflect the new collective bargaining agreement. This does not increase the overall municipal budget as the dollar impact of this agreement has been taken from the Salary Adjustment Account line-item.
- Office of Land Use, Inspectional Services and Economic Development:** Budgets of Planning, Conservation, Health, Economic Development and Building Commissioner have been consolidated, based on Town Manager's recommendation to the Board of Selectmen for reorganizing these departments under a new Assistant Town Manager Position. Further, the proposed Assistant Town Manager position previously shown in the Town Manager's budget is now shown in this budget.
- Salary Transfer Account:** Reduced by approximately \$90,000 based on revised cost of future contract settlements and the Library union collective bargaining agreement explained above.
- Appropriation from the Capital Stabilization Fund:** The appropriation from this fund has been reduced by approximately \$50,000 as a result of the actual interest rate from the recent bond sale being lower than estimated. This appropriation is recommended in order to keep the growth of within-levy debt service at 5 percent.

8. **Appropriation to the Capital Stabilization Fund:** The appropriation to this fund has been reduced by approximately \$250,000, to \$9,533,000, to reflect all of the other changes listed here.

### **Capital Budget:**

1. **Middle School Space Mining:** Reduced by \$350,000 to offset the \$500,000 increase for the High School modular classroom project. The remaining \$150,000 to be funded via a reserve fund transfer.
2. **Lexington Public Schools Educational Capacity Increase:** Current request by School Committee is \$4,080,000. May be adjusted at Summit 7.
3. **Fiske School Standard Modulares:** Current request by School Committee is \$842,000. May be adjusted at Summit 7.
4. **School Interior Painting:** Reduced by \$24,169. See Facilities Budget above.
5. **Diamond Middle School Motors for Backboards:** Reduced by \$25,300. See Facilities Budget above.
6. **LHS Bike Racks and Installation:** Reduced by \$31,531. See Facilities Budget above.
7. **Cary Memorial Building Sidewalk:** Increased by \$30,000 (CPA funding), based on HDC plan approved for this sidewalk.
8. **Supplemental Appropriation-LHS Modulares.** Increased by \$350,000 based on recent bids. Also see Middle School Space Mining above.
9. **DPW Equipment Replacement:** Increased by \$500,000 (debt) for Compost Windrow Turner, if solar project proceeds. Funding from Compost Revolving Fund.
10. **Sidewalk Improvements, Additions and Design:** Remaining at \$600,000. The Board of Selectmen, however, should consider whether Pleasant Street sidewalk feasibility study (\$20,000) and Prospect Hill sidewalk and intersection (\$100,000) should be funded with this proposed appropriation. Both of these projects are also citizen petition articles.

## Summary of Revenues & Expenditures

The summary below shows revenues & expenditures for the Town of Lexington for FY 2013-2016. It reflects actual results of FY2013 and FY2014, FY2015 estimated revenues and budgeted expenditures submitted to the Department of Revenue for the certification of the FY2015 tax rate, and the budget recommendations of the Town Manager and School Superintendent for FY2016 budget and projected revenues to support those recommendations.

Revenue Summary	FY2013 Actual	FY2014 Actual	FY2015 Recap	FY2016 Projected
Tax Levy	\$ 135,386,783	\$ 141,842,484	\$ 148,212,539	\$ 154,493,901
State Aid	\$ 9,410,134	\$ 10,214,580	\$ 11,193,462	\$ 11,430,692
Local Receipts	\$ 12,092,846	\$ 14,374,770	\$ 9,853,431	\$ 11,769,694
Local Receipts not shown on Recap	\$ -	\$ -	\$ 915,952	\$ -
Available Funds	\$ 7,249,652	\$ 12,473,510	\$ 11,012,293	\$ 15,604,229
Other Available Fund: Use of Capital Project/Debt Service Reserve/Building Renewal Stabilization Fund			\$ 919,000	\$ 653,602
Revenue Offsets	\$ (1,645,350)	\$ (1,644,621)	\$ (2,492,221)	\$ (1,987,549)
Enterprise Funds (Indirect)	\$ 1,512,892	\$ 1,497,405	\$ 1,487,905	\$ 1,617,576
<b>Total General Fund</b>	<b>\$ 164,006,957</b>	<b>\$ 178,758,128</b>	<b>\$ 181,102,361</b>	<b>\$ 193,582,145</b>
<b>General Fund Expenditure Summary</b>				
<b>Education</b>				
Lexington Public Schools	\$ 76,628,356	\$ 79,978,598	\$ 86,623,929	\$ 92,060,316
Minuteman Regional School	\$ 1,407,979	\$ 1,474,265	\$ 1,244,384	\$ 1,202,814
<i>sub-total Education</i>	\$ 78,036,335	\$ 81,452,863	\$ 87,868,313	\$ 93,263,130
Municipal Departments	\$ 29,443,136	\$ 30,406,706	\$ 31,957,312	\$ 33,578,271
<b>Shared Expenses</b>				
Benefits & Insurance	\$ 28,062,850	\$ 26,780,525	\$ 29,824,627	\$ 32,423,812
Debt (within-levy)	\$ 5,462,902	\$ 5,409,996	\$ 6,730,641	\$ 6,731,423
Reserve Fund	\$ -	\$ -	\$ 900,000	\$ 900,000
Facilities	\$ 9,343,330	\$ 9,667,013	\$ 9,897,675	\$ 9,844,657
<i>sub-total Shared Expenses</i>	\$ 42,869,081	\$ 41,857,533	\$ 47,352,943	\$ 49,899,893
<b>Capital</b>				
Cash Capital (designated)	\$ 3,902,794	\$ 6,919,202	\$ 5,958,117	\$ 4,952,905
<i>sub-total Capital</i>	\$ 3,902,794	\$ 6,919,202	\$ 5,958,117	\$ 4,952,905
<b>Other</b>				
General Stabilization Fund	\$ -	\$ -	\$ -	\$ -
Exempt Debt Service Mitigation	\$ -	\$ -	\$ -	\$ -
Other (allocated)	\$ 2,436,250	\$ 5,101,056	\$ 7,049,726	\$ 11,887,947
Other (unallocated)	\$ -	\$ -	\$ -	\$ -
<i>sub-total Other</i>	\$ 2,436,250	\$ 5,101,056	\$ 7,049,726	\$ 11,887,947
<b>Total General Fund</b>	<b>\$ 156,687,596</b>	<b>\$ 165,737,360</b>	<b>\$ 180,186,411</b>	<b>\$ 193,582,145</b>
<b>Surplus/(Deficit)</b>	<b>\$ 7,319,361</b>	<b>\$ 13,020,768</b>	<b>\$ 915,951</b>	<b>\$ (0)</b>

Revenue Summary

	FY13 Actual	FY14 Actual	FY15 Estimated	FY16 Projected	FY15-16 Change	
					\$	%
<b>Table 1: Property Tax Levy</b>						
Tax Levy	\$ 128,662,664	\$ 135,440,316	\$ 141,843,659	\$ 148,286,733	\$ 6,443,074	4.5%
Prop. 2.5%	\$ 3,217,107	\$ 3,386,008	\$ 3,546,091	\$ 3,707,168	\$ 161,077	4.5%
New Growth	\$ 3,560,545	\$ 3,017,335	\$ 2,896,983	\$ 2,500,000	\$ (396,983)	-13.7%
Override/Excess Levy Capacity	\$ (53,534)	\$ (1,175)	\$ (74,194)			
<b>Subtotal</b>	<b>\$ 135,386,783</b>	<b>\$ 141,842,484</b>	<b>\$ 148,212,539</b>	<b>\$ 154,493,901</b>	<b>\$ 6,281,362</b>	<b>4.2%</b>
<b>Table 2: State Aid</b>						
Chapter 70	\$ 7,876,799	\$ 8,657,571	\$ 9,584,428	\$ 9,824,039	\$ 239,611	2.5%
Charter School Reimbursement	\$ 18,769	\$ 12,628	\$ 1,786	\$ 20,571	\$ 18,785	1051.8%
Unrestricted General Government Aid	\$ 1,296,276	\$ 1,326,917	\$ 1,363,715	\$ 1,397,808	\$ 34,093	2.5%
Veterans' Benefits & Exemptions	\$ 156,539	\$ 147,543	\$ 169,557	\$ 127,726	\$ (41,831)	-24.7%
Offsets (School Lunch & Library)	\$ 61,751	\$ 69,921	\$ 73,976	\$ 60,549	\$ (13,427)	-18.2%
<b>Subtotal</b>	<b>\$ 9,410,134</b>	<b>\$ 10,214,580</b>	<b>\$ 11,193,462</b>	<b>\$ 11,430,692</b>	<b>\$ 237,230</b>	<b>2.1%</b>
<b>Table 3: Local Receipts</b>						
Motor Vehicle Excise Tax	\$ 4,300,549	\$ 4,695,332	\$ 3,751,289	\$ 4,500,000	\$ 748,711	20.0%
Other Excise	\$ 1,415,189	\$ 1,608,573	\$ 1,262,629	\$ 1,460,000	\$ 197,371	15.6%
Penalties & Interest	\$ 468,003	\$ 670,076	\$ 312,912	\$ 347,000	\$ 34,088	10.9%
PILOT's	\$ 539,258	\$ 535,492	\$ 499,562	\$ 589,000	\$ 89,438	17.9%
Rentals	\$ 336,836	\$ 384,180	\$ 295,071	\$ 257,230	\$ (37,841)	-12.8%
Departmental-Schools	\$ 272,741	\$ 272,741	\$ 374,132	\$ 502,000	\$ 127,868	34.2%
Departmental-Municipal	\$ 1,516,166	\$ 1,604,149	\$ 1,366,018	\$ 1,867,000	\$ 500,982	36.7%
Licenses & Permits <sup>2</sup>	\$ 1,698,028	\$ 1,689,164	\$ 1,408,081	\$ 1,597,464	\$ 189,383	13.4%
Special Assessments	\$ 24,312	\$ 103,086	\$ 18,299	\$ 17,000	\$ (1,299)	-7.1%
Fines & Forfeits	\$ 335,984	\$ 376,800	\$ 307,423	\$ 345,000	\$ 37,577	12.2%
Investment Income	\$ 272,998	\$ 278,458	\$ 258,015	\$ 288,000	\$ 29,985	11.6%
Miscellaneous Non-Recurring	\$ 912,784	\$ 2,156,721	\$ -	\$ -	\$ -	
Local Receipts not shown on Recap			\$ 915,952			
<b>Subtotal</b>	<b>\$ 12,092,846</b>	<b>\$ 14,374,770</b>	<b>\$ 10,769,383</b>	<b>\$ 11,769,694</b>	<b>\$ 1,000,311</b>	<b>9.3%</b>
<b>Table 4: Available Funds</b>						
Parking	\$ 335,000	\$ 335,000	\$ 335,000	\$ 395,000	\$ 60,000	17.9%
Cemetery	\$ 105,000	\$ 105,000	\$ 105,000	\$ 105,000	\$ -	0.0%
Free Cash	\$ 6,269,024	\$ 11,650,931	\$ 9,380,309	\$ 13,108,282	\$ 3,727,973	39.7%
Health Claims Trust Fund	\$ -	\$ -	\$ 1,000,000	\$ 1,858,947	\$ 858,947	85.9%
Insurance Proceeds	\$ 200,000	\$ -	\$ -	\$ -	\$ -	---
Transp.Demand Mgmt. Stab. Fund	\$ 85,160	\$ 90,000	\$ 88,000	\$ 137,000	\$ 49,000	55.7%
Avalon Bay School Enrollment Mitigation Fund	\$ 250,000	\$ 250,000	\$ 49,096	\$ -	\$ (49,096)	-100.0%
Balances from Prior Yr. Capital Articles	\$ 5,468	\$ 42,579	\$ 54,888	\$ -	\$ (54,888)	-100.0%
<b>Subtotal</b>	<b>\$ 7,249,652</b>	<b>\$ 12,473,510</b>	<b>\$ 11,012,293</b>	<b>\$ 15,604,229</b>	<b>\$ 4,591,936</b>	<b>41.7%</b>
<b>Table 4a: Other Available Funds</b>						
Capital Project/Debt Service Reserve/Building Renewal Stabilization Fund	\$ -	\$ -	\$ 919,000	\$ 653,602	\$ (265,398)	-28.9%
<b>Subtotal</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 919,000</b>	<b>\$ 653,602</b>	<b>\$ (265,398)</b>	<b>-28.9%</b>
<b>Table 5: Revenue Offsets</b>						
Cherry Sheet Assessments	\$ (813,255)	\$ (795,309)	\$ (811,754)	\$ (877,000)	\$ (65,246)	8.0%
Cherry Sheet Offsets					\$ -	---
School Lunch	\$ (24,262)	\$ (30,207)	\$ (26,514)	\$ (23,099)	\$ 3,415	-12.9%
Public Libraries	\$ (37,489)	\$ (39,714)	\$ (47,462)	\$ (37,450)	\$ 10,012	-21.1%
Overlay (abatements)	\$ (770,344)	\$ (779,391)	\$ (953,485)	\$ (750,000)	\$ 203,485	-21.3%
Snow Deficit	\$ -	\$ -	\$ (653,006)	\$ (300,000)	\$ 353,006	-54.1%
<b>Subtotal</b>	<b>\$ (1,645,350)</b>	<b>\$ (1,644,621)</b>	<b>\$ (2,492,221)</b>	<b>\$ (1,987,549)</b>	<b>\$ 504,672</b>	<b>-20.2%</b>
<b>Table 6: Enterprise Receipts</b>						
Water	\$ 665,848	\$ 818,689	\$ 789,275	\$ 898,614	\$ 109,339	13.9%
Wastewater (Sewer)	\$ 623,444	\$ 450,116	\$ 465,030	\$ 478,354	\$ 13,325	2.9%
Recreation	\$ 223,600	\$ 228,600	\$ 233,600	\$ 240,608	\$ 7,008	3.0%
<b>Subtotal</b>	<b>\$ 1,512,892</b>	<b>\$ 1,497,405</b>	<b>\$ 1,487,905</b>	<b>\$ 1,617,576</b>	<b>\$ 129,671</b>	<b>8.7%</b>
<b>Gross General Fund Revenues</b>	<b>\$ 164,006,957</b>	<b>\$ 178,758,128</b>	<b>\$ 181,102,361</b>	<b>\$ 193,582,145</b>	<b>\$ 12,479,784</b>	<b>6.9%</b>
<b>Revenues Set Aside for Designated Expenses</b>	<b>\$ 6,339,044</b>	<b>\$ 16,129,376</b>	<b>\$ 14,449,660</b>	<b>\$ 14,540,572</b>	<b>\$ 90,912</b>	<b>0.6%</b>
<b>Net General Fund Revenues Available for Appropriation</b>	<b>\$ 157,667,913</b>	<b>\$ 162,628,752</b>	<b>\$ 166,652,701</b>	<b>\$ 179,041,573</b>	<b>\$ 12,388,872</b>	<b>7.4%</b>

ELEMENT	DESCRIPTION	A	B	C	D	E	G	H	I	
		FY2013 Actual	FY2014 Actual	FY2015 Appropriation	FY2016 Request	FY2016 Manager's Add/Delete	FY2016 Recommended	(G-C) Change \$	(H/C) Change %	
<b>Program 1000: Education</b>										
1100	Lexington Public Schools	\$ 76,628,356	\$ 79,978,598	\$ 86,623,929	\$ 92,060,318		\$ 92,060,318	\$ 5,436,387	6.28%	
1200	Regional Schools	\$ 1,407,979	\$ 1,474,265	\$ 1,244,384	\$ 1,202,814		\$ 1,202,814	\$ (41,570)	-3.34%	
<b>Total Education</b>		<b>\$ 78,036,335</b>	<b>\$ 81,452,863</b>	<b>\$ 87,868,313</b>	<b>\$ 93,263,130</b>	<b>\$ -</b>	<b>\$ 93,263,130</b>	<b>\$ 5,394,817</b>	<b>6.14%</b>	
<b>Program 2000: Shared Expenses</b>										
2110	Contributory Retirement	\$ 5,124,896	\$ 4,717,542	\$ 5,005,537	\$ 5,255,537		\$ 5,255,537	\$ 250,000	4.99%	
2120	Non-Contributory Retirement	\$ 12,696	\$ 13,087	\$ 13,447	\$ 13,810		\$ 13,810	\$ 363	2.70%	
2130	Employee Benefits	\$ 21,635,504	\$ 20,726,558	\$ 23,041,965	\$ 24,428,836	\$ 825,028	\$ 25,251,045	\$ 2,209,080	9.59%	
2130	Medicare	\$ 1,242,409	\$ 1,312,582	\$ 1,353,328	\$ 1,425,814		\$ 1,478,329	\$ 725,000	9.24%	
2130	Health Insurance	\$ 19,495,823	\$ 18,658,694	\$ 20,768,629	\$ 22,011,525	\$ 52,514	\$ 22,750,714	\$ 1,991,885	9.54%	
2130	Dental Insurance	\$ 875,062	\$ 730,287	\$ 898,208	\$ 968,302	\$ 30,500	\$ 998,808	\$ 100,601	11.20%	
2130	Life Insurance	\$ 22,210	\$ 18,036	\$ 21,600	\$ 23,195		\$ 23,195	\$ 1,595	7.38%	
2140	Unemployment	\$ 103,321	\$ 217,608	\$ 200,000	\$ 200,000		\$ 200,000	\$ -	0.00%	
2150	Workers Compensation*	\$ 511,130	\$ 360,170	\$ 612,223	\$ 620,000		\$ 643,112	\$ 30,889	5.05%	
2160	Property & Liability Insurance	\$ 624,947	\$ 706,487	\$ 778,455	\$ 860,309	\$ 23,112	\$ 880,309	\$ 83,854	10.80%	
2170	Uninsured Losses*	\$ 50,556	\$ 39,033	\$ 175,000	\$ 200,000		\$ 200,000	\$ 25,000	14.29%	
<b>sub-total 2100 Benefits</b>		<b>\$28,002,850</b>	<b>\$ 26,780,525</b>	<b>\$ 29,624,627</b>	<b>\$ 31,578,491</b>	<b>\$ 848,138</b>	<b>\$ 32,423,812</b>	<b>\$ 2,590,186</b>	<b>8.71%</b>	
2210	Payment on Funded Debt	\$ 4,787,186	\$ 4,657,772	\$ 5,490,414	\$ 5,189,442		\$ 5,189,442	\$ (320,572)	-5.84%	
2220	Interest on Funded Debt	\$ 695,715	\$ 694,590	\$ 980,876	\$ 915,410		\$ 915,410	\$ (65,265)	-6.88%	
2230	Temporary Borrowing	\$ -	\$ 57,825	\$ 259,551	\$ 646,170		\$ 646,170	\$ 388,620	148.98%	
<b>sub-total 2200 Debt Services</b>		<b>\$ 5,482,902</b>	<b>\$ 5,406,966</b>	<b>\$ 6,730,841</b>	<b>\$ 6,731,423</b>	<b>\$ -</b>	<b>\$ 6,731,423</b>	<b>\$ 782</b>	<b>0.07%</b>	
2310	Reserve Fund	\$ -	\$ 900,000	\$ 900,000	\$ 900,000		\$ 900,000	\$ -	0.00%	
<b>sub-total 2300 Reserve Fund</b>		<b>\$ -</b>	<b>\$ 900,000</b>	<b>\$ 900,000</b>	<b>\$ 900,000</b>	<b>\$ -</b>	<b>\$ 900,000</b>	<b>\$ -</b>	<b>0.00%</b>	
2400	Facilities	\$ 9,343,330	\$ 9,667,013	\$ 9,897,875	\$ 9,818,631	\$ 26,028	\$ 9,844,657	\$ (53,018)	-0.54%	
<b>Total Shared Expenses</b>		<b>\$ 42,869,061</b>	<b>\$ 41,857,533</b>	<b>\$ 47,382,943</b>	<b>\$ 49,028,648</b>	<b>\$ 874,164</b>	<b>\$ 49,899,693</b>	<b>\$ 2,548,960</b>	<b>6.28%</b>	
<b>Program 3000: Public Works</b>										
3100-3500	DPW Personal Services	\$ 3,489,424	\$ 3,664,252	\$ 3,721,529	\$ 3,764,416		\$ 3,764,416	\$ 42,886	1.15%	
3100-3500	DPW Expenses	\$ 4,920,431	\$ 5,221,298	\$ 5,029,416	\$ 4,985,157		\$ 4,985,157	\$ (44,259)	-0.88%	
	October Storm Supplemental	\$ 138,153	\$ -	\$ -	\$ -		\$ -	\$ -	0.00%	
<b>Total Public Works</b>		<b>\$ 8,548,008</b>	<b>\$ 8,885,551</b>	<b>\$ 8,750,945</b>	<b>\$ 8,749,573</b>	<b>\$ -</b>	<b>\$ 8,749,573</b>	<b>\$ (1,372)</b>	<b>-0.02%</b>	
<b>Program 4000: Public Safety</b>										
\$ 0										
4100	Law Enforcement Personal Services	\$ 5,315,329	\$ 5,481,197	\$ 5,571,687	\$ 5,635,184	\$ 45,403	\$ 5,680,587	\$ 108,900	1.93%	
4100	Law Enforcement Expenses	\$ 647,244	\$ 689,831	\$ 760,700	\$ 757,051	\$ 84,218	\$ 821,269	\$ 60,569	7.98%	
<b>sub-total 4100 Law Enforcement</b>		<b>\$ 5,962,573</b>	<b>\$ 6,171,028</b>	<b>\$ 6,332,387</b>	<b>\$ 6,392,235</b>	<b>\$ 109,621</b>	<b>\$ 6,501,856</b>	<b>\$ 169,469</b>	<b>2.66%</b>	
4200	Fire Personal Services	\$ 5,059,117	\$ 4,860,501	\$ 5,180,518	\$ 5,539,415	\$ 270,869	\$ 5,810,284	\$ 629,766	12.18%	
4200	Fire Expenses	\$ 482,626	\$ 502,748	\$ 622,510	\$ 564,350	\$ 4,000	\$ 568,350	\$ (54,180)	-8.70%	
<b>sub-total 4200 EMS/Fire</b>		<b>\$ 5,541,743</b>	<b>\$ 5,363,249</b>	<b>\$ 5,803,028</b>	<b>\$ 6,103,765</b>	<b>\$ 274,869</b>	<b>\$ 6,378,634</b>	<b>\$ 575,606</b>	<b>9.92%</b>	
<b>Total Public Safety</b>		<b>\$ 11,504,316</b>	<b>\$ 11,534,278</b>	<b>\$ 12,135,415</b>	<b>\$ 12,496,999</b>	<b>\$ 384,490</b>	<b>\$ 12,880,490</b>	<b>\$ 745,076</b>	<b>6.14%</b>	
<b>Program 5000: Culture &amp; Recreation</b>										
5100	Library Personal Services	\$ 1,784,557	\$ 1,867,828	\$ 1,947,724	\$ 1,988,798		\$ 1,988,798	\$ 41,072	2.11%	
5100	Library Expenses	\$ 250,839	\$ 257,004	\$ 271,355	\$ 291,354	\$ 94,145	\$ 385,499	\$ 114,144	42.06%	
<b>Total Culture &amp; Recreation</b>		<b>\$ 2,035,396</b>	<b>\$ 2,124,832</b>	<b>\$ 2,219,079</b>	<b>\$ 2,280,152</b>	<b>\$ 94,145</b>	<b>\$ 2,374,298</b>	<b>\$ 186,216</b>	<b>8.99%</b>	
<b>Program 6000: Human Services</b>										
6000	Human Services Personal Services	\$ 442,018	\$ 479,473	\$ 529,796	\$ 496,020		\$ 496,020	\$ (33,776)	-6.38%	
6000	Human Services Expenses	\$ 628,872	\$ 612,315	\$ 690,337	\$ 707,843		\$ 707,843	\$ 17,306	2.51%	
<b>Total Human Services</b>		<b>\$ 1,070,890</b>	<b>\$ 1,091,788</b>	<b>\$ 1,220,133</b>	<b>\$ 1,203,863</b>	<b>\$ -</b>	<b>\$ 1,203,863</b>	<b>\$ (16,470)</b>	<b>-1.38%</b>	
<b>Program 7000: Office of Land Use, Intermodal Services and Economic Development (LUI/IS/ED)</b>										
7100	Office of LUI/IS/ED Personal Services	\$ 1,350,778	\$ 1,358,506	\$ 1,563,432	\$ 1,580,170	\$ 172,740	\$ 1,752,910	\$ 189,477	12.12%	
7100	Office of LUI/IS/ED Personal Services	\$ 238,256	\$ 197,047	\$ 290,839	\$ 346,807	\$ 11,350	\$ 358,157	\$ 67,518	23.23%	
<b>Total Office of LUI/IS/ED</b>		<b>\$ 1,589,033</b>	<b>\$ 1,555,553</b>	<b>\$ 1,854,271</b>	<b>\$ 1,926,977</b>	<b>\$ 184,090</b>	<b>\$ 2,111,067</b>	<b>\$ 256,995</b>	<b>13.86%</b>	
<b>Program 8000: General Government</b>										
8110	Selectmen Personal Services	\$ 97,027	\$ 111,887	\$ 130,721	\$ 138,687		\$ 138,687	\$ 7,967	6.09%	
8110	Selectmen Expenses	\$ 92,206	\$ 68,854	\$ 104,825	\$ 103,325		\$ 103,325	\$ (1,500)	-1.43%	
8120	Legal	\$ 340,592	\$ 416,621	\$ 410,000	\$ 410,000		\$ 410,000	\$ -	0.00%	
8130	Town Report	\$ 6,945	\$ 7,500	\$ 8,000	\$ 8,500	\$ 5,000	\$ 13,500	\$ 5,500	68.75%	
<b>sub-total 8100 Board of Selectmen</b>		<b>\$ 536,770</b>	<b>\$ 604,862</b>	<b>\$ 653,546</b>	<b>\$ 660,512</b>	<b>\$ 5,000</b>	<b>\$ 685,512</b>	<b>\$ 11,967</b>	<b>1.83%</b>	
8210-8220	Town Manager Personal Services	\$ 623,768	\$ 617,579	\$ 639,756	\$ 546,170		\$ 546,170	\$ (93,587)	-14.83%	
8210-8220	Town Manager Expenses	\$ 160,271	\$ 173,405	\$ 237,620	\$ 237,620		\$ 219,085	\$ (22,535)	-9.48%	
8230	Salary Transfer Account* (MGL Ch 40, Sec 13C)	\$ 413,224	\$ 673,588	\$ 697,484	\$ 820,316		\$ 820,316	\$ 122,852	17.61%	
<b>sub-total 8200 Town Manager</b>		<b>\$ 1,197,263</b>	<b>\$ 1,464,572</b>	<b>\$ 1,574,860</b>	<b>\$ 1,581,517</b>	<b>\$ -</b>	<b>\$ 1,581,517</b>	<b>\$ 6,731</b>	<b>0.43%</b>	
8310	Financial Committees	\$ 6,225	\$ 7,559	\$ 7,500	\$ 7,500		\$ 7,500	\$ -	0.00%	
8320	Misc. Boards and Committees	\$ 2,178	\$ 3,276	\$ 4,500	\$ 4,500	\$ 15,000	\$ 19,500	\$ 15,000	333.33%	
8330	Public Celebrations Committee	\$ 51,675	\$ 29,956	\$ 41,000	\$ 42,000		\$ 42,000	\$ 1,000	2.44%	
<b>sub-total 8300 Town Committees</b>		<b>\$ 60,078</b>	<b>\$ 40,791</b>	<b>\$ 53,000</b>	<b>\$ 54,000</b>	<b>\$ 15,000</b>	<b>\$ 69,000</b>	<b>\$ 16,000</b>	<b>30.19%</b>	
8400	Finance Personal Services	\$ 1,168,140	\$ 1,251,674	\$ 1,292,090	\$ 1,322,614	\$ 18,444	\$ 1,341,058	\$ 48,968	3.79%	
8400	Finance Expenses	\$ 384,348	\$ 374,901	\$ 485,875	\$ 482,875		\$ 482,875	\$ (33,100)	-6.87%	
<b>sub-total 8400 Finance</b>		<b>\$ 1,552,488</b>	<b>\$ 1,626,574</b>	<b>\$ 1,778,965</b>	<b>\$ 1,785,489</b>	<b>\$ 18,444</b>	<b>\$ 1,803,933</b>	<b>\$ 15,868</b>	<b>0.89%</b>	
8500	Town Clerk Personal Services	\$ 337,600	\$ 347,171	\$ 362,992	\$ 327,229		\$ 327,229	\$ (35,763)	-9.85%	
8500	Town Clerk Expenses	\$ 115,818	\$ 123,249	\$ 121,075	\$ 109,375		\$ 109,375	\$ (11,700)	-9.66%	
<b>sub-total 8500 Town Clerk</b>		<b>\$ 453,418</b>	<b>\$ 470,420</b>	<b>\$ 484,067</b>	<b>\$ 436,604</b>	<b>\$ -</b>	<b>\$ 436,604</b>	<b>\$ (47,463)</b>	<b>-9.81%</b>	

ELEMENT	DESCRIPTION	A	B	C	D	E	G	H	I
		FY2013 Actual	FY2014 Actual	FY2015 Appropriation	FY2016 Request	FY2016 Manager's Add/Delete	FY2016 Recommended	Change \$ (G-C)	Change % (H/C)
8600 IS Personal Services		\$ 283,387	\$ 355,500	\$ 473,201	\$ 588,508	\$ 163,807	\$ 752,113	\$ 278,913	58.94%
8600 IS Expenses		\$ 632,292	\$ 631,688	\$ 750,950	\$ 938,450	\$ 12,000	\$ 950,450	\$ 199,500	26.57%
sub-total 8600 IT		\$ 915,679	\$ 987,188	\$ 1,224,151	\$ 1,526,958	\$ 175,807	\$ 1,702,563	\$ 478,413	38.88%
<b>Total General Government</b>		<b>\$ 4,718,694</b>	<b>\$ 5,194,704</b>	<b>\$ 5,777,689</b>	<b>\$ 6,046,132</b>	<b>\$ 214,061</b>	<b>\$ 6,269,183</b>	<b>\$ 481,618</b>	<b>8.33%</b>
<b>Total Municipal</b>		<b>\$ 29,443,136</b>	<b>\$ 30,406,706</b>	<b>\$ 31,957,312</b>	<b>\$ 32,701,494</b>	<b>\$ 876,776</b>	<b>\$ 33,578,271</b>	<b>\$ 1,620,959</b>	<b>5.07%</b>
<b>Capital</b>									
Capital Requests (Cash-GF)		\$ 2,307,497	\$ 4,855,174	\$ 3,524,801	\$ 2,500,000	\$ -	\$ 2,500,000	\$ (1,024,891)	-29.08%
Building Envelope Set Aside		\$ 189,711	\$ 173,954	\$ 178,302	\$ 182,760	\$ -	\$ 182,760	\$ 4,458	2.50%
Streets Set Aside		\$ 1,425,586	\$ 1,890,074	\$ 2,254,924	\$ 2,270,145	\$ -	\$ 2,270,145	\$ 15,221	0.68%
<b>Total Capital</b>		<b>\$ 3,902,794</b>	<b>\$ 6,919,202</b>	<b>\$ 5,958,117</b>	<b>\$ 4,952,905</b>	<b>\$ -</b>	<b>\$ 4,952,905</b>	<b>\$ (1,005,212)</b>	<b>-16.87%</b>
<b>Other</b>									
33 Marrett Road Property Acquisition		\$ -	\$ 3,580,000			\$ -	\$ -	\$ -	-
33 Marrett Road Phase I Building Improvements		\$ -	\$ 322,810			\$ -	\$ -	\$ -	-
Set-Aside for Potential Local Aid/Federal Aid Reductions		\$ -	\$ -		\$ 110,000	\$ -	\$ 110,000	\$ 110,000	-
Set-Aside for Unanticipated Current Fiscal Year Needs		\$ -	\$ -		\$ 200,000	\$ -	\$ 200,000	\$ 200,000	-
Set-Aside for Tax Levy Support of Community Center Program (Transfer to Article 5)					\$ 216,836		\$ 216,836	\$ 216,836	-
Allocated to Debt Service/Capital Projects/Building Renewal Stabilization Fund		\$ 1,600,000	\$ 3,983,240	\$ 5,910,728	\$ 6,272,642	\$ 3,206,275	\$ 9,478,917	\$ 3,568,191	60.37%
Senior Service Program		\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ -	\$ 20,000	\$ -	0.00%
OPEB Stabilization Fund		\$ 500,000	\$ 775,000	\$ 1,119,000	\$ 1,862,194	\$ -	\$ 1,862,194	\$ 743,194	66.42%
<b>Total Other Articles</b>		<b>\$ 2,436,260</b>	<b>\$ 6,661,066</b>	<b>\$ 7,049,728</b>	<b>\$ 8,681,872</b>	<b>\$ 3,206,275</b>	<b>\$ 11,687,947</b>	<b>\$ 4,838,221</b>	<b>66.83%</b>
<b>General Fund Total</b>		<b>\$ 168,687,696</b>	<b>\$ 169,297,360</b>	<b>\$ 180,186,411</b>	<b>\$ 189,627,747</b>	<b>\$ 4,957,216</b>	<b>\$ 193,682,146</b>	<b>\$ 13,385,736</b>	<b>7.43%</b>



## Recommended FY16 Enterprise Fund Budgets

### Water

	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>
Personal Services	\$ 626,677	\$ 674,611	\$ 695,679
Expenses	\$ 395,016	\$ 389,400	\$ 389,400
Debt Service	\$ 1,258,627	\$ 1,379,622	\$ 1,415,508
MWRA Assessment	\$ 5,555,065	\$ 6,037,972	\$ 6,695,144
	<u>\$ 7,835,386</u>	<u>\$ 8,481,606</u>	<u>\$ 9,195,730</u>

### Wastewater

	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>
Personal Services	\$ 174,223	\$ 302,360	\$ 296,917
Expenses	\$ 336,397	\$ 345,650	\$ 345,650
Debt Service	\$ 1,112,818	\$ 1,220,843	\$ 940,679
MWRA Assessment	\$ 7,014,300	\$ 7,183,735	\$ 7,041,716
	<u>\$ 8,637,738</u>	<u>\$ 9,052,588</u>	<u>\$ 8,624,962</u>

### Recreation and Community Programs

	<u>FY2014</u>	<u>FY2015</u>	<u>FY2016</u>
Personal Services	\$ 648,607	\$ 704,615	\$ 1,127,630
Expenses	\$ 963,274	\$ 1,036,319	\$ 1,374,201
Personal Services and Expenses	\$ 1,611,881	\$ 1,740,934	\$ 2,501,831
Debt Service	\$ 100,000	\$ 100,000	\$ 100,000
	<u>\$ 1,711,881</u>	<u>\$ 1,840,934</u>	<u>\$ 2,601,831</u>

## FY 2016 Recommended Capital Budget

Department	Project Description	Recommendation	Requested Funding Source(s)
<i>Community Development</i>	Conservation Meadows Preservation Program	\$ 28,400	CPA
<i>Community Development</i>	Lower Vine Brook Paved Recreation Path Reconstruction	\$ 389,813	CPA
<i>Community Development</i>	Acquisition of Wright Farm - Parcel 2	\$ 755,000	CPA
<i>Economic Development</i>	Grain Mill Alley Additional Design	\$ 18,000	CPA
<b>Total Community/Economic Development</b>		<b>\$ 1,169,213</b>	
<i>Fire &amp; Rescue</i>	Fire Pumper	\$ 500,000	GF Debt
<i>Police/Fire &amp; Rescue</i>	Police/Fire Dispatching and Records Software	\$ 705,900	GF Debt/Free Cash
<i>Police</i>	Parking Meter Replacement	\$ 500,000	Debt/Parking Meter Fund
<i>Fire &amp; Rescue</i>	Public Safety Radio Stabilization, Phase 1	\$ 90,000	Free Cash
<i>Police</i>	Design/Engineering - Firing Range at Hartwell Ave. Compost Site	\$ 50,000	Free Cash
<b>Total Public Safety</b>		<b>\$ 1,845,900</b>	
<i>Rec. &amp; Community Programs</i>	Lincoln Park Field Improvements	\$ 650,000	GF Debt/Recreation RE/CPA
<i>Rec. &amp; Community Programs</i>	Park and Playground Improvements	\$ 68,000	CPA
<i>Rec. &amp; Community Programs</i>	Park Improvements - Athletic Fields	\$ 85,000	CPA
<i>Rec. &amp; Community Programs</i>	Park and Playgrounds ADA Accessibility Study	\$ 78,000	CPA
<i>Rec. &amp; Community Programs</i>	Park Improvements- Hard Court Resurfacing	\$ 55,000	CPA
<i>Rec. &amp; Community Programs</i>	Pine Meadows Equipment	\$ 68,000	Recreation RE
<b>Total Culture and Recreation</b>		<b>\$ 1,004,000</b>	
<i>Public Facilities</i>	Middle School Space Mining	\$ 674,000	GF Debt
<i>Public Facilities</i>	Clarke Middle School Circulation and Parking Improvements, Design	\$ 363,000	GF Debt
<i>Public Facilities</i>	LHS Phase 2 Overcrowding/Completion	\$ 90,200	GF Debt
<i>Public Facilities</i>	Major Mechanical/Electrical Systems' Replacement	\$ 483,000	GF Debt
<i>Public Facilities</i>	Lexington Public School Educational Capacity Increase - Short and Long Term	\$ 4,080,000	GF Debt
<i>Public Facilities</i>	Fiske School - Standard Modulars	\$ 842,000	GF Debt
<i>Public Facilities</i>	LHS Heating Systems Upgrade Phases 2 & 3 - Design 2	\$ 150,000	GF Debt
<i>Public Facilities</i>	School Building Envelope and Systems	\$ 210,000	Free Cash
<i>Public Facilities</i>	Municipal Building Envelope and Systems	\$ 182,760	Tax Levy
<i>Public Facilities</i>	School Building Flooring Program	\$ 125,000	Free Cash
<i>Public Facilities</i>	School Paving Program	\$ 150,000	Free Cash
<i>Public Facilities</i>	School Interior Painting Program	\$ 157,594	Free Cash
<i>Public Facilities</i>	Public Facilities Bid Documents	\$ 75,000	Free Cash
<i>Public Facilities</i>	Diamond Middle School Lighting to Rear Parking Lot	\$ 77,000	Free Cash
<i>Public Facilities</i>	Diamond Middle School Motors for Backboards	\$ 25,300	Free Cash
<i>Public Facilities</i>	Security Camera Upgrade	\$ 38,500	Free Cash
<i>Public Facilities</i>	LHS Bike Racks and Installation	\$ 31,531	Free Cash
<i>Public Facilities</i>	Cary Memorial Building Sidewalk Enhancement	\$ 192,000	CPA
<i>Public Facilities</i>	Community Center Sidewalk Design	\$ 50,000	CPA
<i>Public Facilities</i>	Cary Memorial Bldg Records Center Shelving	\$ 75,398	CPA
<i>Public Facilities</i>	Supplemental Appropriation - LHS Modulars	\$ 350,000	GF Debt
<b>Total Public Facilities Department</b>		<b>\$ 8,402,283</b>	
<i>Public Works</i>	Center Streetscape Improvements - Phase I	\$ 2,700,000	GF Debt
<i>Public Works</i>	DPW Equipment Replacement	\$ 1,270,000	GF Debt/Free Cash/Water RE/Wastewater RE/Compost Revolving Fund
<i>Public Works</i>	Storm Drainage Improvements and NPDES compliance	\$ 340,000	GF Debt/Free Cash
<i>Public Works</i>	Comprehensive Watershed Storm Water Management Study and Implementation	\$ 390,000	GF Debt
<i>Public Works</i>	Sidewalk Improvements, Additions and Design	\$ 600,000	GF Debt
<i>Public Works</i>	Town Wide Culvert Replacement	\$ 390,000	GF Debt/CPA
<i>Public Works</i>	Town-wide Signalization Improvements	\$ 125,000	GF Debt
<i>Public Works</i>	Hartwell Avenue Infrastructure Improvements	\$ 4,750,000	GF Debt
<i>Public Works</i>	Street Improvements	\$ 3,231,250	Tax Levy/Chapter 90
<i>Public Works</i>	Bikeway Bridge Repairs, Engineering	\$ 10,000	Free Cash
<i>Public Works</i>	Hastings Park - Undergrounding of Wires	\$ 300,000	Free Cash
<i>Public Works</i>	Hydrant Replacement Program	\$ 150,000	Free Cash/Water RE
<i>Public Works</i>	Pump Station Upgrades	\$ 1,350,000	Wastewater RE
<i>Public Works</i>	Water Distribution System improvements	\$ 900,000	Water RE
<i>Public Works</i>	Battle Green Streetscape Improvements	\$ 200,000	Free Cash/CPA
<i>Public Works</i>	Minuteman Bikeway Wayfinding Signs	\$ 39,000	CPA
<i>Public Works</i>	Westview Cemetery Building Assessment	\$ 35,000	Cemetery Fund
<i>Public Works</i>	Sanitary Sewer System Investigation and Improvements	\$ 1,200,000	Wastewater Debt
<b>Total Public Works Department</b>		<b>\$ 17,980,250</b>	

<i>Lexington Public Schools</i>	Systemwide School Furniture	\$	317,500	GF Debt/Free Cash
<i>Lexington Public Schools</i>	School Technology Capital Request	\$	1,378,000	GF Debt
<i>Lexington Public Schools</i>	Additional Time Clock System Funds	\$	208,000	GF Debt
<i>Lexington Public Schools</i>	Food Service LHS Dishwasher and Installation	\$	82,500	Food Service Revolving Fund
<b>Total Lexington Public Schools</b>		<b>\$</b>	<b>1,986,000</b>	

<i>Information Technology</i>	Replace Town Wide Phone Systems-Phase IV	\$	52,000	Free Cash
<i>Information Technology</i>	Municipal Technology Improvement Program- Phase III	\$	140,000	Free Cash
<i>Information Technology</i>	Network Redundancy & Improvement Plan - Phase III	\$	57,000	PEG Access Fund
<b>Total General Government</b>		<b>\$</b>	<b>249,000</b>	

<i>Non-Governmental Projects</i>	Parker's Revenge Restoration	\$	36,790	CPA
<i>Non-Governmental Projects</i>	Study for the Restoration of the First Parish Church	\$	40,000	CPA
<b>Total Non-Governmental Projects</b>		<b>\$</b>	<b>76,790</b>	

<b>Total FY 2016 Recommendations - All Funds</b>		<b>\$</b>	<b>32,713,435</b>	
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# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**                      **PRESENTER:**    **ITEM NUMBER:**

2/23/2015                      Carl F. Valente, Town Manager    I.9

**AGENDA ITEM TITLE:**

Approve Veterans Services District Agreement with Bedford (5 min.)

**SUMMARY:**

In 2013 the Town's of Lexington and Bedford created a District for the purpose of providing services to the veterans and their families living in the two towns. The initial forming of the District, and continuation of the District, required approval of the Massachusetts Department of Veteran's Services (DVS). The DVS has granted the continuation of this District and the Town's have entered into a new five-year intermunicipal agreement. The new agreement has not changed from the original agreement, other than the updating of dates and cost sharing amounts.

**RECOMMENDATION / SUGGESTED MOTION:**

Move to approve and sign the Inter-Municipal Agreement Between the Towns of Lexington and Bedford, for a Veterans' Services District, for a term expiring on June 30, 2019.

**FOLLOW-UP:**

Town Manager's Office will handle distribution of the agreement.

**APPROXIMATE TIME ON AGENDA:**

8:55 PM

**ATTACHMENTS:**

Description	Type
☐ Intermunicipal Agreement	Exhibit

**INTER-MUNICIPAL AGREEMENT**  
**BETWEEN THE TOWNS OF LEXINGTON AND BEDFORD**

**VETERANS' SERVICES DISTRICT**

THIS AGREEMENT dated as of this \_\_\_\_\_ day of \_\_\_\_\_, 2015 ("Agreement") by and between the Town of Lexington, a Massachusetts municipal corporation having a usual place of business at Town Hall, 1625 Massachusetts Avenue, Lexington, MA 02420, acting by and through its Board of Selectmen ("Lexington"), and the Town of Bedford, a Massachusetts municipal corporation having a usual place of business at 10 Mudge Way, Bedford, Massachusetts 01730, acting by and through its Board of Selectmen ("Bedford").

**WITNESSETH THAT:**

**WHEREAS**, Lexington and Bedford desire to continue to share the services and costs associated with a Veterans' Services District; and

**WHEREAS**, each of the parties has obtained authority to enter into this Agreement pursuant to G.L. c. 40, s 4A and c. 115 (Chapter 471 of the Acts of 1972);

**WHEREAS**, the Massachusetts Department of Veterans' Services Secretary (Secretary) must approve this District and Agreement;

NOW, THEREFORE, in consideration of the premises set forth above and for other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereto, intending to be legally bound, hereby agree under seal as follows:

1. **District Board**. A District Board shall be created on acceptance of this agreement with one representative from Lexington and Bedford. Said representative shall be the Town Manager or designee. The Board shall meet as needed and shall address all issues related to the implementation of this District and shall oversee the performance of the Director.
2. **Payment of Veterans' Services District Benefits**. During the Term of this Agreement, it is agreed that the distribution of benefits payable to Veterans in the member towns under the provisions of MGL c. 115 shall be paid by the Treasurer of the member Town in which that Veteran resides.
3. **Term**. The term of this Agreement shall commence on the date of execution hereof, and shall expire on June 30, 2019, **subject to approval by the Massachusetts Department of Veterans' Services**, unless earlier terminated as set forth herein. On or before May 1<sup>st</sup> of each year during the Term of this Agreement, the parties shall review their contractual relationship, the terms of which are set forth herein, to ensure that this Agreement continues to satisfy the needs and objectives of each community.
4. **Veterans' Services District Director**. The Veterans Services Officer ("VSO") of Lexington, or a successor hired through standard personnel practices agreed to by the Town Managers of Lexington and Bedford, shall serve as the Director of the District and will supervise all VSO's in their duties as related to the Office in the two Towns. Specifically, the parties shall share the services of the Veteran Services District Director and the Veteran Services Officer, notwithstanding any other the provision of this Agreement to the contrary.
5. **Cost of District Operations**. Lexington and Bedford shall assume their respective shares of the

costs associated with a common Veteran Services District, based on the Cost Allocation Model found in Appendix D. Shared expenses under this Agreement will include, but not necessarily be limited to, the following expenses attributable to the VSO's: employee salary, benefits, Medicare tax, Worker's Compensation, liability insurance, membership in professional associations, recruitment costs and as further detailed in Appendix D

Lexington shall employ all VSO's of the District and pay all reasonable and customary salaries and operating expenses. Bedford shall contribute its share of the associated costs for these positions by paying to Lexington an amount as required by the terms and conditions of this Agreement and Appendix D. Payments to Lexington shall be due and payable within fifteen (15) days after the commencement of such fiscal quarter (i.e., after 7/1, 10/1, 1/1 and 4/1).

Lexington shall adjust the compensation it pays said positions as it may elect to do in accordance with standard personnel practices which impact upon the Veteran Services District Director and VSO, and shall give prompt written notice to Bedford of any such adjustment.

To provide Bedford with certainty in planning its budget for the Veterans' Services District, Bedford's payment to Lexington each fiscal year shall be established and fixed by January 15, prior to the start of the fiscal year. Within 90 days of the close of each fiscal year, Lexington will provide the Town of Bedford with an analysis of actual staff and office expenses for the prior fiscal year. Any amount over or under the amount paid by Bedford will be adjusted in the subsequent year's payment by Bedford.

**6. Other Benefits.** Lexington shall provide all VSO benefits to which he/she is entitled under standard personnel practices of the Lexington. Both parties agree to allow the Director and VSO to enjoy such vacation, sick days, personal days and other leave as he may be entitled to receive under such agreement and under standard personnel practices of Lexington. Neither party shall make any demand on the Director or VSO or take any action with respect to them that is in violation of their rights under standard personnel practices of Lexington or under any applicable legislation.

Should a VSO formerly employed by this District (but not the Director) file for unemployment insurance benefits or workers' compensation benefits, the Bedford share of the cost will be increased in the following year by an equal amount.

**7. Retirement Benefits.** All VSO's of the District will be members of the Lexington Contributory Retirement System, assuming eligibility requirements are met. As part of Bedford annual payment, it will pay the agreed upon prorated normal cost or other retirement benefits toward the pension/retirement costs of the VSO's of the district.

**8. Duties.** The VSO's of the District shall perform their duties as required by the District Board and the respective local laws and regulations of Lexington and Bedford. Attached, as Appendix C to this document, are the "Goals, Objectives and Structure of the Veterans' Services District.

**9. Office Hours and Locations.** The Director and the Veterans' Services Officer shall work primarily in the office spaces provided by Lexington and Bedford. Both Towns shall maintain regular, public office hours with such office hours to be mutually agreed upon by the parties.

**10. Indemnification.** Notwithstanding the final sentence of G.L. c. 40, §4A, and to the extent permitted by law, the Town of Bedford agrees to indemnify the Town of Lexington, including all officials, officers, employees, agents, servants and representatives, from and against any claim arising out of the duties performed by the Veterans' Services District staff pursuant to the Agreement in or on behalf of the the Town of

Bedford for any claim of liability, loss, damages, costs and expenses for personal injury or damage to real or personal property by reason of any negligent act or omission by the Veterans' Services District while performing services for the Town of Bedford; and the Town of Lexington agrees to indemnify the Town of Bedford, including all officials, officers, employees, agents, servants and representatives, from and against any claim arising out of the duties performed by the Veterans' Services District staff pursuant to the Agreement in or on behalf of the Town of Lexington for any claim of liability, loss, damages, costs and expenses for personal injury or damage to real or personal property by reason of any negligent act or omission by the Veterans' Services District while performing services for the Town of Lexington. As to any claim or occurrence, the express indemnification set forth above shall be town-specific: Bedford's obligations shall be limited to the services provided for Bedford; Lexington's obligations shall be limited to the services provided for Lexington.

**11. Termination.** This Agreement may be terminated by either party for any reason or no reason on one-hundred eighty (180) days written notice to the other, unless the parties agree otherwise. No such termination shall affect any obligation of indemnification that may have arisen hereunder prior to such termination. The parties shall equitably adjust any payments made or due relating to the unexpired portion of the Term following such termination.

**12. Assignment.** Neither party shall assign or transfer any of its rights or interests in or to this Agreement, or delegate any of its obligations hereunder, without the prior written consent of the other.

**13. Severability.** If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, illegal or unenforceable, or if any such term is so held when applied to any particular circumstance, such invalidity, illegality or unenforceability shall not affect any other provision of this Agreement, or affect the application of such provision to any other circumstances, and this Agreement shall be construed and enforced as if such invalid, illegal or unenforceable provision were not contained herein.

**14. Waiver.** The obligations and conditions set forth in this Agreement may be waived only by a writing signed by the party waiving such obligation or condition. Forbearance or indulgence by a party shall not be construed as a waiver, nor limit the remedies that would otherwise be available to that party under this Agreement or applicable law. No waiver of any breach or default shall constitute or be deemed evidence of a waiver of any subsequent breach or default.

**15. Amendment.** This Agreement may be amended only by a writing signed by both parties duly authorized thereunto.

**16. Governing Law.** This Agreement shall be governed by and construed in accordance with the substantive laws of the Commonwealth of Massachusetts, without regard to the conflicts of laws provisions thereof.

**17. Headings.** The paragraph headings herein are for convenience only, are no part of this Agreement and shall not affect the interpretation of this Agreement.

**18. Notices.** Any notice permitted or required hereunder to be given or served on either party by the other shall be in writing signed in the name of or on behalf of the party giving or serving the same. Notice shall be deemed to have been received at the time of actual receipt of any hand delivery or three (3) business days after the date of any properly addressed notice sent by mail as set forth below.

a. **To Bedford.** Any notice to Bedford hereunder shall be delivered by hand or sent by registered or certified mail, return receipt requested, postage prepaid, to:

Richard T. Reed, Town Manager  
Bedford Town Hall  
10 Mudge Way  
Bedford MA 01730

or to such other address(es) as Bedford may designate in writing to Lexington.

b. To Lexington. Any notice to Lexington hereunder shall be delivered by hand or sent by registered or certified mail, return receipt requested, postage prepaid, to:

Carl F. Valente, Town Manager  
Lexington Town Hall  
1625 Massachusetts Avenue  
Lexington, Massachusetts 02420

or to such other address(es) as Lexington may designate in writing to Bedford.

**19. Complete Agreement.** This Agreement constitutes the entire agreement between the parties concerning the subject matter hereof, superseding all prior agreements and understandings. There are no other agreements or understandings between the parties concerning the subject matter hereof. Each party acknowledges that it has not relied on any representations by the other party or by anyone acting or purporting to act for the other party or for whose actions the other party is responsible, other than the express, written representations set forth herein.

**20. Financial Accounting and Reporting.** Lexington shall maintain separate, accurate and comprehensive records of all services performed for each of the parties hereto. Lexington shall maintain accurate and comprehensive records of all costs incurred by or on account of the Veteran Services District, and all payments received from Bedford. An annual financial statement will be issued by Lexington to Bedford within 120 days of the end of the fiscal year.

**21. Justification for District formation per Massachusetts Department of Veteran Services.** See Appendix A for the District Formulation basis upon which the Massachusetts Secretary of Veteran Services will consider this request for approval to form a veterans' services district per 108 CMR 12.02(2)(a) through 12.02(2)(f).

**WITNESS OUR HANDS as of the first date written above.**

**TOWN OF BEDFORD**  
**By its Board of Selectmen**

**TOWN OF LEXINGTON**  
**By its Board of Selectmen**

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## Appendix A District Formation Justification for DVS



### **District Name**

Lexington/Bedford Veteran Services District

### **Municipalities:**

Lexington  
Bedford

### **Municipality Populations (2010 Federal Census):**

Lexington:	31,394
Bedford:	13,320
Total:	44,714

### **District Position Titles:**

District Director  
Veteran Services Officer

### **Number of Full-time Positions Required by Chapter 115**

Director:	1
Part-Time VSO:	1
Clerical:	1*

*\*District will have a full-time/shared administrative staff to meet this requirement.*

### **Office Locations**

Director:	1625 Massachusetts Avenue, Lexington MA 02420
VSO:	12 Mudge Way, Bedford, MA 01730

### **Hours of Operation**

Lexington Office: Monday – Wednesday: 8:30 a.m. to 4:30 p.m.; Thursday, 8:30 a.m. to 7:30 p.m.; Friday: 8:30 a.m. to 12:00 noon.

Bedford Office: Tuesday and Thursday: 8:30 a.m. to 4:30 p.m.



***Lexington/Bedford  
Veteran Services District***

**Mission Statement**

*Our mission is to support the veterans residing in our district by identifying veterans and their families in need of service and providing information and access to the services for which they are eligible under the law.*



# ***Lexington-Bedford Veterans' Services District***

## **Goals and Objectives**

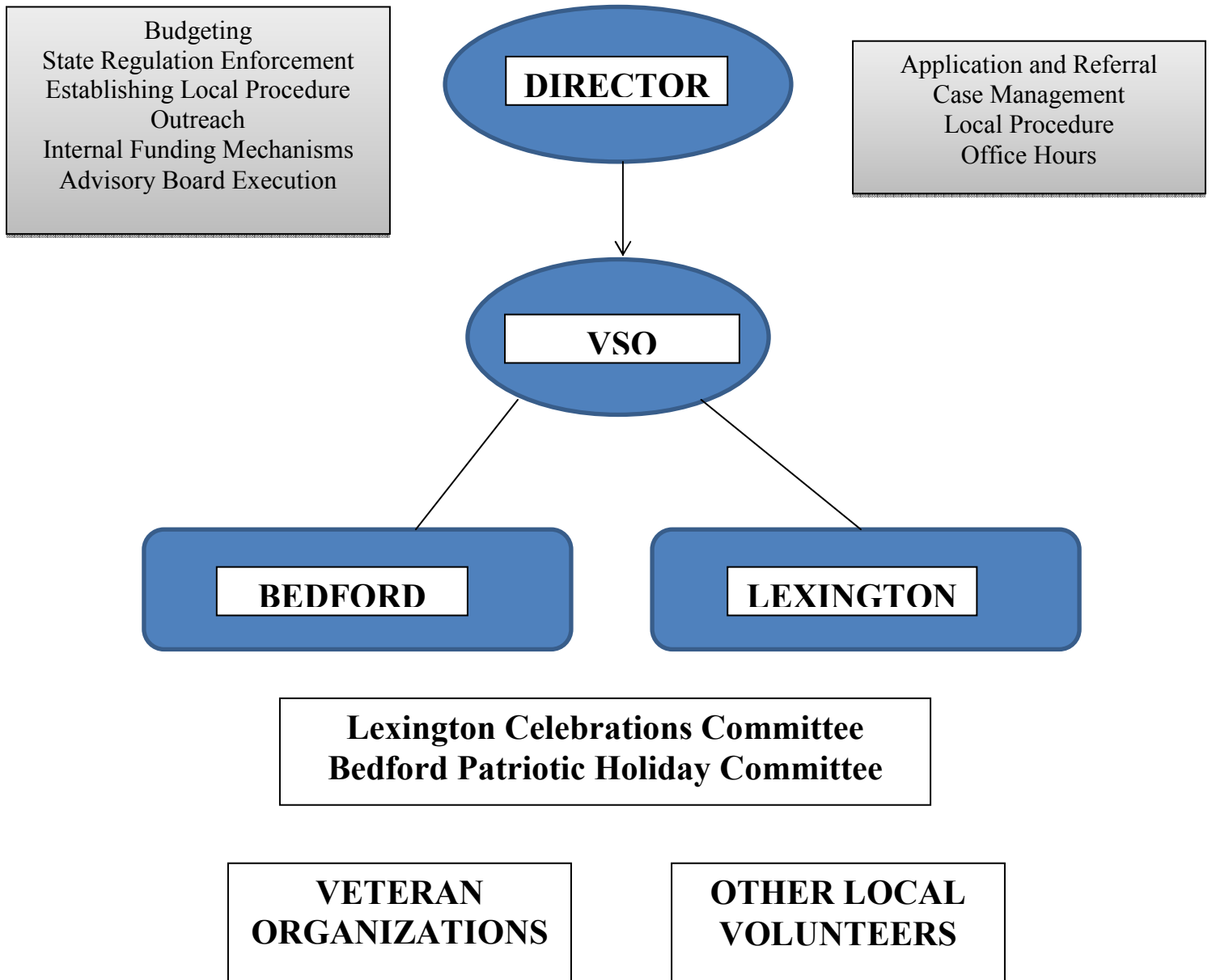
- 1.) To execute timely and accurate benefit delivery for all veterans seeking help from the Federal, State and Local branches of government***
- 2.) To provide dignity, compassion, respect and privacy to all veterans seeking assistance***
- 3.) To empower veterans through technology, information sharing, and networking; where they can assist themselves and their fellow veterans by connecting services to need***
- 4.) To continue the fight against homelessness and joblessness within the veteran community***
- 5.) To be honest and forthright with our veterans, researching the correct answer and providing results as quickly as accuracy allows***
- 6.) To see the office as a base of operations, not a home, bringing services to the veteran wherever they are whenever they need***

## Appendix D – Budget and Cost Allocation

Veterans' Services DistrictA1:I43								
Annual Estimated Budget/Town Allocation								
FY2015								
		Effective Date		Annual Estimated Total	Lexington Allocation	Lexington Amount	Bedford Allocation	Bedford Amount
1	Salary-Director	7/1/14-10/3/14	District Director - Ryan Lennon	\$ 15,968	91.20%	\$ 14,563	8.80%	\$ 1,405
			Vacation Buy out	\$ 1,936	91.20%	\$ 1,765	8.80%	\$ 170
2	Benefits		Health	\$ 9,473	91.20%	\$ 8,639	8.80%	\$ 834
3			Dental	\$ 3,399	91.20%	\$ 3,099	8.80%	\$ 299
4			Life	\$ 2	91.20%	\$ 2	8.80%	\$ 0
5			Medicare (1.45%)	\$ 260	91.20%	\$ 237	8.80%	\$ 23
6			Pension (4.90% normal cost)	\$ 877	91.20%	\$ 800	8.80%	\$ 77
7			Workers Compensation-Reinsurance	\$ 14.37	91.20%	\$ 13	8.80%	\$ 1
8	Subtotal			\$ 31,928		\$ 29,118		\$ 2,810
	Salary-Director	12/15/14-6/30/15	District Director - Gina Rada	\$ 31,904	91.20%	\$ 29,097	8.80%	\$ 2,808
	Benefits		Health	\$ 7,218	91.20%	\$ 6,583	8.80%	\$ 635
			Dental	\$ -	91.20%	\$ -	8.80%	\$ -
			Life	\$ -	91.20%	\$ -	8.80%	\$ -
			Medicare (1.45%)	\$ 463	91.20%	\$ 422	8.80%	\$ 41
			Pension (4.90% normal cost)	\$ 1,563	91.20%	\$ 1,426	8.80%	\$ 138
			Workers Compensation-Reinsurance	\$ 28.71	91.20%	\$ 26	8.80%	\$ 3
	Subtotal			\$ 41,177		\$ 37,553		\$ 3,624
9	Salary-VSO	7/1/14-6/30/15	VSO - Bill Linnehan	\$ 25,890	0.00%	\$ -	100.00%	\$ 25,890
10	Benefits		Health	\$ -		\$ -	0.00%	\$ -
11			Dental	\$ -		\$ -	0.00%	\$ -
12			Life	\$ -		\$ -	0.00%	\$ -
13			Medicare (1.45%)	\$ 375	0.00%	\$ -	100.00%	\$ 375
14			Pension	\$ -		\$ -	0.00%	\$ -
15			Workers Compensation-Reinsurance	\$ 23		\$ -	100.00%	\$ 23
16	Subtotal			\$ 26,288		\$ -		\$ 26,288
17	Salary-clerical			Note 1				Note 1
18	Expenses	7/1/14-6/30/15	Printing	\$ 400	65.00%	\$ 260	35%	\$ 140
19			Professional Serv./Special Events	\$ 650	100.00%	\$ 650	0%	\$ -
20			Mileage	\$ 500	60.00%	\$ 300	40%	\$ 200
21			Seminars/Conf.	\$ 500	60.00%	\$ 300	40%	\$ 200
22			Cell Phone/Pager	\$ 1,248	50.00%	\$ 624	50%	\$ 624
23			Supplies	\$ 1,860	65.00%	\$ 1,209	35%	\$ 651
24			Public Liability Ins.	\$ -		\$ -	100%	\$ -
25			Recruitment Costs (not prorated)	\$ -	0.00%	\$ -	100%	Note 2
26			Unemployment Benefits Paid			\$ -	100%	Note 3
27			Workers Compensation Benefits Paid			\$ -	100%	Note 3
28	Subtotal			\$ 5,158		\$ 3,343		\$ 1,815
29	Total		Total Salary, Benefits and Expenses	\$ 63,374		\$ 32,461		\$ 30,913
Note 1	Each community will provide administrative support with existing office staff							
Note 2	Actual Bedford amount will be billed quarterly by Lexington							
Note 3	Bedford will be charged with Worker's Compensation benefits or UI benefits only if incurred Lexington will provide primary office space and office equipment for the District Director Bedford will provide primary office space and office equipment for the VSO							
<i>Part-time employees working fewer than 20 hours per week receive pro-rated holiday and sick leave benefits.</i>								

Appendix E - District Structure

**Lexington Bedford  
Veterans' Services District**  
*Complete Integration of the Veteran Community  
Maximize Local Resources  
Open Doors to Veteran*







**Memorandum of Understanding  
Between  
Town of Lexington  
And  
Cary Memorial Library Staff Association,  
Local 4928, MLSA, AFT Mass, AFL-CIO**

This Memorandum of Agreement is entered into by and between the Town of Lexington (hereinafter the Town) and the Cary Memorial Library Staff Association (hereinafter the Association).

Whereas, the Town and the Association are parties to a Collective Bargaining Agreement for the period July 1, 2012 through June 30, 2014; and

Whereas, the Town and the Association have, pursuant to Massachusetts General Laws Chapter 150E, negotiated the terms for a successor agreement; and

Whereas the negotiating subcommittee of the Town acting subject to the ratification of this Memorandum of Agreement by the full governing body of the Town to whom the subcommittee agrees to recommend acceptance, and the negotiating subcommittee of the Association, acting subject to the ratification of this Agreement by the membership of the Association to whom the negotiating subcommittee agrees to recommend acceptance, hereby mutually agree to the following terms and conditions of settlement of the contract negotiations for the successor Collective Bargaining Agreement that will be in effect from July 1, 2014 through June 30, 2017.

Now, therefore, the parties agree as follows:

---

**1 Article VII Probationary Periods**

**Section 1: Original Appointments**

Strike the sentence beginning with "At the end of the six (6) month probationary period..."

**2. Article I Recognition, Section 2; Article XXVII, Wage Schedule and Appendix**

Create a new job title “Librarian II” which would be placed in the salary schedule between the existing positions of Department Head and Librarian.

Revise the Library Associate language as follows and add a description for Librarian II – Manager/Coordinator.

Library Associate:

“Non-professional position having the general title Library *Associate*. Usually a specialized area of paraprofessional librarianship with assigned tasks related to departmental or cross-departmental initiatives. Associate positions require a combination of experience and specialized skills or activities. Associates or Bachelor’s degree desirable”.

Librarian II – Manager/Coordinator:

“A “Professional Librarian” whose position requires some combination of direct supervision of staff, budget management, and/or community liaison functions. In the absence of a Department Head, a Librarian II may have administrative responsibility. Master’s degree in Library and Information Science or related field desired”.

**3. Article XXI Miscellaneous**

Section 7: Existing Conditions of Employment

Delete this section and replace with the following language:

“While the Town’s Administrative Directives are applicable to all employees of the Town of Lexington, the provisions of this collective bargaining agreement prevail over those sections of the Directives that are subject to negotiation (i.e. discipline). Any changes made to the Administrative Directives that apply to sections that are subjects of bargaining will be negotiated with the Union, if the Union so chooses.”

**4. Article XI Vacation for employees hired BEFORE 07/01/2007.**

Delete the two (2) references to “Effective 01/01/08” in the Full-time and Part-Time Para-Professional Library Employee sections as this date has passed.

**5. Article XXI Miscellaneous**

Section 5: Car Allowance

Strike “including trips to the library branch”, as the branch library is closed.



**6. Article XXVI Workweek**

**Section 2: Saturday Shift Differential**

Remove "Effective July 1, 2013", and replace with "Effective July 1, 2015".

Change the amount of "\$2.50 per hour" to "\$3.00 per hour".

**7. Article XXIX Direct Deposit**

Remove two (2) references to "July 1, 2013", as that date has passed.

**8. Article XIV Personal Days**

Delete the language in the first sentence, "Upon completion of the probationary period defined in Article VII of this Agreement".

Add the following paragraph:

"New employees will have their Personal Leave pro-rated in their first year of employment based on the following hire dates:

Hire date January 1 to June 30	24 Personal Hours
Hire Date July 1 to September 30	16 Personal Hours
Hire Date October 1 to December 31	8 Personal Hours"

**9. Article X Paid Holidays**

**Section 1: Paid Holidays**

The list of holidays remains unchanged.

Delete the remainder of the section and replace with the following:

"Section 2: Full Time Employees

**2a. Paid Holiday**

Full-time staff receive a paid holiday for each of the holidays listed above when it falls on a day the staff person is regularly scheduled to work.

**2b. Holiday Leave**

Full-time staff receive a compensatory holiday leave day for each of the holidays listed above when it falls on a staff person's scheduled day off. Said compensatory holiday leave day shall be taken within seventy-five (75) days of the holiday.

Employees are entitled to either a paid holiday or holiday leave for each holiday listed above.

**Section 3. Part-Time Benefits Eligible Employees**

**3a. Paid Holiday**

Part-time Benefits Eligible staff receive a pro-rated paid holiday for each of the holidays listed above when it falls on a day the staff person is regularly scheduled to work.

**3b. Holiday Leave**

Effective January 1, 2015, part-time Benefits Eligible staff receive a pro-rated compensatory holiday leave day for each of the holidays listed above when it falls on a staff person's scheduled day off. Said compensatory holiday leave day shall be taken within seventy-five (75) days of the holiday.

Employees are entitled to either a pro-rated paid holiday or pro-rated holiday leave for each holiday listed above.

**Section 4 Holiday Notification**

The Library Director shall confirm in a memo to all staff the holiday schedule for the coming calendar year.

**Section 5 Easter Closure**

The Library shall be closed on Easter. This is not considered a paid holiday and employees will not be scheduled to work on that day".

**10. Article II Union Dues / Initiation Fee / Fair Share Fee**

Change the title of the Article to "Union Dues / Agency Fee (Fair Share)

Amend Section 4: Authorization of Payroll Deduction

Add an "a" to the sentence beginning with "The following form for..." Delete the words "or agency fee" from the same sentence.

Delete the word "MFT" from the second paragraph and replace with "AFTMA".

Add a new Section b.

"Section b. The following form for authorization of agency fee (fair share) shall be used.

AUTHORIZATION FOR PAYROLL DEDUCTION

BY:

(PRINT NAME OF EMPLOYEE)

TO: TOWN OF LEXINGTON

(PRINT NAME OF EMPLOYER)

Effective \_\_\_\_\_ (date) I hereby request and authorize you to deduct from my earnings each bi-weekly pay period the current amount of agency fee (fair share) as established by the Union. This amount shall be paid to the Treasurer of the MLSA, AFTMA, AFT, AFL-CIO.

(Employee's Signature)

(Employee's Address) (Employee's Phone)

**11. Article XI Vacations for employees hired BEFORE 07/01/07**

For the Section titled "Full-Time Para-Professional Library Employees", change the date "Effective 01/01/08" to "01/01/2015".

Modify the chart to read as follows:

<u>"Length of Service"</u>	<u>Vacation</u>
6 months to 1 year	2 weeks
1 to 20 years	4 weeks
More than 20 years	5 weeks"

For the Section titled, "Part-Time Para-Professional Library Employees", change the date "Effective 01/01/08" to "01/01/2015".

Delete Section 3: Vacation and Probationary Period, since all employee to whom this Article applies were hired prior to 2007 and have completed their probationary period.

**12. Article XII Vacations for employees hired AFTER 07/01/07**

For the Section titled "Full-Time Professional Library Employees", delete first sentence and replace with, "Employees hired after July 1, 2007 will earn vacation accrual according to the following table":

For the Section titled “Full-Time Para-Professional Library Employees”, delete first sentence and replace with, “Effective January 1, 2015, employees hired after July 1, 2007 will earn vacation accrual according to the following table:

- “During the first 12 months accrue 6.16 hours per month
- At 13 months of continuous service accrue 12.33 hours per month
- At 240 months of continuous service accrue 15.42 hours per month”

Revise Section 3 to read as follows:

“Section 3: Vacation and Probationary Period  
All employees begin accruing vacation immediately”.

“Section 5: Probationary Period Employees

Employees who are in their probationary period may request vacation leave. The amount of vacation leave requested and granted shall not exceed the balance in the employee’s vacation leave accrual”.

### **13. Article XIII Sick Leave**

Add the following to Section 5: Sick Leave Bank – CARY LIBRARY

Add the following sentence in paragraph 1, sentence 2, “Eligible members are those employees who are regularly scheduled to work at least fifteen (15) hours per week”.

Delete the words one (1) and “day per” from sentence 3 and replace with “seven (7) hours” and “in the prior”.

Add sentence number 4, “Eligible part-time employees using the sick bank will receive time on a pro-rated basis”.

In paragraph 2, sentence 2, add the following words “full-time” before the word “employee”.

In paragraph 2, sentence 2, delete “fifteen (15) days and replace with “111 hours”.

In paragraph 2 sentence 2, add after the word “bank”, “(part-time employees must keep a minimum total of forty-five (45) hours in his/her bank”.

Paragraphs 3, 4 and 5 remain unchanged.

In paragraph 6, delete the words “one (1) additional day” and replace with “seven (7) hours”.

In Section 6: Sick Leave Incentive Program, add the following sentence to number 2, "An employee's donation to the bank shall not be held against the sick leave performance standard".

**14. Article XXVII Wage Schedule**

Change Section 1: Compensation Schedule to read as follows:

"FY2015            2.0% base wage increase effective 07/01/2014  
FY2016            2.5% base wage increase effective 07/01/2015  
FY2017            2.0% base wage increase effective 07/01/2016  
Increase existing Step 7 of the Fiscal Year 2016 table by 0.5% for the following job titles; "Adult Pages, Library Technicians, Library Associates, Branch Librarian / Circulation Supervisor and Librarian I".

---

SIGNED THIS \_\_\_\_\_ DAY OF FEBRUARY, 2015

FOR THE TOWN OF LEXINGTON:

FOR THE CARY MEMORIAL  
LIBRARY STAFF ASSOCIATION:

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Carl F. Valente  
Town Manager

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Linda Sullivan  
Chapter Chair

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Negotiating Team

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Negotiating Team

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Negotiating Team

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Negotiating Team

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Negotiating Team

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Negotiating Team

# APPENDIX A

Effective July 1, 2014

FY 2015  
2.00%  
1.020

<u>Position Title</u>	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Department Head	---	\$28.97	\$31.58	\$34.18	\$36.79	\$39.39	---
Librarian II	\$27.85	\$28.96	\$30.11	\$31.02	\$31.95	\$32.59	\$33.24
Librarian I.	---	\$24.61	\$26.62	\$28.65	\$30.66	\$31.28	\$31.44
Branch Librarian Circulation Supervisor	\$19.31	\$21.20	\$23.08	\$24.97	\$26.88	\$28.73	\$28.88
Library Associate	\$18.34	\$20.13	\$21.91	\$23.75	\$25.53	\$27.36	\$27.49
Library Technician	\$16.36	\$17.82	\$19.27	\$20.74	\$22.20	\$22.64	\$22.76
Adult Pages	\$8.99	\$10.00	\$12.01	\$12.98	\$14.00	\$15.00	\$15.08

# APPENDIX B

Effective July 1, 2015

FY 2016

2.50%

1.025

<u>Position Title</u>	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Department Head	---	\$29.69	\$32.37	\$35.03	\$37.71	\$40.38	---
Librarian II	\$28.54	\$29.68	\$30.86	\$31.79	\$32.75	\$33.40	\$34.07
Librarian I.	---	\$25.23	\$27.29	\$29.37	\$31.43	\$32.07	\$32.22
Branch Librarian Circulation Supervisor	\$19.79	\$21.73	\$23.66	\$25.59	\$27.55	\$29.45	\$29.60
Library Associate	\$18.80	\$20.64	\$22.46	\$24.34	\$26.17	\$28.04	\$28.18
Library Technician	\$16.77	\$18.26	\$19.75	\$21.26	\$22.75	\$23.21	\$23.33
Adult Pages	\$9.21	\$10.25	\$12.31	\$13.31	\$14.35	\$15.38	\$15.45

# APPENDIX C

Effective July 1, 2016

FY 2017  
2.00%  
1.020

<u>Position Title</u>	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Department Head	---	\$30.29	\$33.02	\$35.74	\$38.47	\$41.18	---
Librarian II	\$29.11	\$30.28	\$31.48	\$32.43	\$33.40	\$34.07	\$34.75
Librarian I. <sup>(1)</sup>	---	\$25.73	\$27.83	\$29.96	\$32.06	\$32.71	\$33.03
Branch Librarian Circulation Supervisor <sup>(1)</sup>	\$20.19	\$22.16	\$24.13	\$26.11	\$28.10	\$30.04	\$30.34
Library Associate <sup>(1)</sup>	\$19.17	\$21.05	\$22.91	\$24.83	\$26.69	\$28.60	\$28.88
Library Technician <sup>(1)</sup>	\$17.11	\$18.63	\$20.14	\$21.68	\$23.21	\$23.67	\$23.91
Adult Pages <sup>(1)</sup>	\$9.40	\$10.45	\$12.55	\$13.58	\$14.64	\$15.69	\$15.84

<sup>(1)</sup> .5% added to Step 7.



# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:** 2/23/2015      **PRESENTER:** Carl F. Valente, Town Manager      **ITEM NUMBER:** I.11

**AGENDA ITEM TITLE:**

Designation of Public Safety Official regarding Declaration to Recess Town Meeting (5 min.)

**SUMMARY:**

A recent change in State law, MGL chapter 39, section 10A, permits the Town Moderator to declare a continuation of town meeting to a time, date and place, due to inclement weather or a public safety emergency, after consultation with local public safety officials and members of the Board of Selectmen. The law further requires that within 10 days of the declaration to recess and continue a town meeting, a local public safety official designed by the Board of Selectmen shall submit a report to the attorney general that sets forth the reason for the declaration. It is recommended that Fire Chief John Wilson, the Town's Director of Emergency Management, be designated for this purpose.

**RECOMMENDATION / SUGGESTED MOTION:**

Designate Fire Chief/Director of Emergency Management John Wilson as the local public safety official set for in MGL Chapter 39, Section 10A (d).

**FOLLOW-UP:**

Town Manager's office will convey this designation to the Town Clerk and Town Moderator.

**APPROXIMATE TIME ON AGENDA:**

9:05 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> Summary of Statute	Backup Material

February 2015 – Information from Attorney General’s Office RE: Declaration to Recess Town Meeting made by Moderator

On January 7, 2015, Chapter 487 of the Acts of 2014, *An Act Further Regulating Town Meeting Notices*, took effect in the Commonwealth. The new law, codified as G.L. c. 39, § 10A, “Recession and continuation of town meeting due to inclement weather or public safety emergency; notice” allows the town moderator, because of weather-related concerns or a public safety emergency, and after consultation with local public safety officials and members of the board of selectmen, to declare a continuation of town meeting to a time, date and place certain. The new law sets forth several notice and posting requirements in the event that the moderator recesses and continues the town meeting. *See* G.L. c. 39, §10A (b). Further, Section 10A (d) requires:

*Within 10 days after a declaration to recess and continue a town meeting pursuant to this section, a local public safety official designated by the board of selectmen of the town in which the declaration was made shall submit a report to the attorney general that sets forth the reasons why the declaration was made.*

Reports to the Attorney General pursuant to G.L. c. 39, § 10A (d) should be filed with the Municipal Law Unit of the Attorney General’s Office either via email to [bylaws@state.ma.us](mailto:bylaws@state.ma.us) or mail to: Office of the Attorney General, Municipal Law Unit, 10 Mechanic Street, Suite 301, Worcester, MA 01608. If you have any questions, please contact the Municipal Law Unit at (508) 792-7600.

# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**

2/23/2015

**PRESENTER:**

William Hadley

**ITEM NUMBER:**

C.1

**AGENDA ITEM TITLE:**

Commitment of Water and Sewer Charges

**SUMMARY:**

See attached request for approval of commitments of water and sewer charges.

**RECOMMENDATION / SUGGESTED MOTION:**

Motion to approve the water and sewer commitments as submitted.

**FOLLOW-UP:**

**APPROXIMATE TIME ON AGENDA:**

9:10 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> Water and Sewer Commitments	Backup Material

# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**

February 23, 2015

**STAFF:**

William P. Hadley, Director

**ITEM NUMBER:**

Consent



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**SUBJECT:**

Commitment of Water and Sewer charges.

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**EXECUTIVE SUMMARY:**

Commitment of Water and Sewer Cycle 9 January 2015	\$ 194,089.74
Commitment of Water and Sewer Finals January 2015	\$ 2,266.76

---

**FINANCIAL IMPACT:**

Allows the reconciliation with the General Ledger.

---

**RECOMMENDATION / SUGGESTED MOTION:**

Motion to approve the Water and Sewer commitments as noted above.

---

**STAFF FOLLOW-UP:**

Revenue Officer



Department of Public Works  
Town of Lexington  
Water and Sewer Enterprise Funds  
FISCAL YEAR 2015  
January 2015 Cycle 9 Billing

CYCLE 9		GRAND TOTALS
January 2015		
WATER	\$186,154.60	\$186,154.60
SEWER	\$2,940.00	\$2,940.00
FEE FOR BEDFORD	\$4,995.14	\$4,995.14
TOTAL:	\$194,089.74	\$194,089.74

To the Collector of Revenue for the Town of Lexington:

You are hereby authorized and required to levy and collect of the persons named in the list of water/sewer charges herewith committed to you and each one of his/her respective portion herein set down of the sum total of such list. Said sum being:

*One hundred ninety-four thousand, eighty-nine dollars and 74/100*

And pay the same into the treasury of the Town of Lexington and to exercise the powers conferred by law in regard thereto.

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DIRECTOR OF PUBLIC WORKS

BOARD OF SELECTMEN February 23, 2015

Treasurer/Collector; Director Public Works, Water/Sewer Billing



Department of Public Works  
Town of Lexington  
Water and Sewer Enterprise Funds  
FISCAL YEAR 2015

	FINALS	GRAND TOTALS
	JANUARY 2015	
WATER	\$890.99	\$890.99
SEWER	\$1,375.77	\$1,375.77
TOTAL:	\$2,266.76	\$2,266.76

To the Collector of Revenue for the Town of Lexington:

You are hereby authorized and required to levy and collect of the persons named in the list of water/sewer charges herewith committed to you and each one of his/her respective portion herein set down of the sum total of such list. Said sum being:

*Two thousand two hundred sixty-six dollars and 76/00*

And pay the same into the treasury of the Town of Lexington and to exercise the powers conferred by law in regard thereto.

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\_\_\_\_\_  
DIRECTOR OF PUBLIC WORKS

\_\_\_\_\_  
BOARD OF SELECTMEN

February 23, 2015

Treasurer/Collector; Director Public Works, Water/Sewer Billing

# AGENDA ITEM SUMMARY

## LEXINGTON BOARD OF SELECTMEN MEETING

**DATE:**

2/23/2015

**PRESENTER:**

Joe Pato

**ITEM NUMBER:**

C.2-4

**AGENDA ITEM TITLE:**

Consent Agenda

**SUMMARY:**

1. MiniLux has requested a one-day liquor license to serve beer and wine on Thursday, March 19, 2015, for a Manicures for Melanoma fundraiser from 4:00 p.m. to 10:00 p.m.
2. Lexington Little League has requested approval for the Annual Little League Parade on Saturday, May, 2, 2015 from 8:30 a.m. to approximately 11:00 a.m. as outlined in their letter dated February 4, 2015. Public Works, Town Manager and Police have approved the plans.
3. The Lexington Minute requested permission to use the Battle Green and fire muskets with six other local militia companies on Saturday, March 28, 2015 from 9:00 a.m. to 4:00 p.m.

**RECOMMENDATION / SUGGESTED MOTION:**

Motion to approve the Consent Agenda.

**FOLLOW-UP:**

Selectmen's Office

**APPROXIMATE TIME ON AGENDA:**

9:10 PM

**ATTACHMENTS:**

Description	Type
<input type="checkbox"/> MiniLux Request for One-Day Liquor License	Backup Material
<input type="checkbox"/> Lex. Little League Opening Day Request	Backup Material
<input type="checkbox"/> Lexington Minute Men Request for Battle Green	Backup Material



**TOWN OF LEXINGTON  
SELECTMEN'S OFFICE**

**APPLICATION FOR  
ONE-DAY LIQUOR LICENSE**

The Board of Selectmen issues one-day liquor licenses to for-profit and non-profit organizations that serve liquor and charge either a cover charge or for each drink. Please fill in this form completely and return to the Selectmen's Office along with a check for \$25.00 made payable to the Town of Lexington.

MFNE - melanoma Fund. N.F.

BUSINESS/FUNDRAISING ORGANIZATION: Manicures for Melanoma

CONTACT NAME AND NUMBER: Catherine Murphy 781 641 1559

ADDRESS FOR MAILING: 96 Bow St. Lexington MA

EMAIL ADDRESS: murphy.catherine567@gmail.com

TITLE/PURPOSE OF EVENT: Manicures for Melanoma - Raise \$ for MFNE

LOCATION AND ADDRESS: MiniLuxe 1718 Mass Ave Lexington

DATE OF FUNCTION: March 19, 2015

TIMES OF FUNCTION: 4-10

TYPE OF LIQUOR TO BE SERVED: Wine and beer

DATE AND TIME WHEN LIQUOR DELIVERED: ~~3/15~~ 3/19/15 3:30 or 4:00 PM.

DATE AND TIME WHEN LIQUOR REMOVED: 3/19/15 10:00 P.M.

ADDITIONAL INFORMATION: I am a melanoma survivor and

this is an event to raise money and awareness about sun protection.

Catheri J Murphy  
Authorized Signature

\_\_\_\_\_  
Federal Identification No. or

034 48 1315  
Social Security Number



## Lynne Pease

---

**From:** Lynne Pease  
**Sent:** Wednesday, February 04, 2015 2:33 PM  
**To:** Cathy Severance; David Pinsonneault; Christina Demambro; Laurie Lucibello  
**Subject:** FW: Request for Little League Opening Day Parade  
**Attachments:** Lexington Little League (2).pdf

Attached is the annual request for the Little League parade on May 2. Please let me know if you have any concerns/questions before I have the Selectmen approve.

*Lynne A. Pease*  
Selectmen's Office  
Town of Lexington  
1625 Massachusetts Avenue  
Lexington, MA 02420  
email [selectmen@lexingtonma.gov](mailto:selectmen@lexingtonma.gov)  
phone 781-698-4580  
fax 781-863-9468

DP - OK  
CD - OK  
Tm - OK  
LL - Fac OK

**From:** Michael Schroeder [<mailto:mschroeder73@gmail.com>]  
**Sent:** Wednesday, February 04, 2015 2:31 PM  
**To:** Lynne Pease  
**Cc:** Karen Simmons; Peter Coleman  
**Subject:** Request for Little League Opening Day Parade

Ms. Pease,

Attached is a letter to the Selectmen from Lexington Little League, requesting approval for our annual Little League Opening Day parade on May 2, 2015. Thank you for your help with this and please let me know if you have any questions or concerns.

Thank you,  
Michael Schroeder  
President, Lexington Little League

Cell: 339-227-0754  
Home: 781-862-5824

## *Lexington Little League*

Michael Schroeder  
President

Tel: (339) 227-0754  
Email:mschroeder73@gmail.com

February 4, 2015

Joseph Pato  
Chairman, Board of Selectmen  
Town of Lexington  
Town Office Building  
Lexington, MA 02420

Dear Mr. Pato,

The Lexington Recreation Department and Lexington Little League are now making plans for the Annual Little League Parade to kick off the 2015 season. The scheduled date is Saturday, May 2, 2015 forming at 8:30 a.m. at Muzzey Field and stepping off at 9:00 a.m. The route will follow Mass. Ave. through the Center, then down Muzzey St. ending at the Fitzgerald Field/ Little League Center #4 ball field off Park Drive. Immediately following the parade there will be a brief Opening Day Ceremony at the field. The entire event should last until 11:00 a.m. In the event of rain, the program will be canceled.

We would appreciate receiving permission from the Board of Selectman to conduct these activities on Saturday, May 2, 2015. Furthermore, we would like to extend an invitation to you and the entire Board to participate in the parade and opening ceremonies.

Thank you for your time and consideration. I look forward to hearing from you at your earliest convenience. If you have any questions, please feel free to give me a call at (339) 227-0754.

Sincerely,



Michael Schroeder  
President, Lexington Little League

CC: Peter Coleman, Recreation Supervisor  
Karen Simmons, Director of Recreation

## Lynne Pease

---

**From:** Larry Conley <lconly30@aol.com>  
**Sent:** Tuesday, February 17, 2015 9:42 AM  
**To:** selectmen's  
**Subject:** Re: March 28 drill

Lynne, it is from 9:00 - 4:00

Sent from my iPad

On Feb 17, 2015, at 9:17 AM, selectmen's <Selectmen@lexingtonma.gov> wrote:

> What time does this event start and how long will it last?

>

> Lynne A. Pease

> Selectmen's Office

> Town of Lexington

> 1625 Massachusetts Avenue

> Lexington, MA 02420

> email selectmen@lexingtonma.gov

> phone 781-698-4580

> fax 781-863-9468

>

> -----Original Message-----

> From: Larry Conley [mailto:lconly30@aol.com]

> Sent: Wednesday, February 11, 2015 9:32 AM

> To: selectmen's

> Subject: Re: March 28 drill

>

> It is a militia drill with 6 other local militia companies, we have done this before. Part of our drilling exercising to fire muskets in a safe way, this prepares us for Battle Road in April. The majority of drilling will be on the grounds of the Buckman, that will be where we fire. Some drilling on the green also, we expect 60-80 persons Hope this works, if you need more let me know.

> Thanks for all your help

> Larry,LMM

>

>

> Sent from my iPhone

>

>> On Feb 11, 2015, at 9:24 AM, selectmen's <Selectmen@lexingtonma.gov> wrote:

>>

>> Mr. Conley,

>>

>> Could you please provide some additional information:

>>

>> i. Nature of event.

>> iv. Expected number of participants, spectators, and vehicles.

>> v. Duration and time of event .

>> vi. Statement of equipment and facilities to be used.

>> vii. Section of the Battle Green desired.

>>

>> Thanks!

>>

>> Lynne A. Pease

>> Selectmen's Office

>> Town of Lexington

>> 1625 Massachusetts Avenue

>> Lexington, MA 02420

>> email [selectmen@lexingtonma.gov](mailto:selectmen@lexingtonma.gov)

>> phone 781-698-4580

>> fax 781-863-9468

>>

>> -----Original Message-----

>> From: Larry Conley [mailto:[lconly30@aol.com](mailto:lconly30@aol.com)]

>> Sent: Wednesday, February 11, 2015 8:21 AM

>> To: selectmen's

>> Subject: March 28 drill

>>

>> Good morning Lynne, The Lexington Minute Men would like to request permission to do some volleys during our drill on March 28th at the Buckman.

>> Should be a crowd pleaser!

>>

>> thank you

>> Larry Conley, Adjutant

>> for the Captain Commanding Barry J Cunha Lexington Minute Men, Co

>> Sent from my iPad