

1. Comprehensive Sustainable Energy Committee Regular Meeting Agenda

Documents:

[COMPREHENSIVE SUSTAINABLE ENERGY COMMITTEE AGENDA 03-22-16.PDF](#)

2. Comprehensive Sustainable Energy Committee Item 1

Documents:

[2016 CSEC WARRANT POSITIONS.PDF](#)

3. Comprehensive Sustainable Energy Committee Item 2

Documents:

[CSEC CHOICES.PDF](#)

4. Comprehensive Sustainable Energy Committee Item 3

Documents:

[2016 GC POTENTIAL PROJECTS.PDF](#)

5. Comprehensive Sustainable Energy Committee Item 4

Documents:

[WWTP LIGHTING UPGRADE .PDF](#)

6. Comprehensive Sustainable Energy Committee Item 5

Documents:

[2016 POTENTIAL GC.PDF](#)



MEETING AGENDA

Town of Concord Comprehensive Sustainable Energy Committee

Date: Tuesday, March 22, 2016
Time: 7:30PM
Location: Harvey Wheeler Community Center
1276 Main Street

**** SPECIAL MEETING ****

1. Welcome visitors [7:30, 5 min]
2. Next meetings
3. [Optional] Update on Town energy staffing (Jan) [7:35, 10 min]
4. Review of CSEC-positions on energy-related Town Meeting warrant articles;
see attached CSEC position statement (All) [7:45, 20 min]
http://www.concordma.gov/pages/ConcordMA_CSE/Meeting%20Support%20Materials/March%202022,%202016%20CSEC%20meeting/2016%20CSEC%20warrant%20positions
5. Choice of project for Green Communities grant application;
see attached short informational memo (All) [8:05, 40 min]
http://www.concordma.gov/pages/ConcordMA_CSE/Meeting%20Support%20Materials/March%202022,%202016%20CSEC%20meeting/2016%2003%2022%20CSEC%20choices
http://www.concordma.gov/pages/ConcordMA_CSE/Meeting%20Support%20Materials/March%202022,%202016%20CSEC%20meeting/2016%20GC%20Potential%20Projects
6. Public comment [8:45, 10 min]
7. Adjourn [target 8:55pm]

2016 Comprehensive Sustainable Energy Committee (CSEC):

Alan Whitney (Chair)	Resident
Annie Moore	Resident
Bradley Hubbard-Nelson	Resident
Gilda Gussin	Resident
Gordon Brockway	Resident
Jill Appel	Resident
Mark Myles	Resident
Sue Felshin	Resident
William Lehr	Resident
Alice Kaufman	BOS Liaison

Comprehensive Sustainable Energy Committee Positions on Warrant Articles (draft)

Article 20, item M: Community Preservation Committee Appropriation Recommendations, Town of Concord/Concord On Tap – Drinking Water Fountains for Concord Playing Fields

Position: Favor

Explanation: By providing accessible, clean water to users of Concord playing fields that currently have no access to public water, the use of water from purchased disposable plastic bottles will be reduced, helping to further the goals of sustainable practices adopted by the Town in 2011.

Article 34: Zoning Bylaw Amendment – Combined Business/Residence

Position: Favor

Explanation: Housing in town centers reduces consumption of energy not only by residents who are closer to transit, shopping, schools, etc., but also by the town, which can more efficiently provide school busing, utilities, and emergency services to more-centrally located residents. Although the article reduces the requirement for affordable housing, the effective reduction would be slight, and worth the gain in sustainable energy use.

Article 42: Zoning Bylaw Amendment – Dimensional Regulations, Residence Districts Maximum Floor Area Ratio & Nonconforming Single And Two- Family Residential Structures

Position: Favor

Explanation: All else being equal, we may expect a smaller house to have lower energy use than a larger house. This article is an incremental but nevertheless worthwhile step toward sustainability.

Article 45: Bylaw Prohibiting Polystyrene in Food Service Ware

Position: Favor

Explanation: Manufacture of polystyrene requires fossil fuels and polystyrene is not recyclable. Given that there are practical alternatives, the value of polystyrene does not justify its impact on sustainability.

Article 46: Request to Create a Net Zero Greenhouse Gas Emissions Goal, Task Force, Funding & Plan

Explanation: It is CSEC's understanding that this article will not be moved. Without taking a position on the specifics of Article 46, CSEC generally favors the development of a net-zero energy plan for Concord.

CSEC Choices (22 Mar 2016)

Precipitating circumstance:

Town has decided not to move forward with possible GC-funded Ripley boiler replacement in 2016; re-scheduled for 2017. At this meeting, we need to identify alternate projects for GC application (due 25 Mar); also need to identify projects for Sawyer Trust Fund and GYH-remainder funds, though not critical to do so at 22 Mar CSEC special meeting.

Choices to be made:

The accompanying spreadsheet describes the costs and savings of the potential projects in the mix:

1. School lighting projects. The viability of these projects depends on Brian Schlegel's ability to execute them within the next year. We are trying to reach Brian to get his feedback on this matter.
2. Library lighting (~\$89k for main library, but we need to reduce that to \$79k to keep gross project cost under bid cap, ~\$29k for Fowler); possible sticking point – are libraries willing to do complete job in one go? (*Jan will be meeting with library officials on Monday to nail down scope of work.*)
3. WWTP lighting (~\$42k, but could save \$ with town labor. Also, the majority of existing fixtures are 32 years old, and would likely need to be replaced in the future anyway.)
4. LED lighting fixtures with daylighting and occupancy controls throughout CMLP headquarters
5. LED streetlights in the West Concord and Thoreau Street areas

Possible funding sources (individually or, in some cases, combination):

1. Green Communities (application for \$250,000 in 2016 GC funding due 25 Mar)
2. Sawyer Trust Fund (Trustees of Town Donations only meets quarterly, so we can expedite projects by making choices in time for their 21 April meeting)
3. Town of Concord (for WWTP labor)
4. Left-over GYH \$ (decision can wait until 12 Apr regular CSEC meeting)

Constraints:

GC grant application must be started no later than 22 March in order to meet submission deadline.

Project Name	Building	Contractor	Total Project Cost	CMLP Rebate	GC Grant Request	Annual Energy Cost Savings	Potential Annual Electricity Savings (kWh)	Total Energy Savings MMBtu	Cost / MMBtu saved \$ / MMBtu	Payback Years	Notes	Expected Annual Energy + Maintenance Savings
School LED	Sanborn	Horizon	\$ 91,982	\$ 26,914	\$ 65,068	\$ 12,528	90,455	308.6	\$ 298	5.2	Additional estimated annual maintenance savings for all school projects combined: \$2,233.68	
School LED	Peabody	Horizon	\$ 32,571	\$ 8,650	\$ 23,921	\$ 4,380	31,628	107.9	\$ 302	5.5		
School LED	Thoreau	Horizon	\$ 28,311	\$ 7,742	\$ 20,569	\$ 3,639	26,276	89.7	\$ 316	5.7		
School LED	Alcott	Horizon	\$ 18,222	\$ 3,768	\$ 14,454	\$ 1,838	13,272	45.3	\$ 402	7.9		
School LED	Ripley	Horizon	\$ 50,991	\$ 10,264	\$ 40,727	\$ 4,854	35,048	119.6	\$ 426	8.4		\$ 29,473.64
Library LED	Fowler Branch	Horizon	\$ 26,745	\$ 5,314	\$ 21,431	\$ 2,994	16,633	56.8	\$ 471	7.2	Add'l estimated annual maintenance savings: \$245.51	\$ 3,239.52
Library LED	Main Library	Horizon	\$ 90,000	\$ 16,438.18	\$ 73,562	\$ 13,090	72,721	248.1	\$ 363	5.6	Add'l estimated annual maintenance savings: \$1,301.11	\$ 14,390.89
Library LED	Main Library	Horizon	\$ 109,096	\$ 19,926	\$ 89,170	\$ 15,867	88,151	300.8	\$ 363	5.6	Note: This project is too large, unless we go out to bid on it. We can use GC funding for projects under \$100,000 (including rebate \$) and not have to go out to bid on them. Add'l estimated annual maintenance savings: \$1,301.11	\$ 17,168.26
WWTP LED	WWTP	Town	\$ 41,000	\$ 4,000	\$ 37,000	\$ 1,688	11,255	38.4	\$ 1,068	21.9	Majority of existing fixtures are 32 years old. Cost of replacing with like fixtures is estimated to be \$21,000, so additional cost attributable to energy efficiency features is about \$21,000.	n/d
Cubicle controlled LEDs	CMLP	CMLP	\$ 32,250	\$ -	\$ 32,250	\$ 8,918	89,180	304.3	\$ 106	3.6	cost estimate: \$3,000/bldg + (\$250/fixture *117)	n/d
LED Streetlights	W. Concord	CMLP	\$ 44,976	\$ -	\$ 44,976	\$ 1,125	7,752	26.4	\$ 1,700	40.0	No CMLP rebates available for outdoor lighting	n/d
LED Streetlights	Thoreau Street Area	CMLP	\$ 29,984	\$ -	\$ 29,984	\$ 750	5,168	17.6	\$ 1,700	40.0	No CMLP rebates available for outdoor lighting	n/d

Total \$ 403,941
blue total \$ 224,708
Target to be able to include 10% administrative staffing line item \$ 225,000

Note: CMLP rebates are \$1,000 / kW of reduced demand in indoor lighting. CMLP does not give itself rebates.

Subject: Wastewater Treatment Plant Lighting Upgrade

Date: March 18, 2016 at 4:09:45 PM EDT

From: Jan Aceti

To: Alan Whitney, Annie Moore, Bradley Hubbard-Nelson, Sue Felshin, Gilda Gussin, Gordon Brockway, Jill Appel, William Lehr, Mark Myles, Pamela Cady

Hello CSEC members,

I wanted to provide you with some additional perspective on the numbers we've provided for the Wastewater Treatment Plant lighting upgrade. You will note on the spreadsheet that we sent that the payback period for this project is 22 years. This is quite long. However, I think that the cost estimate that GGD prepared for us is conservatively high. As one example, they included \$500 for operation and maintenance manuals. I also think that they specified very high quality fixtures.

Further, their proposal does call for the replacement of fixtures, not the retrofit of existing fixtures with LED lamps and drivers. The majority of fixtures at the WWTP are 32 years old. GGD considers this to be close to the end of a fixture's useful life. Therefore, we can assume that even if we don't replace these fixtures with energy efficient ones now, that they would need to be replaced in the future anyway. GGD has estimated that the cost of replacing the existing fixtures with similar ones would be \$21,000. Therefore, the additional cost of the upgrade due to the energy efficiency features of the proposed fixtures is only about \$21,000. That is, the extra cost is the \$42,000 energy efficient lighting upgrade cost minus the \$21,000 cost of installing fixtures similar to the existing ones. That consideration cuts the 22 year payback to 11 years.

In addition, Jana Dengler, our new Facilities Manager, has requested the opportunity to put in a bid to install the new lighting at the WWTP using her Town employee staff. She would bid against private contractors, and is confident that she could come in with a lower price, since labor costs would be less than those offered by contractors who have to pay prevailing wage. We've confirmed with Jon Harris that having an internal bid compete against external bids is permissible. So, the final payback period may be quite a bit less than the estimated one.

We could, of course, put this project off until LED fixture prices come down further. For example, say that we waited a decade, and the overall project cost went down by ½, to \$21,000 (an optimistic projection, since fixtures are only a portion of the overall cost). During the intervening decade, we would forfeit about \$17,000 in electricity cost savings. When we returned to the project in a decade, we'd have to pay a company like GGD another \$3,500 to prepare a lighting design, and we'd have to pay someone like me again to manage the project. I've spent about 40 hours on the project since late December, so those staff costs add up.

GGD has proposed LED fixtures with occupancy and daylighting sensors. So, we'd be getting the most up-to-date technology. Alan Cathcart, the Water/Sewer Director, says that he expects the Wastewater Treatment Plant to remain at its current site, because there really is nowhere else in Town to put it. He expects that it will be 30 years before

the existing building undergoes a major renovation. Therefore, my recommendation is that we capitalize on the time and money we have already devoted to the project by completing it at this time. Then, if it is another 30 years before the WWTP lighting is upgraded again, we will know that we maximized energy savings between now and then.

We may want to pay for the project using Sawyer Trust funds rather than with Green Communities grant money, but my recommendation is that we move ahead with the project at this time using the most appropriate source of funding.

Thank you.

Jan Aceti
Energy Conservation Coordinator
Concord Light
PO Box 1029
1175 Elm St.
Concord, MA 01742
978-318-3151
jaceti@concordma.gov
www.concordma.gov/cmlp

Follow Town of Concord:



Project Name	Building	Contractor	Total Project Cost	Utility Rebate	GC Grant Request	Energy Cost Savings	Potential Energy Savings	Total Energy Savings	Cost / MMBtu saved	Payback	Notes
			\$	\$	\$	\$	Electricity (kWh)	MMBtu	\$ / MMBtu	Years	
School LED	Sanborn	Horizon	\$ 91,982	\$ 26,914	\$ 65,068	\$ 12,528	90,455	308.6	\$ 211	5.2	Additional estimated maintenance savings for all school projects combined: \$2,233.68
School LED	Peabody	Horizon	\$ 32,571	\$ 8,650	\$ 23,921	\$ 4,380	31,628	107.9	\$ 222	5.5	
School LED	Thoreau	Horizon	\$ 28,311	\$ 7,742	\$ 20,569	\$ 3,639	26,276	89.7	\$ 229	5.7	
School LED	Alcott	Horizon	\$ 18,222	\$ 3,768	\$ 14,454	\$ 1,838	13,272	45.3	\$ 319	7.9	
School LED	Ripley	Horizon	\$ 50,991	\$ 10,264	\$ 40,727	\$ 4,854	35,048	119.6	\$ 341	8.4	
Library LED	Main Library	Horizon	\$ 109,096	\$ 19,926	\$ 89,170	\$ 15,867	88,151	300.8	\$ 296	5.6	Note: This project is too large, unless we go out to bid on it. We can use GC funding for projects under \$100,000 (including rebate \$) and not have to go out to bid on them. Add'l estimated maintenance savings: \$1,301.11
Library LED	Fowler Branch	Horizon	\$ 26,745	\$ 5,314	\$ 21,431	\$ 2,994	16,633	56.8	\$ 378	7.2	Add'l estimated maintenance savings: \$245.51
WWTP LED	WWTP	Town	\$ 41,000	\$ 4,000	\$ 37,000	\$ 1,688	11,255	38.4	\$ 963	21.9	Majority of existing fixtures are 32 years old. Cost of replacing with like fixtures is estimated to be \$21,000, so additional cost attributable to energy efficiency features is about \$21,000.
Cubicle controlled LEDs	CMLP	CMLP	\$ 32,250		\$ 32,250	\$ 8,866	88,660	302.5	\$ 107	3.6	cost estimate: \$3,000/bldg + (\$250/fixture *117)
LED Streetlights	W. Concord	CMLP	\$ 44,976	\$ -	\$ 44,976	\$ 1,125	7,752	26.4	\$ 1,700	40.0	No CMLP rebates available for outdoor lighting
LED Streetlights	Thoreau Street Area	CMLP	\$ 29,984	\$ -	\$ 29,984	\$ 750	5,168	17.6	\$ 1,700	40.0	No CMLP rebates available for outdoor lighting

Total \$ 419,549
blue total \$ 238,794

Note: CMLP rebates are \$1,000 / kW of reduced demand

