



TOWN OF WAKEFIELD

ENVIRONMENTAL SUSTAINABILITY COMMITTEE

Thursday, September 9, 2021
7:00 P.M.
Zoom Meeting

COMMITTEE MEMBERS PRESENT:

Myra Sessions, Chair
Rob Darnell, Vice Chair
Robin Greenberg, Secretary
Mary Hajjar
Dan Noren
Sean Cash
Julie Smith-Galvin, Town Council rep
Suzy Veilleux, School Committee rep
Tom Boettcher, WMGLD rep
Ann Waitt, DPW alternate rep
Sophie Brown, Student Liaison
Addie Festel, Student Liaison

COMMITTEE MEMBERS ABSENT:

Melissa Eusden
Joe Conway, DPW rep
Uma Gerweck, Youth Council rep
Nick Pilleri, Student Liaison
Abby Lane, Student Liaison

----- TOPICS OF DISCUSSION -----

Call to Order	The meeting was called to order at 7:02 p.m by M. Session. The meeting is being recording and closed captioning is available.
Public Participation	Carol Zoubek shared good news that the Quannapowitt Yacht Club received Green Sailing manual which covers green cleaning of boats and policies on recycling ropes.
Approval of Minutes	R. Greenberg motion to approve the August meeting notes with S. Veilleux second. Motion passed.
Sustainable Buildings Presentation	R. Greenberg gave presentation on Sustainable Buildings as an introduction to sustainable building rating systems, sustainability related terms, potential WMHS project schedule and potential opportunities for WMHS. S. Veilleux suggested ESC generate its goals for project.
2021-2022 Committee Priorities & Committee Structure	J. Smith-Galvin recommends that non-ESC members be encouraged to join ESC subcommittees. R. Greenberg motion to make three subcommittees. M. Hajjar second.



**Peaker Plant,
Environmental &
Health Safety
Review**

The Peaker Plant, aka Peabody power plant, has received MA Dept Public Utilities' approval of public bond funding. Building of the new plant needs to start construction by end of 2023 or at risk for reevaluation of funding. Potential influence to stop the construction is limited at this point.

WMGLD current board voted to support the plant in 2016, prior to four of the five current commissioners were on the board. If plant does not go forward, Wakefield utility payers will need to still meet the department's financial commitment.

Peabody Board of Health (BOH) has asked the state to look at air quality related to the new plant because Essex County has air quality issues already.

No environmental study was not done because since there are already power plants on site, the state said it was not necessary.

The plant is a "peaker plant" which means it is intended to operate when there is a highest demand.

Operators of the plant said if new plant moves forward, they plan to shutdown one of the existing older 'dirtier' plants.

**Green
Communities Act
(GCA)**

Energy audit in progress. J. Smith-Galvin hopes to have Town Council vote by end of the month.

**Styrofoam &
Plastic Reduction
By-law**

No news

**Student Member
comments**

S. Brown and A. Festel shared that the high school recycling club teacher wants to group to start up again. They are hoping to meet on Tuesday to recruit new members. S. Veilleux suggested that the Recycling Club consider also organizing food rescue at the high school. They will discuss with teacher. M. Session noted that there might is a compost bin available for them at Woodville if the high school wants to use it. Black Earth's services were pre-paid so it might be able to applied to a pickup high school. S. Cash noted he is available with food rescue efforts.

**Wakefield Public
Schools (WPS)
Update**

No news

**Town Council (TC)
Update**

J. Smith-Galvin said that TC had a meeting with the Northeast Metro Tech School about their replacement school project. They are projecting a LEED Silver project.

Fall Town Meeting is likely Saturday, November 6, 2021.

WMGLD Update

T. Boettcher shared that as of the end of July, 40 customers have signed up for Green Choice.

2020A, a 6 megawatt solar project in Lundlow, construction project has been delayed so project is now expected to be online in 2022. There are six communities involved with it including Wakefield.

Installation on the new streetlights in the Albion corridor which includes Tuttle and Foundry Street is delayed due to material availability.

DPW Update

A. Waitt shared that the corrugated collection at the yard pit has been successful.

There might be a fall rainbarrel and compost bin sale; a joint effort with Melrose is being considered. Their goal is to sell a 100.

Right now, there are new 164 Black Earth customers in town.

**Clean Lake
Committee
Update**

No news


Next Meetings

The next regular Environmental Sustainability Committee meeting is scheduled for Thursday, October 14, at 7pm.

**Committee
Meeting
Adjournment**

J. Smith-Galvin motioned to adjourn. R. Greenberg second. Meeting adjourned at 8:36 pm.

Respectfully submitted,



Robin Greenberg, Secretary

Attachments: Sustainable Buildings presentation

Sustainable Buildings:

Building Rating Programs, Building Vocabulary, & WMHS Project

Environmental Sustainability Committee Meeting
September 9, 2021



Building Rating Systems*



The Spruce/ Margot Cavin

* This list is limited to the more common building rating systems for commercial projects

US Green Building Council (USGBC)

Rating System: LEED – Leadership in Energy and Environmental Design

- Version: LEED v4.1
 - Credit Categories:
 - Integrative Process
 - Location & Transportation
 - Sustainable Site
 - Water Efficiency
 - Energy & Atmosphere
 - Materials & Resources
 - Indoor Environmental Quality (IEQ)
 - Levels: Certified, Silver, Gold, Platinum
 - New Construction, Existing Building (EB), Interiors, Operations & Maintenance
 - LEED AP – LEED Accredited Professional
 - <https://www.usgbc.org/leed>



**LEED v4 for BD+C: Schools****Project Checklist**

Credit Integrative Process

1

0	0	0	Location and Transportation	15
			Credit LEED for Neighborhood Development Location	15
			Credit Sensitive Land Protection	1
			Credit High Priority Site	2
			Credit Surrounding Density and Diverse Uses	5
			Credit Access to Quality Transit	4
			Credit Bicycle Facilities	1
			Credit Reduced Parking Footprint	1
			Credit Green Vehicles	1

0	0	0	Sustainable Sites	12
			Prereq Construction Activity Pollution Prevention	Required
			Prereq Environmental Site Assessment	Required
			Credit Site Assessment	1
			Credit Site Development - Protect or Restore Habitat	2
			Credit Open Space	1
			Credit Rainwater Management	3
			Credit Heat Island Reduction	2
			Credit Light Pollution Reduction	1
			Credit Site Master Plan	1
			Credit Joint Use of Facilities	1

0	0	0	Water Efficiency	12
			Prereq Outdoor Water Use Reduction	Required
			Prereq Indoor Water Use Reduction	Required
			Prereq Building-Level Water Metering	Required
			Credit Outdoor Water Use Reduction	2
			Credit Indoor Water Use Reduction	7
			Credit Cooling Tower Water Use	2
			Credit Water Metering	1

0	0	0	Energy and Atmosphere	31
			Prereq Fundamental Commissioning and Verification	Required
			Prereq Minimum Energy Performance	Required
			Prereq Building-Level Energy Metering	Required
			Prereq Fundamental Refrigerant Management	Required
			Credit Enhanced Commissioning	6
			Credit Optimize Energy Performance	16
			Credit Advanced Energy Metering	1
			Credit Demand Response	2
			Credit Renewable Energy Production	3
			Credit Enhanced Refrigerant Management	1
			Credit Green Power and Carbon Offsets	2

Project Name:

Date:

0	0	0	Materials and Resources	13
			Prereq Storage and Collection of Recyclables	Required
			Prereq Construction and Demolition Waste Management Planning	Required
			Credit Building Life-Cycle Impact Reduction	5
			Credit Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit Building Product Disclosure and Optimization - Material Ingredients	2
			Credit Construction and Demolition Waste Management	2

0	0	0	Indoor Environmental Quality	16
			Prereq Minimum Indoor Air Quality Performance	Required
			Prereq Environmental Tobacco Smoke Control	Required
			Prereq Minimum Acoustic Performance	Required
			Credit Enhanced Indoor Air Quality Strategies	2
			Credit Low-Emitting Materials	3
			Credit Construction Indoor Air Quality Management Plan	1
			Credit Indoor Air Quality Assessment	2
			Credit Thermal Comfort	1
			Credit Interior Lighting	2
			Credit Daylight	3
			Credit Quality Views	1
			Credit Acoustic Performance	1

0	0	0	Innovation	6
			Credit Innovation	5
			Credit LEED Accredited Professional	1

0	0	0	Regional Priority	4
			Credit Regional Priority: Specific Credit	1
			Credit Regional Priority: Specific Credit	1
			Credit Regional Priority: Specific Credit	1
			Credit Regional Priority: Specific Credit	1

0	0	0	TOTALS	Possible Points: 110
---	---	---	--------	----------------------

Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

Northeast Energy Efficiency Partnerships (NEEP)

Rating System: NE-CHPS - Northeast Collaborative for High Performance Schools

- Version: NE-CHPS Criteria v3
 - Credit Categories:
 - Integration
 - Operations & Metrics
 - Indoor Environmental Quality
 - Energy
 - Water
 - Sites
 - Materials & Waste Management
 - Levels: Verified
 - Galvin Middle School was MA CHPS 2009 Verified Leader
 - <https://chps.net/criteria/chps-massachusetts>



Collaborative for High Performance Schools (CHPS)

Project Scorecard: 2014 US-CHPS Criteria™

School Name:	Project #		
Expected Completion:	Current Phase:		
School District:	Website:		
School Address:	City:	State:	Zip:
School Contact:	Phone:	E-mail:	
Student Capacity:	Notes:		
Approximate Square Feet:			

Verification

Is this the final CHPS Scorecard?

Registered Principal Architect (Signature)

Project Manager (Signature)

Name, Title, Date (Please print)

Name, Title, Date (Please print)

Use this scorecard to track expected scores. Note that prerequisites have points associated with them even though they are required. This enables project teams to talk more meaningfully about the effort being put into each section of the Criteria. Prerequisite point columns are also highlighted for reference. Mark each credit as ready for review by using the appropriate column for each phase of the review.

Key: P - Prerequisite; PS - CHPS Plan Sheet Required; CD - Construction Documents Required; A - Attachment Required

Criteria	Title	Prerequisite	Max Possible Pts	Points Targeted	Points Claimed	Responsible Team Member	Design Review Requirements	Ready for Design Review Construction Review Requirements	Ready for Construction Review Performance Review Requirements	Ready for Performance Review	Annotation
Total			250								
Integration and Innovation Subtotal			21								
II 1.0	Integrated Design	P	1				CD		A		
II 1.1	Enhanced Integrated Design		2				A				
II 2.1	District Level Commitment		2				A				
II 3.1	School Master Plan		2				A				
II 4.1	High Performance Transition Plan		1				A		A		
II 5.1	Educational Display		1				CD		A		
II 6.1	Educational Integration		2						A		
II 7.1	Demonstration Area		1				CD		A		
II 8.1	Climate Change Action / Carbon Footprint Reporting		3				A		A		
II 9.1	Crime Prevention Through Environmental Design		2				A		A		
II 10.1	Innovation (CHPS Verified Projects only)		4				VARIES		VARIES		
Indoor Environmental Quality Subtotal			82								
EQ 1.0	HVAC Design - ASHRAE 62.1	P	7				PS1				
EQ 1.1	Enhanced Filtration		2				PS1	CD		A	
EQ 1.2	Dedicated Outdoor Air System		5				PS1	CD		A	
EQ 2.1	Pollutant and Chemical Source Control		3					A		A	
EQ 3.1	Outdoor Moisture Management		3				CD		A		
EQ 4.1	Ducted Returns		2				PS1	CD			
EQ 5.1	Construction Indoor Air Quality Management		6				PS1	CD		A	
EQ 5.2	(Indoor)Moisture Management		3								

International Living Future Institute

Rating System: Living Building Challenge (LBC)

- Version: LBC 4.0
 - Performance Categories:
 - Place
 - Water
 - Energy
 - Health + Happiness
 - Materials
 - Equity
 - Beauty
- Levels: Zero Carbon, Zero Energy, Core Green Building, Petal, Full
- <https://living-future.org/lbc/>



Additional Building Rating Systems

- International WELL Building Institute (IWBE)
 - Rating System: WELL
 - <https://www.wellcertified.com/>
- Green Building Initiative (GBI)
 - Rating System: Green Globes
 - <https://thegbi.org/green-globes-certification/>
- Passive House Institute US (PHIUS)
 - Passive House
 - <https://phmass.org/>
- BRE
 - Rating System: BREEAM
 - <https://www.breeam.com/>
- GIGA
 - Rating System: Regenerative Ecological, Social, and Economic Targets (RESET)
 - <https://www.reset.build/>



Definitions - Net Zero

- Net Zero GHG Emission – no greenhouse gas (GHG) emission
 - National Renewable Energy Laboratory (NREL): "produces (or purchases) enough emissions-free RE to offset emissions from all energy used in the building annually. Carbon, nitrogen oxides, and sulfur oxides are common emissions."
- Net Zero Carbon (ZNC) – *"a highly energy efficient building that produces on-site, or procures, enough carbon-free renewable energy to meet building operations energy consumption annually"* www.architecture2030.org
- Triple Net Zero – net zero energy, water, and waste
- Net Zero Energy Building (EZEB) –
 - MA Department of Energy Resources: "one that is optimally efficient, and over the course of a year, generates energy onsite, using clean renewable resources, in a quantity equal to or greater than the total amount of energy consumed onsite."
www.mass.gov/service-details/what-is-a-zero-net-energy-building
 - US Department of Energy: "an energy-efficient building where, on a source energy basis, the actual annual delivered energy is less than or equal to the on-site renewable exported energy."
https://www.energy.gov/sites/prod/files/2015/09/f26/bto_common_definition_zero_energy_buildings_093015.pdf
 - NREL: "produces at least as much RE (renewable energy) as it uses in a year, when accounted for at the site."
<https://www.nrel.gov/docs/fy10osti/44586.pdf>



Definitions – Embodied Carbon

- “Embodied carbon is the carbon dioxide (CO₂) emissions associated with materials and construction processes throughout the whole lifecycle of a building or infrastructure.
- “It includes any CO₂ created during the manufacturing of building materials (material extraction, transport to manufacturer, manufacturing), the transport of those materials to the job site, and the construction practices used.
- “Put simply, embodied carbon is the carbon footprint of a building or infrastructure project before it becomes operational. It also refers to the CO₂ produced maintaining the building and eventually demolishing it, transporting the waste, and recycling it.
- “Embodied carbon is distinct from operational carbon — the carbon that comes from energy, heat, lighting, etc.”

<https://www.carboncure.com/concrete-corner/what-is-embodied-carbon/>



Definitions

- ASHRAE – professional organization that publishes HVAC standards, e.g. Standard 62.1 – standard for ventilation systems design and acceptable indoor air quality (IAQ) and Standard 90.1 – standard for energy modeling
 - Energy Conservation Measures (ECM) – energy and water conservation measures studied for energy efficiency, life cycle cost (LCC), and energy conservations
 - Energy Use Intensity (EUI) - total energy consumed by the building in one year (measured in kBtu or GJ) by the total gross floor area of the building
 - Site EUI – energy consumed at the building site and is reflected in the utility bills paid by the owner
 - Source EUI – site energy and energy lost during production, transmission and delivery to the site
- <https://www.buildingenclosureonline.com/blogs/14-the-be-blog/post/87007-energy-use-intensity-eui-in-simple-terms>

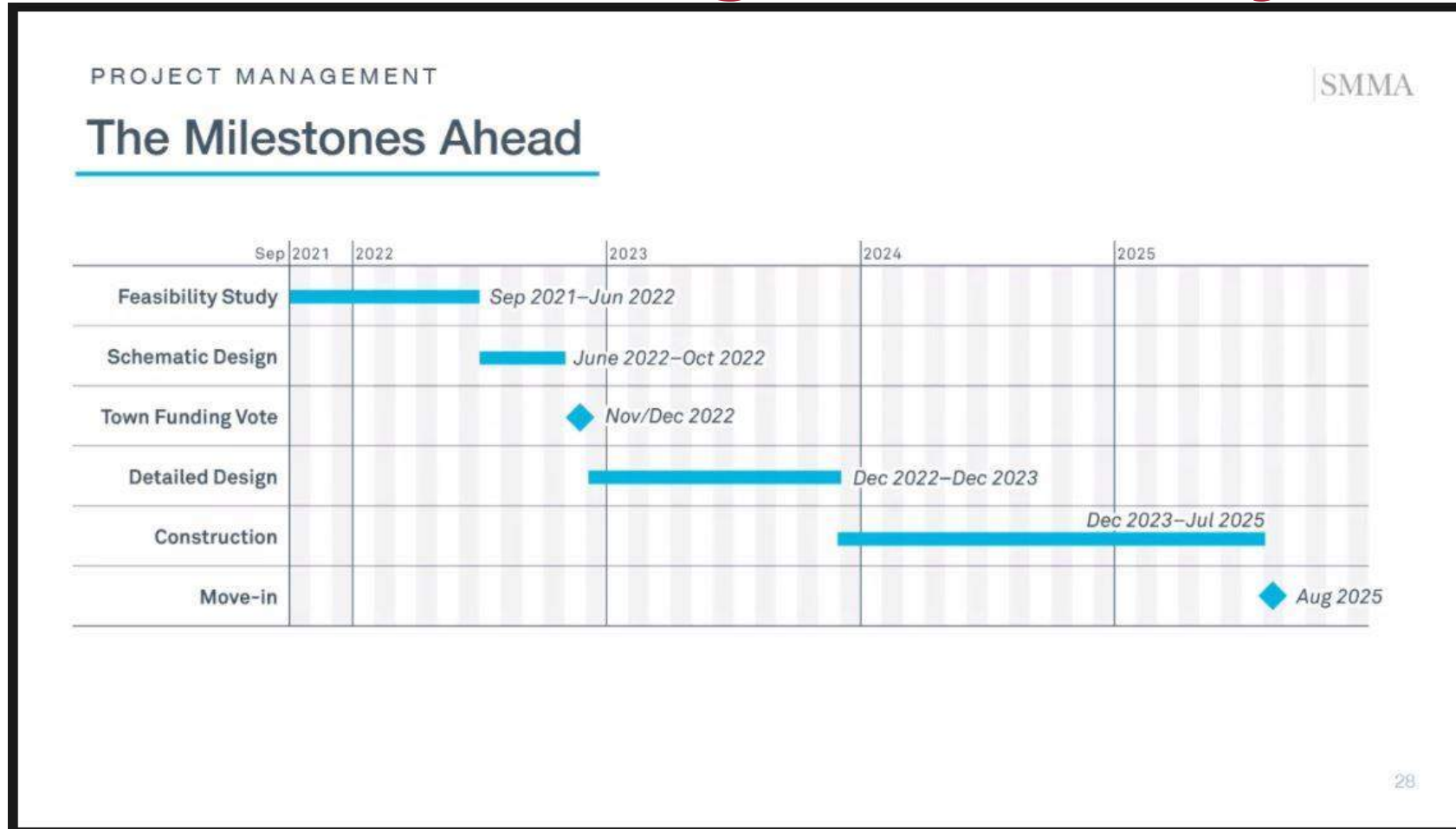


Definitions

- Health Product Declaration (HPD) – self-declared list of ingredients in building materials by the product manufacturer
<http://www.activarcpg.com/news/hpd-documentation-green-building-projects>
- Environmental Product Declaration (EPD) - list of ingredients in building materials verified by a third party panel
<http://www.activarcpg.com/news/hpd-documentation-green-building-projects>
- Red List – International Living Future Institute’s ““worst in class” materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem that are prevalent in the building products industry”
<https://living-future.org/declare/declare-about/red-list/>



Wakefield Memorial High School Project



Systems Sophistication

