MEETING NOTES

DORE + WHITTIER

Meeting Date: **September 5, 2024**
Project Name: **Lexington High School**
Project Number:
Subject: **MEP and Sustainability Focus Group Meeting**
Attendees:

Present	Name	Affiliation	Present	Name	Affiliation
✓	Cynthia Arens (CA)	Sustainable Lexington Committee Chair	✓	David Pinnsonnault (DP)	Director of Public Works
✓	Susan Barrett (SB)	Town Transportation Manager		Todd Rhodes (TR)	Sustainable Lexington Vice Chair
	Chris Bouchard (CB)	Project Engineer	✓	Mark Sandeen (MS)	Select Board
	Phil Coleman (PC)	Permanent Building Committee		Sophie Shaw (SS)	Student
	Julie Hackett (JH)	Superintendent of Schools		Nancy Sofen (NS)	Tree Committee
	Wendy Heiger-Bernays (WH)	Board of Health		Bernardo Streithorst (BS)	Student
✓	Jon Himmel (JH2)	Permanent Building Committee Chair		Jillian Tung (JT)	Board of Health
	Lin Jensen (LJ)	Support/Resident		Dan Voss (DV)	Sustainable Lexington Committee
✓	Vincent Lerow (VL)	AV Technician	✓	Dave Wininger (DW)	Digital Learning Coach
	Erica Downs (ED)		✓	Brian Black	SMMA
	Tina McBride (TB)	Support/Resident		Lorraine Finnegan (LF)	SMMA-Project Manager
	Asa Mele (AM)	Student	✓	Matt Rice (MR)	SMMA-Project Architect
✓	Shawn Newell (SN)	Assistant Director of Facilities	✓	Martine Dion (MD)	SMMA-Director of Sustainability
	Glenn Parker (GP)	Appropriation Committee Chair	✓	Andy Oldeman (AO)	SMMA-Director of Engineering
✓	Maggie Peard (MP)	Town of Sustainability and Resilience Officer	✓	Anthony Jimenez (AJ)	SMMA-Electrical Engineer
	Brian Black (BB)	SMMA-Design Architect	✓	Rebecca Rahmlow (RR)	SMMA-Project Manager for Sustainability
✓	Chris Shaffner (CS)	The Green Engineer		Vamshi Gooje (VG)	SMMA-Principal in Charge for Sustainability
	Lisa Whelen (LW)			Mike Burton (MB)	Dore + Whittier
	Michael Dowhan (MD2)		✓	Christina Dell Angelo (CD)	Dore + Whittier
✓	Mark Barrett (MB)			Rachel Rincon (RR2)	Dore + Whittier
	Sophie Shaw (SS)		✓	Jacob Greco (JG)	Dore + Whittier

	Kathleen Lenihan (KL)	SBC Chair	✓	Anoush Krafian (AK)	SMMA - Assistant Project Manager
✓	Mike Cronin (MC)		✓	Gary Yurkevicz	
✓	Nancy Sofen		✓	Greg Shemstones	
	Chase Gibson (CB2)				

Agenda Item	Description
1.	**Introduction:** Refer to attendees list. • SMMA shared a presentation that will be referenced throughout these minutes, **please view it HERE**
2.	**Recap Discussion Topics** • MEP Systems & Sustainability o Review preferred MEP systems, sustainable design features, healthy materials, environmentally friendly design and renewable opportunities • M.Rice reviewed the current project timeline **(Slide 6)** • M.Rice shared the recap of the discussion topics **(Slide 8)** 1. Net Zero Energy and Renewable Energy 2. Sustainable Transportation and Electrification of Transportation 3. MEP Systems 4. Sustainable Materials and Healthfulness [IAQ/IEQ] 5. Climate Preparedness and Adaptability 6. General Sustainability and MEP Design Planning 7. Sustainable Sites 8. Environmental Literacy
3.	**Review Current Options** • B.Black reviewed the current options that are present in the Preferred Schematic Report phase o Please view the details for these in the linked presentation starting on **Slide 10** o These included Renovation & Addition - Phased in Place • B.1 • B.4 o New Construction - Phased in Place • D.2 o New Construction - On The Fields • C.1b

	● C.2b ● C.5b ● M.Dion reviewed the LEEDv4 & IDP **(Slide 16)** o Overview ● Project is already registered with USGBC (Feb 2024) **–** LEEDv4 ● Project will be LEEDv4 Gold Certified (voted by SBC on Sept 2023), with a goal for LEEDv4 Platinum ● Preliminary Life Cycle Cost Analysis (LCCA) **–** July 2024 o Gold = 60 points (66 points to be submitted) o Platinum = 80 points (84-86 points to be submitted) o Current tracking = 81 points ● R.Rahmlow reviewed the Red List Materials **(Slide 19)** o Low Emitting and Red List Materials ● Target Red List materials priority list to be presented to SBC ● Schematic Design: Decision on Red List materials to be included in the specifications ● A.Odelman reviewed the MEP Systems **(Slide 22)** o MEP Systems ● Consider 24/7 HVAC & power needs of theatre spaces ● Discuss number and depth of geothermal wells ● Discuss supplemental backup for HVAC ● Look at long-term impacts of refrigerant management for ASHP ● Discuss heat pump maintenance on cold days o System Selection Update ● Geothermal Test well underway, anticipate report in September o Sustainable Materials and Healthfulness [IAQ/IEQ] ● Reiterate throughout the process that health of students and staff comes before energy efficiency ● Consider air quality sensors ● Consider the option of 600ppm threshold for the CO2 sensors ● Impact to HVAC sizing ● Impact to DOAS / Distribution sizing ● Impact to PV sizing and EUI baseline ● WELL building standard: 900ppm & 750 ppm ● M.Dion reviewed the Net-Zero and Renewable Energy **(Slide 26)** ● M.Dion reviewed Sustainable and Electrified Transportation **(Slide 32)**
4.	**Discussion** ● G.Shemstones Asked if the level 3 courtyard is open to the sky o B.Black noted it is completely open to the sky and unroofed, but canopy space can be added. He also noted it can be open to classrooms on the same level ● G.Yurkevicz asked if there was a massing cost for the B.4 option? o M.Rice noted that this will be coming in October when the next round of pricing for all the options occurs. It would just be guessing work at this time, and we will wait for the estimators ● M.Peard asked what the color difference between the light and dark blue was on Slide 20 o M.Dion noted the goal is to focus on where the materials are closer to their occupants

- C.Arens asked who is on track to provide the red list materials from the Lexington PD
    - M.Burton noted he can provide them to SMMA for review
    - M.Dion
- C.Shaffner asked what the approach will be for materials that do not have red list option?
    - M.Dion noted they will do their best to get as close as they can be and will mix options to get the best possible solution. Dion noted for the vinyl flooring there is options such as linoleum flooring that was used other places in Lexington
- C.Arens asked if on recent projects they have been avoiding spray foam?
    - M.Dion noted yes, they have been using a mix of cellulose and mineral wool
- D.Voss asked if the red list materials could be sub categorized into each category such as flooring, walls, etc..
    - M.Dion noted yes, they can do this
- M.Sandeen asked if the intent is to try and follow a process like what was used on the Lexington PD or to create a new process?
    - M.Dion noted they need to see the red list from that project first to check
    - M.Cronin noted there is no need to redo what has already been done
- C.Shaffner noted that there are other concerns with materials aside form just the red list ones and other reasons to make choices aside from just that one list
    - M.Dion agreed such as embodied carbon and they will look at all of this going forward
- V.Lerow noted some of the theater equipment will need to be treated as their own small IT rooms that are climate controlled
    - M.Rice noted they will review this in the future during the design process and provide what is required
- C.Arens asked what parts of the federal reimbursement for geothermal wells is difficult to get?
    - A.Olderman noted that reaching 30% is hard as it is based on prevailing wage and apprentice percentages. He is not positive exactly what is required for the process, but they are looking into it.
- M.Sandeen asked what the guideline is for prevailing wage with the town
    - M.Cronin noted that the town follows the states prevailing wage program
- C.Shaffner noted that through his analysis on the Hastings school was that geothermal was not the best plan, but they were able to make it work and this was before the incentives
    - M.Dion agreed and noted they are in this step currently and will have to evolve the numbers from the Hasting's project per M.Sandeen's memo
    - C.Shaffner noted on the Hastings school they modeled a EUI of 28 and it is actually performing at 23 with geothermal while at another site in Lexington with air source they modeled an EUI of 24 but is operating at 44
- M.Sandeen noted another thing that happened on the Hastings school was that they were able to get expert design input for free from a company and reduced the size of the well by 20% while hitting the same standards
    - A.Olderman noted they are open to all options
- M.Gens asked about more information about the geothermal difficulties with the fault they discovered on the high school site
    - A.Olderman noted that when drilling geothermal bore holes, the deeper they go the more heat exchange they can get. He noted when looking they want solid strong bedrock to drill through and then after will add a roughly 6" pipe into the drill hole to protect it from surface water. Olderman noted on this specific project they found that bedrock at 50' and added the pipe, they kept drilling but then at 190' they found a fracture where there was some water production which is not good solid bedrock to use. He noted that loose debris can fall into the hole, to fix this they now have to add an even

smaller pipe past the fracture line to then keep drilling. Olderman noted that now if all the locations are the same the project will need to purchase a lot more piping, but this does not mean that geothermal is not viable.

- M.Sandeen would suggest that there is less need for supplemental back-up when designing for the new stretch code
    - A.Olderman noted this is the case as they are finding that the temperature changes are less drastic
- S.Newell asked if they have reviewed the metering required with the intense regulations for it when using geothermal and trying to get the credits
    - M.Dion noted they will keep this under consideration early to make sure they are able to complete it properly and the building is functional
- S.Newell noted when moving so much air through the building humidity becomes a large factor
- ??? Asked if the team can make available any background research on the benefits of different CO2 levels and if they can be added to the website
- M.Sandeen asked if the current range for EUI of 25.1 - 25.4 will cause the project to fall off with Eversource credit?
    - M.Dion noted that modeling is an art and hard to predict but they will keep modeling as the project moves along and will be able to compare this with the Utility Companies models
    - M.Sandeen followed up with hoe confident they are with these numbers
    - M.Cronin noted they should get down to one option prior to committing to any numbers
- C.Shaffner noted that 25 is a very aggressive goal but the first credit comes from the model before the operational comes in and it is important to keep watching the models as the project moves forward
- O.Guttag asks what happens if any of the wells fail and if a Republic Party gets into office and cancles the credits
    - M.Dion noted it is a risk that can be rolled back but it is a legislation-based incentive and is set ins tone until 2035
    - M.Cronin noted the well that failed at Hastings just had a small leak that was fixed very fast and other than that there have been zero issues with the system
- S.Newell asked if there have been discussions about how much of the specification would have to be sourced by American companies
    - M.Rice noted they will work with S.Newell in the project going forward to learn more about what the town currently is using
- O.Guttag asked if SMMA can separate the costs of the Federal vs State incentives. She also asked that if we care about the environment should we use battery storage as the creation and the recycling of them is not good for the environment
    - C.Arens noted the prime point of the batteries is to shave peak demand off of the building as the school will be saving lots of energy and storing it to offset costs
    - A.Jimenez noted that they can look into the tradeoffs of taking energy off of the peak load. He noted that SMMA can breakout these costs
- M.Sandeen asked about high roof solar canopies
    - B.Black noted that they have had discussions about this, and this is what maximizing the PV potential would look like compared to just optimizing it
- D.Voss noted the assumption around the coverage of the car parks it would be helpful to start showing and rendering the maximize canopies to help show the orientation and the configuration of the parking spots
- S.Barrett thinks it is critical that the school and town governments get together to decide how to handle the parking situation as they urge all developments to reduce their parking counts

	• D.Winiger Asked what the shower aspect is at the school as that may help with biking and carpooling
	  o M.Rice noted that staff showers are part of the LEED credit, and they will take into account
	• D.Voss asked if they could show an assignment of space on the property for battery storage
	  o M.Dion noted yes, they do have drawings showing the battery storage it is just not on these options

5.	**Close**

Sincerely,

DORE + WHITTIER
Jacob Greco
Assistant Project Manager

Cc: Attendees, File
The above is my summation of our meeting. If you have any additions and/or corrections, please contact me for incorporation into these minutes.