

**Minutes–HSMS Work Group Meeting
July 7, 2022
Zero-energy ready new Woodstock Union Middle and High School Building &
Efficiency planning for current buildings**

In Attendance:

WCSU District:

Joe Rigoli, Buildings and Grounds Director
Matt Stout, board member
Ben Ford, board member and Chair of Finance Committee
Ben Jervey, Work Group member
Jason Drebitko Work Group member
Jamie Ziobro, Work Group member
Jim Fenn, District Finance Director,
Marlena McNamee, District Fundraising Manager
Kat Robbins, instructor/national parks
Sumanth Krishna, Instructor NuVu

Lavallee Brensinger Architects (LVBA):

Leigh Sherwood, Principal Architect
Doug Lajoie, Mechanical Engineer
David Harris, Project Manager

Sustainable Woodstock:

Michael Caduto, Director
Jenevra Wetmore, Program Manager
Todd Kortekamp, Board member

Other key members:

Geoff Martin Intermunicipal Regional Energy Coordinator, Two Rivers Ottauquechee
Bill Karis, Efficiency VT

Media:

Kurt Peterson, Mountain Times
Frances Mize, Valley News

Minutes:

Marlena McNamee called the meeting to order at 1:05 pm and went through introductions. She then brought the group's attention to the meeting agenda. The first item on the agenda was:

- I. State of current school in terms of efficiency and pressing maintenance; interim solutions to address failing heat system with a goal of efficiency and possible re-use in new build. Use of solar credits from Union Arena.

Joe Rigoli discussed the condition of the current school including the failing heat system in addition to critical building envelope, plumbing and electrical concerns. The district is exploring switching the current failing steam system to a hydronic system in the HS including the venting and classroom heating

systems, etc. We deemed that if this were the case, these components would likely not be reusable in a new build. This would cost ~1 million and would bridge the gap between the failing heat system and new school. It was asked if there might be a more sustainable solution in the interim for the heating system, one that could be reused in the new school. Leigh Sherwood commented that by 3-5 years these systems would likely be obsolete and or difficult to reuse. Though the district is exploring the potential of an electric boiler or maybe heat pumps (though back up power can be an issue). Other options were discussed but were likely not viable.

A discussion of the timeline for the new heating system was discussed. It was stated that work to replace the failing heating system cannot take place until next summer/fall.

Michael Caduto stated that he has spoken with EJay Bishop and Hal Mayhew of Union Arena. They completed their solar array in July 2021, and are keen to sell solar credits to WUHS. Once they have a year's worth of data on solar array production (soon), they can discuss specifically what they have available for solar credits for WUHS.

Next steps:

- Sherry Sousa stated that the Buildings & Grounds committee meets next week and will discuss the building needs for heat next winter and long term planning.
- It was suggested that Leigh, Doug and David be a part of that meeting.

II. New Build zero energy/positive energy ready from the start; project details and budgeting

Leigh Sherwood stated that ideally the project should be net-zero ready not “net-zero,” due to potential over promises. It was stated that the design of the new school is net-zero/energy efficient in its building envelope and other design. Adding the heating/cooling system + renewal energies will get the building close to or full zero-energy.

He stated that the least expensive system is a hybrid system—a mix of electric + conventional boilers or other components. Though it was noted that hybrid systems have high maintenance and it is usually better in many ways to go conventional or zero-energy (though not of course for the environment re the former!) Other ways are an “all electric building” with an air source/heat pump OR starting with geothermal and adding renewables. In this scenario, you start from a much better place to achieve zero-energy. In fact, the most promising way to obtain zero-energy is via geothermal. It was noted that the site has a lot of room for geothermal but that borings of the site had not been commissioned to check for viability/loads.

While geothermal often does not have a large pay off and most of the time you will break even, we need to consider—community buy-in and values, student and climate health, life cycle vs initial costs, net-zero finance vs net-zero sustainability. Leigh stated that he can assist with talking points on this matter for the public/donors if needed.

Regarding solar. It was noted that the new build will have an electric need greater than its roof capacity. It was noted that parking lot canopies are costly but might be an option. It was noted the limited amount of site space to use and Act 250 compounds this. A discussion ensued about tax credits which the district is not entitled to. Several schools have used a PPA (Power Purchase Agreement). Currently the district is working with Norwich Solar to add roof panels to three schools. Remote solar was also discussed including potential areas in town, perhaps Kings Farm, etc. Onsite would be preferred but remote ok too.

It was noted that biomass should potentially be considered and it would be good to see how it compared to geothermal, etc.

Next steps:

- Create a series of system options and pricing.
- What are the next steps to develop those options and when will they happen?

III. Identifying potential partners/utility collaborators

- A number of potential partners were discussed: Efficiency VT, Green Mt. Power (Tier III program; Joe working on electric boilers, we need to engage them soon and continue to do so), Dandelion Energy, US Dept. of Energy
- DOE community geothermal program: <https://www.energy.gov/eere/articles/doe-announces-intent-release-13-million-support-community-geothermal-projects>
- It was noted that Efficiency VT has supported modeling and new construction for projects that go beyond code, which should be ok here.
- National Park facility director via Kat Robbins on their energy portfolio.

We did not have time to cover items IV, V or VI on the agenda. Marlena will circle back with folks who would be a part of these items.

Final Next Steps:

- After options for a system are presented, need to select a system and perform costing
- Right now, the new school's plans have a hybrid system built in.
- Need energy modeling.
- Will need to follow up with appropriate people for meetings on these items.

Meeting adjourned at 2:40 pm.

