

MINUTES
Cheshire County Commissioners Meeting
Monday August 6, 2018 03:30PM
County Hall Building
Stillman Rogers Conference Room
12 Court Street, Keene, NH 03431

Present: Commissioners Peter Graves, Joseph Cartwright and Charles Weed

Staff: Count Administrator Coates, Finance Director Trombly, Maplewood Administrator Kindopp, Maplewood Facilities Manager Harrison, and Assistant County Administrator Bouchard

Guest(s): Maplewood Owners Representative S. Horton, Ingrid Nichols, President Banwell Architects, Mike Davey, Energy Efficient Investments (EEI)

At 3:35PM Vice-Chair Cartwright opened the meeting and recognized Director Trombly to discuss the Pro Share data that will be shared with the Delegation Executive committee at a meeting later in the day.

A discussion of the current and future funding of the Integrated Delivery Network (IDN) by the current delegation and recommendations of future delegation funding was covered.

At 3:43PM Commissioner Graves joined the meeting.

The damage of the Sheriff's radios by rodents was covered and Coates said that the Communications Director is working on the funding numbers for replacement and upgrade of the units.

The discussion of the Maplewood HVAC bio-mass proposal was taken-up and Commissioner Weed asked about an electrostatic precipitators (ESP) system for the dry chip system and the sizing of the boilers was covered as it effects emissions for the operation of the proposed dry chip installation.

Three (3) detailed spreadsheets prepared by Commissioner Cartwright on his analysis of the HVAC options was reviewed and discussed at length. **(See Appendix A Below)**

Mike Davey then presented documents that outline the addition of two (2) to three (3) companies that could act as a supplier for dry chip delivery and a re-analysis of the operational costs of the options.

Maplewood Facilities Director Harrison spoke to his preference for dry chip based on delivery logistics and issues and related to ease of operations and maintenance.

Following further discussion, Commissioner Weed moved to accept the recommendation of the Maplewood Reconstruction Owners Representative, Architect, and engineering teams to approve Option #3 that provides Resident Room Electric Heat Pumps, two (2) propane boilers, and a dry chip biomass boiler for the HVAC system to be installed as part of the reconstruction project. Commissioner Graves seconded the motion and a friendly amendment was made by Commissioner Cartwright to examine the possible addition of an ESP system if it proves to be needed and beneficial to the project. Upon vote the motion passed with two (2) Yea's and one (1) Nay, with Commissioners Graves and Weed Voting Yea, and Commissioner Cartwright Voting Nay.

The New Hampshire Medicaid Director of the Department of Health and Human Services, Henry Lipman, was then recognized as was Ann Landry Director of IDN Region 1, and Phil Wyzik of Monadnock Family Services to discuss the Building Capacity for Transformation: Delivery System Reform Incentive Payment (DSRIP) Demonstration Waiver (1115 wavier) that returns funds to the Counties to pay for programs that support mental health, physical health, and other programs to help keep people out of nursing homes for as long as possible.

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Lipman handed out a printout of a PowerPoint presentation that explains the framework of the 1115 Waiver program and reviewed the highlights of the program.

He said that approximately \$150M dollars over five (5) years is available through the State for all ten (10) Counties, and that seven (7) IDN's regions have been instituted within the State. He then handed-out a spreadsheet that breaks out the payments that the County is eligible to receive to decrease the deficit for the operation of the County Nursing home.

Following up on a question concerning the proportionality of funds that would be received if other Counties do not return approximately 50% of the total funds allocated to the Counties, Lipman said that the issue is being looked at and reviewed and that it would most likely negatively affect the non-contributing Counties.

Kindopp asked if this means that the Pro Share payments will continue for the next five (5) years. Lipman said that if all things play out as anticipated, the Pro Share funding should be continued for at least the next few years.

Commissioner Cartwright then moved to accept the IDN resolution as presented for recommendation to the Executive Committee and the full Delegation and was seconded by Commissioner Weed. Upon vote the motion passed unanimously.

At 5:12PM there being no further business to discuss, Commissioner Weed moved to adjourn the meeting. The motion to adjourn was seconded by Commissioner Cartwright and upon vote the motion passed unanimously.

Respectfully Submitted,

Charles Weed
Clerk, Board of Commissioners

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Appendix A

[Δ Joseph Cartwright
County Commissioner
County of Cheshire]

Joe,

ESPs are a long-established technology for the reduction of particulate matter (PM); they have been used on coal fired power plants and the larger wood-fired power plants for decades and have proven to significantly reduce PM emissions. In the past several years, we have seen an increasing amount of ESPs used on industrial and commercial sized boiler systems, such as those used at schools and government complexes. Two recent examples would be the recently installed wood chip boiler system at our offices on Hazen Drive, and the system at the Rockingham County Complex.

For wood-fired boilers, the primary air pollutant of concern is particulate matter. From the USEPA website:

The size of particles is directly linked to their potential for causing health problems. Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into your lungs, and some may even get into your bloodstream.

Exposure to such particles can affect both your lungs and your heart. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including:

- premature death in people with heart or lung disease
- nonfatal heart attacks
- irregular heartbeat
- aggravated asthma
- decreased lung function
- increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

People with heart or lung diseases, children, and older adults are the most likely to be affected by particle pollution exposure.

As you will note, many of the above health problems specifically impact our most sensitive populations, particularly the elderly that may have with existing health issues that are exacerbated by PM pollution.

New Hampshire does not mandate the use of an ESP on a wood boiler system, provided that it can meet applicable state/federal emissions standards. However, NHDES strongly encourages the installation of an ESP whenever possible because of the associated air quality and health benefits. Historically, wood-fired boilers not employing an ESP have PM emissions that range from around 0.10-0.30 lb./MMBtu, where an ESP has been shown to reduce PM down to 0.01-0.03 lb./MMBtu.

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Given that this will be located at a facility with a particularly sensitive population, NHDES would certainly recommend that the facility consider the installation of an ESP if at all possible.

If you have further questions, or would like to discuss further, please do not hesitate to contact me.

Best,

Gary

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 Air Resources Division
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Original Presentation – August 1, 2018

Option	Cost to Install	Annual Operating Costs	Added install cost	Effect on Annual Cost	Simple Payback
1. Res. Rm. Elect. Heat Pumps, Propane throughout – No Biomass	\$5,596,000	\$287,810	None	None	Baseline
2. Water sourced Heat Pump throughout using Propane	\$5,610,000	\$293,425	\$14,000	\$5,615	None
3. Res. Rm. Elect. Heat Pumps, Propane throughout – Dry chip Biomass	\$6,000,000	\$186,192	\$404,000	\$(101,618)	3.97 years
4. Res. Rm. Elect. Heat Pumps, Propane throughout – Green chip Biomass	\$6,501,000	\$181,685	\$905,000	\$(106,125)	8.52 years
5. (4) pipe system with Chiller using Propane only	\$7,300,000	\$305,608	\$1,704,000	\$17,798	None
6. Res. Rm. Elect. Heat Pumps, Propane throughout – Messersmith 8MBTU Biomass	\$7,066,000	\$157,677	\$1,470,000	\$(130,133)	11.29 years
7. Bid System- (4) Pipe using Propane- Messersmith 8MBTU	\$9,055,000	\$169,348	\$3,459,000	\$(118,462)	29.19 years

Notes

Simple Payback calculated by “Added Install Cost” divided by “Effect on Annual Cost”

Paybacks do not assume interest or inflation costs

Paybacks do not assume energy fluctuation costs

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Updated Chart Based upon Equal Size Boilers

Option	Cost to Install	Annual Operating Costs	Added install cost	Effect on Annual Cost	Simple Payback
1. Res. Rm. Elect. Heat Pumps, Propane throughout – No Biomass	\$5,596,000	\$287,810	None	None	Baseline
2. Water sourced Heat Pump throughout using Propane	\$5,610,000	\$293,425	\$14,000	\$5,615	None
3. Res. Rm. Elect. Heat Pumps, Propane throughout – Dry chip Biomass (4MMBTU)	\$6,116,940 ¹⁺⁸	\$186,192	\$520,940 ²⁺⁸	\$(101,618)	5.12 years
4. Res. Rm. Elect. Heat Pumps, Propane throughout – Green chip Biomass (4MMBTU)	\$6,501,000	\$146,192 ⁴	\$905,000	\$(141,618) ⁶	6.39 years
5. (4) pipe system with Chiller using Propane only	\$7,300,000	\$305,608	\$1,704,000	\$17,798	None
6. Res. Rm. Elect. Heat Pumps, Propane throughout – Messersmith 4MBTU Biomass ⁹	\$6,392,925 ³	\$146,192 ⁴	\$796,925 ⁵	\$(141,618) ⁶	5.62 years
7. Bid System- (4) Pipe using Propane- Messersmith 8MBTU	\$9,055,000	\$169,348	\$3,459,000	\$(118,462)	29.19 years

¹⁻⁷Source: “Biomass Systems Options Analyses Bid Package Results” spreadsheet on email received 7/16/18, “Re: Maplewood HVAC Bio mass discussion”

⁸ Includes approximate cost of Electric Static Participator (ESP) \$165000 recommended for nursing homes

⁹ Changed 8Mbtu boiler to a 4 MMBTU boiler to be consistent with Option #3

Questions/ Concerns regarding above options

1. Dry chip Biomass estimate is for 4MMBTU size boiler while Green Chip Biomass estimate is for 8MMBTU
2. Annual operating costs for Green Chip Biomass, believe it is closer to \$146,000
3. Dry chip boiler should have an ESP [electrostatic precipitator]
4. Dry chip Biomass has only one supplier. Cost will double if supplier is not able to provide the dry chips

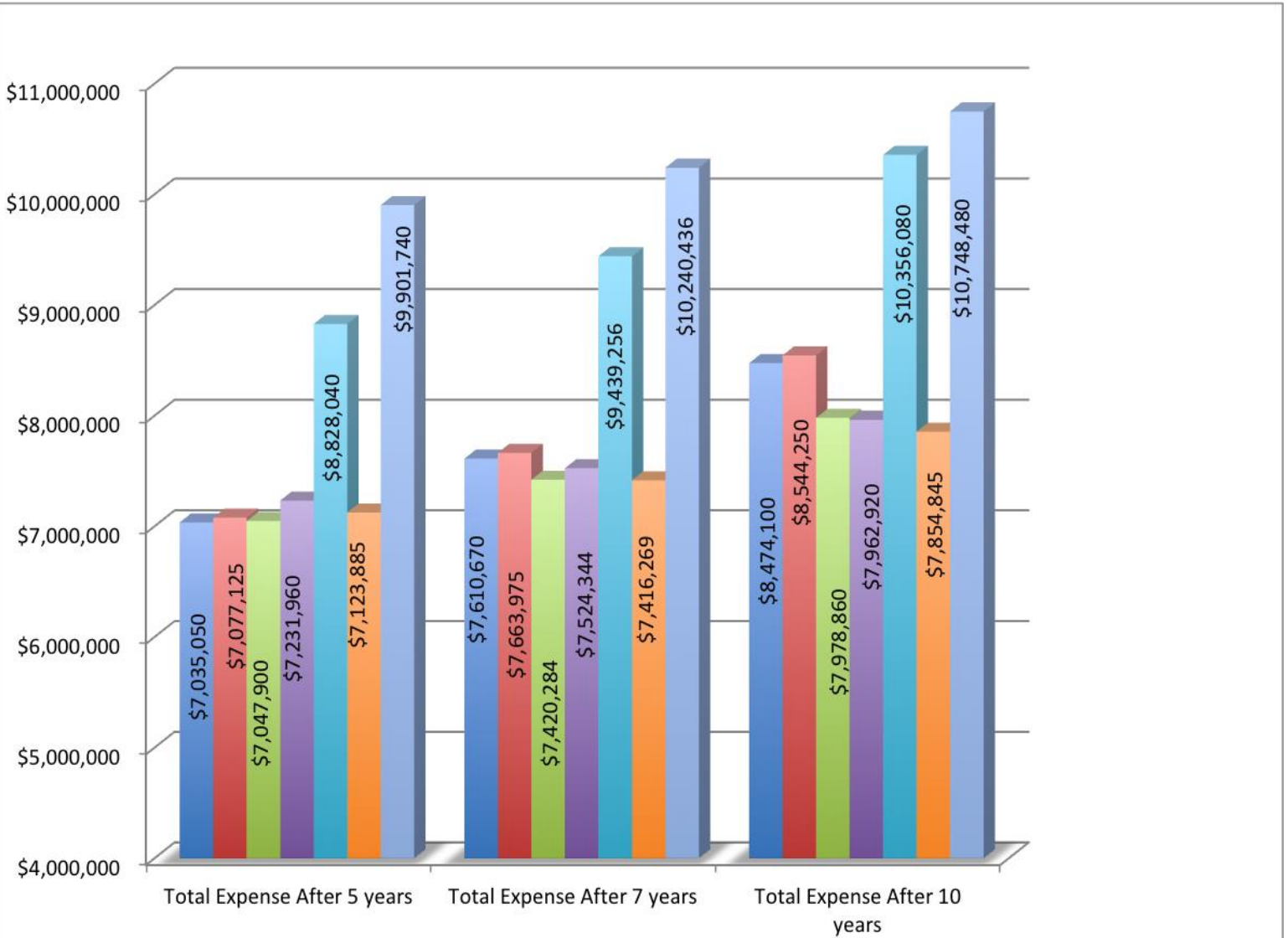
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Total cost of Each Option over Time (Taking installation cost plus the annual operating costs per year)

Option	Total Expense After 5 years	Total Expense After 7 years	Total Expense After 10 years
1. Res. Rm. Elect. Heat Pumps, Propane throughout – No Biomass	\$7,035,050	\$7,610,670	\$8,474,100
2. Water sourced Heat Pump throughout using Propane	\$7,077,125	\$7,663,975	\$8,544,250
3. Res. Rm. Elect. Heat Pumps, Propane throughout – Dry chip Biomass (4MMBTU)	\$7,047,900	\$7,420,284	\$7,978,860
4. Res. Rm. Elect. Heat Pumps, Propane throughout – Green chip Biomass (4MMBTU)	\$7,231,960	\$7,524,344	\$7,962,920
5. (4) pipe system with Chiller using Propane only	\$8,828,040	\$9,439,256	\$10,356,080
6. Res. Rm. Elect. Heat Pumps, Propane throughout – Messersmith 4MBTU Biomass	\$7,123,885	\$7,416,269	\$7,854,845
7. Bid System- (4) Pipe using Propane- Messersmith 8MBTU	\$9,901,740	\$10,240,436	\$10,748,480

*Shaded section indicates lowest total expense

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- 1. Res. Rm. Elect . Heat Pumps, Propane throughout – No Biomass
- 2. Water sourced Heat Pump throughout using Propane
- 3. Res. Rm. Elect. Heat Pumps, Propane throughout – Drychip Biomass (4MMBTU)
- 4. Res. Rm. Elect. Heat Pumps, Propane throughout – Greenchip Biomass (4MMBTU)
- 5. (4) pipe system with Chiller using Propane only
- 6. Res. Rm. Elect. Heat Pumps, Propane throughout – Messersmith 4MBTU Biomass
- 7. Bid System- (4) Pipe using Proprane- Messersmith 8MBTU