

Approved March 20, 2014

Taft Library Building Committee Meeting
Taft Public Library
Mendon, MA 01756
Tuesday, March 11, 2014
7:00 p.m.

Committee Members Present:

Joe Cronin, Amy Fahey, Paul Fitzgerald, Don Morin, Chuck Noel, Kevin Rudden

Susan Darnell (via Skype)

Others Present:

Mary Bulso, OPM, Lamoureux-Pagano Associates

I. Call to Order

The meeting was called to order by Joe Cronin at 7:01 p.m.

Don and Joe reminded the group that Susan Darnell was participating remotely via Skype as a result of her inability to attend due to geographic distance, and that all votes will need to be performed via roll call.

II. Approval of Agenda

MOTION: A motion was made by Kevin Rudden, seconded by Amy Fahey, to approve the agenda.

DISCUSSION: Don mentioned that Anne Mazar will not yet have an update on the Green Communities Grant eligibility until Thursday so we will pass over this agenda item.

VOTED: Unanimous by roll call vote.

III. Approval of Meeting Minutes from February 20, 2014

MOTION: A motion was made by Kevin Rudden, seconded by Amy Fahey, to approve the meeting minutes from February 20, 2014.

DISCUSSION: None.

VOTED: Unanimous by roll call vote.

IV. Approval of Meeting Minutes from March 4, 2014

MOTION: A motion was made by Joe Cronin, seconded by Amy Fahey, to approve the meeting minutes from March 4, 2014.

DISCUSSION: None.

VOTED: Unanimous by roll call vote, with Joe Cronin and Kevin Rudden abstaining as they weren't present at the meeting.

V. Green Communities Grant Program

The Committee passed over this agenda topic as no new information was available.

VI. Public Water Supply Discussion

Joe read an email from Fred Lapham of Shea Engineering, Inc. regarding a discussion he had with Susan Connors from the Mass. Dept. of Environmental Protection office. The content of that email was as follows:

Hi David,

This afternoon I had a conversation with Susan Connors of the Mass. Drinking Water Program. I explained to her the proposed reuse of the church as a public library and asked how that would affect use of the existing well with respect to the Public Water Supply (PWS) requirements. Her first response was that it "could be a PWS". She asked a few questions...would there be drinking fountains?...would there be a kitchen?...if a kitchen is planned, would it serve just the employees?...would there be a coffee maker and if there would be, would coffee be sold to patrons?

I asked about the simple PWS criteria of 25 people for 60 days or more per year and she said that it's not as clear cut as that. She indicated that much of the information on the state website comes from the EPA and that the state Drinking Water Program makes PWS Determinations based upon much more site-specific information.

She said that the next step for the library would be to request a PWS Determination. There is not a formal application, just a written request accompanied with a description of anticipated use of the building, including the attached single family house. She would need answers to the questions listed above. If there will be committee meetings for town boards, then she would need an estimate on the number of meetings per month. The request should include a plan showing the current condition and use of Zone I (well head protection zone). We have information in our files that would provide her with all that she will need. We can use the assessor's maps to show abutting properties and I'll see if the Board of Health has information on the location of abutting septic systems. Susan said that they will make a determination and if it turns out that they would want the well registered as a PWS, then they would also tell us what could be done that would make them determine it not to be a PWS.

It was a very encouraging discussion and I think we have a clearer direction on how to proceed. I have completed task 1.b. of my proposal at this point. I would like, however, to compile the request for a PWS Determination and submit it to the Drinking Water Program at no cost to the project. Let me know if you are in agreement and I will start the process. I will need approval from the Library Building Committee to proceed, as well.

Fred

Joe mentioned that Fred agreed to look into the Public Water Supply situation at no cost to the town, which was great for the project. He also suggested that we get the necessary information to Fred regarding use of water at the new library. We agree that we'll need water for the restrooms, janitorial closet(s), hand sink in the

staff meeting room, and potentially a coffee pot for staff. There will be kitchen in the new structure, and the decision on whether to install water fountains for patrons will need to be finalized. We will need to obtain information on septic systems for abutting properties. Joe also mentioned that improvements within zone 1 of the well head area are planned, such as removal of asphalt and improved drainage.

Joe updated the Committee that he, Don and Fred spoke with the Mendon Board of Selectmen on Monday night (March 10th) to update them on the decisions that will need to be made regarding the public water supply. One key decision will be how to handle the hook-up to the rectory, since one well supplies both structures. Should we disconnect the well to the rectory until the future use of that building is determined? The Committee along with the Selectmen will have to decide this as the project moves forward.

Paul asked if there is any clear criteria specified for a Public Water Supply, and Joe replied that it's not that straight-forward. Don explained that Mary provided him with a copy of 310 CMR 22.00: Drinking Water Regulations excerpts from 310 CMR 22.02, 22.03 and 22.21, and that he would attach a copy to the minutes. The regulations are attached here.



DEP Public Water
Supply.pdf

Don asked if there is anything that prevents public meetings from taking place in a building that doesn't have a public water supply. Joe stated that the Town Clerk has informed him that the Mendon Fire Station cannot be used for public meeting because of its lack of a public water supply, but that he isn't sure why this is true. Joe agreed to follow up with the Town Clerk to try to understand the restriction.

ACTION: Contact the Town Clerk to inquire about whether a public meeting can be held in a building without a public water supply. – Joe

Joe asked for a motion to allow Fred Lapham of Shea Engineering, Inc. to investigate the public water supply requirements for the future library.

MOTION: A motion was made by Kevin Rudden, seconded by Chuck Noel, to allow Fred Lapham to move forward with putting together a package for the Mass. Dept. of Environmental Protection to determine whether the new library needs to have a public water supply and if so, what would be needed to achieve this approval.

DISCUSSION: No further discussion.

VOTED: Unanimous by roll call vote.

VII. HVAC Discussion

Joe referred the Committee to emails that we received earlier in the day from David Eisen of Abacus Architects and Planners regarding the HVAC system options being pursued. Sergio Siani from Norian/Siani Engineering provided an updated set of operating costs for each of the options we were pursuing along with a narrative

describing each of the options, and David provided some initial installation costs for the options as well. The information is included here, starting with the narratives.

Air Source Heat Pumps (likely lowest first cost)

1. Four (4), 5-ton capacity outdoor heat pump units each connected to multiple indoor ductless fan coils. Total number of 18 indoor units
2. Ventilation system using and energy recovery ventilator (ERV), 1,000 cfm, with ECM motors, and demand limit control ventilation control (separate CO2 monitor at return ducts) connected to both furnace systems.
3. Separate duct systems for exhaust and supply air from and to the ERV system.
4. 24"x24" intake grille and exhaust louver for ventilation-ERV system.
5. Electric recessed fan coils at entries and bathrooms.
6. Electric domestic hot water unit 20 gallon.

Oil Fired Furnaces

1. Three (3) oil fired furnaces, 2,000 cfm each.
2. Furnace venting through roof, double wall steel (3).
3. Combustion air intake grilles and ducting for furnaces (3).
4. (3) 300 gallon oil tanks, fill and vent, filters, safeties, and oil lines to furnaces.
5. Each furnace system to include a 5 ton cooling coil, and matching outdoor condensing unit (3).
6. Each furnace system to include complete air distribution, supply and return duct system including grilles and diffusers (3).
7. Four ductless mini-split indoor units to serve separate spaces each connected to the same 5 ton outdoor unit.
8. Ventilation system using and energy recovery ventilator (ERV), 1,000 cfm, with ECM motors, and demand limit control ventilation control (separate CO2 monitor at return ducts) connected to both furnace systems.
9. Separate duct systems for exhaust and supply air from and to the ERV system.
10. 24"x24" intake grille and exhaust louver for ventilation-ERV system.
11. Electric recessed fan coils at entries and bathrooms (4).
12. Electric domestic hot water unit, 20 gallon.

Gas Fired Furnaces

1. New gas service (Allowance \$55,000).
2. Three (3) gas fired furnaces, 2,000 cfm each.
3. Furnace, polybutylene venting (3), up through roof and air intake from side wall (3).
4. Gas piping.
5. Each furnace system to include a 5 ton cooling coil, and matching outdoor condensing unit (3).
6. Each furnace system to include complete air distribution, supply and return duct system including grilles and diffusers (3).

7. Four ductless mini-split indoor units to serve separate spaces each connected to the same 5 ton outdoor unit.
8. Ventilation system using and energy recovery ventilator (ERV), 1,000 cfm, with ECM motors, and demand limit control ventilation control (separate CO2 monitor at return ducts) connected to both furnace systems.
9. Separate duct systems for exhaust and supply air from and to the ERV system.
10. 24"x24" intake grille and exhaust louver for ventilation-ERV system.
11. Electric recessed fan coils at entries and bathrooms.
12. Electric domestic hot water unit, 20 gallon.

Oil Fired Boiler & Air Handlers

1. Oil fired boiler, 400 BTU/Hr.
2. Boiler venting through roof, double wall steel.
3. (3) 300 gallon oil tanks, fill and vent, filters, safeties, and oil lines to furnaces.
4. Forced hot water heating piping system to serve three air handlers and 4 radiators.
5. 4 steel panel radiators with non-electric zone valves (4).
6. Three (3) air Handling units (AHU's), 2,000 cfm each. Each AHU to include 120,000 MBH heating coil and 5 ton DX cooling coil.
7. Matching 5 ton outdoor condensing unit for each AHU (3).
8. Each AHU system to include complete air distribution, supply and return duct system including grilles and diffusers (3).
9. Four ductless mini-split indoor units to serve separate spaces each connected to the same 5 ton outdoor unit.
10. Ventilation system using and energy recovery ventilator (ERV), 1,000 cfm, with ECM motors, and demand limit control ventilation control (separate CO2 monitor at return ducts) connected to both furnace systems.
11. Separate duct systems for exhaust and supply air from and to the ERV system.
12. 24"x24" intake grille and exhaust louver for ventilation-ERV system.

Gas Fired Boiler & Air Handlers

1. New gas service (Allowance \$55,000).
2. One gas fired condensing mode boiler.
3. Gas piping.
4. Forced hot water heating piping system to serve three air handlers and 4 radiators.
5. 4 steel panel radiators with non-electric zone valves (4).
6. Three (3) air Handling units (AHU's), 2,000 cfm each. Each AHU to include 120,000 MBH heating coil and 5 ton DX cooling coil.
7. Matching 5 ton outdoor condensing unit for each AHU (3).
8. Each AHU system to include complete air distribution, supply and return duct system including grilles and diffusers (3).
9. Four ductless mini-split indoor units to serve separate spaces each connected to the same 5 ton outdoor unit.

10. Ventilation system using and energy recovery ventilator (ERV), 1,000 cfm, with ECM motors, and demand limit control ventilation control (separate CO2 monitor at return ducts) connected to both furnace systems.
11. Separate duct systems for exhaust and supply air from and to the ERV system.
12. 24"x24" intake grille and exhaust louver for ventilation-ERV system.

Ground Water Source Heat Pumps (GWSHP's)

1. Likely 4 separate well bores to be used for ground water thermal source (total 20 ton capacity).
2. Each well should include a pair of 1-1/2 inch poly piping with return bend to form a continuous closed loop piping system.
3. Piping from wells into the building.
4. Manifold these well pipes together in the basement, add piping to serve all four GWSHP's, plus a pair of 1.5HP circulating pumps.
5. Four (4), 5-ton capacity water source heat pump units each connected to duct systems.
6. Each duct system to include complete air distribution, supply and return ducts including grilles and diffusers.
7. Add duct systems to serve the entries and bathrooms.
8. Ventilation system using and energy recovery ventilator (ERV), 1,000 cfm, with ECM motors, and demand limit control ventilation control (separate CO2 monitor at return ducts) connected to both furnace systems.
9. Separate duct systems for exhaust and supply air from and to the ERV system.
10. 24"x24" intake grille and exhaust louver for ventilation-ERV system.
11. Electric domestic hot water unit 20 gallon

Thank you,

Sergio F. Siani

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 Concord, MA 01742-2972
 ph. 781 398 2250 x-117
 fx. 781 398 2280
SergioS@NS-Engineering.com

Operating Costs:



Taft Library System
 Comparisons with emi

Initial Startup Costs:

- | | |
|--------------------------|--------------------------------|
| 1. Air Source Heat Pumps | \$18.50/sf @ 6,900 sf = \$128K |
| 2. Oil Fired Furnaces | \$25.56/sf @ 6,900 sf = \$176K |
| 3. Gas Fired Furnaces | \$30.15/sf @ 6,900 sf = \$208K |

- | | |
|------------------------------------|--------------------------------|
| 4. Oil Fired Boiler & Air Handlers | \$30/sf @ 6,900 sf = \$206K |
| 5. Gas Fired Boiler & Air Handlers | \$35.50/sf @ 6,900 sf = \$244K |
| 6. Geothermal System | \$30-\$45/sf |

There are a variety of reasons it is difficult to approximate the cost of a geothermal system. An open loop system tends to be less than a closed loop system, however due to environmental regulations and factors an open loop may not be possible. Drilling distances can vary substantially depending on how deep the water source/aquifer is as well as soil conditions. It may, however, be a viable alternative to the above options depending on state and local incentives and life cycle cost advantages.

I hope this is helpful in the decision making process. Please let me know if you have further questions.

-Tim
 Timothy Brown, CPE
 North Bay Construction Consultants
 508-686-2781
www.nbaycc.com

After reviewing all the information, the Committee agreed that the initial startup costs of ~\$55K to get a natural gas line run down North Avenue to the new library site is a deal breaker as it would make the installation of a new HVAC system too expensive. The Committee also felt that a geothermal system was also too expensive to install, leaving the group with three options left: air source heat pumps, oil fired furnaces and oil fired boiler with air handlers. Since the comparisons of operating and installation costs didn't appear to be apples to apples comparisons, the Committee asked if these three options could be compared more equally so a decision could be made on which one to pursue. Several questions were posed and follow up requested by Mary with Abacus as follows:

ACTION: Is an electric heat backup required for air source heat pumps? – Mary/Abacus

ACTION: Should the water heater be a point of use system? – Mary/Abacus

ACTION: Two different efficiencies of operating costs are shown in the summary table. What are the different installation costs for each of these options? Mary/Abacus

ACTION: Update the comparisons for install and operating costs for the remaining three options, ensuring that they all have a quote without A/C and with A/C in case the decision is to forego this option up front but leave the opportunity to add it in the future. Mary/Abacus

When the discussion about foregoing air conditioning was raised, Mary expressed concern due to the humidity in the lower level. If A/C is not installed, de-humidifiers may be needed. Mary suggested that a moisture test be performed on the slab in the lower level.

ACTION: Obtain a quote for the cost of performing moisture testing of the slab in the lower level. – Mary

VIII. Approval of Bills

With regards to approving bills for payment, the process we have been following by approving them in our meetings and submitting the quote with the chair's signature to the Mendon Board of Selectmen's office is effective and will continue. For those owner costs where Abacus does the research and provides a recommendation to the Town for work, the Committee felt that it is in our best interest to continue with this approach and pay Abacus the 10% fee for their services as this is in the best interest of all parties, as Abacus will have full responsibility for the work. If the committee were to contract it out, and miss anything, the committee would be responsible for any additional costs incurred. Joe also read an email from the Mendon Board of Selectmen's office describing the process we should follow depending on the amount of the owner costs. It is as follows:

This is from the Chapter 30B manual:

<http://www.mass.gov/ig/publications/manuals/30bmanl.pdf>

- Contracts under \$5,000. Use sound business practices.
- Contracts between \$5,000 and \$24,999.99. Seek price quotes from at least three vendors and award the contract to the responsible vendor offering the supply or service needed for the best price.

"Sound business practices" is defined as ensuring the receipt of a favorable price by periodically soliciting price lists or quotes. While the law does not require a formal competitive process, it does require local jurisdictions to ensure that they have received the needed quality of supplies and services at a reasonable price.

Joe also reiterated that our OPM represents the Town and provides excellent direction when it comes to decision making for owner costs.

IX. Hazardous Material Testing Discussion

At our last meeting David Eisen wanted the Committee to review and approve a decision to perform a hazardous material inspection at the site. Since the Committee did not have a quorum present at the time of the request, the item was passed over to this meeting. The Committee agreed to approve this request at this meeting.

MOTION: A motion was made by Kevin Rudden, seconded by Chuck Noel, to approve of hazardous material inspection and design as described in the attached quote from Universal Environmental Consultants as items Task I and Task II in the amount of \$2900 plus the Abacus 10% service fee per contract as a reimbursable expense.

DISCUSSION: No further discussion.

VOTED: Unanimous by roll call vote.



Abacus-Mendon
Church-IDM.pdf

X. Review Open Items on Decision Action Log

Don walked the Committee through the items on the Decision Action Log. An updated copy of the document is included here. It will also be posted to the library website.



Taft Public Library
Decision Action Log - F

XI. Items not reasonably anticipated 48 hours prior to meeting

Mary asked if any discussion has taken place with regards to the cupola on the former church building. She suggested that we allow for someone to take it provided they did the removal themselves and patched the roof afterwards. Mary will look into posting it to a listserv for barn owners as they are the ones who typically like to take these types of things. If there is no interest, perhaps a historic commission listserv should be pursued. If there is no interest there, perhaps we could ask BVT if they could help with removal and roof patching.

ACTION: Look into opportunities to someone to remove the cupola and patch the roof. – Mary

Joe mentioned that during a recent inspection of the building he and Mary discovered that the windows are single pane. They wondered if the existing frames could take double pane glass, but that they weren't sure. The windows will likely need to be replaced, which could be costly. Could BVT possibly help with installation? Mary will ask when she meets with them.

XII. NEXT MEETING

The next meeting will be held on Thursday, March 20 at 7pm at the Taft Public Library. Agenda will include an update on the HVAC options, Green Communities Grant, BVT discussions and the hazardous materials inspection.

XIII. ADJOURNMENT

MOTION: A motion was made by Kevin Rudden, seconded by Joe Cronin, to adjourn the meeting.

DISCUSSION: None.

VOTED: Unanimous by roll call vote.

The meeting adjourned at 8:24 p.m.

Minutes by Don Morin