Emmanuel Church Heating System Upgrade Proposal

December 2024

This document will give you a brief overview of the proposal the Elders and Deacons are presenting to the Emmanuel congregation for approval on Sunday, January 12, 2025.

As you know, our church building is currently heated by an old oil-fired boiler system. In addition, there are some electric baseboards in different places around the building. The cost of operating this system has risen significantly over the last number of years, with us budgeting \$8500 for furnace oil in 2024 alone.

To cope with the increasing costs of heating our building, the deacons have investigated other options at different times, including last year when several quotes were received. At the time it appeared that even though rebates may be available, they 1) did not apply to upgrading our electrical system (needed to handle heat pumps), and 2) required us to put up all the money beforehand with the hope to recoup 50-80% of the cost. Together, these challenges made the project unattainable to us.

This past summer we were approached by a company that proposed upgrading our electrical, installing the heat pumps, and doing all the paperwork related to the project. Under that proposal, we would be responsible for 20% of the cost of the project plus the full amount of HST. After scheduling a congregational meeting where we would vote on this project, several concerns were raised about the proposal. And so, more research was done and different companies were invited to provide guotes and expertise. Though this process took longer than we had hoped, we have gained many invaluable insights into this upgrade.

The company that provided us with the best overall proposal is Greenfoot Energy Solutions, and we pursued only top-line brands for the equipment, ultimately selecting Daikin equipment.

The project itself has two main components:

- Upgrading our electrical service from 200 amp to 400 amp. This will require the building of a dividing wall in our furnace room to meet code.
 - \$10,000 + \$1,500 HST = • Cost for the electrical upgrade 11.500 1,150
 - Cost for constructing wall \$1,000 + \$150 HST =
 - o Total \$12,650
- Installation of heat pumps throughout the building with the exception of the west-• end. The rooms in that area are small and used very little. Further, those rooms already have electric baseboards installed. We believe we will not save any money installing heat pumps in this area.

The equipment will be installed as follows:

- 1 split unit for kitchen and sanctuary
- 1 single unit for sanctuary
- 1 split unit for the foyer and fellowship room
- 1 single unit for the fellowship room
- 1 split unit for library and nursery

This means there will be 5 outside compressor units and 8 interior heads. The strategy behind this layout is that both the sanctuary and fellowship room are heated by 2 outside compressors, thereby providing redundancy in case of equipment failure.

As for the cost:

0	Cost for the equipment and installation	\$ 43,044.00
0	HST	\$ 6,749.10
0	Total	\$ 49,793.10

The combined cost of the 2 main parts of the project (without HST) is \$54,298.35 With the 80% subsidy by Efficiency Nova Scotia, our part of the \$54,298.35 will be \$10,859.67

As mentioned above, we will also be responsible for the full amount of HST, which is \$8,144.75. However, we can claim 50% back of our HST expenses back.

Thus, the total cost to Emmanuel Church, after the Efficiency Nova Scotia subsidy has been received will be \$19,004.42

We currently have over \$24,000 in the building fund plus \$7,500 in a memorial fund that hasn't been designated yet. So, we have the funds in place to cover the final tally. Meanwhile, a generous congregant has offered to provide the financing needed to bridge the gap between when the bill is due and when the subsidy is received.

Although it is difficult to predict just how much this upgrade will save on our heating bill, it is important to remember that our 1950s furnace probably has an efficiency of less than 70%. Heat pumps, on the other hand, run at an average efficiency of about 220%. Expectations are that this will save us thousands of dollars each year.

Finally, once the system is operational and we have learned to work with it, it may be necessary to install wall-mounted electric heaters in the washrooms and/or maintenance room. We have been encouraged to hold off on including this in the project, as it may not be necessary.

Blessings,

The Elders and Deacons