



TOWN OF LINCOLN

MIDDLESEX COUNTY MASSACHUSETTS

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MEMORANDUM

To: Lincoln Select Board
Library Trustees
Green Energy Committee
Finance Committee
Capital Planning Committee
Community Preservation Committee

From: Daniel Pereira, Asst. Town Administrator
Colleen Wilkins, Finance Director
Melissa Roderick, Library Director
Brandon Kelly, Facilities Director

Date: January 8, 2026

Subject: Evaluation of Library Decarbonization Options

This memo provides a high-level overview of the Town of Lincoln's process to evaluate options to decarbonize the library building—driven by both an urgent equipment reliability need and the Town's broader climate and decarbonization goals. It is intended to summarize the steps taken to date and identify the decision point now facing the Town.

Background

The library's existing heating system includes a gas-fired boiler that is 35 years old and increasingly at risk of failure. This presents an immediate operational and financial risk for the Town and the library.

At the same time, the library has recognized and supported the Town's desire to decarbonize municipal buildings. Accordingly, rather than simply moving forward with a like-for-like replacement of the gas-fired boiler, the library agreed to study decarbonization options for the building as a long-term strategy.

CPA-Funded Building Assessment

In 2024, the library used Community Preservation Act (CPA) funds to hire [Northeast Engineering & Commissioning to develop a report](#) that evaluated options to replace the existing hot water boiler. As part of their work, they considered 3 options: 1. Electric Boiler, 2. High Efficiency Gas Boiler, 3. Ground Source Heat Pump Hydronic System. This served as an initial framework for considering alternatives to a conventional boiler replacement.

Feedback from Town Boards

Following careful review of this 2024 assessment, the Community Preservation Committee and the Green Energy Committee expressed concern that the study was incomplete, particularly because it did not propose full life cycle solutions for each technology and it did not fully consider air source heat pumps (ASHPs) and related system configurations that might be viable for the library. After deliberation, the Town decided to extend the project timeline out one more year to allow for further evaluation.

Expanded Technical Support

In summer 2025, the Green Energy Committee was awarded a three-year MassSave Energy Manager Grant. Through this grant, the Town began working with [Power Options, Inc.](#) as the Town's Energy Manager. They immediately identified the library decarbonization study as their most time sensitive project and began work.

To address the gaps identified in the prior work and to develop a clearer basis for decision-making, Power Options brought in [Energy Systems Group](#) (ESG) to perform a more detailed study of library decarbonization strategies. ESG and the Town team worked diligently throughout Fall 2025 to evaluate options and develop comparative cost information.

ESG developed a [cost driven analysis of all 3 options](#), as well as funding strategies:

1. Ground Source Heat Pumps (GSHP) along with associated HVAC and building code upgrades.
2. Air Source Heat Pumps (ASHP) along with associated HVAC and building code upgrades.
3. Maintaining the conventional boiler system (including continued investment in the existing approach and/or conventional replacement strategy) along with associated HVAC and building code upgrades.

ESG's analysis compares the cost of all three options over the next 20 years and factors in potential incentives that could be used to reduce the net cost of decarbonization.

The analysis for the decarbonization options was presented to members of the Select Board, Library Trustees and Green Energy Committee at a meeting on Tuesday December 16, 2025. Consensus from that meeting was that ground source heat pumps were the preferred method of decarbonization due to better incentive opportunities (making it the most cost effective), while also providing the best operational outcome for the library.

The Library Trustees took that feedback and unanimously voted to support ESG's recommendation to more fully develop the ground source option with the understanding that estimated incentives/grants/rebates are realized and the cost of ,required ADA compliance measures will be included in the final numbers. So, *if the Town chooses to decarbonize the building*, they agree this is the preferred method.

Need To Consider Decarbonization vs A Conventional Approach

Apples to apples information about maintaining a conventional boiler system was not available at these meetings, and thus no decision was made regarding decarbonization vs

a conventional approach. This should be the top priority decision made next, if and when this group feels they have adequate information to make such a decision.

Funding Strategies

A second important decision needed is how to fund the preferred approach(es).

The ground source heat pump decarbonization option was preferred by the above groups in part because it continues to be eligible for the federal Inflation Reduction Act (IRA) “direct pay” option for paying a 30% tax credit to municipalities. In addition, the Massachusetts Climate Leaders Program, of which Lincoln is a participant, is trying to encourage ground source heat pump solutions and we believe there is a very good chance we could obtain our full \$1mil grant from that program for a ground source project.

Nonetheless, if we choose to finance this project with bond financing, we will need to appropriate more than our net cost for such a project. We could potentially appropriate the full cost less the Climate Leaders grant amount and simply not proceed with the project unless we did in fact receive the grant. However, we would need to appropriate the amount of the project cost to cover the IRA direct pay amount, since that is not paid to the Town until after the project is completed.

Alternatively, if we chose ESG to perform the decarbonization work, they could offer a Service Contract pricing option, which would allow the town to amortize costs over 20 years rather than paying the full capital expense up front. This creates another decision point for our consideration. Note that as a State procured vendor, we can select ESG to perform the work without making any additional procurement efforts.

High Level Summary of the Numbers with Anticipated Incentive Offsets:

Library HVAC Scenarios	Total Project Cost	Grants Incentives	Net Project Cost
Ground Source Heat Pump (GSHP)	4,950,874	2,934,816	2,016,058
Conventional HVAC System Replacement	2,068,660	28,300	2,040,360
Air Source Heat Pump (ASHP)	4,107,710	1,210,729	2,896,981
Tax Exempt Lease Program (TELP)-GSHP *	5,129,395	2,864,081	2,265,314
High Efficiency Boiler -Swap -No Full HVAC System Replacement	300,000	-	300,000

The **Ground Source Heat Pump (GSHP)** represents the most comprehensive solution with a net cost of \$2,016,058 after \$2.9 million in grants and incentives. This option offers the longest lifecycle (30 years), greatest energy efficiency, and minimal disruption to Library operations.

The **Conventional HVAC System Replacement** provides a complete system upgrade at a net cost of \$2,040,360, however it qualifies for minimal incentives (\$28,300) and lacks the efficiency benefits of heat pump technology.

An **Air Source Heat Pump (ASHP)** option costs significantly more at \$2,896,981 due to fewer available incentives, and provides lower efficiency compared to the GSHP system. This option was not recommended by ESG or the Lincoln team. The Library Trustees voted accordingly to support the recommendation that if decarbonization is the goal, that the GSHP is the preferred option.

The **Tax Exempt Lease Program (TELP) avoids the need to dedicate full project costs right away, but carries significant financial risk, as Lincoln would be required to pay \$1.8 million in year two of the lease if anticipated federal grants do not materialize.

Finally, a **High Efficiency Boiler Swap** at \$300,000 represents the lowest-cost option but does not address the broader HVAC system issues and should be considered a temporary measure only.

Decision Point

The Town now faces a few decisions:

1. Do we have an adequate understanding of what an “apples to apples” full lifecycle project would cost using conventional equipment, and thus we are ready to decide on decarbonization vs a conventional approach?
2. If so:
 - a. What financing approach do we prefer: a capital outlay or use ESG’s Service Contract option? If we choose to finance the project ourselves, we could use some combination of free cash / CPA funds/stabilization and/or bonding.
 - b. If we’d like to finance the project ourselves, are we comfortable making the project contingent on obtaining Climate Leader grant funding and only appropriate the full cost net of that?
 - c. Are we comfortable enough to propose this at the upcoming March 2026 Annual Town Meeting? If so, with the town meeting window closing rapidly, decisions will need to be made quickly.
3. If not:
 - a. What further information do we need to decide?
 - b. Should we consider “limping along” with a simple boiler replacement (i.e. \$300k) and worry about decarbonization and future upgrades needed to air handlers 2 and 3 later?