

Warrant Article 2, Special Town Meeting 3

Recommendation: By a vote of 24-1-0, the Advisory Committee recommends FAVORABLE ACTION.

Executive Summary:	Article 2 seeks to bond \$4.9 million to support the restoration of a Ground Source Heat Pump (GSHP) system to the plans for the new Driscoll School, thus eliminating the currently proposed Air Source Heat Pump system (ASHP), with the objective of reducing electrical consumption by 306,000kWh annually (a 24.6% reduction) and electricity demand by 744 kW (a 67.5% reduction). By a vote of 24-1-0, the Advisory Committee recommends FAVORABLE ACTION.
Voting Yes will...	1) Permit the Driscoll School contractor to order the required equipment by the firm deadline of October 12, 2021, a date that is critical to maintain the construction schedule for a Fall 2023 school opening. 2) Reduce the new school's greenhouse gas emissions by 100 metric tons annually.
Voting No will...	The Driscoll School project will proceed as currently planned with an ASHP system. The project will remain a fossil fuel free building.
Financial impact	The Town will commit to this expenditure before having certainty on its funding source. The Town will first ask the State Department of Revenue (DOR) to increase the bonding for the School by \$4.9 million, which, assuming a 2.5% interest rate and a 20-year level principal payment structure, will initially increase median value single family, condominium, and commercial property taxes by \$20, \$6, and \$52 respectively. A denial by DOR will necessitate this project to be funded through the Town's Capital Improvement Program (CIP), replacing and/or delaying other capital improvements. Annual maintenance costs are projected to be marginally lower for GSHP vs ASHP. Technical expertise for the maintenance of both systems relies on outside contractors. Enforcement impact: None Staff Impact: None Identified
Legal implications	None identified.

Introduction

In the spring of 2020, the GSHP system was removed from the Driscoll School Building Project as one of the value engineering decisions made to maintain the construction budget at approximately \$91.8 million, as strongly encouraged by the Building Commission. Sometime in the summer of 2021, in response to the potential for American Rescue Plan Act (ARPA) funding for sustainability projects, consideration of restoring the GSHP system to Driscoll began. Subsequent Treasury guidance indicates the GSHP may not qualify and Brookline's own policies for determining use of the ARPA funds are also incompatible with the project's timeline. Passage of this Warrant Article will commit the Town to funding the \$4.9 million cost of restoring the GSHP prior to knowing the funding source. This will allow the required materials and equipment to be ordered. The Warrant Article further requires the Town to first seek permission from the MA Department of Revenue (DOR) to include the additional \$4.9 million in the debt excluded borrowings previously approved by the public in 2019. A denial of this request by DOR will require the Town to fund the GSHP system through the CIP, beginning in FY 2023.

Evaluation Methodology/Research

The Capital and Schools Subcommittees of the Advisory Committee (AC) had only 48 hours to review the materials and analysis provided by the petitioner. Though satisfied with the general conclusion of the

financial analysis findings, the subcommittees could not validate and verify all aspects of the analysis. The Committees' "Outline of Inquiry" is included as an important exhibit to this report.

In addition to financial considerations, the AC wanted to know if this was the most effective use of the \$4.9 million to achieve the Town's sustainability goals. This question was not answered.

Consulted Departments:

- Building Department –Public Buildings Division
- Sustainability Director
- Deputy Town Administrator
- Public Schools of Brookline – Facilities Division
- Leftfield & Associates – Construction Manager for the Driscoll School Project

Exhibits:

Outline of Inquiry, including alternative potential sustainability investments
Potential Impact on the CIP

Discussion

The AC members expressed concern with the impact of this expenditure on other projects within the CIP both in FY 2023 and beyond, particularly infrastructure, parks/open space, and public safety if the DOR denies the Town's request. There was also concern regarding the rising tax burden on residents, with future potential debt exclusion votes for the expansion/renovation or replacement of the Pierce School as well as renovations to the Town's fire stations and the replacement of the Babcock Street Fire Station and the Davis Path Footbridge. Finally, it was emphasized that there are currently no cost estimates or plans for how the Town will achieve its Climate/Sustainability objectives, which include decarbonization of all Town facilities, conversion to an electric vehicle fleet, hardening of the Town's infrastructure and increasing its resiliency in the face of Climate Change. These climate investments will likely necessitate funding through additional debt exclusions.

Members also noted the inability to measure the effectiveness of this investment in achieving the Town's climate objectives, versus other potential projects flagged by both the Town's Sustainability Director and its Building Department. The petitioners responded that the installation of GSHP is a one-time opportunity which will benefit the Town both financially and through a reduced carbon footprint for the lifetime of the building. The potential for future technological advances to reduce these future benefits cannot be assessed.

The AC ultimately supported this Warrant Article, not based on financial considerations, but because it is the expressly stated priority of Town Meeting to support the Town's Climate Change objectives.

Recommendation

By a vote of 24-1-0, the Advisory Committee recommends FAVORABLE ACTION on Warrant Article 2, Special Town Meeting 3.

MOVED: To appropriate, \$4,900,000, to be expended under the direction of the Building Commission, with any necessary contracts over \$100,000 to be approved by the Select Board and the School Committee, to provide a fossil-fuel-free Ground Source Heat Pump system for the new Driscoll School, and to meet the appropriation authorize the Treasurer, with approval of the Select Board, to borrow \$4,900,000 under General Laws, Chapter 44, Section 7(1). Any premium received upon the sale of any bonds or notes approved by this vote, less any such premium applied to the payment of the costs of issuance of such bonds or notes, may be applied to the payment of costs approved by this vote in accordance with Chapter 44, Section 20 of the General Laws, thereby reducing the amount authorized to be borrowed to pay such costs by a like amount, provided that this appropriation shall be conditioned upon the town's request of the Department of Revenue to include the Town's additional borrowing authorization of \$4,900,000 for the Driscoll School project as debt excluded from the provisions of Prop 2 1/2.

WA 2
Special Town Meeting 3
Driscoll Ground-Source Heat Pumps

The following is the AC's Outline of Inquiry for this Warrant Article. We thank the Petitioners for their efforts in addressing these questions. Due to the extreme time limitations facing the AC, we were unable to fully review and validate the analysis presented by the petitioners. Many of the areas of Inquiry were not touched upon or adequately addressed. Information that may be of use to Town Meeting Members, which is not included in the Petitioners' materials is included below.

- 1) Ground-Source Heat Pumps Analysis
 - a) Description of Ground-Source Heat Pump vs Air Source Heat Pump
 - b) As stand-alone decision. The merits of spending \$5 million to save "X" kWh and "Y" carbon emissions.
 - i) Payback
 - ii) Return on Investment
 - iii) Carbon Footprint: New Driscoll School Building vs Town overall
 - iv) How will changes in technology impact this analysis in 5 years? 10 years? Will this become an expensive white elephant for the Town?
 - v) Include the costs of designing the air source heat pump system into the financial analysis for the Ground-Source system
 - vi) How does the \$4.9m breakdown? How much redesign will be necessary and does the ground source equipment and excavation for the 49 wells need to be rebid? Cost of change order, etc. Please provide this information in an easy-to-follow table.
 - vii) History of the Geothermal Construction Costs at Driscoll.
 - c) Maintenance Costs:
 - i) Increase cost over an all-electric air source system. Has this been quantified? How will the schools pay for this since they aren't currently fully funding their Repair and Maintenance budget?
 - d) Utility Cost
 - i) PSB does not pay for its utilities. These expenses are paid out of the Building Department's utility account.
 - (1) Town is currently purchasing 20% green electricity, on a plan to gradually increase to 100% by 2050 until told otherwise.
 - (2) Significant upcharge for 100% renewable energy. Have asked for this information on a per kWh, and for the total bill.
 - ii) Should the switch to Geothermal be compared to purchasing 100% renewable energy for the New Driscoll? Should it be compared to purchasing 100% renewable just for the delta in energy usage between the geothermal and air source heat pumps?

- 2) What is the rationale for the priority given to this project as a use of the Town's Sustainability Investment resources?
- i) How does this compare in impact to investing \$5 million in other possible Sustainability projects?
 - (1) In terms of impact on the Town's carbon footprint
 - (2) In terms of payback

From the Town's new Director of Sustainability:

Other areas of sustainable building design where a fraction of the money may be better spent include, but are not limited to:

1. Water conservation
2. Optimum building material
3. Indoor Environmental Quality
4. Solar Canopy
5. Battery Storage (Electricity from Solar)
6. Passive Design Elements

Beyond the school the funds could be used to:

1. Accelerate the complete electrification of other municipal buildings
 - a. Rooftop Solar
 - b. Battery Storage
2. Purchase Municipal EV for the Fleet
3. Purchase/Lease a small fleet of electric school buses
4. Weatherization/New Windows in Municipal Buildings
5. Stormwater Infrastructure Design/Upgrades
6. Urban Forestry Plantings
7. Pocket Park Design/Build
8. Establish a Revolving Loan Fund for Local Business Energy Efficacy Efforts
9. Accelerate the Town's Purchase of Renewables Energy via the Contracts with Freedom Energy. (The goal of this program, already underway, is for the Town to purchase 100% of its electricity from renewables by 2050. Additional expenditures in this program would allow us to achieve this goal before 2050. Example: If we put the geothermal project budget into this the Town would achieve 100% renewables immediately and for the next 13 years. Likely there are other market factors that may flux there by a few years in either direction, but for the purposes of discussion this is significant. However, considering the Town does not actually have \$5M in cash to do this, it is a paperwork exercise. The fiscally prudent option would be an increase in renewable purchasing on the order of .5% to 1 %.) Please see the attached spreadsheet courtesy of Freedom Energy.

- 3) Why has this single design change to the Driscoll School project been singled out?
- a) List of Value Engineering changes to the project: cost savings, change in useful life, change in projected maintenance costs.

i) From the Driscoll Building Project Website:

Where we are:

- Bids received March 23rd
- \$5.6 Million over the project budget of \$92.8 Million
- Filed Sub Bids \$1.1M over budget
 - Major overruns: HVAC (\$1.6M), Electrical (\$468k), and Miscellaneous Metals (\$300k)
- Non-filed Bids \$4.5M over budget
 - Major overruns: Steel, concrete, drywall, millwork, curtainwall, and landscaping

Significant value management (VM) across many trades is required to get the project back within budget. The Team has developed a VM list that that will ensure bids do not come in over budget when the project goes back out to bid. Currently, the priced items total approximately \$7.1M.

- **Identified significant Value Engineering items –**
 - **no significant educational impacts – all changes reviewed with the School**
 - **building will still be Fossil Fuel Free**
- **Architecture**
 - Simplify interior finishes without sacrificing acoustical performance. Reduce wood trim.
 - Simplify geometry without affecting room sizes
 - Remove residual exterior sunshade / trellis
 - Remove canopy at Washington Street entrance
 - Simplify exterior window system
 - Simplify exterior details and materials without affecting performance
 - Simplify project area and break out space geometry
 - Remove balcony at Media Center
- **Structure**
 - Simplify exterior perimeter details
 - Lower floor to floor heights by 8" at upper floors
 - Simplify concrete pours where possible
- **HVAC**
 - Bring scope in line with Ridley, without affecting comfort or air changes per hour
 - Simplify metering and controls
 - Substitute radiant ceiling panels for radiant light shelves
 - Simplify diffuser connection at curved classroom wall
- **Electrical**

- Bring scope in line with Ridley
- Simplify metering and controls
- Remove Audio Visual scope from construction documents and purchase through the Project's soft cost FF&E/Technology budget
- **Landscape**
 - Simplify materials such as railings and site furniture without affecting playgrounds or longevity
 - Reduce size, quantity, and type of boulders
 - Simplify concrete finishes
 - Reduce density of shrub / perennial plantings
 - Remove pergola structure

How we got here:

It's important to understand that this project followed a process that received more cost input than is typical. Below are some of the steps the project took to ensure cost certainty at bid time:

- Estimates were provided early at 50% DD rather than relying solely on the customary 100% DD estimate
- Additional estimates were conducted at the 100% DD, 60% CD, and 90% CD milestones
- The 60% estimate included a 3rd estimator
- A market study was completed at the end of 2020 to better understand where the market was headed in these unprecedented times
- When necessary along the way, the project preformed VM studies to bring the project back within budget

Potential contributing factors for bids coming in higher than anticipated include:

- The major inflation spike that the market is currently going through, which was not obvious even 6-8 weeks ago
 - Significant increases in the price of copper, steel, lumber
- Even with multiple estimators reviewing the same drawings, the estimates don't seem to have captured the more challenging aspects of the design of the project
 - VM items decrease customization and create more efficiency for manufacturing parts and during installation
- The bid process included six addenda, which may have complicated the pricing exercise
 - This issue will be resolved in the next round of bidding as JLA will be issuing a conformed set of documents that include the information issued by addenda in the first round of bidding

- b) Should other value engineered changes be added back-in?
- c) Metrics on PSB school building costs: comparisons to Coolidge Corner & 22 Tappan Street (new High School building):
 - i) PSF costs
 - ii) Per Student Cost: 2019 enrollment, 2021 enrollment, projected opening enrollment.

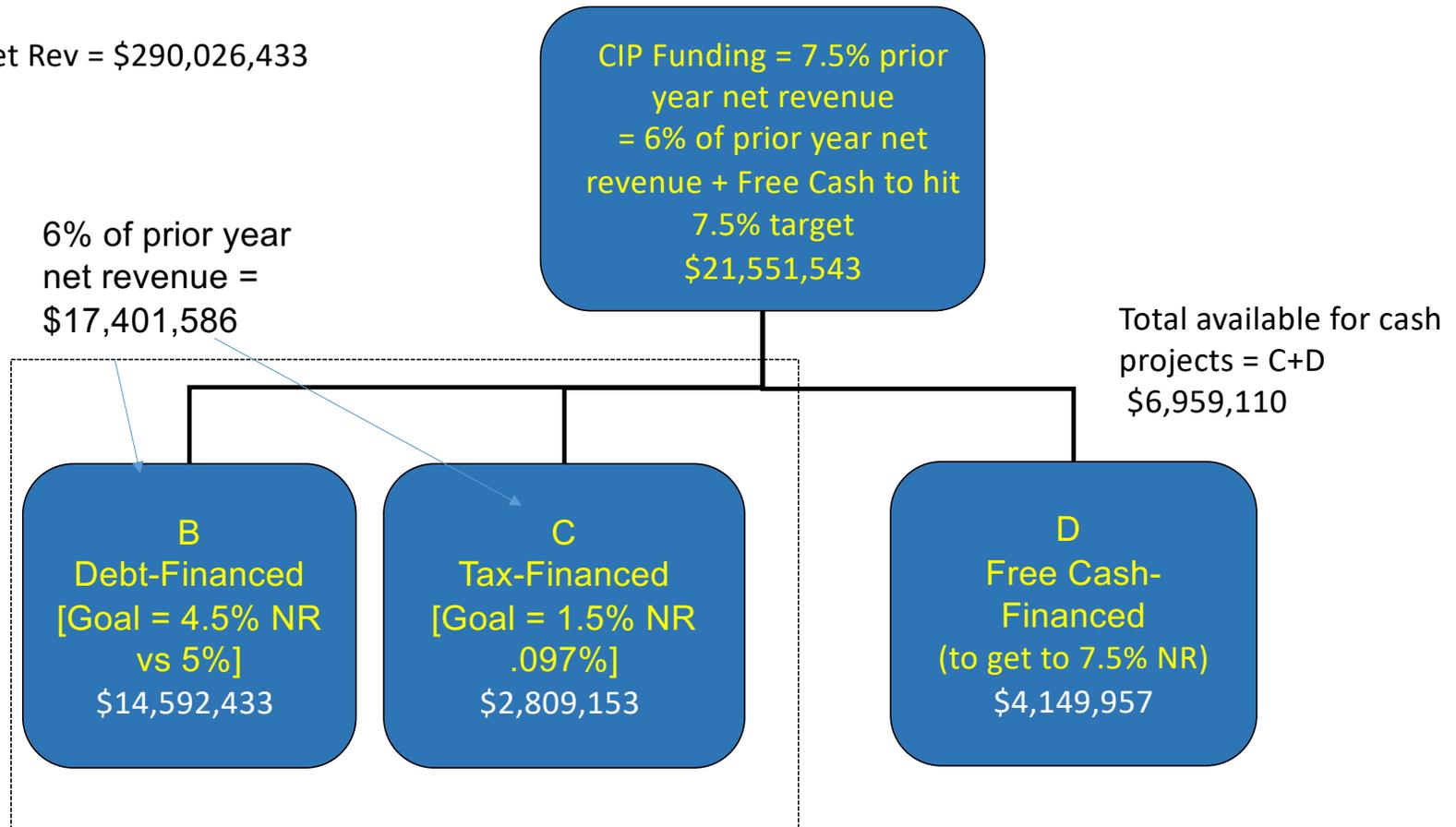
- 4) Investment Decision Making Process for the Town:
 - a) Brookline Fiscal Advisory Committee (BFAC) findings:
 - i) Warrant articles interfere with rational planning to address the Town's established priorities
 - ii) "Fire Drill" approach to issues results in huge demands on Town staff. How much time did the staff spend on responding to duplicate requests from multiple parties?

CIP Without \$4.9 Geothermal Investment

7.5% CIP FUNDING POLICY FY23

(as projected in the FY22 Financial Plan)

FY 2022 Net Rev = \$290,026,433



7.5% CIP FUNDING POLICY FY23

(as projected in the FY22 Financial Plan)

FY 2022 Net Rev = \$290,026,433

6% Policy Net
Revenue =
\$17,401,586

CIP Funding = 7.5% prior
year net revenue
= 6% of prior year net
revenue + Free Cash to hit
7.5% target
\$21,551,543

Total available for cash
projects = C+D
\$6,599,110

