



Town of Reading Meeting Posting with Agenda

Board - Committee - Commission - Council:

Permanent Building Committee

Killam School Building Committee

Date: 2024-11-20

Time: 7:00 PM

Building: Reading Town Hall

Location: Select Board Meeting Room

Address: 16 Lowell Street

Agenda:

Purpose: General Business

Meeting Called By: Jacquelyn LaVerde on behalf of Chair Carla Nazzaro

Notices and agendas are to be posted 48 hours in advance of the meetings excluding Saturdays, Sundays and Legal Holidays. Please keep in mind the Town Clerk's hours of operation and make necessary arrangements to be sure your posting is made in an adequate amount of time. A listing of topics that the chair reasonably anticipates will be discussed at the meeting must be on the agenda.

All Meeting Postings must be submitted in typed format; handwritten notices will not be accepted.

Topics of Discussion:

This meeting will be held in-person in the Town Hall Select Board Meeting Room and remotely via Zoom:

Join Zoom Meeting

<https://us06web.zoom.us/j/84335154687>

Meeting ID: 843 3515 4687

One tap mobile

+16465588656,,84335154687# US (New York)

+16465189805,,84335154687# US (New York)

Dial by your location

• +1 646 558 8656 US (New York)

• +1 646 518 9805 US (New York)

Find your local number: <https://us06web.zoom.us/u/keH4quZd43>

AGENDA:

1. Call to order
2. Public Comment
3. Liaison Reports
4. OPM Update
 - a. Financial*
 - b. Schedule
5. Designer Update
 - a. Community Meetings Update
 - b. Energy Feasibility Study*
6. Chapter 149 vs 149A Follow up*
7. Warrant
8. Meeting Minutes*
9. Next KSBC Meeting – December 16th 2024
10. Adjourn

*Noted potential vote required

This Agenda has been prepared in advance and represents a listing of topics that the chair reasonably anticipates will be discussed at the meeting. However the agenda does not necessarily include all matters which may be taken up at this meeting.



Town of Reading
Killam Elementary School



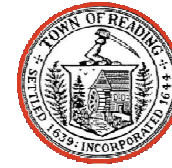
November 15, 2024

Project Budget and Cost Summary

Project Leaders

A Description	C (Bud. Adj. Tab)			E (C+D)	F (Com. Cost tab)		G (E-F)	H (Forecast. tab, >G)	I (F+G+H)	J (Invoice Tab)	K (I-J)
	BUDGET				COST				CASH FLOW		
	PFA Approved	Authorized Changes	Approved Budget		Committed Costs	Uncommitted Costs	Forecast Costs	Total Project Costs		Expenditures to Date	Balance To Spend
20 Construction											
Construction		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Change Orders		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Subtotal	\$0	\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
30 Architectural & Engineering											
Design Development		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Construction Documents		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Bidding / Negotiations		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Closeout		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Other Basic Services		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
A&E Feasibility Study	\$800,000	\$50,000	\$850,000		\$850,000	\$0	\$0	\$850,000		\$535,000	\$315,000
Subtotal	\$800,000	\$50,000	\$850,000		\$850,000	\$0	\$0	\$850,000		\$535,000	\$315,000
40 Administrative Costs											
OPM Feasibility Study	\$280,000	\$0	\$280,000		\$280,000	\$0	\$0	\$280,000		\$240,667	\$39,333
OPM Design Development		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
OPM Construction Contract Documents		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
OPM Bidding		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
OPM Construction Contract Admin		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
OPM Closeout		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Environmental & Site (FS/SD)	\$500,000	\$0	\$500,000		\$237,370	\$262,630	\$0	\$500,000		\$135,188	\$364,812
Other Project Costs (FS/SD)	\$620,000	-\$50,000	\$570,000		\$9,374	\$560,626	\$0	\$570,000		\$5,420	\$564,580
Subtotal	\$1,400,000	-\$50,000	\$1,350,000		\$526,744	\$823,256	\$0	\$1,350,000		\$381,275	\$968,725
50 Furniture, Fixtures and Equipment											
Furniture, Fixtures and Equipment		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Technology		\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Subtotal	\$0	\$0	\$0		\$0	\$0	\$0	\$0		\$0	\$0
Project Sub-Total											
	\$2,200,000	\$0	\$2,200,000		\$1,376,744	\$823,256	\$0	\$2,200,000		\$916,275	\$1,283,725
70 Project Contingency											
Construction Contingency (Hard Cost)	\$0	\$0	\$0					\$0			\$0
Owner's Contingency (Soft Cost)	\$0	\$0	\$0					\$0			\$0
Subtotal	\$0	\$0	\$0					\$0			\$0
Project Total											
	\$2,200,000	\$0	\$2,200,000		\$1,376,744	\$823,256	\$0	\$2,200,000		\$916,275	\$1,283,725

Town of Reading
Killam Elementary School
11/15/24



Project Budget Adjustments

Adjustment Item	BRR	Adjusted Amount	Date Approved	CODE	Comments
Move to OPM FS to SC Contingency		\$20,000.00	07/19/23	40-010	Moved \$20k to cover OPM FS/SD Cost
From SC Cont to OPM FS		(\$20,000.00)	07/19/23	70-500	Moved \$20k to cover OPM FS/SD Cost
Move to A/E FS from SC Contingency		\$110,000.00	12/12/23	30-290	Moved \$110k to Cover A/E FS/SD Cost
From SC Cont to A/E FS		(\$110,000.00)	12/12/23	70-500	Moved \$110k to Cover A/E FS/SD Cost
Move back SC Contingency form OPM FS		(\$20,000.00)	07/19/23	40-010	Moved \$20k to cover OPM FS/SD Cost
From OPM FS to SC Cont		\$20,000.00	07/19/23	70-500	Moved \$20k to cover OPM FS/SD Cost
Move A/E FS back to SC Contingency		(\$60,000.00)	12/12/23	30-290	Moved \$110k to Cover A/E FS/SD Cost
To SC Cont from A/E FS		\$60,000.00	12/12/23	70-500	Moved \$110k to Cover A/E FS/SD Cost
Move to Other Project Costs from SC Cont		\$269.67	03/11/24	40-810	Moved to cover Design Services Advertisement
From SC Cont to Other Project Costs		(\$269.67)	03/11/24	70-500	Moved to cover Design Services Advertisement
Move to Other Project Costs from SC Cont		\$2,750.00	05/29/24	40-810	Move to cover LBA Amd 7
From SC Cont to Other Project Costs		(\$2,750.00)	05/29/24	70-500	Move to cover LBA Amd 7
Move to Other Project Costs from SC Cont		\$3,600.00	06/11/24	40-810	Move to Cover Kartoon
From SC Cont to Other Project Costs		(\$3,600.00)	06/11/24	70-500	Move to Cover Kartoon
Move from Other Project Cost to SC Cont		(\$50,000.00)	10/21/24	40-810	Adjustment to coordinate to MSBA Propay System (No Cont Line)
To SC Cont from Other Project Cost		\$50,000.00	10/21/24	70-500	Adjustment to coordinate to MSBA Propay System (No Cont Line)
Move to Other Project Costs from SC Cont		(\$269.67)	10/21/24	40-810	Adjustment to coordinate to MSBA Propay System (No Cont Line)
From SC Cont to Other Project Costs		\$269.67	10/21/24	70-500	Adjustment to coordinate to MSBA Propay System (No Cont Line)
Move to Other Project Costs from SC Cont		(\$2,750.00)	10/21/24	40-810	Adjustment to coordinate to MSBA Propay System (No Cont Line)
From SC Cont to Other Project Costs		\$2,750.00	10/21/24	70-500	Adjustment to coordinate to MSBA Propay System (No Cont Line)
Move to Other Project Costs from SC Cont		(\$3,600.00)	10/21/24	40-810	Adjustment to coordinate to MSBA Propay System (No Cont Line)
From SC Cont to Other Project Costs		\$3,600.00	10/21/24	70-500	Adjustment to coordinate to MSBA Propay System (No Cont Line)
Total Approved Adjustments to Date		\$0.00			\$ -

**Town of Reading
Killam Elementary School
11/15/24**



Committed Cost (Contracts/Pos)

VENDOR	AMOUNT	ISSUE DATE	SIGNED/ RETURN DATE	ENCUM (PO)	CODE	MSBA	Notes
Colliers Project Leaders	\$280,000.00	6/22/2023	07/19/23	CPL Contract	40-010	0001-0000	CPL Base Contract Excluding Estimating
Lavallee Brensinger Architects	\$400,000.00	12/12/2023	12/12/2023	LBA Contract	30-290	0002-0000	LBA Base Contract for FS (Excluding Extra Services)
Lavallee Brensinger Architects	\$450,000.00	12/12/2023	12/12/2023	LBA Contract	30-290	0002-0000	LBA Base Contract for SD (Excluding Extra Services)
Lavallee Brensinger Architects	\$26,400.00	12/14/2023	12/23/23	LBA Amd 01	40-800	0003-0000	LBA Amd 01 - Land Surveying (Samioetes)
Lavallee Brensinger Architects	\$120,450.00	12/14/2023	12/23/23	LBA Amd 02	40-800	0003-0000	LBA Amd 02 - Traffic Study (GPI)
Lavallee Brensinger Architects	\$4,950.00	12/18/2024	12/23/23	LBA Amd 03	40-800	0003-0000	LBA Amd 03 - Haz Mat Consulting (UEC)
Lavallee Brensinger Architects	\$14,520.00	12/18/2024	12/23/23	LBA Amd 04	40-800	0003-0000	LBA Amd 04 - Phase 1 ESA & Soil Sampling (FS Engineers)
Lavallee Brensinger Architects	\$41,800.00	1/3/2024	01/25/24	LBA Amd 05	40-800	0003-0000	LBA Amd 05 - Geotech Services (LGCI)
Daily Times Chronicle	\$269.67	9/14/2023	02/29/24	PO NA	40-810	0004-0000	District advertising for Designer Services
Lavallee Brensinger Architects	\$2,750.00	5/29/2024	06/17/24	LBA Amd 06	40-800	0003-0000	LBA Amd 6 - Soil Testing for Stormwater System Locations
Lavallee Brensinger Architects	\$2,750.00	5/29/2024	06/17/24	LBA Amd 07	40-810	0004-0000	LBA Amd 7 - Additional Cost Estimating HVAC systems
Kartoon EDU	\$3,600.00	5/7/2024	06/10/24	Contract	40-810	0004-0000	Pillars @ \$600/each - Video Information
Lavallee Brensinger Architects	\$16,500.00	8/30/2024	09/10/24	LBA Amd 08	40-800	0003-0000	LBA Amd 8 - "TED1" Energy Modeling
Lavallee Brensinger Architects	\$2,753.94	9/12/2024	10/15/24	LBA Amd 09	40-810	0004-0000	LBA Amd 9 - Additional services for printing delivery boards
Lavallee Brensinger Architects	\$10,000.00	11/13/2024		LBA Amd 10	40-800	0003-0000	LBA Amd 10 - reimbursable expenses
TOTAL	\$1,376,743.61						\$1,376,743.61



Expenditures - Invoices/Requisitions

Invoice Amount	Vendor	Invoice Number	Invoice Date	Approval Date	CODE	Propay Code	Propay Subm. #	Description
\$20,031.00	Colliers Project Leaders	937330	04/08/24	05/09/24	40-010	0001-0000	02	CPL Services Mar 2024 - FS/SD
\$52,000.00	Lavallee Brensinger Architects	19969	04/10/24	05/09/24	30-290	0002-0000	02	LBA Services Mar 2024 - FS
\$9,240.00	Lavallee Brensinger Architects	19969	04/10/24	05/09/24	40-800	0003-0000	02	LBA Services Mar 2024 - A&E Environmental & Site - Amd 1
\$57,816.00	Lavallee Brensinger Architects	19969	04/10/24	05/09/24	40-800	0003-0000	02	LBA Services Mar 2024 - A&E Environmental & Site - Amd 2
\$2,904.00	Lavallee Brensinger Architects	19969	04/10/24	05/09/24	40-800	0003-0000	02	LBA Services Mar 2024 - A&E Environmental & Site - Amd 4
\$13,964.50	Colliers Project Leaders	945141	05/07/24	06/17/24	40-010	0001-0000	03	CPL Services Apr 2024 - FS/SD
\$40,000.00	Lavallee Brensinger Architects	20157	05/22/24	06/17/24	30-290	0002-0000	03	LBA Services Apr 2024 - FS
\$20,232.50	Colliers Project Leaders	953651	06/07/24	06/17/24	40-010	0001-0000		CPL Services May 2024 - FS/SD
\$60,000.00	Lavallee Brensinger Architects	20369	06/17/24	08/05/24	30-290	0002-0000	03	LBA Services May 2024 - FS
\$3,960.00	Lavallee Brensinger Architects	20369	06/17/24	08/05/24	40-800	0003-0000	03	LBA Services May 2024 - A&E Environmental & site - Survey
\$2,409.00	Lavallee Brensinger Architects	20369	06/17/24	08/05/24	40-800	0003-0000	03	LBA Services May 2024 - A&E Environmental & site - Traffic
\$11,616.00	Lavallee Brensinger Architects	20369	06/17/24	08/05/24	40-800	0003-0000	03	LBA Services May 2024 - A&E Environmental & site - Environmental
\$18,810.00	Lavallee Brensinger Architects	20369	06/17/24	08/05/24	40-800	0003-0000	03	LBA Services May 2024 - A&E Environmental & site - Geotech
\$21,812.00	Colliers Project Leaders	961796	07/10/24	08/05/24	40-010	0001-0000	03	CPL Services June 2024 - FS/ SD
\$48,000.00	Lavallee Brensinger Architects	20516	07/18/24	08/05/24	30-290	0002-0000	03	LBA Services June 2024 - FS
(\$10,924.10)	Lavallee Brensinger Architects	20516	07/18/24	08/05/24	40-800	0003-0000	03	LBA Services June 2024 - A&E Environmental & site - Traffic
(\$1,210.00)	Lavallee Brensinger Architects	20516	07/18/24	08/05/24	40-800	0003-0000	03	LBA Services June 2024 - A&E Environmental & site - Geotech
\$2,400.00	Kartoon EDU	000072	07/25/24	08/05/24	40-810	0004-0000		Promotional Video - Pillars 4 of 6
\$52,000.00	Lavallee Brensinger Architects	20640	08/19/24	09/30/24	30-290	0002-0000		LBA Services July 2024 - FS
\$2,750.00	Lavallee Brensinger Architects	20640	08/19/24	09/30/24	40-810	0004-0000		LBA Services July 2024 - HVAC Cost Estimate
\$24,954.00	Colliers Project Leaders	969708	08/13/24	09/30/24	40-010	0001-0000		CPL Services July 2024 - FS/ SD
\$26,197.00	Colliers Project Leaders	978642	09/06/24	09/30/24	40-010	0001-0000		CPL Services August 2024 - FS/ SD
\$40,000.00	Lavallee Brensinger Architects	20830	09/17/24	09/30/24	30-290	0002-0000		LBA Services August 2024 - FS
\$67,500.00	Lavallee Brensinger Architects	20830	09/17/24	09/30/24	30-290	0002-0000		LBA Services August 2024 - SD
\$5,846.60	Lavallee Brensinger Architects	20830	09/17/24	09/30/24	40-800	0003-0000		LBA Services August 2024 - A&E Environmental & site - Traffic
\$412.50	Lavallee Brensinger Architects	20830	09/17/24	09/30/24	40-800	0003-0000		LBA Services August 2024 - A&E Environmental & site - Soil Testing
\$16,870.00	Colliers Project Leaders	988260	10/04/24	10/21/24	40-010	0001-0000		CPL Services September 2024 - FS/ SD
\$67,500.00	Lavallee Brensinger Architects	20910	10/11/24	10/21/24	30-290	0002-0000		LBA Services September 2024 - SD
\$2,187.80	Lavallee Brensinger Architects	20910	10/11/24	10/21/24	40-800	0003-0000		LBA Services September 2024 - A&E Environmental & site - Traffic
\$1,925.00	Lavallee Brensinger Architects	20910	10/11/24	10/21/24	40-800	0003-0000		LBA Services September 2024 - A&E Environmental & site - Soil Testing
\$23,026.00	Colliers Project Leaders	996167	11/06/24		40-010	0001-0000		CPL Services October 2024 - FS/ SD
\$916,274.72 Total Spent to Date								\$916,274.72

November 15, 2024

Killam Elementary School Estimated Project Cash Flow Sheet



Month		OPM	Designer & Consultants	FF&E & Misc	Construction	Contingency	Estimated Outlay	Actual outlay	Est Cum	Act Cum
Feasibility Study Period	1	Aug-23	\$8,203				\$8,203	\$620	\$8,203	\$620
	2	Sep-23	\$15,096				\$15,096	\$11,903	\$23,299	\$12,523
	3	Oct-23	\$15,096				\$15,096	\$8,303	\$38,395	\$20,825
	4	Nov-23	\$15,096				\$15,096	\$7,433	\$53,491	\$28,258
	5	Dec-23	\$14,025				\$14,025	\$0	\$67,516	\$28,258
	6	Jan-24	\$14,584	\$20,000			\$34,584	\$32,431	\$102,100	\$60,689
	7	Feb-24	\$14,584	\$50,000			\$64,584	\$60,074	\$166,684	\$120,763
	8	Mar-24	\$14,584	\$75,000	\$30,000		\$119,584	\$0	\$286,268	\$120,763
	9	Apr-24	\$14,584	\$75,000	\$50,000		\$139,584	\$91,282	\$425,852	\$212,045
	10	May-24	\$14,584	\$75,000	\$50,000		\$139,584	\$141,991	\$565,436	\$354,036
	11	Jun-24	\$14,584	\$75,000	\$50,000		\$139,584	\$74,197	\$705,020	\$428,233
	12	Jul-24	\$14,584	\$75,000	\$75,000		\$164,584	\$0	\$869,604	\$428,233
	13	Aug-24	\$14,584	\$75,000	\$75,000		\$164,584	\$156,873	\$1,034,188	\$585,106
Schematic Design	14	Sep-24	\$14,584	\$75,000	\$75,000		\$164,584	\$219,660	\$1,198,772	\$804,766
	15	Oct-24	\$14,584	\$75,000	\$75,000		\$164,584	\$88,483	\$1,363,356	\$893,249
	16	Nov-24	\$14,584	\$75,000	\$75,000		\$164,584	\$0	\$1,527,940	
	17	Dec-24	\$14,584	\$75,000	\$75,000		\$164,584	\$0	\$1,692,524	
	18	Jan-25	\$15,174	\$75,000	\$75,000		\$165,174	\$0	\$1,857,698	
	19	Feb-25	\$17,245	\$75,000	\$50,000		\$142,245	\$0	\$1,999,943	
	20	Mar-25	\$2,580	\$75,000	\$50,000		\$127,580	\$0	\$2,127,523	
	21	Apr-25	\$2,477	\$13,120	\$50,000		\$65,597	\$0	\$2,193,120	
	22	May-25	\$0		\$6,880		\$6,880	\$0	\$2,200,000	
		\$2,200,000	\$280,000	\$1,058,120	\$861,880	\$0	\$0	\$2,200,000	\$893,249	

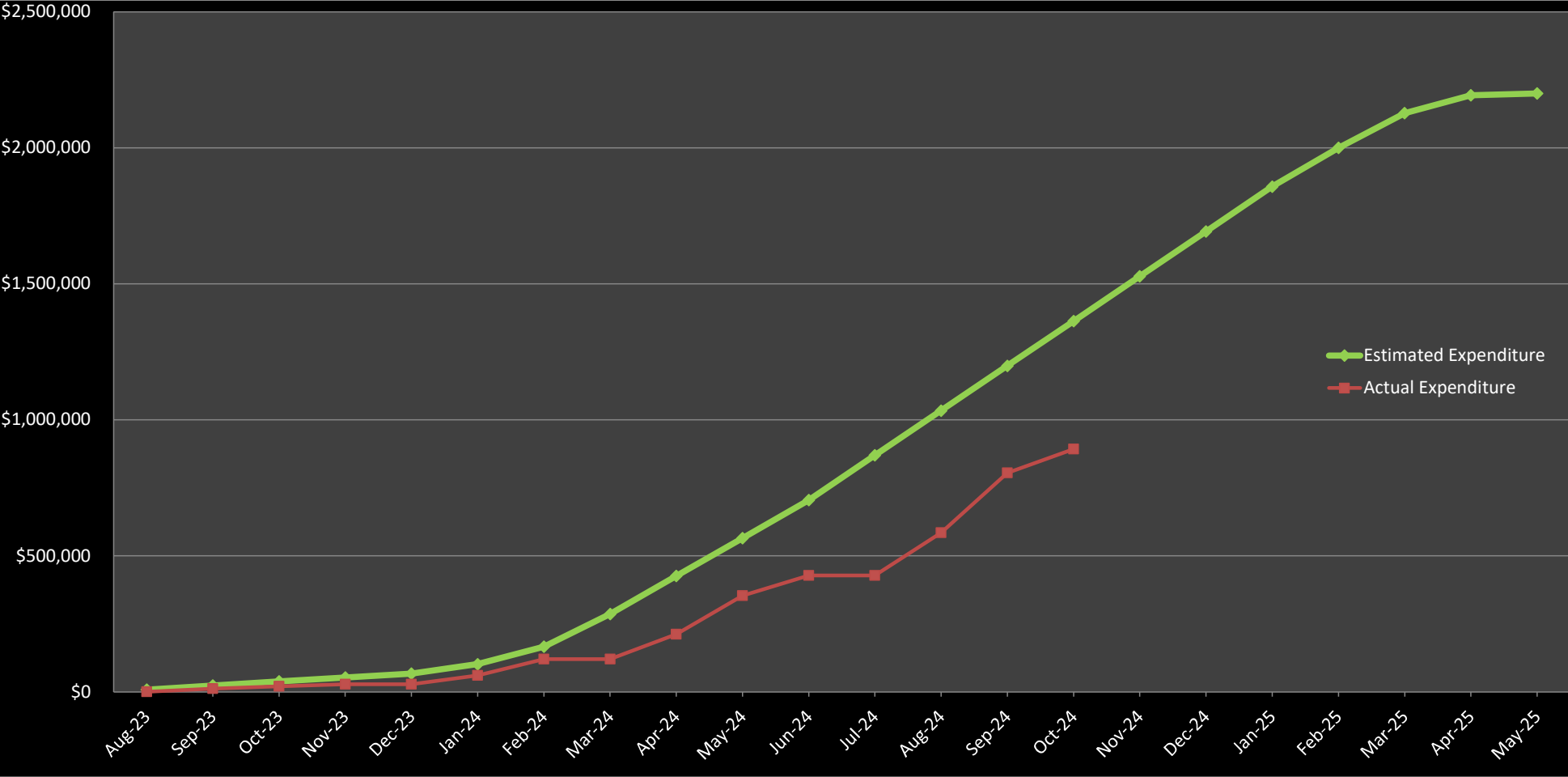


Town of Reading
Killam Elementary School
Estimated Project Cash Flow Graph



Project Leaders

November 15, 2024



November 13, 2024

Matthew Kraunelis
Town Manager
Town of Reading
16 Lowell St
Reading, MA 01867

Subject: J. Warren Killam Elementary School Designer Amendment #10

Dear Mr. Kraunelis:

Colliers Project Leaders has reviewed the designer's contract, specifically Article 9, which allows the design team to bill for reimbursable expenses. Please note that the contract allows for this, to date we have not established a budget to which these reimbursable expenses could be billed. At this time we are recommending the approval of Lavallee Brensinger Architects' Contract Amendment #10 for the J. Warren Killam Elementary School project. This will create a line item to which these expenses can be billed.

Lavallee Brensinger Architects' Contract Amendment #10 is for Reimbursable for Additional Services for design, for a total of up to *Ten Thousand and 00/100 Dollars (\$10,000.00)*. (ProPay Code: 0003-0000)

As design work is ongoing, we respectfully request execution of this agreement at the earliest opportunity. Please let us know if you have any questions.

Sincerely,



Shirley Ng
Project Manager

cc: Mike Carroll, Colliers Project Leaders
Tom Milaschewski, Superintendent
Carla Nazzaro, School Building Committee Chair

"A PLACE WHERE EVERYONE BELONGS"



AGENDA

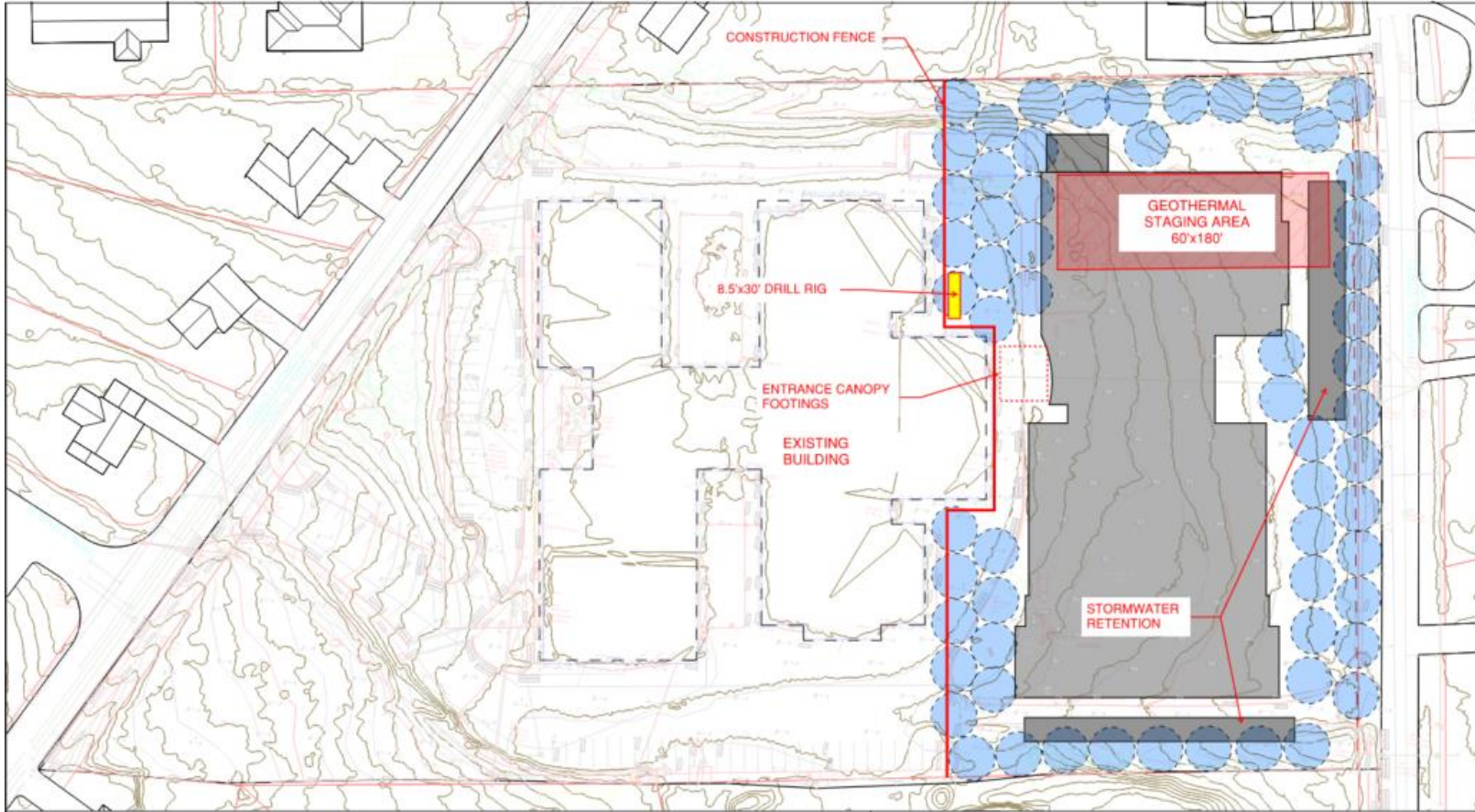
- **Community Meeting Report**
 - **Site and Community Use**
 - **Traffic**
- **HVAC**
 - **Goals**
 - **Coordination with Site Utilities**
 - **System Options**
 - **Qualitative Comparison of Reliability and Operating Cost**
 - **Costs & Incentives**
 - **Life-Cycle Cost Analysis**
 - **Solar PV Rooftop Array**

ENERGY FEASIBILITY STUDY - GOALS

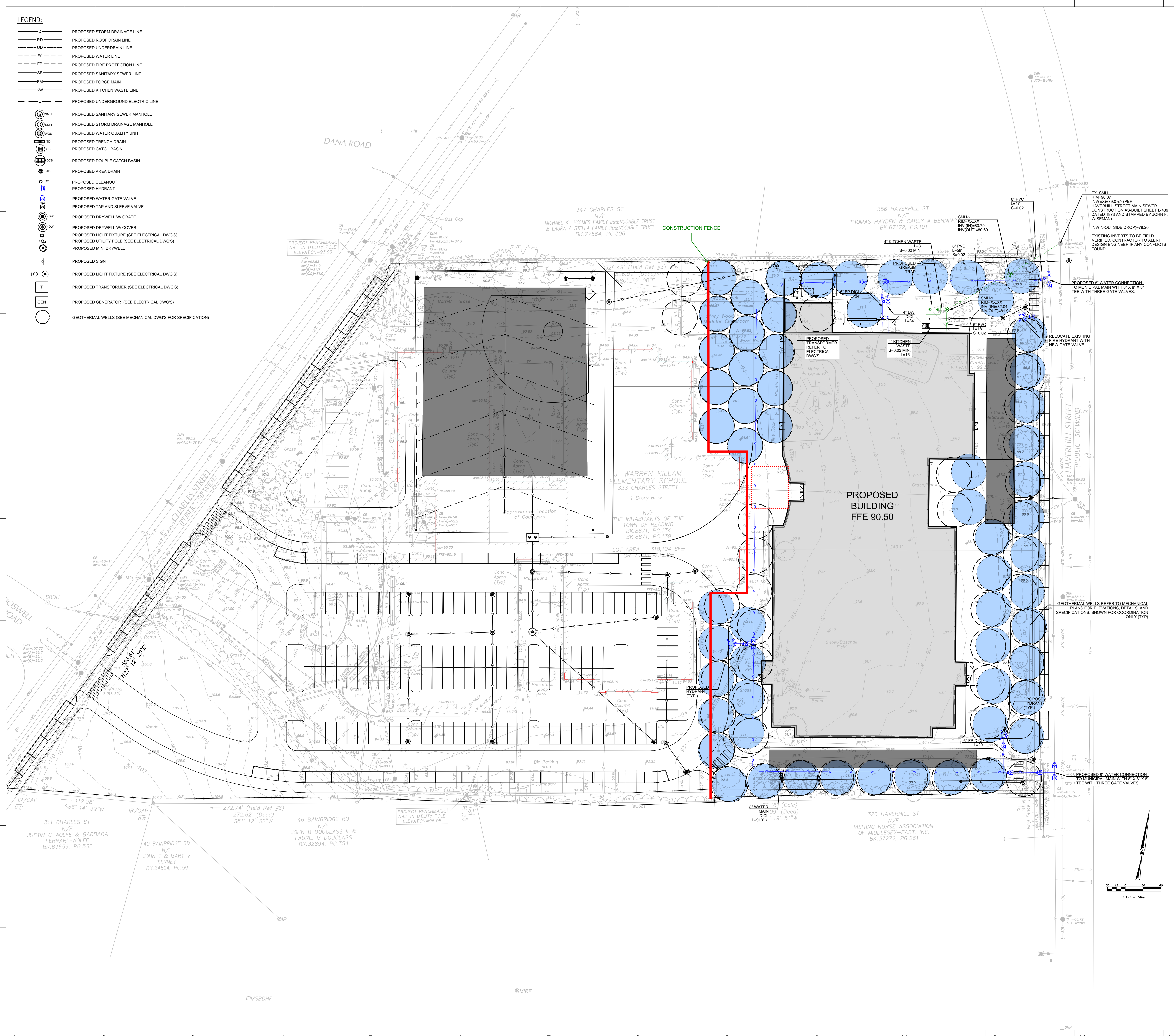
- ☑ Site logistics plan during construction.
- ☑ Number of wells needed based on energy model.
- ☑ Layout of wells on the site.
 - Layout of site utilities coordinated with well field.
 - Qualitative comparison of reliability and operating cost.
 - Cost comparison, with first cost, life-cycle cost, and incentives.

COORDINATION WITH SITE UTILITIES

WELL FIELD LAYOUT | FULL GEOTHERMAL | 60 WELLS @ 800' DEEP



- LEGEND:**
- D - PROPOSED STORM DRAINAGE LINE
 - RD - PROPOSED ROOF DRAIN LINE
 - UD - PROPOSED UNDERDRAIN LINE
 - W - PROPOSED WATER LINE
 - FP - PROPOSED FIRE PROTECTION LINE
 - SS - PROPOSED SANITARY SEWER LINE
 - FM - PROPOSED FORCE MAIN
 - KW - PROPOSED KITCHEN WASTE LINE
 - E - PROPOSED UNDERGROUND ELECTRIC LINE
 - SMH - PROPOSED SANITARY SEWER MANHOLE
 - DMH - PROPOSED STORM DRAINAGE MANHOLE
 - WQU - PROPOSED WATER QUALITY UNIT
 - TD - PROPOSED TRENCH DRAIN
 - CB - PROPOSED CATCH BASIN
 - DCB - PROPOSED DOUBLE CATCH BASIN
 - AD - PROPOSED AREA DRAIN
 - CO - PROPOSED CLEANOUT
 - H - PROPOSED HYDRANT
 - WGV - PROPOSED WATER GATE VALVE
 - TSSV - PROPOSED TAP AND SLEEVE VALVE
 - DWG - PROPOSED DRYWELL W/ GRATE
 - DMH - PROPOSED DRYWELL W/ COVER
 - LF - PROPOSED LIGHT FIXTURE (SEE ELECTRICAL DWG'S)
 - UP - PROPOSED UTILITY POLE (SEE ELECTRICAL DWG'S)
 - MD - PROPOSED MINI DRYWELL
 - S - PROPOSED SIGN
 - LF - PROPOSED LIGHT FIXTURE (SEE ELECTRICAL DWG'S)
 - T - PROPOSED TRANSFORMER (SEE ELECTRICAL DWG'S)
 - GEN - PROPOSED GENERATOR (SEE ELECTRICAL DWG'S)
 - GW - GEOTHERMAL WELLS (SEE MECHANICAL DWG'S FOR SPECIFICATION)



A

B

C

D

E

F

G

H

I

J

TOWN OF READING

KILLAM ELEMENTARY SCHOOL

333 Charles St, Reading, MA 01867

NO.	DESCRIPTION	DATE

CONTENT:
CIVIL UTILITIES PLAN

DRAWN BY: CPDL

PROJECT NO: 23-106-00

DATE: 10/17/2024

REVISED:

SCALE: AS SHOWN

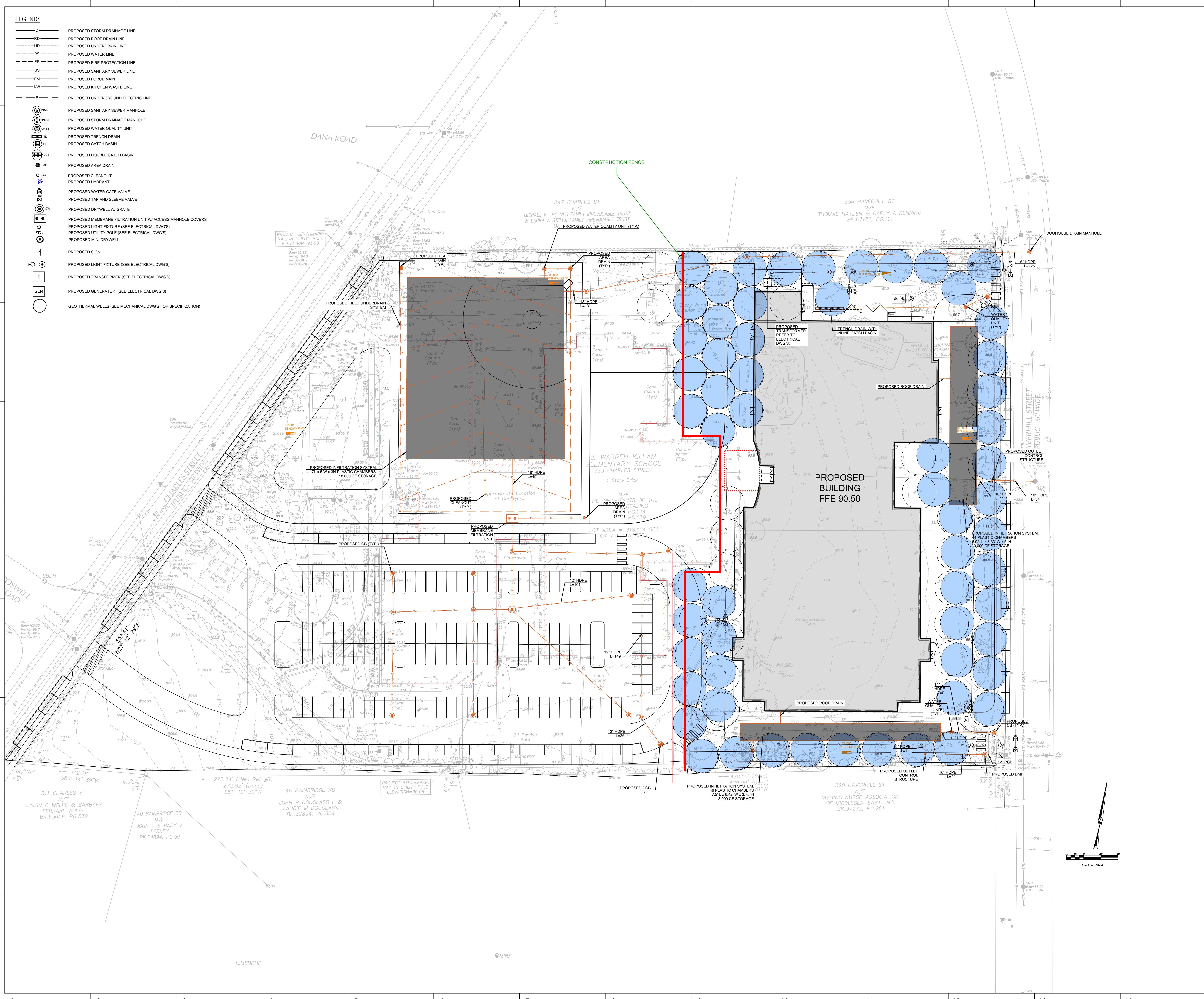
C-200

Project Phase
SCHEMATIC DESIGN

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- LEGEND:**
- PROPOSED STORM DRAINAGE LINE
 - PROPOSED ROOF DRAIN LINE
 - PROPOSED UNDERDRAIN LINE
 - PROPOSED WATER LINE
 - PROPOSED FIRE PROTECTION LINE
 - PROPOSED SANITARY SEWER LINE
 - PROPOSED FORCE MAIN
 - PROPOSED KITCHEN WASTE LINE
 - PROPOSED UNDERGROUND ELECTRIC LINE
 - PROPOSED SANITARY SEWER MANHOLE
 - PROPOSED STORM DRAINAGE MANHOLE
 - PROPOSED WATER QUALITY UNIT
 - PROPOSED TRENCH DRAIN
 - PROPOSED CATCH BASIN
 - PROPOSED DOUBLE CATCH BASIN
 - PROPOSED AREA DRAIN
 - PROPOSED CLEANOUT
 - PROPOSED HYDRANT
 - PROPOSED WATER GATE VALVE
 - PROPOSED TAP AND SLEEVE VALVE
 - PROPOSED DRYWELL W/GRATE
 - PROPOSED MEMBRANE FILTRATION UNIT W/ACCESS MANHOLE COVERS
 - PROPOSED LIGHT FIXTURE (SEE ELECTRICAL DWG'S)
 - PROPOSED UTILITY POLE (SEE ELECTRICAL DWG'S)
 - PROPOSED MINI DRYWELL
 - PROPOSED SIGN
 - PROPOSED LIGHT FIXTURE (SEE ELECTRICAL DWG'S)
 - PROPOSED TRANSFORMER (SEE ELECTRICAL DWG'S)
 - PROPOSED GENERATOR (SEE ELECTRICAL DWG'S)
 - GEOTHERMAL WELLS (SEE MECHANICAL DWG'S FOR SPECIFICATION)



Boston | Manchester | Portland
 99 Bedford Street, Boston, MA 02111
 617.398.2035
 www.LBPA.com

TOWN OF READING
 KILLAM
 ELEMENTARY
 SCHOOL

333 Charles St, Reading, MA 01867

NO.	DESCRIPTION	DATE

CONTENT:	STORMWATER MANAGEMENT PLAN
DRAWN BY:	CPDL
PROJECT NO.:	23-106-00
DATE:	10/17/2024
REVISED:	
SCALE:	AS SHOWN
C-300	
Project Phase	SCHEMATIC DESIGN
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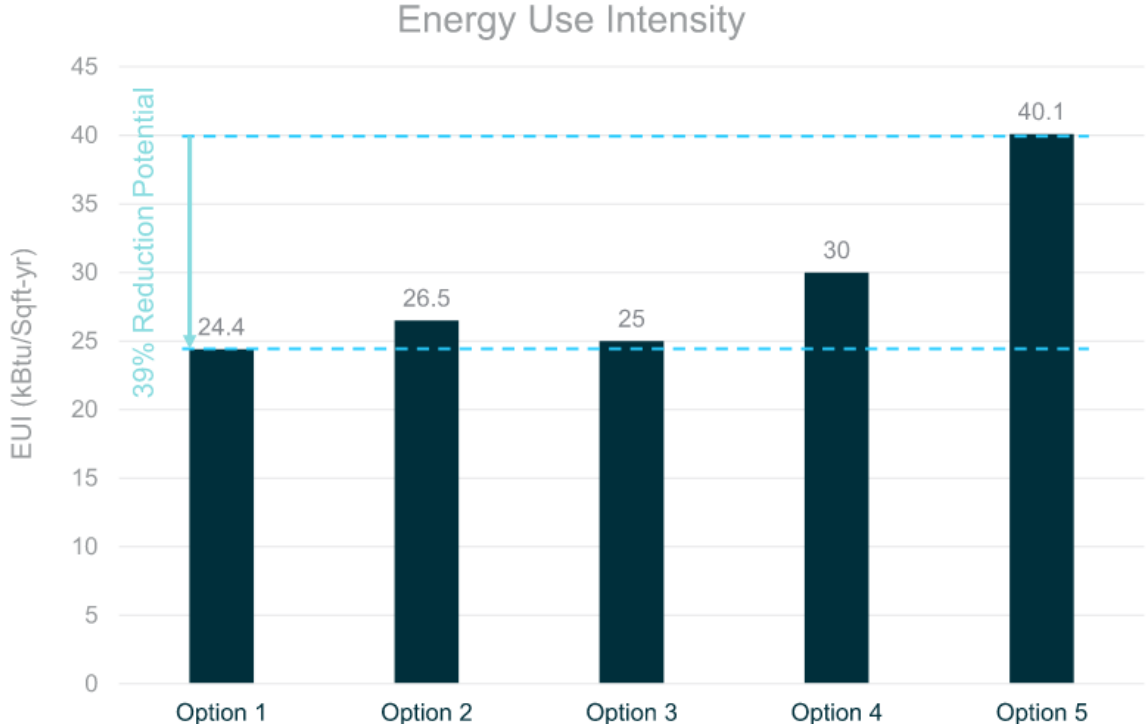
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HVAC SYSTEMS

HVAC SYSTEMS

	System Type	System Description
1A	Full Geothermal <i>60 wells</i>	Ground-source heat pump connected to 60 geothermal wells.
2A	Hybrid Geothermal <i>40 wells</i>	Water source heat pump connected to 40 geothermal wells supplemented by a cooling tower and a boiler.
3A	Half Geothermal <i>44 wells</i>	Water source heat pump connected to 44 geothermal wells; separate DOAS for ventilation air with air-source heat pump.
4A	Air-Source <i>all-electric</i>	Heat Pump Chiller and Boiler serving chilled water and hot water to the 4-pipe hydronic system. Heat recovered to hot water loop from Heat Pump Chiller.
5A	Chiller-Boiler <i>gas-fired</i>	Electric Screw Chiller and Gas Fired Boiler serving chilled water and hot water to the 4-pipe hydronic system. Heat recovered to hot water loop from Heat Pump Chiller.

5 HVAC SYSTEM OPTIONS



Option 1, the full geothermal system, achieves the highest performance with an annual EUI of **24.4 kBtu/Sqft-yr**

**QUALITATIVE
COMPARISON of
RELIABILITY and
OPERATING COST**

PANEL DISCUSSION: *QUALITATIVE COMPARISON of RELIABILITY and OPERATING COSTS*

Joe Huggins, Director of Facilities, Town of Reading

James Miller, Commissioning & Energy Services, Colliers

Waseem Khoury, Mechanical Engineer, CES

Vamshi Gooje, Sustainability Consultant, Thornton Tomasetti

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COSTS and INCENTIVES

CONSTRUCTION COST

		A.	B. =(A*.725)	C.	D.	E. =B-C-D
		HVAC System Construction Cost	HVAC Town Share <i>(approx)</i>	MSBA Incentive Value	IRA Incentive Value	First Cost <i>(town share less incentives)</i>
1A	Full Geothermal <i>60 wells</i>					
2A	Hybrid Geothermal <i>40 wells</i>					
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4A	Air-Source <i>all-electric</i>	\$ 11,600,000				
5A	Chiller-Boiler <i>gas-fired</i>	\$ 11,100,000				

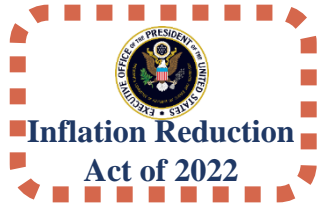
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1A	Full Geothermal <i>60 wells</i>	\$ 15,200,000	\$ 11,000,000			
2A	Hybrid Geothermal <i>40 wells</i>	\$ 14,300,000	\$ 10,400,000			
3A	Half Geothermal <i>44 wells</i>	\$ 13,300,000	\$ 9,600,000			
4A	Air-Source <i>all-electric</i>	\$ 11,600,000	\$ 8,400,000			
5A	Chiller-Boiler <i>gas-fired</i>	\$ 11,100,000	\$ 8,000,000			

REBATES AND INCENTIVES SUMMARY



- Additional 3% reimbursement for meeting Specialized Opt-in Code
- Additional 1% reimbursement for Indoor Air Quality (*not considered as part of this analysis*)



- Rebates for geothermal heat pumps and solar photovoltaics
- For geo, 50%+ of cooling/heating load must come from geo
- 34% of cost of eligible costs can be refunded.



- Commercial rebate is capped at \$60,000 per project.
- Explore RMLD ownership of solar PV.

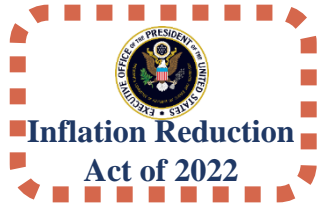


- Confirmed with National Grid that no incentives are available for New Construction served by a municipal light plant.

REBATES AND INCENTIVES SUMMARY



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REBATES AND INCENTIVES: MSBA GREEN SCHOOLS



- Additional 3% reimbursement for meeting Specialized Opt-in Code
- Additional 1% reimbursement for Indoor Air Quality (*not considered as part of this analysis*)



3-4% Additional Reimbursement

- 5 LEED IEQ points (1%) - assumed for all options
- Specialized Opt-in Code (3%)



Three Pathways :

- 1. Zero Energy:** On site energy production \geq building energy use
- 2. All-Electric:** Full space and water heating electrification

3. Mixed Fuel:

- On-site renewable capacity ≥ 1.5 W/ft² multiplied by sum of floor area of three largest floors
- More efficient HVAC equipment performance
- Wiring for future electrification

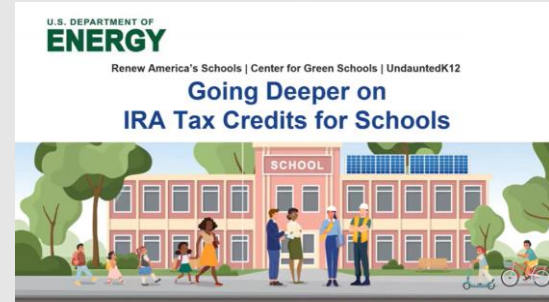
REBATES AND INCENTIVES: MSBA GREEN SCHOOLS

		A.	B. =(A*.725)	C.	D.	E. =B-C-D
		HVAC System Construction Cost	HVAC Town Share <i>(approx)</i>	MSBA Incentive Value	IRA Incentive Value	First Cost <i>(town share less incentives)</i>
1A	Full Geothermal <i>60 wells</i>	\$ 15,200,000	\$ 11,000,000	\$ (2,200,000)		
2A	Hybrid Geothermal <i>40 wells</i>	\$ 14,300,000	\$ 10,400,000	\$ (2,200,000)		
3A	Half Geothermal <i>44 wells</i>	\$ 13,300,000	\$ 9,600,000	\$ (2,200,000)		
4A	Air-Source <i>all-electric</i>	\$ 11,600,000	\$ 8,400,000	\$ (2,200,000)		
5A	Chiller-Boiler <i>gas-fired</i>	\$ 11,100,000	\$ 8,000,000	\$ 0		

REBATES AND INCENTIVES: INFLATION REDUCTION ACT

- LBA is deeply engaged in learning about the IRA but we are not experts
- If pursuing IRA credits, we recommend engaging a tax advisor and/or energy compliance manager

Recommended Learning Resources:

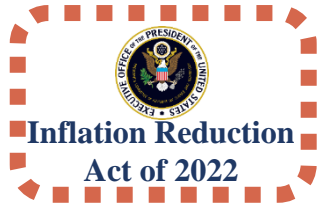


DOE Webinar, May 30, 2024



MSBA Joint Roundtable, Oct. 19 2023

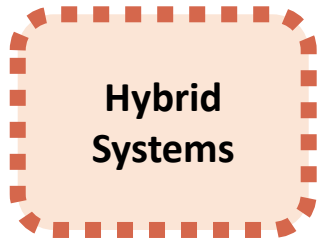
REBATES AND INCENTIVES: INFLATION REDUCTION ACT



- Rebates for geothermal heat pumps and solar photovoltaics
- 34% of cost of eligible costs can be refunded.



- Geothermal wells PLUS all equipment needed to deliver heating/cooling from geothermal wells to occupied spaces



- If 50%-100% of heating/cooling load is from ground source – pro-rated credit
- If 0-49% of energy used is from ground source – NO CREDIT!

REBATES AND INCENTIVE: IRA

		A.	B. =(A*.725)	C.	D.	E. =B-C-D
		HVAC System Construction Cost	HVAC Town Share (approx)	MSBA Incentive Value	IRA Incentive Value	First Cost (town share less incentives)
1A	Full Geothermal 60 wells	\$ 15,200,000	\$ 11,000,000	\$ (2,200,000)	\$ (4,600,000)	
2A	Hybrid Geothermal 40 wells	\$ 14,300,000	\$ 10,400,000	\$ (2,200,000)	\$ (3,400,000)	
3A	Half Geothermal 44 wells	\$ 13,300,000	\$ 9,600,000	\$ (2,200,000)	\$ (1,900,000)	
4A	Air-Source all-electric	\$ 11,600,000	\$ 8,400,000	\$ (2,200,000)	\$ 0	
5A	Chiller-Boiler gas-fired	\$ 11,100,000	\$ 8,000,000	\$ 0	\$ 0	

FIRST COST LESS INCENTIVES

		A.	B. =(A*.725)	C.	D.	E. =B-C-D
		HVAC System Construction Cost	HVAC Town Share <i>(approx)</i>	MSBA Incentive Value	IRA Incentive Value	First Cost <i>(town share less incentives)</i>
1A	Full Geothermal <i>60 wells</i>	\$ 15,200,000	\$ 11,000,000	\$ (2,200,000)	\$ (4,600,000)	\$ 4,200,000
2A	Hybrid Geothermal <i>40 wells</i>	\$ 14,300,000	\$ 10,400,000	\$ (2,200,000)	\$ (3,400,000)	\$ 4,800,000
3A	Half Geothermal <i>44 wells</i>	\$ 13,300,000	\$ 9,600,000	\$ (2,200,000)	\$ (1,900,000)	\$ 5,500,000
4A	Air-Source <i>all-electric</i>	\$ 11,600,000	\$ 8,400,000	\$ (2,200,000)	\$ 0	\$ 6,200,000
5A	Chiller-Boiler <i>gas-fired</i>	\$ 11,100,000	\$ 8,000,000	\$ 0	\$ 0	\$ 8,000,000

LIFE-CYCLE COST ANALYSIS

LIFE-CYCLE COST ANALYSIS

Alternatives	HVAC System Description	EUI (kBtu/sf/yr)*	Total HVAC First Cost (\$)*	Annual Maint. Cost (\$/yr)*	Annual Energy Cost (\$/yr)*	Annual Operating Cost [energy+maint] (\$/yr)	40-Year Life Cycle Cost (\$/40yr)
1A	Full Geothermal	24.4	\$ 4,200,000.00	\$ 25,000	\$ 209,000	\$ 234,000	\$ 12,600,000
2A	Hybrid Geothermal	26.5	\$ 4,800,000.00	\$ 32,000	\$ 232,000	\$ 264,000	\$ 15,000,000
3A	Half Geothermal	25.0	\$ 5,500,000.00	\$ 25,000	\$ 214,000	\$ 239,000	\$ 14,100,000
4A	Air Source	30.0	\$ 6,200,000.00	\$ 26,000	\$ 252,000	\$ 278,000	\$ 17,200,000
5A	Chiller/Boiler	40.1	\$ 8,000,000.00	\$ 28,000	\$ 204,000	\$ 232,000	\$ 17,000,000

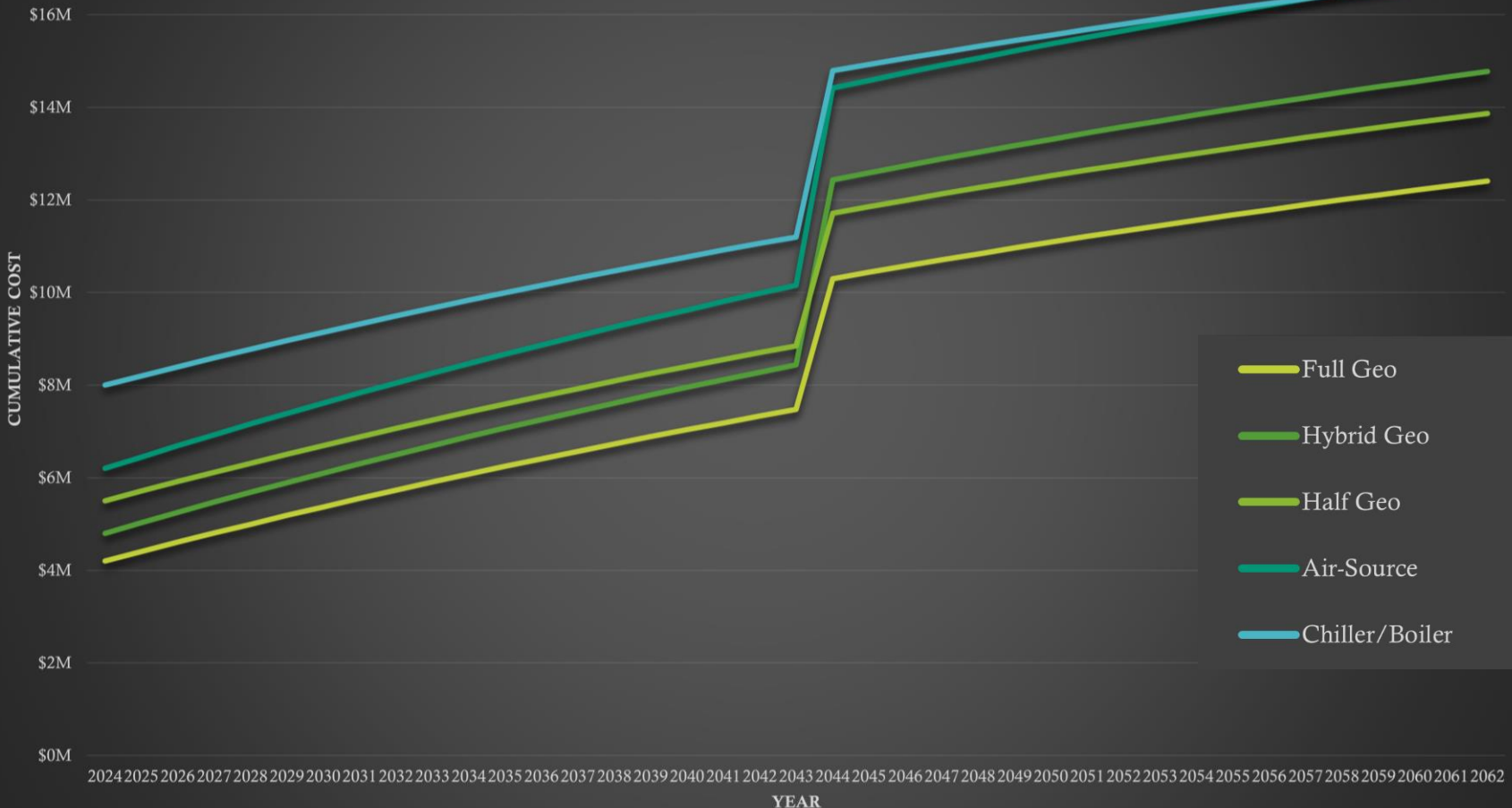
* Data provided by
Thornton Tomasetti

* Data Provided by LBA

* Refer to the
Maintenance Costs
tab.

* Data provided by
Thornton Tomasetti

CUMULATIVE LIFE CYCLE COST COMPARISON



SOLAR PV ROOFTOP ARRAY

SOLAR PV

Today's Discussion:

- Impact on HVAC system selection of adding 185kW Solar Rooftop Array

Dec. 16 SBC:

- Site Solar Capacity
- Total Estimated Load
- PV Options and Costs
- Payback Period
- RMLD ownership option



COSTS WITH 185 kW ROOFTOP SOLAR ARRAY

		A.	B. =(A*.725)	C.	D.	E. =B-C-D
		HVAC System Construction Cost	HVAC Town Share <i>(approx)</i>	MSBA Incentive Value	IRA Incentive Value	First Cost <i>(town share less incentives)</i>
1B	Full Geothermal <i>60 wells</i>	\$ 15,900,000	\$ 11,500,000	\$ (2,200,000)	\$ (4,800,000)	\$ 4,500,000
2B	Hybrid Geothermal <i>40 wells</i>	\$ 15,000,000	\$ 10,900,000	\$ (2,200,000)	\$ (3,600,000)	\$ 5,100,000
3B	Half Geothermal <i>44 wells</i>	\$ 14,000,000	\$ 10,200,000	\$ (2,200,000)	\$ (2,100,000)	\$ 5,900,000
4B	Air-Source <i>all-electric</i>	\$ 12,300,000	\$ 8,900,000	\$ (2,200,000)	\$ (200,000)	\$ 6,500,000
5B	Chiller-Boiler <i>gas-fired</i>	\$ 12,400,000	\$ 9,000,000	\$ (2,200,000)	\$ (200,000)	\$ 6,600,000

LIFE-CYCLE COST ANALYSIS w/ 185 kW ROOFTOP SOLAR ARRAY

Alternatives	HVAC System Description	EUI (kBtu/sf/yr)*	Total HVAC First Cost (\$)*	Annual Maint. Cost (\$/yr)*	Annual Energy Cost (\$/yr)*	Annual Operating Cost [energy+maint] (\$/yr)	40-Year Life Cycle Cost (\$/40yr)
1B	Full Geotheraml	24.4	\$ 4,500,000.00	\$ 25,000	\$ 131,000	\$ 156,000	\$ 12,200,000
2B	Hybrid Geothermal	26.5	\$ 5,100,000.00	\$ 32,000	\$ 147,000	\$ 179,000	\$ 14,600,000
3B	Half Geothermal	25.0	\$ 5,900,000.00	\$ 25,000	\$ 136,000	\$ 161,000	\$ 13,800,000
4B	Air Source	30.0	\$ 6,500,000.00	\$ 26,000	\$ 174,000	\$ 200,000	\$ 16,800,000
5B	Chiller/Boiler	40.1	\$ 6,600,000.00	\$ 28,000	\$ 124,000	\$ 152,000	\$ 15,600,000

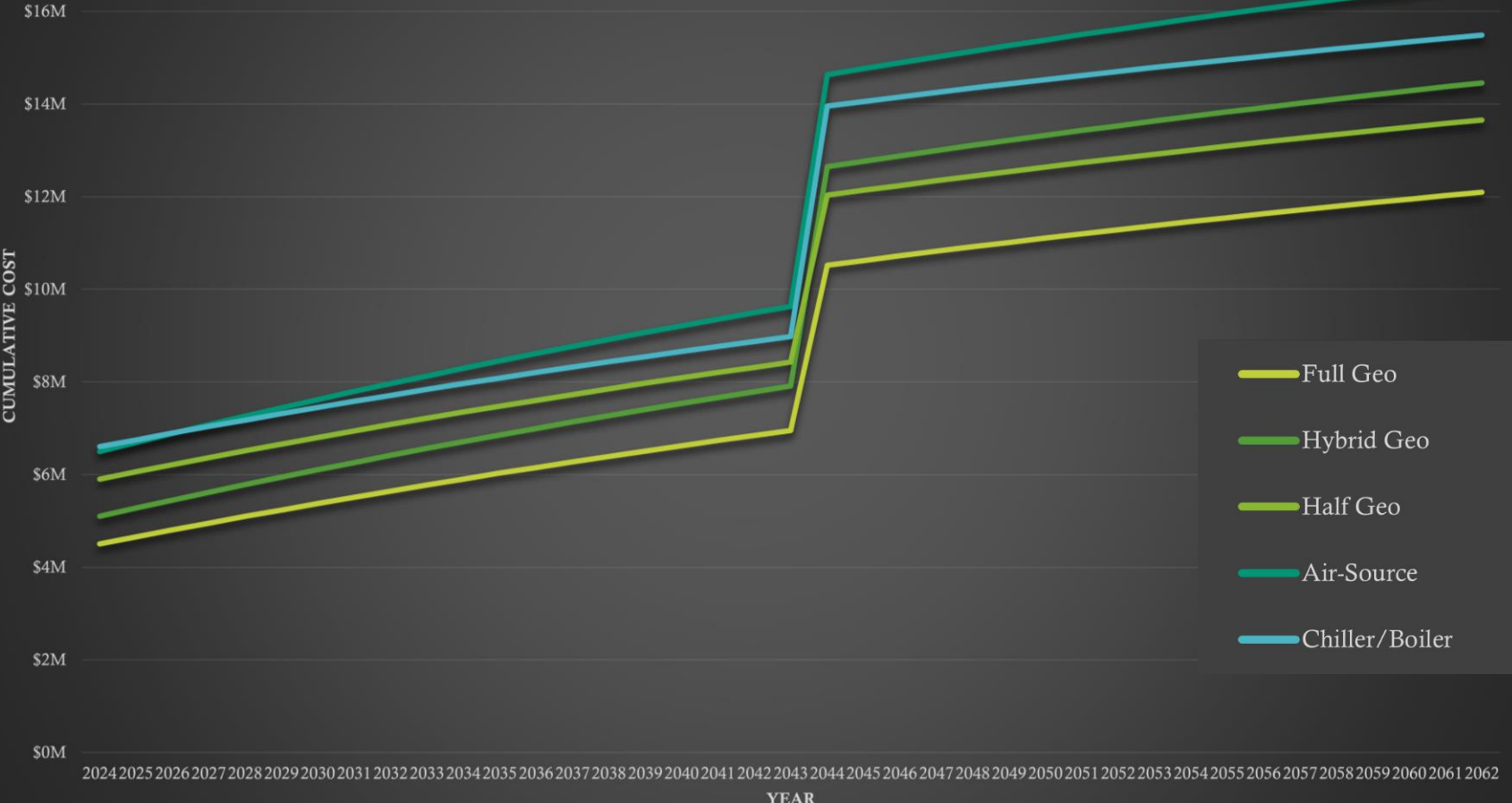
* Data provided by Thornton Tomasetti

* Data Provided by LBA

* Refer to the Maintenance Costs tab.

* Data provided by Thornton Tomasetti

CUMULATIVE LIFE CYCLE COST COMPARISON



SUMMARY COMPARISON

SUMMARY

NO Solar PV

		First Cost <i>(town share less incentives)</i>	Annual Operating Cost <i>(energy + maintenance)</i>	Life Cycle Cost <i>(40 year)</i>
1A	Full Geothermal <i>60 wells</i>	\$ 4,200,000	\$ 234,000	\$ 12,600,000
2A	Hybrid Geothermal <i>40 wells</i>	\$ 4,800,000	\$ 264,000	\$ 15,000,000
3A	Half Geothermal <i>44 wells</i>	\$ 5,500,000	\$ 239,000	\$ 14,100,000
4A	Air-Source <i>all-electric</i>	\$ 6,200,000	\$ 278,000	\$ 17,200,000
5A	Chiller-Boiler <i>gas-fired</i>	\$ 8,000,000	\$ 232,000	\$ 17,000,000

WITH Solar PV

		First Cost <i>(town share less incentives)</i>	Annual Operating Cost <i>(energy + maintenance)</i>	Life Cycle Cost <i>(40 year)</i>
1B	Full Geothermal <i>60 wells</i>	\$ 4,500,000	\$ 156,000	\$ 12,200,000
2B	Hybrid Geothermal <i>40 wells</i>	\$ 5,100,000	\$ 179,000	\$ 14,600,000
3B	Half Geothermal <i>44 wells</i>	\$ 5,900,000	\$ 161,000	\$ 13,800,000
4B	Air-Source <i>all-electric</i>	\$ 6,500,000	\$ 200,000	\$ 16,800,000
5B	Chiller-Boiler <i>gas-fired</i>	\$ 6,600,000	\$ 152,000	\$ 15,600,000

SUMMARY

NO Solar PV

		First Cost <i>(town share less incentives)</i>	Annual Operating Cost <i>(energy + maintenance)</i>	Life Cycle Cost <i>(40 year)</i>
1A	Full Geothermal <i>60 wells</i>	\$ 4,200,000	\$ 234,000	\$ 12,600,000
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WITH Solar PV

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5B	Chiller-Boiler <i>gas-fired</i>	\$ 6,600,000	\$ 152,000	\$ 15,600,000

THANK YOU



Town of Reading Meeting Minutes

Board - Committee - Commission - Council:

Permanent Building Committee

Killam School Building Committee

Date: 2024-10-21

Time: 7:00 PM

Building: Reading Town Hall

Location: Select Board Meeting Room

Address: 16 Lowell Street

Session: Open Session

Purpose: General Business

Version: Draft

Attendees: **Members - Present:**

Chair Carla Nazzaro, Vice Chair Pat Tompkins, Shawn Brandt (remote), John Coote, Chris Haley, Kirk McCormick (remote), Ed Ross, Greg Stepler (remote)

Members - Not Present:

Nancy Twomey

Others Present:

Town Manager Matt Kraunelis, Chief Financial Officer Sharon Angstrom (remote), Assistant Town Manager Jayne Wellman (remote), Killam Principal Lindsay Fulton (remote), Facilities Director Joe Huggins (remote), Colliers Project Director Mike Carroll, LBA Project Manager Jenni Katajamaki, LBA Architect Leigh Sherwood (remote), Karen Herrick (remote), Jack (remote 7:58 pm), Laura Stella (remote 8:11 pm)

Minutes Respectfully Submitted By: Jacquelyn LaVerde

Topics of Discussion:

This meeting was held in-person in the Select Board Meeting Room of Town Hall and remotely via Zoom.

Chair Carla Nazzaro called the meeting to order at 7:00 pm.

Roll call attendance: Pat Tompkins, Shawn Brandt (remote), John Coote, Chris Haley, Kirk McCormick (remote), Ed Ross, Greg Stepler (remote), Carla Nazzaro. Not present: Nancy Twomey.

Public Comment

There was no comment from the public.

Liaison Reports

John Coote requested a response from LBA on comments on the geotechnical report. LBA Project Manager Jenni Katajamaki stated that she will follow up.

OPM Update

Financial

Colliers Project Director Mike Carroll stated that they have been working with the Massachusetts School Building Authority (MSBA) on budget revision requests. The MSBA advised shifting items that were allocated under the "Contingency" line item to the "Other Project Costs" line item to be consistent with MSBA paperwork.

Expenditures this month include an invoice from LBA and an invoice from Colliers.

LBA also invoiced for Amendment #9 for \$2,753.94 for reimbursable presentation boards.

On a motion by Pat Tompkins, seconded by Chris Haley, the Killam School Building Committee voted 8-0-0 to approve Colliers invoice number 988260 in the amount of \$16,870, LBA invoice number 20910 in the amount of \$71,612.80, and LBA Amendment number 9 in the amount of \$2,753.94.

MSBA Report

Mr. Carroll shared Colliers's monthly report to the MSBA, which included the financials he just reviewed, as well as the master schedule provided to the MSBA.

Discuss and potential vote on Chapter 149 vs. 149A

Mr. Carroll provided an explanation and comparison of construction delivery methods. Chapter 149 is also known as General Contractor (GC), or Design, Bid, Build (DBB). Chapter 149A, is also known as Construction Management At-Risk (CM@R).

The traditional GC/DBB method requires documents to be 100% complete before going to bid, and is awarded to the lowest, responsible, eligible, and pre-qualified bidder. Contractors and subcontractors must be prequalified on projects estimated at \$10 million or over. The contract is based on a lumpsum amount, and work not shown in the bid documents will require a change order.

The CM@R process will require approval from the Office of the Inspector General in advance for projects over \$5 million. Having the Construction Manager retained early in the process provides additional expertise on budget, schedule, logistics, and constructability. CM@R is selected based on qualifications, then fees can be negotiated. The prequalification of subcontractors still applies. CM@R has greater ability to have early packages and allow construction to begin prior to the full completion of design. Mr. Carroll further reviewed the differences between the two methods, and recent MSBA projects and costs done using both methods. MSBA no longer gives additional reimbursement for CM@R. The Committee discussed at length the benefits and drawbacks of both processes.

Designer Update

Review MSBA PSR comments

LBA Project Manager Jenni Katajamaki shared which spaces MSBA will reimburse including: all 20 classrooms for grades one through five; the science, technology, and engineering space and storage room; specialist offices for literacy, math, and reading; multi-language learner classrooms; adaptive physical education space; and the twelve RISE pre-k classrooms. MSBA will not participate in funding: the extra 1,150 square feet of gym space and storage room for the Recreation Department, 187 square feet for a larger staff lunchroom (to keep the same size as the current lunchroom), increases in the administrative and guidance offices, all non-classroom associated space with RISE, and extended day office and storage. MSBA will partially fund 2,000 square feet of 4,800 square feet of flax areas outside classrooms adjacent to the corridors.

Community Meeting - Site and Community Use

The next Community meeting will focus on site and community use. Ms. Katajamaki shared the current proposed site plan, and how the site areas are programmed with the WOW center, U12 soccer field, 3-5 play area K-2 play area, outdoor dining patio, RISE playground, and drop off/arrival courtyard. She also shared a proposed site plan with a softball field, though Recreation seemed to indicate that it would not be a big need. The cafeteria and gym spaces will also be accessible to the public.

Sustainability Update

Ms. Katajamaki explained the five HVAC systems that are being considered for the project: full geothermal, hybrid geothermal, half geothermal, air source heat pump, and conventional gas boiler. Options one through four are all electric and eligible for additional reimbursement. Option five may be eligible if it includes solar. She reviewed the energy

use intensity of each system, and noted that option one, full geothermal, uses the least amount of energy per year, and is close in efficiency to option three, half geothermal. Option five, the conventional system, is the least efficient. Mr. Carroll noted that operation and maintenance will cost more as the building will be bigger, fully ventilated, and will require filter changes and other equipment maintenance. Ms. Katajamaki provided an overview of potential geothermal well layouts and construction schedule.

The goals of the energy feasibility study include: a site logistics plan during construction (which needs more planning), established the number of wells based on energy models, a layout of site utilities, cost comparison, and gathering information on reliability and operating costs on geothermal systems.

Next steps include the MSBA board meeting on October 30th, where they will vote to accept the PSR submission and advance the project to the Schematic Design phase. The next KSBC meetings will be on November 20th to select the HVAC system, and December 2nd for a Schematic Design update. The next Community Meetings are October 23rd to discuss site and community use, and November 4th to discuss traffic.

The Committee will continue to discuss Chapter 149 vs. 149A at a future meeting.

Discuss and potential vote on the Warrant

The warrant was tabled to a future meeting.

Approval of prior meeting minutes

On a motion by Pat Tompkins, seconded by Ed Ross, the Killam School Building Committee voted 8-0-0 to accept the meeting minutes of September 30, 2024. Roll call vote: Pat Tompkins – Yes, Shawn Brandt – Yes, John Coote – Yes, Chris Haley – Yes, Kirk McCormick – Yes, Ed Ross – Yes, Greg Stepler – Yes, Carla Nazzaro – Yes.

Karen Herrick expressed her appreciation for the work done on the sustainability update and addressed concerns about geothermal system implementation and maintenance.

Adjourn

On a motion by Chris Haley, seconded by Ed Ross, the Killam School Building Committee voted 8-0-0 to adjourn at 9:30 pm. Roll call vote: Pat Tompkins – Yes, Shawn Brandt – Yes, John Coote – Yes, Chris Haley – Yes, Kirk McCormick – Yes, Ed Ross – Yes, Greg Stepler – Yes, Carla Nazzaro – Yes.