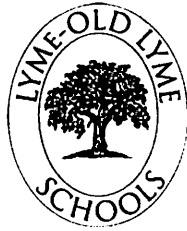


LYME-OLD LYME SCHOOLS

Regional School District #18

A Private School Experience



in a Public School Setting

PK-8 Building Committee Meeting

October 16, 2023

Committee Members Present: Steve Wilson, Chair; Mary Powell St. Louis, Vice-Chair; Ken Biega; John Hartman; Andy Russell; Cara Zimmerman; Sara Hrinak

Administration Present: Ian Neviaser, Superintendent of Schools; Ronald Turner, Director of Facilities & Technology; Brian Howe, Assistant Director of Facilities; Mark Ambruso, Principal of Lyme-Old Lyme Middle School; Kelly Enoch, Principal of Mile Creek School; Allison Hine, Principal of Lyme Consolidated School; Noah Ventola, Assistant Principal of Lyme-Old Middle School

The meeting was called to order by Mary Powell St. Louis at 6:00 p.m.

Approval of Minutes of September 18, 2023 Meeting

MOTION: Mary Powell St. Louis made a motion, which was seconded by Andy Russell, to approve the minutes of the September 18, 2023 meeting.

VOTE: the committee voted unanimously in favor of the motion.

Architect and Construction Manager Updates

Dean Petrucelli and Tanta Cutolo of Silver Petrucelli and Associates; Waseem Khoury of CES Engineering; and Jeff Anderson of Downes Construction gave a presentation to the building committee with the following agenda items:

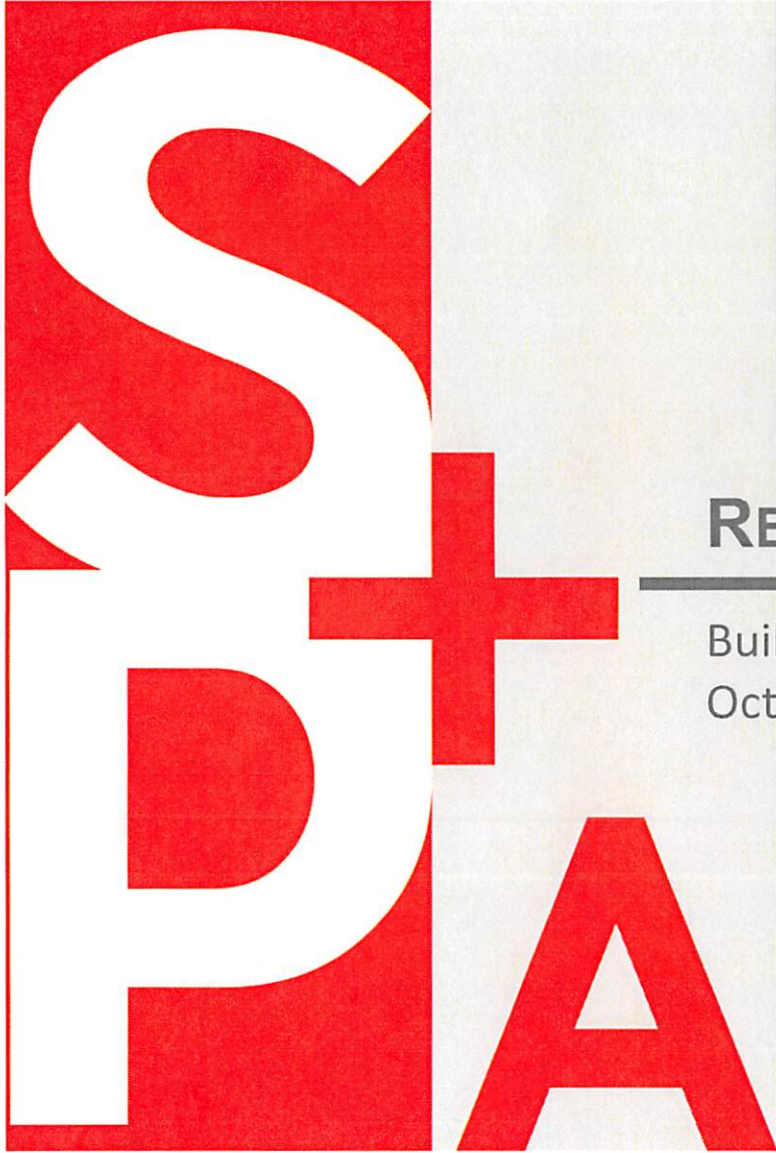
- HVAC Life Cycle Operational Systems Comparison
- Updated Project Budget and Schedules

The presentation is attached to these minutes for informational purposes.

Areas of discussion centered around oil vs. gas systems. Mr. Khoury presented a life cycle cost analysis which presented information of the pros and cons of moving to propane vs. oil. Comparisons reflect the present value of oil and propane and fluctuations over a 20-year lifespan can be expected. Carbon emissions would be a strong factor when choosing a system. Change in overall project costs were also discussed. It was decided to hold a special meeting on November 9 to decide on oil vs. propane systems. This would allow for the project moving into schematic design.

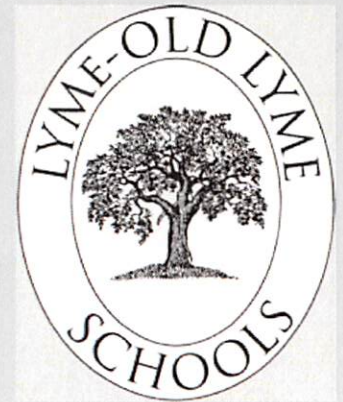
The committee discussed the generators for the fire systems and how propane vs. oil would affect generators currently in use. It was agreed that we apply current generator systems where able to utilize.

The meeting was adjourned at 7:00 p.m. upon a motion by Mr. Wilson and a second by Mr. Russell.



REGION 18 SCHOOL RENOVATION PROJECTS

Building Committee Meeting 3
October 16, 2023



AGENDA

Schematic Design Updates

- Mile Creek School Connector wall glazing revisions
- Added raptor security check in system to all vestibules as per safety committee
- Geo technical testing at Mile Creek
- Pre-Renovation Environmental Testing

Oil vs. Gas Boilers Options

Life Cycle Operational Systems Comparison

- Lyme/Old Lyme Middle/Center Schools
- Lyme Consolidated School
- Mile Creek School

Budget & Schedule Updates



REGION 18 SCHOOL RENOVATION PROJECTS

- **Center School**

37,000 sf
HVAC Upgrades
Security/Code Upgrades



- **Lyme/Old Lyme Middle School**

88,000 sf
HVAC Upgrades
Security/Code Upgrades



- **Lyme Consolidated School**

35,000 sf
HVAC & FP Upgrades
Security/Code Upgrades



- **Mile Creek School**

53,000 sf
8,600 sf addition
HVAC & FP Upgrades
Security/Code Upgrades



PROJECT TEAM

■ SP+A

Architecture
MEP Engineering



David Stein, AIA
Principal in Charge



Dean Petrucelli, AIA
Design Principal
Project Director



Tanya Cutolo, AIA, LEED AP
Project Manager



Mat Begin
MEP Project Manager

■ Benesch

Civil Engineering



Will Walter, PE, LEED AP
Senior Associate

■ CES

MEP Engineering



Matt Couceiro
Project Manager



Waseem Khoury, PE
Senior Mechanical Engineer



Derek Bride, PE
Principal in Charge

■ Downes

Construction Manager



Tom Romagnoli
Project Executive

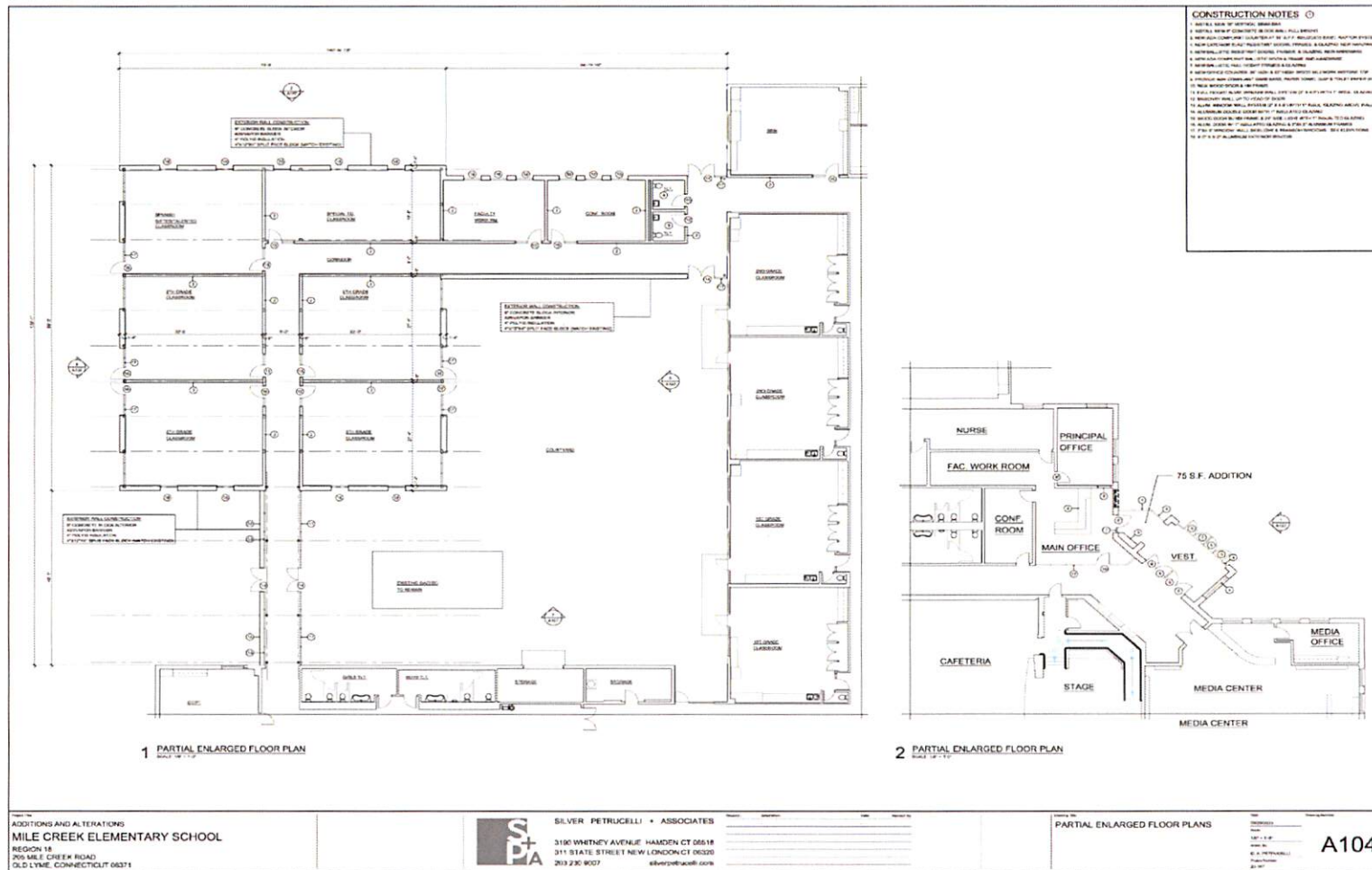


Jeff Anderson
Preconstruction Manager



Ryan Patrick
Senior Estimator





Mile Creek School Addition Updates



Mile Creek School Addition Updates



LIFE CYCLE OPERATIONAL SYSTEMS COMPARISON

Oil vs. Gas Boilers Options

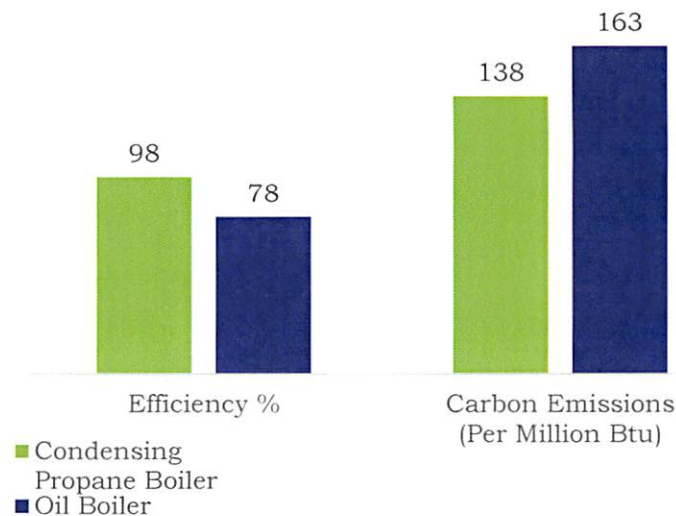
- Lyme/Old Lyme Middle & Center Schools
- Lyme Consolidated School
- Mile Creek School



Proposed HVAC Upgrades for all schools



- ✓ Install a new advanced Building Management System (BMS)
- ✓ **Replace the Boiler System with High-Efficiency System**
- ✓ Perimeter Heating
- ✓ Heat Pump Rooftop/DOAS units



Proposed Boiler Replacement
Oil vs Propane



Building Parameter Assumptions



Climatic Data

Heating – 99.6%	
Coldest Month	January
Dry Bulb Temperature	9°F
Cooling – 0.4%	
Hottest Month	July
Dry Bulb Temperature	84.4°F
Wet Bulb Temperature	75.7°F

Temperature Setpoints

Occupied Spaces and IT Rooms	
Summer	75°F
Winter	70°F
Utilities and Unoccupied Storage	
Winter	70°F
Vestibules	
Winter	55°F

Building Envelope (Assumptions)

Item	Description
Windows	U-value - 0.8 / SC - 0.46
Doors	U-value - 0.2
Wall	R-value - 15
Roof	R-value - 21

Utility Rate (Assumptions)

Utility	
Electrical	Rate 30 – “Small General Electric Service”
Propane Gas	4.4 \$/Gallon
Oil	3.79 \$/Gallon

Occupancy (Assumptions)

Occupancy Schedule	
Jan. to Jun.	8 AM to 4 PM
Jul.	8 AM to 1 PM
Aug.	OFF
Sep. to Dec.	8 AM to 4 PM
Sat. and Sun.	OFF

Ventilation

Outdoor Air
Based on ASHRAE 62.1



Lyme Old Lyme Middle & Center School



Middle School Building Data

Overall Building U-Factor	0.088 Btu/h.SF.F
Total Building Wall Area	34,331 SF
Total Window Area	5,128 SF
Building Total Window %	14.9 %

Center School Building Data

Overall Building U-Factor	0.090 Btu/h.SF.F
Total Building Wall Area	22,541 SF
Total Window Area	6,340 SF
Building Total Window %	28.1 %

Life Cycle Cost Analysis *

Boiler System	Yearly Energy Consumption	Carbon Emissions	Construction Cost	Annual Operations Cost	20 years Construction + Operating Cost
Oil	12,730 therms 1,272,970,000 btu/yr	208,067 lb	\$821,408	\$788,574	\$ 13,715,723
Propane	10,725 therms 1,072,500,000 btu/yr	148,681 lb	\$1,288,028	\$654,195	\$11,985,054



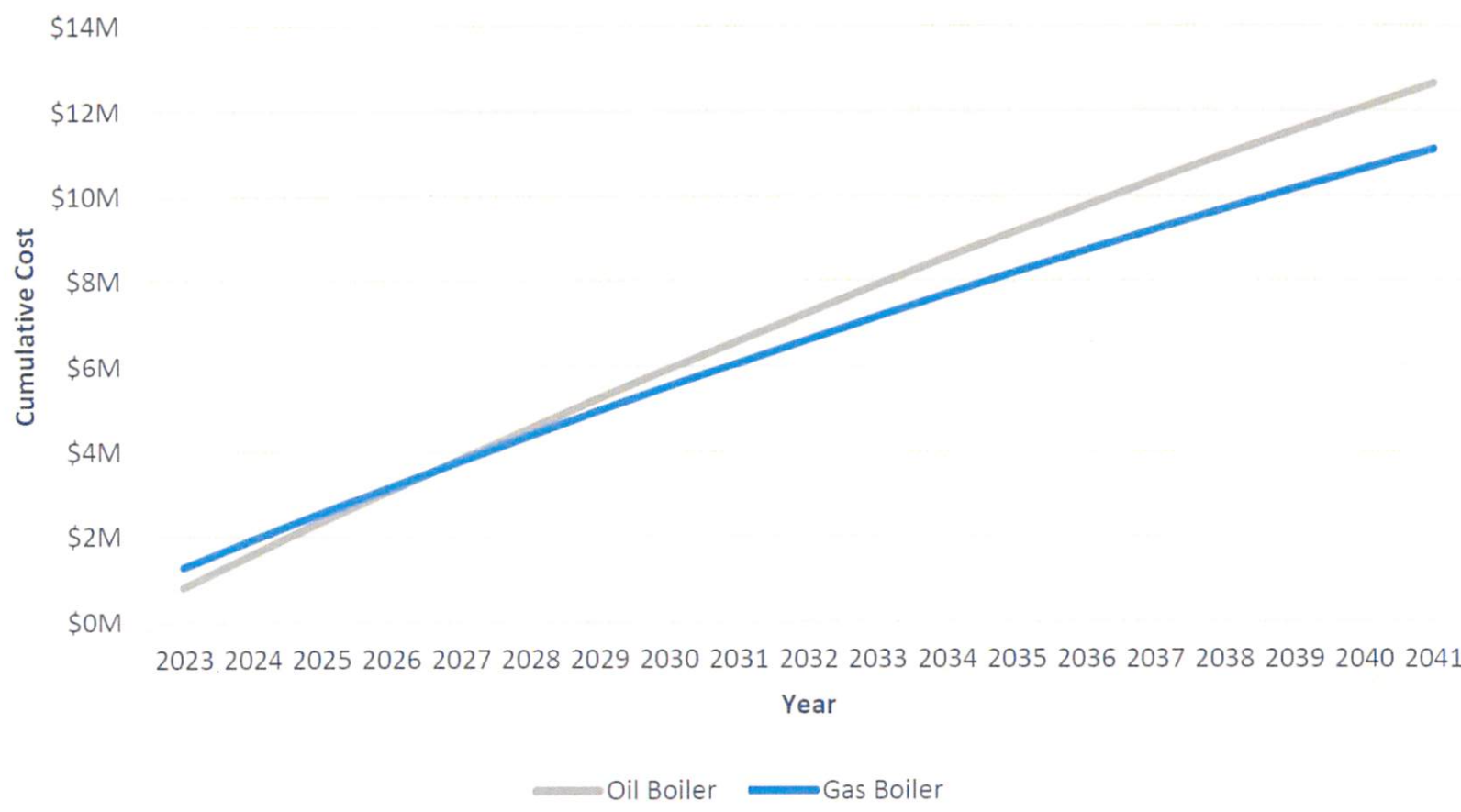
**The energy model described in the attached reports shall only be used for comparison purposes. The building performance does not predict the actual energy consumption or costs for the proposed design after construction. Actual experience will differ from these calculations due to variations such as occupancy, building operation, maintenance, weather, changes in the energy rates between the design of the building and occupancy, and the precision of the calculation tool.*



Lyme Old Lyme Middle & Center School



Cumulative Life Cycle Cost Comparison



Consolidated School



Building Data

Overall Building U-Factor	0.091 Btu/h.SF.F
Total Building Wall Area	21,425 SF
Total Window Area	2,490 SF
Building Total Window %	11.6 %

Life Cycle Cost Analysis *

Boiler System	Yearly Energy Consumption	Carbon Emissions	Construction Cost	Annual Operations Cost	20 years Construction + Operating Cost
Oil	3,150 therms 315,000,000 btu/yr	51,487 lb	\$431,108	\$195,135	\$ 3,516,410
Propane	2,744 therms 274,400,000 btu/yr	38,040 lb	\$715,712	\$167,376	\$3,277,511



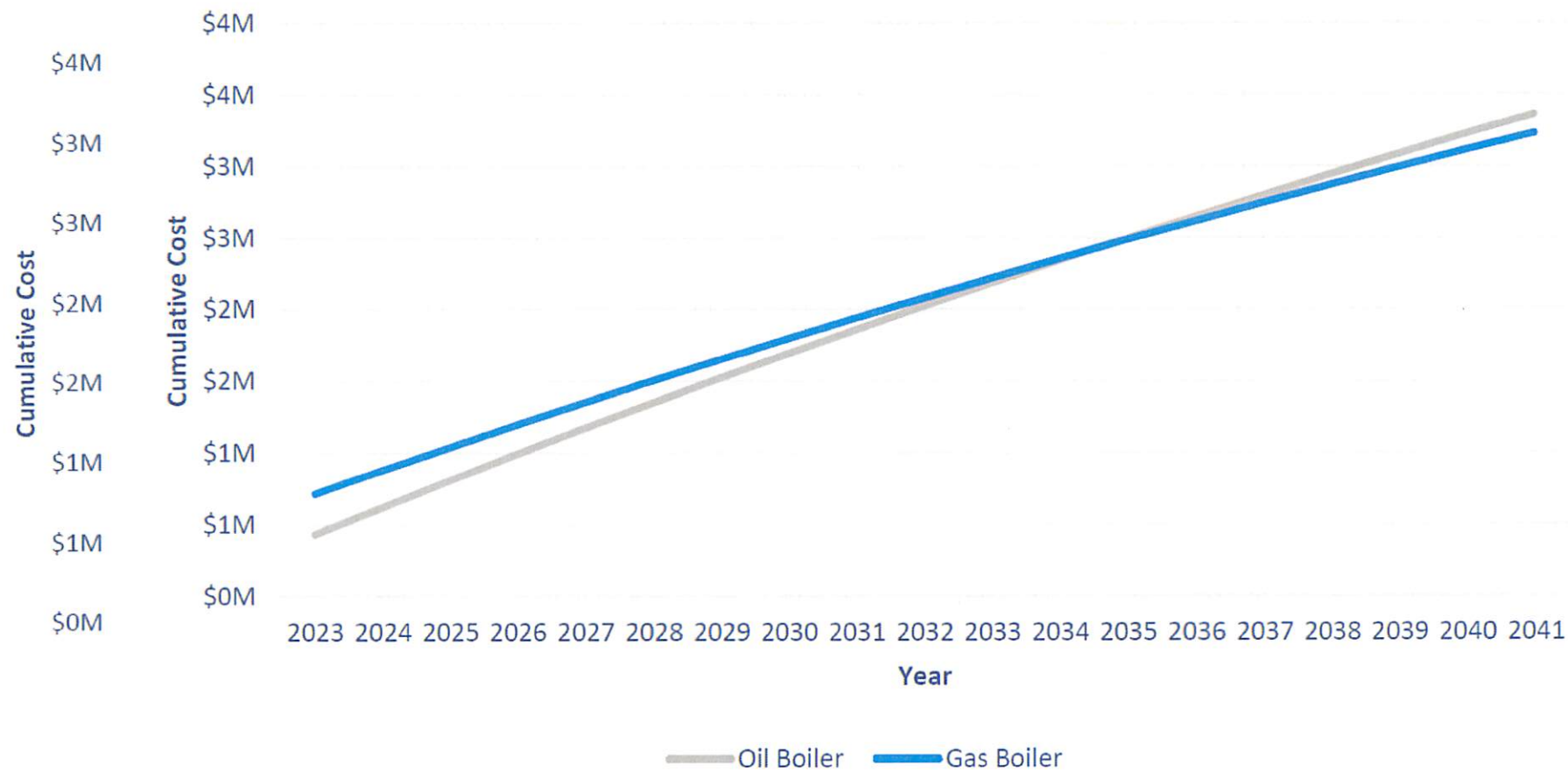
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Consolidated School



Cumulative Life Cycle Cost Comparison



Mile Creek School

Building Data

Overall Building U-Factor	0.091 Btu/h.SF.F
Total Building Wall Area	40,086 SF
Total Window Area	4,373 SF
Building Total Window %	11 %

Life Cycle Cost Analysis *

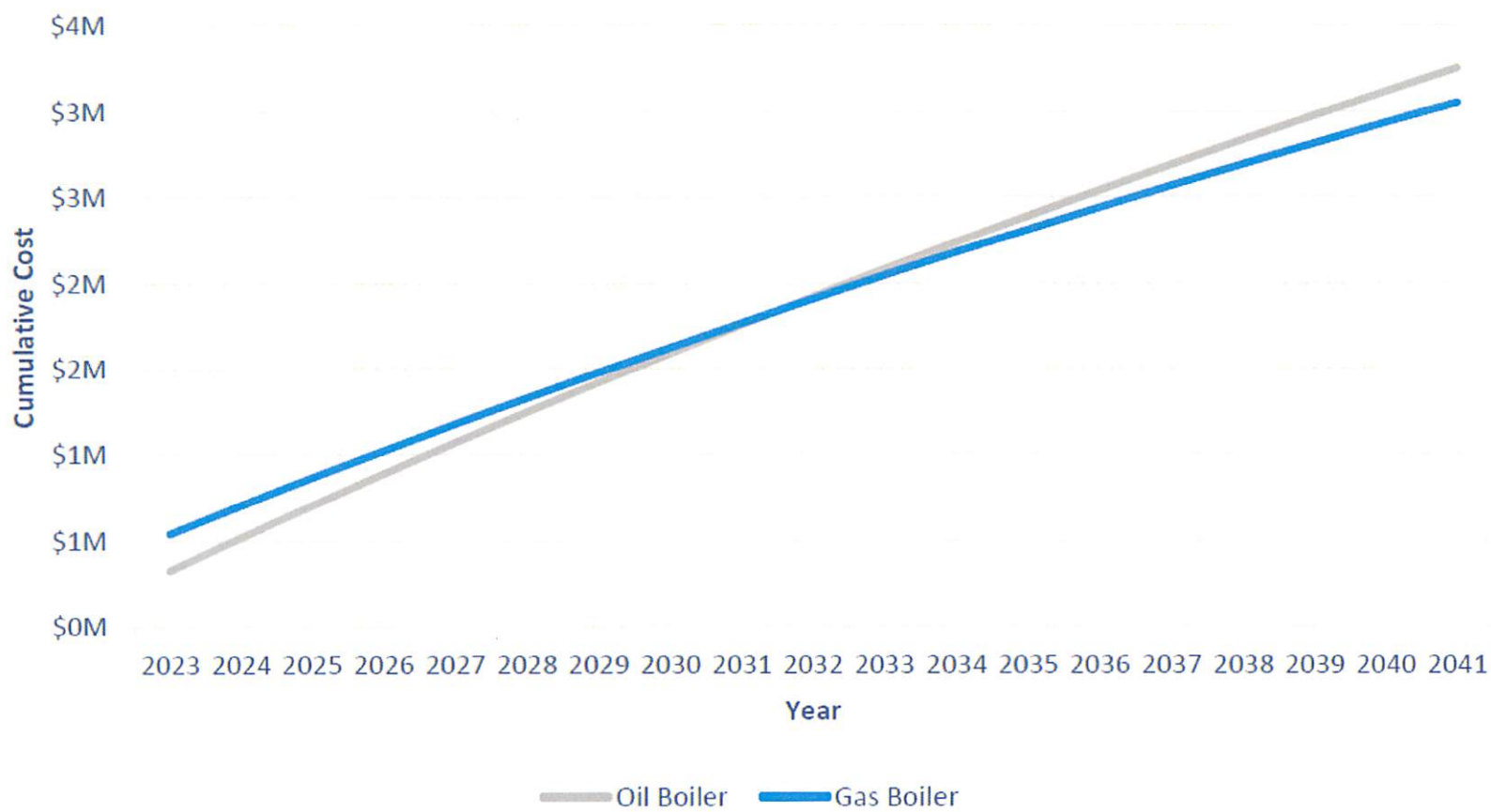
Boiler System	Yearly Energy Consumption	Carbon Emissions	Construction Cost	Annual Operations Cost	20 years Construction + Operating Cost
Oil	3,778 therms 377,843,700 btu/yr	96,681 lb	\$674,803	\$352,585	\$ 6,684,971
Propane	3,343 therms 334,375,000 btu/yr	68,589 lb	\$1,042,142	\$315,769	\$6,424,751

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Mile Creek School

Cumulative Life Cycle Cost Comparison



BUDGET & SCHEDULE UPDATES

- Schematic Design Estimates
- Project Schedules



QUESTIONS & DISCUSSION

- Next Steps

