

West Shore School District Guaranteed Energy Saving Agreement (GESA)

Phase VI Fishing Creek Elementary



March 14th, 2024



Agenda

- Background – Phase I, II, III, IV, & V
- Facility Improvement Measures Analyzed
- Technical Discussion
- Financial Data – Cost and Savings
- Next Steps & Schedule

Background – Phase I, II, III, IV, & V

Phase I 2016:

- ✓ Replacement of Red Land HS Boilers & Piping Network including fuel conversion to natural gas
- ✓ Replacement of Domestic Water Heating System
- ✓ Upgraded Building Automation System
- ✓ Extending Natural Gas Pipeline
- ✓ Targeted HVAC Upgrades

Phase II 2017:

- ✓ Replacement of Cedar Cliff HS Boilers
- ✓ Replacement of Domestic Water Heating System
- ✓ Upgraded Building Automation System
- ✓ Targeted HVAC Upgrades

Phase III 2018:

- ✓ Replacement of Red Mill ES Boilers & Chiller Plants, including fuel conversion to propane
- ✓ HVAC Upgrades
- ✓ Upgraded Building Automation System
- ✓ LED Lighting Upgrades
- ✓ Building Envelope Upgrades
- ✓ Cooler and Freezer Upgrades

Phase IV 2020:

- ✓ Replacement of Crossroads MS Boilers including fuel conversion to natural gas
- ✓ HVAC Upgrades
- ✓ Upgraded Building Automation System
- ✓ Upgraded Fire Alarm System
- ✓ Window Replacements
- ✓ LED Lighting Upgrades
- ✓ Various painting, ceiling, and Auditorium upgrades

Phase V 2021:

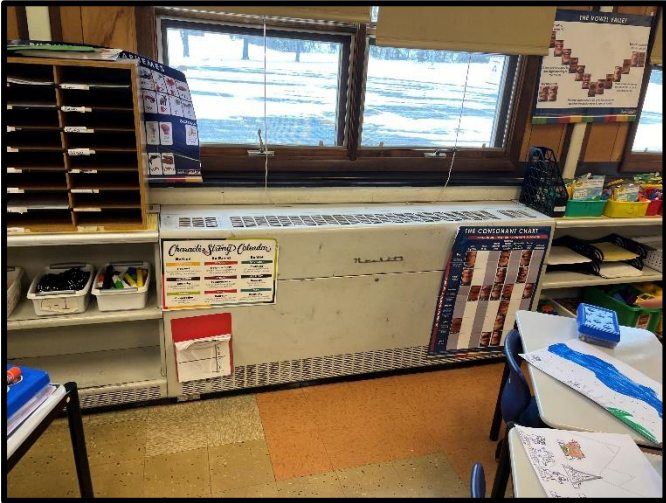
- ✓ Replacement of Transportation Building Boilers including fuel conversion to natural gas
- ✓ HVAC Upgrades
- ✓ Upgraded Building Automation System
- ✓ LED Lighting Upgrades
- ✓ Electrical System Maintenance including Short Circuit, Coordination, Arc Hazard Study
- ✓ Window and Door Upgrades

Phase I, II, III, IV & V Projected 20 Year Savings = \$12,600,000+

Improvements Analyzed – General Overview



ID	Description
1	Boiler Replacement
2	Unit Ventilator Replacements
3	Electrical Panel Upgrades



Boiler Replacement

EXISTING CONDITIONS

1. The existing steam boiler has failed and is not repairable. It is original to the 1955 construction.
2. A temporary steam boiler has been installed and requires a monthly rental fee. Without a more permanent solution, the boiler would need to stay onsite through non-heating months to ensure availability.
3. Existing system is oil fired.
4. Steam serves the 1955 and 1958 portions of the building. The remainder is served by electric.
5. Existing steam infrastructure (piping/condensate return) is in various states of condition.
6. Control is localized only, not allowing for remote viewing or alarms.



Boiler Replacement

PROPOSED SOLUTIONS

1. Remove the existing failed oil-fired steam boiler.
2. Disconnect and fill underground fuel oil tank. District may reclaim oil for other sites.
3. Remove all accessible fuel oil piping and pumps in the Mechanical Room.
4. Coordinate with UGI for extension of natural gas to the building.
5. Provide new steam boiler on a new housekeeping pad.
6. Reconnect existing steam header, pumped condensate return, relief vent line, cold water make-up, and flue.
7. Provide new, networked boiler control system.
8. Includes allowance for piping infrastructure repair.



Unit Ventilator Replacements

EXISTING CONDITIONS

1. The heating only unit ventilators are original to construction, 1955 or 1958 depending on area.
2. The unit manufacturer is no longer in business, parts are hard to locate, and the units are in various states of operation with failing components.
3. Units are pneumatically controlled.



Unit Ventilator Replacements

PROPOSED SOLUTIONS

- Replace (14) steam unit ventilators in kind with new units.
- Units will have new control valves and steam traps.
- Provide new, networked control system to tie into boiler system controls.
- Testing and balancing of units.
- Units in rooms with impacted casework (12) will get new sub-bases to match height and new casework on the “short” side to properly install the unit.



Electric Panel Upgrades

EXISTING CONDITIONS

1. A recent District conducted study has identified (12) electrical distribution panels of concern due to manufacturer, availability of parts, and insurance company safety concerns.
2. Units are located in both building portions of Fishing Creek.



Electric Panel Upgrades

PROPOSED SOLUTIONS

- Replace (12) branch and distribution electrical panels.
- Replace necessary feeders for new branch and distribution electrical panels.
- Conduct Short Circuit, Coordination, and Arc Flash Hazard Study on power distribution system.

Financial Summary

WEST SHORE SD - PHASE VI COST AND SAVINGS SUMMARY				
ITEM	DESCRIPTION	Hard Costs	20 Year Savings	Proposed Scope
1	Boiler Replacement	\$342,081	\$240,824	X
2	Unit Ventilator Replacements	\$366,696	\$35,429	X
3	Electric Panel Upgrades	\$221,222		X
	Steam Infrastructure Allowance	\$50,000		X
			Construction Hard Cost	\$979,999
			Construction Soft Cost	\$111,414
			Performance and Payment Bond	\$10,331
			Total Construction Cost	\$1,101,744
			20 Year Energy and Operational Savings	\$276,253
			20 Year NET Cost	\$825,491

Next Steps & Schedule

December 2023 -	Boiler Failure
January 3 rd , 2024-	Started UGI Coordination Study
January 31 st , 2024-	Preliminary Scope Update to Admin Team
February 15 th , 2024-	UGI Coordination Study Complete
February 29 th , 2024-	UGI Agreement Provided
March 8 th , 2024-	Study Results Presented to Admin Team
March 14 th , 2024-	Study Results and Recommendation Presented to Board of Education
March 21 st , 2024-	Approval of Project/Notice to Proceed
March to May 2024-	Final Engineering, Procurement, UGI Coordination, Preconstruction Activities; District Removes Rental Boiler
June to August 2024-	Construction

Questions?

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