PUYALLUP SCHOOL DISTRICT
A Tradition of Excellence

AEM Year 2 Summary Report – 9.24-8.25

AEM YEAR 2 SUMMARY REPORT (SEPTEMBER 2024 – AUGUST 2025)

The Puyallup School District's AEM Program is working to maximize efficiency and utility cost savings for energy and water through low- and no-cost opportunities. This report will share utility use data as it becomes available.

Year 2 highlights include an estimated $325,408 in total estimated cost avoided (electricity + gas), 10,081,697 kBtu avoided, 85+ issues identified for investigation, and 3 Tier 1 schools brought into compliance (Sunrise, Pope, Kalles).

PROGRAM BACKGROUND

Year 1 of the McKinstry/Puyallup Active Energy Management program focused on getting to know the District's priorities, establishing a working relationship, identifying low-effort, high-impact Energy Conservation Measures (ECMs), and working with the district to streamline the implementation of ECMs. There was also significant effort put toward working with the developer of Reveal to set up, test, and validate analytics that are proving to be a useful tool to efficiently identify potential energy-efficiency issues with HVAC equipment across the district. Use of this technology platform is already demonstrating an impact, and continuing to refine use of the analytics module will only increase its effectiveness in supporting efficient PSD operations in the coming years.

Year 2 of the McKinstry/Puyallup Active Energy Management program focused on leveraging the foundational team and tools established in Year 1. With Reveal established in Year 1, Year 2 efforts were streamlined for systematic review of schools by priority. Schools identified for focused review aligned with district goals, the Clean Buildings Performance Standard, and excluded schools scheduled for ASHRAE Level 2 audits. Schools with ASHRAE Level 2 audits received in-depth analysis and energy-efficiency recommendations. Implementing any low- and no-cost measures identified through the auditing process will be the focus of Year 3.

PROGRAM HIGHLIGHTS

85+ SEPARATE ISSUES IDENTIFIED FOR INVESTIGATION IN CXALLOY

- In September of 2024, McKinstry started identifying and assessing ECMs, with implementations starting with the school year. Issues were identified through controls reviews using Reveal analytics, Deep Dives (targeted investigations), and site walks.
- Issues ranged from classroom level heat pumps with possible malfunctioning heating/cooling valves, to identifying large HVAC equipment running continuously.
- Issues were documented and forwarded to district Facilities Team and JCI vendor for further investigation and resolution when warranted.
    - 16 issues closed
    - 13 issues implemented

SCHOOL INVESTIGATION PRIORITY LIST

- For Year 2 of AEM, PSD and McKinstry changed our approach to energy-efficiency investigation. Year 1 focused on district-wide changes such as equipment

SAVINGS SNAPSHOT

As Energy Conservation Measures are implemented, utility data will be collected and analyzed to determine Energy Savings.

TOTAL ENERGY SAVINGS

SEPT '24 - AUG '25



10,081,697 (kBtu)



WHICH IS ENOUGH ENERGY TO RUN **98** SINGLE FAMILY HOMES IN WASHINGTON STATE FOR 1 YEAR

*U.S. EIA 2020 RESIDENTIAL ENERGY CONSUMPTION SURVEY

TOTAL ESTIMATED COST AVOIDANCE

SEPT '24 - AUG '25



$325,408

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schedule changes, implementing holiday and summer reduced runtime schedules, and a broad-spectrum school review. Year 2 followed a priority list focusing on CBPS Tier 1 schools close to, but slightly above, the energy use intensity target. This strategy aligns AEM team efforts for maximum impact on identifying low- and no-cost energy-efficiency measures to achieve Clean Buildings Performance Standards. The shared goal is to maintain energy savings across the district and bring buildings close to target performance standards. This strategy will help the district avoid costly measures like ASHRAE Level 2 audits and resulting capital investments.

- 13 schools investigated for ECMs, November 2024–April 2025
    - 3 Tier 1 schools came into compliance with energy targets (Sunrise, Pope, Kalles)
    - All investigated schools reduced year-over-year (YOY) EUI except Brouillet ES. (Tier 2)
- The 12 schools below their respective Energy Use Intensity Target remained below target.
    - 7 Tier 1 schools in the "monitor" category were investigated for ECMs from June through August 2025
- The 8 schools where an ASHRAE Level 2 Audit was conducted were not investigated for ECMs to avoid overlapping work.
    - Future work for Year 3 AEM intends to review Audit findings for low- and no-cost ECMs that can be supported by the team.

REVEAL DEVELOPMENT, TESTING, AND MAINTENANCE

- McKinstry personnel have consistently been working with the developer of Reveal to implement and quality-check analytics tools and Key Performance Indicators. These tools are leveraged to efficiently identify equipment issues that indicate possible energy inefficiencies.
- Similar maintenance and QC occur with utility data, a vital effort to ensure the best possible utility data quality to accurately assess district consumption and performance.

SUMMER BREAK SCHEDULE IMPLEMENTATION

- PSD Facilities Team and JCI control vendor implemented proposed summer setback scheduling at Compass Control sites. Programming modifications reduced runtime to match Custodial and Maintenance Teams' summer occupancy schedule to reduce the energy requirements for mechanical cooling, improving efficiency.
- Additionally, summer schedules reduce outside air damper parameters to 5% to account for the reduced occupant load.
- Performance indicated there may need to be minor modifications but can similarly be implemented at district facilities with minimal changes during summer months. Temperatures exceeding 100 degrees may require increased schedule runtime.

PORTABLES IN UNOCCUPIED MODE DURING SUMMER BREAK

- Coordinated with PSD Facility Operations to prioritize custodial activities in portables across the district to allow them to be placed in unoccupied mode for the majority of summer break, reducing the need for mechanical cooling during the hot summer months.

PARTICIPATION IN UTILITY PROVIDER CSEM PROGRAMS

- Coordinated with Puget Sound Energy and Tacoma Public Utilities to participate in their Commercial Strategic Energy Management incentive programs. This is an ongoing effort that will continue for the duration of the CSEM contracts.
- The 2025 CSEM Completion Report for Rogers High School from Tacoma Power shows a 15.8% electric energy savings and an $8,000 incentive check earned.

AEM Year 2 Summary Report – 9.24-8.25

ENERGY MANAGEMENT PLAN

- McKinstry worked with PSD personnel to update the district-wide Energy Management Plan that sets the framework for best practices surrounding energy conservation efforts.

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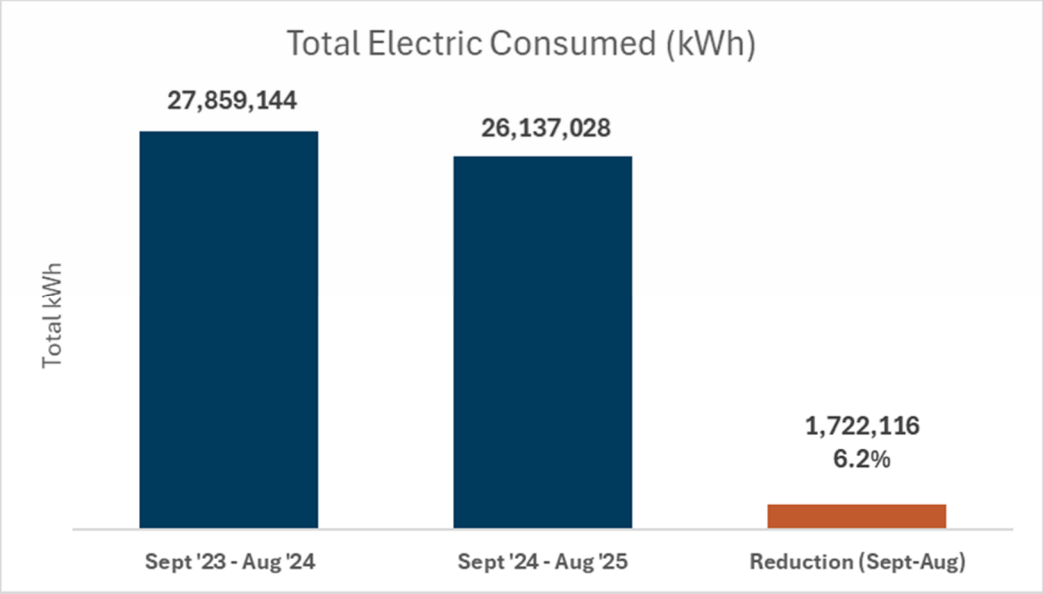
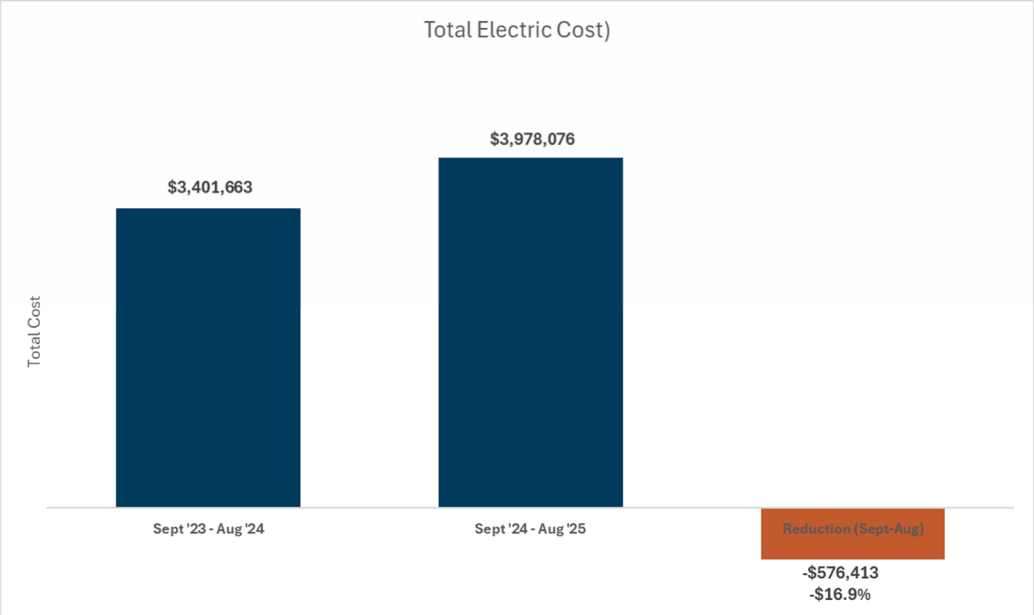
TOTAL ELECTRIC CONSUMPTION ACROSS ALL DISTRICT FACILITIES FOR NOTED TIMEFRAMES

- September through August data represents the utility data available for school year to date



TOTAL COST OF ELECTRICITY ACROSS ALL DISTRICT FACILITIES FOR NOTED TIMEFRAMES



Please note that although electric usage decreased, the overall cost went up because the price per kWh increased.

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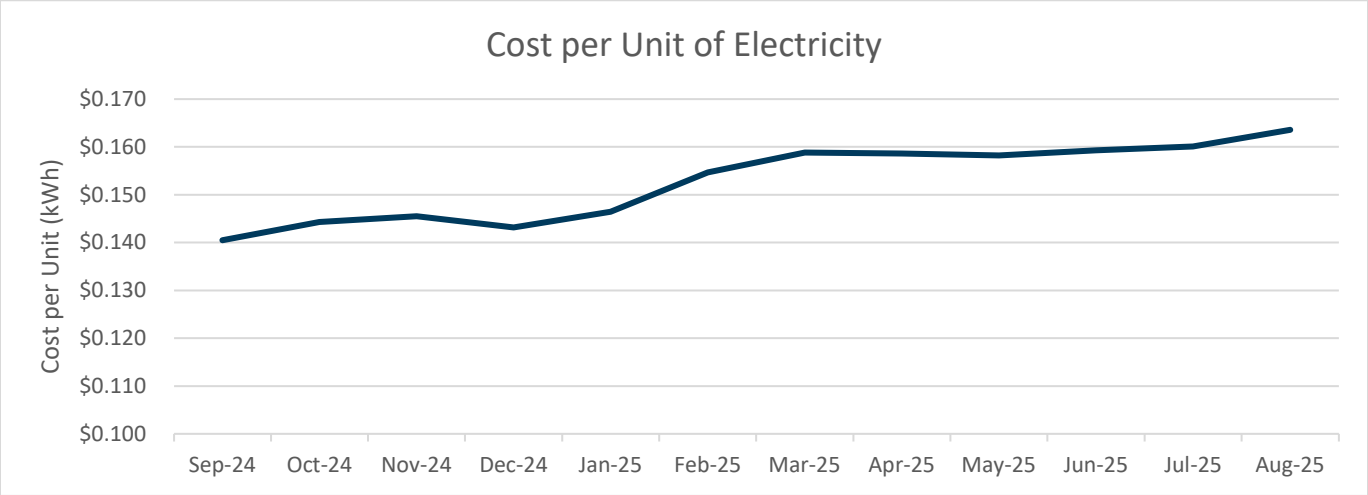
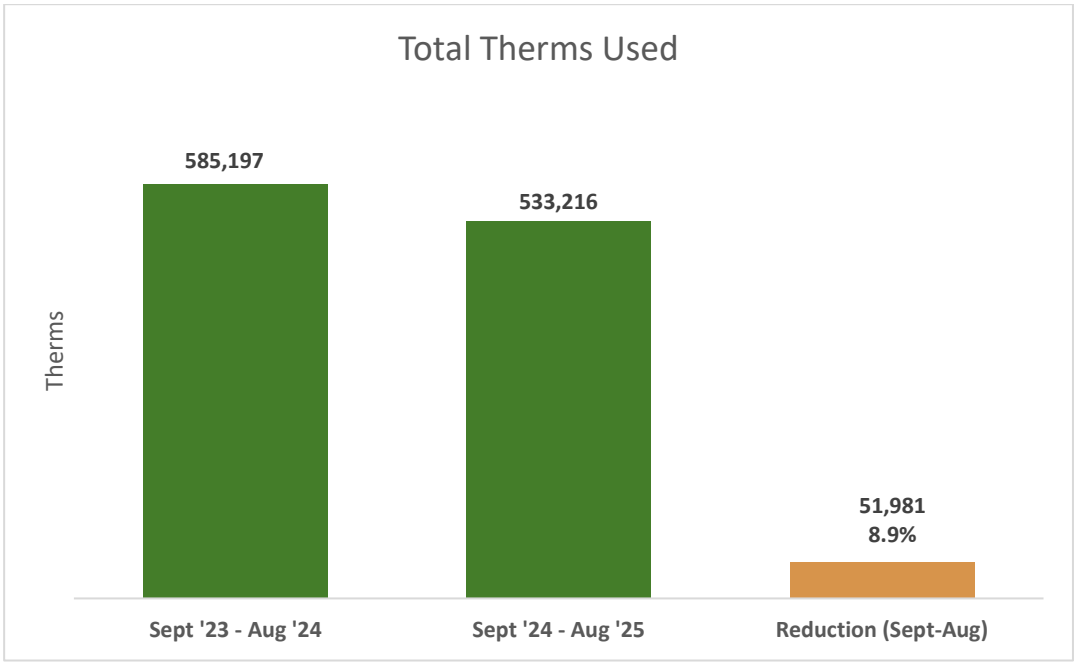
COST PER UNIT OF ELECTRICITY *PSE data from EnergyCAP

Consistent unit cost increase shows why despite actual kWh savings, the savings are not reflected in cost.



TOTAL NATURAL GAS CONSUMPTION ACROSS ALL DISTRICT FACILITIES FOR NOTED TIMEFRAMES

- September through August data represents the utility data available for school year to date



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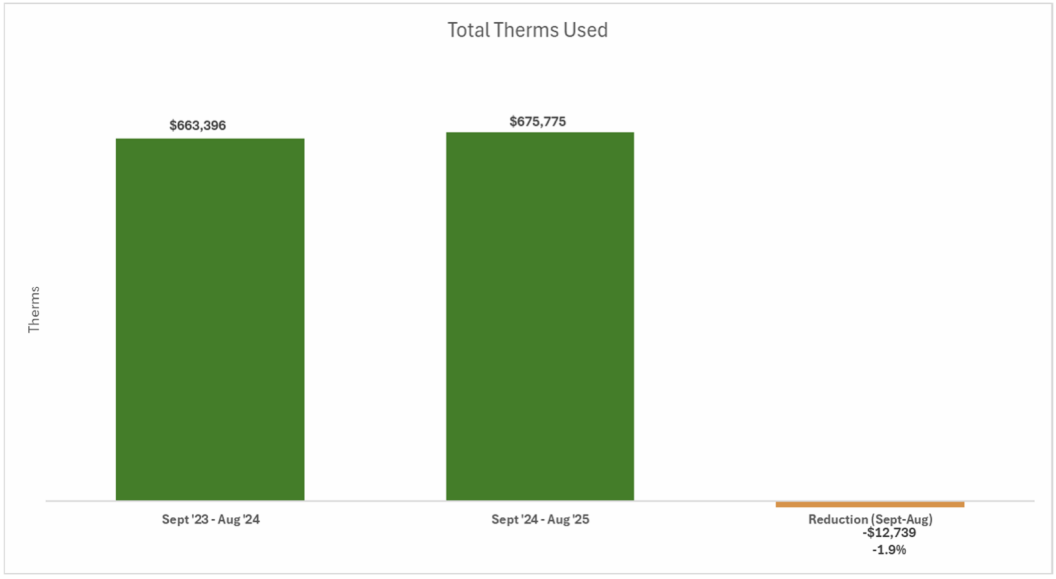
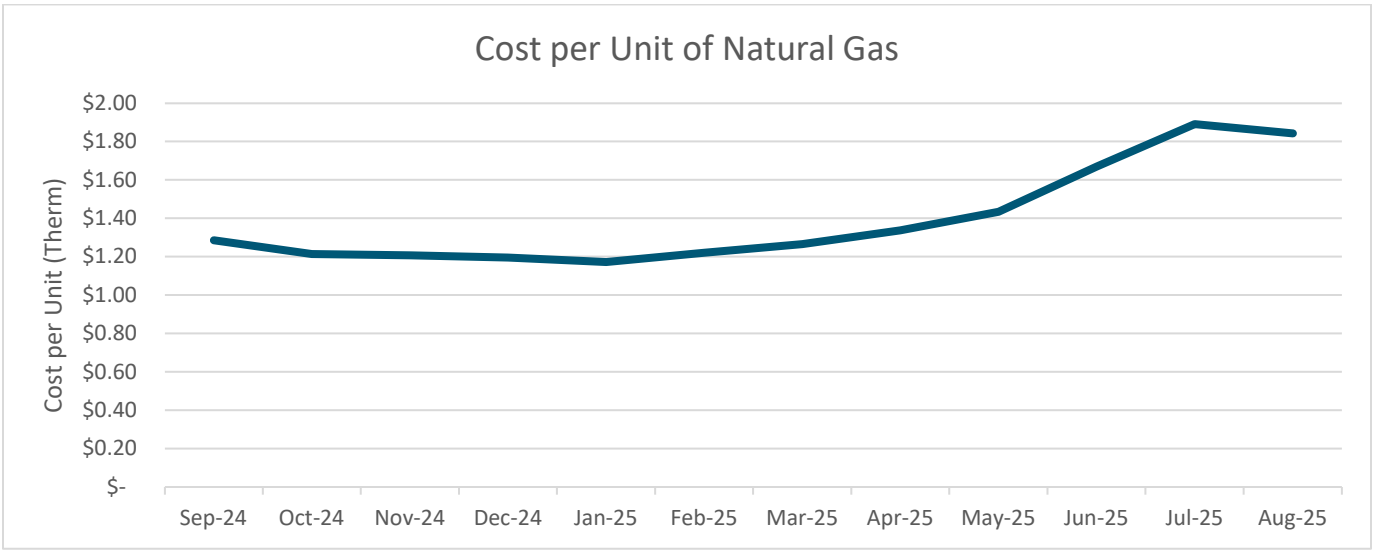


Please note that although natural gas usage decreased, the overall cost went up because the price per therm increased.

COST PER UNIT OF NATURAL GAS *PSE data from EnergyCAP

Consistent unit cost increase shows why despite actual therms savings, the savings are not reflected in cost.

During the previous two years there has been a seasonal increase in the cost per unit of natural gas, but the overall cost per unit has remained stable.



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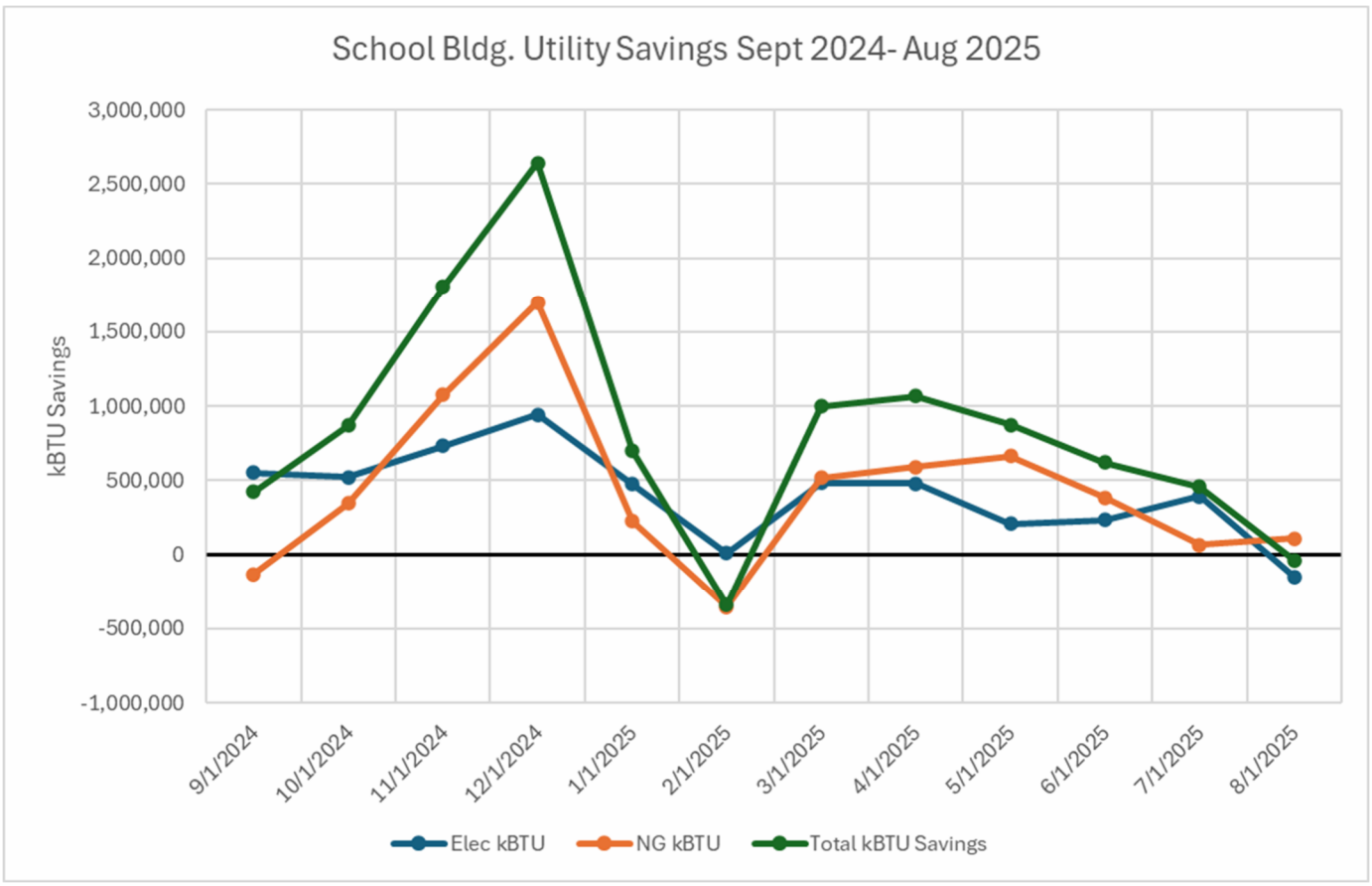
TOTAL ENERGY SAVINGS BY MONTH

Electricity (kWh) and natural gas (therms) were converted to a common unit (kBtu) to help visualize the energy saved over baseline in the following chart. Standard industry practice for assessing a building's Energy Use Intensity (EUI) used the same methodology.



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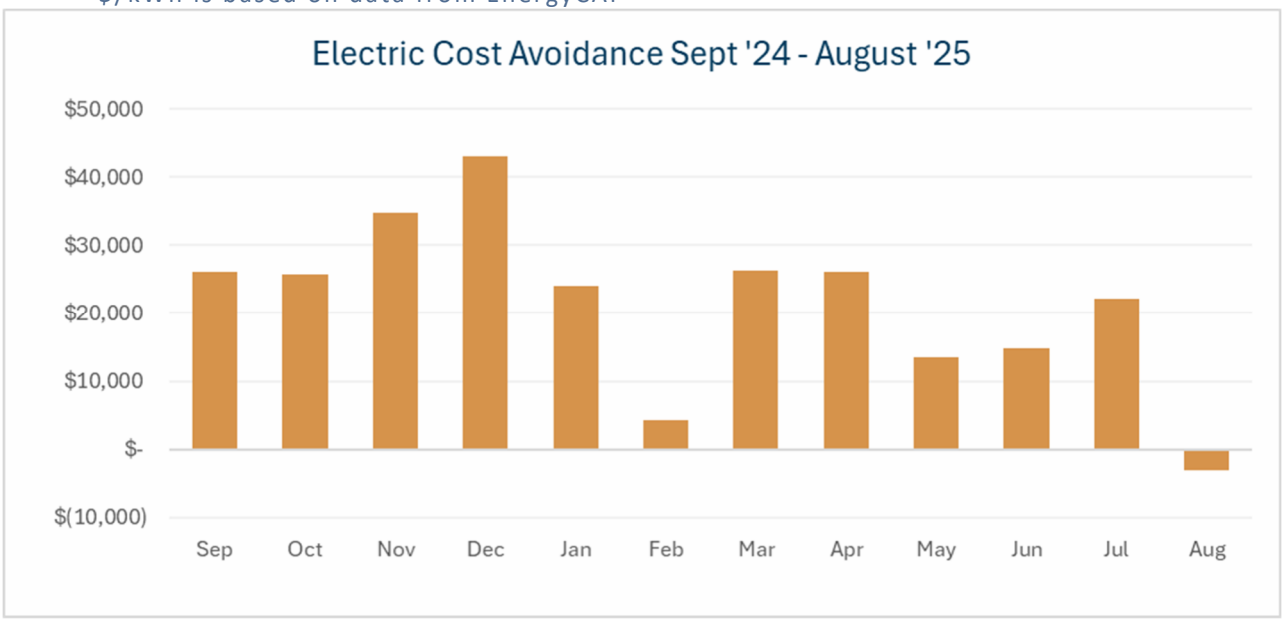
AEM Year 2 Summary Report – 9.24-8.25

COST AVOIDANCE

Cost and consumption avoidance refers to the amount of money saved by implementing energy-saving measures compared to what the energy costs would have been without these actions. It represents the difference between the baseline energy cost (what you would have spent) and the actual energy cost after efficiency measures were taken.

AVOIDED ELECTRIC CONSUMPTION AND COST

- $/kWh is based on data from EnergyCAP



Sept ’24 – Aug ’25 Cost Avoided

- Est = $257,517

Sept ’24 – Aug ’25 Consumption Avoided

- Est = 1,722,116 kWh

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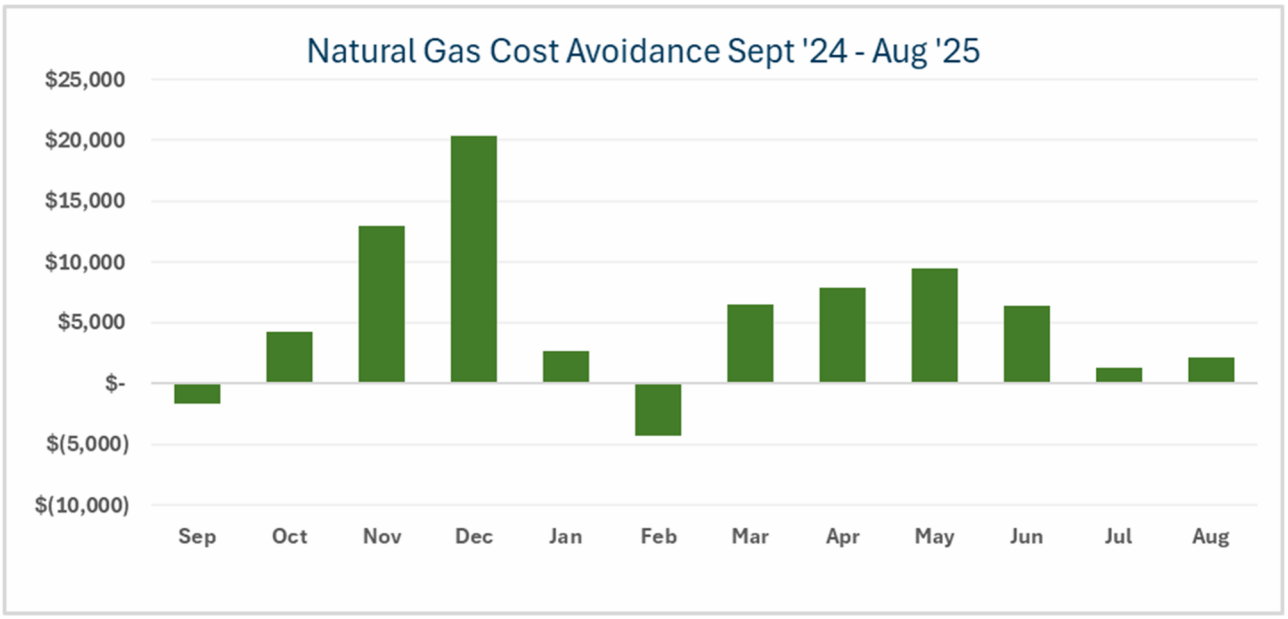
AEM Year 2 Summary Report – 9.24-8.25

AVOIDED NATURAL GAS CONSUMPTION AND COST

- $/therm is based on data from EnergyCAP



Sept '24 – Aug '25 Cost Avoided

- Est = $67,891

Sept '24 – Aug '25 Units Avoided

- Est = 51,981 therms

TOTAL (ELECTRICITY AND GAS)

Sept '24 – Aug '25 Cost Avoided

- Est = $325,408

Sept '24 – Aug '25 Units Avoided

- Est = 10,081,697 kBtu

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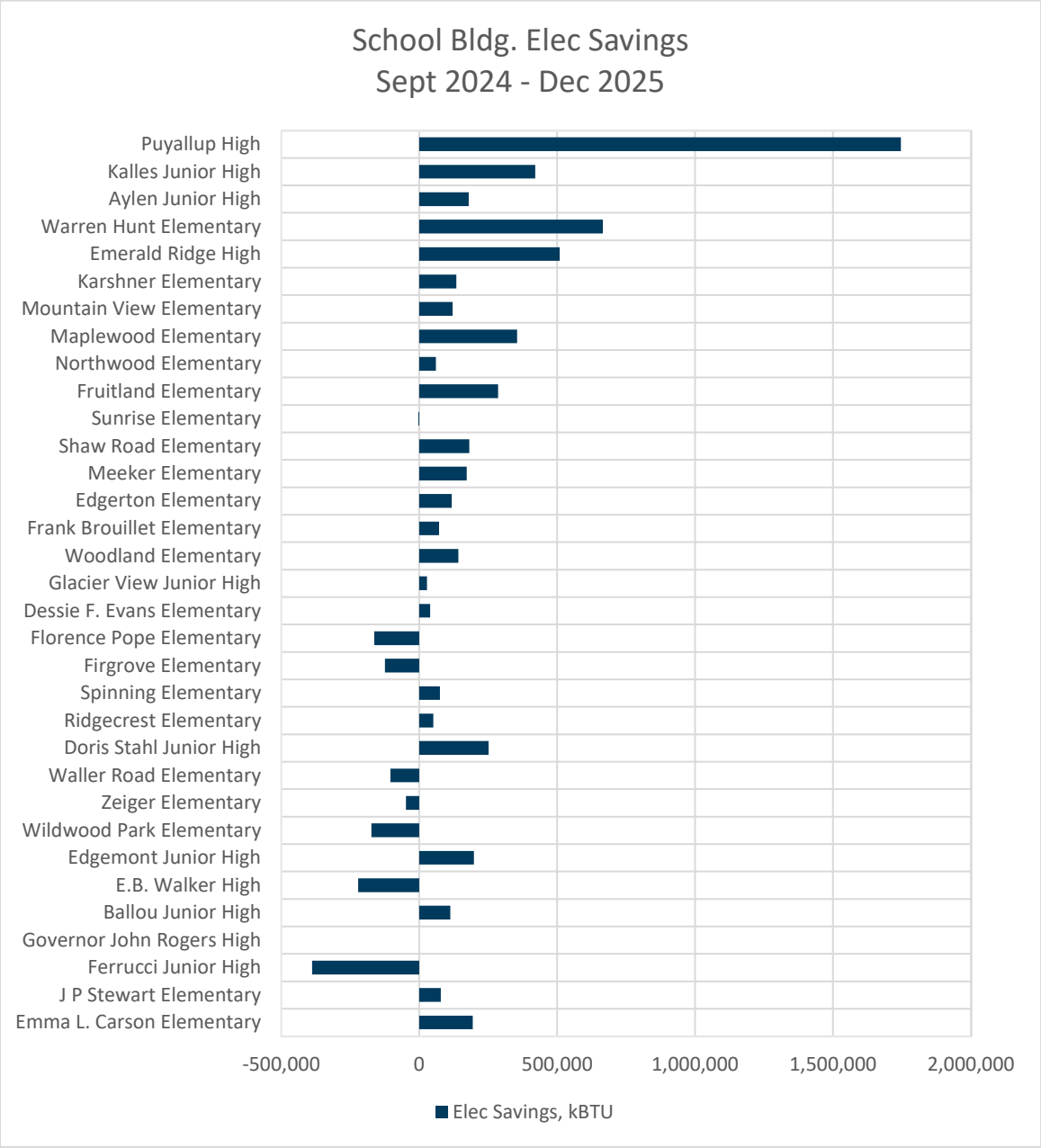
ELECTRICITY SAVINGS BY SCHOOL

This chart calculates electricity savings by school using the 2022 calendar year as a baseline.



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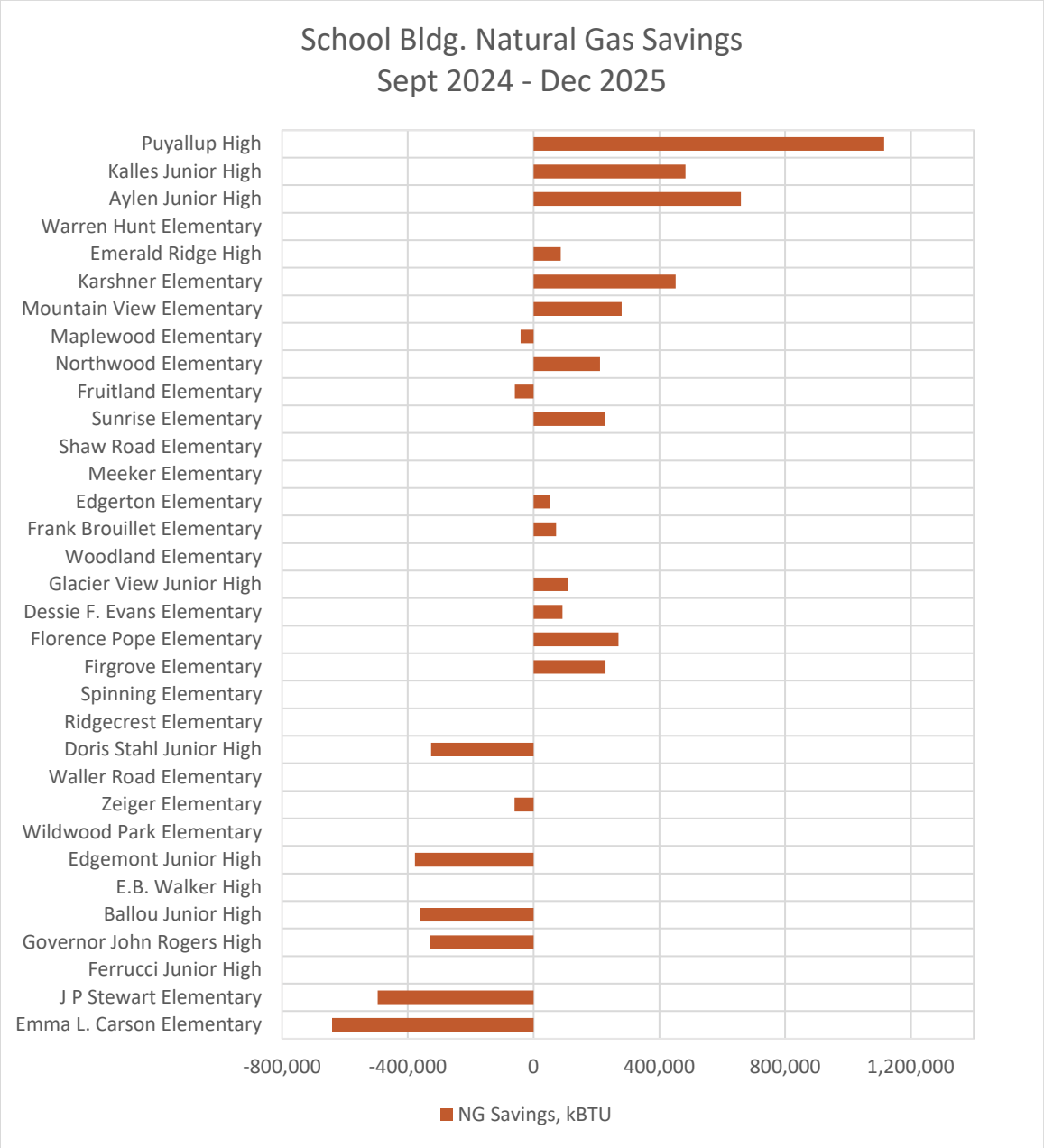
GAS SAVINGS BY SCHOOL

This chart calculates gas savings by school using the 2022 calendar year as a baseline.



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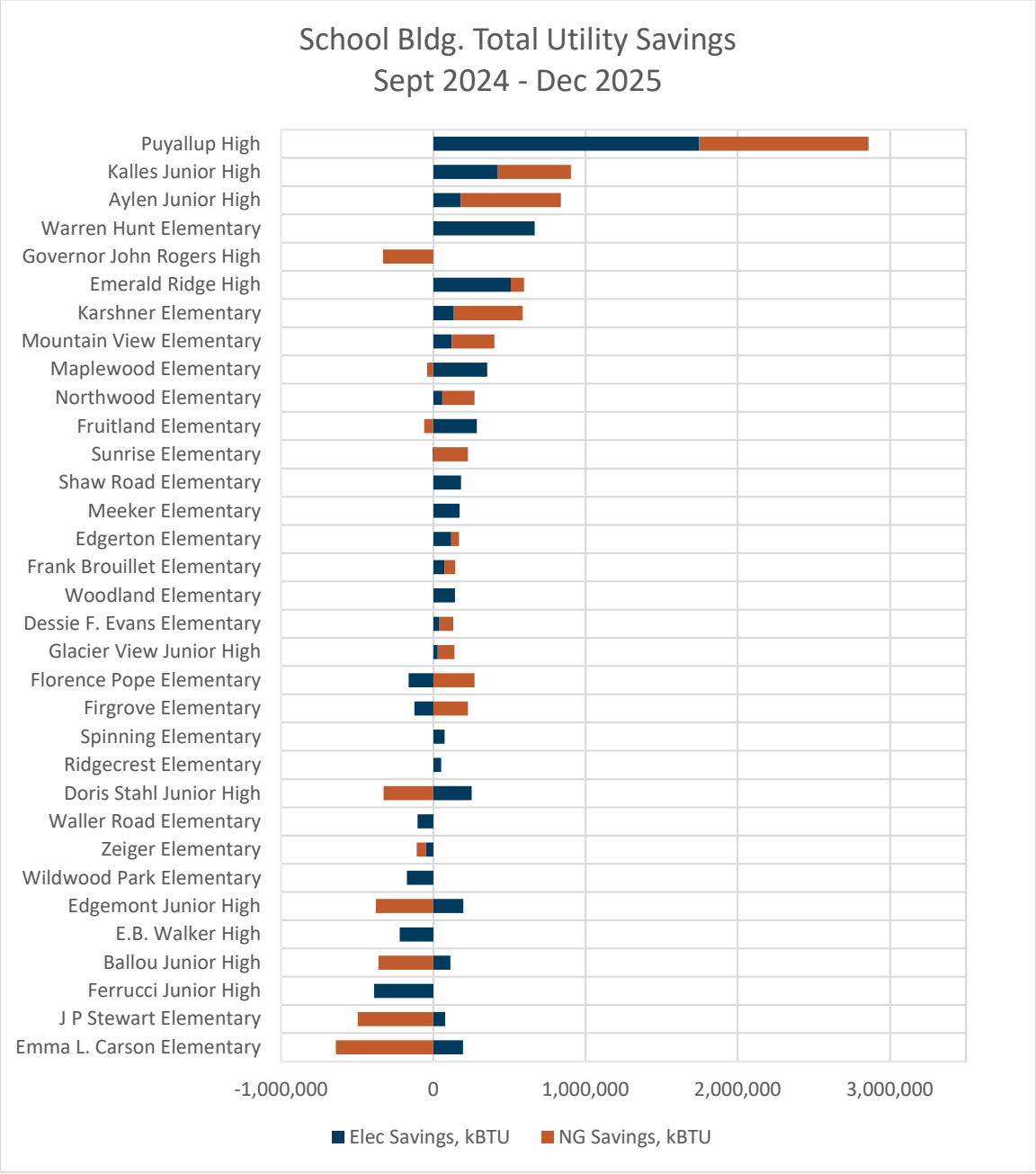
TOTAL ENERGY SAVINGS BY SCHOOL

This chart calculates total savings by school using the 2022 calendar year as a baseline.



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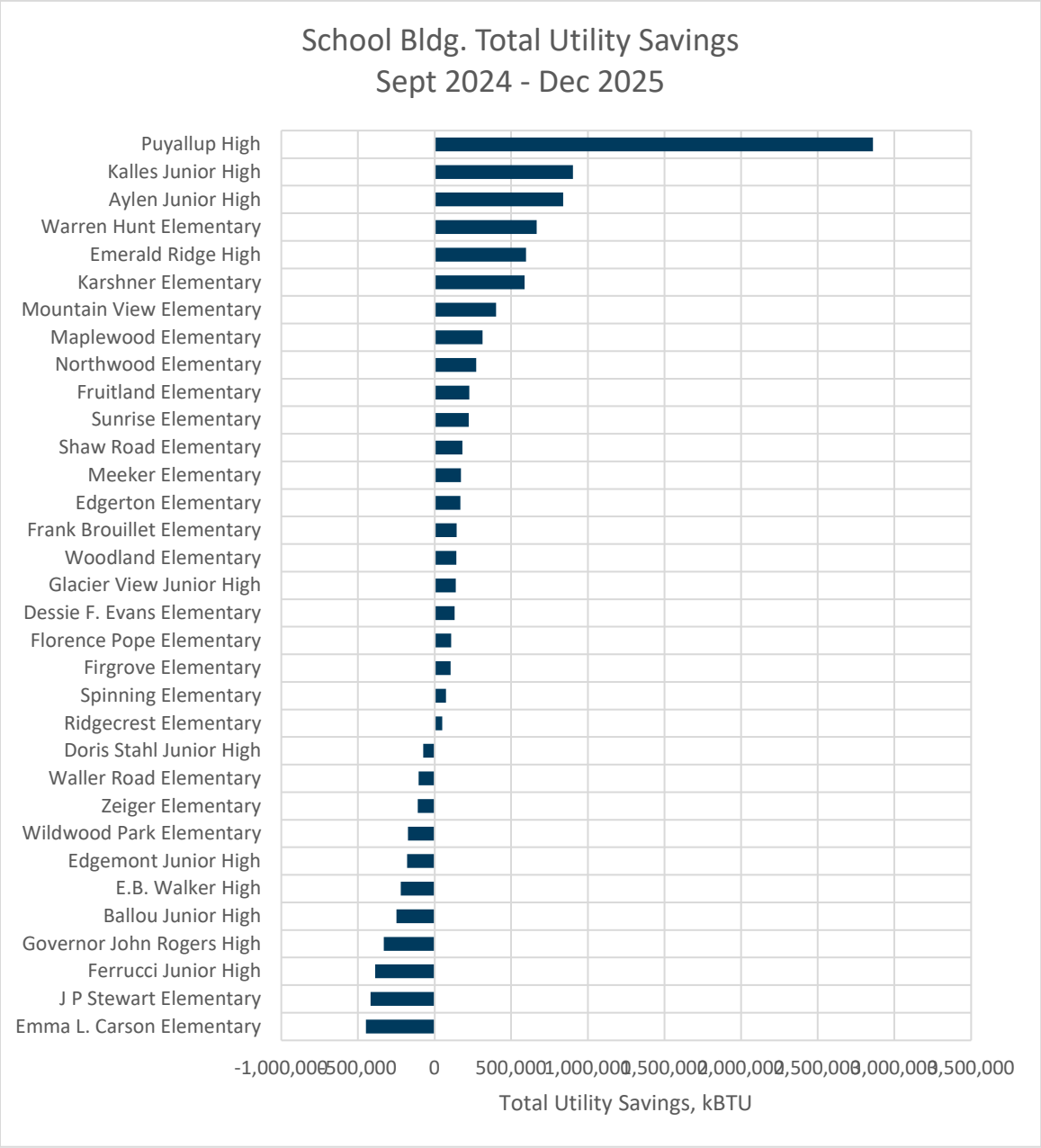
AEM Year 2 Summary Report – 9.24-8.25



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AEM Year 2 Summary Report – 9.24-8.25

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