

Puyallup School District powerED Progress Report – January 2023

The Puyallup School District’s powerED Program is working to maximize efficiency and utility cost savings for energy and water through low and no-cost opportunities. This report will share a high-level view of the district’s energy consumption during the 2022-2023 school year. This is intended to be a reference point for where the district is starting from prior to partnering with McKinstry under the powerED contract. As recommendations are identified and implemented and more utility data is collected and analyzed, savings will be able to be calculated and included in subsequent reports.

AUGUST 2022 –JULY 2023 OPERATIONAL PERFORMANCE

During the 2022-23 school year, Puyallup School District was operating its buildings in much the same way many districts across the state were, under a mix of measures put in place to mitigate the spread of Covid-19. The guidance from agencies like the CDC and Washington State Department of Health were not overly specific, and as such, operators were left to interpret precisely how to operate the HVAC systems to maximize outside airflow while still maintaining thermal comfort and preventing equipment failure. This dramatically increased the demands on energy consumption to compensate for longer equipment runtimes, and conditioning of increased volumes of outside air. This set the stage for the next challenge of how to begin moving the complex changes back towards a more sustainable method of operation without causing unintended consequences. However, this leaves substantial opportunity to streamline building operations that can recapture utility savings while being completed in a thoughtful manner.

PROGRAM HIGHLIGHTS

Program highlights that have occurred since contract start in September 2023:

- Completed the initial installation and setup of EDO Gateway to import building Automation System data into the Reveal platform, which will allow greater insight into building mechanical operations with advanced analytical tools.
- Validated utility meters across the district to begin porting utility data into Reveal platform which will allow greater overall visibility into consumption trends for Electricity, Natural Gas, and Water.
- Began using Building Automation System data via Reveal platform to identify potential anomalies for further investigation.
- Performing building HVAC and Lighting schedule audits to help identify opportunities for more efficient operations. To date there have been 70 individual modifications implemented resulting in improve energy efficiency and extended equipment life.
- Deep dive investigation for Ballou Junior High completed resulting in 39 individual issues identified for on site verification and corrective action if required.

UPCOMING AREAS OF FOCUS

- Continue to review and modify HVAC and Lighting schedules where appropriate, with the goal of completing recommendations and implementation along with associated temperature studies by May 2024.
- Complete district wide audit of Optimal Start Programming and make modifications where appropriate.
- Complete deep dive investigation at Maplewood Elementary School where programming deficiencies in HVAC equipment was discovered during temperature trend studies.

SAVINGS SNAPSHOT

As Energy Conservation Measures are implemented, utility data will be collected and analyzed to determine Energy Savings. In the coming months those calculations will be able to be completed and tracked, as more ECMs are implemented the associated savings will continue to increase.

ENERGY SAVINGS



%-TBD

SAVINGS IDENTIFIED



\$-TBD

SAVINGS IMPLEMENTED

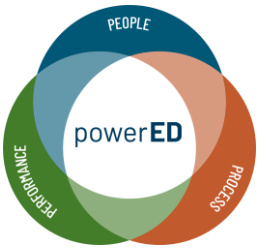


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OPPORTUNITIES IMPLEMENTED



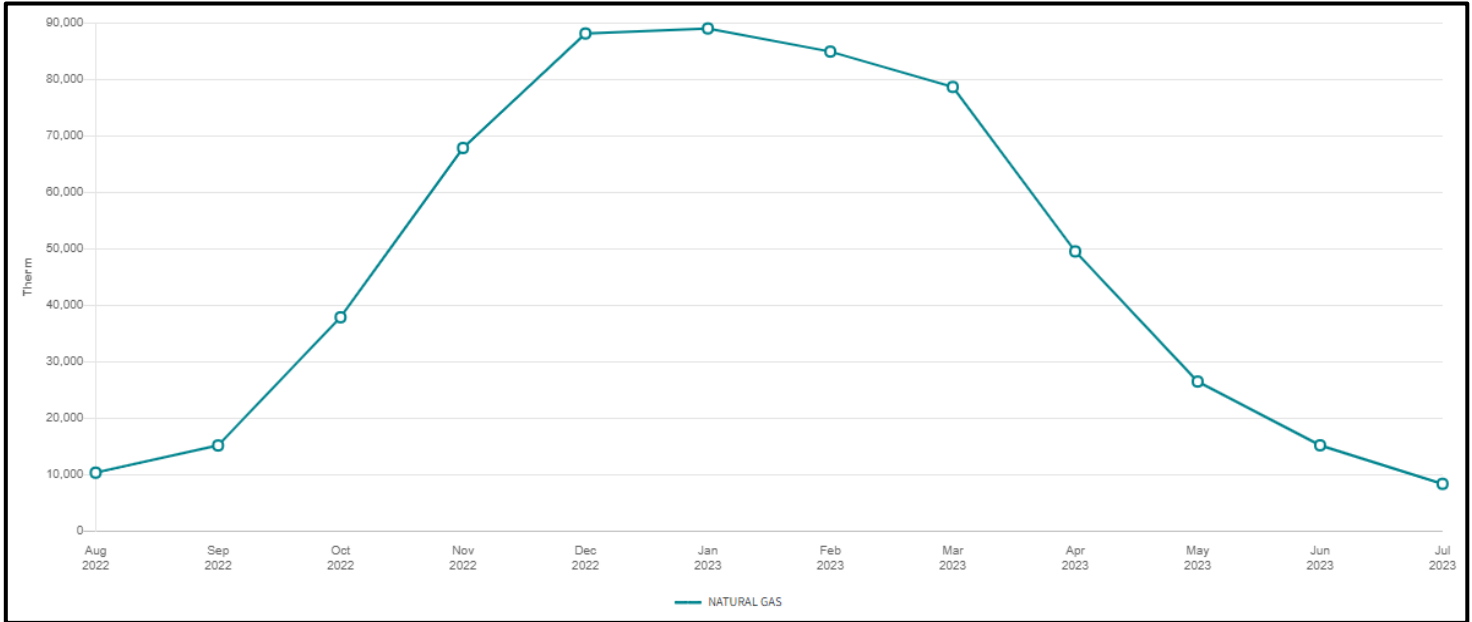
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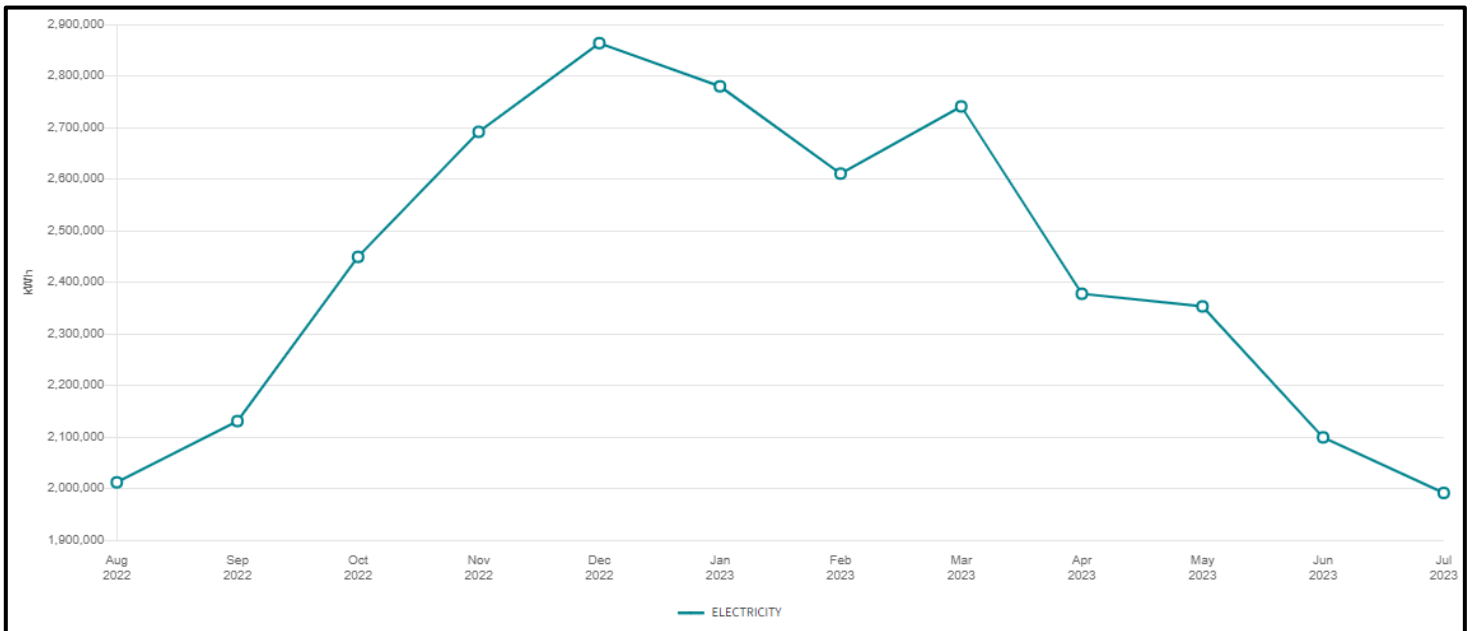
AUGUST 2022 – JULY 2023 NATURAL GAS CONSUMPTION (BY UNIT)

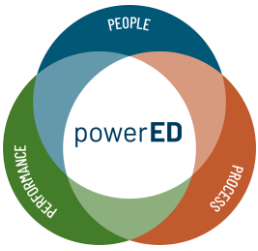
The chart below depicts total Natural Gas consumption across the district by unit (Therms).



AUGUST 2022 – JULY 2023 ELECTRIC CONSUMPTION (BY UNIT)

The chart below depicts total Electric consumption across the district by unit (kWh).

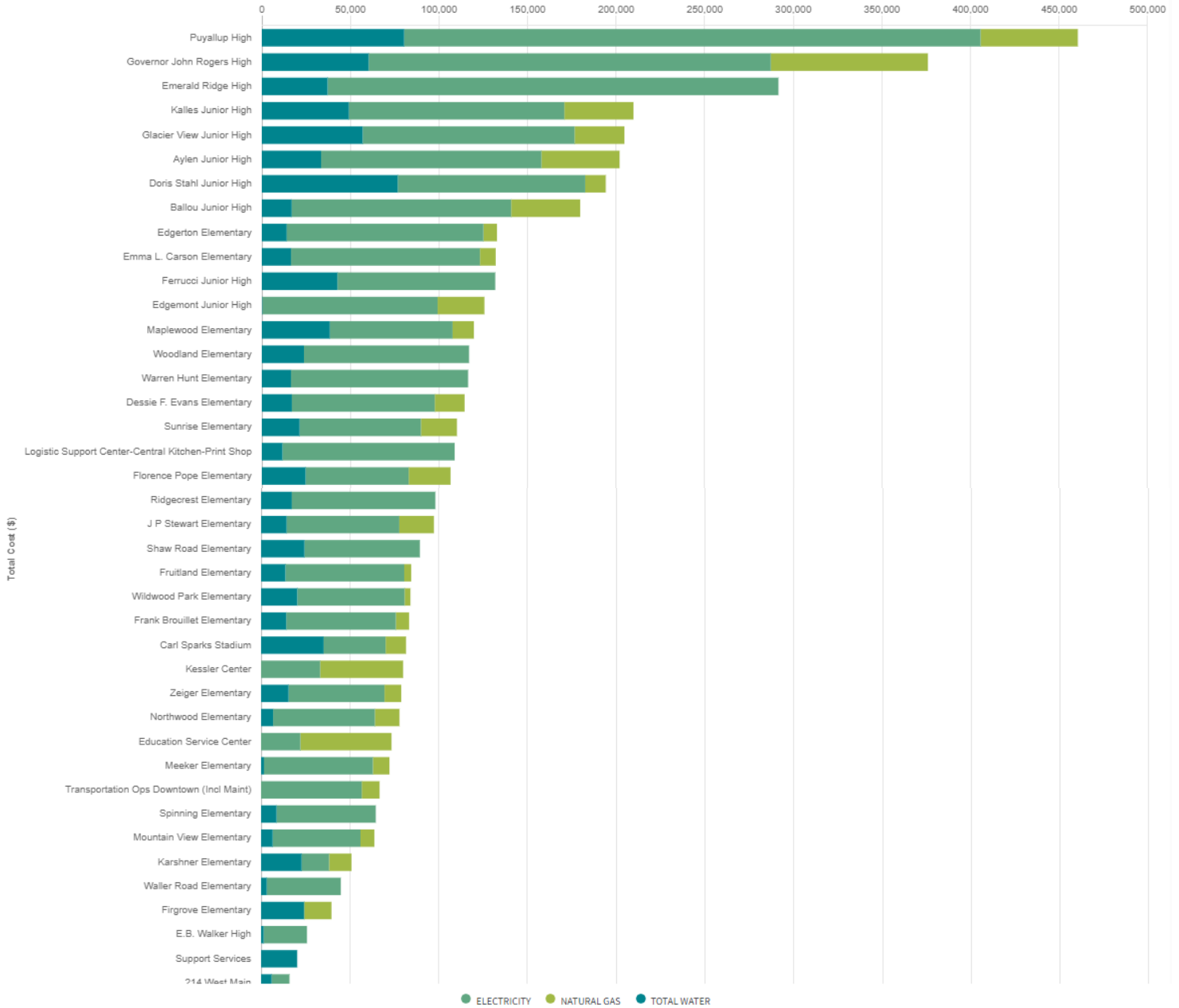


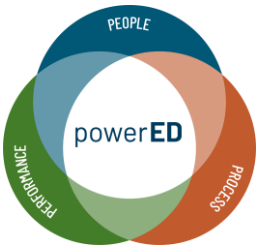


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AUGUST 2022 – JULY 2023 UTILITY COST BY SITE

The below graph shows a site-by-site breakdown of utility costs for the period of August 2022 through July 2023 ranked by total cost, high to low. Utility costs show Natural Gas, Electricity, and Water (combined Domestic, Irrigation, Sewer)

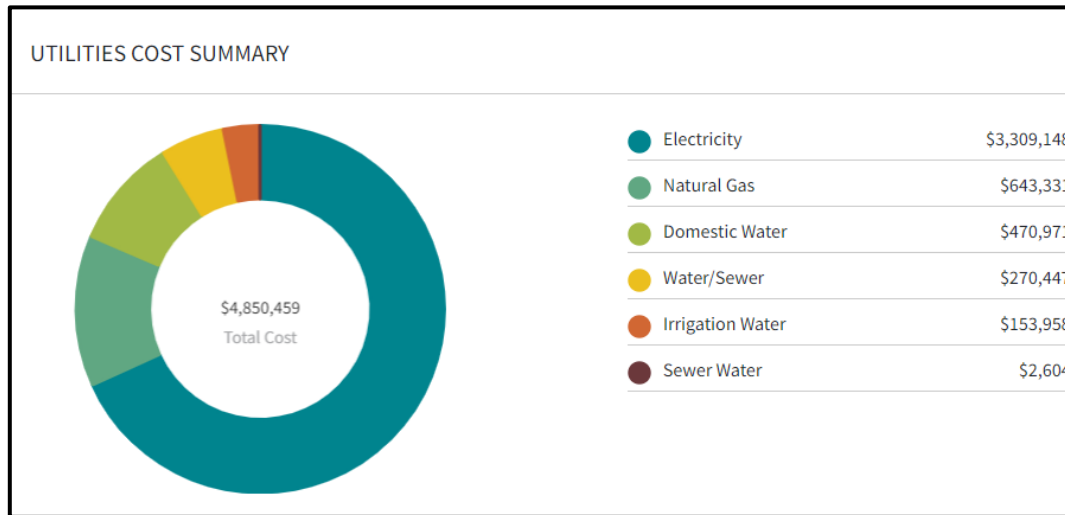




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TOTAL COST SUMMARY FOR ALL SITES – AUGUST 2022 – JULY 2023

The graph below shows total cost summary for all sites across the district for the 22-23 school year. While all utility use will be factored into where to target Energy Conservation Measures, the bulk of the district spending and use intensity is Electricity, stressing the need to streamline HVAC operations and lighting, especially as Washington State moves towards electrification with the goal of decarbonization.



PROGRAM CONTACTS:

Jacob Brochhagen

Project Lead, powerED

JacobB@mckinstry.com

206.658.8609

Joe Firrantello, PhD, PE

Senior Building Energy Engineer

JosephF@mckinstry.com

206.785.9568

Brady Martin

Director of Capital Projects

MartiBL@puyallupsd.org

253.435.6613

Phillip Anderson

Maintenance Director

AndersPJ@puyallupsd.org

253.841.8777

