

CAPITAL PROGRAMS

2018 Semi-Annual Report
Work Session, May 8, 2019



Agenda

Capital Programs Semi-Annual Report

- 2018 Work Plan Highlights
- Schools Opened Fall 2018
- Projects Completed 2018
- Projects Under Construction
- Projects in Planning
- Smaller Building Projects
- Energy Conservation
- BEX V Next Steps



Board Policy 1010

- Semi-annually, the Board will receive a **capital projects report**, prepared by the district's capital and finance departments in consultation with the Operations Committee, designed to provide an overview of the status of capital programs and expenditures and show key trends. The report will include, but not be limited to, CEP, BEX and BTA program activities.



2018 Work Plan Highlights

Designing, bidding, and building projects

- BTA III Capital Levy
- BEX IV Capital Levy
- BTA IV Capital Levy

Completed and opened two schools in September

- Roxhill Elementary at E.C. Hughes School in West Seattle
- Loyal Heights Elementary in Ballard



2018 Work Plan Highlights

Planning for Building Excellence V Capital Levy

- Approved by voters in February 2019
- School Board's Guiding Principles informed project recommendations

**Thank You
Seattle Voters!**

BOTH LEVIES APPROVED



Schools Opened Fall 2018

- E.C. Hughes School, Home of Roxhill Elementary
- Loyal Heights Elementary



Roxhill at E.C. Hughes



Loyal Heights



E.C. Hughes School

Modernization of a Landmarked School

- Budget: \$14.4 million (BTA IV, Distressed Schools Grant, School Construction Assistance Program)
- 47,307 square feet for up to 350 K-5 students
- 2 K classrooms, 11 classrooms 1-5, 2 SPED classrooms, 1 flex classroom, 1 PT/OT room, art classroom, music classroom, gym, library lunchroom/multipurpose room
- Reconfigured entrance and administration area for secure entry
- Replacement of major mechanical, electrical and plumbing (MEP) systems; new data cabling and wireless access points throughout
- Opened with 259 Roxhill Elementary students (Oct. 1, 2018 – Headcount)



E.C. Hughes School



Entry



Modernized classroom



Loyal Heights Elementary

Modernization of and Addition to a Landmarked School

- Budget: \$46.5 million (BEX IV, BTA III)
- 88,100 square feet for up to 660 elementary students
- 4 K classrooms, 20 classrooms 1-5, 3 flex classrooms, 4 learning commons, 4 SPED classrooms, 2 art classrooms, 1 music classroom, 2 computer labs, 1 before/after care space, library, gym, lunchroom/commons
- Library relocated to historic lunchroom w/former stage as reading nook
- Gym/lunchroom partition wall opens to combine spaces
- Geo-thermal heating and cooling system
- Opened with 449 students (Oct. 1, 2018 - Headcount)



Loyal Heights Elementary



New entry



New gym



Projects Completed 2018

McGilvra Elementary: Lunchroom Addition

- 5,103-square-foot addition
- Kitchen, lunchroom, restrooms, custodial space
- Seismic improvements to existing building
- 2 reconfigured classrooms



McGilvra Elementary Addition



Exterior



Dining area



Projects Under Construction

Lincoln High School: Modernization of and Addition to a Landmarked School

- Extensive renovations to historic buildings on west side of campus
- Minimal upgrades to east side buildings, gym and auditorium, funding included in BEX V for additional work
- Modernized school opens fall 2019



Lincoln High School



Window installation



Tile installation



Library plaster repair

Projects Under Construction

Ingraham High School: Classroom Addition

- New domestic water and fire suppression service to the school
- Selective modernizations to building 100 and gym, including seismic improvements and roof replacement
- New classroom addition opens fall 2019



Ingraham High School



Structural steel framing



Seismic brace in courtyard

High School Capacity Changes 2019-20

Lincoln High School (1,600 seats) and Ingraham High school addition (500 seats)

- Provides 9-12 capacity relief in the northern part of the district
- Boundaries were approved in January 2018
- Lincoln High School opens with 9th and 10th grade
- Added 9-12 capacity allows removal of some of the portable classrooms from Ingraham
- Not recommending removing portables from Ballard or Roosevelt at this time



Projects Under Construction

Magnolia Elementary: Modernization of and Addition to a Landmarked School

- Master Plan includes six-classroom addition—begins 2019
- Opens fall 2019



Magnolia Elementary



Installing windows in classroom addition



Corridor to new gym

Projects Under Construction

Wing Luke Elementary: New Replacement School

- Approx. 82,000 sq. ft. for up to 500 students
- Core facilities sized to support up to 650 students
- Expected opening, fall 2020



Wing Luke Elementary



October 2018



Site prep



Building pads

Projects Under Construction

Queen Anne Elementary: Classroom and Gymnasium Addition

- Classroom addition and core facilities, including gym, increase capacity to a total of 500 students
- Opens fall 2019



Queen Anne Elementary



CMU install for gym



Commons framing and columns

Elementary Capacity Changes 2019-20

Magnolia Elementary Phase I

- 430 seats with K-3 class size reduction
- Attendance area school; boundary approved January 2019

Wing Luke Elementary

- Total 500 seats; net addition of 180 seats
- Opens Winter Break 2020

Queen Anne Elementary 8 classroom addition

- (Total 500 seats; net addition of 75 seats)
- Option school, no boundary changes planned
- Additional permanent capacity: 170 seats
- Remove 5 portables for net addition of 75 seats



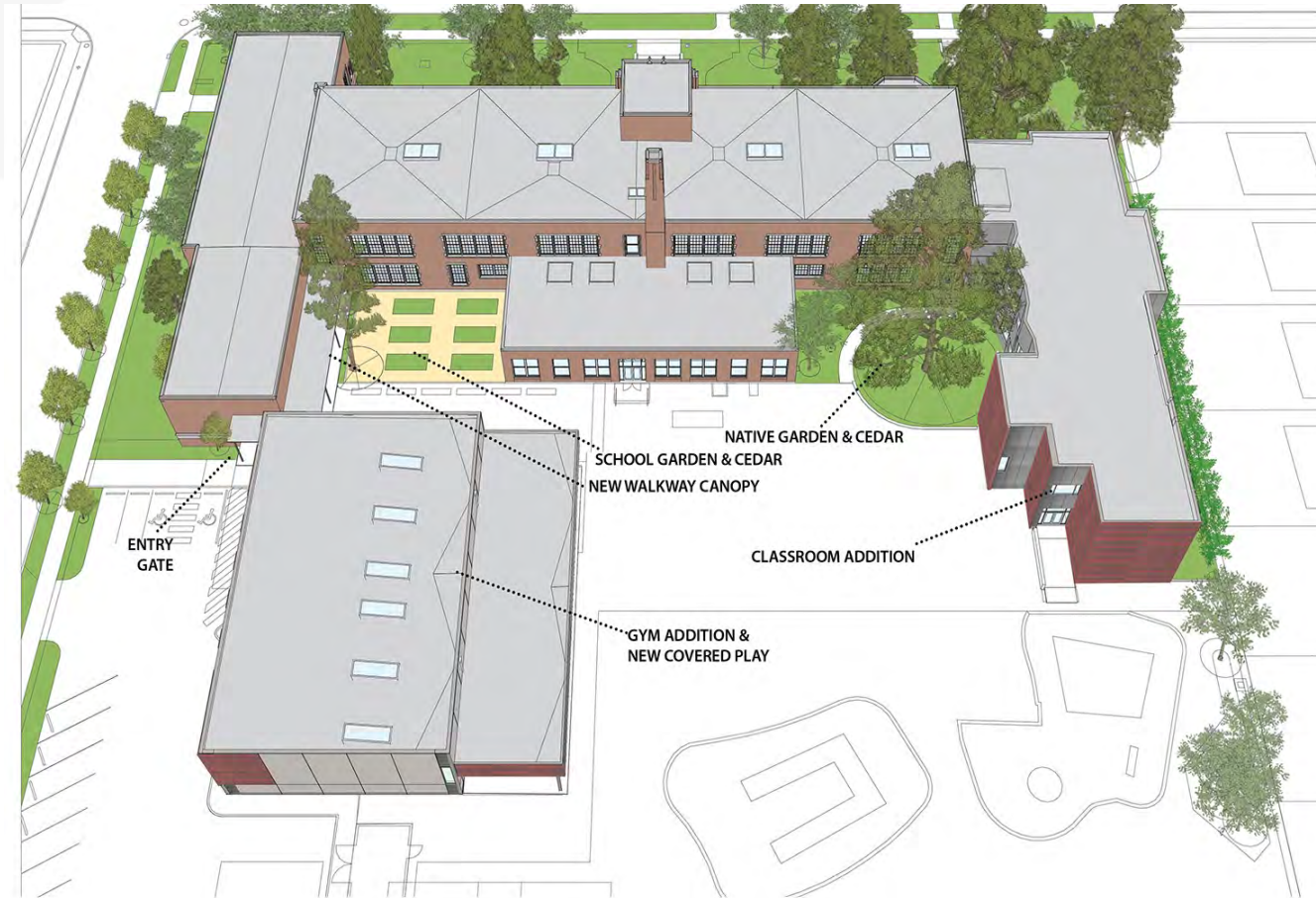
Projects in Planning

Bagley Elementary: Modernization of and Addition to a Landmarked School

- 18,000 sq. ft. classroom addition and increase in core facilities to house up to 500 students
- Expected opening, fall 2020



Bagley Elementary



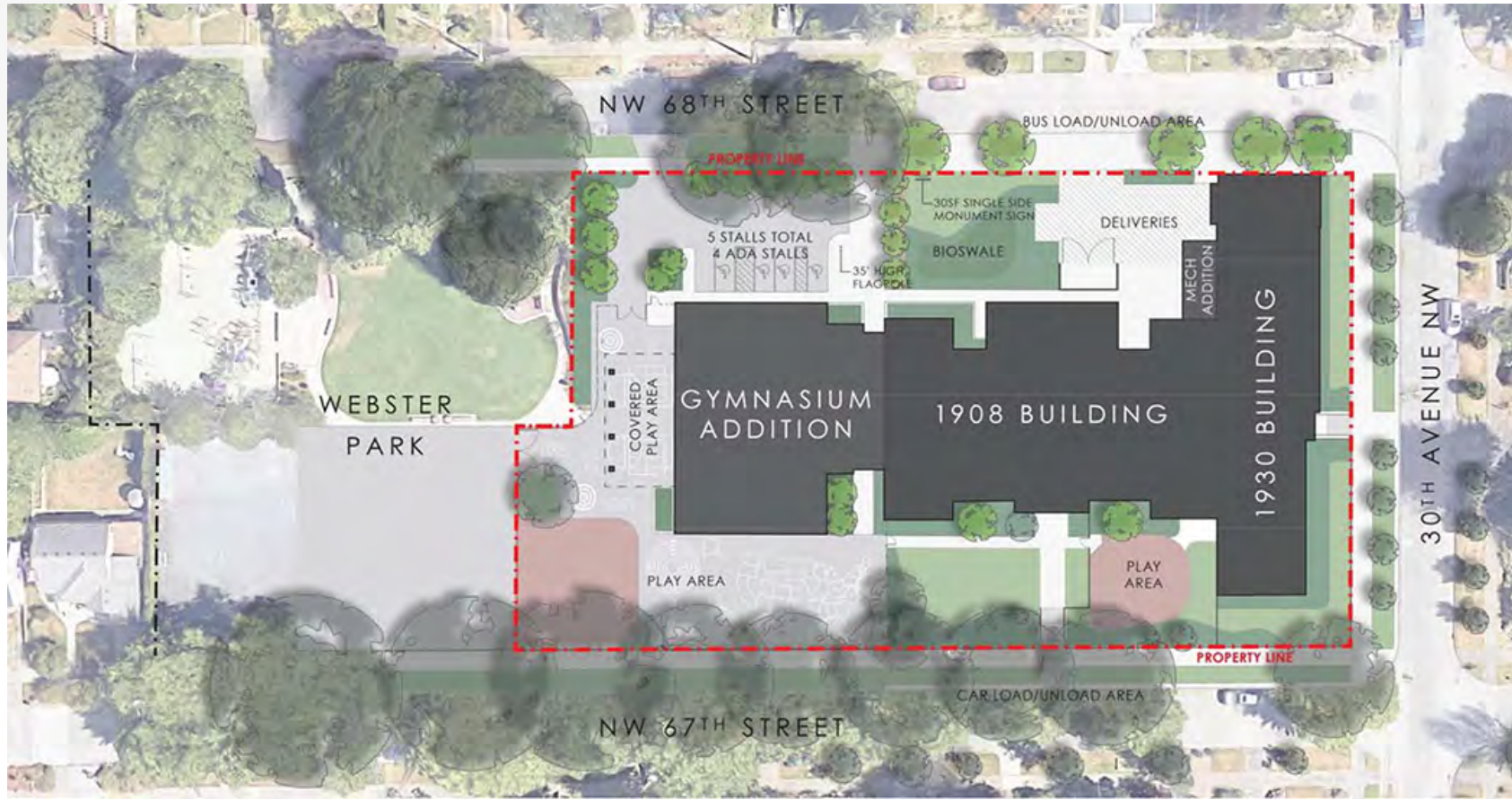
Projects in Planning

Webster School: Modernization of and Addition to a Landmarked School

- New school in Ballard
- 52,000 total sq. ft for up to 375 K-5 or K-8 students
- Expected opening, fall 2020



Webster School



Smaller Building Projects

Chief Sealth Int'l High School/SW Athletic Complex (SWAC): Field and track improvements

Cleveland High: Field and track improvements, field events space

Dearborn Park Int'l Elementary: Roof replacement

Eckstein Middle School: Seismic upgrades; field and track improvements

Leschi Elementary: Seismic upgrades

Lowell Elementary: Seismic upgrades; exterior door replacement

Solar Energy Systems: Arbor Heights and Gatzert elementary schools; South Shore and Hazel Wolf K-8 schools, and Ballard High School



Chief Sealth / SWAC



Solar Energy Systems

- Clean, renewable energy by installing approx. 795 kW of solar photovoltaic systems
- Produce estimated 864,000 kWh of electricity annually
- \$59,200 energy savings costs identified for FY 2019-2020



South Shore K-8



Gatzert ES



Completed Capacity Management Actions — 2018-19

- Moved/placed 21 portables
- Created 35 classrooms identified for enrollment growth
- Created 41 classrooms to support K-3 Class Size Reduction
- Created 15 Special Education classrooms identified for enrollment growth



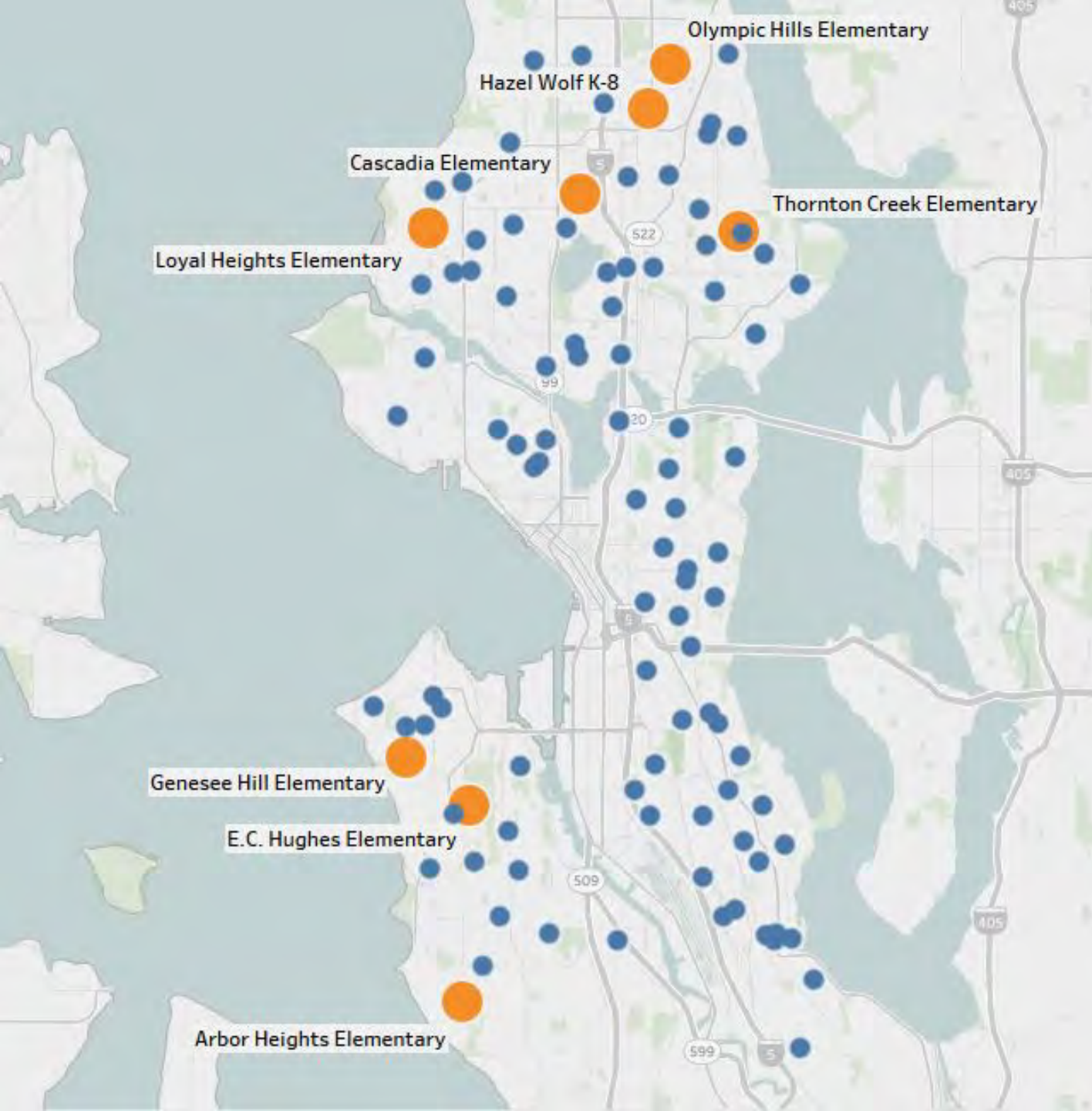
Questions?



Energy Conservation

- Identify and better understand which BEX IV schools are operating most effectively, both from an energy and total cost of ownership (TCO) perspective
- Apply lessons learned from BEX IV projects to inform discussions for future BEX V projects
- Schools evaluated:
 - Arbor Heights ES, Cascadia ES, Genesee Hill ES, Hazel Wolf K-8, Olympic Hills ES, and Thornton Creek ES
 - Partial analysis of E.C. Hughes and Loyal Heights ES





H A R G I S

BEX IV Projects

Measurement and Verification Analysis Final Results

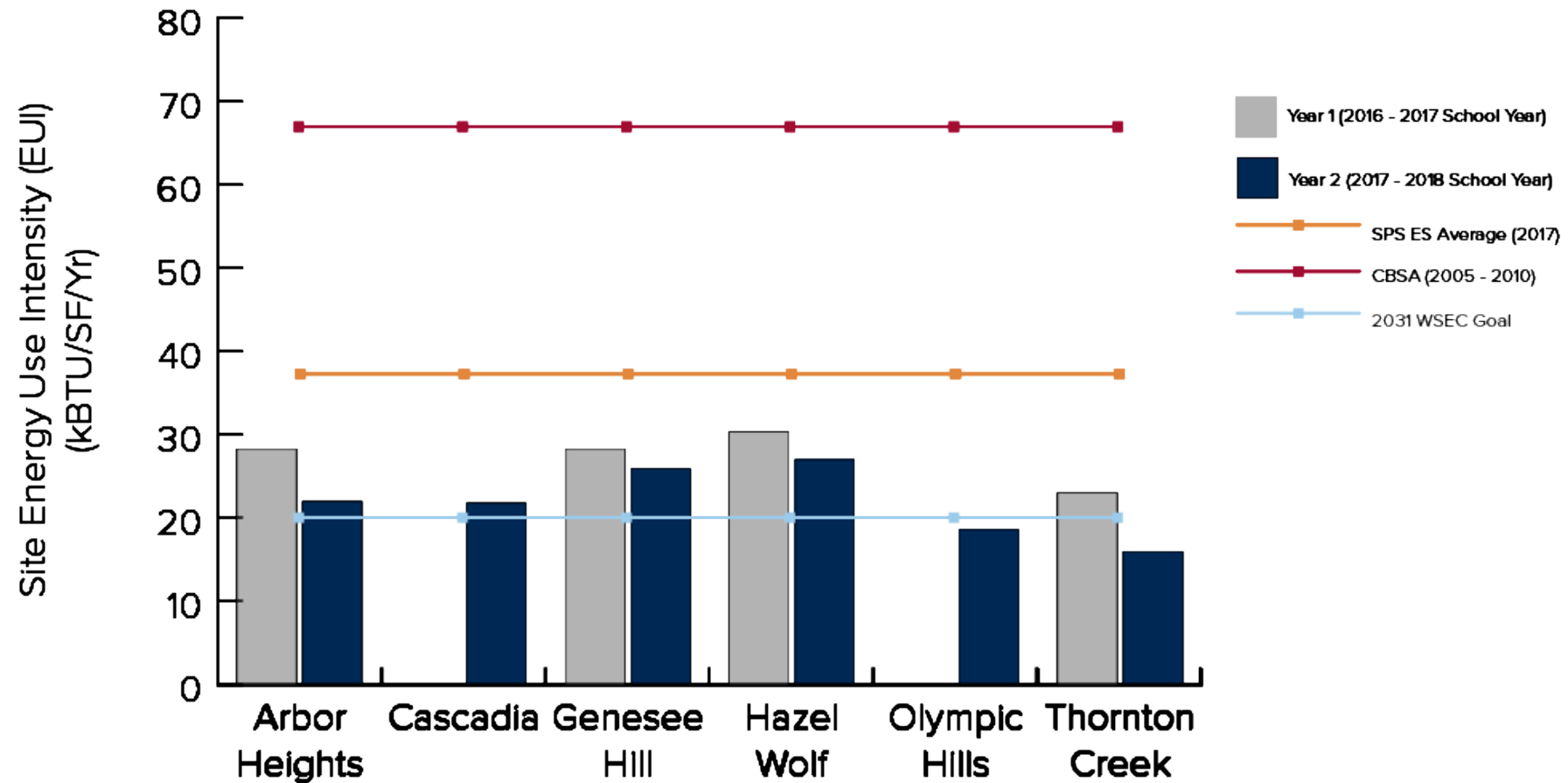
Michael J. Baranick, PE, CEM®, CMVP®, LEED®
Green Associate
d 206.436.0448
c 206.696.1214
michael.baranick@hargis.biz

- Data Collection and synthesis*
 - Key factors for each school (e.g. envelope, HVAC, lighting, controls, project team, known operational issues, hours of operation)
 - Monthly utility bills (worked with SCL/PSE to back-check data and correct issues)
 - Electrical sub-metering
 - Trending of control system
 - Envelope characteristics for each classroom
 - Site observations
- Analysis*
 - Energy & costs
 - Carbon
 - Sub-metering
 - Envelope
 - Total Cost of Ownership
- Recommendations



*All information has been consolidated into Tableau, a *dynamic* data visualization tool that can summarize and visualize large quantities of data

Energy Performance



Energy Performance

Schools performing as predicted based on HVAC system type, with exception to Hazel Wolf K-8



Genesee Hill ES

- ▶ Traditional heating plant (condensing boiler)
- ▶ Centralized VAV-AHUs (medium pressure system)



Arbor Heights ES

- ▶ Traditional heating plant (condensing boiler)
- ▶ Decentralized FCUs (low pressure system)



Cascadia ES*

- ▶ Hybrid System (heat pump chiller/ condensing boiler)
- ▶ Decentralized FCUs (low pressure system)



Olympic Hills ES*

- ▶ Hybrid System (ground source / electric boiler)
- ▶ Decentralized WSHPs (low pressure system)



Thornton Creek ES* / Hazel Wolf K-8*

- ▶ Hybrid System (ground source / electric boiler)
- ▶ Decentralized WSHPs (low pressure system)
- ▶ Energy Recovery

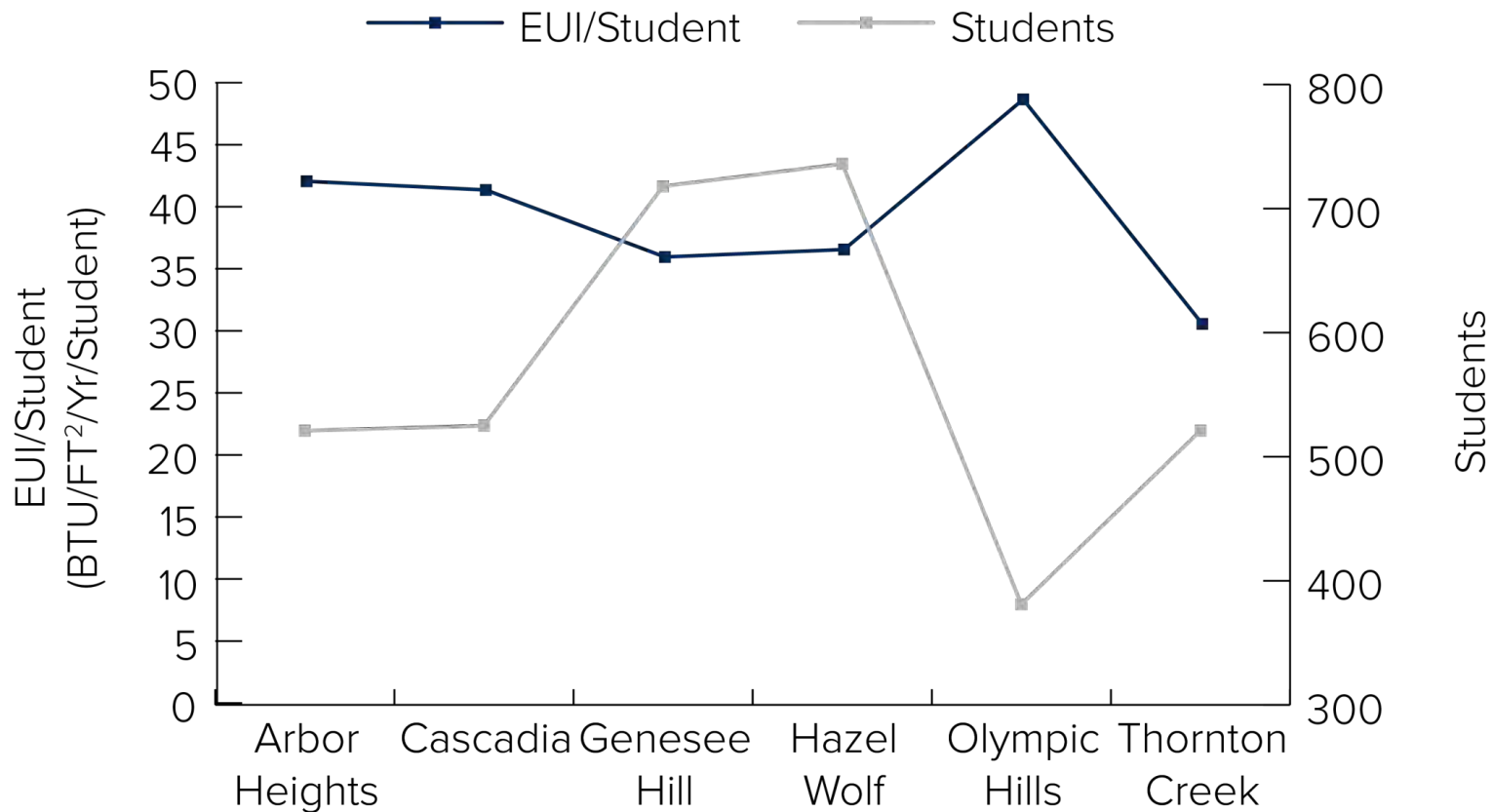


*School has full mechanical cooling

Less Efficient

More Efficient

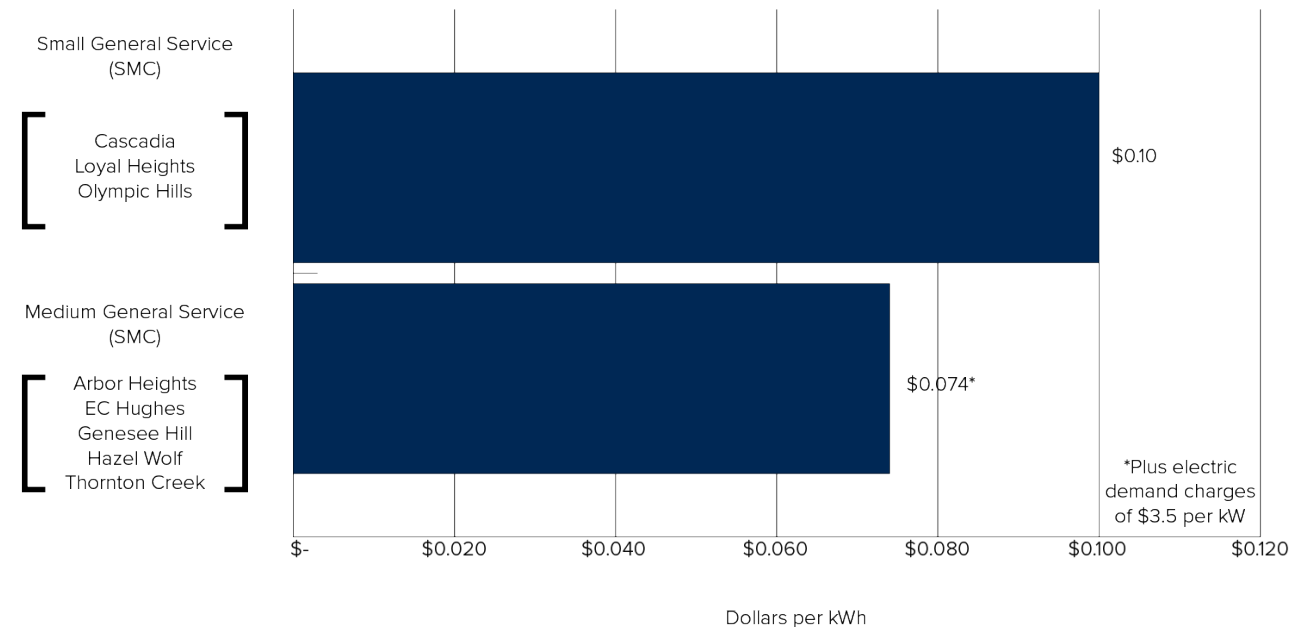
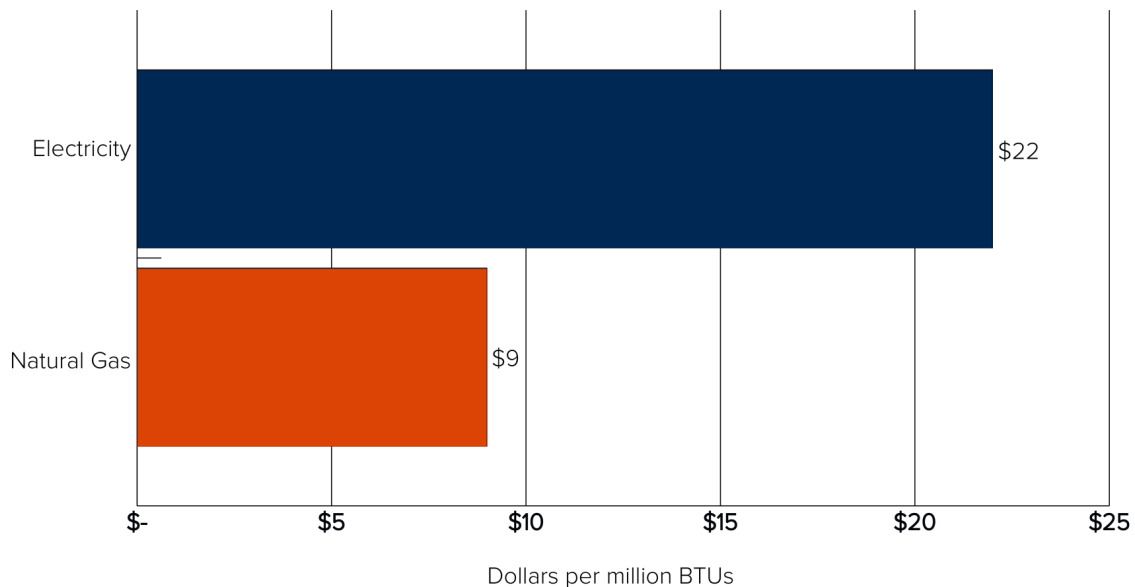
Energy Performance



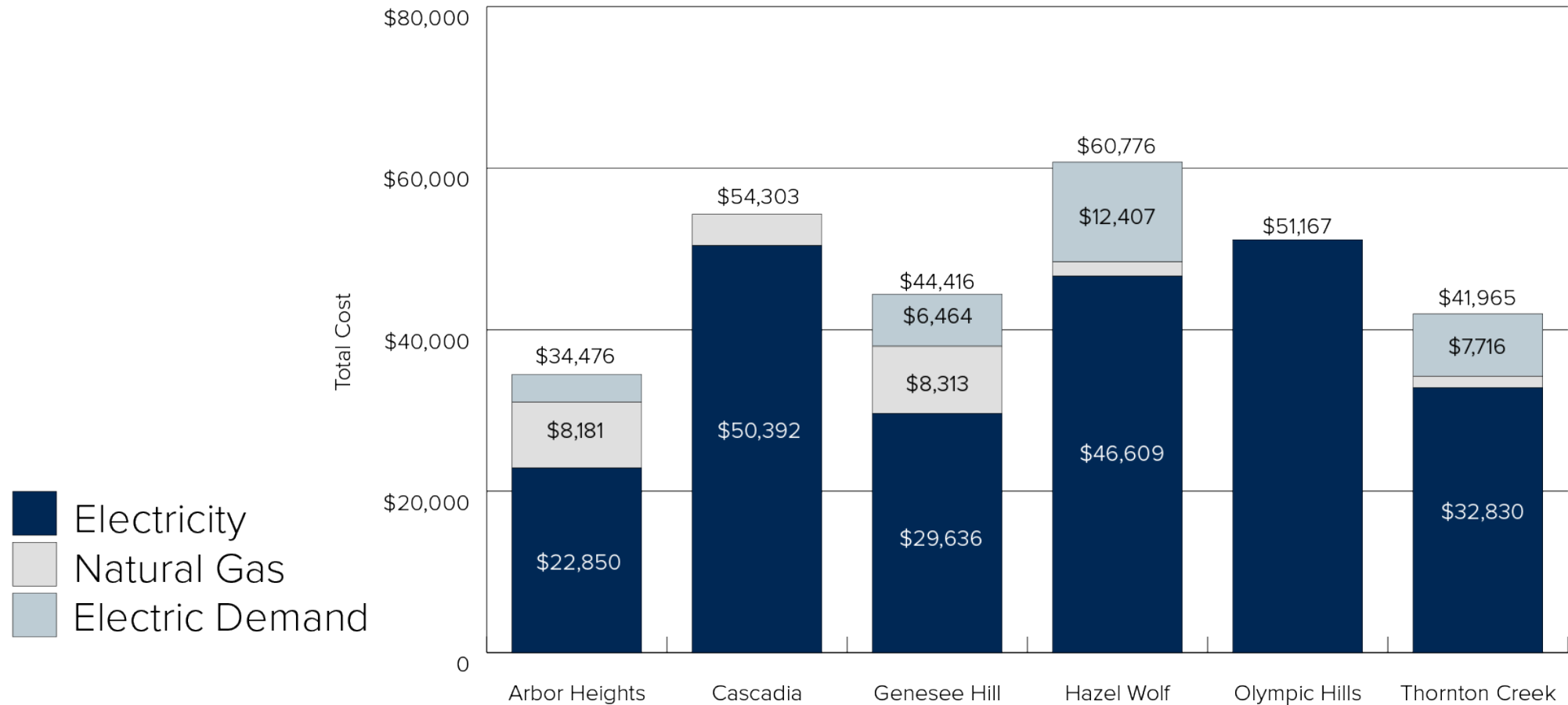
- Schools with longer operating hours will consume more energy
- Occupancy rates will increase energy consumption, primarily as a result of increased ventilation airflow and plug loads

Utility Costs

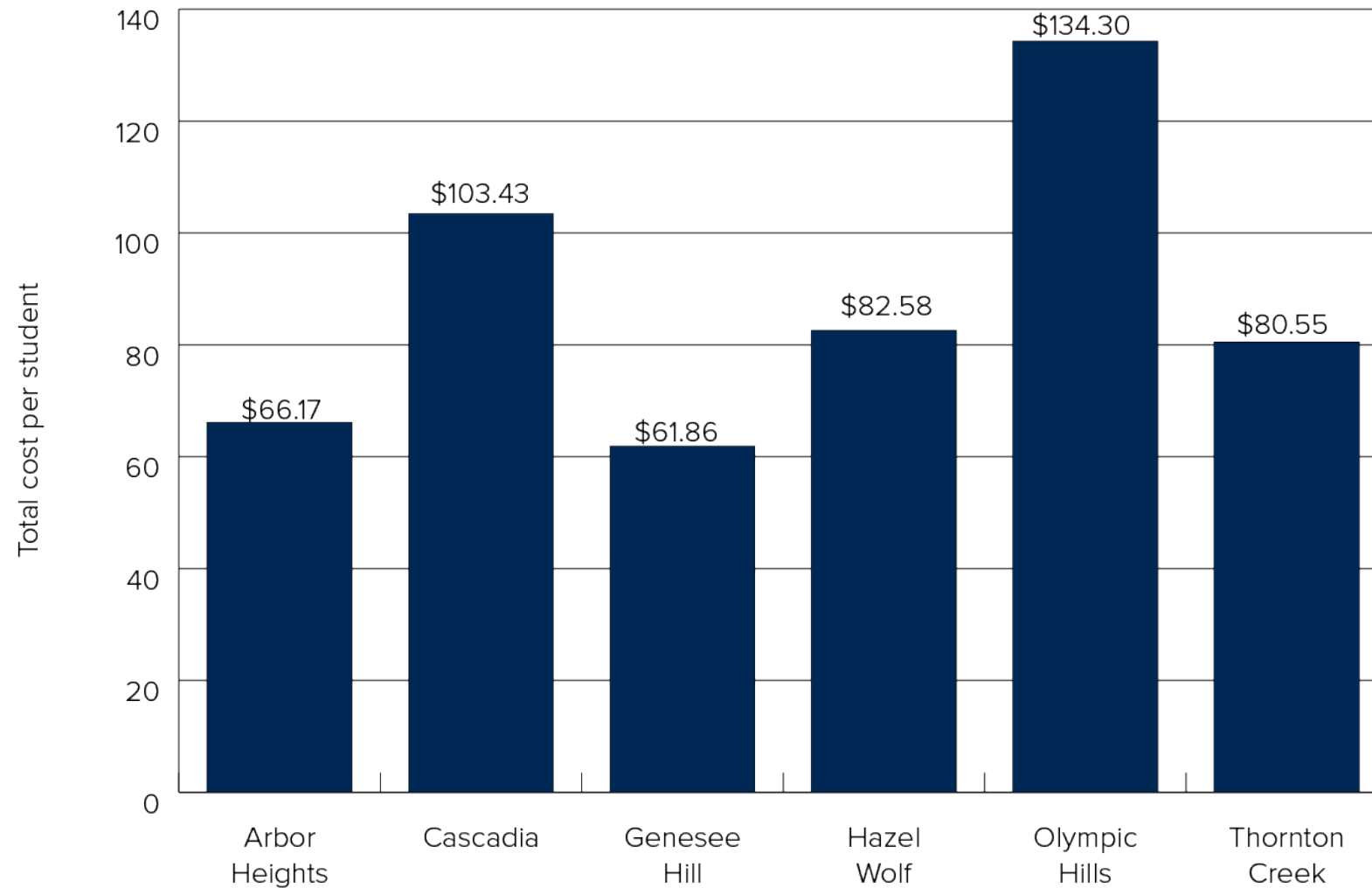
- Natural gas is inexpensive
- Schools utilizing natural gas as the primary heating source have the lowest operating cost potential based on current utility rates
- Electric rate schedule significantly impacts costs



Utility Costs

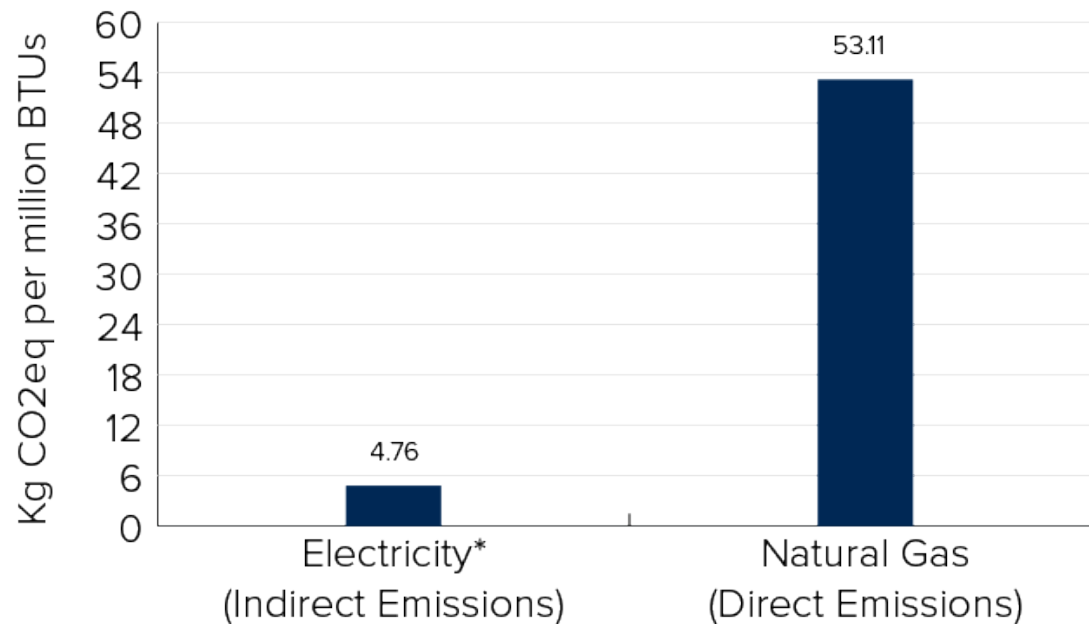


Utility Costs Per Student



Greenhouse Gas Emissions

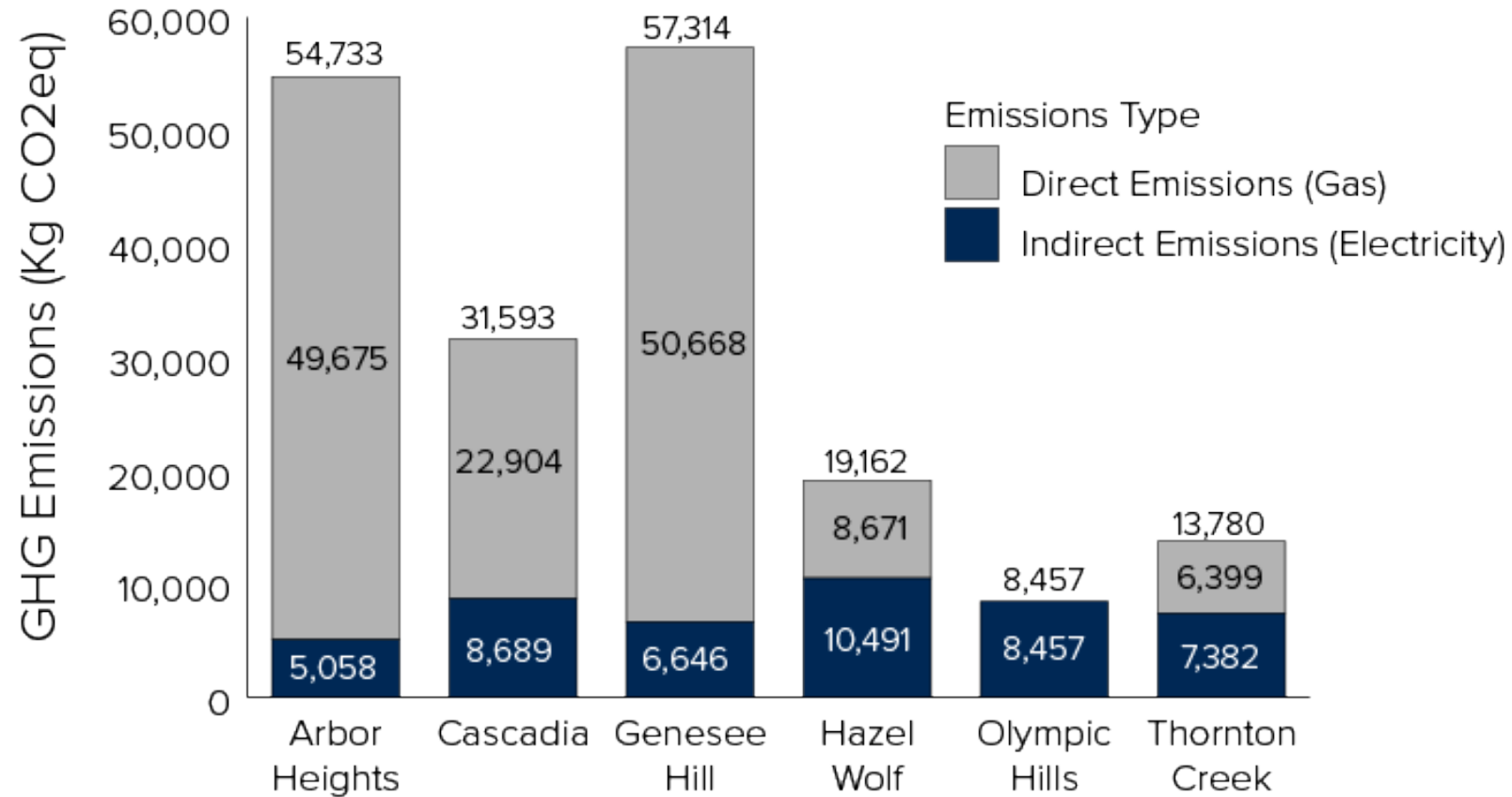
- Greenhouse gas (GHG) emissions heavily dependent on:
 - Energy consumption (EUI)
 - Fuel mix (electricity vs. natural gas)
 - Emissions factor utilized for electricity consumption



*Seattle City Light's 2016 Emissions Rate.
For comparison, regional rate is 87.13



Greenhouse Gas Emissions



Questions?



BEX V Draft Implementation Plan

Next Steps

Capital Projects efforts will focus on:

- Continued monthly meetings with building principals to inform understanding of design and construction process
- Meetings with Facilities Department to review Quality Control/Quality Assurance process
- Preparing Request for Qualifications — elementary school architect and engineering (A/E) firms and construction management firms
- Drafting communications and community engagement plans
- Begin SDAT/Schematic Design Phase in October 2019



Planning Timeline

Capital Planning will focus on:

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Calendar Year	Task
2019	Update to middle school educational specification
2019	Begin planning for BTA V replacement levy
2020	Certified Building Condition Assessment due to OSPI
2021	Study and Survey due to OSPI
2021	Prepare Facilities Master Plan
2022	Special Election for BTA V replacement levy



Thank you!



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