



Bond Energy Overview

Walla Walla Public Schools

February, 2018

Objectives

- Review the high-priority energy improvement projects identified by the Community Facilities Task Force
- Analyze energy efficiency, maintenance & comfort/health enhancements per project/site



Lincoln HS Boiler

Facilities Committee

- Facilities Committee commissioned district-wide energy audit in Feb. '17 as a part of their work (available on website)
- Projects prioritized based on age, return on investment, impact to learning, and maintenance factors
- Projects deemed “critical” were placed in Option #1. “Urgent” in Option #2.

Walla Walla High School

Energy Efficient:

- New domestic HW heaters in kitchen/commons/both gyms
- LED lights in small gym

Potential Improvements:

- Lighting is mostly original
- Older inefficient boilers (3)
- No VFD's
- No lighting controls
- HVAC controls upgrade needed (portions still pneumatic)
- Single pane windows



Bond Options

Both packages are eligible for \$52.6 million in State Match funds. All State Match funds will be applied to these projects.

Option #1

\$65.6M Bond Package
(Local Cost)

Replaces current rate
of approximately
\$1.23/\$1,000

**NO TAX
RATE
INCREASE**



Add'l School Infrastructure - \$8.37M

School Infrastructure - \$6.68M

Lincoln Renovation - \$5.71M

Pioneer
Renovation -
\$16.05M

Wa-Hi
Renovation -
\$37.18M

Option #2

\$73.9M Bond Package
(Local Cost)

Makes bond tax rate
approximately
\$1.38/\$1,000

**15¢ TAX
RATE
INCREASE**



Bond Options – District-wide Improvements

All Campuses -

Safety, security and communication/technology network improvements - per safety audit recommendation:

- Unified emergency messaging system, necessary cabling and select communications/intercom upgrades
- Enhanced security camera coverage
- Communications and data connectivity backbone and redundancy (e.g., network ring)
- Limited fencing improvements and access control/emergency lockdown accommodations

Green Park Elementary -

- Replace composition roof
- [Address drainage issues/ground water intrusion](#)
- [Address settlement issues](#)
- [Replace flooring](#)
- [HVAC systems \(controls/energy efficiency\)](#)
- [Replace 20+ year-old boilers with energy efficient systems](#)
- [Enhanced front entry security and access control measures for safety](#)

Blue Ridge Elementary -

- Replace roof membrane
- Backup power for emergencies and communications
- [Address foundation cracking and water intrusion](#)
- [Renovate restrooms](#)
- [HVAC systems \(controls/energy efficiency\)](#)
- [Address courtyard access](#)

Garrison Middle School -

- Backup power for emergencies and communications
- [Repair roof and partial replacement](#)
- [HVAC systems \(controls/energy efficiency\)](#)
- [Renovate restrooms \(not already completed\)](#)
- [Replace flooring](#)
- [Enhanced access control measures for safety](#)
- [Lighting efficiency upgrade](#)

Prospect Point Elementary -

- Roof repairs and venting improvements
- Campus access/safety improvements
- Kitchen improvements
- Backup power for emergencies and communications
- [Insulate non-insulated exterior walls](#)
- [Address site drainage issues](#)
- [HVAC systems \(controls/energy efficiency\)](#)
- [Replace flooring](#)
- [Enhanced site security measures](#)
- [Renovate restrooms \(ADA compliance\)](#)

Berney Elementary -

- Replace roof membrane
- [HVAC systems \(controls/energy efficiency\)](#)
- [Replace cooling tower](#)
- [Kitchen plumbing renovation and minor kitchen improvements](#)
- Backup power for emergencies and communications
- [Replace exterior siding](#)
- [Lighting efficiency upgrade](#)
- [Renovate restrooms \(not already completed\)](#)
- [Replace flooring](#)
- [Sidewalk and exterior access improvements](#)

Sharpstein Elementary -

- [Replace composition roof](#)
- [Replace commons, hallway and classroom flooring](#)
- [HVAC systems \(controls/energy efficiency\)](#)
- [Lighting efficiency upgrade](#)

Walla Walla High School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
ELIMINATE PORTABLE CLASSROOMS	X		X	X	X	X
UPGRADE HVAC SYSTEM	X			X	X	X
ADD CENTRAL COOLING TO OLDER AREAS	X		X			X
LIGHTING UPGRADE	X			X	X	X
IMPROVE BUILDING ENVELOPE	X			X	X	X

Pioneer Middle School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
ELIMINATE PORTABLE CLASSROOMS	X		X	X	X	X
UPGRADE HVAC SYSTEM & CONTROLS	X			X	X	X
LIGHTING UPGRADE	X			X	X	X

Lincoln High School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
ELIMINATE PORTABLE CLASSROOMS	X			X	X	X
UPGRADE HVAC SYSTEM	X			X	X	X
ADD CENTRAL COOLING	X		X			X
LIGHTING UPGRADE	X			X	X	X

Berney Elementary School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
MAJOR HVAC UPGRADE	X			X	X	X
IMPROVE/ADD CENTRAL COOLING	X		X	X	X	X
LIGHTING UPGRADES		X		X	X	X

Sharpstein Elementary School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
NEW HVAC CONTROLS		X		X	X	X
LIGHTING UPGRADES		X		X	X	X

Blue Ridge Elementary School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
NEW HVAC CONTROLS		X		X	X	X

Garrison Middle School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
NEW HVAC CONTROLS		X		X	X	X
LIGHTING UPGRADES		X		X	X	X

Prospect Point Elementary School



Bond Scope	Option 1	Option 2	Increase Energy Use	Decrease Energy Use	Reduce Maintenance Costs	Improve Comfort, Health & Morale
NEW HVAC CONTROLS		X		X	X	X
INSULATION IMPROVEMENTS		X		X		X

GENERAL COMMENTS

- » Incentives are available through Pacific Power as well as Cascade Natural Gas to help with the costs of upgrading or replacing many of these energy-related building systems and components (conservative incentive estimated have been taken into account in the estimates).
- » LED Lighting upgrades typically reduce electrical consumption by 10% - 20%
- » Lincoln is currently using limited energy for heating and cooling because the system can not maintain acceptable comfort levels.
- » Installing LED light fixtures reducing annual maintenance costs by approximately \$0.10 - \$.0.20 per SF.
- » Goal of all energy saving measures is to have a return on investment of less than 10 years.

Controls Upgrades:

(Wa-Hi, Lincoln High, Pioneer, Berney, Green Park, Sharpstein, Blue Ridge, Garrison & Prospect Point)

To manage something effectively, you need data. Intelligent decisions are dependent on getting adequate information about the real-world situations inside a school building. Are all your system devices and schedules functioning properly at all times? How do you really know?

Pneumatic systems, unfortunately, provide little or no data to a building owner. This lack of data often means underperforming systems, wasting of energy, impending breakdowns aren't noticed until it is too late, and maintenance is reduced to chasing fires instead of proactive prevention.

DDC systems, on the other hand, are all about data. They automatically adjust parameters and correct conditions that would require tedious manual labor on pneumatic systems. Digital systems also provide real-time and trended data for reports and graphs that allow for easy analysis and intelligent decision-making.

A short list of benefits of a DDC controls system over a pneumatic control system are:

- Reduced maintenance cost
- Optimized controls
- Ability to trend data
- Provided failure alarms
- Continuous monitoring
- Identified failed components
- Web or remote access
- Better equipment and software support
- Improved comfort
- Improved indoor air quality

These features can yield operational energy savings of 15% and greater when compared to an aged pneumatic system.