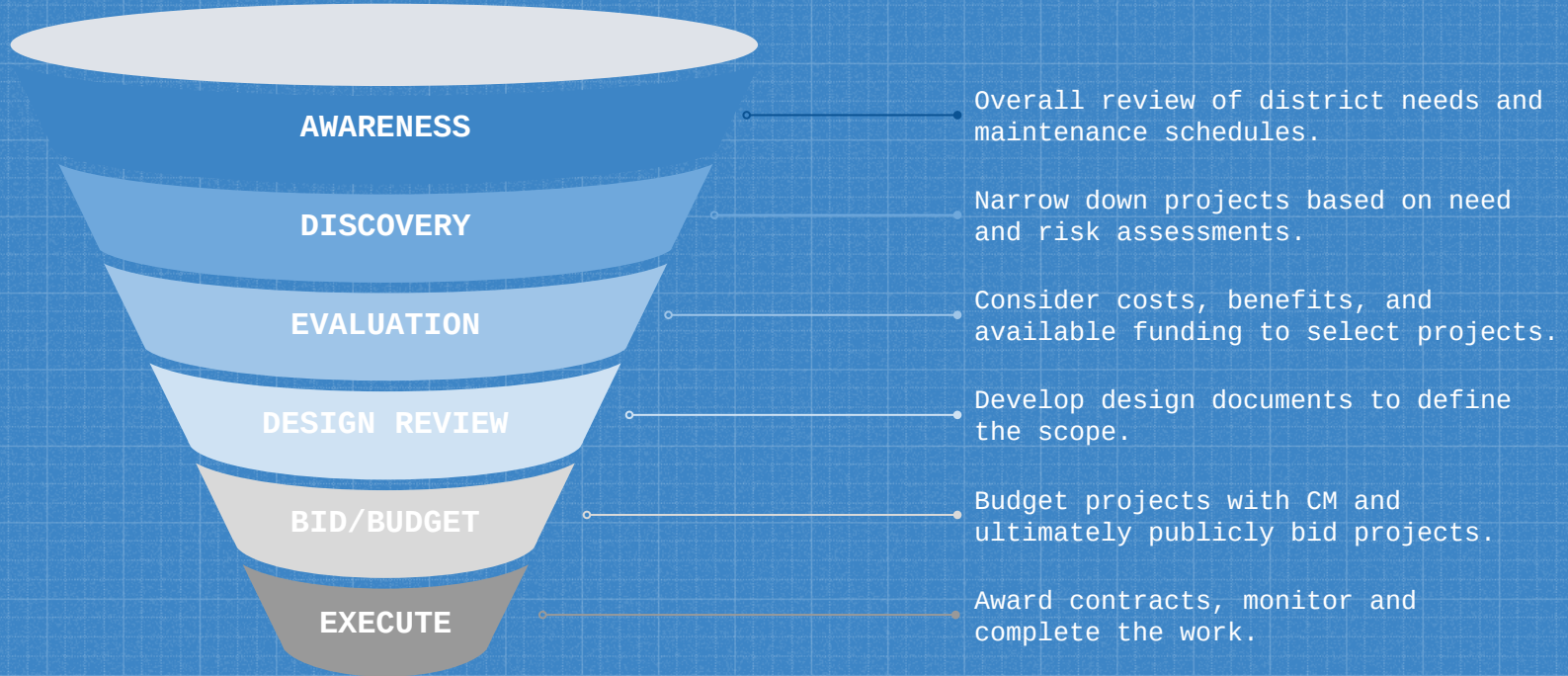




# 25 Year Preventative Maintenance Plan



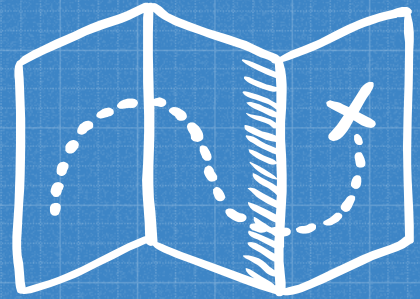
# Decision Making Funnel





# Today's Topics:

1. Recently Completed Work
2. In Progress and Upcoming Work
3. Progress on 25 year plan update
4. Energy Savings and Air Quality Improvements







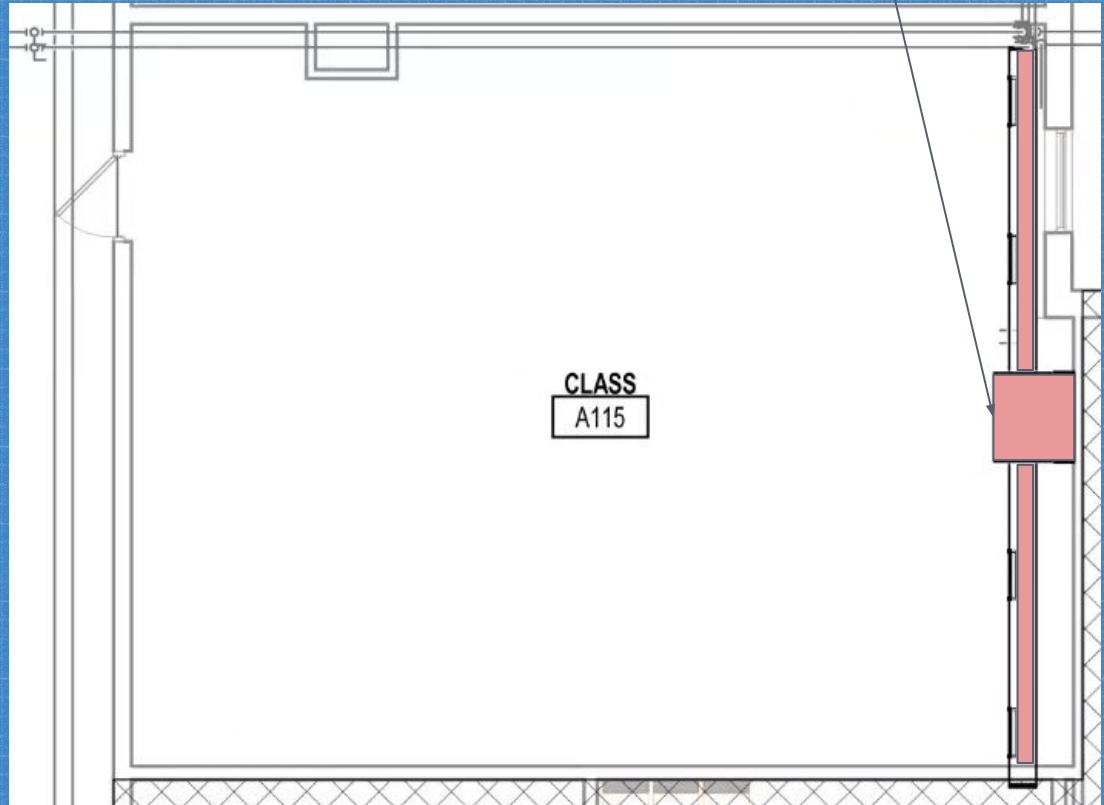
# 1

## Recently Competed Work



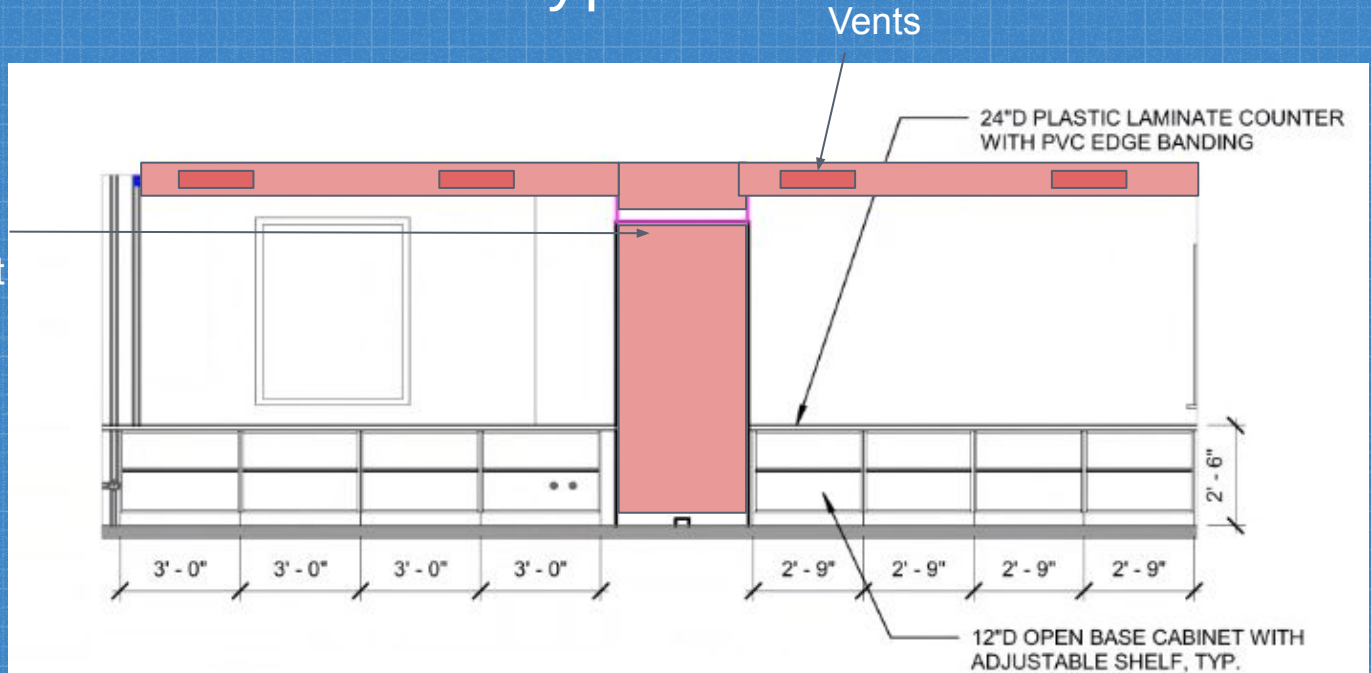
# HVAC replacement units

Vertical Unit Air Ventilator  
(VAV) for heat and cooling



# HVAC replacement unit- Typical

Vertical Unit Air  
Ventilator (VAV) for heat  
and cooling



1A

## CASEWORK ELEVATION - CLASSROOM A115

1/4" = 1'-0"

SPECIFICATION: 12 32 00  
COUNTER: PLASTIC LAMINATE (PL-1)  
CABINETRY: WOOD



# Chapewood And Rhoades

- Classroom and corridor renovation
- VUV Upgrades
- Mechanical Improvements.



Old vs new ventilation





RHE Classroom Addition





CWE Renovation



# 2020-2021 Boiler Replacements:

- BPE
- CGE
- GCE
- ROE







## **2 In Progress and Upcoming Projects**



# Sanders School

- First phase near-complete with 11 classrooms in A hall
- Second phase in progress includes B-wing and Admin
- Complete Mechanical replacement
- Replacement of all (single pane) windows
- Final phase scheduled to be complete by 6/30.





# Sanders School



Phase 1 Turnover



# Lakeview - Achieve Virtual Academy

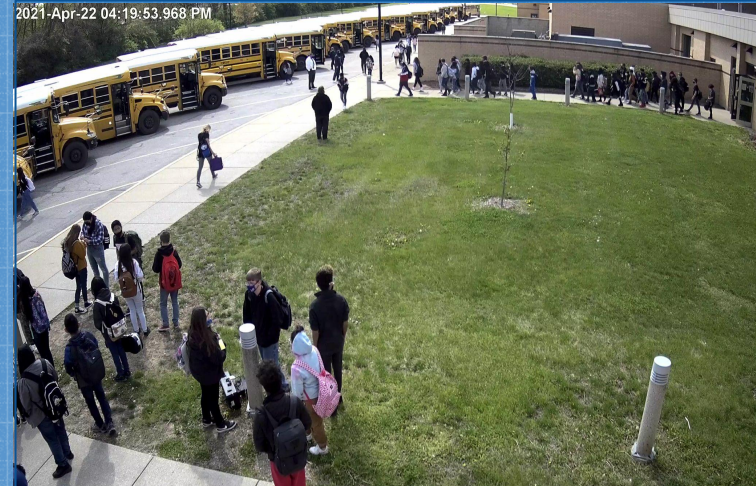
- Demolition is complete
- Painting started today (4/26)
- Add a "front office"
- Add doors for corridor entry
- Repair/ install carpet





# Security Camera Updates

- District wide upgrades
- Scope includes updating servers
- Cameras include better analytics
- Mobile access now possible
- 30 days of video storage



(In progress)



# Work Planned For The Next 3 Years

## Upcoming Projects Beginning/ Continuing In Q3/Q4 2021

- BDHS - Interior Theater / Auditorium
- BDHS - A31 Bakeshop
- BDHS - A31 Storage building
- BDU - Mechanical Improvements
- MCE - Interior renovation including VUV, Stage, Science Lab conversion.
- MCE - Exterior loop road, lot expansion & landscape
- WLE - Interior renovation including VUV, Restrooms, Computer Lab & Science Lab conversion.
- Roofing - BDHS, CWE, MCE, WLE
- Asphalt - BDHS, LHC, OPS, RHE, SAE, WLE



# Work Planned For The Next 3 Years

## Upcoming Projects 2022

- BDHS - Mechanical upgrades to Boiler and Fieldhouse
- ROE - VUV upgrades
- BPE - Interior renovation including VUV upgrades
- SFE - Interior renovation including VUV upgrades
- Transportation - Interior renovation and mechanical improvements.
- Classroom Additions - MCE, WLE, ROE



# Work Planned For The Next 3 Years

## Upcoming Projects 2023+

- Roofing project candidates - under review.  
District roof plan is being updated.
  - potentially include GCE, LHC, RHE, ROE
- Classroom renovations MWE, GCE, BPE
- Asphalt - review being done this year.
- Chiller upgrades - CGE, CWE, GCE, MWE
- BDHS - AHU upgrades





Candidates for  
upcoming paving  
and mechanical  
upgrades.







3

# 25 Year Plan Progress Update



# Review Progress of Updating the 25 Year Plan

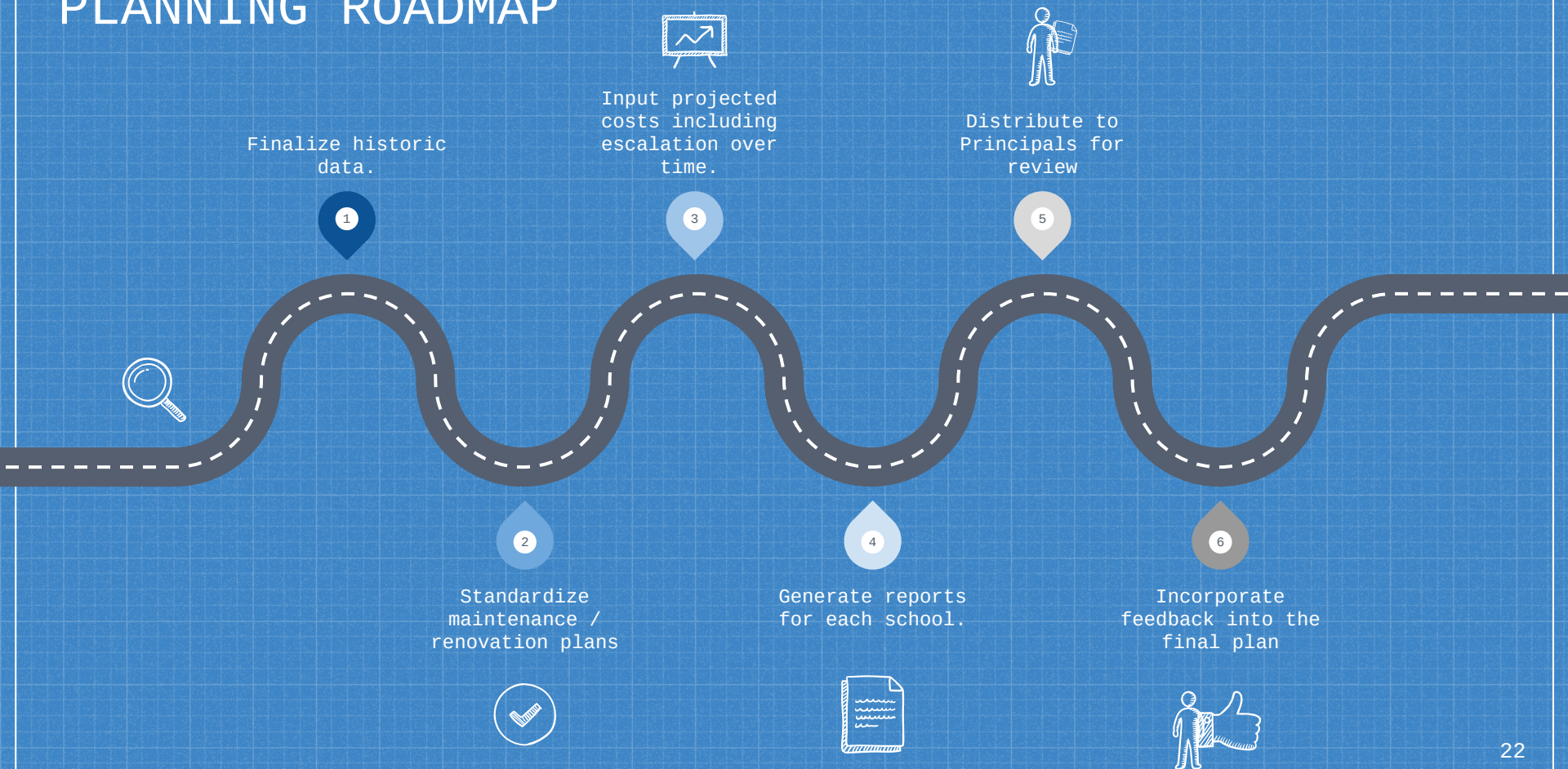
## Spreadsheets!

- Consolidated information
- Standardized information
- Applied labels and filters to easily sort and filter information.
- Added function to automate reporting and budgeting.
- In progress, still need to build out some data.

(Demonstration)



# PLANNING ROADMAP







# 4 Energy Savings and Air Quality Improvements



# Energy Savings

- EC motors vs PSC
- V Belt to Synchronous belt and pulleys
- Condensing boilers 90% efficiency
- New more efficient chillers
- Variable Frequency Drives (VFDs)
- Occupancy sensors for lighting
- Continuation of LED lighting upgrades

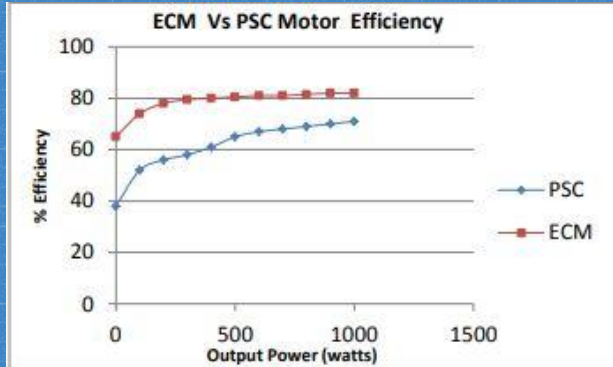


Table 1 Efficiency Comparison – PSC Motor & EC Motor

## Example

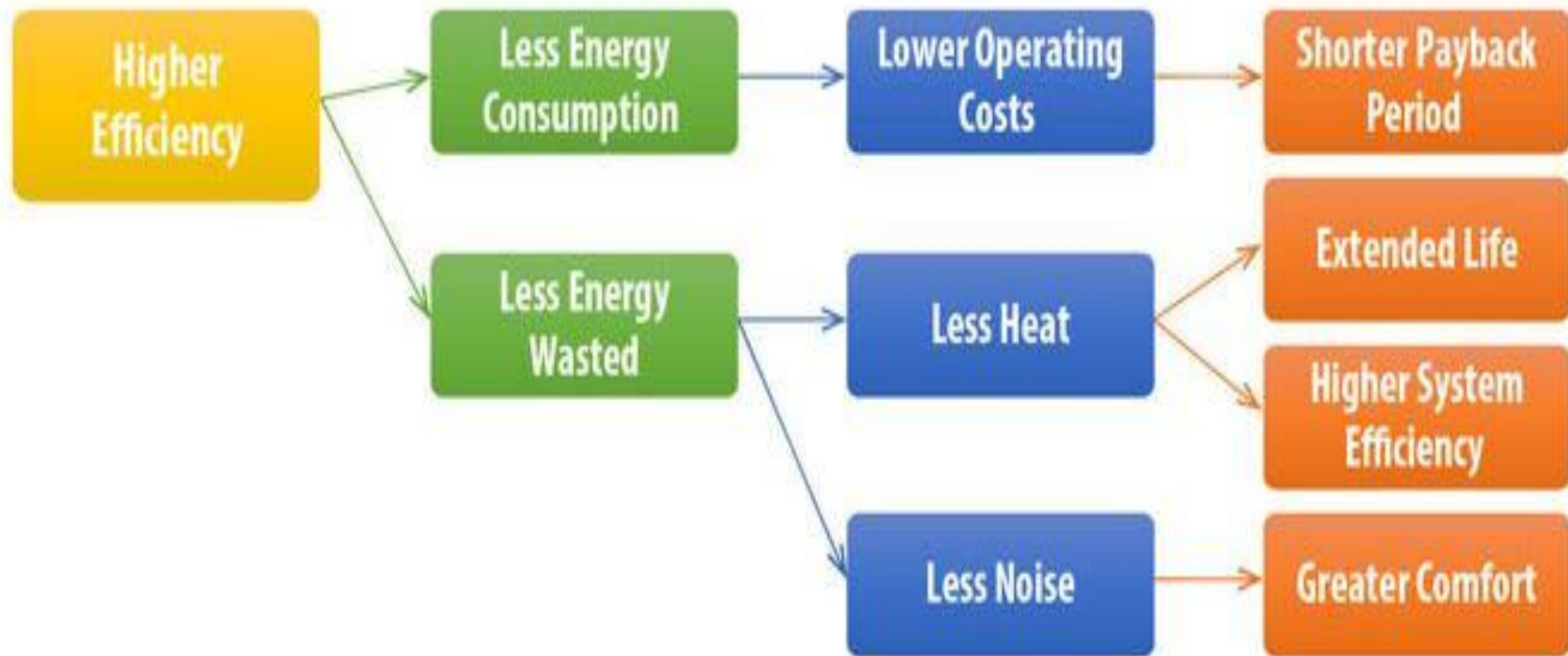
A continuously operating, 100-hp, supply-air fan motor (93% efficient) operates at an average load of 75% while consuming 527,000 kWh annually. What are the annual energy and dollar savings if a 93% efficient ( $E_1$ ) V-belt is replaced with a 98% efficient ( $E_2$ ) synchronous belt? Electricity is priced at \$0.05/kWh.

$$\begin{aligned}\text{Energy Savings} &= \text{Annual Energy Use} \times \left(1 - \frac{E_1}{E_2}\right) \\ &= 527,000 \text{ kWh/year} \times \left(1 - \frac{93}{98}\right) = 26,888 \text{ kWh/year}\end{aligned}$$

$$\text{Annual Dollar Savings} = 26,888 \text{ kWh} \times \$0.05/\text{kWh} = \$1,345$$



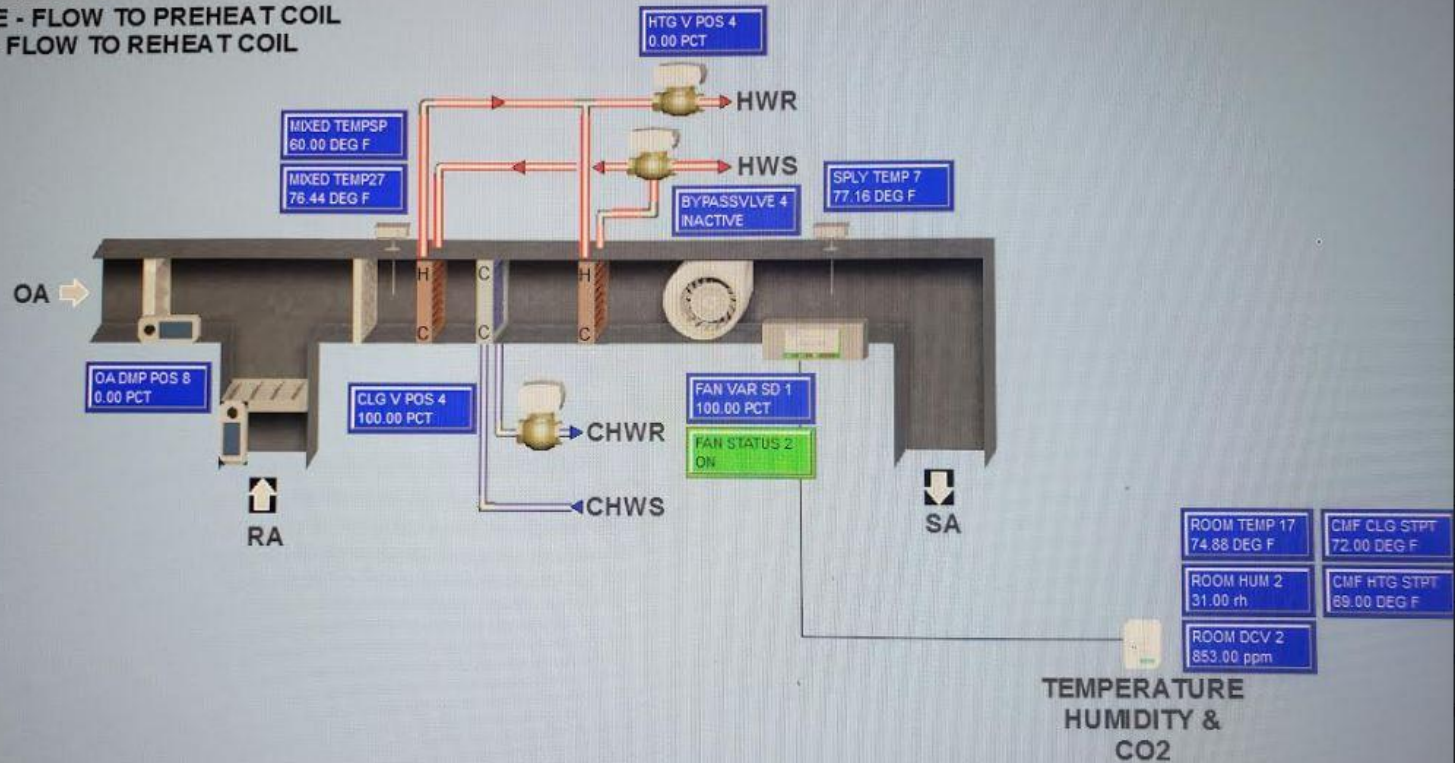
## SIDE EFFECTS OF HIGH EFFICIENCY EC MOTORS





# RHOADES ELEMENTARY VERTICAL UNIT VENTS

**BYPASS VALVE 4**  
INACTIVE - FLOW TO PREHEAT COIL  
ACTIVE - FLOW TO REHEAT COIL







4

# 25 Year Plan Current Budgeting



# 2021 Bond Budget Allocation

Location	Projects	Budget Estimate
BDHS	Auditorium, Theater, Interiors, Roofing, Asphalt	\$6,013,000
WLE	VUV, Electrical, Interiors, Asphalt, Roofing	\$5,043,000
MCE	VUV, Electrical, Interiors, Asphalt, Roofing	\$6,416,000
Other Roofing		\$1,000,000
Other Asphalt		\$1,763,000
Other MEP projects		\$329,000



# 2022 Bond Budget Allocation

Location	Projects	Budget Estimate
BDHS	Interiors, Exteriors, Boilers, Mechanical, Roofing	\$3,400,000
BPE	VUV, Interiors, Exteriors	\$1,800,000
ROE	VUV, Exteriors, Electrical, Classroom Addition, Roofing	\$3,060,000
WLE, MCE	Classroom Addition	\$5,079,000
SFE	Electrical, Mechanical, Interiors, Exteriors, Roofing	\$2,500,000
Other Asphalt		\$350,000
Other MEP projects		\$2,900,000



# Thanks!

## ANY QUESTIONS?

Pete Just

Dave Erickson

Todd Hendricks

