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**WAPPINGERS** | Empower  
CENTRAL SCHOOL DISTRICT | Challenge  
Grow

11/1/2017



# Project Overview

# Wappingers CSD Phase II Timeline

- 1) RFP issued in March 2017
- 2) Proposal Submitted on 4/19/2017 (\$1 Million)
- 3) Ameresco officially awarded on 5/8/2017
- 4) Comprehensive Energy Audit began 5/9/2017
- 5) Lighting loggers installed, several field audits completed
- 6) Project grows to \$2.6 Million by August 2017
- 7) Final audits in early September 2017
- 8) Contractor pricing in late September 2017
- 9) Final project size \$5.7 Million; \$2.8 Million in cash flow

# Wappingers Central School District

## Energy Conservation Measures (ECMs)

Facility	Interior Lighting System Improvements - Nonaidable	Exterior Lighting System Improvements - Aidable	Solar PV Array	Demand Controlled Ventilation	Plug Load Controls	Walk-in Cooler Controls	Kitchen Appliances
	1	2	3	4	5	6	7
Brinckerhoff ES	X		X		X	X	X
James S. Evans ES	X	X	X	X	X		
Fishkill ES	X	X			X		
Fishkill Plains ES	X	X			X		X
Gayhead ES	X	X			X		
Kinry Road ES	X	X			X	X	
Myers Corners ES	X	X		X	X		
Oak Grove ES	X	X			X	X	
Sheafe Road ES	X	X			X	X	X
Vassar Road ES	X	X	X		X		X
Van Wyck JHS	X		X	X	X		
Wappingers JHS	X			X	X		
John Jay HS	X	X		X	X		X
Roy C. Ketcham HS	X	X	X		X	X	
Facilities & Operations	X				X	X	

# ECM 1: Interior Lighting Improvements

- 13,215 fixtures will be upgraded to “state of the art” LED’s
- New LED technologies are rated for 50,000 hours of life
- Each room type can be custom designed for optimal color temperature for each specific learning environment



# ECM 2: Exterior Lighting Improvements

- Over 350 fixtures will be converted to LED's
- Existing exterior fixtures have less than 1/3 of the run life of new LED technologies
- Scope includes floods, wallpacks, pole tops and screw in installations





# ECM 3: Solar PV array

- 1.995 MW of Solar PV arrays will be installed across 5 schools
  - > Brinkerhoff Elementary School
  - > Evans Elementary School
  - > Vassar Road Elementary School
  - > Van Wyck Junior High School
  - > Ketcham High School
- Ballasted installation – No roof penetrations – will not effect roof warranties
- Major contributor to EPC cash flow



# ECM 4: Demand Control Ventilation

- Modern controls that modulate outdoor air based on occupancy
- Reduces energy consumption by reducing outside air during times of low occupancy
- Shortest ECM payback at 9 years



*Existing constant air volume system at the Evans Elementary School*



# ECM 5: Plug Load Controls

- Plug Load Controls will be applied to Water Fountains, Printers, Copiers and Televisions
- All of the units draw power 24 hours per day
- Installed controls will work off a schedule so the units will be completely turned off during unoccupied times



*Pictured above is a copier found in the Wappingers Junior High School which would receive a plug load controller.*

# ECM 6: Walk-In Refrigerator Controls

- Scheduling and sensor controls will be installed in various walk-in coolers
- Controls will never compromise quality of the contents within
- Compressor and fans typically run at 100% when operating on/off
- Similar to a VFD on a pump; but designed specifically for refrigeration



*Walk-In Refrigerator at Brinckerhoff Elementary School.*

# ECM 7: Kitchen Equipment Upgrades

- 5 schools will receive new gas fired kitchen equipment
- A total of 18 units will be replaced
  - > Kettles
  - > Single and dual ovens
  - > Kitchen ranges
  - > Pizza ovens
- This measure will also include new fire protection equipment on the existing hoods to comply with modern safety codes



*Kitchen Equipment at John Jay High School.*

# Next Steps for the EPC

- 1) Complete final Comprehensive Energy Audit (CEA) document
- 2) Start legal negotiations of Energy Services Agreement (ESA) with WCSD Attorney
- 3) Present to the WCSD Board of Education
- 4) Have the project approved by BOE (with signing power upon legal review)
- 5) Both parties sign ESA
- 6) Finalize design and compile NYSED package
- 7) Submit to 3<sup>rd</sup> party engineering review
- 8) NYSED approval
- 9) Construction



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