

KENTON COUNTY SCHOOLS

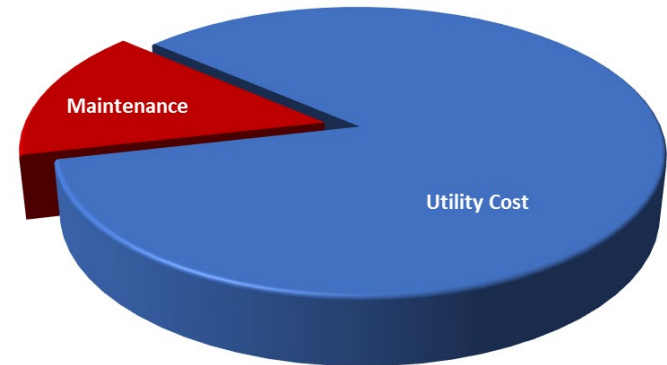
Guaranteed Energy Savings Contract
2017-2018 Measurement & Verification Report



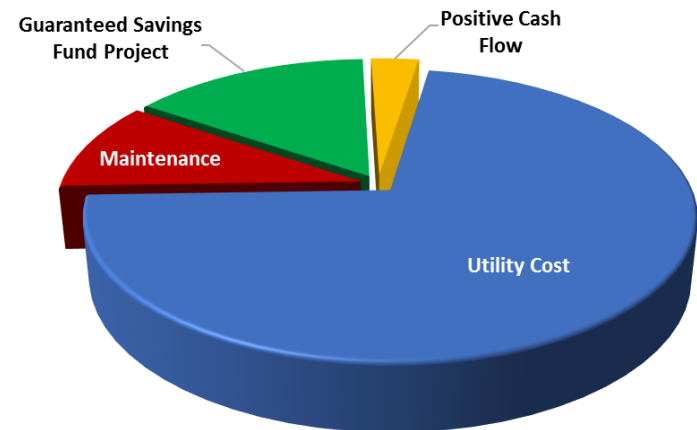
What is a Guaranteed Energy Savings Contract?

- KRS 45A.352 gives school districts statutory authority to upgrade facilities through GESC.
- Savings guaranteed by Qualified Provider provide cash flow to fund debt service. Annual savings reconciliation required.
- Typical upgrades include HVAC, controls systems, lighting, water conservation, building envelope improvements, etc.
- Popular funding mechanism for school districts that have facility needs in excess of their bonding potential.

Operations Budget Before Improvements



Operations Budget After Improvements



Facilities in Scope for this GES

- Beechgrove Elementary School
- Caywood Elementary School
- Dixie Heights High School
- Kenton Elementary School
- Piner Elementary School
- R.C. Hinsdale Elementary School
- River Ridge Elementary School
- Ryland Heights Elementary School
- Simon Kenton High School
- Summit View Middle School
- Taylor Mill Elementary School
- The Academies
- Turkey Foot Middle School
- Twenhofel Middle School
- White's Tower Elementary School
- Woodland Middle School

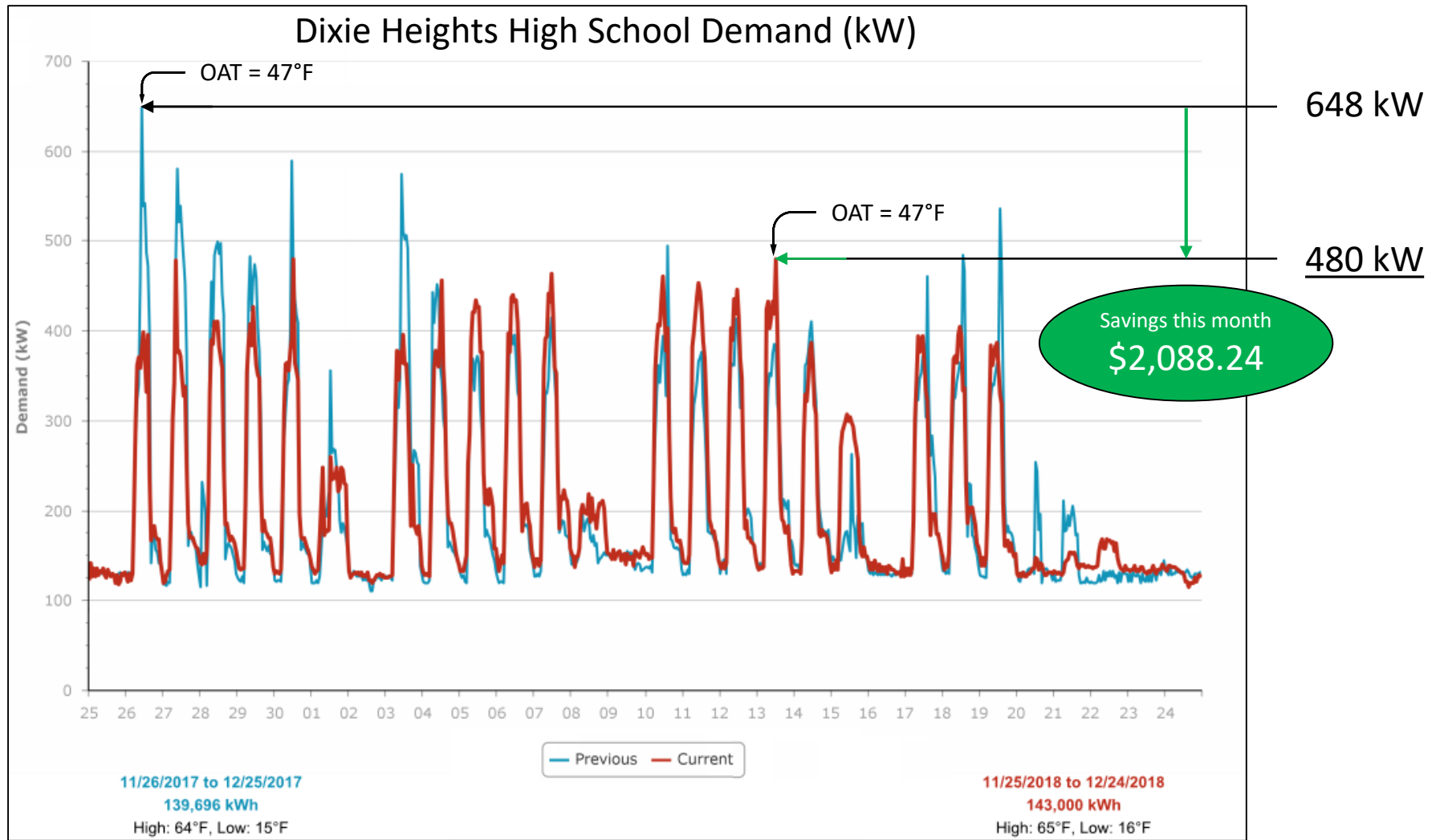
Major Scopes of Work

- LED lighting upgrades at 16 facilities
- HVAC controls improvements
- Power demand limiting improvements
- Beechgrove Elementary School complete HVAC renovation including new windows and roof coating




Beechgrove Roof Before and After

Power Demand Limiting in Action




How CMTA Calculates Saving

September Bill - Baseline

 To view information printed on the back of your bill please click or go to www.duke-energy.com/kentucky/billing/back-of-bill.asp		Page 2 of 2
Name	Service Address	Account Number
Kenton CO Bd Of Ed Summit View Campus	5002 Madison Pk Independence KY 41051	3450-2130-01-5
Explanation of Current Charges		
Electric Meter - 108124429	Duke Energy Rate DT01 - Distribution Service-TOD	
kWh Usage - 82,680	Customer Charge	
On Peak Actual kW - 822.00	Demand Chrg 822.00 kW @ \$ 12.07000000	9
Actual kVa - 875.20	Energy Chrg 82,680 kWh @ \$ 0.04747500	3
Power Factor - 93.5%	Elec DSM Rider 196.212 kWh @ \$ 0.00165400	
Off Peak kWh Usage - 113.532	Rider MSR-E 196.212 kWh 0.00000000	
Actual kW - 783.60	Rider PSM 196.212 kWh @ \$ 0.00454800cr	
Actual kVa - 837.40	Elec Fuel Adjustment 82,680 kWh @ \$ 0.00061900	
Power Factor - 93.6%		
Billed kWh - 82,680	Duke Energy Rate DT01 - Distribution Service-TOD	
Sep 17 - Oct 16 29 Days		

September Bill - 2018

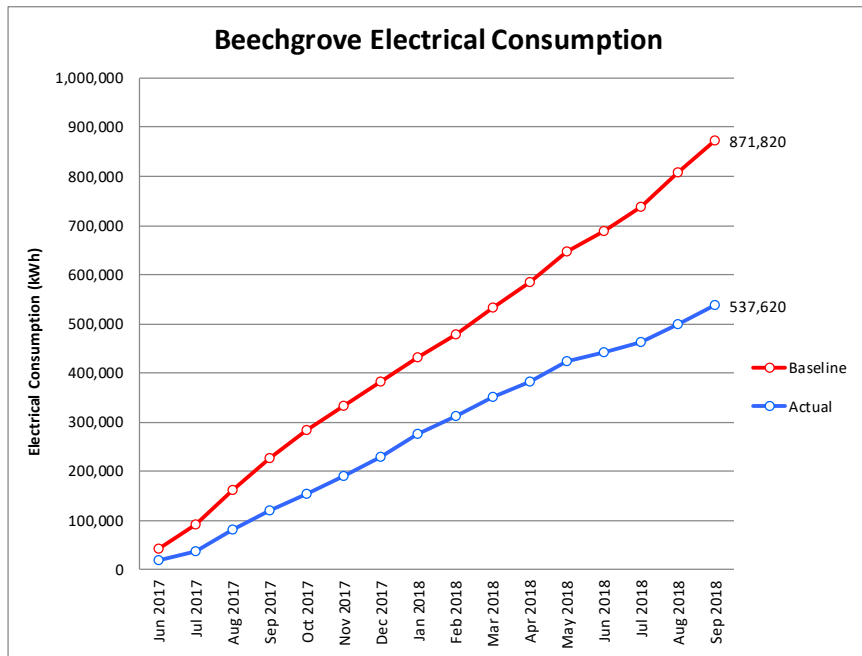
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Name	Service Address	Account Number
Kenton CO Bd Of Ed Summit View Campus	5006 Madison Pk Independence KY 41051	3450-2130-01-5
Explanation of Current Charges		
Electric Meter - 108124429	Duke Energy Rate DT01 - Distribution Service-TOD	
kWh Usage - 70,598	Old Rate Effective Sep 17 To Oct 08	
On Peak Actual kW - 698.40	Customer Charge	\$ 91.95
Actual kVa - 747.10	Demand Chrg 505.64 kW @ \$ 13.04000000	6,593.55
Power Factor - 93.5%	Energy Chrg 51,113 kWh @ \$ 0.04140300	2,116.23
Off Peak kWh Usage - 137,274	Elec DSM Rider 150,499 kWh @ \$ 0.00509100	766.19
Actual kW - 667.20	Rider PSM 150,499 kWh @ \$ 0.00140700cr	211.75cr
Actual kVa - 715.80	Elec Fuel Adjustment 51,113 kWh @ \$ 0.00504000	257.61
Power Factor - 93.2%	Rider ESM	1,075.00
Sep 17 - Oct 16 29 Days	Duke Energy Rate DT01 - Distribution Service-TOD	\$ 10,688.78

- $(82,680) - (70,598) = 12,082 \text{ kWh}$ Savings => \$593.02
- $(822.0) - (698.4) = 123.6 \text{ kW}$ Savings => \$1,580.84

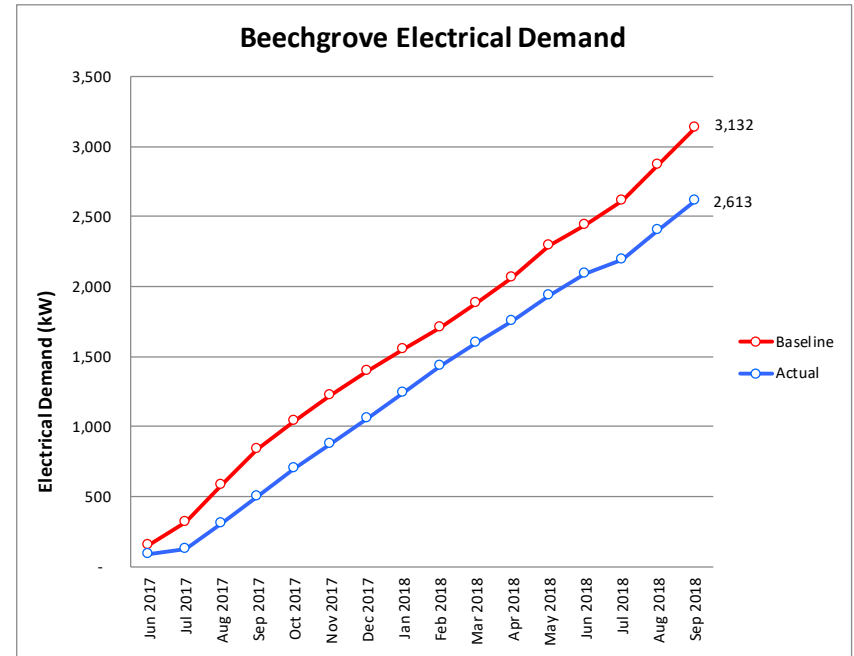
\$2,173.86 Savings Achieved
at Summit View in Sep. 2018

Beechgrove Elementary Year 1 Performance

- 38% reduction in electrical usage from baseline (kWh)



- 17% reduction of electrical demand from baseline (kW)

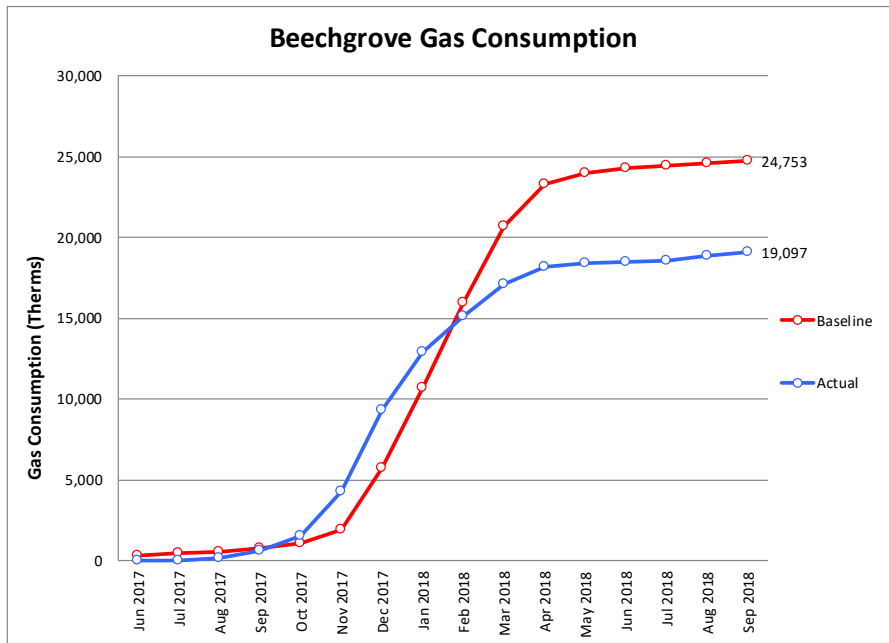


Beechgrove Elementary Year 1 Performance

- 23% reduction of natural gas usage from baseline (therms)

Analysis Period	Electricity (kWh)	Demand (kW)	Natural gas (therms)	Analysis Period Cost (\$)
Baseline	871,820	3,132	24,753	\$ 100,843
Target	743,028	3,142	13,504	\$ 84,064
2017-2018	537,620	2,613	19,097	\$ 69,376

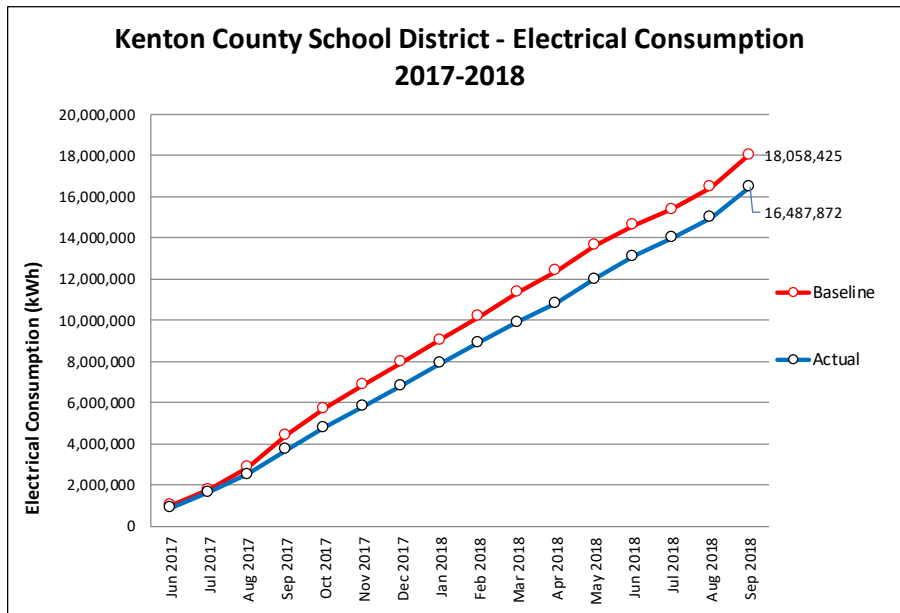
Target Savings	\$ 16,779
Actual Saving	\$ 31,468



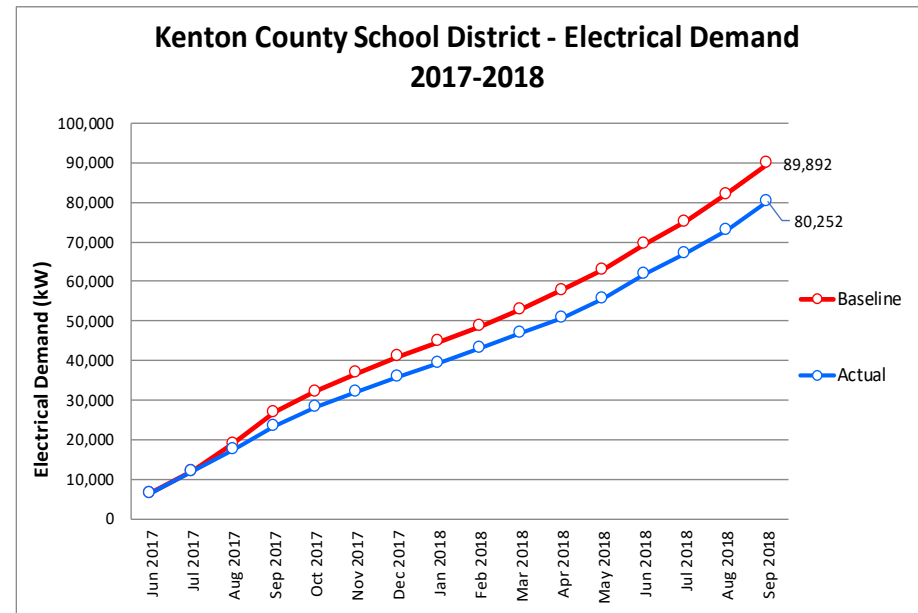
- \$31,468 saved
- 87% excess savings at Beechgrove Elementary

Project-Wide Performance

- 8.7% reduction in electrical usage from baseline (kWh)



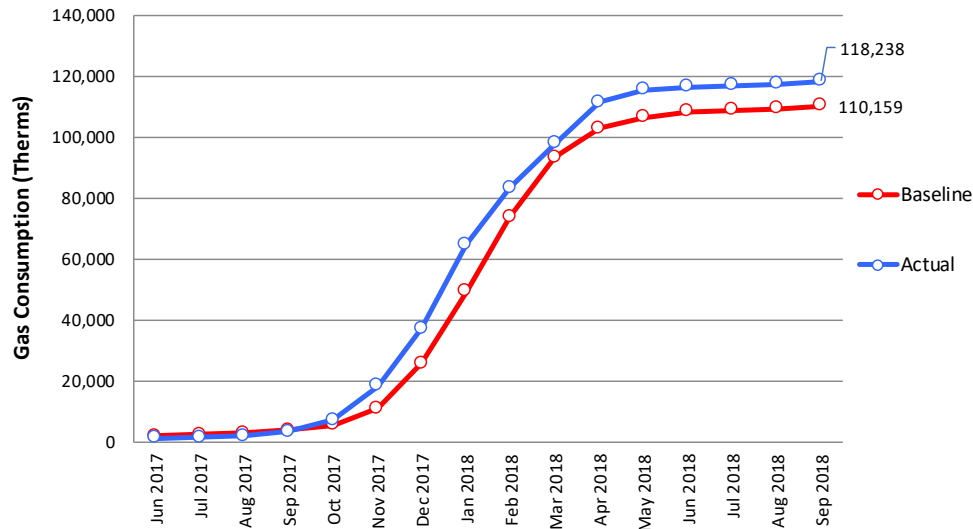
- 10.7% reduction of electrical demand from baseline (kW)



Project-Wide Performance

- 7.3% increase in natural gas usage from baseline (therms)

Kenton County School District - Gas Consumption
2017-2018



- Cooler weather in Year 1 accounting period than reflected in baseline years 2014 – 2016
 - Baseline winter average low **22.2°F**
 - Year 1 winter average low **17.8°F**
- Savings are not adjusted for weather

- Despite not meeting the natural gas usage guarantee, excess electrical savings and utility rebates accounted for the difference.

2017-2018 Savings Summary

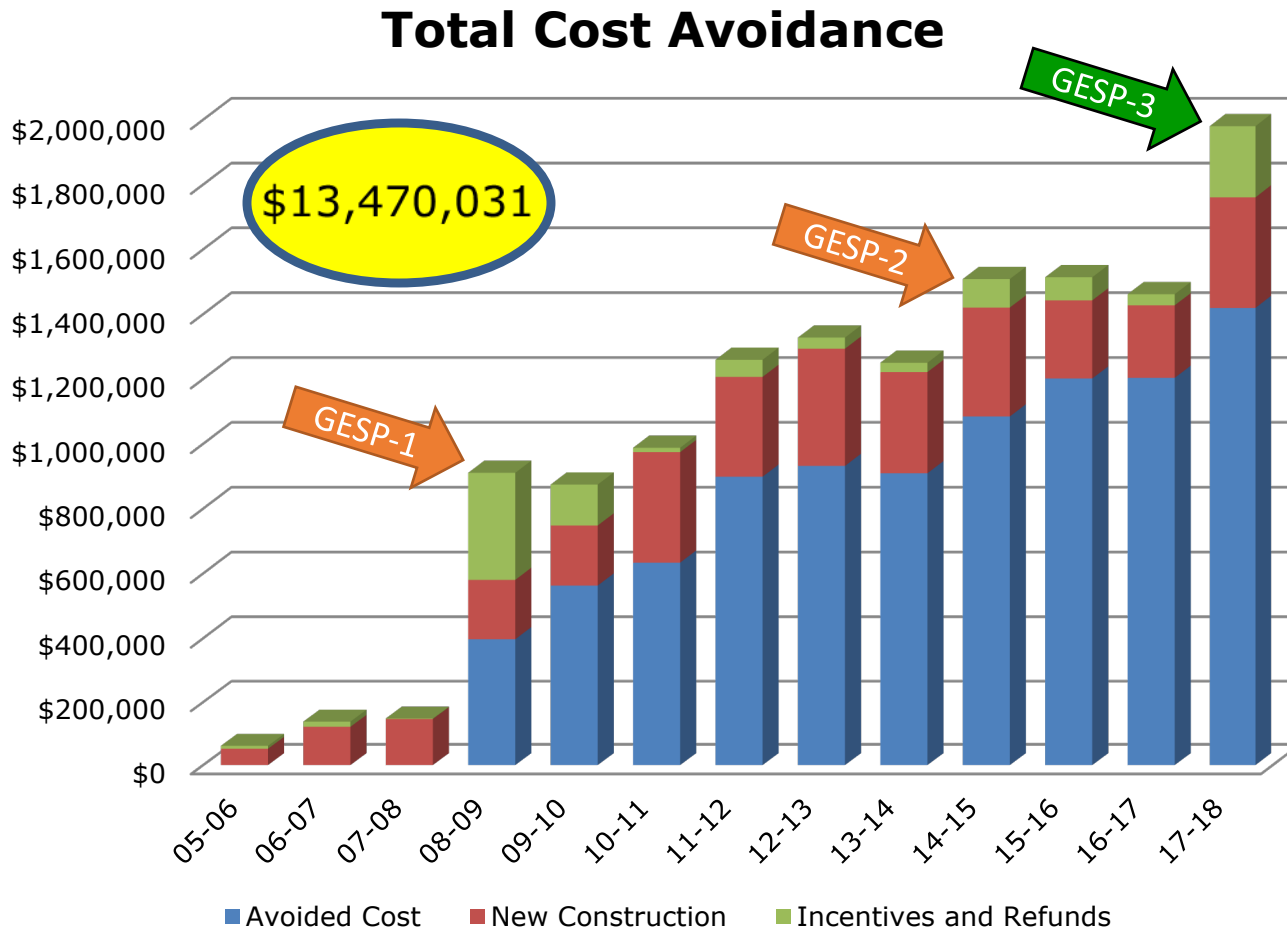
	Energy Saved	Dollar Value
Electric Consumption (kWh)	1,570,553	\$ 91,077
Electric Demand (kW)	9,640	\$ 99,628
Propane/Natural Gas (therms)	(8,079)	\$ (6,839)
Rebates	-	\$ 209,192
O&M Savings	-	\$ 31,892
Total Dollar Savings:		\$ 424,951

Total Year 1 Savings \$424,951

Savings Required to Cover 2018 Debt Service \$388,979

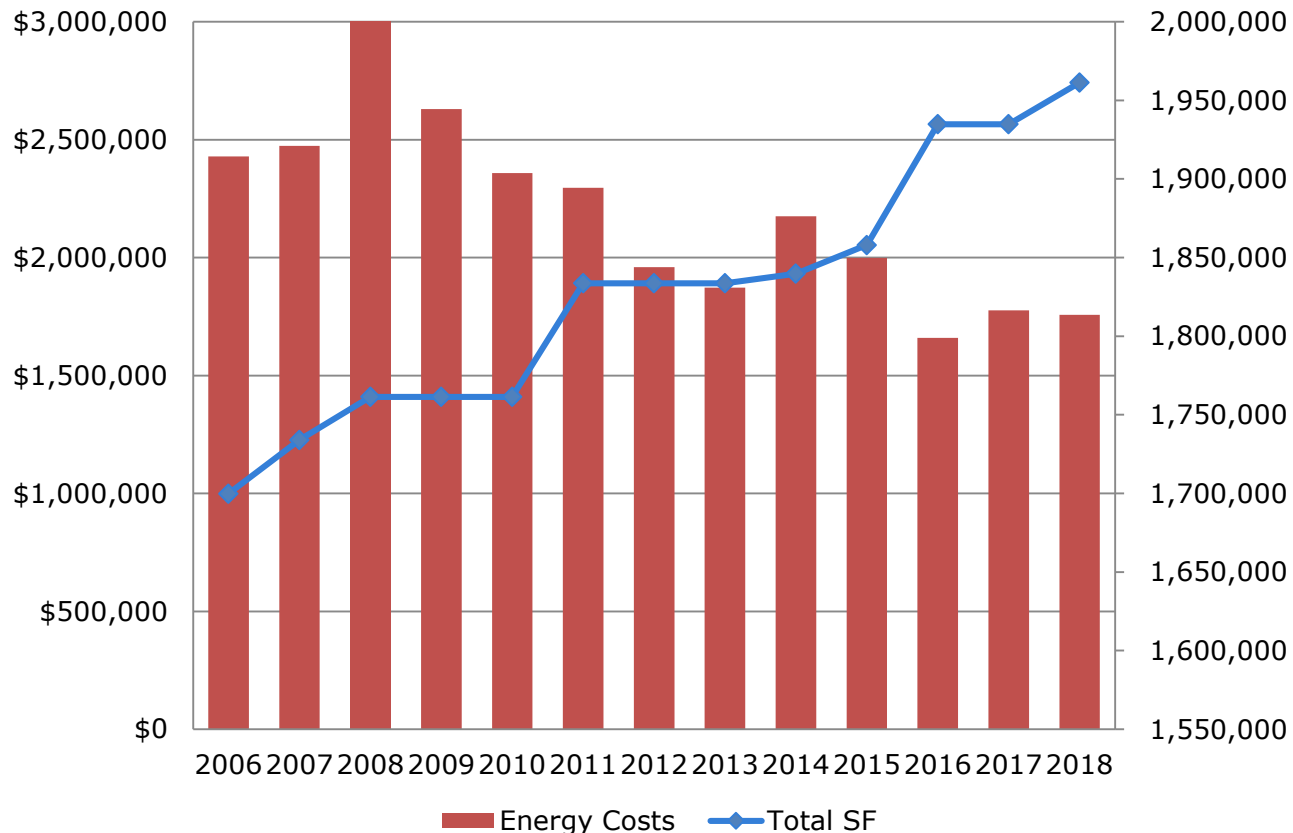
Surplus General Fund Savings \$35,972

2005-2018 Historical Cost Avoidance



2006-2018 Cost per Square Foot

Energy Cost vs Square Footage School Buildings Only



➤ **\$0.86 / Square Foot in 2018**

Questions