

LGEA Presentation

Clark Township & School District

March 7, 2023



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- *Township of Clark*
 - James Ulrich
 - Nicole Castellucci
- *Clark Twp BOE*
 - Paul Vizzuso
 - John Pingor
 - Edward Grande
- *Greener By Design*
 - Michael Duffy
 - Carol Mendez Benitez
 - Adam Zellner
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Moussa Traore – LGEA Lead Auditor
 - Meredith Coley – LGEA Account Manager
 - Eduardo Garcia – LGEA Project Auditor
 - Michelle Rossi – ESIP Coordinator (BPU)
- *Utility Energy Efficiency Programs*
 - Casey Hennessy – Elizabethtown Gas
 - Kim Byk – Elizabethtown Gas

AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified & other recommendations
- Energy Savings Improvement Program (ESIP)
- Energy Efficiency Incentive Programs
- Questions regarding the draft audit report
- Next steps for Clark Township and School District

LGEA PROCESS

- Application Approval
- Initial Call
- Facility Interviews
- Audit
- Benchmarking & Analysis
- Draft Reports
- LGEA Presentation
- Final Reports



SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Cooking & Refrigeration Equipment

Utility Consumption:

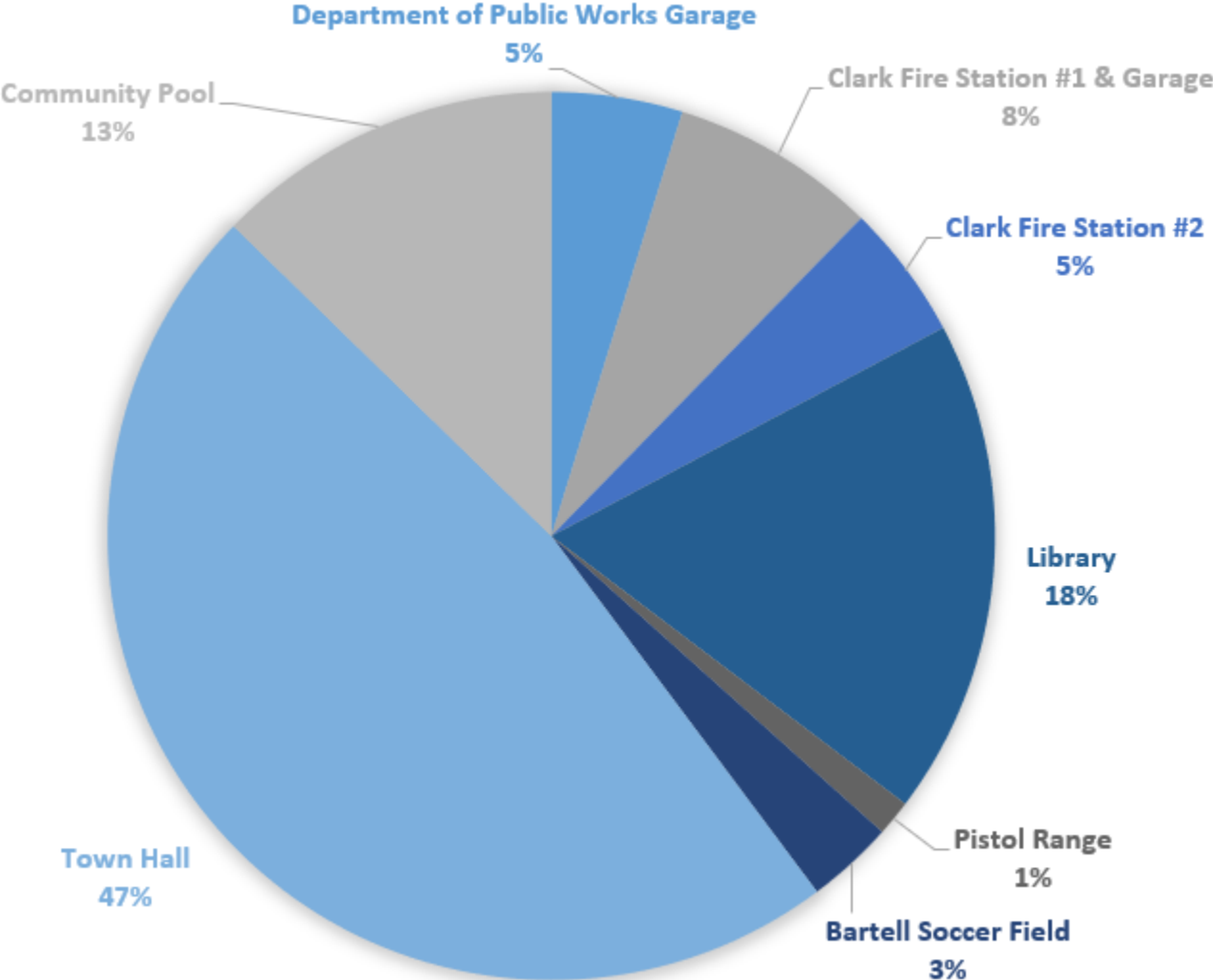
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

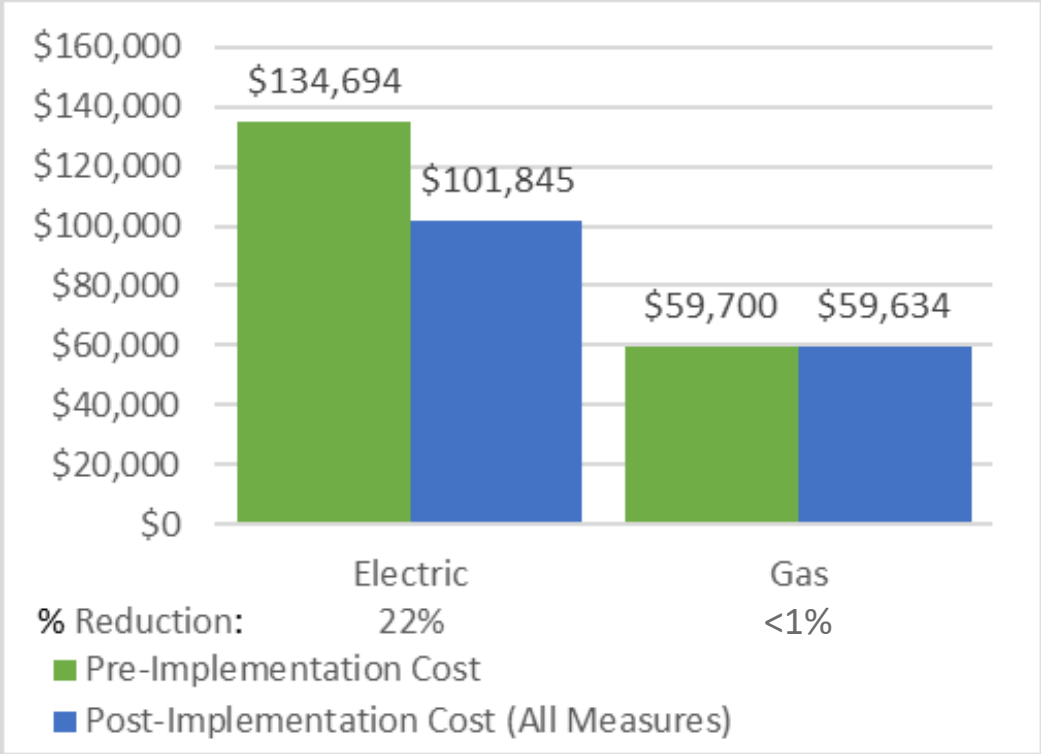
<u>Township</u>	<u>School District</u>
• Town Hall	• Valley Road Elementary School
• Pool	• Frank K Hehnly Elementary School
• Firehouse #1 & Garage	• Carl H Kumpf Middle School
• Firehouse #2	• Arthur L Johnson High School
• Soccer Field	
• Library	
• DPW Garage	
• Pistol Range	

CLARK TOWNSHIP UTILITY BREAKOUT

Percent of Total Annual Energy Costs

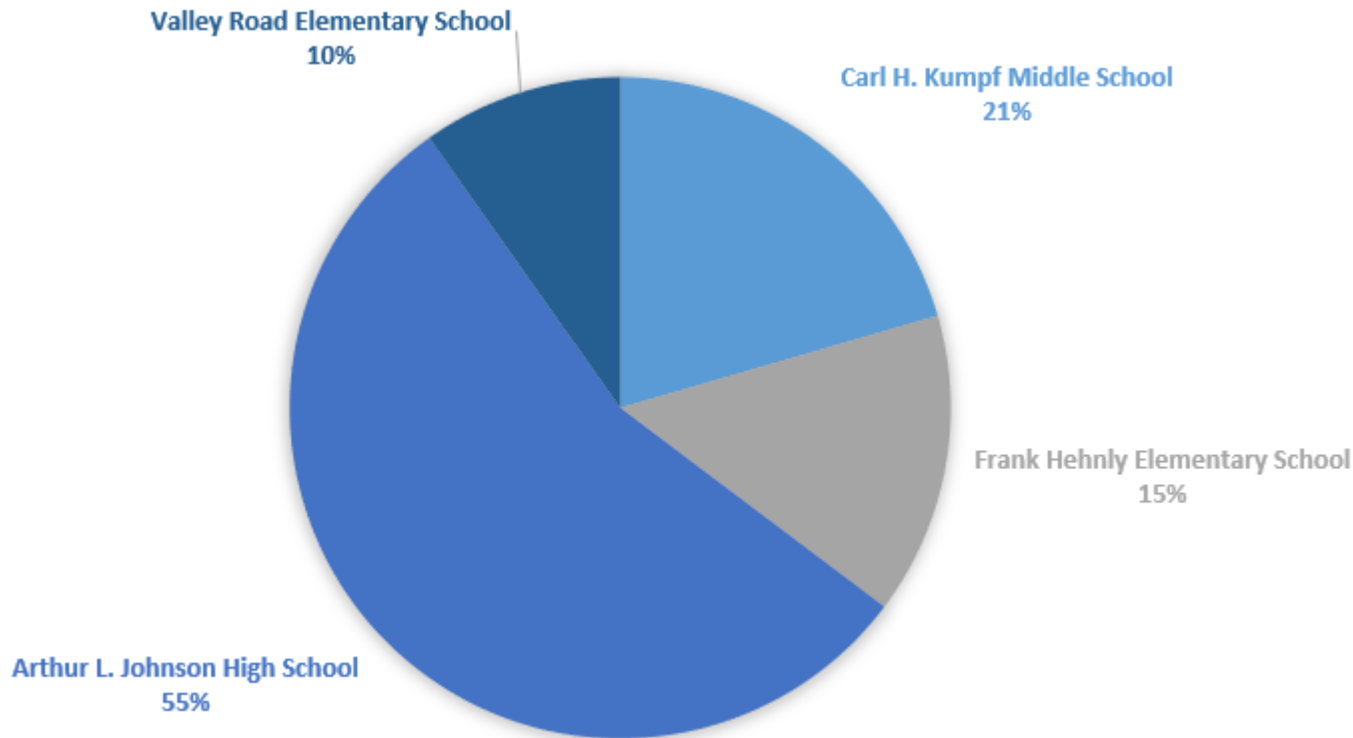


Pre & Post Implementation Cost

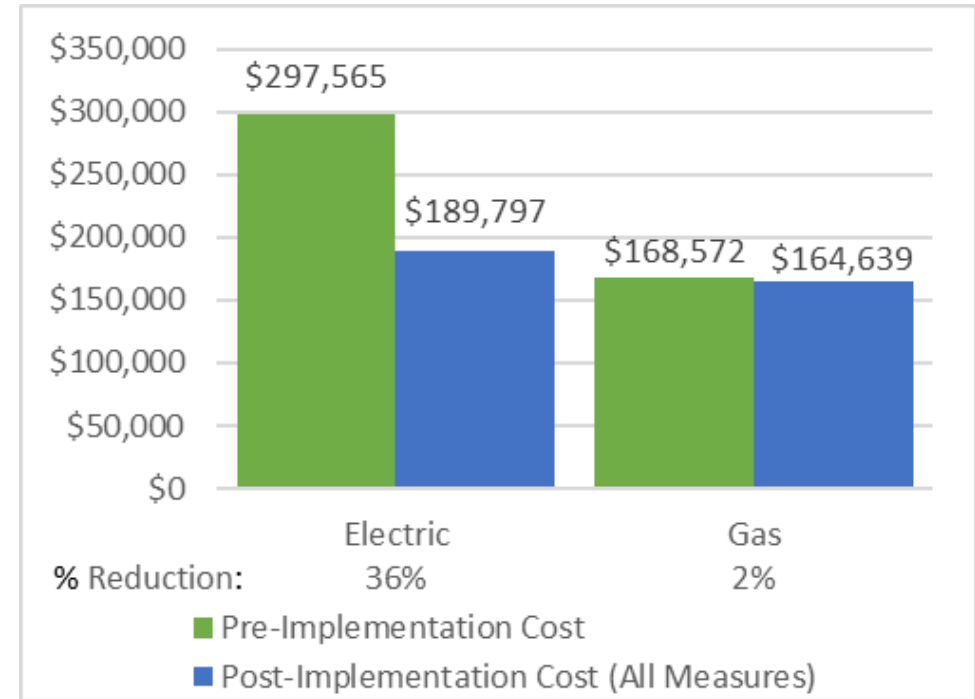


CLARK SCHOOL DISTRICT UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



CLARK TOWNSHIP BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

N/A

Clark Township Public Works Garage

Primary Property Type: Other - Public Services
Gross Floor Area (ft²): 5,550
Built: 1994

For Year Ending: October 31, 2021
Date Generated: January 16, 2023

ENERGY STAR® Score¹

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Clark Township Public Works Garage 303 Westfield Ave Clark, New Jersey 07066	Township of Clark 430 Westfield Ave Clark, NJ 07066 (732) 388-3600	James Ulrich 430 Westfield Avenue Clark, NJ 07066 (732) 388-3600 Ext. 3002 ba@ourclark.com

Property ID: 23774566

Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
93.1 kBtu/ft²	Electric - Grid (kBtu) 99,014 (19%) Natural Gas (kBtu) 417,496 (81%)	National Median Site EUI (kBtu/ft²) 64.4 National Median Source EUI (kBtu/ft²) 89.3 % Diff from National Median Source EUI 44%
Source EUI 128.9 kBtu/ft²		Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 31

Site EUI
93.1 kBtu/ft²

Source EUI
128.9 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	64.4
National Median Source EUI (kBtu/ft²)	89.3
% Diff from National Median Source EUI	44%

Site Name	ENERGY STAR® Score
All Buildings	N/A

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

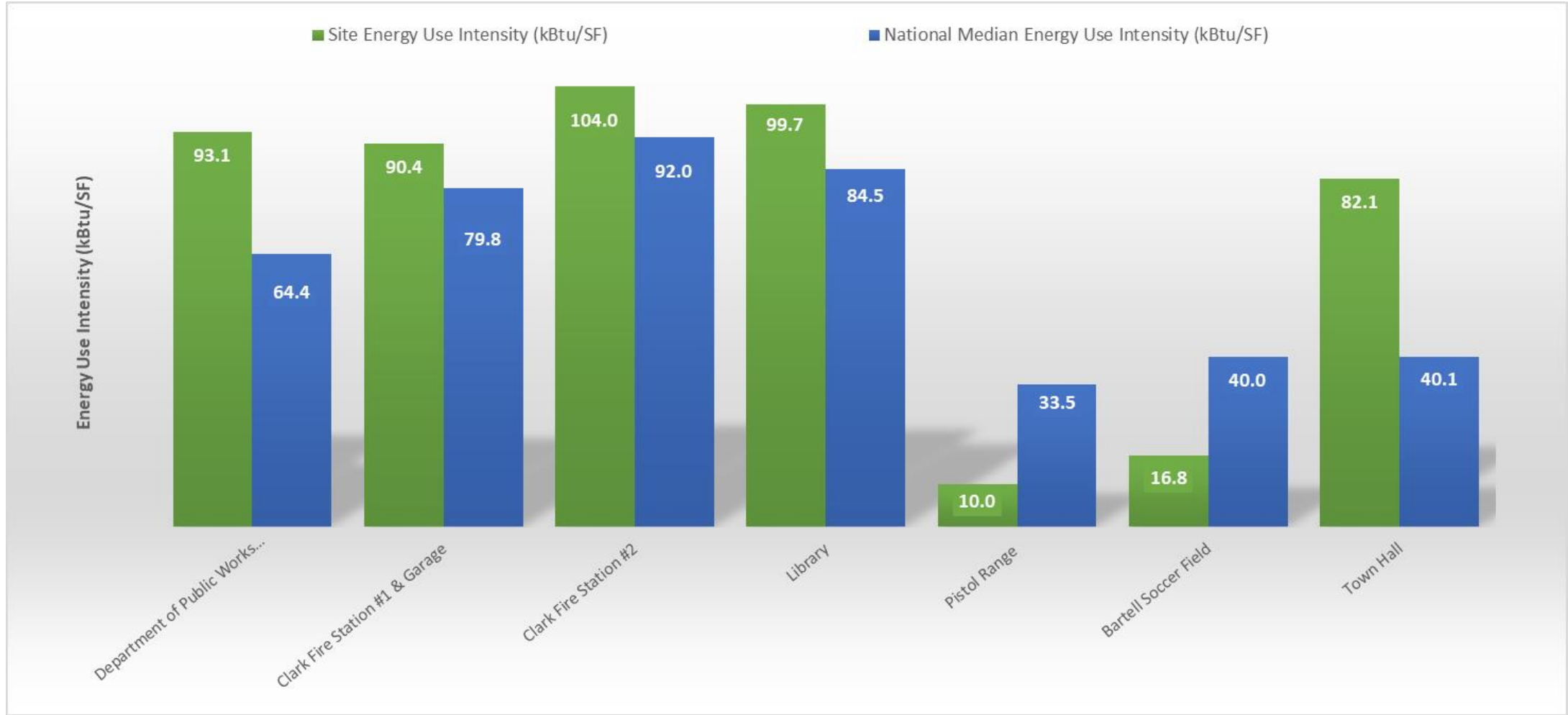
LP Signature: _____ Date: _____

Licensed Professional


Professional Engineer or Registered Architect Stamp (if applicable)

ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

CLARK TOWNSHIP BENCHMARKING



CLARK SCHOOL DISTRICT BENCHMARKING



ENERGY STAR® Statement of Energy Performance

27 Valley Road Elementary School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 40,612
Built: 1970

For Year Ending: November 30, 2021
Date Generated: November 01, 2022

ENERGY STAR® Score¹

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Valley Road Elementary School 150 Valley Road Clark, New Jersey 07066	Clark Public School District 365 Westfield Ave Clark, NJ 07066 (732) 574-9600	Paul Vizzuso 365 Westfield Ave Clark, NJ 07066 (732) 574-9600 ext 3354 pvizzuso@clarkschools.org

Property ID: 21589153

Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison
73.1 kBtu/ft²	Electric - Grid (kBtu) 854,514 (29%) Natural Gas (kBtu) 2,112,290 (71%)	National Median Site EUI (kBtu/ft²) 57.8 National Median Source EUI (kBtu/ft²) 89.8 % Diff from National Median Source EUI 26%
Source EUI		Annual Emissions
113.5 kBtu/ft²		Greenhouse Gas Emissions (Metric Tons CO2e/year) 187

Site EUI
73.1 kBtu/ft²

Source EUI
113.5 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	57.8
National Median Source EUI (kBtu/ft²)	89.8
% Diff from National Median Source EUI	26%

Site Name	ENERGY STAR® Score
Valley Road Elementary School	27
Frank K Hehnlly Elementary School	21
Carl H Kumpf Middle School	26
Arthur L Johnson High School	64

Signature & Stamp of Verifying Professional

(Name) verify that the above information is true and correct to the best of my knowledge.

LP Signature: _____ Date: _____

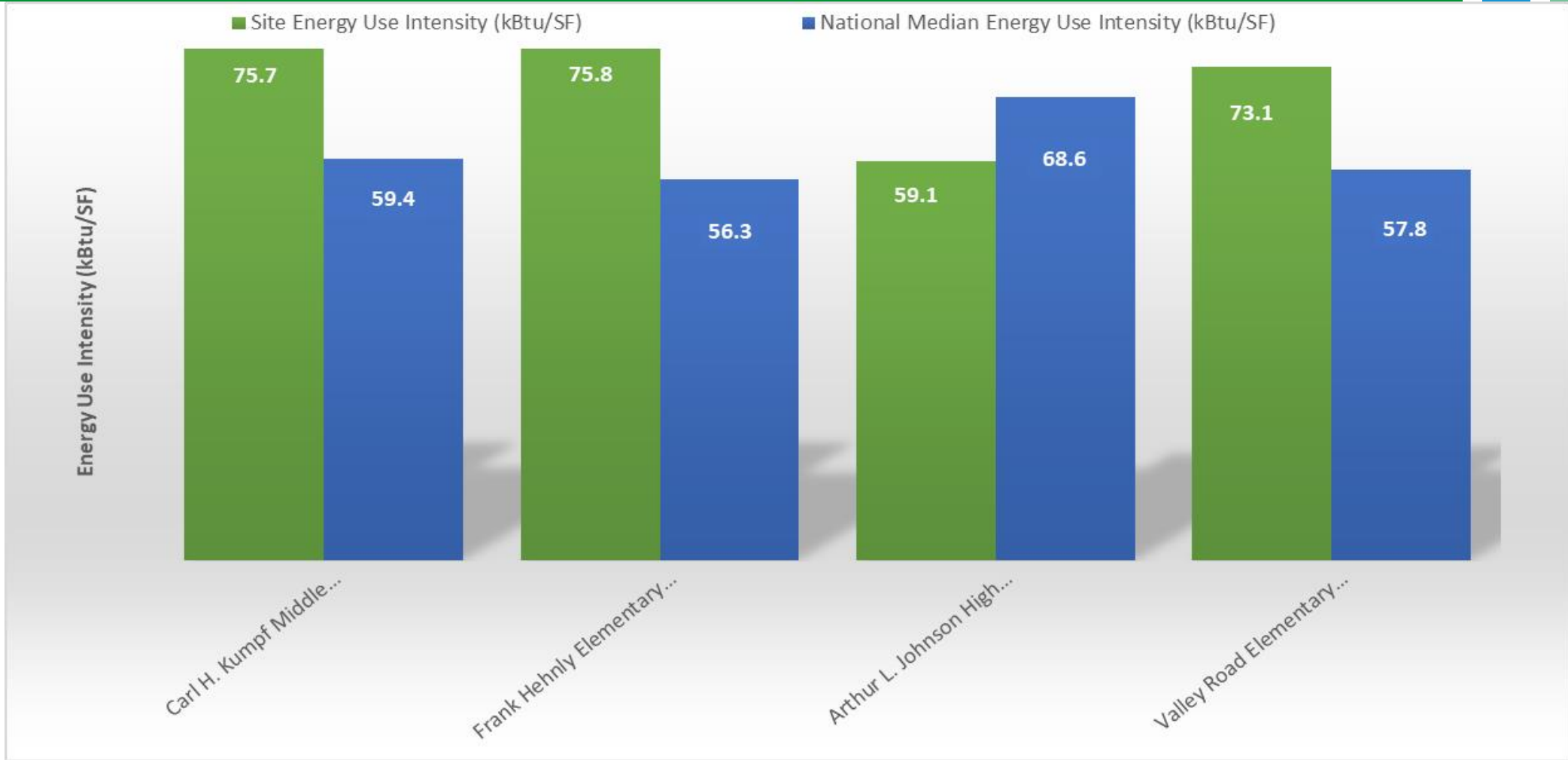
Licensed Professional

() - _____

Professional Engineer or Registered Architect Stamp (if applicable)

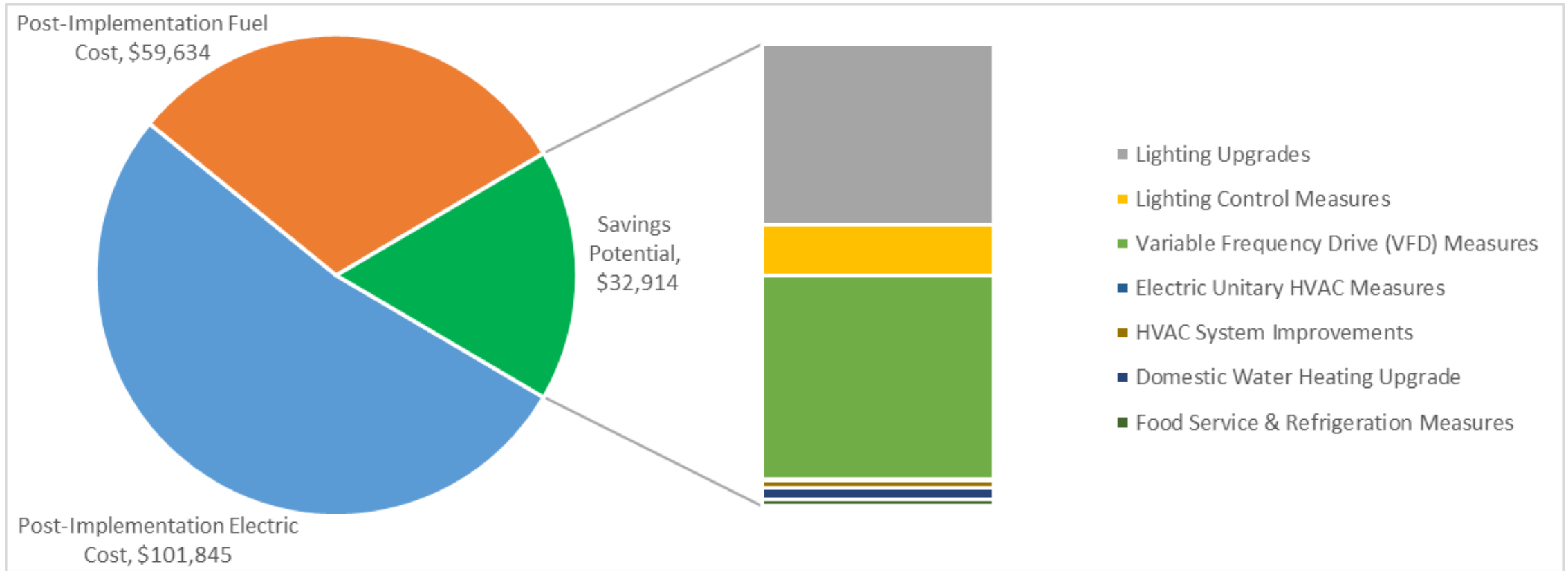
ENERGY STAR® scores are percentile ranking from 1 (least efficient) to 100 (most efficient). It compares your building's energy performance to similar buildings nationwide.

CLARK SCHOOL DISTRICT BENCHMARKING



CLARK TOWNSHIP - ALL OPPORTUNITIES

Savings Potential



CLARK TOWNSHIP - ALL OPPORTUNITIES

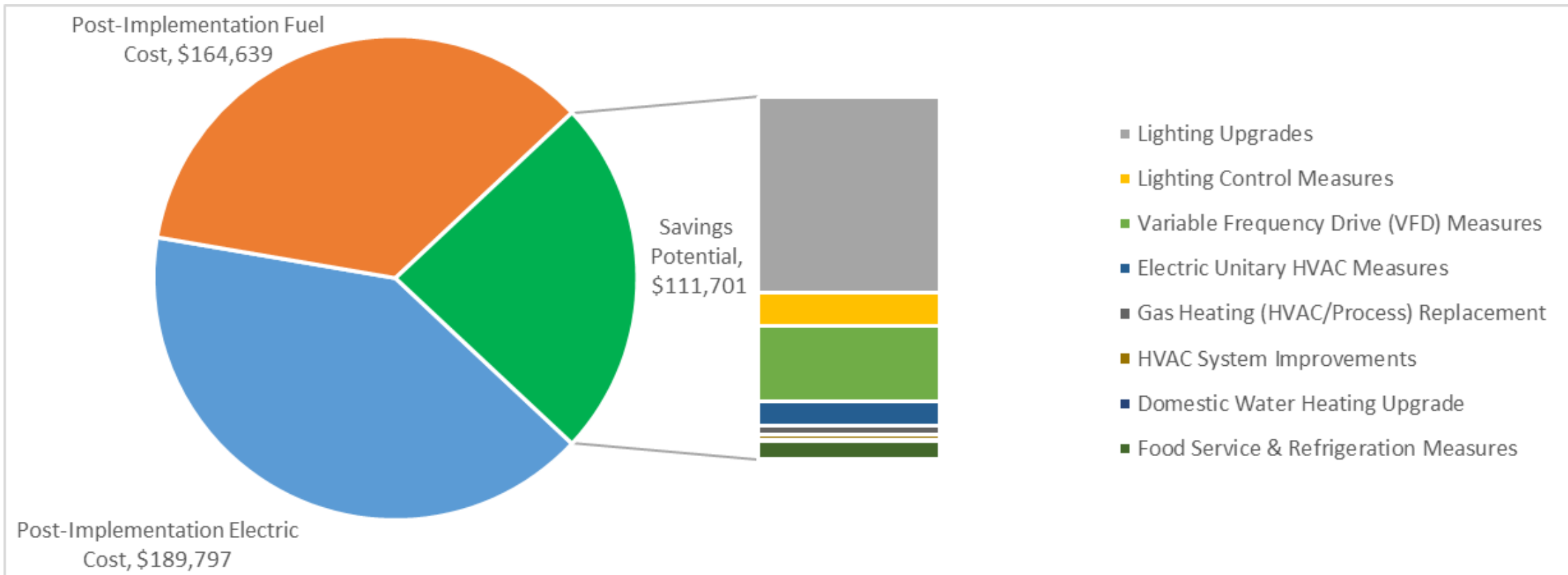
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		64,255	7.7	-7.7	\$12,891	\$36,153	\$2,505	\$33,648	2.6	63,807
ECM 1	Install LED Fixtures	21,888	0.0	0.0	\$6,122	\$22,260	\$400	\$21,860	3.6	22,041
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	234	0.1	0.0	\$39	\$153	\$20	\$133	3.5	232
ECM 3	Retrofit Fixtures with LED Lamps	28,122	6.4	-4.9	\$4,432	\$9,250	\$2,085	\$7,165	1.6	27,743
ECM 4	Install LED Exit Signs	14,010	1.3	-2.7	\$2,298	\$4,490	\$0	\$4,490	2.0	13,791
Lighting Control Measures		21,585	6.4	-4.4	\$3,563	\$26,765	\$8,595	\$18,170	5.1	21,220
ECM 5	Install Occupancy Sensor Lighting Controls	20,964	6.4	-4.4	\$3,464	\$26,045	\$8,595	\$17,450	5.0	20,594
ECM 6	Install Daylight Dimming/Photocell Controls	622	0.0	0.0	\$100	\$720	\$0	\$720	7.2	626
Variable Frequency Drive (VFD) Measures		81,130	7.9	0.0	\$14,543	\$101,666	\$5,850	\$95,816	6.6	81,697
ECM 7	Install VFDs on Constant Volume (CV) Fans	16,851	3.6	0.0	\$2,706	\$60,153	\$1,075	\$59,078	21.8	16,969
ECM 8	Install VFDs on Heating Water Pumps	13,162	3.6	0.0	\$2,371	\$14,520	\$1,275	\$13,245	5.6	13,254
ECM 9	Install VFDs on Process/Pool Filtration Pumps	51,116	0.7	0.0	\$9,465	\$26,993	\$3,500	\$23,493	2.5	51,474
Unitary HVAC Measures		474	0.1	0.0	\$109	\$942	\$0	\$942	8.6	477
ECM 10	Install High Efficiency Air Conditioning Units	474	0.1	0.0	\$109	\$942	\$0	\$942	8.6	477
HVAC System Improvements		2,651	0.0	1.9	\$513	\$1,754	\$280	\$1,474	2.9	2,891
ECM 11	Install Pipe Insulation	2,651	0.0	1.9	\$513	\$1,754	\$280	\$1,474	2.9	2,891
Domestic Water Heating Upgrade		3,628	0.0	15.5	\$791	\$1,220	\$324	\$896	1.1	5,471
ECM 12	Install Low-Flow DHW Devices	3,628	0.0	15.5	\$791	\$1,220	\$324	\$896	1.1	5,471
Food Service & Refrigeration Measures		3,224	0.4	0.0	\$504	\$460	\$100	\$360	0.7	3,246
ECM 13	Vending Machine Control	3,224	0.4	0.0	\$504	\$460	\$100	\$360	0.7	3,246
TOTALS		176,947	22.5	5.3	\$32,914	\$168,959	\$17,654	\$151,305	4.6	178,810

* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

CLARK SCHOOL DISTRICT - ALL OPPORTUNITIES

Savings Potential



CLARK SCHOOL DISTRICT - ALL OPPORTUNITIES

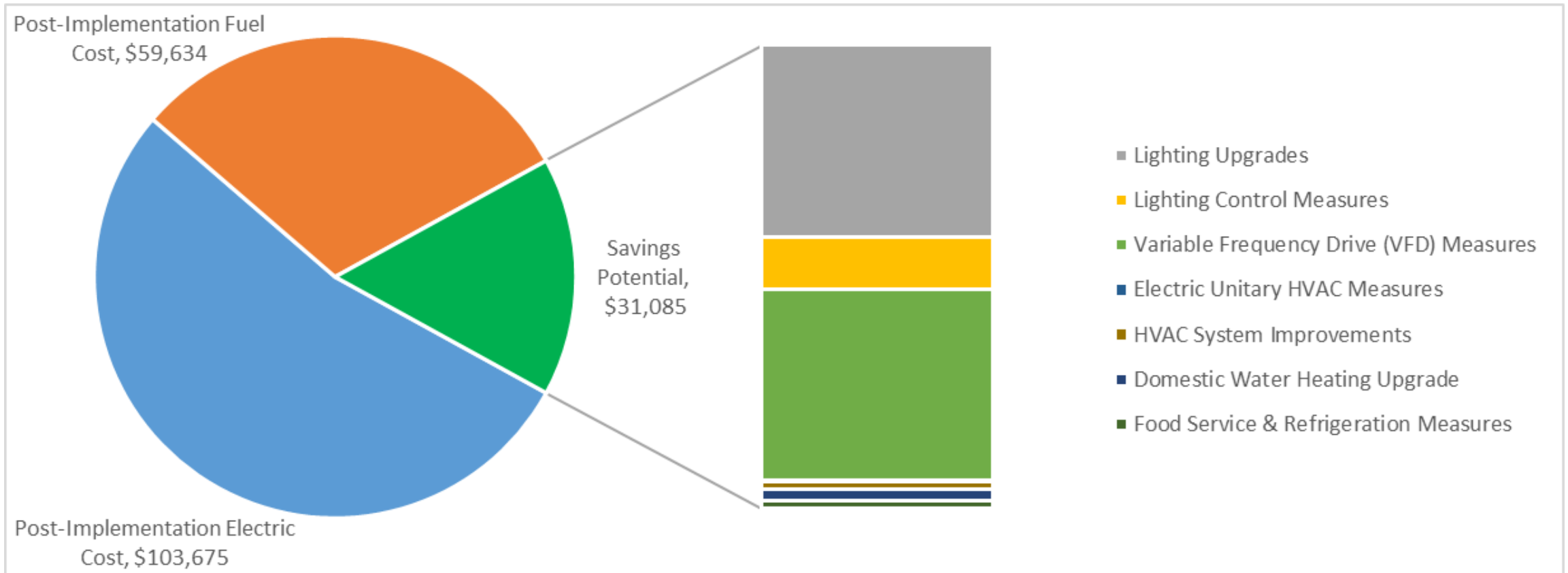
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		436,332	128.1	-89.6	\$60,438	\$206,243	\$51,407	\$154,836	2.6	428,896
ECM 1	Install LED Fixtures	15,658	6.8	-1.6	\$2,295	\$17,952	\$1,505	\$16,447	7.2	15,579
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	251	0.1	-0.1	\$37	\$202	\$20	\$182	4.9	246
ECM 3	Retrofit Fixtures with LED Lamps	420,423	121.1	-87.9	\$58,106	\$188,088	\$49,882	\$138,206	2.4	413,071
Lighting Control Measures		70,150	17.1	-14.7	\$10,255	\$77,446	\$21,515	\$55,931	5.5	68,923
ECM 4	Install Occupancy Sensor Lighting Controls	57,985	14.4	-12.1	\$8,519	\$57,646	\$7,270	\$50,376	5.9	56,971
ECM 5	Install High/Low Lighting Controls	12,165	2.7	-2.5	\$1,736	\$19,800	\$14,245	\$5,555	3.2	11,952
Variable Frequency Drive (VFD) Measures		155,420	57.0	26.1	\$23,173	\$175,034	\$17,375	\$157,659	6.8	159,559
ECM 6	Install VFDs on Constant Volume (CV) Fans	134,811	54.1	0.0	\$19,914	\$152,690	\$13,300	\$139,390	7.0	135,753
ECM 7	Install VFDs on Heating Water Pumps	17,229	2.9	0.0	\$2,461	\$18,953	\$4,000	\$14,953	6.1	17,349
ECM 8	Install VFDs on Kitchen Hood Fan Motors	3,380	0.0	26.1	\$797	\$3,391	\$75	\$3,316	4.2	6,456
Electric Unitary HVAC Measures		52,790	63.0	6.7	\$7,397	\$532,985	\$26,960	\$506,025	68.4	53,947
ECM 9	Install High Efficiency Air Conditioning Units	40,095	45.1	6.7	\$5,841	\$474,649	\$23,510	\$451,139	77.2	41,164
ECM 10	Install High Efficiency Heat Pumps	12,695	17.9	0.0	\$1,556	\$58,336	\$3,450	\$54,886	35.3	12,783
Gas Heating (HVAC/Process) Replacement		0	0.0	254.6	\$2,703	\$41,588	\$2,500	\$39,088	14.5	29,806
ECM 11	Install High Efficiency Furnaces	0	0.0	254.6	\$2,703	\$41,588	\$2,500	\$39,088	14.5	29,806
HVAC System Improvements		1,413	0.0	125.1	\$1,550	\$15,278	\$102	\$15,176	9.8	16,068
ECM 12	Implement Demand Control Ventilation (DCV)	1,413	0.0	106.0	\$1,363	\$14,954	\$0	\$14,954	11.0	13,834
ECM 13	Install Pipe Insulation	0	0.0	19.1	\$187	\$324	\$102	\$222	1.2	2,234
Domestic Water Heating Upgrade		0	0.0	54.6	\$570	\$825	\$412	\$412	0.7	6,389
ECM 14	Install Low-Flow DHW Devices	0	0.0	54.6	\$570	\$825	\$412	\$412	0.7	6,389
Food Service & Refrigeration Measures		37,177	4.1	13.3	\$5,615	\$32,469	\$2,455	\$30,014	5.3	38,988
ECM 15	Food Service Equipment Replacement	0	0.0	13.3	\$127	\$9,290	\$500	\$8,790	69.4	1,551
ECM 16	Dishwasher Replacement	23,216	2.7	0.0	\$3,411	\$18,540	\$1,400	\$17,140	5.0	23,378
ECM 17	Refrigerator/Freezer Case Electrically Commutated Motors	524	0.1	0.0	\$79	\$607	\$80	\$527	6.7	528
ECM 18	Refrigeration Controls	1,812	0.0	0.0	\$273	\$2,193	\$125	\$2,068	7.6	1,825
ECM 19	Vending Machine Control	11,625	1.3	0.0	\$1,726	\$1,840	\$350	\$1,490	0.9	11,707
TOTALS		753,282	269.2	376.0	\$111,701	\$1,081,866	\$122,726	\$959,140	8.6	802,576

* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

CLARK TOWNSHIP - COST EFFECTIVE OPPORTUNITIES

Savings Potential



CLARK TOWNSHIP - COST EFFECTIVE OPPORTUNITIES

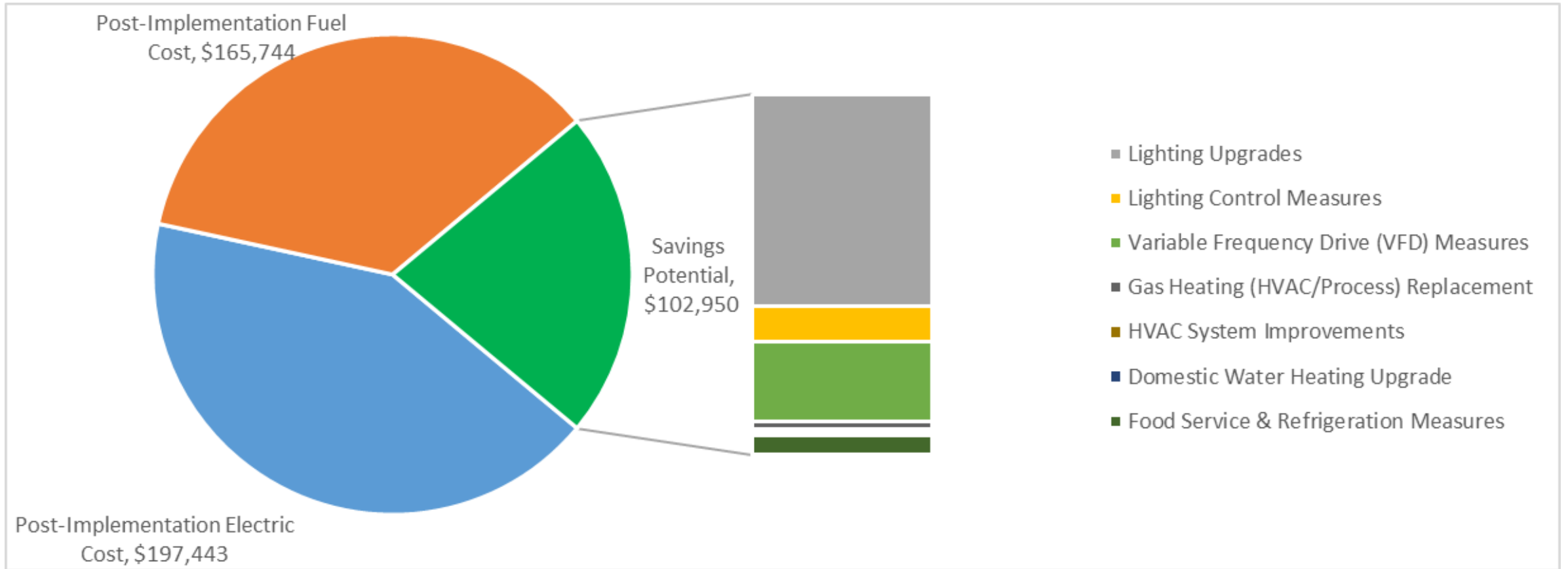
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Lighting Upgrades		64,255	7.7	-7.7	\$12,891	\$36,153	\$2,505	\$33,648	2.6	63,807
ECM 1	Install LED Fixtures	21,888	0.0	0.0	\$6,122	\$22,260	\$400	\$21,860	3.6	22,041
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	234	0.1	0.0	\$39	\$153	\$20	\$133	3.5	232
ECM 3	Retrofit Fixtures with LED Lamps	28,122	6.4	-4.9	\$4,432	\$9,250	\$2,085	\$7,165	1.6	27,743
ECM 4	Install LED Exit Signs	14,010	1.3	-2.7	\$2,298	\$4,490	\$0	\$4,490	2.0	13,791
Lighting Control Measures		21,322	6.2	-4.4	\$3,514	\$25,029	\$8,365	\$16,664	4.7	20,955
ECM 5	Install Occupancy Sensor Lighting Controls	20,701	6.2	-4.4	\$3,415	\$24,309	\$8,365	\$15,944	4.7	20,329
ECM 6	Install Daylight Dimming/Photocell Controls	622	0.0	0.0	\$100	\$720	\$0	\$720	7.2	626
Variable Frequency Drive (VFD) Measures		71,243	5.5	0.0	\$12,762	\$52,036	\$5,000	\$47,036	3.7	71,742
ECM 7	Install VFDs on Constant Volume (CV) Fans	6,965	1.2	0.0	\$926	\$10,523	\$225	\$10,298	11.1	7,014
ECM 8	Install VFDs on Heating Water Pumps	13,162	3.6	0.0	\$2,371	\$14,520	\$1,275	\$13,245	5.6	13,254
ECM 9	Install VFDs on Process/Pool Filtration Pumps	51,116	0.7	0.0	\$9,465	\$26,993	\$3,500	\$23,493	2.5	51,474
Unitary HVAC Measures		474	0.1	0.0	\$109	\$942	\$0	\$942	8.6	477
ECM 10	Install High Efficiency Air Conditioning Units	474	0.1	0.0	\$109	\$942	\$0	\$942	8.6	477
HVAC System Improvements		2,651	0.0	1.9	\$513	\$1,754	\$280	\$1,474	2.9	2,891
ECM 11	Install Pipe Insulation	2,651	0.0	1.9	\$513	\$1,754	\$280	\$1,474	2.9	2,891
Domestic Water Heating Upgrade		3,628	0.0	15.5	\$791	\$1,220	\$324	\$896	1.1	5,471
ECM 12	Install Low-Flow DHW Devices	3,628	0.0	15.5	\$791	\$1,220	\$324	\$896	1.1	5,471
Food Service & Refrigeration Measures		3,224	0.4	0.0	\$504	\$460	\$100	\$360	0.7	3,246
ECM 13	Vending Machine Control	3,224	0.4	0.0	\$504	\$460	\$100	\$360	0.7	3,246
TOTALS		166,797	20.0	5.3	\$31,085	\$117,593	\$16,574	\$101,019	3.2	168,589

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CLARK SCHOOL DISTRICT - COST EFFECTIVE OPPORTUNITIES

Savings Potential



CLARK SCHOOL DISTRICT - COST EFFECTIVE OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		436,332	128.1	-89.6	\$60,438	\$206,243	\$51,407	\$154,836	2.6	428,896
ECM 1	Install LED Fixtures	15,658	6.8	-1.6	\$2,295	\$17,952	\$1,505	\$16,447	7.2	15,579
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	251	0.1	-0.1	\$37	\$202	\$20	\$182	4.9	246
ECM 3	Retrofit Fixtures with LED Lamps	420,423	121.1	-87.9	\$58,106	\$188,088	\$49,882	\$138,206	2.4	413,071
Lighting Control Measures		70,150	17.1	-14.7	\$10,255	\$77,446	\$21,515	\$55,931	5.5	68,923
ECM 4	Install Occupancy Sensor Lighting Controls	57,985	14.4	-12.1	\$8,519	\$57,646	\$7,270	\$50,376	5.9	56,971
ECM 5	Install High/Low Lighting Controls	12,165	2.7	-2.5	\$1,736	\$19,800	\$14,245	\$5,555	3.2	11,952
Variable Frequency Drive (VFD) Measures		151,573	55.8	26.1	\$22,807	\$168,512	\$17,175	\$151,337	6.6	155,685
ECM 6	Install VFDs on Constant Volume (CV) Fans	130,964	52.9	0.0	\$19,548	\$146,168	\$13,100	\$133,068	6.8	131,879
ECM 7	Install VFDs on Heating Water Pumps	17,229	2.9	0.0	\$2,461	\$18,953	\$4,000	\$14,953	6.1	17,349
ECM 8	Install VFDs on Kitchen Hood Fan Motors	3,380	0.0	26.1	\$797	\$3,391	\$75	\$3,316	4.2	6,456
Gas Heating (HVAC/Process) Replacement		0	0.0	180.7	\$1,997	\$27,807	\$1,500	\$26,307	13.2	21,157
ECM 11	Install High Efficiency Furnaces	0	0.0	180.7	\$1,997	\$27,807	\$1,500	\$26,307	13.2	21,157
HVAC System Improvements		1,198	0.0	112.0	\$1,394	\$12,559	\$102	\$12,457	8.9	14,317
ECM 12	Implement Demand Control Ventilation (DCV)	1,198	0.0	92.9	\$1,207	\$12,235	\$0	\$12,235	10.1	12,083
ECM 13	Install Pipe Insulation	0	0.0	19.1	\$187	\$324	\$102	\$222	1.2	2,234
Domestic Water Heating Upgrade		0	0.0	54.6	\$570	\$825	\$412	\$412	0.7	6,389
ECM 14	Install Low-Flow DHW Devices	0	0.0	54.6	\$570	\$825	\$412	\$412	0.7	6,389
Food Service & Refrigeration Measures		37,177	4.1	0.0	\$5,489	\$23,179	\$1,955	\$21,224	3.9	37,437
ECM 16	Dishwasher Replacement	23,216	2.7	0.0	\$3,411	\$18,540	\$1,400	\$17,140	5.0	23,378
ECM 17	Refrigerator/Freezer Case Electrically Commutated Motors	524	0.1	0.0	\$79	\$607	\$80	\$527	6.7	528
ECM 18	Refrigeration Controls	1,812	0.0	0.0	\$273	\$2,193	\$125	\$2,068	7.6	1,825
ECM 19	Vending Machine Control	11,625	1.3	0.0	\$1,726	\$1,840	\$350	\$1,490	0.9	11,707
TOTALS		696,431	205.1	269.1	\$102,950	\$516,571	\$94,066	\$422,504	4.1	732,804

* - All incentives presented in this table are included as placeholders and are based on previously run state rebate programs. Contact your utility provider for details on current programs

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

CLARK TOWNSHIP – INDIVIDUAL BUILDING SUMMARY TABLES



TOWN HALL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			30,117	2.7	-2	\$4,680	\$6,278	\$880	\$5,398	1.2	30,049
ECM 1	Install LED Fixtures	Yes	18,650	0.0	0	\$2,915	\$1,982	\$250	\$1,732	0.6	18,780
ECM 2	Retrofit Fixtures with LED Lamps	Yes	5,685	2.1	-1	\$876	\$2,485	\$630	\$1,855	2.1	5,588
ECM 3	Install LED Exit Signs	Yes	5,782	0.6	-1	\$890	\$1,810	\$0	\$1,810	2.0	5,680
Lighting Control Measures			6,902	2.5	-1	\$1,064	\$10,380	\$2,030	\$8,350	7.8	6,794
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	6,394	2.5	-1	\$984	\$10,180	\$2,030	\$8,150	8.3	6,282
ECM 5	Install Photocell Controls	Yes	508	0.0	0	\$79	\$200	\$0	\$200	2.5	512
Domestic Water Heating Upgrade			1,946	0.0	3	\$334	\$158	\$73	\$85	0.3	2,274
ECM 6	Install Low-Flow DHW Devices	Yes	1,946	0.0	3	\$334	\$158	\$73	\$85	0.3	2,274
Food Service & Refrigeration Measures			3,224	0.4	0	\$504	\$460	\$100	\$360	0.7	3,246
ECM 7	Vending Machine Control	Yes	3,224	0.4	0	\$504	\$460	\$100	\$360	0.7	3,246
TOTALS (COST EFFECTIVE MEASURES)			42,188	5.5	-1	\$6,582	\$17,276	\$3,083	\$14,193	2.2	42,362
TOTALS (ALL MEASURES)			42,188	5.5	-1	\$6,582	\$17,276	\$3,083	\$14,193	2.2	42,362

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

POOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			2,554	0.6	0	\$473	\$1,412	\$233	\$1,179	2.5	2,572
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	91	0.0	0	\$17	\$69	\$10	\$59	3.5	91
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,202	0.5	0	\$223	\$909	\$223	\$686	3.1	1,210
ECM 3	Install LED Exit Signs	Yes	1,261	0.1	0	\$234	\$434	\$0	\$434	1.9	1,270
Lighting Control Measures			263	0.1	0	\$49	\$1,736	\$230	\$1,506	30.9	265
ECM 4	Install Occupancy Sensor Lighting Controls	No	263	0.1	0	\$49	\$1,736	\$230	\$1,506	30.9	265
Variable Frequency Drive (VFD) Measures			51,116	0.7	0	\$9,465	\$26,993	\$3,500	\$23,493	2.5	51,474
ECM 5	Install VFDs on Process/Pool Filtration Pumps	Yes	51,116	0.7	0	\$9,465	\$26,993	\$3,500	\$23,493	2.5	51,474
HVAC System Improvements			2,651	0.0	0	\$491	\$1,515	\$240	\$1,275	2.6	2,670
ECM 6	Install Pipe Insulation	Yes	2,651	0.0	0	\$491	\$1,515	\$240	\$1,275	2.6	2,670
Domestic Water Heating Upgrade			1,339	0.0	0	\$248	\$808	\$163	\$644	2.6	1,348
ECM 7	Install Low-Flow DHW Devices	Yes	1,339	0.0	0	\$248	\$808	\$163	\$644	2.6	1,348
TOTALS (COST EFFECTIVE MEASURES)			57,660	1.3	0	\$10,677	\$30,728	\$4,136	\$26,591	2.5	58,063
TOTALS (ALL MEASURES)			57,923	1.4	0	\$10,726	\$32,464	\$4,366	\$28,097	2.6	58,328

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

FIREHOUSE #1 & GARAGE

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			7,023	0.7	-1	\$921	\$1,912	\$329	\$1,583	1.7	6,936
ECM 1	Install LED Fixtures	Yes	1,288	0.0	0	\$171	\$788	\$150	\$638	3.7	1,297
ECM 2	Retrofit Fixtures with LED Lamps	Yes	5,315	0.7	-1	\$695	\$979	\$179	\$800	1.2	5,227
ECM 3	Install LED Exit Signs	Yes	420	0.0	0	\$55	\$145	\$0	\$145	2.6	412
Lighting Control Measures			907	0.1	0	\$118	\$2,168	\$270	\$1,898	16.0	891
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	846	0.1	0	\$110	\$1,968	\$270	\$1,698	15.4	829
ECM 5	Install Photocell Controls	Yes	61	0.0	0	\$8	\$200	\$0	\$200	24.5	62
Variable Frequency Drive (VFD) Measures			6,965	1.2	0	\$926	\$10,523	\$225	\$10,298	11.1	7,014
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	6,965	1.2	0	\$926	\$10,523	\$225	\$10,298	11.1	7,014
Domestic Water Heating Upgrade			0	0.0	4	\$42	\$57	\$26	\$32	0.8	444
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	4	\$42	\$57	\$26	\$32	0.8	444
TOTALS (COST EFFECTIVE MEASURES)			14,895	2.0	2	\$2,007	\$14,660	\$850	\$13,811	6.9	15,285
TOTALS (ALL MEASURES)			14,895	2.0	2	\$2,007	\$14,660	\$850	\$13,811	6.9	15,285

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

FIREHOUSE #2

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			6,977	1.4	-1	\$964	\$2,007	\$451	\$1,556	1.6	6,852
ECM 1	Retrofit Fixtures with LED Lamps	Yes	6,296	1.3	-1	\$870	\$1,790	\$451	\$1,339	1.5	6,183
ECM 2	Install LED Exit Signs	Yes	681	0.1	0	\$94	\$217	\$0	\$217	2.3	669
Lighting Control Measures			1,733	0.4	0	\$239	\$1,466	\$195	\$1,271	5.3	1,702
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,733	0.4	0	\$239	\$1,466	\$195	\$1,271	5.3	1,702
Domestic Water Heating Upgrade			0	0.0	2	\$28	\$118	\$28	\$90	3.2	281
ECM 4	Install Low-Flow DHW Devices	Yes	0	0.0	2	\$28	\$118	\$28	\$90	3.2	281
TOTALS (COST EFFECTIVE MEASURES)			8,710	1.7	1	\$1,232	\$3,591	\$674	\$2,917	2.4	8,835
TOTALS (ALL MEASURES)			8,710	1.7	1	\$1,232	\$3,591	\$674	\$2,917	2.4	8,835

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

Soccer Field

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			1,950	0.0	0	\$3,037	\$19,490	\$1,200	\$18,290	6.0	1,964
ECM 1	Install LED Fixtures	Yes	1,950	0.0	0	\$3,037	\$19,490	\$1,200	\$18,290	6.0	1,964
TOTALS (COST EFFECTIVE MEASURES)			1,950	0.0	0	\$3,037	\$19,490	\$1,200	\$18,290	6.0	1,964
TOTALS (ALL MEASURES)			1,950	0.0	0	\$3,037	\$19,490	\$1,200	\$18,290	6.0	1,964

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

LIBRARY

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			10,196	1.3	-2	\$1,817	\$3,137	\$265	\$2,872	1.6	10,067
ECM 1	Retrofit Fixtures with LED Lamps	Yes	4,973	0.8	-1	\$889	\$1,471	\$265	\$1,206	1.4	4,938
ECM 2	Install LED Exit Signs	Yes	5,222	0.5	-1	\$928	\$1,666	\$0	\$1,666	1.8	5,129
Lighting Control Measures			10,745	3.0	-2	\$1,909	\$9,767	\$5,710	\$4,057	2.1	10,552
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	10,745	3.0	-2	\$1,909	\$9,767	\$5,710	\$4,057	2.1	10,552
Variable Frequency Drive (VFD) Measures			21,862	5.7	0	\$3,939	\$55,096	\$1,975	\$53,121	13.5	22,015
ECM 4	Install VFDs on Constant Volume (CV) Fans	No	8,699	2.2	0	\$1,567	\$40,576	\$700	\$39,876	25.4	8,760
ECM 5	Install VFDs on Heating Water Pumps	Yes	13,162	3.6	0	\$2,371	\$14,520	\$1,275	\$13,245	5.6	13,254
HVAC System Improvements			0	0.0	2	\$22	\$239	\$40	\$199	9.0	221
ECM 6	Install Pipe Insulation	Yes	0	0.0	2	\$22	\$239	\$40	\$199	9.0	221
Domestic Water Heating Upgrade			343	0.0	6	\$128	\$65	\$28	\$37	0.3	1,013
ECM 7	Install Low-Flow DHW Devices	Yes	343	0.0	6	\$128	\$65	\$28	\$37	0.3	1,013
TOTALS (COST EFFECTIVE MEASURES)			34,447	7.9	4	\$6,248	\$27,727	\$7,318	\$20,409	3.3	35,108
TOTALS (ALL MEASURES)			43,146	10.0	4	\$7,815	\$68,302	\$8,018	\$60,285	7.7	43,868

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

DPW GARAGE

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			2,932	0.8	-1	\$445	\$1,233	\$265	\$968	2.2	2,875
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	143	0.0	0	\$22	\$84	\$10	\$74	3.4	140
ECM 2	Retrofit Fixtures with LED Lamps	Yes	2,146	0.7	0	\$326	\$931	\$255	\$676	2.1	2,104
ECM 3	Install LED Exit Signs	Yes	643	0.1	0	\$98	\$217	\$0	\$217	2.2	631
Lighting Control Measures			613	0.2	0	\$93	\$896	\$120	\$776	8.3	601
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	613	0.2	0	\$93	\$696	\$120	\$576	6.2	601
ECM 5	Install Photocell Controls	Yes	0	0.0	0	\$0	\$200	\$0	\$200	0.0	0
Variable Frequency Drive (VFD) Measures			791	0.2	0	\$122	\$6,036	\$100	\$5,936	48.6	797
ECM 6	Install VFDs on Constant Volume (CV) Fans	No	791	0.2	0	\$122	\$6,036	\$100	\$5,936	48.6	797
Domestic Water Heating Upgrade			0	0.0	1	\$11	\$14	\$7	\$7	0.7	111
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$11	\$14	\$7	\$7	0.7	111
TOTALS (COST EFFECTIVE MEASURES)			3,545	1.0	0	\$549	\$2,143	\$392	\$1,751	3.2	3,587
TOTALS (ALL MEASURES)			4,336	1.2	0	\$671	\$8,179	\$492	\$7,687	11.4	4,384

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

PISTOL RANGE

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			2,505	0.2	0	\$555	\$684	\$82	\$602	1.1	2,492
ECM 1	Retrofit Fixtures with LED Lamps	Yes	2,505	0.2	0	\$555	\$684	\$82	\$602	1.1	2,492
Lighting Control Measures			422	0.1	0	\$90	\$352	\$40	\$312	3.5	416
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	370	0.1	0	\$78	\$232	\$40	\$192	2.5	363
ECM 3	Install Photocell Controls	Yes	52	0.0	0	\$12	\$120	\$0	\$120	10.0	53
Variable Frequency Drive (VFD) Measures			396	0.1	0	\$91	\$3,018	\$50	\$2,968	32.6	398
ECM 4	Install VFDs on Constant Volume (CV) Fans	No	396	0.1	0	\$91	\$3,018	\$50	\$2,968	32.6	398
Unitary HVAC Measures			474	0.1	0	\$109	\$942	\$0	\$942	8.6	477
ECM 5	Install High Efficiency Air Conditioning Units	Yes	474	0.1	0	\$109	\$942	\$0	\$942	8.6	477
TOTALS (COST EFFECTIVE MEASURES)			3,401	0.5	0	\$754	\$1,978	\$122	\$1,856	2.5	3,385
TOTALS (ALL MEASURES)			3,796	0.6	0	\$845	\$4,996	\$172	\$4,824	5.7	3,783

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CLARK SCHOOL DISTRICT – INDIVIDUAL BUILDING SUMMARY TABLES



VALLEY ROAD ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			55,130	19.8	-12	\$5,130	\$31,397	\$8,379	\$23,018	4.5	54,167
ECM 1	Retrofit Fixtures with LED Lamps	Yes	55,130	19.8	-12	\$5,130	\$31,397	\$8,379	\$23,018	4.5	54,167
Lighting Control Measures			1,078	0.4	0	\$100	\$2,295	\$1,470	\$825	8.2	1,059
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	267	0.1	0	\$25	\$270	\$35	\$235	9.5	262
ECM 3	Install High/Low Lighting Controls	Yes	811	0.3	0	\$75	\$2,025	\$1,435	\$590	7.8	797
Variable Frequency Drive (VFD) Measures			3,847	1.2	0	\$366	\$6,522	\$200	\$6,322	17.3	3,874
ECM 4	Install VFDs on Constant Volume (CV) Fans	No	3,847	1.2	0	\$366	\$6,522	\$200	\$6,322	17.3	3,874
Unitary HVAC Measures			9,477	11.5	0	\$901	\$72,557	\$3,122	\$69,436	77.0	9,543
ECM 5	Install High Efficiency Air Conditioning Units	No	3,297	4.2	0	\$314	\$47,194	\$1,622	\$45,572	145.3	3,320
ECM 6	Install High Efficiency Heat Pumps	No	6,179	7.3	0	\$588	\$25,363	\$1,500	\$23,863	40.6	6,223
HVAC System Improvements			0	0.0	14	\$137	\$255	\$78	\$177	1.3	1,617
ECM 7	Install Pipe Insulation	Yes	0	0.0	14	\$137	\$255	\$78	\$177	1.3	1,617
Domestic Water Heating Upgrade			0	0.0	6	\$56	\$86	\$43	\$43	0.8	667
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	6	\$56	\$86	\$43	\$43	0.8	667
TOTALS (COST EFFECTIVE MEASURES)			56,208	20.2	8	\$5,423	\$34,033	\$9,970	\$24,063	4.4	57,509
TOTALS (ALL MEASURES)			69,532	32.8	8	\$6,690	\$113,112	\$13,292	\$99,821	14.9	70,926

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** - Simple Payback Period is based on net measure costs (i.e. after incentives).

FRANK HEHNLY ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$) *	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			80,327	24.1	-17	\$11,429	\$37,625	\$10,039	\$27,586	2.4	78,922
ECM 1	Install LED Fixtures	Yes	187	0.2	0	\$27	\$417	\$50	\$367	13.8	184
ECM 2	Retrofit Fixtures with LED Lamps	Yes	80,140	23.9	-17	\$11,402	\$37,208	\$9,989	\$27,219	2.4	78,739
Lighting Control Measures			3,292	0.8	-1	\$468	\$5,800	\$2,250	\$3,550	7.6	3,235
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,825	0.5	0	\$260	\$3,550	\$395	\$3,155	12.2	1,793
ECM 4	Install High/Low Lighting Controls	Yes	1,468	0.3	0	\$209	\$2,250	\$1,855	\$395	1.9	1,442
Variable Frequency Drive (VFD) Measures			18,155	3.9	0	\$2,620	\$17,245	\$2,400	\$14,845	5.7	18,282
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	9,163	2.4	0	\$1,322	\$7,768	\$400	\$7,368	5.6	9,228
ECM 6	Install VFDs on Heating Water Pumps	Yes	8,992	1.4	0	\$1,298	\$9,476	\$2,000	\$7,476	5.8	9,055
Unitary HVAC Measures			5,395	6.8	0	\$779	\$69,499	\$2,310	\$67,189	86.3	5,432
ECM 7	Install High Efficiency Air Conditioning Units	No	5,395	6.8	0	\$779	\$69,499	\$2,310	\$67,189	86.3	5,432
Domestic Water Heating Upgrade			0	0.0	8	\$79	\$122	\$61	\$61	0.8	944
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	8	\$79	\$122	\$61	\$61	0.8	944
Food Service & Refrigeration Measures			1,612	0.2	0	\$233	\$230	\$50	\$180	0.8	1,623
ECM 9	Vending Machine Control	Yes	1,612	0.2	0	\$233	\$230	\$50	\$180	0.8	1,623
TOTALS (COST EFFECTIVE MEASURES)			103,387	29.0	-9	\$14,829	\$61,022	\$14,800	\$46,222	3.1	103,007
TOTALS (ALL MEASURES)			108,782	35.8	-9	\$15,608	\$130,521	\$17,110	\$113,411	7.3	108,439

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

CARL H. KUMPF MIDDLE SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			83,449	32.6	-17	\$11,621	\$55,000	\$13,184	\$41,816	3.6	81,989
ECM 1	Install LED Fixtures	Yes	4,876	4.3	-1	\$679	\$9,314	\$900	\$8,414	12.4	4,790
ECM 2	Retrofit Fixtures with LED Lamps	Yes	78,573	28.3	-16	\$10,942	\$45,685	\$12,284	\$33,401	3.1	77,199
Lighting Control Measures			7,545	2.5	-2	\$1,051	\$12,692	\$3,850	\$8,842	8.4	7,413
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	5,943	1.9	-1	\$828	\$8,642	\$1,085	\$7,557	9.1	5,839
ECM 4	Install High/Low Lighting Controls	Yes	1,602	0.5	0	\$223	\$4,050	\$2,765	\$1,285	5.8	1,574
Variable Frequency Drive (VFD) Measures			20,704	5.4	0	\$2,925	\$30,548	\$2,750	\$27,798	9.5	20,849
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	12,467	3.9	0	\$1,761	\$21,071	\$750	\$20,321	11.5	12,554
ECM 6	Install VFDs on Heating Water Pumps	Yes	8,237	1.4	0	\$1,164	\$9,476	\$2,000	\$7,476	6.4	8,295
Unitary HVAC Measures			7,274	10.1	0	\$1,027	\$97,103	\$4,390	\$92,713	90.2	7,325
ECM 7	Install High Efficiency Air Conditioning Units	No	5,846	7.4	0	\$826	\$90,340	\$3,990	\$86,350	104.6	5,886
ECM 8	Install High Efficiency Heat Pumps	No	1,428	2.7	0	\$202	\$6,764	\$400	\$6,364	31.5	1,438
Gas Heating (HVAC/Process) Replacement			0	0.0	74	\$706	\$13,780	\$1,000	\$12,780	18.1	8,649
ECM 9	Install High Efficiency Furnaces	No	0	0.0	74	\$706	\$13,780	\$1,000	\$12,780	18.1	8,649
HVAC System Improvements			215	0.0	18	\$206	\$2,788	\$24	\$2,764	13.4	2,367
ECM 10	Implement Demand Control Ventilation (DCV)	No	215	0.0	13	\$156	\$2,719	\$0	\$2,719	17.5	1,751
ECM 11	Install Pipe Insulation	Yes	0	0.0	5	\$50	\$69	\$24	\$45	0.9	617
Domestic Water Heating Upgrade			0	0.0	11	\$104	\$165	\$82	\$82	0.8	1,278
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	11	\$104	\$165	\$82	\$82	0.8	1,278
Food Service & Refrigeration Measures			10,684	1.2	13	\$1,636	\$18,790	\$1,250	\$17,540	10.7	12,310
ECM 13	Food Service Equipment Replacement	No	0	0.0	13	\$127	\$9,290	\$500	\$8,790	69.4	1,551
ECM 14	Dishwasher Replacement	Yes	9,072	1.0	0	\$1,282	\$9,270	\$700	\$8,570	6.7	9,136
ECM 15	Vending Machine Control	Yes	1,612	0.2	0	\$228	\$230	\$50	\$180	0.8	1,623
TOTALS (COST EFFECTIVE MEASURES)			122,382	41.7	-3	\$17,260	\$107,974	\$20,640	\$87,333	5.1	122,904
TOTALS (ALL MEASURES)			129,871	51.8	97	\$19,276	\$230,866	\$26,530	\$204,336	10.6	142,181

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

ARTHUR L. JOHNSON HIGH SCHOOL

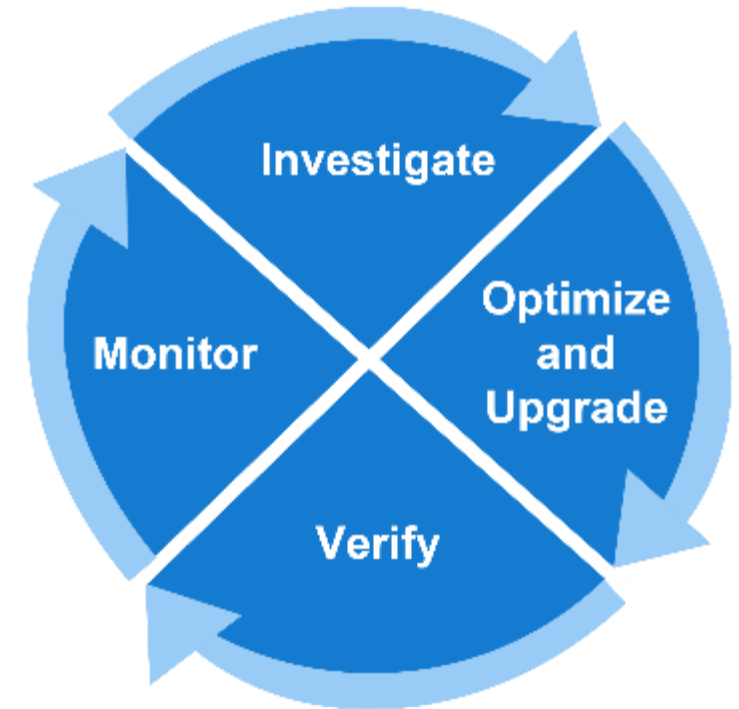
#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			217,425	51.5	-44	\$32,259	\$82,221	\$19,805	\$62,416	1.9	213,818
ECM 1	Install LED Fixtures	Yes	10,595	2.3	-1	\$1,589	\$8,220	\$555	\$7,665	4.8	10,605
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	251	0.1	0	\$37	\$202	\$20	\$182	4.9	246
ECM 3	Retrofit Fixtures with LED Lamps	Yes	206,580	49.1	-43	\$30,632	\$73,798	\$19,230	\$54,568	1.8	202,966
Lighting Control Measures			58,235	13.5	-12	\$8,635	\$56,659	\$13,945	\$42,714	4.9	57,216
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	49,950	11.9	-10	\$7,407	\$45,184	\$5,755	\$39,429	5.3	49,077
ECM 5	Install High/Low Lighting Controls	Yes	8,284	1.6	-2	\$1,228	\$11,475	\$8,190	\$3,285	2.7	8,140
Variable Frequency Drive (VFD) Measures			112,714	46.6	26	\$17,262	\$120,719	\$12,025	\$108,694	6.3	116,554
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	109,333	46.6	0	\$16,465	\$117,329	\$11,950	\$105,379	6.4	110,098
ECM 7	Install VFDs on Kitchen Hood Fan Motors	Yes	3,380	0.0	26	\$797	\$3,391	\$75	\$3,316	4.2	6,456
Unitary HVAC Measures			30,645	34.5	7	\$4,689	\$293,825	\$17,139	\$276,686	59.0	31,647
ECM 8	Install High Efficiency Air Conditioning Units	No	25,558	26.6	7	\$3,923	\$267,616	\$15,589	\$252,028	64.2	26,525
ECM 9	Install High Efficiency Heat Pumps	No	5,087	7.9	0	\$766	\$26,209	\$1,550	\$24,659	32.2	5,122
Gas Heating (HVAC/Process) Replacement			0	0.0	181	\$1,997	\$27,807	\$1,500	\$26,307	13.2	21,157
ECM 10	Install High Efficiency Furnaces	Yes	0	0.0	181	\$1,997	\$27,807	\$1,500	\$26,307	13.2	21,157
HVAC System Improvements			1,198	0.0	93	\$1,207	\$12,235	\$0	\$12,235	10.1	12,083
ECM 11	Implement Demand Control Ventilation (DCV)	Yes	1,198	0.0	93	\$1,207	\$12,235	\$0	\$12,235	10.1	12,083
Domestic Water Heating Upgrade			0	0.0	30	\$330	\$452	\$226	\$226	0.7	3,500
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	30	\$330	\$452	\$226	\$226	0.7	3,500
Food Service & Refrigeration Measures			24,881	2.7	0	\$3,747	\$13,449	\$1,155	\$12,294	3.3	25,055
ECM 13	Dishwasher Replacement	Yes	14,143	1.6	0	\$2,130	\$9,270	\$700	\$8,570	4.0	14,242
ECM 14	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	524	0.1	0	\$79	\$607	\$80	\$527	6.7	528
ECM 15	Refrigeration Controls	Yes	1,812	0.0	0	\$273	\$2,193	\$125	\$2,068	7.6	1,825
ECM 16	Vending Machine Control	Yes	8,402	1.0	0	\$1,265	\$1,380	\$250	\$1,130	0.9	8,460
TOTALS (COST EFFECTIVE MEASURES)			414,453	114.3	274	\$65,438	\$313,542	\$48,656	\$264,887	4.0	449,383
TOTALS (ALL MEASURES)			445,098	148.8	280	\$70,127	\$607,367	\$65,794	\$541,573	7.7	481,030

* - All incentives presented in this table are included as placeholders for planning purposes and are based on previously run state rebate programs. Contact your utility provider for details on current programs.

** - Simple Payback Period is based on net measure costs (i.e. after incentives).

CLARK SCHOOL DISTRICT – MEASURES FOR FUTURE CONSIDERATION

- Retro-Commissioning Study
- Installation of an Energy Management System
- VRF Systems
- Variable Frequency Drives to Control Fixed Head Pump Motors
- Replace Smooth V-Belts with Notched or Synchronous Belts



Retro-Commissioning

ENERGY EFFICIENT BEST PRACTICES

- Reduce Air Leakage
- Close Doors and Windows
- Develop a Lighting Maintenance Schedule
- Ensure Lighting Controls Are Operating Properly
- Use Fans to Reduce Cooling Load
- Use Window Treatments/Coverings
- Clean and/or Replace HVAC filters
- Check and Seal Duct Leakage
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- Plug Load Controls
- Water Conservation

See individual reports for specific EE practices by building

EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



LEVEL 1



4-6 miles/hour
Replenish Rate



7-30 hours for full charge

Approximate time to charge a battery*

CHARGE
110/120V

LEVEL 2



10-20 miles/hour
Replenish Rate



2-10 hours for full charge

Approximate time to charge a battery*

CHARGE
208/240V

DIRECT CURRENT (DC) FAST CHARGING*



120-200 miles/hour
Replenish Rate



20-90 minutes for full charge

Approximate time to charge a battery*

CHARGE
480V or 208V

*dependent on the size of the battery

Clark Township

All Sites

Potential:

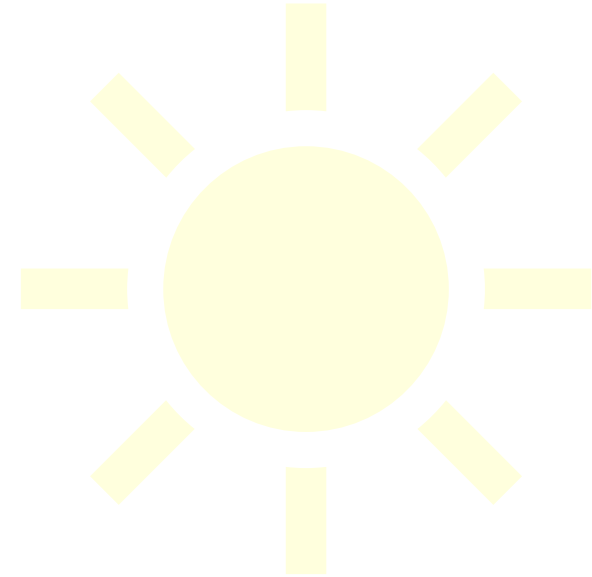
Medium



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

<u>Clark Township</u>	Town Hall
Potential:	MEDIUM
System Potential: (kW)	91
Electric Generation: (kWh per year)	68,473
Displaced Cost: (per year)	\$10,700



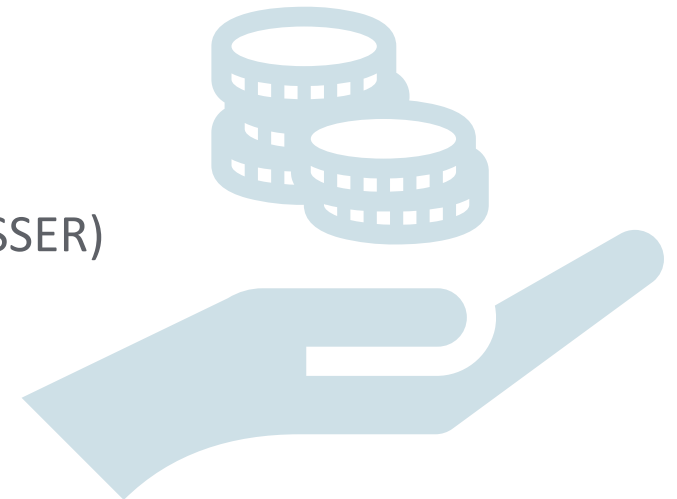
<u>Clark School District</u>	Valley Road	Kumpf MS	Johnson HS
Potential:	HIGH	HIGH	MEDIUM
System Potential: (kW)	77	100	345
Electric Generation: (kWh per year)	91,735	119,137	411,023
Displaced Cost: (per year)	\$8,720	\$16,830	\$61,900

FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

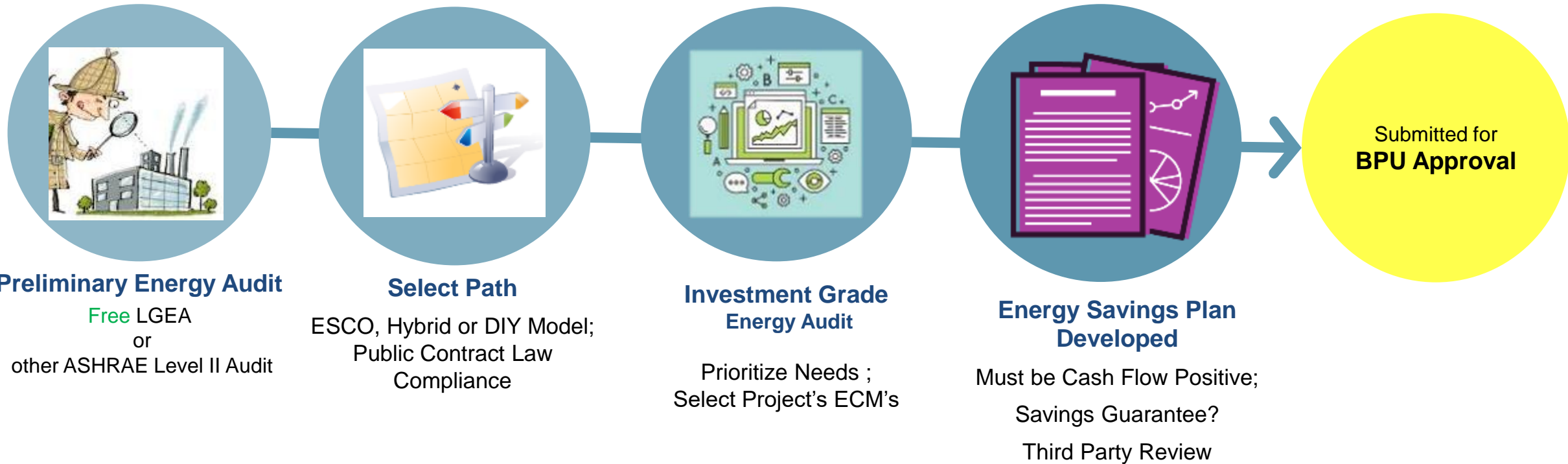
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting = NJ ESIP
- A creative tool and financing mechanism that allows public entities to make energy efficiency improvements without impacting their budgets
- Administered by the NJBPU
- Project is paid for with the value of its own energy savings
- 15 or 20 year pay back; self funding
- NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Pandemic Relief Funds (ESSER)
- No upfront capital expenses
- No referendum or impact to tax payers



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP

FOR MORE INFORMATION

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C&I ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com

LOCAL
GOVERNMENT
CUSTOMERS

COMMERCIAL &
INSTITUTIONAL
CUSTOMERS

LARGE
ENERGY
CUSTOMERS

EXISTING BUILDINGS

MEASUREMENT & AUDITS

FREE Energy Audits



RETROFITS

Prescriptive &
Custom Rebates

Direct Install

Engineered Solutions

And more from
your local utility!



Incentives up
to \$4 million
for eligible projects



NEW CONSTRUCTION

Prescriptive & Custom
Rebates for New
Construction and
Gut Rehabs

Pay for Performance
incentives for
buildings over
50,000 sq. ft.



DISTRIBUTED ENERGY RESOURCES

Combined Heat & Power
and Fuel Cell Installation
Incentives

Microgrid Development

Battery Storage

Muni EV Fleets



Key:
Programs run by investor-owned utility companies



Programs run by NJCEP



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com/Transition

PRESCRIPTIVE & CUSTOM REBATES:

- Individual high efficiency equipment rebates for renovation, remodeling, and equipment replacement
- Flexibility to do a little or a lot
- No size requirement

DIRECT INSTALL:

- Turn-key retrofit program to replace outdated and inefficient equipment including, lighting, HVAC, refrigeration, etc.
- The facility must have an average electric peak demand <200kW in the previous year to qualify

ENGINEERED SOLUTIONS:

- Comprehensive, whole-building approach to saving energy
- The facility must have an average electric peak demand >200kW in the previous year to qualify



UTILITY RUN ENERGY EFFICIENCY PROGRAMS

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THANK YOU

