

New Jersey's Clean Energy Program

LGEA Exit Meeting for:
Willingboro Board of Education

January 23, 2020



INTRODUCTIONS

- *Willingboro Board of Education*
 - Orlando Chandler– Facilities Manager
 - Kevin Smith – Business Administrator

- *NJ Clean Energy Program*
 - Yagna Otia – TRC Auditor
 - Sarah Walters – TRC Account Manager
 - Gary Finger – TRC Outreach Manager



AGENDA

- The audit process overview
- Energy use & existing conditions
- Review of **E**nergy **C**onservation **M**easures (ECMs) identified
- Questions regarding the draft audit report
- Overview of NJCEP equipment incentives
- Next steps for Willingboro BOE



LGEA PROCESS

- Application Approval
- Scheduling Call
- Audit
- Benchmarking & Analysis
- Draft Report
- Exit Meeting Presentation
- Final Report

SITE VISIT & UTILITY ANALYSIS

Overview of Systems, Baseline & Existing Conditions:

- Lighting System
- HVAC and Mechanical Systems
- Plug Load Equipment
- Kitchen Equipment

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs

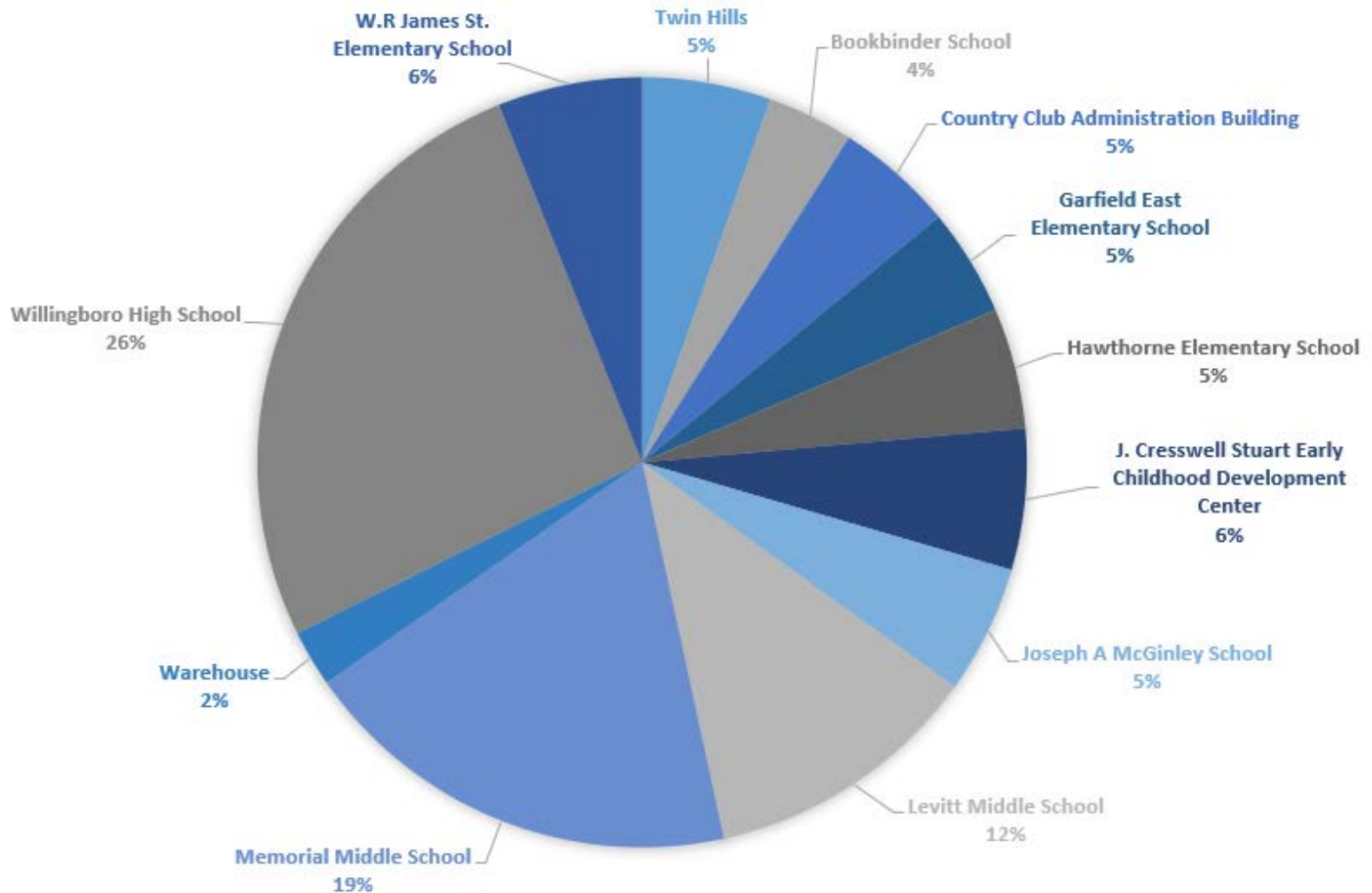
Sites Visited/Analyzed

- Twin Hills Elementary School
- Garfield East Elementary School
- Willingboro High School
- Joseph A. McGinley School
- Country Club Admin Building
- Memorial Middle School
- W.R. James Sr. Elementary School
- Levitt Middle School
- Bookbinder School
- J.C. Stuart Elementary School
- Hawthorne Elementary School
- Warehouse



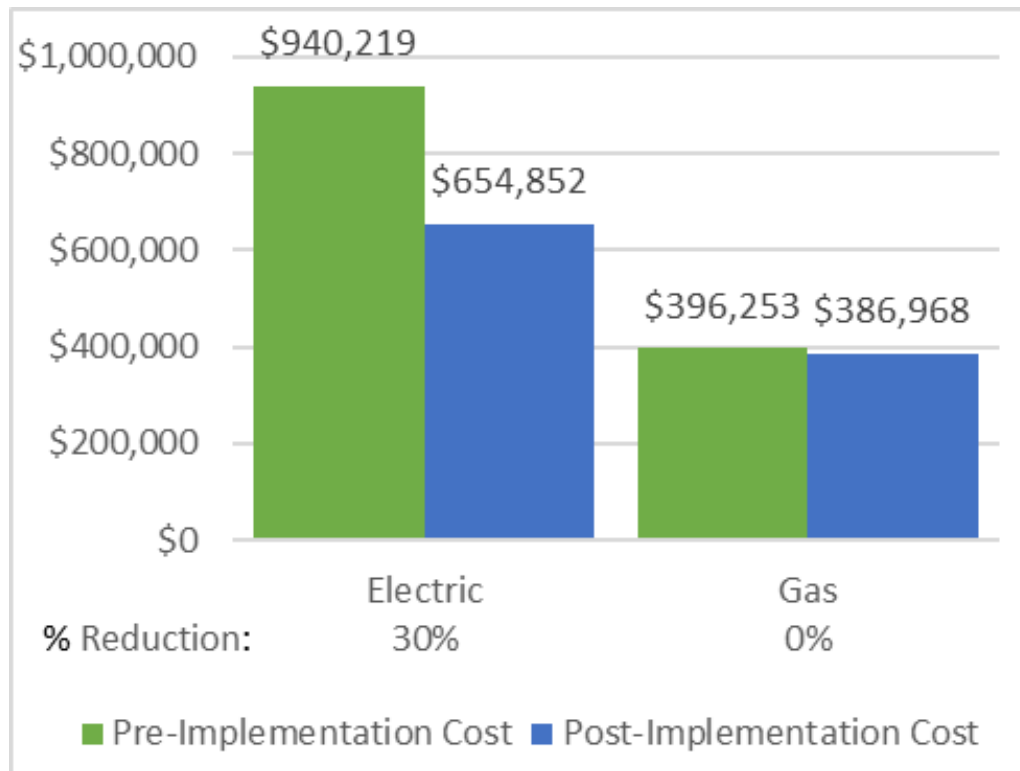
UTILITY BREAKOUT

Percent of Total Annual Energy Costs




UTILITY BREAKOUT

Pre & Post Implementation Cost



BENCHMARKING



ENERGY STAR® Statement of Energy Performance

43

ENERGY STAR® Score¹

Willingboro High School

Primary Property Type: K-12 School
Gross Floor Area (ft²): 227,623
Built: 1975

For Year Ending: August 31, 2018
Date Generated: October 30, 2019

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 Willingboro High School 20 John F. Kennedy Way Willingboro, New Jersey 08048	Property Owner Willingboro School District 440 Beverly Ranocas Rd Willingboro, NJ 08048 (609) 835-8800	Primary Contact Orlando Chandler 39 Industrial Drive Willingboro, NJ 08048 (609) 835-8788 ochandler@wboe.net
Property ID: 7956685		

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 79.9 kBtu/ft ²	Annual Energy by Fuel		National Median Comparison
	Electricity (kBtu)	7,067,897 (39%)	
Source EUI 138.3 kBtu/ft ²	Natural Gas (kBtu)	11,129,154 (61%)	National Median Source EUI (kBtu/ft ²)
			% Diff from National Median Source EUI
Annual Emissions			
Greenhouse Gas Emissions (Metric Tons CO ₂ e/year)			1,307

Site EUI
79.9 kBtu/ft²

Source EUI
138.3 kBtu/ft²

National Median Comparison	
National Median Site EUI (kBtu/ft ²)	74.6
National Median Source EUI (kBtu/ft ²)	129
% Diff from National Median Source EUI	7%

Signature & Stamp of Verifying Professional

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

Signature: _____ Date: _____

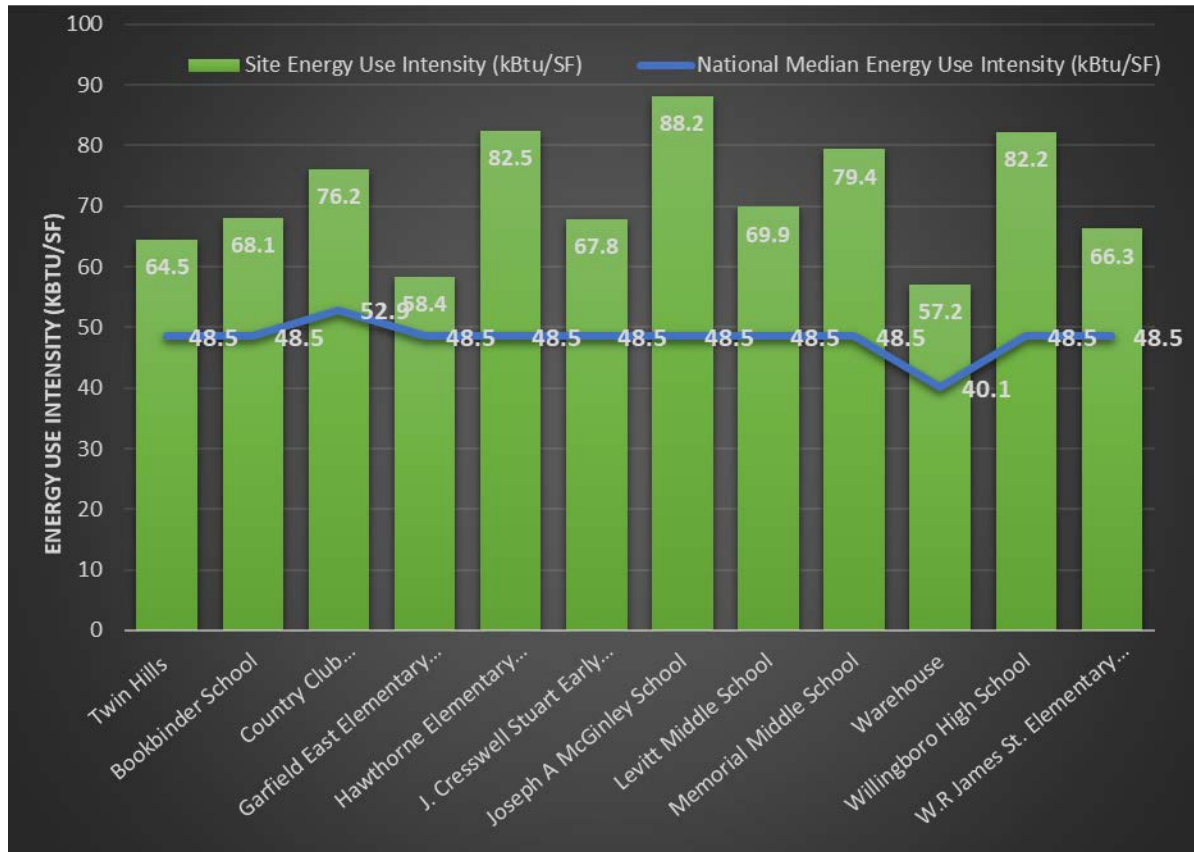
Licensed Professional

() _____

Professional Engineer 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.

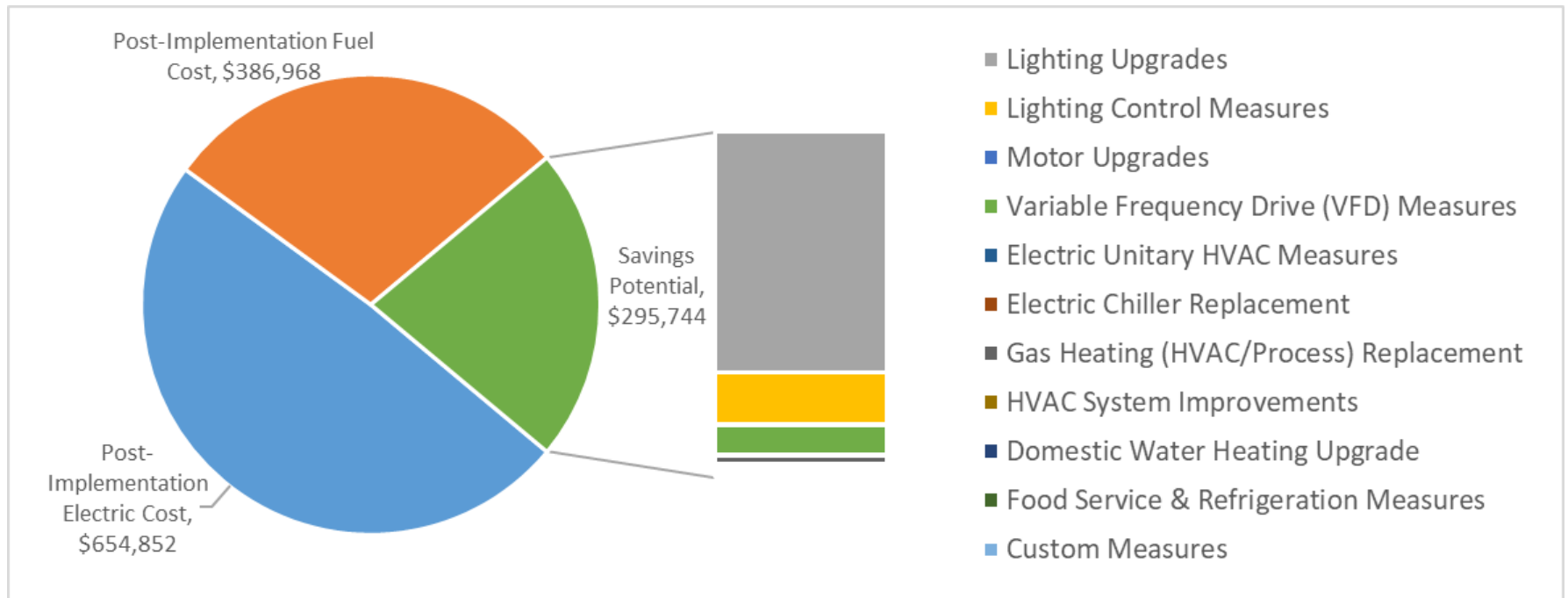
BENCHMARKING



Site Name	ENERGY STAR Score
Twin Hills	35
Bookbinder School	N/A
Country Club Admin Bldg	64
Garfield East ES	54
Hawthorne ES	36
J. C. Stuart	58
McGinley School	N/A
Levitt MS	28
Memorial MS	36
Warehouse	N/A
Willingboro HS	43
W. R. James ST. ES	43

ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		1,522,347	332.6	-260.6	\$205,817	\$904,127	\$342,078	\$562,049	2.7	1,502,474
ECM 1	Install LED Fixtures	305,877	15.2	-13.5	\$40,874	\$394,570	\$86,030	\$308,540	7.5	306,433
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	12,430	3.7	-2.7	\$1,876	\$7,258	\$1,784	\$5,474	2.9	12,206
ECM 3	Retrofit Fixtures with LED Lamps	1,204,041	313.7	-244.5	\$163,067	\$502,299	\$254,264	\$248,035	1.5	1,183,835
Lighting Control Measures		332,144	86.8	-69.9	\$45,004	\$409,700	\$133,380	\$276,320	6.1	326,286
ECM 4	Install Occupancy Sensor Lighting Controls	295,718	77.7	-62.2	\$39,988	\$347,510	\$74,960	\$272,550	6.8	290,504
ECM 5	Install High/Low Lighting Controls	36,426	9.0	-7.7	\$5,016	\$62,190	\$58,420	\$3,770	0.8	35,782
Motor Upgrades		965	0.2	0.0	\$134	\$3,951	\$0	\$3,951	29.5	971
ECM 6	Premium Efficiency Motors	965	0.2	0.0	\$134	\$3,951	\$0	\$3,951	29.5	971
Variable Frequency Drive (VFD) Measures		186,206	59.4	0.0	\$25,443	\$212,862	\$32,144	\$180,718	7.1	187,508
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	8,374	2.9	0.0	\$1,275	\$5,152	\$2,400	\$2,752	2.2	8,433
ECM 8	Install VFDs on Constant Volume (CV) Fans	160,184	53.3	0.0	\$21,321	\$143,326	\$29,744	\$113,582	5.3	161,304
ECM 9	Install VFDs on Heating Water Pumps	17,648	3.3	0.0	\$2,847	\$64,385	\$0	\$64,385	22.6	17,771
Electric Unitary HVAC Measures		7,646	8.0	0.0	\$1,141	\$102,961	\$4,271	\$98,690	86.5	7,699
ECM 10	Install High Efficiency Air Conditioning Units	7,268	7.7	0.0	\$1,096	\$99,363	\$3,995	\$95,368	87.0	7,319
ECM 11	Install High Efficiency Heat Pumps	377	0.3	0.0	\$45	\$3,599	\$276	\$3,323	73.4	380
Gas Heating (HVAC/Process) Replacement		0	0.0	739.3	\$6,216	\$359,985	\$18,720	\$341,265	54.9	86,560
ECM 12	Install High Efficiency Hot Water Boilers	0	0.0	739.3	\$6,216	\$359,985	\$18,720	\$341,265	54.9	86,560

ALL OPPORTUNITIES

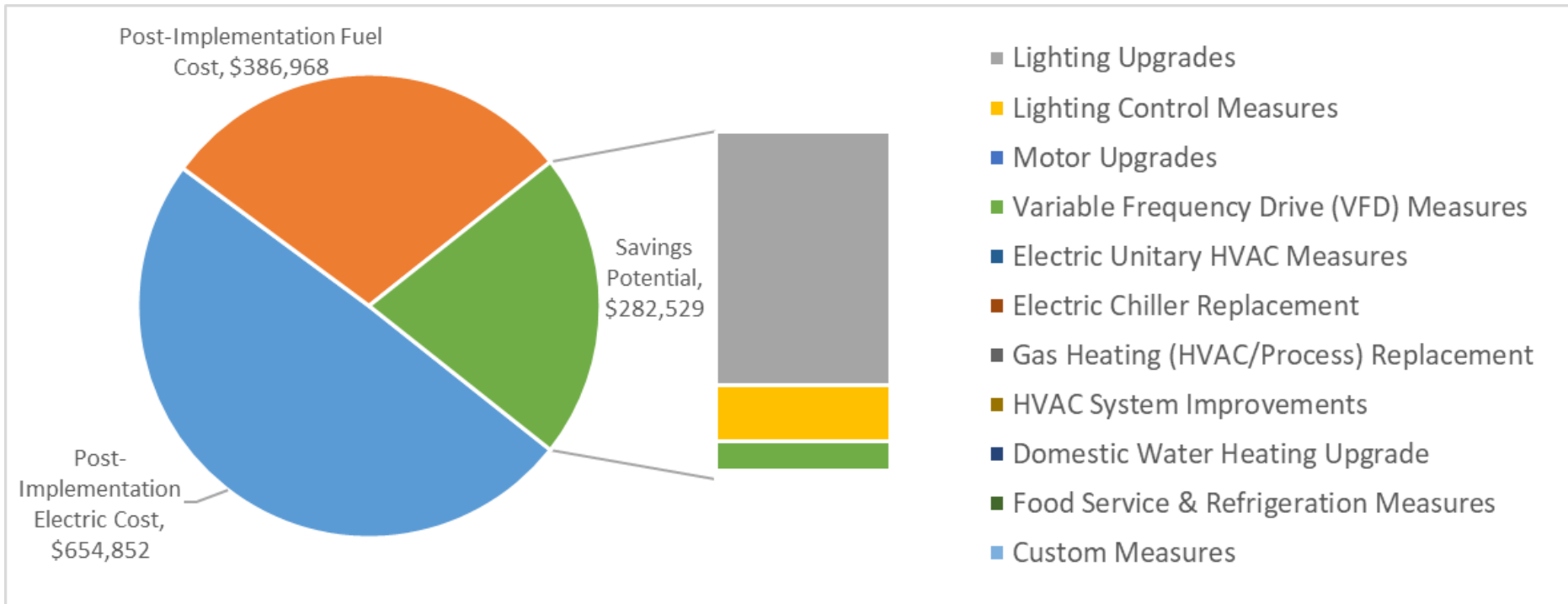
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
HVAC System Improvements		14,519	0.0	215.0	\$3,533	\$55,736	\$0	\$55,736	15.8	39,793
ECM 13	Implement Demand Control Ventilation (DCV)	14,519	0.0	215.0	\$3,533	\$55,736	\$0	\$55,736	15.8	39,793
Domestic Water Heating Upgrade		834	0.0	278.4	\$2,361	\$41,654	\$7,306	\$34,347	14.5	33,436
ECM 14	Install High Efficiency Gas-Fired Water Heater	0	0.0	76.0	\$626	\$39,065	\$4,718	\$34,347	54.9	8,901
ECM 15	Install Low-Flow DHW Devices	834	0.0	202.4	\$1,735	\$2,588	\$2,588	\$0	0.0	24,535
Food Service & Refrigeration Measures		26,584	2.7	0.0	\$3,500	\$11,950	\$2,470	\$9,480	2.7	26,770
ECM 16	Refrigerator/Freezer Case Electrically Commutated Motors	2,741	0.3	0.0	\$333	\$2,730	\$720	\$2,010	6.0	2,760
ECM 17	Refrigeration Controls	3,131	0.1	0.0	\$376	\$5,541	\$550	\$4,991	13.3	3,153
ECM 18	Vending Machine Control	20,712	2.4	0.0	\$2,791	\$3,680	\$1,200	\$2,480	0.9	20,857
Custom Measures		3,893	0.0	252.1	\$2,595	\$117,490	\$0	\$117,490	45.3	33,439
ECM 19	Installation of Energy Management System	3,893	0.0	252.1	\$2,595	\$117,490	\$0	\$117,490	45.3	33,439
TOTALS		2,095,137	489.8	1,154.3	\$295,744	\$2,220,416	\$540,369	\$1,680,047	5.7	2,244,938

* - All incentives presented in this table are based on NJ Smart Start Building equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

COST EFFECTIVE OPPORTUNITIES

Savings Potential



COST EFFECTIVE OPPORTUNITIES

#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		1,522,347	332.6	-260.6	\$205,817	\$904,127	\$342,078	\$562,049	2.7	1,502,474
ECM 1	Install LED Fixtures	305,877	15.2	-13.5	\$40,874	\$394,570	\$86,030	\$308,540	7.5	306,433
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	12,430	3.7	-2.7	\$1,876	\$7,258	\$1,784	\$5,474	2.9	12,206
ECM 3	Retrofit Fixtures with LED Lamps	1,204,041	313.7	-244.5	\$163,067	\$502,299	\$254,264	\$248,035	1.5	1,183,835
Lighting Control Measures		332,144	86.8	-69.9	\$45,004	\$409,700	\$133,380	\$276,320	6.1	326,286
ECM 4	Install Occupancy Sensor Lighting Controls	295,718	77.7	-62.2	\$39,988	\$347,510	\$74,960	\$272,550	6.8	290,504
ECM 5	Install High/Low Lighting Controls	36,426	9.0	-7.7	\$5,016	\$62,190	\$58,420	\$3,770	0.8	35,782
Motor Upgrades		308	0.1	0.0	\$52	\$532	\$0	\$532	10.2	310
ECM 6	Premium Efficiency Motors	308	0.1	0.0	\$52	\$532	\$0	\$532	10.2	310
Variable Frequency Drive (VFD) Measures		175,832	57.2	0.0	\$23,865	\$160,129	\$32,144	\$127,985	5.4	177,062
ECM 7	Install VFD on Variable Air Volume (VAV) Fans	8,374	2.9	0.0	\$1,275	\$5,152	\$2,400	\$2,752	2.2	8,433
ECM 8	Install VFDs on Constant Volume (CV) Fans	160,184	53.3	0.0	\$21,321	\$143,326	\$29,744	\$113,582	5.3	161,304
HVAC System Improvements		1,414	0.0	13.6	\$336	\$1,359	\$0	\$1,359	4.1	3,014
ECM 13	Implement Demand Control Ventilation (DCV)	1,414	0.0	13.6	\$336	\$1,359	\$0	\$1,359	4.1	3,014
Domestic Water Heating Upgrade		834	0.0	202.4	\$1,735	\$2,588	\$2,588	\$0	0.0	24,535
ECM 15	Install Low-Flow DHW Devices	834	0.0	202.4	\$1,735	\$2,588	\$2,588	\$0	0.0	24,535
Food Service & Refrigeration Measures		23,453	2.7	0.0	\$3,124	\$6,410	\$1,920	\$4,490	1.4	23,617
ECM 16	Refrigerator/Freezer Case Electrically Commutated Motors	2,741	0.3	0.0	\$333	\$2,730	\$720	\$2,010	6.0	2,760
ECM 18	Vending Machine Control	20,712	2.4	0.0	\$2,791	\$3,680	\$1,200	\$2,480	0.9	20,857
Custom Measures		3,893	0.0	252.1	\$2,595	\$117,490	\$0	\$117,490	45.3	33,439
ECM 19	Installation of Energy Management System	3,893	0.0	252.1	\$2,595	\$117,490	\$0	\$117,490	45.3	33,439
TOTALS		2,060,225	479.3	137.6	\$282,529	\$1,602,336	\$512,110	\$1,090,225	3.9	2,090,738



TWIN HILLS ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			64,473	18.4	-11	\$10,291	\$43,706	\$18,160	\$25,546	2.5	63,653
ECM 1	Install LED Fixtures	Yes	11,758	0.0	0	\$1,894	\$12,097	\$2,600	\$9,497	5.0	11,840
ECM 2	Retrofit Fixtures with LED Lamps	Yes	52,714	18.4	-11	\$8,398	\$31,609	\$15,560	\$16,049	1.9	51,812
Lighting Control Measures			13,808	4.8	-3	\$2,199	\$19,804	\$4,750	\$15,054	6.8	13,567
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	13,220	4.6	-3	\$2,106	\$17,464	\$3,640	\$13,824	6.6	12,988
ECM 4	Install High/Low Lighting Controls	Yes	589	0.2	0	\$94	\$2,340	\$1,110	\$1,230	13.1	578
Variable Frequency Drive (VFD) Measures			9,890	3.1	0	\$1,593	\$8,385	\$1,760	\$6,625	4.2	9,960
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	9,890	3.1	0	\$1,593	\$8,385	\$1,760	\$6,625	4.2	9,960
Domestic Water Heating Upgrade			0	0.0	28	\$237	\$4,643	\$719	\$3,924	16.6	3,265
ECM 6	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	20	\$166	\$4,449	\$525	\$3,924	23.6	2,291
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	8	\$71	\$194	\$194	\$0	0.0	974
Food Service & Refrigeration Measures			343	0.0	0	\$55	\$230	\$0	\$230	4.2	345
ECM 8	Vending Machine Control	Yes	343	0.0	0	\$55	\$230	\$0	\$230	4.2	345
TOTALS (COST EFFECTIVE MEASURES)			88,514	26.4	-5	\$14,209	\$72,319	\$24,864	\$47,455	3.3	88,498
TOTALS (ALL MEASURES)			88,514	26.4	14	\$14,375	\$76,768	\$25,389	\$51,379	3.6	90,789

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

GARFIELD EAST ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			58,213	17.4	-10	\$8,768	\$38,919	\$16,662	\$22,257	2.5	57,420
ECM 1	Install LED Fixtures	Yes	7,815	0.0	0	\$1,189	\$11,167	\$2,400	\$8,767	7.4	7,869
ECM 2	Retrofit Fixtures with LED Lamps	Yes	50,399	17.4	-10	\$7,578	\$27,752	\$14,262	\$13,490	1.8	49,551
Lighting Control Measures			13,050	4.5	-3	\$1,962	\$17,550	\$6,240	\$11,310	5.8	12,822
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	11,929	4.1	-2	\$1,793	\$14,850	\$3,640	\$11,210	6.3	11,721
ECM 4	Install High/Low Lighting Controls	Yes	1,121	0.4	0	\$169	\$2,700	\$2,600	\$100	0.6	1,102
Motor Upgrades			79	0.0	0	\$12	\$758	\$0	\$758	62.8	80
ECM 5	Premium Efficiency Motors	No	79	0.0	0	\$12	\$758	\$0	\$758	62.8	80
Variable Frequency Drive (VFD) Measures			8,374	2.9	0	\$1,275	\$5,152	\$2,400	\$2,752	2.2	8,433
ECM 6	Install VFD on Variable Air Volume (VAV) Fans	Yes	8,374	2.9	0	\$1,275	\$5,152	\$2,400	\$2,752	2.2	8,433
Electric Unitary HVAC Measures			1,097	1.4	0	\$167	\$11,970	\$1,472	\$10,498	62.9	1,105
ECM 7	Install High Efficiency Air Conditioning Units	No	1,097	1.4	0	\$167	\$11,970	\$1,472	\$10,498	62.9	1,105
Domestic Water Heating Upgrade			0	0.0	6	\$57	\$158	\$158	\$0	0.0	742
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	6	\$57	\$158	\$158	\$0	0.0	742
Food Service & Refrigeration Measures			1,612	0.2	0	\$245	\$230	\$100	\$130	0.5	1,623
ECM 9	Vending Machine Control	Yes	1,612	0.2	0	\$245	\$230	\$100	\$130	0.5	1,623
TOTALS (COST EFFECTIVE MEASURES)			81,250	25.0	-7	\$12,307	\$62,008	\$25,560	\$36,448	3.0	81,040
TOTALS (ALL MEASURES)			82,426	26.4	-7	\$12,486	\$74,736	\$27,032	\$47,704	3.8	82,225

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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WILLINGBORO HIGH SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			475,027	95.9	-83	\$56,382	\$288,586	\$109,076	\$179,510	3.2	468,633
ECM 1	Install LED Fixtures	Yes	138,339	14.3	-13	\$16,510	\$169,574	\$49,800	\$119,774	7.3	137,803
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	2,000	0.5	0	\$237	\$932	\$210	\$722	3.0	1,965
ECM 3	Retrofit Fixtures with LED Lamps	Yes	334,689	81.1	-70	\$39,635	\$118,080	\$59,066	\$59,014	1.5	328,865
Lighting Control Measures			91,242	22.1	-19	\$10,805	\$101,835	\$26,040	\$75,795	7.0	89,646
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	85,059	20.7	-18	\$10,072	\$91,260	\$16,380	\$74,880	7.4	83,571
ECM 5	Install High/Low Lighting Controls	Yes	6,183	1.4	-1	\$732	\$10,575	\$9,660	\$915	1.2	6,075
Motor Upgrades			578	0.1	0	\$69	\$2,661	\$0	\$2,661	38.4	582
ECM 6	Premium Efficiency Motors	No	578	0.1	0	\$69	\$2,661	\$0	\$2,661	38.4	582
Variable Frequency Drive (VFD) Measures			89,038	27.4	0	\$10,692	\$73,771	\$15,344	\$58,427	5.5	89,660
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	89,038	27.4	0	\$10,692	\$73,771	\$15,344	\$58,427	5.5	89,660
Electric Unitary HVAC Measures			2,653	2.6	0	\$319	\$22,510	\$1,152	\$21,358	67.0	2,671
ECM 8	Install High Efficiency Air Conditioning Units	No	2,276	2.3	0	\$273	\$18,911	\$876	\$18,035	66.0	2,291
ECM 9	Install High Efficiency Heat Pumps	No	377	0.3	0	\$45	\$3,599	\$276	\$3,323	73.4	380
HVAC System Improvements			9,817	0.0	161	\$2,465	\$43,501	\$0	\$43,501	17.6	28,789
ECM 10	Implement Demand Control Ventilation (DCV)	No	9,817	0.0	161	\$2,465	\$43,501	\$0	\$43,501	17.6	28,789
Domestic Water Heating Upgrade			0	0.0	67	\$535	\$717	\$717	\$0	0.0	7,863
ECM 11	Install Low-Flow DHW Devices	Yes	0	0.0	67	\$535	\$717	\$717	\$0	0.0	7,863
Food Service & Refrigeration Measures			16,043	1.5	0	\$1,927	\$9,734	\$1,710	\$8,024	4.2	16,155
ECM 12	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	2,213	0.2	0	\$266	\$2,123	\$560	\$1,563	5.9	2,229
ECM 13	Refrigeration Controls	No	3,131	0.1	0	\$376	\$5,541	\$550	\$4,991	13.3	3,153
ECM 14	Vending Machine Control	Yes	10,699	1.2	0	\$1,285	\$2,070	\$600	\$1,470	1.1	10,773
TOTALS (COST EFFECTIVE MEASURES)			668,219	146.9	-35	\$79,964	\$469,102	\$152,337	\$316,765	4.0	668,804
TOTALS (ALL MEASURES)			684,398	149.7	127	\$83,193	\$543,315	\$154,039	\$389,276	4.7	703,998

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JOSEPH A. MCGINLEY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			64,098	15.5	-12	\$11,099	\$38,753	\$11,512	\$27,241	2.5	63,197
ECM 1	Install LED Fixtures	Yes	11,758	0.0	0	\$2,052	\$15,529	\$0	\$15,529	7.6	11,840
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	520	0.1	0	\$90	\$206	\$60	\$146	1.6	510
ECM 3	Retrofit Fixtures with LED Lamps	Yes	51,820	15.4	-11	\$8,957	\$23,018	\$11,452	\$11,566	1.3	50,846
Lighting Control Measures			11,397	2.5	-3	\$1,969	\$22,026	\$8,310	\$13,716	7.0	11,177
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	9,447	2.1	-2	\$1,633	\$16,626	\$3,080	\$13,546	8.3	9,265
ECM 5	Install High/Low Lighting Controls	Yes	1,950	0.4	0	\$337	\$5,400	\$5,230	\$170	0.5	1,911
Variable Frequency Drive (VFD) Measures			17,965	2.5	0	\$3,135	\$15,728	\$800	\$14,928	4.8	18,090
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	10,691	1.5	0	\$1,866	\$4,076	\$800	\$3,276	1.8	10,765
ECM 7	Install VFDs on Heating Water Pumps	Yes	7,274	1.1	0	\$1,270	\$11,652	\$0	\$11,652	9.2	7,325
Gas Heating (HVAC/Process) Replacement			0	0.0	346	\$2,651	\$162,786	\$0	\$162,786	61.4	40,517
ECM 8	Install High Efficiency Hot Water Boilers	No	0	0.0	346	\$2,651	\$162,786	\$0	\$162,786	61.4	40,517
Domestic Water Heating Upgrade			0	0.0	40	\$304	\$11,694	\$1,587	\$10,107	33.2	4,652
ECM 9	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	27	\$206	\$11,500	\$1,393	\$10,107	49.0	3,152
ECM 10	Install Low-Flow DHW Devices	Yes	0	0.0	13	\$98	\$194	\$194	\$0	0.0	1,500
Food Service & Refrigeration Measures			1,612	0.2	0	\$281	\$230	\$100	\$130	0.5	1,623
ECM 11	Vending Machine Control	Yes	1,612	0.2	0	\$281	\$230	\$100	\$130	0.5	1,623
Custom Measures			3,893	0.0	252	\$2,595	\$117,490	\$0	\$117,490	45.3	33,439
ECM 12	Installation of an Energy Management System	Yes	3,893	0.0	252	\$2,595	\$117,490	\$0	\$117,490	45.3	33,439
TOTALS (COST EFFECTIVE MEASURES)			98,964	20.7	251	\$19,178	\$194,421	\$20,916	\$173,505	9.0	129,026
TOTALS (ALL MEASURES)			98,964	20.7	624	\$22,035	\$368,706	\$22,309	\$346,398	15.7	172,695

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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



COUNTRY CLUB ADMIN BLDG.

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			68,541	19.6	-12	\$11,550	\$43,165	\$15,978	\$27,187	2.4	67,608
ECM 1	Install LED Fixtures	Yes	10,854	0.0	0	\$1,847	\$11,167	\$2,400	\$8,767	4.7	10,930
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	6,302	2.1	-1	\$1,060	\$4,308	\$982	\$3,326	3.1	6,192
ECM 3	Retrofit Fixtures with LED Lamps	Yes	51,385	17.5	-11	\$8,643	\$27,689	\$12,596	\$15,093	1.7	50,486
Lighting Control Measures			18,597	6.2	-4	\$3,128	\$24,120	\$7,260	\$16,860	5.4	18,272
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	17,155	5.8	-4	\$2,885	\$21,870	\$5,110	\$16,760	5.8	16,855
ECM 5	Install High/Low Lighting Controls	Yes	1,442	0.5	0	\$243	\$2,250	\$2,150	\$100	0.4	1,417
Motor Upgrades			308	0.1	0	\$52	\$532	\$0	\$532	10.2	310
ECM 6	Premium Efficiency Motors	Yes	308	0.1	0	\$52	\$532	\$0	\$532	10.2	310
Variable Frequency Drive (VFD) Measures			6,867	1.1	0	\$1,168	\$33,643	\$320	\$33,323	28.5	6,915
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	2,052	0.6	0	\$349	\$3,623	\$320	\$3,303	9.5	2,066
ECM 8	Install VFDs on Heating Water Pumps	No	4,815	0.5	0	\$819	\$30,020	\$0	\$30,020	36.6	4,849
Electric Unitary HVAC Measures			3,656	3.7	0	\$622	\$66,849	\$1,647	\$65,202	104.8	3,681
ECM 9	Install High Efficiency Air Conditioning Units	No	3,656	3.7	0	\$622	\$66,849	\$1,647	\$65,202	104.8	3,681
Gas Heating (HVAC/Process) Replacement			0	0.0	155	\$1,442	\$71,968	\$0	\$71,968	49.9	18,172
ECM 10	Install High Efficiency Hot Water Boilers	No	0	0.0	155	\$1,442	\$71,968	\$0	\$71,968	49.9	18,172
Domestic Water Heating Upgrade			0	0.0	12	\$116	\$4,550	\$690	\$3,860	33.3	1,462
ECM 11	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	5	\$48	\$4,392	\$532	\$3,860	80.3	606
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	7	\$68	\$158	\$158	\$0	0.0	856
Food Service & Refrigeration Measures			1,612	0.2	0	\$274	\$230	\$100	\$130	0.5	1,623
ECM 13	Vending Machine Control	Yes	1,612	0.2	0	\$274	\$230	\$100	\$130	0.5	1,623
TOTALS (COST EFFECTIVE MEASURES)			91,109	26.7	-9	\$15,421	\$71,828	\$23,816	\$48,012	3.1	90,735
TOTALS (ALL MEASURES)			99,580	30.9	152	\$18,352	\$245,056	\$25,995	\$219,061	11.9	118,044

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

MEMORIAL MIDDLE SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			322,693	53.1	-57	\$43,764	\$149,801	\$57,152	\$92,649	2.1	318,238
ECM 1	Install LED Fixtures	Yes	44,015	0.0	0	\$6,025	\$69,418	\$14,600	\$54,818	9.1	44,323
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	581	0.1	0	\$79	\$183	\$52	\$131	1.7	571
ECM 3	Retrofit Fixtures with LED Lamps	Yes	278,096	53.0	-57	\$37,661	\$80,200	\$42,500	\$37,700	1.0	273,344
Lighting Control Measures			86,808	16.4	-18	\$11,754	\$64,935	\$24,005	\$40,930	3.5	85,289
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	73,170	13.9	-15	\$9,907	\$50,760	\$10,500	\$40,260	4.1	71,890
ECM 5	Install High/Low Lighting Controls	Yes	13,638	2.6	-3	\$1,847	\$14,175	\$13,505	\$670	0.4	13,399
Variable Frequency Drive (VFD) Measures			2,453	0.6	0	\$336	\$3,261	\$320	\$2,941	8.8	2,470
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	2,453	0.6	0	\$336	\$3,261	\$320	\$2,941	8.8	2,470
HVAC System Improvements			3,288	0.0	40	\$732	\$10,875	\$0	\$10,875	14.9	7,990
ECM 7	Implement Demand Control Ventilation (DCV)	No	3,288	0.0	40	\$732	\$10,875	\$0	\$10,875	14.9	7,990
Domestic Water Heating Upgrade			0	0.0	38	\$272	\$459	\$459	\$0	0.0	4,503
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	38	\$272	\$459	\$459	\$0	0.0	4,503
TOTALS (COST EFFECTIVE MEASURES)			411,953	70.1	-37	\$56,125	\$218,456	\$81,936	\$136,520	2.4	410,500
TOTALS (ALL MEASURES)			415,241	70.1	3	\$56,857	\$229,331	\$81,936	\$147,396	2.6	418,490

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W.R. JAMES ST. ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			70,793	15.1	-12	\$11,331	\$38,856	\$14,860	\$23,996	2.1	69,920
ECM 1	Install LED Fixtures	Yes	10,754	0.0	0	\$1,735	\$12,324	\$2,620	\$9,704	5.6	10,829
ECM 2	Retrofit Fixtures with LED Lamps	Yes	60,039	15.1	-12	\$9,596	\$26,532	\$12,240	\$14,292	1.5	59,091
Lighting Control Measures			15,062	4.0	-3	\$2,406	\$34,065	\$11,150	\$22,915	9.5	14,799
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	12,225	3.2	-3	\$1,952	\$28,890	\$6,230	\$22,660	11.6	12,011
ECM 4	Install High/Low Lighting Controls	Yes	2,837	0.7	-1	\$453	\$5,175	\$4,920	\$255	0.6	2,788
Variable Frequency Drive (VFD) Measures			14,614	4.6	0	\$2,358	\$18,896	\$2,560	\$16,336	6.9	14,716
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	14,614	4.6	0	\$2,358	\$18,896	\$2,560	\$16,336	6.9	14,716
HVAC System Improvements			1,414	0.0	14	\$336	\$1,359	\$0	\$1,359	4.1	3,014
ECM 6	Implement Demand Control Ventilation (DCV)	Yes	1,414	0.0	14	\$336	\$1,359	\$0	\$1,359	4.1	3,014
Domestic Water Heating Upgrade			0	0.0	23	\$179	\$265	\$265	\$0	0.0	2,647
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	23	\$179	\$265	\$265	\$0	0.0	2,647
TOTALS (COST EFFECTIVE MEASURES)			101,883	23.7	21	\$16,610	\$93,441	\$28,835	\$64,606	3.9	105,097
TOTALS (ALL MEASURES)			101,883	23.7	21	\$16,610	\$93,441	\$28,835	\$64,606	3.9	105,097

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

LEVITT MIDDLE SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			161,781	32.9	-26	\$20,409	\$75,489	\$30,264	\$45,225	2.2	159,822
ECM 1	Install LED Fixtures	Yes	12,636	0.0	0	\$1,612	\$18,426	\$600	\$17,826	11.1	12,724
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	514	0.1	0	\$65	\$187	\$60	\$127	2.0	505
ECM 3	Retrofit Fixtures with LED Lamps	Yes	148,631	32.8	-26	\$18,733	\$56,876	\$29,604	\$27,272	1.5	146,593
Lighting Control Measures			35,857	9.2	-7	\$4,509	\$35,851	\$12,710	\$23,141	5.1	35,230
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	32,724	8.4	-7	\$4,115	\$31,576	\$8,450	\$23,126	5.6	32,152
ECM 5	Install High/Low Lighting Controls	Yes	3,133	0.8	-1	\$394	\$4,275	\$4,260	\$15	0.0	3,078
Variable Frequency Drive (VFD) Measures			18,634	9.7	0	\$2,377	\$20,787	\$5,440	\$15,347	6.5	18,764
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	18,634	9.7	0	\$2,377	\$20,787	\$5,440	\$15,347	6.5	18,764
Domestic Water Heating Upgrade			0	0.0	23	\$195	\$172	\$172	\$0	0.0	2,667
ECM 7	Install Low-Flow DHW Devices	Yes	0	0.0	23	\$195	\$172	\$172	\$0	0.0	2,667
Food Service & Refrigeration Measures			2,139	0.2	0	\$273	\$837	\$260	\$577	2.1	2,154
ECM 8	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	527	0.1	0	\$67	\$607	\$160	\$447	6.6	531
ECM 9	Vending Machine Control	Yes	1,612	0.2	0	\$206	\$230	\$100	\$130	0.6	1,623
TOTALS (COST EFFECTIVE MEASURES)			218,411	52.1	-11	\$27,763	\$133,136	\$48,846	\$84,290	3.0	218,636
TOTALS (ALL MEASURES)			218,411	52.1	-11	\$27,763	\$133,136	\$48,846	\$84,290	3.0	218,636

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

BOOKBINDER SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			48,643	16.3	-6	\$6,659	\$50,087	\$18,714	\$31,373	4.7	48,250
ECM 1	Install LED Fixtures	Yes	16,075	0.0	0	\$2,219	\$14,070	\$200	\$13,870	6.3	16,187
ECM 2	Retrofit Fixtures with LED Lamps	Yes	32,567	16.3	-6	\$4,440	\$36,016	\$18,514	\$17,502	3.9	32,063
Lighting Control Measures			7,219	4.3	-2	\$982	\$23,246	\$10,005	\$13,241	13.5	7,075
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	6,420	3.8	-1	\$873	\$17,396	\$4,170	\$13,226	15.1	6,292
ECM 4	Install High/Low Lighting Controls	Yes	799	0.5	0	\$109	\$5,850	\$5,835	\$15	0.1	783
Variable Frequency Drive (VFD) Measures			1,290	1.1	0	\$178	\$11,844	\$0	\$11,844	66.5	1,299
ECM 5	Install VFDs on Heating Water Pumps	No	1,290	1.1	0	\$178	\$11,844	\$0	\$11,844	66.5	1,299
Gas Heating (HVAC/Process) Replacement			0	0.0	238	\$2,123	\$125,231	\$18,720	\$106,511	50.2	27,871
ECM 6	Install High Efficiency Hot Water Boilers	No	0	0.0	238	\$2,123	\$125,231	\$18,720	\$106,511	50.2	27,871
Domestic Water Heating Upgrade			0	0.0	23	\$205	\$7,417	\$1,069	\$6,349	31.0	2,690
ECM 7	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	10	\$91	\$7,224	\$875	\$6,349	70.1	1,190
ECM 8	Install Low-Flow DHW Devices	Yes	0	0.0	13	\$114	\$194	\$194	\$0	0.0	1,500
TOTALS (COST EFFECTIVE MEASURES)			55,861	20.5	5	\$7,755	\$73,526	\$28,913	\$44,614	5.8	56,825
TOTALS (ALL MEASURES)			57,151	21.7	253	\$10,146	\$217,825	\$48,508	\$169,317	16.7	87,184

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

J.C. STUART ELEMENTARY SCHOOL

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			91,592	25.9	-17	\$12,315	\$54,676	\$24,068	\$30,608	2.5	90,216
ECM 1	Install LED Fixtures	Yes	9,338	0.0	0	\$1,270	\$13,368	\$2,810	\$10,558	8.3	9,400
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	146	0.0	0	\$20	\$101	\$20	\$81	4.1	143
ECM 3	Retrofit Fixtures with LED Lamps	Yes	82,108	25.8	-17	\$11,026	\$41,207	\$21,238	\$19,969	1.8	80,673
Lighting Control Measures			21,584	6.7	-5	\$2,899	\$32,485	\$11,485	\$21,000	7.2	21,207
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	19,132	6.0	-4	\$2,569	\$27,310	\$6,510	\$20,800	8.1	18,798
ECM 5	Install High/Low Lighting Controls	Yes	2,452	0.8	-1	\$329	\$5,175	\$4,975	\$200	0.6	2,409
Variable Frequency Drive (VFD) Measures			11,591	3.4	0	\$1,576	\$16,244	\$1,600	\$14,644	9.3	11,672
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	7,322	2.9	0	\$996	\$5,375	\$1,600	\$3,775	3.8	7,373
ECM 7	Install VFDs on Heating Water Pumps	No	4,269	0.6	0	\$581	\$10,869	\$0	\$10,869	18.7	4,299
Domestic Water Heating Upgrade			0	0.0	14	\$115	\$11,500	\$1,393	\$10,107	88.1	1,661
ECM 8	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	14	\$115	\$11,500	\$1,393	\$10,107	88.1	1,661
Food Service & Refrigeration Measures			1,612	0.2	0	\$219	\$230	\$100	\$130	0.6	1,623
ECM 9	Vending Machine Control	Yes	1,612	0.2	0	\$219	\$230	\$100	\$130	0.6	1,623
TOTALS (COST EFFECTIVE MEASURES)			122,110	35.7	-22	\$16,429	\$92,766	\$37,253	\$55,513	3.4	120,419
TOTALS (ALL MEASURES)			126,379	36.2	-8	\$17,124	\$115,136	\$38,646	\$76,490	4.5	126,379

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

HAWTHORNE ELEMENTARY SCHOOL



#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			59,535	16.5	-10	\$8,111	\$40,379	\$13,372	\$27,007	3.3	58,775
ECM 1	Install LED Fixtures	Yes	10,854	0.0	0	\$1,493	\$14,334	\$0	\$14,334	9.6	10,930
ECM 2	Retrofit Fixtures with LED Lamps	Yes	48,682	16.5	-10	\$6,618	\$26,044	\$13,372	\$12,672	1.9	47,846
Lighting Control Measures			12,595	4.3	-3	\$1,712	\$26,692	\$9,635	\$17,057	10.0	12,375
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	10,374	3.5	-2	\$1,410	\$22,642	\$5,670	\$16,972	12.0	10,192
ECM 4	Install High/Low Lighting Controls	Yes	2,221	0.8	0	\$302	\$4,050	\$3,965	\$85	0.3	2,183
Variable Frequency Drive (VFD) Measures			5,491	2.9	0	\$755	\$5,152	\$1,600	\$3,552	4.7	5,530
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	5,491	2.9	0	\$755	\$5,152	\$1,600	\$3,552	4.7	5,530
Domestic Water Heating Upgrade			0	0.0	3	\$22	\$22	\$22	\$0	0.0	333
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	3	\$22	\$22	\$22	\$0	0.0	333
TOTALS (COST EFFECTIVE MEASURES)			77,622	23.7	-10	\$10,600	\$72,244	\$24,629	\$47,615	4.5	77,013
TOTALS (ALL MEASURES)			77,622	23.7	-10	\$10,600	\$72,244	\$24,629	\$47,615	4.5	77,013

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

WAREHOUSE

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			36,958	6.0	-4	\$5,138	\$41,711	\$12,260	\$29,451	5.7	36,742
ECM 1	Install LED Fixtures	Yes	21,681	0.9	-1	\$3,030	\$33,096	\$8,000	\$25,096	8.3	21,758
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	2,367	0.7	-1	\$327	\$1,340	\$400	\$940	2.9	2,320
ECM 3	Retrofit Fixtures with LED Lamps	Yes	12,910	4.4	-3	\$1,782	\$7,275	\$3,860	\$3,415	1.9	12,665
Lighting Control Measures			4,925	1.7	-1	\$680	\$7,091	\$1,790	\$5,301	7.8	4,828
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	4,864	1.7	-1	\$671	\$6,866	\$1,580	\$5,286	7.9	4,769
ECM 5	Install High/Low Lighting Controls	Yes	61	0.0	0	\$8	\$225	\$210	\$15	1.8	59
Electric Unitary HVAC Measures			240	0.4	0	\$34	\$1,633	\$0	\$1,633	48.6	242
ECM 6	Install High Efficiency Air Conditioning Units	No	240	0.4	0	\$34	\$1,633	\$0	\$1,633	48.6	242
Domestic Water Heating Upgrade			834	0.0	1	\$125	\$57	\$57	\$0	0.0	951
ECM 7	Install Low-Flow DHW Devices	Yes	834	0.0	1	\$125	\$57	\$57	\$0	0.0	951
Food Service & Refrigeration Measures			1,612	0.2	0	\$226	\$230	\$100	\$130	0.6	1,623
ECM 8	Vending Machine Control	Yes	1,612	0.2	0	\$226	\$230	\$100	\$130	0.6	1,623
TOTALS (COST EFFECTIVE MEASURES)			44,329	7.9	-4	\$6,169	\$49,089	\$14,207	\$34,882	5.7	44,145
TOTALS (ALL MEASURES)			44,569	8.3	-4	\$6,202	\$50,722	\$14,207	\$36,515	5.9	44,386

* - All incentives presented in this table are based on NJ SmartStart equipment incentives and assume proposed equipment meets minimum performance criteria for that program.

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

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

CLEAN ENERGY PROGRAM PORTFOLIO

ELIGIBLE SECTORS

Commercial, Industrial, Government, Non-Profit, Institutional and Multifamily

INCENTIVE PROGRAMS

Equipment Rebates:

- **SmartStart**
- **Customer Tailored Energy Efficiency Pilot (CTEEP)**
- **Direct Install**
- Large Energy Users

Whole Buildings:

- **Pay for Performance**

Energy Generation:

- Combined Heat and Power – Fuel Cells

OTHER PROGRAMS

Renewable Energy Generation:

- **SREC Registration Program (SRP)**
- **Community Solar**



SOLAR ENERGY GENERATION POTENTIAL

	Twin Hills ES	Garfield ES	Willingboro HS	McGinley	Country Club Admin	Memorial MS	WR James	Hawthorne
<i>Potential:</i>	HIGH	Medium	HIGH	Medium	HIGH	HIGH	HIGH	Medium
<i>System Potential: (kW)</i>	112	94	500	35	96	300	106	76
<i>Electric Generation: (kWh per year)</i>	133,433	111,989	595,685	41,698	114,371	357,411	126,285	90,545
<i>Displaced Cost: (per year)</i>	\$21,490	\$17,050	\$71,530	\$7,280	\$19,460	\$48,920	\$20,380	\$12,450

SREC Registration Program (SRP):

<http://www.NJCleanEnergy.com/SREC>

Community Solar Energy Pilot Program:

<http://www.NJCleanEnergy.com/CommunitySolar>



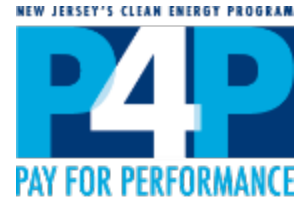
RECOMMENDED NJCEP INCENTIVES PER BUILDING

Entity Name	Pay For Performance	Direct Install	SmartStart	CTEEP
Twin Hills Elementary School		X	X	X
Garfield East Elementary School		X	X	X
Willingboro HS	X		X	X
Joseph A McGinley School		X	X	X
Country Club Admin Bldg.		X	X	X
Memorial Middle School			X	X
WR James St Elementary School		X	X	X
Levitt Middle School	X		X	X
Bookbinder School		X	X	X
JC Stuart Elementary School		X	X	X
Hawthorne Elementary School		X	X	X
Warehouse		X	X	X

Buildings marked with a lighter X do not quite meet the requirements of the current P4P program. P4P should be evaluated again once project planning is underway.

PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



What is P4P: Comprehensive, whole-building approach to saving energy in existing or new facilities.

Qualifications: Annual peak demand 200 kW+ in the previous year for existing buildings

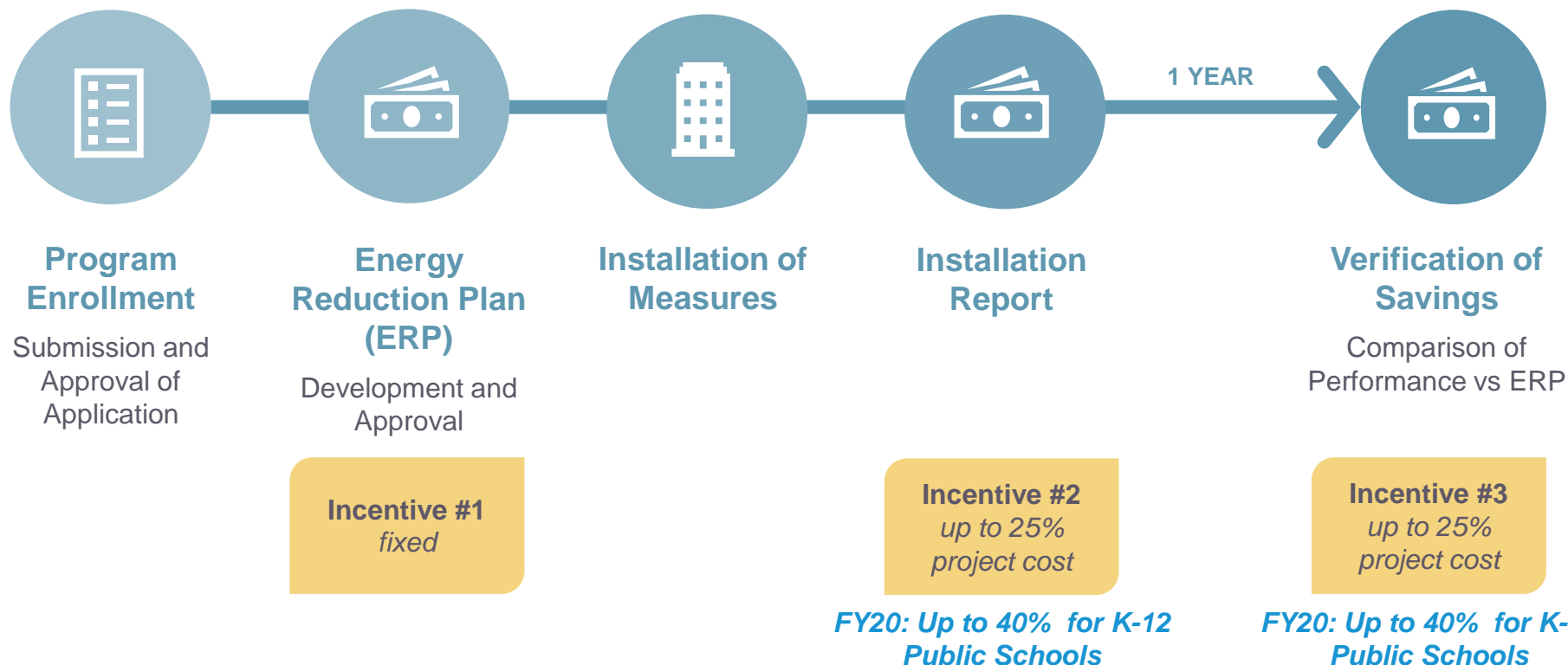
About: Customer choose from a network of pre-approved *Participating Partners*

Incentives:

- Incentives paid in three installments
 - Up to \$2MM per project((\$4MM entity cap/year)
 - \$1 million for electric measures
 - \$1 million for gas measures
 - Up to 50% of project cost (or 80% for UEZ/OZ/Local Govt./ K-12 Public Schools) up to \$2MM per project / \$4MM per entity annually

PAY FOR PERFORMANCE

NJCleanEnergy.com/P4P



DIRECT INSTALL

NJCleanEnergy.com/DI



What is DI: Turn-key retrofit program to replace outdated and inefficient equipment, including lighting, HVAC, refrigeration, etc.

Qualifications: Average electric peak demand <200 kW in the previous 12 months

- About:**
- Pre-approved participating contractors provide support and process paperwork
 - Incentives paid directly to the contractor
 - Fast project turnaround time (4-6 months)

- Incentives:**
- \$125,000 incentive funding per project/building ([\\$250K](#) UEZ/OZ/Local Govt./[K-12 Public Schools](#)), or
 - \$250,000 entity cap ([\\$4MM](#) UEZ/OZ/Local Govt./[K-12 Public Schools](#))

DIRECT INSTALL

NJCleanEnergy.com/DI

Facilities in Urban Enterprise Zones (UEZ), Opportunity Zones (OZ), Local Governments, and K-12 public schools:

INCENTIVE FUNDING

Up to **80%** of installed cost is paid directly to the contractor

CUSTOMER

20% of installed cost

All other eligible facilities:

INCENTIVE FUNDING

Up to **70%** of installed cost is paid directly to the contractor

CUSTOMER

30% of installed cost



DIRECT INSTALL

NJCleanEnergy.com/DI

Participating Contractor

Hutchinson Mechanical Services

Pete Hatton

856-429-5828 x259

petehatton@hutchbiz.com



SMARTSTART

NJCleanEnergy.com/SSB

What is SSB: Individual high efficiency equipment rebates for new construction, renovation, remodeling, equipment replacement

Qualifications:

- All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- Prescriptive and custom designed measures
- Pre-approval required only for lighting projects with incentives >\$100,000 and all custom projects
- For measures not requiring pre-approval, applications must be submitted to the program within one year of purchase.

Incentives:

- Prescriptive: \$500,000 cap for each electric or gas account
- Custom, lesser of the following:
 - \$0.16/kWh and/or \$1.60/Therm saved annually
 - 50% of incremental installed cost
 - Buy-down to 1 year payback based on incremental cost and savings



SMARTSTART

NJCleanEnergy.com/SSB

Prescriptive Incentives

- Lighting & Lighting Controls
- Packaged HVAC
- Boilers & Water Heaters
- Chillers
- VFD's
- Food Service
- Refrigeration

Prescriptive Only:

**DOUBLE
INCENTIVES FOR
OZ/UEZ/LOCAL
GOVT./K-12 PUBLIC
SCHOOLS**

Custom Incentives

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Projects must have a minimum first year energy savings of 75,000 kWh or 1,500 therms
- Project pre and post inspection required



CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

NJCleanEnergy.com/CTEEP

What is CTEEP: A streamlined/single application process for participants submitting multiple different technology types.

Qualifications:

- All C&I customer types contributing into the Societal Benefits Charge (SBC)

About:

- On site assistance available
- Additional technical incentive available to offset soft costs associated with developing and planning custom projects

Incentives:

- \$250,000 fiscal year entity cap
- Technical assistance incentives for custom project evaluation (up to \$10K)

**SAME INCENTIVE
VALUES AS
SMARTSTART**

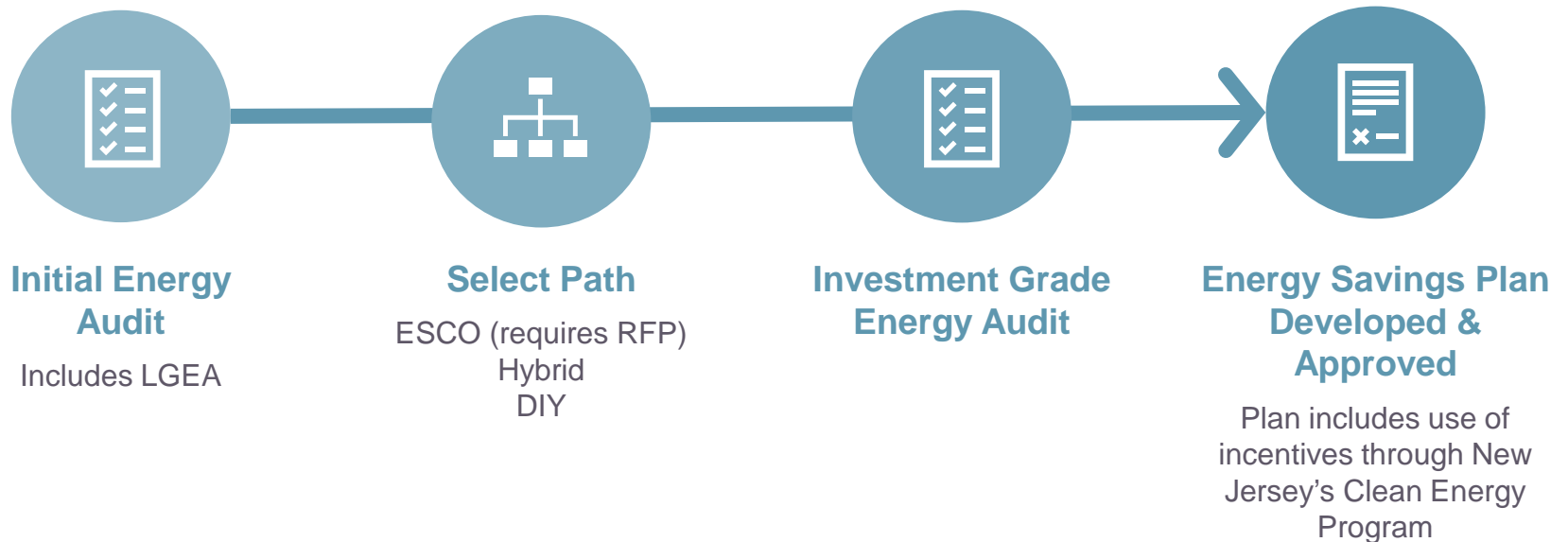
FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the BPU
- Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract
- Requires NO new bonding and is outside of capital budget
- Does not count as debt or require voter approval



FINANCING MECHANISM: ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

FOR MORE INFORMATION

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ESIP Coordinator

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ESIP@bpu.nj.gov



FOR MORE INFORMATION

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QUESTIONS

