

New Jersey's Clean Energy Program

LGEA Presentation

Borough of Woodbine & Woodbine MUA

October 23, 2020



INTRODUCTIONS

- *Borough of Woodbine*
 - William Pikolycky – Mayor
 - Dave Bennet – Councilman
 - Lisa Garrison – Borough Clerk
 - James Gurdgiel – PW Director
- *NJ Clean Energy Program*
 - Aimee Lalonde – TRC Program Manager
 - Moussa Traore – TRC Auditor
 - Sarah Walters – TRC Account Manager
 - Tony O'Donnell – TRC Outreach Manager
 - Michelle Rossi – ESIP Coordinator (BPU)



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 Borough of Woodbine & MUA



LGEA PROCESS

- Application Approval
- Scheduling Call
- Audit
- Benchmarking & Analysis
- Draft Report
- LGEA 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

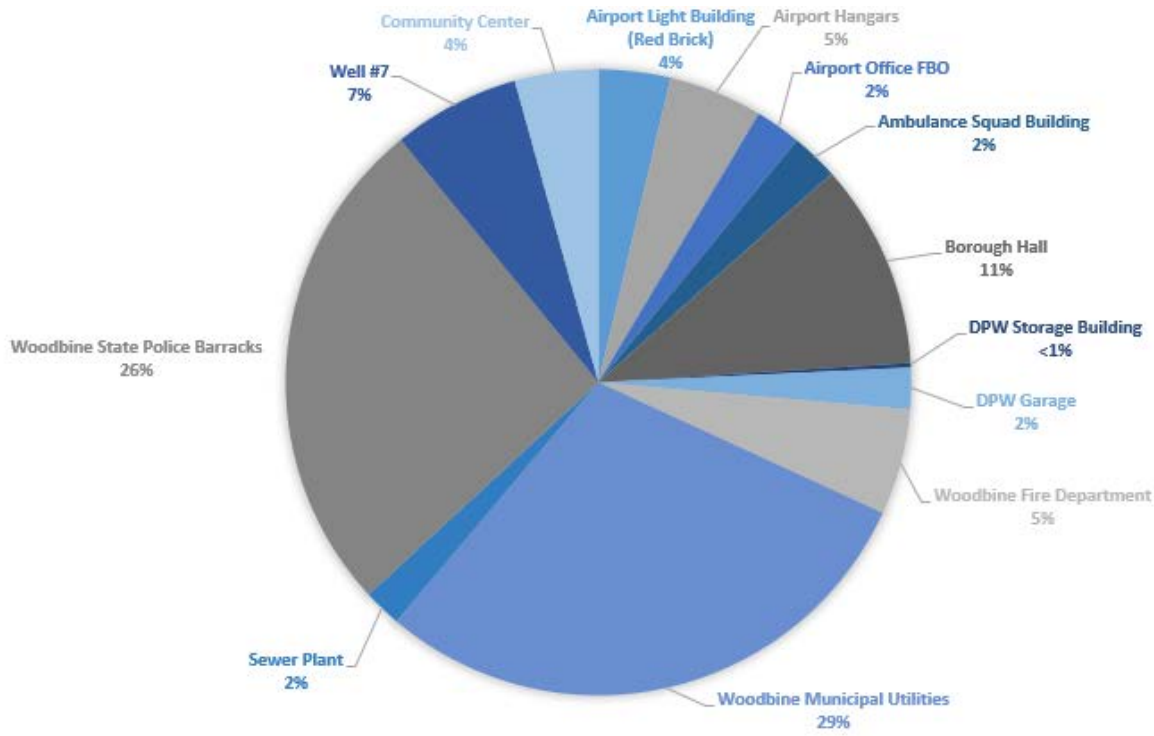
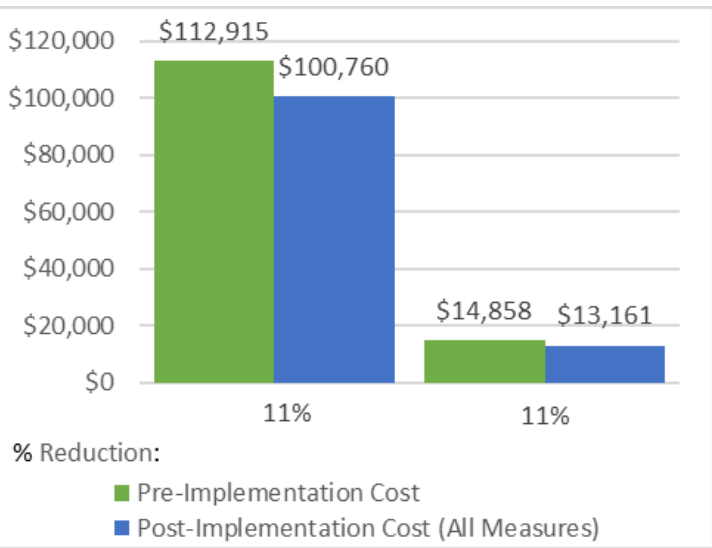
Sites Visited/Analyzed

- Woodbine Municipal Utilities
- Water Plant Garage
- Water Plant Filter Building
- Well #7
- Woodbine Borough Office
- Woodbine State Police Barracks
- Woodbine Fire Department
- Ambulance Squad Building
- Community Center
- DPW Garage
- DPW Storage Building
- Woodbine Borough Sewage Treatment Plant
- Airport Hangar B-2
- Airport Hangar D-1
- Airport Hangar C-2
- Airport Hangar A-1
- Airport Office FBO
- Airport Light Building (Red Brick)
- Airport Hangar #12

UTILITY BREAKOUT

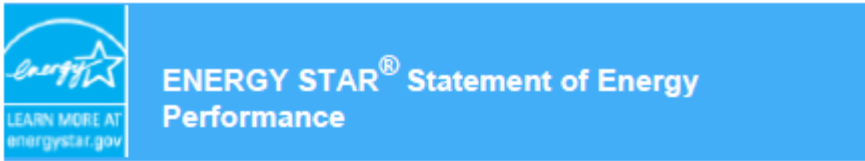
Pre & Post Implementation Costs

Percent of Total Annual Energy Costs



BENCHMARKING

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.



37
ENERGY STAR® Score¹

Woodbine Borough Hall

Primary Property Type: Office
Gross Floor Area (ft²): 8,320
Built: 1985

For Year Ending: January 31, 2020
Date Generated: June 24, 2020

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 Woodbine Borough Hall 501 Washington Avenue Woodbine, New Jersey 08270	Property Owner Borough of Woodbine 501 Washington Avenue Woodbine, NJ 08270 (609) 861-2153	Primary Contact William Pitkojcky 501 Washington Avenue Woodbine, NJ 08270 (609) 861-2153 mayor@boroughofwoodbine.net
Property ID: 11619605		

Energy Consumption and Energy Use Intensity (EUI)			
Site EUI 78.1 kBtu/ft ²	Annual Energy by Fuel	National Median Comparison	
Electric - Grid (kBtu)	198,908 (40%)	National Median Site EUI (kBtu/ft ²)	67.3
Natural Gas (kBtu)	294,545 (60%)	National Median Source EUI (kBtu/ft ²)	118.1
Source EUI 137.1 kBtu/ft ²		% Diff from National Median Source EUI	16%
Annual Emissions			
Greenhouse Gas Emissions (Metric Tons CO2e/year)		36	

Site EUI
78.1 kBtu/ft²

Source EUI
137.1 kBtu/ft²

National Median Comparison	
National Median Site EUI (kBtu/ft ²)	67.3
National Median Source EUI (kBtu/ft ²)	118.1
% Diff from National Median Source EUI	16%

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: _____

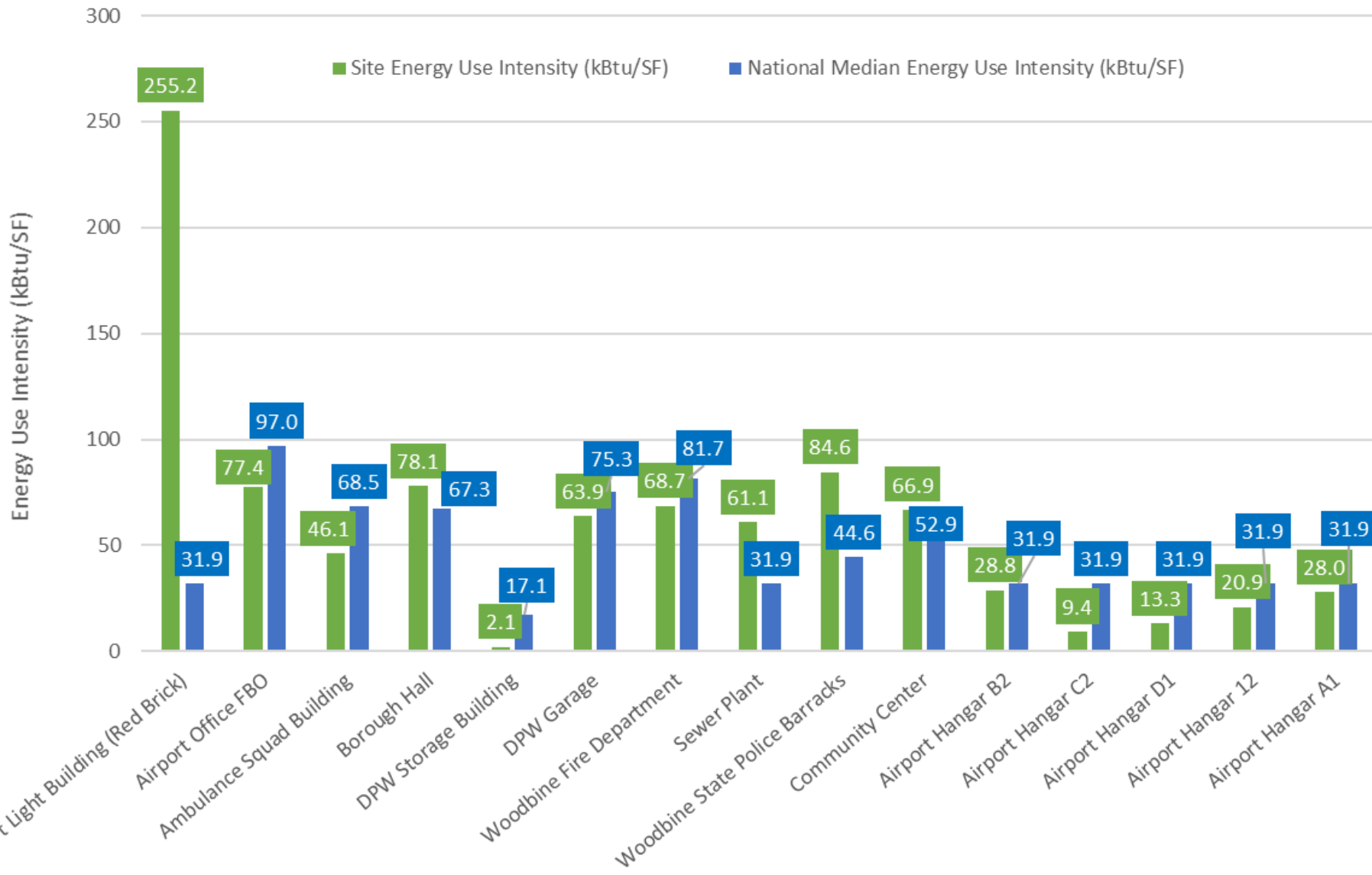
Licensed Professional

() _____

Professional Engineer or Registered Architect Stamp (if applicable)

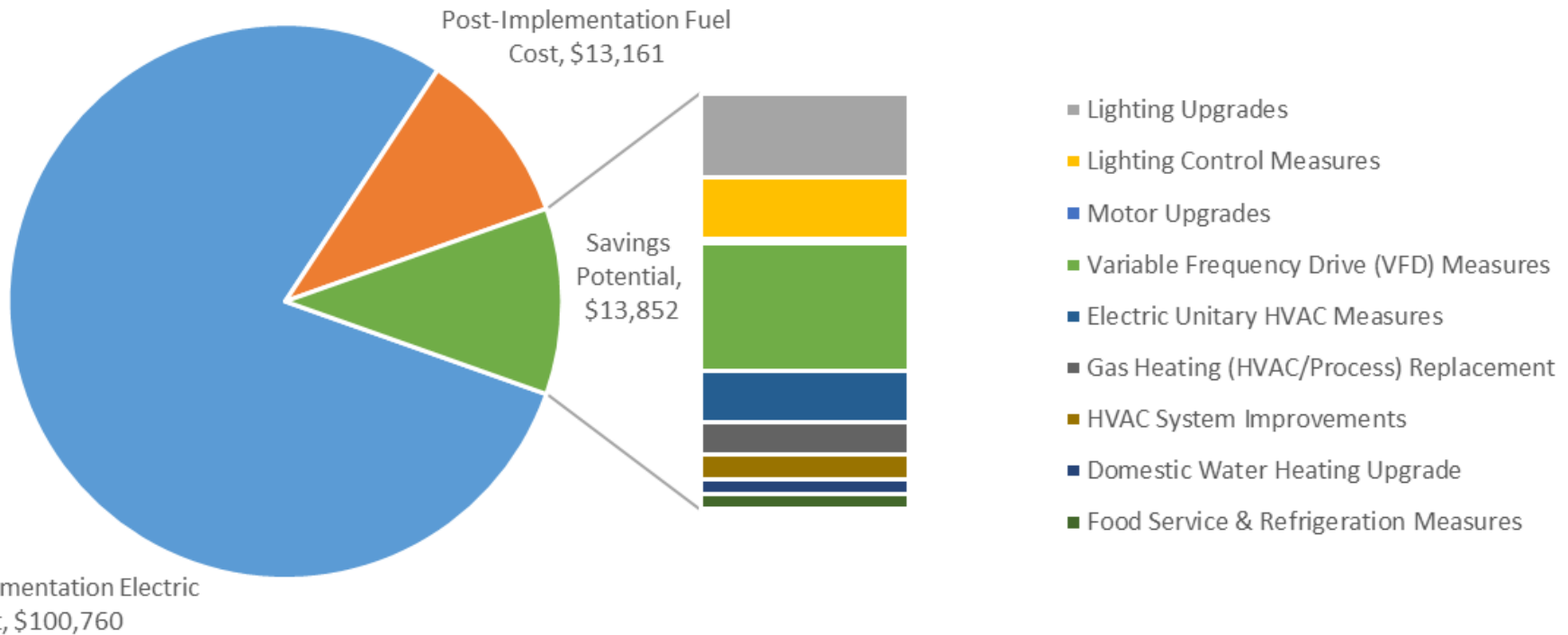
Site Name	ENERGY STAR® Score
Airport Light Building (Red Brick)	N/A
Airport Office FBO	66
Ambulance Squad Building	N/A
Borough Hall	37
DPW Storage Building	N/A
DPW Garage	N/A
Woodbine Fire Department	N/A
Woodbine Municipal Utilities Complex	N/A
Sewer Plant	N/A
Woodbine State Police	N/A
Well #7	N/A
Community Center	N/A
Airport Hangar B2	N/A
Airport Hangar C2	N/A
Airport Hangar D1	N/A
Airport Hangar 12	N/A
Airport Hangar A1	N/A

BENCHMARKING



ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES

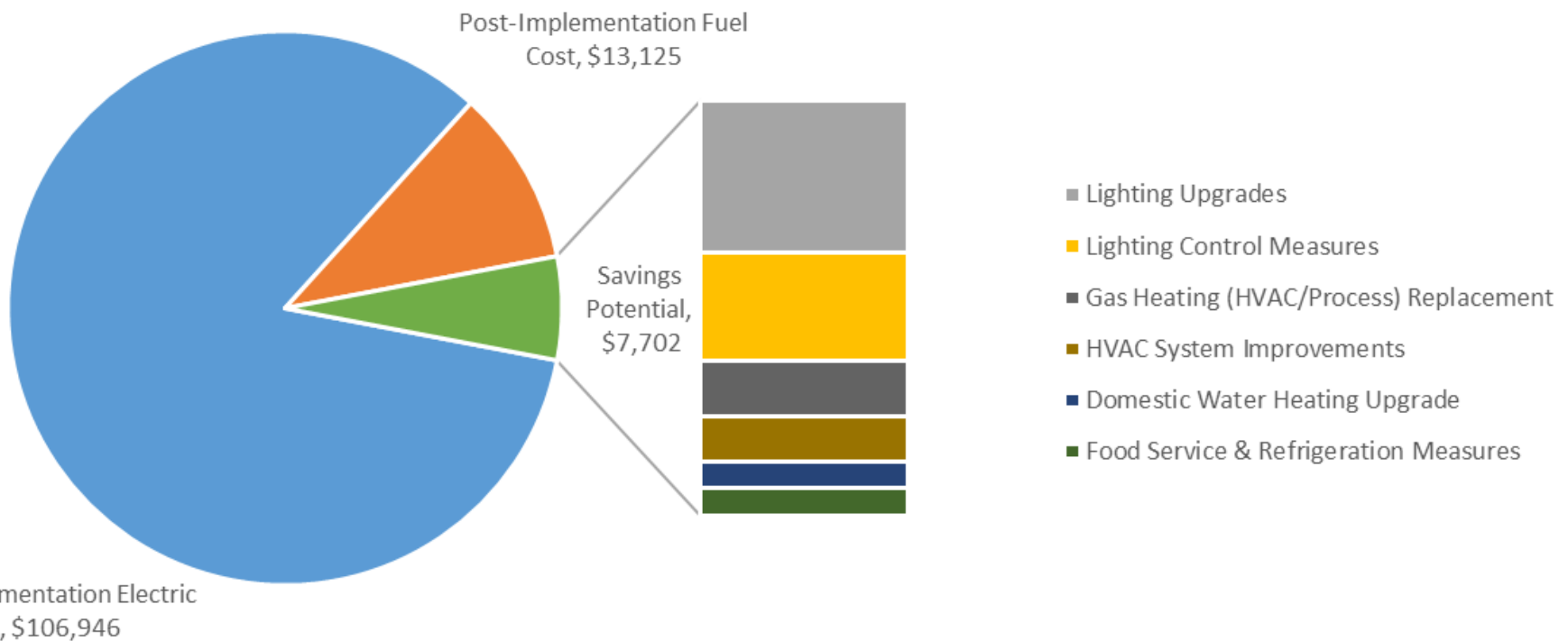
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		15,581	4.3	-0.9	\$2,812	\$11,717	\$3,534	\$8,183	2.9	15,589
ECM 1	Install LED Fixtures	3,910	0.6	0.0	\$729	\$6,104	\$1,640	\$4,464	6.1	3,937
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	7,192	2.4	-0.3	\$1,277	\$3,710	\$1,220	\$2,490	1.9	7,206
ECM 3	Retrofit Fixtures with LED Lamps	4,478	1.3	-0.6	\$806	\$1,904	\$674	\$1,230	1.5	4,445
Lighting Control Measures		12,168	3.4	-1.0	\$2,028	\$13,848	\$4,115	\$9,733	4.8	12,131
ECM 4	Install Occupancy Sensor Lighting Controls	10,264	3.1	-1.0	\$1,726	\$13,173	\$3,455	\$9,718	5.6	10,213
ECM 5	Install High/Low Lighting Controls	1,904	0.2	0.0	\$302	\$675	\$660	\$15	0.0	1,917
Motor Upgrades		905	0.2	0.0	\$152	\$2,466	\$0	\$2,466	16.2	911
ECM 6	Premium Efficiency Motors	905	0.2	0.0	\$152	\$2,466	\$0	\$2,466	16.2	911
Variable Frequency Drive (VFD) Measures		26,642	3.8	0.0	\$4,232	\$50,471	\$2,050	\$48,421	11.4	26,828
ECM 7	Install VFDs on Constant Volume (CV) Fans	21,674	2.9	0.0	\$3,443	\$40,559	\$1,500	\$39,059	11.3	21,825
ECM 8	Install VFDs on Heating Water Pumps	4,533	0.9	0.0	\$720	\$6,522	\$400	\$6,122	8.5	4,565
ECM 9	Install VFDs on Cooling Tower Fans	435	0.0	0.0	\$69	\$3,391	\$150	\$3,241	46.9	438
Electric Unitary HVAC Measures		10,613	6.4	0.0	\$1,746	\$146,012	\$11,378	\$134,634	77.1	10,687
ECM 10	Install High Efficiency Air Conditioning Units	6,769	5.1	0.0	\$1,135	\$45,505	\$5,520	\$39,985	35.2	6,817
ECM 11	Install High Efficiency Heat Pumps	3,844	1.3	0.0	\$611	\$100,506	\$5,858	\$94,649	155.0	3,871
Gas Heating (HVAC/Process) Replacement		0	0.0	73.0	\$1,040	\$17,242	\$7,200	\$10,042	9.7	8,544
ECM 12	Install High Efficiency Furnaces	0	0.0	73.0	\$1,040	\$17,242	\$7,200	\$10,042	9.7	8,544
HVAC System Improvements		1,619	0.0	40.0	\$849	\$2,573	\$120	\$2,453	2.9	6,315
ECM 13	Install Programmable Thermostats	1,619	0.0	19.9	\$563	\$2,309	\$0	\$2,309	4.1	3,965
ECM 14	Install Pipe Insulation	0	0.0	20.1	\$286	\$264	\$120	\$144	0.5	2,350
Domestic Water Heating Upgrade		2,920	1.4	-0.8	\$480	\$659	\$643	\$16	0.0	2,842
ECM 15	Install Tankless Water Heater	246	1.4	-0.8	\$30	\$523	\$523	\$0	0.0	150
ECM 16	Install Low-Flow DHW Devices	2,674	0.0	0.0	\$450	\$136	\$120	\$16	0.0	2,693
Food Service & Refrigeration Measures		3,224	0.4	0.0	\$512	\$460	\$200	\$260	0.5	3,246
ECM 17	Vending Machine Control	3,224	0.4	0.0	\$512	\$460	\$200	\$260	0.5	3,246
TOTALS		73,671	19.8	110.2	\$13,852	\$245,448	\$29,240	\$216,208	15.6	87,093

* - 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		15,581	4.3	-0.9	\$2,812	\$11,717	\$3,534	\$8,183	2.9	15,589
ECM 1	Install LED Fixtures	3,910	0.6	0.0	\$729	\$6,104	\$1,640	\$4,464	6.1	3,937
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	7,192	2.4	-0.3	\$1,277	\$3,710	\$1,220	\$2,490	1.9	7,206
ECM 3	Retrofit Fixtures with LED Lamps	4,478	1.3	-0.6	\$806	\$1,904	\$674	\$1,230	1.5	4,445
Lighting Control Measures		12,067	3.2	-1.0	\$2,009	\$12,498	\$3,835	\$8,663	4.3	12,029
ECM 4	Install Occupancy Sensor Lighting Controls	10,163	3.0	-1.0	\$1,707	\$11,823	\$3,175	\$8,648	5.1	10,112
ECM 5	Install High/Low Lighting Controls	1,904	0.2	0.0	\$302	\$675	\$660	\$15	0.0	1,917
Gas Heating (HVAC/Process) Replacement		0	0.0	73.0	\$1,040	\$17,242	\$7,200	\$10,042	9.7	8,544
ECM 12	Install High Efficiency Furnaces	0	0.0	73.0	\$1,040	\$17,242	\$7,200	\$10,042	9.7	8,544
HVAC System Improvements		1,619	0.0	40.0	\$849	\$2,573	\$120	\$2,453	2.9	6,315
ECM 13	Install Programmable Thermostats	1,619	0.0	19.9	\$563	\$2,309	\$0	\$2,309	4.1	3,965
Domestic Water Heating Upgrade		2,920	1.4	-0.8	\$480	\$659	\$643	\$16	0.0	2,842
ECM 15	Install Tankless Water Heater	246	1.4	-0.8	\$30	\$523	\$523	\$0	0.0	150
ECM 16	Install Low-Flow DHW Devices	2,674	0.0	0.0	\$450	\$136	\$120	\$16	0.0	2,693
Food Service & Refrigeration Measures		3,224	0.4	0.0	\$512	\$460	\$200	\$260	0.5	3,246
ECM 17	Vending Machine Control	3,224	0.4	0.0	\$512	\$460	\$200	\$260	0.5	3,246
TOTALS		35,411	9.2	110.2	\$7,702	\$45,149	\$15,532	\$29,617	3.8	48,565

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

WOODBINE MUNICIPAL UTILITIES

#	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			427	0.0	0	\$67	\$669	\$208	\$461	6.9	428
ECM 1	Install LED Fixtures	Yes	221	0.0	0	\$35	\$600	\$200	\$400	11.5	222
ECM 2	Retrofit Fixtures with LED Lamps	Yes	206	0.0	0	\$32	\$69	\$8	\$61	1.9	205
Lighting Control Measures			384	0.2	0	\$59	\$810	\$210	\$600	10.2	377
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	384	0.2	0	\$59	\$810	\$210	\$600	10.2	377
Electric Unitary HVAC Measures			1,841	0.9	0	\$289	\$7,481	\$920	\$6,561	22.7	1,853
ECM 4	Install High Efficiency Air Conditioning Units	No	1,841	0.9	0	\$289	\$7,481	\$920	\$6,561	22.7	1,853
HVAC System Improvements			532	0.0	0	\$84	\$660	\$0	\$660	7.9	536
ECM 5	Install Programmable Thermostats	Yes	532	0.0	0	\$84	\$660	\$0	\$660	7.9	536
Domestic Water Heating Upgrade			278	0.0	0	\$44	\$14	\$14	\$0	0.0	280
ECM 6	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$44	\$14	\$14	\$0	0.0	280
TOTALS (COST EFFECTIVE MEASURES)			1,621	0.2	0	\$252	\$2,153	\$432	\$1,721	6.8	1,621
TOTALS (ALL MEASURES)			3,461	1.1	0	\$541	\$9,634	\$1,352	\$8,282	15.3	3,474

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WELL #7

#	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			553	0.1	0	\$110	\$1,036	\$204	\$832	7.6	553
ECM 1	Install LED Fixtures	Yes	423	0.0	0	\$85	\$966	\$200	\$766	9.0	426
ECM 2	Retrofit Fixtures with LED Lamps	Yes	130	0.1	0	\$25	\$70	\$4	\$66	2.7	127
TOTALS (COST EFFECTIVE MEASURES)			553	0.1	0	\$110	\$1,036	\$204	\$832	7.6	553
TOTALS (ALL MEASURES)			553	0.1	0	\$110	\$1,036	\$204	\$832	7.6	553

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WOODBINE BOROUGH OFFICE

#	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			620	0.2	0	\$102	\$89	\$8	\$81	0.8	609
ECM 1	Retrofit Fixtures with LED Lamps	Yes	620	0.2	0	\$102	\$89	\$8	\$81	0.8	609
Lighting Control Measures			1,590	0.5	0	\$261	\$2,565	\$1,165	\$1,400	5.4	1,563
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,590	0.5	0	\$261	\$2,565	\$1,165	\$1,400	5.4	1,563
Motor Upgrades			828	0.2	0	\$138	\$2,114	\$0	\$2,114	15.3	834
ECM 3	Premium Efficiency Motors	No	828	0.2	0	\$138	\$2,114	\$0	\$2,114	15.3	834
Electric Unitary HVAC Measures			3,183	2.5	0	\$532	\$23,469	\$2,944	\$20,525	38.6	3,205
ECM 4	Install High Efficiency Air Conditioning Units	No	3,183	2.5	0	\$532	\$23,469	\$2,944	\$20,525	38.6	3,205
Gas Heating (HVAC/Process) Replacement			0	0.0	43	\$595	\$10,876	\$4,800	\$6,076	10.2	5,028
ECM 5	Install High Efficiency Furnaces	Yes	0	0.0	43	\$595	\$10,876	\$4,800	\$6,076	10.2	5,028
HVAC System Improvements			465	0.0	3	\$113	\$330	\$0	\$330	2.9	770
ECM 6	Install Programmable Thermostats	Yes	465	0.0	3	\$113	\$330	\$0	\$330	2.9	770
Domestic Water Heating Upgrade			409	0.0	0	\$68	\$36	\$20	\$16	0.2	412
ECM 7	Install Low-Flow DHW Devices	Yes	409	0.0	0	\$68	\$36	\$20	\$16	0.2	412
TOTALS (COST EFFECTIVE MEASURES)			3,084	0.7	45	\$1,140	\$13,895	\$5,993	\$7,902	6.9	8,382
TOTALS (ALL MEASURES)			7,095	3.5	45	\$1,811	\$39,478	\$8,937	\$30,541	16.9	12,421

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WOODBINE STATE POLICE BARRACKS

#	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			567	0.1	0	\$90	\$252	\$40	\$212	2.4	571
ECM 1	Retrofit Fixtures with LED Lamps	Yes	567	0.1	0	\$90	\$252	\$40	\$212	2.4	571
Lighting Control Measures			5,917	0.8	0	\$940	\$2,835	\$1,220	\$1,615	1.7	5,958
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	4,013	0.6	0	\$638	\$2,160	\$560	\$1,600	2.5	4,041
ECM 3	Install High/Low Lighting Controls	Yes	1,904	0.2	0	\$302	\$675	\$660	\$15	0.0	1,917
Variable Frequency Drive (VFD) Measures			26,642	3.8	0	\$4,232	\$50,471	\$2,050	\$48,421	11.4	26,828
ECM 4	Install VFDs on Constant Volume (CV) Fans	No	21,674	2.9	0	\$3,443	\$40,559	\$1,500	\$39,059	11.3	21,825
ECM 5	Install VFDs on Heating Water Pumps	No	4,533	0.9	0	\$720	\$6,522	\$400	\$6,122	8.5	4,565
ECM 6	Install VFDs on Cooling Tower Fans	No	435	0.0	0	\$69	\$3,391	\$150	\$3,241	46.9	438
Electric Unitary HVAC Measures			3,844	1.3	0	\$611	\$100,506	\$5,858	\$94,649	155.0	3,871
ECM 7	Install High Efficiency Heat Pumps	No	3,844	1.3	0	\$611	\$100,506	\$5,858	\$94,649	155.0	3,871
Domestic Water Heating Upgrade			834	0.0	0	\$133	\$22	\$22	\$0	0.0	840
ECM 8	Install Low-Flow DHW Devices	Yes	834	0.0	0	\$133	\$22	\$22	\$0	0.0	840
Food Service & Refrigeration Measures			3,224	0.4	0	\$512	\$460	\$200	\$260	0.5	3,246
ECM 9	Vending Machine Control	Yes	3,224	0.4	0	\$512	\$460	\$200	\$260	0.5	3,246
TOTALS (COST EFFECTIVE MEASURES)			10,541	1.3	0	\$1,675	\$3,569	\$1,482	\$2,087	1.2	10,615
TOTALS (ALL MEASURES)			41,027	6.3	0	\$6,518	\$154,547	\$9,389	\$145,157	22.3	41,313

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WOODBINE FIRE DEPARTMENT

#	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			772	0.2	0	\$138	\$310	\$84	\$226	1.6	758
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	742	0.2	0	\$133	\$275	\$80	\$195	1.5	729
ECM 2	Retrofit Fixtures with LED Lamps	Yes	30	0.0	0	\$5	\$34	\$4	\$30	5.7	29
Lighting Control Measures			1,653	0.5	0	\$296	\$1,620	\$350	\$1,270	4.3	1,623
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,653	0.5	0	\$296	\$1,620	\$350	\$1,270	4.3	1,623
Electric Unitary HVAC Measures			757	0.6	0	\$138	\$7,481	\$920	\$6,561	47.5	763
ECM 4	Install High Efficiency Air Conditioning Units	No	757	0.6	0	\$138	\$7,481	\$920	\$6,561	47.5	763
HVAC System Improvements			0	0.0	20	\$286	\$264	\$120	\$144	0.5	2,350
ECM 5	Install Pipe Insulation	Yes	0	0.0	20	\$286	\$264	\$120	\$144	0.5	2,350
Domestic Water Heating Upgrade			278	0.0	0	\$51	\$14	\$14	\$0	0.0	280
ECM 6	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$51	\$14	\$14	\$0	0.0	280
TOTALS (COST EFFECTIVE MEASURES)			2,703	0.7	20	\$771	\$2,208	\$568	\$1,639	2.1	5,011
TOTALS (ALL MEASURES)			3,460	1.3	20	\$910	\$9,689	\$1,488	\$8,200	9.0	5,774

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AMBULANCE SQUAD BUILDING

#	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			5	0.0	0	\$1	\$17	\$2	\$15	17.2	5
ECM 1	Retrofit Fixtures with LED Lamps	Yes	5	0.0	0	\$1	\$17	\$2	\$15	17.2	5
Lighting Control Measures			400	0.3	0	\$68	\$926	\$250	\$676	9.9	393
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	400	0.3	0	\$68	\$926	\$250	\$676	9.9	393
Electric Unitary HVAC Measures			775	0.9	0	\$135	\$5,985	\$736	\$5,249	39.0	781
ECM 3	Install High Efficiency Air Conditioning Units	No	775	0.9	0	\$135	\$5,985	\$736	\$5,249	39.0	781
Gas Heating (HVAC/Process) Replacement			0	0.0	18	\$278	\$3,942	\$1,600	\$2,342	8.4	2,119
ECM 4	Install High Efficiency Furnaces	Yes	0	0.0	18	\$278	\$3,942	\$1,600	\$2,342	8.4	2,119
HVAC System Improvements			207	0.0	9	\$172	\$660	\$0	\$660	3.8	1,241
ECM 5	Install Programmable Thermostats	Yes	207	0.0	9	\$172	\$660	\$0	\$660	3.8	1,241
Domestic Water Heating Upgrade			385	1.4	-1	\$54	\$530	\$530	\$0	0.0	290
ECM 6	Install Tankless Water Heater	Yes	246	1.4	-1	\$30	\$523	\$523	\$0	0.0	150
ECM 7	Install Low-Flow DHW Devices	Yes	139	0.0	0	\$24	\$7	\$7	\$0	0.0	140
TOTALS (COST EFFECTIVE MEASURES)			997	1.6	26	\$573	\$6,075	\$2,382	\$3,693	6.4	4,048
TOTALS (ALL MEASURES)			1,772	2.5	26	\$707	\$12,060	\$3,118	\$8,942	12.6	4,829

* - 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).

COMMUNITY CENTER

#	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 Control Measures			527	0.3	0	\$93	\$1,466	\$250	\$1,216	13.1	518
ECM 1	Install Occupancy Sensor Lighting Controls	Yes	527	0.3	0	\$93	\$1,466	\$250	\$1,216	13.1	518
Motor Upgrades			76	0.0	0	\$14	\$352	\$0	\$352	25.7	77
ECM 2	Premium Efficiency Motors	No	76	0.0	0	\$14	\$352	\$0	\$352	25.7	77
Gas Heating (HVAC/Process) Replacement			0	0.0	12	\$167	\$2,424	\$800	\$1,624	9.7	1,396
ECM 3	Install High Efficiency Furnaces	Yes	0	0.0	12	\$167	\$2,424	\$800	\$1,624	9.7	1,396
HVAC System Improvements			415	0.0	9	\$194	\$660	\$0	\$660	3.4	1,418
ECM 4	Install Programmable Thermostats	Yes	415	0.0	9	\$194	\$660	\$0	\$660	3.4	1,418
Domestic Water Heating Upgrade			417	0.0	0	\$75	\$22	\$22	\$0	0.0	420
ECM 5	Install Low-Flow DHW Devices	Yes	417	0.0	0	\$75	\$22	\$22	\$0	0.0	420
TOTALS (COST EFFECTIVE MEASURES)			1,359	0.3	20	\$529	\$4,572	\$1,072	\$3,500	6.6	3,752
TOTALS (ALL MEASURES)			1,436	0.4	20	\$543	\$4,924	\$1,072	\$3,852	7.1	3,828

* - 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).

DPW GARAGE

#	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			1,714	0.4	0	\$348	\$3,182	\$1,036	\$2,146	6.2	1,705
ECM 1	Install LED Fixtures	Yes	809	0.0	0	\$165	\$2,400	\$800	\$1,600	9.7	815
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	662	0.3	0	\$133	\$712	\$220	\$492	3.7	649
ECM 3	Retrofit Fixtures with LED Lamps	Yes	242	0.0	0	\$49	\$70	\$16	\$54	1.1	241
Lighting Control Measures			158	0.1	0	\$32	\$386	\$110	\$276	8.7	155
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	158	0.1	0	\$32	\$386	\$110	\$276	8.7	155
Domestic Water Heating Upgrade			41	0.0	0	\$8	\$7	\$7	\$0	0.0	41
ECM 5	Install Low-Flow DHW Devices	Yes	41	0.0	0	\$8	\$7	\$7	\$0	0.0	41
TOTALS (COST EFFECTIVE MEASURES)			1,913	0.4	0	\$388	\$3,575	\$1,153	\$2,422	6.2	1,902
TOTALS (ALL MEASURES)			1,913	0.4	0	\$388	\$3,575	\$1,153	\$2,422	6.2	1,902

* - 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).



DPW STORAGE BUILDING

#	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			630	0.3	0	\$183	\$1,043	\$400	\$643	3.5	634
ECM 1	Install LED Fixtures	Yes	202	0.0	0	\$59	\$600	\$200	\$400	6.8	204
ECM 2	Retrofit Fixtures with LED Lamps	Yes	428	0.3	0	\$124	\$443	\$200	\$243	2.0	431
Lighting Control Measures			111	0.1	0	\$32	\$270	\$70	\$200	6.2	112
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	111	0.1	0	\$32	\$270	\$70	\$200	6.2	112
TOTALS (COST EFFECTIVE MEASURES)			741	0.4	0	\$215	\$1,313	\$470	\$843	3.9	746
TOTALS (ALL MEASURES)			741	0.4	0	\$215	\$1,313	\$470	\$843	3.9	746

* - 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).



SEWAGE TREATMENT PLANT

#	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			526	0.0	0	\$85	\$965	\$204	\$761	8.9	529
ECM 1	Install LED Fixtures	Yes	460	0.0	0	\$75	\$931	\$200	\$731	9.8	463
ECM 2	Retrofit Fixtures with LED Lamps	Yes	66	0.0	0	\$11	\$34	\$4	\$30	2.9	66
Lighting Control Measures			13	0.2	0	\$2	\$810	\$140	\$670	305.6	14
ECM 3	Install Occupancy Sensor Lighting Controls	No	13	0.2	0	\$2	\$810	\$140	\$670	305.6	14
TOTALS (COST EFFECTIVE MEASURES)			526	0.0	0	\$85	\$965	\$204	\$761	8.9	529
TOTALS (ALL MEASURES)			539	0.2	0	\$88	\$1,775	\$344	\$1,431	16.3	543

* - 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).

AIRPORT HANGARS

#	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			7,487	2.4	0	\$1,292	\$3,346	\$1,002	\$2,344	1.8	7,539
ECM 1	Install LED Fixtures	Yes	1,795	0.6	0	\$310	\$607	\$40	\$567	1.8	1,807
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	5,216	1.7	0	\$900	\$2,367	\$800	\$1,567	1.7	5,252
ECM 3	Retrofit Fixtures with LED Lamps	Yes	477	0.2	0	\$82	\$371	\$162	\$209	2.5	480
Lighting Control Measures			1,111	0.4	0	\$192	\$1,350	\$140	\$1,210	6.3	1,119
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	1,111	0.4	0	\$192	\$1,350	\$140	\$1,210	6.3	1,119
TOTALS (COST EFFECTIVE MEASURES)			8,598	2.7	0	\$1,484	\$4,696	\$1,142	\$3,554	2.4	8,658
TOTALS (ALL MEASURES)			8,598	2.7	0	\$1,484	\$4,696	\$1,142	\$3,554	2.4	8,658

* - 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).

AIRPORT OFFICE FBO

#	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			1,708	0.4	0	\$285	\$453	\$226	\$227	0.8	1,680
ECM 1	Retrofit Fixtures with LED Lamps	Yes	1,708	0.4	0	\$285	\$453	\$226	\$227	0.8	1,680
Lighting Control Measures			216	0.0	0	\$36	\$270	\$70	\$200	5.6	212
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	216	0.0	0	\$36	\$270	\$70	\$200	5.6	212
Domestic Water Heating Upgrade			278	0.0	0	\$47	\$14	\$14	\$0	0.0	280
ECM 3	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$47	\$14	\$14	\$0	0.0	280
TOTALS (COST EFFECTIVE MEASURES)			2,202	0.4	0	\$368	\$738	\$310	\$427	1.2	2,172
TOTALS (ALL MEASURES)			2,202	0.4	0	\$368	\$738	\$310	\$427	1.2	2,172

* - 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).

AIRPORT LIGHT BUILDING (RED BRICK)

#	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			572	0.2	0	\$111	\$355	\$120	\$235	2.1	576
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	572	0.2	0	\$111	\$355	\$120	\$235	2.1	576
Lighting Control Measures			87	0.0	0	\$17	\$540	\$140	\$400	23.6	88
ECM 2	Install Occupancy Sensor Lighting Controls	No	87	0.0	0	\$17	\$540	\$140	\$400	23.6	88
Electric Unitary HVAC Measures			214	0.1	0	\$42	\$1,089	\$0	\$1,089	26.2	215
ECM 3	Install High Efficiency Air Conditioning Units	No	214	0.1	0	\$42	\$1,089	\$0	\$1,089	26.2	215
TOTALS (COST EFFECTIVE MEASURES)			572	0.2	0	\$111	\$355	\$120	\$235	2.1	576
TOTALS (ALL MEASURES)			873	0.4	0	\$170	\$1,984	\$260	\$1,724	10.2	879

* - 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

MEASURES FOR FUTURE CONSIDERATION

- **Installation of an Energy Management System**
- **VRF Systems (Variable Refrigerant Flow)**
- **Natural Gas Service to Building**

SOLAR ENERGY GENERATION POTENTIAL

	Municipal Utilities
<i>Potential:</i>	MEDIUM
<i>System Potential: (kW)</i>	70
<i>Electric Generation: (kWh per year)</i>	\$83,396
<i>Displaced Cost: (per year)</i>	\$13,090

Transition Incentive (TI) Program:

<https://www.njcleanenergy.com/renewable-energy/programs/transition-incentive-program>

Community Solar Energy Pilot Program:

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

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:

- **Transition Incentive (TI) Program**
- **Community Solar**

RECOMMENDED NJCEP INCENTIVES PER BUILDING

Building Name	Direct Install	SmartStart	CTEEP
Municipal Utilities	X	X	X
Well #7	X	X	X
Borough Office	X	X	X
State Police Barracks	X	X	X
Fire Department	X	X	X
Ambulance Squad	X	X	X

Building Name	Direct Install	SmartStart	CTEEP
Community Center	X	X	X
DPW Garage	X	X	X
DPW Storage	X	X	X
Sewage Treatment Plant	X	X	X
Airport Hangars		X	X
Airport Light Building	X	X	X

Some sites with only lighting upgrades will need further assessment for DI eligibility. They are eligible for a full free assessment with the DI Participating Contractor to submit the waiver or to identify other measure/s to enable participation

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

- Electric Chillers
- Gas Cooling
- Electric Unitary HVAC
- Ground Source Heat Pumps
- Gas Heating
- Variable Frequency Drives
- Gas Water Heating
- Lighting/Lighting Controls
- Refrigeration Doors
- Refrigeration Controls
- Food Service Equipment
- Refrigerator/Freezer Motors

DOUBLE INCENTIVES

for OZ/UEZ, local government (munis & counties), K-12 public school, or designated as affordable housing



CUSTOM INCENTIVES

- New or innovative technologies proven to be cost-effective and not listed as prescriptive
- Must meet code for retrofit projects or exceed code for new construction
- 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:

- Up to \$500,000 for each electric or gas account
- Technical assistance incentives for custom project evaluation (up to \$10K)

**SAME INCENTIVE
VALUES AS
SMARTSTART**

CTEEP: CUSTOMER TAILORED ENERGY EFFICIENCY PILOT

NJCleanEnergy.com/CTEEP



SAME INCENTIVE VALUES AS SMARTSTART



SMARTSTART, CTEEP, DI, & P4P: FINANCING OPTION

- SJG provides 0% financing options that will cover up to \$130,000 per year.
- 10 year term-repayments made on regular monthly gas bill
- Need to review project with SJG to confirm project qualifies.

- Questions? Contact:

Peter Druckenmiller
Program Manager
South Jersey Gas
609-572-4271

wdruckenmiller@sjindustries.com



LOCAL GOVERNMENT FLEETS

Electric vehicles are now included in the State Purchasing Contract!

- New NJBPU Grant Program
 - Designed to encourage local governments to add EVs to their fleet
 - \$4000 per battery electric vehicle
 - \$1500 for one Level-Two EV charging station
 - Grants awarded on rolling basis until June 2021 or until funding expended

Questions? **EV.programs@bpu.nj.gov**



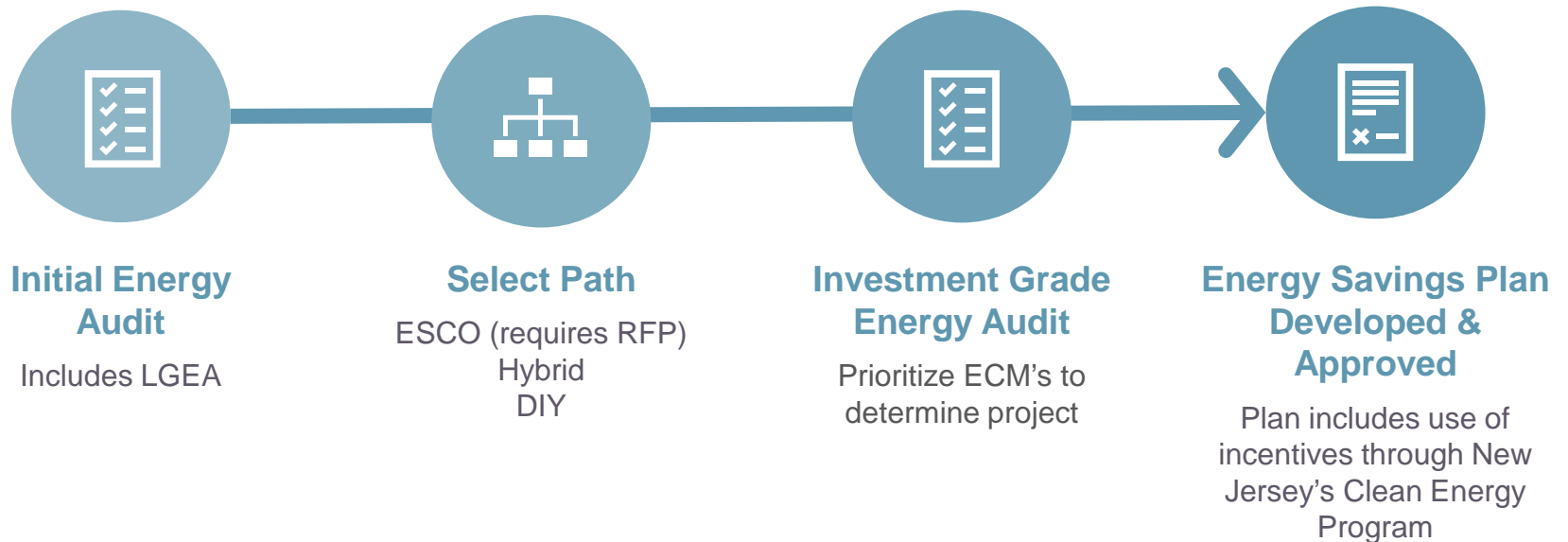
FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Provides alternative financing for energy savings projects at public institutions
- Administered directly by the NJBPU
- Project is paid for with the value of its own energy savings
- 15 or 20-year repayment term
- NJCEP incentives/rebates are layered within an ESIP
- No upfront capital expenses



FINANCING MECHANISM: ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

FOR MORE INFORMATION

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QUESTIONS

