

LGEA Presentation Cape May County MUA

May 13, 2022



New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future

INTRODUCTIONS

- *Cape May County MUA Team*

- Joseph Rizzuto
- Joshua Palombo
- Emily Zidanic
- John Conturo
- Jim Rocco
- Tom Tomassone
- Kenneth Wuerker
- Tim Fisher
- Jason Lynch
- Joe Johnson
- Lyle Nemeth
- Jim Collins
- James McDonald
- Carl Seabrook
- Joseph Jordan
- Ed Pisani
- Andy Janson

- *NJ Clean Energy Program*

- Sarah Walters – LGEA Project Manager
- Moussa Traore – LGEA Lead Auditor
- Bob Grindrod – LGEA Engineer
- Star Stewart – Benchmark Reviewer
- Michelle Rossi – ESIP Coordinator (BPU)

- *Utility Energy Efficiency Programs*

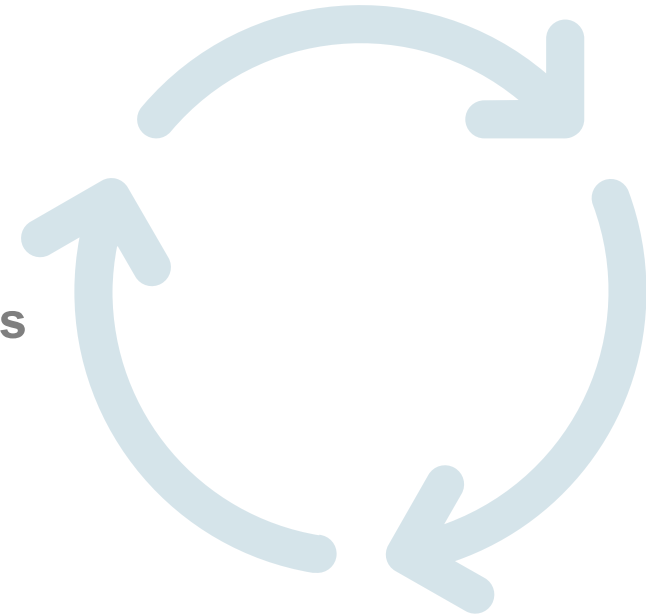
- Greg Reinert – Atlantic City Electric (TRC)
- Kim Bodine – South Jersey Gas
- Kim Byk – South Jersey Gas

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)
- C&I Transition of EE Programs
- Questions regarding the draft audit report
- Next steps for Cape May County MUA

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
- Process Equipment

Utility Consumption:

- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Fuel Oil #2 Consumption and Costs

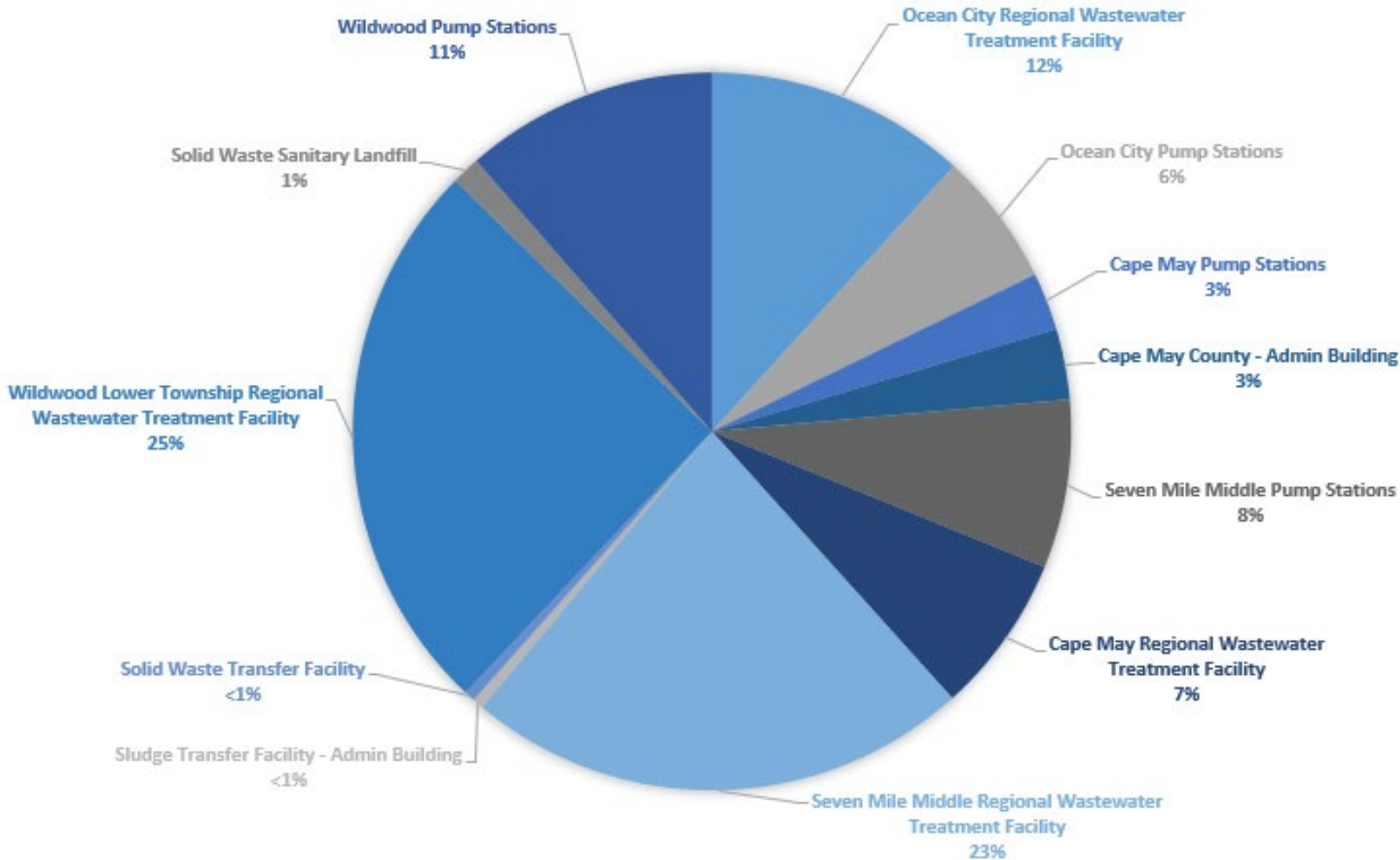
Sites Visited/Analyzed

- Cape May Pump Stations
- Cape May Regional Wastewater Treatment Facility
- Ocean City Pump Stations
- Ocean City Regional Wastewater Treatment Facility
- Seven Mile Pump Stations
- Seven Mile Middle Regional Wastewater Treatment Facility
- Wildwood Pump Stations
- Wildwood Lower Township Regional Wastewater Treatment Facility
- Sludge Transfer Facility – Admin Building
- Cape May County MUA Admin Building
- Solid Waste Transfer Facility
- Solid Waste Sanitary Landfill

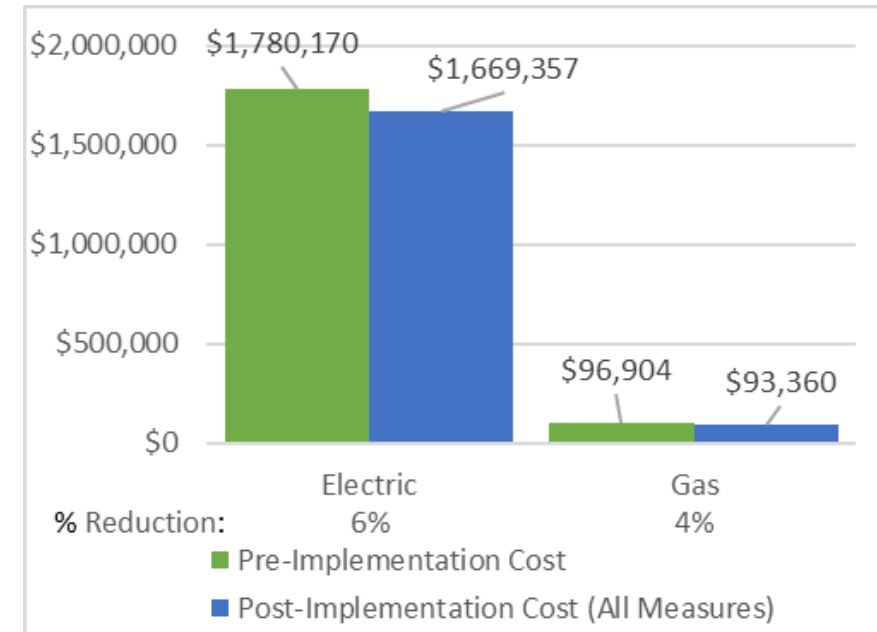
A total of 49 sites included in this LGEA

UTILITY BREAKOUT

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING

ENERGY STAR® Statement of Energy Performance

50 ENERGY STAR® Score¹

Cape May County Municipal Utilities Authority Administration Building

Primary Property Type: Office
Gross Floor Area (ft²): 30,000
Built: 2017

For Year Ending: October 31, 2019
Date Generated: August 31, 2021

Property & Contact Information

Property Address	Property Owner	Primary Contact
Cape May County Municipal Utilities Authority Administration Building 1523 Route 9 North Cape May Court House, New Jersey 08210	Cape May County MUA 1523 Route 9 North Swainton, NJ 08210 609-465-9026	Joseph Rizzuto 1523 Route 9 North Swainton, NJ 08210 609-465-9026 rizzutojr@cmcmua.com

Property ID: 14516539

Energy Consumption and Energy Use Intensity (EUI)

Site EUI 46.8 kBtu/ft²	Annual Energy by Fuel Electric - Grid (kBtu) 1,358,111 (97%) Natural Gas (kBtu) 45,672 (3%)	National Median Comparison National Median Site EUI (kBtu/ft²) 46.9 National Median Source EUI (kBtu/ft²) 128.6 % Diff from National Median Source EUI -0%
Source EUI 128.4 kBtu/ft²		Annual Emissions Greenhouse Gas Emissions (Metric Tons CO2e/year) 128

Site EUI
46.8 kBtu/ft²

Source EUI
128.4 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	46.9
National Median Source EUI (kBtu/ft²)	128.6
% Diff from National Median Source EUI	-0%

Site Name	ENERGY STAR® Score
All Pump Stations	N/A
Cape May County MUA Admin Bldg	50
Solid Waste Transfer Facility	N/A
Solid Waste Sanitary Landfill	50
Cape May Regional WWTF	76
Wildwood Lower Twp Regional WWTF	N/A
Seven Mile Middle Regional WWTF	28
Ocean City Regional WWTF	71

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



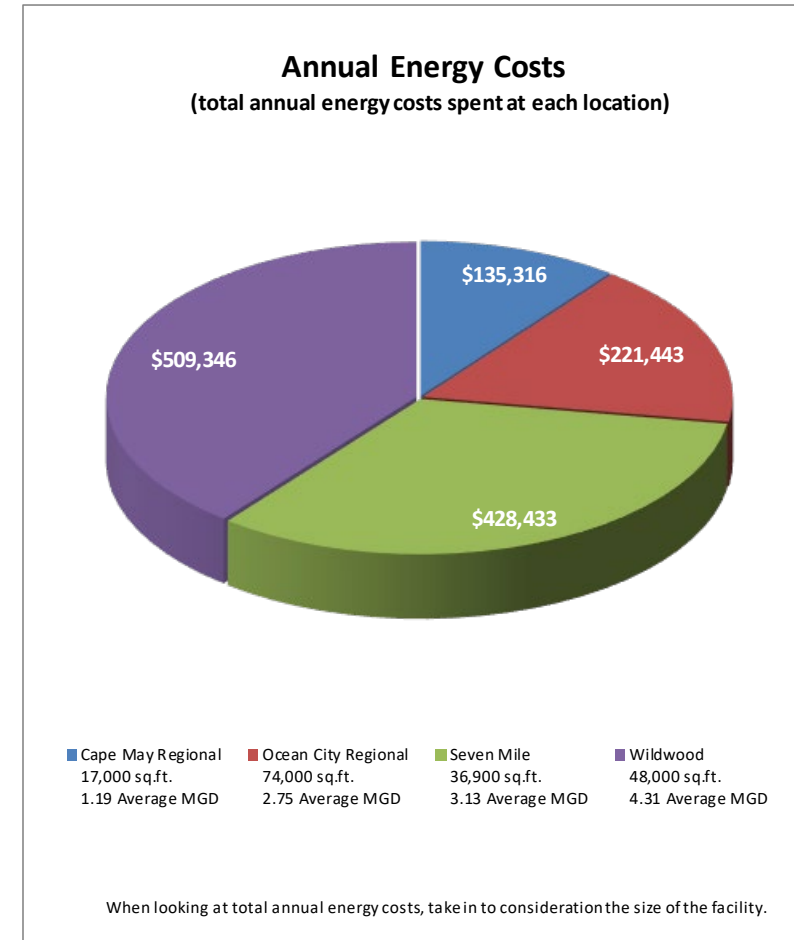
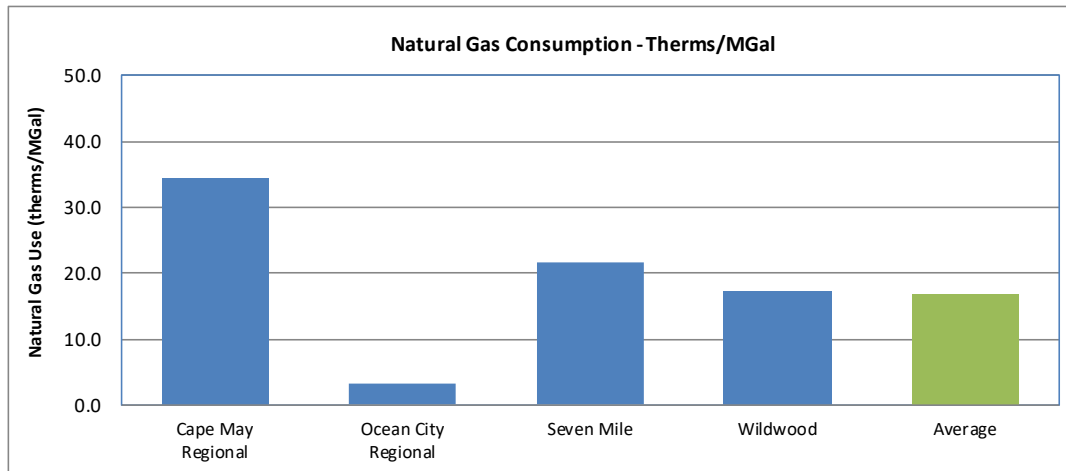
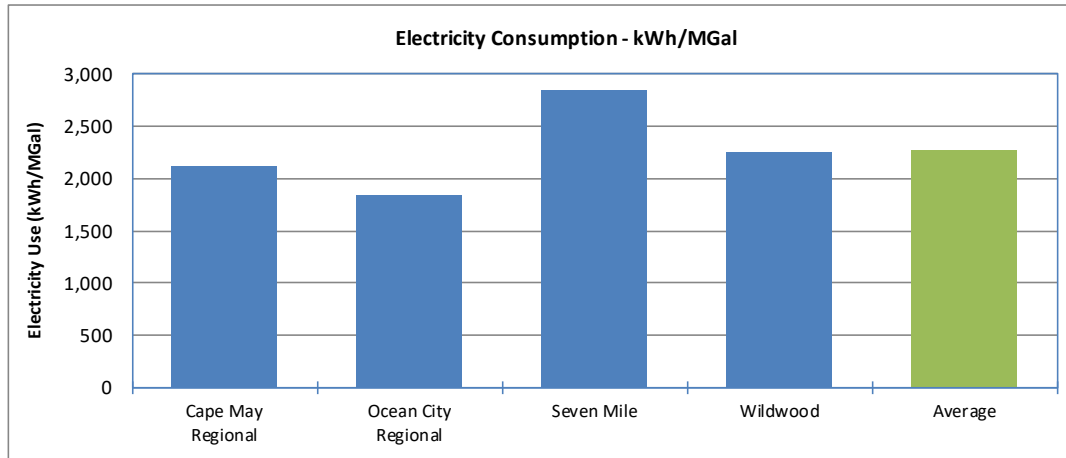
Professional Engineer or Registered Architect Stamp (if applicable)

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.

Metrics such as energy consumption (electric, gas, etc.), facility size, influent flow, BOD, plant load factor, etc. will impact score.

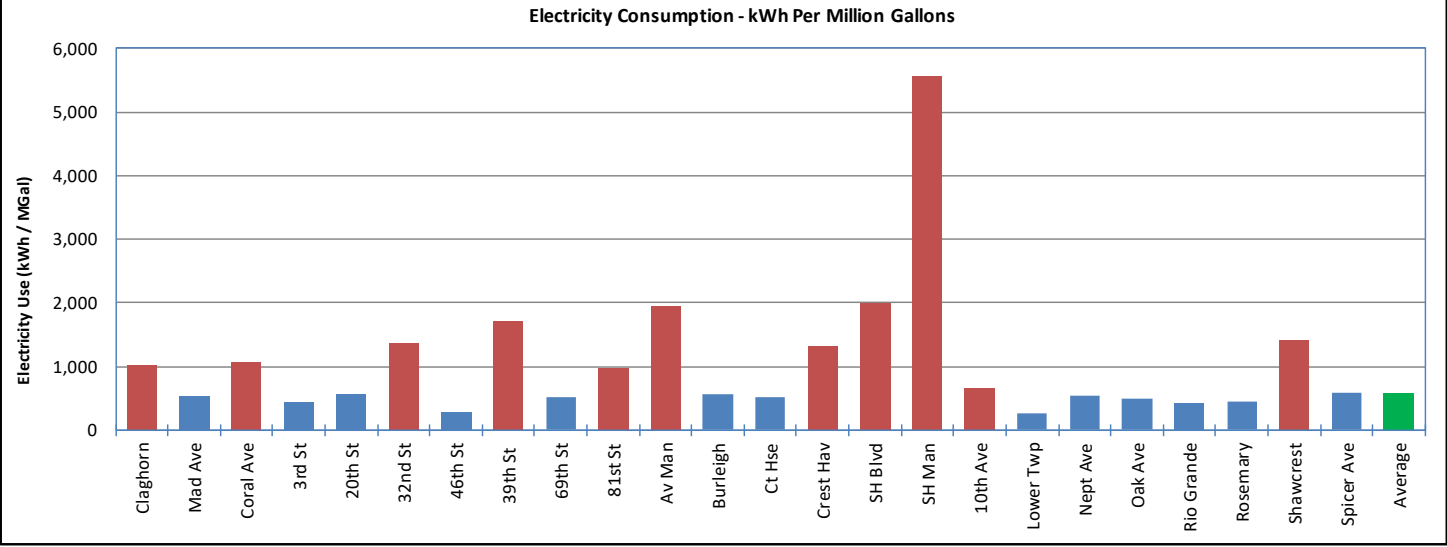
Cape May County Municipal Utilities Authority - Wastewater Treatment Energy Performance Benchmarking Snapshot

Property Descriptions	Annual Energy & Cost Metrics (2019)						
	ENERGY STAR Score	Electric Use [kWh/MGal]	Natural Gas Use [Therms/MGal]	Total Energy Use [kBtu/MGal]	Electric Cost [\$/MGal]	Natural Gas Cost [\$/MGal]	Total Energy Cost [\$/MGal]
Cape May County MUA's Portfolio Average	58	2,305	16.9	9,497	\$292	\$21	\$311
Individual Property Snapshot							
Wastewater Treatment Facilities							
▪ Cape May Regional Wastewater Treatment Facility	76	2,119	34.4	10,658	\$278	\$33	\$311
▪ Ocean City Regional Wastewater Treatment Facility	71	1,838	3.3	6,619	\$216	\$4	\$220
▪ Seven Mile Middle Regional Wastewater Treatment Facility	28	2,853	21.5	11,748	\$349	\$26	\$375
▪ Wildwood Lower Township Regional Wastewater Treatment Facility	N/A	2,258	17.4	9,511	\$304	\$20	\$324

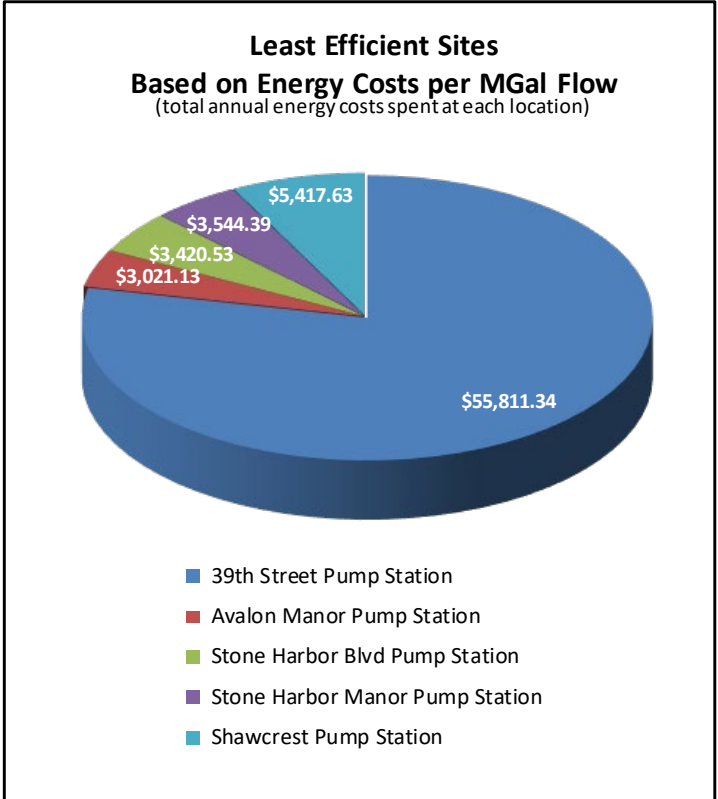
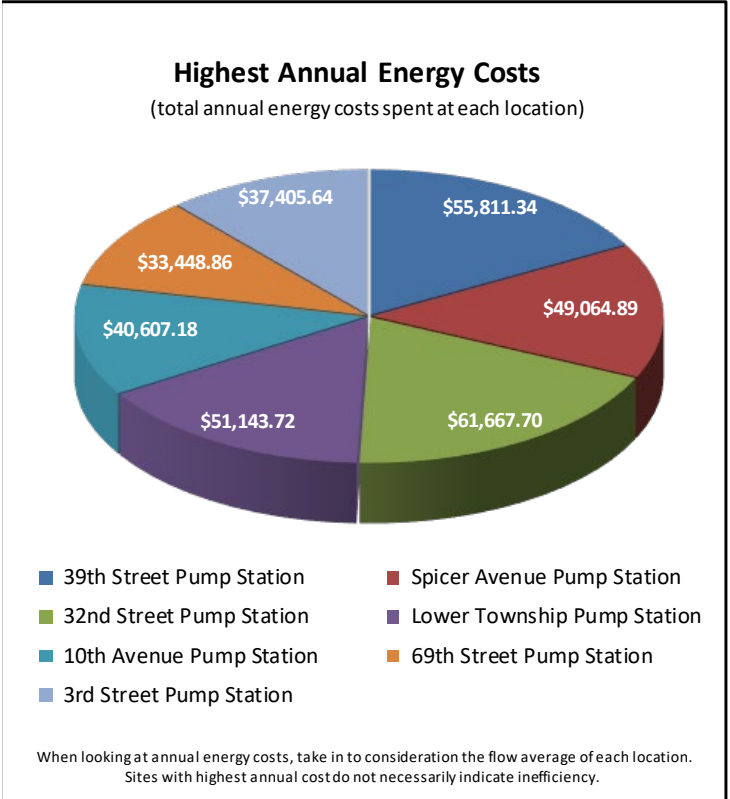


Cape May County Municipal Utilities Authority - Pump Stations
Energy Performance Benchmarking Snapshot

Property Descriptions	Reporting Year 2019	
	Electric Use [kWh/MGal]	Electric Cost [\$/MGal]
Cape May County MUA's Portfolio Average	587	\$100
Individual Property Snapshot		
Cape May Regional Wastewater Treatment Facility		
• Claghorn Pump Station	1,025	\$158
• Madison Avenue Pump Station	540	\$83
• Coral Avenue Pump Station	1,079	\$169
Ocean City Regional Wastewater Treatment Facility		
• 3rd Street Pump Station	443	\$70
• 20th Street Pump Station	554	\$88
• 32nd Street Pump Station	1,373	\$273
• 39th Street Pump Station	1,722	\$283
• 69th Street Pump Station	524	\$95
• 81st Street Pump Station	985	\$141
• Avalon Manor Pump Station	1,953	\$331
• Burleigh Pump Station	566	\$88
• Court House Pump Station	514	\$82
• Crest Haven Pump Station	1,320	\$205
• Stone Harbor Blvd Pump Station	2,005	\$324
• Stone Harbor Manor Pump Station	5,559	\$905
Wildwood Lower Township Regional Wastewater Treatment Facility		
• 10th Avenue Pump Station	663	\$142
• Lower Township Pump Station	274	\$43
• Neptune Ave Pump Station	543	\$89
• Oak Avenue Pump Station	495	\$86
• Rio Grande Pump Station	437	\$68
• Rosemary Pump Station	458	\$72
• Shawcrest Pump Station	1,423	\$240
• Spicer Avenue Pump Station	585	\$107

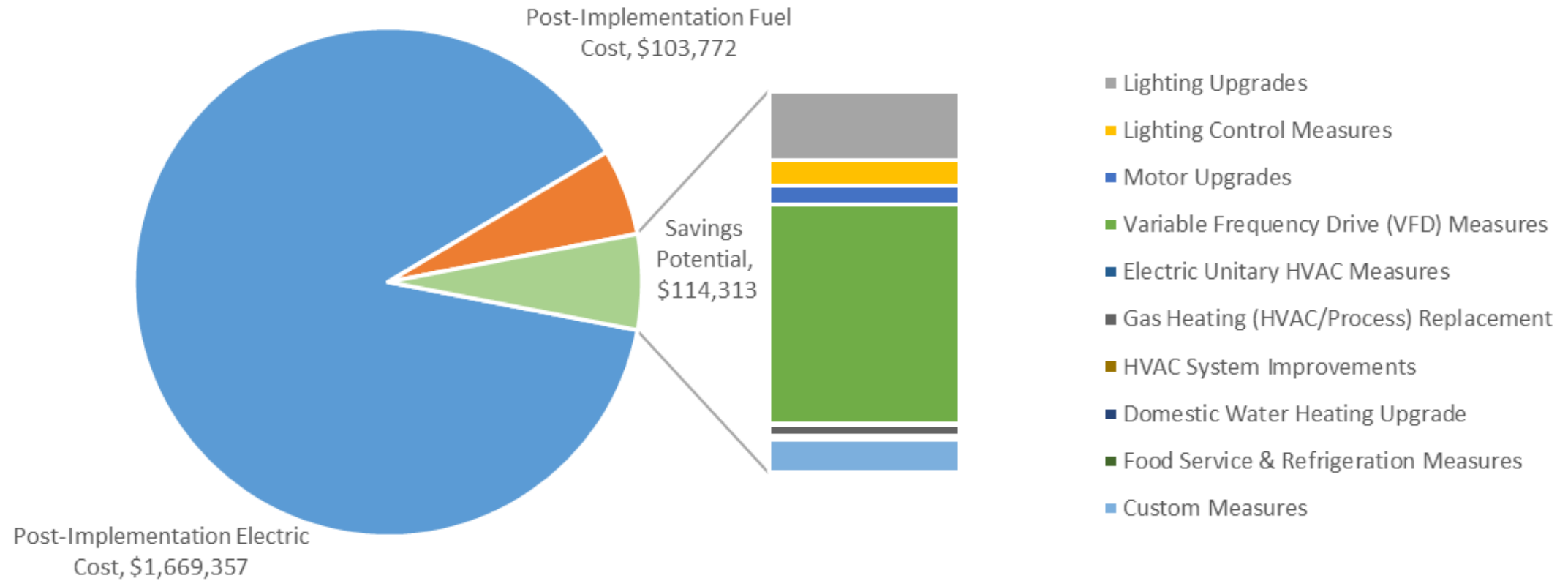


Worse Than CMCMUA Average (Red) | Better Than CMCMUA Average (Blue)



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 M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		167,695	30.1	-32.7	\$20,922	\$80,149	\$14,625	\$65,524	3.1	164,660
ECM 1	Install LED Fixtures	67,535	6.3	-13.4	\$7,930	\$39,385	\$5,370	\$34,015	4.3	66,145
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	8,040	2.6	-2.3	\$917	\$4,488	\$619	\$3,869	4.2	7,788
ECM 3	Retrofit Fixtures with LED Lamps	91,769	21.1	-16.9	\$12,031	\$35,914	\$8,636	\$27,278	2.3	90,383
ECM 4	Install LED Exit Signs	350	0.0	-0.1	\$45	\$362	\$0	\$362	8.0	343
Lighting Control Measures		65,722	12.0	-16.2	\$7,499	\$51,513	\$11,905	\$39,608	5.3	64,006
ECM 5	Install Occupancy Sensor Lighting Controls	42,559	8.8	-9.2	\$5,345	\$38,288	\$5,200	\$33,088	6.2	41,776
ECM 6	Install Daylight Dimming/Photocell Controls	15,764	1.3	-5.8	\$1,217	\$5,350	\$420	\$4,930	4.1	14,917
ECM 7	Install High/Low Lighting Controls	7,399	1.9	-1.2	\$937	\$7,875	\$6,285	\$1,590	1.7	7,313
Motor Upgrades		36,411	7.0	0.0	\$5,772	\$44,946	\$0	\$44,946	7.8	36,665
ECM 8	Premium Efficiency Motors	36,411	7.0	0.0	\$5,772	\$44,946	\$0	\$44,946	7.8	36,665
Variable Frequency Drive (VFD) Measures		517,095	124.1	0.0	\$65,458	\$221,276	\$26,650	\$194,626	3.0	520,710
ECM 9	Install VFDs on Constant Volume (CV) Fans	26,820	4.5	0.0	\$4,379	\$6,811	\$1,200	\$5,611	1.3	27,008
ECM 10	Install VFDs on Heating Water Pumps	39,715	6.5	0.0	\$4,803	\$39,456	\$5,000	\$34,456	7.2	39,992
ECM 11	Install VFDs on Process Pumps	106,615	26.0	0.0	\$13,708	\$76,012	\$10,150	\$65,862	4.8	107,360
ECM 12	Install VFDs on Process Blowers	343,945	87.2	0.0	\$42,567	\$98,998	\$10,300	\$88,698	2.1	346,350
Electric Unitary HVAC Measures		2,044	1.1	0.0	\$226	\$8,045	\$309	\$7,736	34.3	2,059
ECM 13	Install High Efficiency Air Conditioning Units	2,044	1.1	0.0	\$226	\$8,045	\$309	\$7,736	34.3	2,059

ALL OPPORTUNITIES

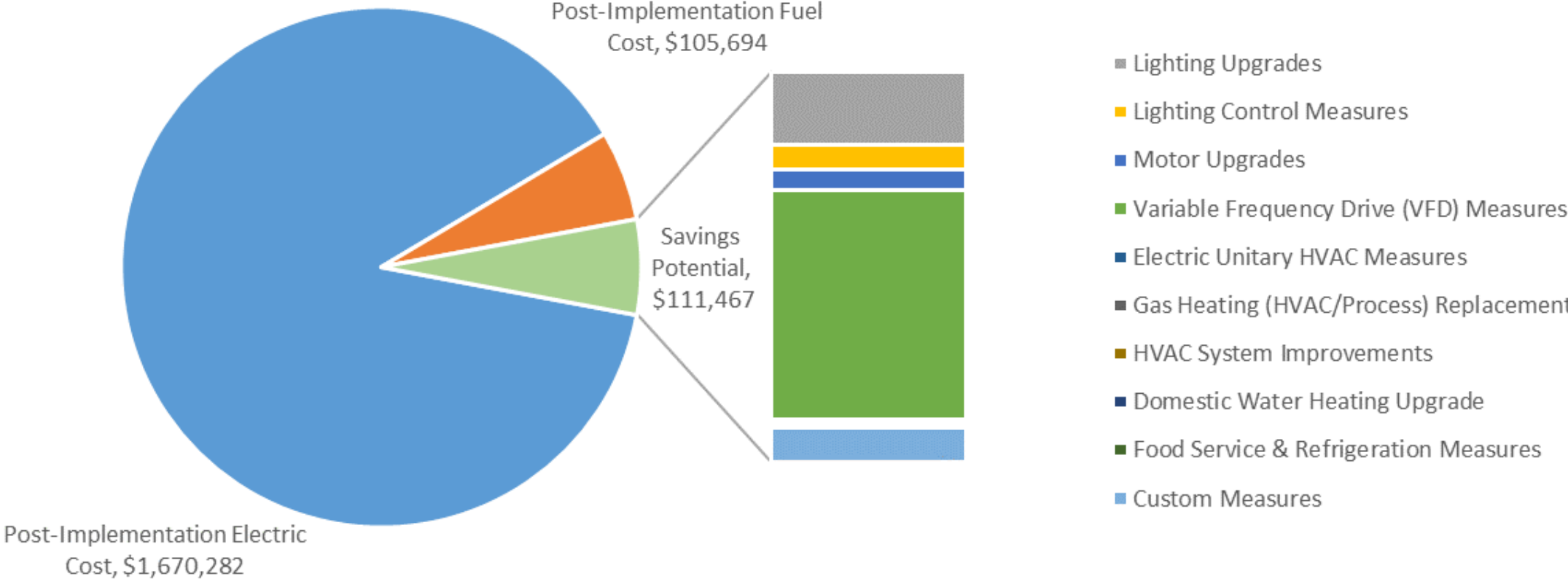
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Gas Heating (HVAC/Process) Replacement		0	0.0	294.4	\$3,259	\$214,051	\$19,341	\$194,710	59.7	34,466
ECM 14	Install High Efficiency Hot Water Boilers	0	0.0	294.4	\$3,259	\$214,051	\$19,341	\$194,710	59.7	34,466
HVAC System Improvements		1,718	0.0	40.6	\$686	\$2,557	\$83	\$2,474	3.6	6,486
ECM 15	Install Programmable Thermostats	1,432	0.0	38.6	\$636	\$2,309	\$0	\$2,309	3.6	5,957
ECM 16	Install Pipe Insulation	286	0.0	2.1	\$50	\$248	\$83	\$165	3.3	529
Domestic Water Heating Upgrade		1,538	0.0	8.1	\$314	\$13,442	\$918	\$12,524	39.9	2,499
ECM 17	Install High Efficiency Gas-Fired Water Heater	0	0.0	1.1	\$14	\$12,762	\$690	\$12,073	852.6	130
ECM 18	Install Low-Flow DHW Devices	1,538	0.0	7.0	\$300	\$680	\$228	\$452	1.5	2,369
Food Service & Refrigeration Measures		3,909	0.4	0.0	\$441	\$920	\$150	\$770	1.7	3,936
ECM 19	Vending Machine Control	3,909	0.4	0.0	\$441	\$920	\$150	\$770	1.7	3,936
Custom Measures		59,656	0.0	0.0	\$9,736	\$36,744	\$0	\$36,744	3.8	35,619
ECM 20	Optimize HVAC Schedule	9,980	0.0	0.0	\$1,494	\$500	\$0	\$500	0.3	10,050
ECM 21	Building Envelope Improvements	12,801	0.0	0.0	\$2,090	\$27,164	\$0	\$27,164	13.0	12,891
ECM 22	Install Heat Pump Water Heater	2,427	0.0	0.0	\$305	\$3,320	\$0	\$3,320	10.9	2,444
ECM 23	Generator Block Heater Thermostat	10,164	0.0	0.0	\$1,614	\$2,880	\$0	\$2,880	1.8	10,235
ECM 24	Generator Block Heater Controls	24,284	0.0	0.0	\$4,233	\$2,880	\$0	\$2,880	0.7	0
TOTALS		855,787	174.7	294.2	\$114,313	\$673,644	\$73,981	\$599,663	5.2	871,106

* - 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).

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 M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades		167,695	30.1	-32.7	\$20,922	\$80,149	\$14,625	\$65,524	3.1	164,660
ECM 1	Install LED Fixtures	67,535	6.3	-13.4	\$7,930	\$39,385	\$5,370	\$34,015	4.3	66,145
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	8,040	2.6	-2.3	\$917	\$4,488	\$619	\$3,869	4.2	7,788
ECM 3	Retrofit Fixtures with LED Lamps	91,769	21.1	-16.9	\$12,031	\$35,914	\$8,636	\$27,278	2.3	90,383
ECM 4	Install LED Exit Signs	350	0.0	-0.1	\$45	\$362	\$0	\$362	8.0	343
Lighting Control Measures		62,430	10.6	-15.7	\$7,047	\$41,213	\$10,600	\$30,613	4.3	60,759
ECM 5	Install Occupancy Sensor Lighting Controls	39,267	7.5	-8.6	\$4,893	\$27,988	\$3,895	\$24,093	4.9	38,528
ECM 6	Install Daylight Dimming/Photocell Controls	15,764	1.3	-5.8	\$1,217	\$5,350	\$420	\$4,930	4.1	14,917
ECM 7	Install High/Low Lighting Controls	7,399	1.9	-1.2	\$937	\$7,875	\$6,285	\$1,590	1.7	7,313
Motor Upgrades		35,656	6.9	0.0	\$5,680	\$42,399	\$0	\$42,399	7.5	35,906
ECM 8	Premium Efficiency Motors	35,656	6.9	0.0	\$5,680	\$42,399	\$0	\$42,399	7.5	35,906
Variable Frequency Drive (VFD) Measures		517,095	124.1	0.0	\$65,458	\$221,276	\$26,650	\$194,626	3.0	520,710
ECM 9	Install VFDs on Constant Volume (CV) Fans	26,820	4.5	0.0	\$4,379	\$6,811	\$1,200	\$5,611	1.3	27,008
ECM 10	Install VFDs on Heating Water Pumps	39,715	6.5	0.0	\$4,803	\$39,456	\$5,000	\$34,456	7.2	39,992
ECM 11	Install VFDs on Process Pumps	106,615	26.0	0.0	\$13,708	\$76,012	\$10,150	\$65,862	4.8	107,360
ECM 12	Install VFDs on Process Blowers	343,945	87.2	0.0	\$42,567	\$98,998	\$10,300	\$88,698	2.1	346,350

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)
Gas Heating (HVAC/Process) Replacement		0	0.0	127.9	\$1,210	\$81,996	\$7,515	\$74,481	61.5	14,971
ECM 14	Install High Efficiency Hot Water Boilers	0	0.0	127.9	\$1,210	\$81,996	\$7,515	\$74,481	61.5	14,971
HVAC System Improvements		1,532	0.0	40.6	\$673	\$2,227	\$83	\$2,144	3.2	6,299
ECM 15	Install Programmable Thermostats	1,246	0.0	38.6	\$623	\$1,979	\$0	\$1,979	3.2	5,769
ECM 16	Install Pipe Insulation	286	0.0	2.1	\$50	\$248	\$83	\$165	3.3	529
Domestic Water Heating Upgrade		1,538	0.0	7.0	\$300	\$680	\$228	\$452	1.5	2,369
ECM 17	Install High Efficiency Gas-Fired Water Heater	0	0.0	0.0	\$0	\$0	\$0	\$0	0.0	0
ECM 18	Install Low-Flow DHW Devices	1,538	0.0	7.0	\$300	\$680	\$228	\$452	1.5	2,369
Food Service & Refrigeration Measures		3,909	0.4	0.0	\$441	\$920	\$150	\$770	1.7	3,936
ECM 19	Vending Machine Control	3,909	0.4	0.0	\$441	\$920	\$150	\$770	1.7	3,936
Custom Measures		59,656	0.0	0.0	\$9,736	\$36,744	\$0	\$36,744	3.8	35,619
ECM 20	Optimize HVAC Schedule	9,980	0.0	0.0	\$1,494	\$500	\$0	\$500	0.3	10,050
ECM 21	Building Envelope Improvements	12,801	0.0	0.0	\$2,090	\$27,164	\$0	\$27,164	13.0	12,891
ECM 22	Install Heat Pump Water Heater	2,427	0.0	0.0	\$305	\$3,320	\$0	\$3,320	10.9	2,444
ECM 23	Generator Block Heater Thermostat	10,164	0.0	0.0	\$1,614	\$2,880	\$0	\$2,880	1.8	10,235
ECM 24	Generator Block Heater Controls	24,284	0.0	0.0	\$4,233	\$2,880	\$0	\$2,880	0.7	0
TOTALS		849,511	172.2	127.2	\$111,467	\$507,605	\$59,852	\$447,753	4.0	845,227

* - 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).

CAPE MAY PUMP STATIONS

CORAL AVE, MADISON AVE, CLAGHORN PL.

#	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			2,597	0.6	0	\$400	\$1,434	\$251	\$1,183	3.0	2,615
ECM 1	Install LED Fixtures	Yes	465	0.0	0	\$72	\$225	\$5	\$220	3.1	469
ECM 2	Retrofit Fixtures with LED Lamps	Yes	2,132	0.6	0	\$328	\$1,209	\$246	\$963	2.9	2,147
Motor Upgrades			6,648	2.4	0	\$1,024	\$11,699	\$0	\$11,699	11.4	6,694
ECM 3	Premium Efficiency Motors	Yes	6,648	2.4	0	\$1,024	\$11,699	\$0	\$11,699	11.4	6,694
Domestic Water Heating Upgrade			49	0.0	0	\$8	\$14	\$8	\$6	0.8	49
ECM 4	Install Low-Flow DHW Devices	Yes	49	0.0	0	\$8	\$14	\$8	\$6	0.8	49
Custom Measures			4,892	0.0	0	\$753	\$720	\$0	\$720	1.0	4,926
ECM 5	Generator Block Heater Thermostat	Yes	4,892	0.0	0	\$753	\$720	\$0	\$720	1.0	4,926
TOTALS (COST EFFECTIVE MEASURES)			14,186	3.0	0	\$2,184	\$13,867	\$259	\$13,608	6.2	14,285
TOTALS (ALL MEASURES)			14,186	3.0	0	\$2,184	\$13,867	\$259	\$13,608	6.2	14,285

* - 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).

CAPE MAY REGIONAL WASTEWATER TREATMENT FACILITY

ADMIN OFFICE, EFFLUENT BUILDING, INFLUENT BUILDING, SLUDGE PROCESSING

#	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			14,040	1.7	-1	\$1,834	\$10,891	\$1,591	\$9,300	5.1	14,037
ECM 1	Install LED Fixtures	Yes	12,099	0.8	0	\$1,583	\$9,017	\$1,300	\$7,717	4.9	12,134
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	537	0.3	0	\$69	\$587	\$80	\$507	7.3	526
ECM 3	Retrofit Fixtures with LED Lamps	Yes	1,054	0.6	0	\$136	\$926	\$211	\$715	5.3	1,033
ECM 4	Install LED Exit Signs	Yes	350	0.0	0	\$45	\$362	\$0	\$362	8.0	343
Lighting Control Measures			2,620	1.0	-1	\$338	\$7,780	\$1,305	\$6,475	19.2	2,568
ECM 5	Install Occupancy Sensor Lighting Controls	No	2,478	1.0	-1	\$320	\$7,330	\$920	\$6,410	20.1	2,429
ECM 6	Install High/Low Lighting Controls	Yes	142	0.0	0	\$18	\$450	\$385	\$65	3.6	139
Variable Frequency Drive (VFD) Measures			125,540	39.0	0	\$16,469	\$57,964	\$9,100	\$48,864	3.0	126,418
ECM 7	Install VFDs on Heating Water Pumps	Yes	6,576	1.0	0	\$863	\$14,652	\$600	\$14,052	16.3	6,622
ECM 8	Install VFDs on Process Pumps	Yes	8,303	0.9	0	\$1,089	\$4,738	\$1,000	\$3,738	3.4	8,361
ECM 9	Install VFDs on Process Blowers	Yes	110,661	37.1	0	\$14,517	\$38,574	\$7,500	\$31,074	2.1	111,434
Gas Heating (HVAC/Process) Replacement			0	0.0	128	\$1,210	\$16,802	\$1,540	\$15,262	12.6	14,971
ECM 10	Install High Efficiency Hot Water Boilers	Yes	0	0.0	128	\$1,210	\$16,802	\$1,540	\$15,262	12.6	14,971
HVAC System Improvements			723	0.0	16	\$243	\$1,354	\$12	\$1,342	5.5	2,559
ECM 11	Install Programmable Thermostats	Yes	723	0.0	14	\$223	\$1,319	\$0	\$1,319	5.9	2,319
ECM 12	Install Pipe Insulation	Yes	0	0.0	2	\$19	\$35	\$12	\$23	1.2	241
Domestic Water Heating Upgrade			0	0.0	2	\$17	\$407	\$84	\$323	19.5	206
ECM 13	Install Low-Flow DHW Devices	Yes	0	0.0	2	\$17	\$407	\$84	\$323	19.5	206
TOTALS (COST EFFECTIVE MEASURES)			140,444	40.8	144	\$19,790	\$87,869	\$12,712	\$75,157	3.8	158,329
TOTALS (ALL MEASURES)			142,923	41.7	144	\$20,110	\$95,199	\$13,632	\$81,567	4.1	160,757

* - 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).

OCEAN CITY PUMP STATIONS

3RD ST, 32ND ST, 20TH ST, 46TH ST.

#	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			9,813	1.4	0	\$1,744	\$2,613	\$352	\$2,261	1.3	9,882
ECM 1	Retrofit Fixtures with LED Lamps	Yes	9,813	1.4	0	\$1,744	\$2,613	\$352	\$2,261	1.3	9,882
Lighting Control Measures			1,082	0.0	0	\$192	\$1,450	\$0	\$1,450	7.5	1,090
ECM 2	Install Photocell Controls	Yes	1,082	0.0	0	\$192	\$1,450	\$0	\$1,450	7.5	1,090
Domestic Water Heating Upgrade			164	0.0	0	\$29	\$7	\$4	\$3	0.1	165
ECM 3	Install Low-Flow DHW Devices	Yes	164	0.0	0	\$29	\$7	\$4	\$3	0.1	165
Custom Measures			1,848	0.0	0	\$328	\$960	\$0	\$960	2.9	1,861
ECM 4	Generator Block Heater	Yes	1,848	0.0	0	\$328	\$960	\$0	\$960	2.9	1,861
TOTALS (COST EFFECTIVE MEASURES)			12,907	1.4	0	\$2,293	\$5,030	\$356	\$4,674	2.0	12,998
TOTALS (ALL MEASURES)			12,907	1.4	0	\$2,293	\$5,030	\$356	\$4,674	2.0	12,998

* - 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).

OCEAN CITY REGIONAL WASTEWATER TREATMENT FACILITY

ADMIN OFFICE, SLUDGE PROCESSING, EFFLUENT BUILDING, TUNNELS

#	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			4,751	1.1	-1	\$544	\$1,728	\$354	\$1,374	2.5	4,657
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,296	0.3	0	\$148	\$564	\$50	\$514	3.5	1,271
ECM 2	Retrofit Fixtures with LED Lamps	Yes	3,455	0.8	-1	\$396	\$1,164	\$304	\$860	2.2	3,386
Lighting Control Measures			5,729	1.2	-1	\$656	\$6,681	\$3,195	\$3,486	5.3	5,615
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,388	0.3	0	\$159	\$2,856	\$345	\$2,511	15.8	1,360
ECM 4	Install High/Low Lighting Controls	Yes	4,341	0.9	-1	\$497	\$3,825	\$2,850	\$975	2.0	4,255
Motor Upgrades			5,535	0.6	0	\$650	\$6,490	\$0	\$6,490	10.0	5,573
ECM 5	Premium Efficiency Motors	Yes	5,535	0.6	0	\$650	\$6,490	\$0	\$6,490	10.0	5,573
Variable Frequency Drive (VFD) Measures			306,860	60.1	0	\$36,042	\$89,511	\$6,400	\$83,111	2.3	309,005
ECM 6	Install VFDs on Heating Water Pumps	Yes	27,204	4.3	0	\$3,195	\$16,651	\$2,600	\$14,051	4.4	27,395
ECM 7	Install VFDs on Process Pumps	Yes	57,859	11.2	0	\$6,796	\$25,590	\$3,800	\$21,790	3.2	58,263
ECM 8	Install VFDs on Process Blowers	Yes	221,796	44.6	0	\$26,051	\$47,270	\$0	\$47,270	1.8	223,347
Unitary HVAC Measures			1,750	0.9	0	\$206	\$6,639	\$309	\$6,330	30.8	1,762
ECM 9	Install High Efficiency Air Conditioning Units	No	1,750	0.9	0	\$206	\$6,639	\$309	\$6,330	30.8	1,762
Gas Heating (HVAC/Process) Replacement			0	0.0	38	\$486	\$51,760	\$5,563	\$46,197	95.0	4,463
ECM 10	Install High Efficiency Hot Water Boilers	No	0	0.0	38	\$486	\$51,760	\$5,563	\$46,197	95.0	4,463
Domestic Water Heating Upgrade			0	0.0	2	\$31	\$12,798	\$710	\$12,089	386.8	287
ECM 11	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	1	\$14	\$12,762	\$690	\$12,073	852.5	130
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$17	\$36	\$20	\$16	0.9	157
TOTALS (COST EFFECTIVE MEASURES)			322,875	62.9	-1	\$37,909	\$104,445	\$9,969	\$94,476	2.5	325,007
TOTALS (ALL MEASURES)			324,625	63.8	38	\$38,615	\$175,607	\$16,530	\$159,076	4.1	331,362

* - 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).

WILDWOOD LOWER TWP REGIONAL PUMP STATIONS

10TH, LOWER TWP, NEPTUNE, OAK, RIO GRANDE, ROSEMARY, SHAWCREST, SPICER

#	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			10,786	3.5	-1	\$1,859	\$7,777	\$1,786	\$5,991	3.2	10,730
ECM 1	Install LED Fixtures	Yes	5,597	0.1	0	\$974	\$1,938	\$550	\$1,388	1.4	5,632
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,374	1.0	0	\$234	\$1,788	\$260	\$1,528	6.5	1,347
ECM 3	Retrofit Fixtures with LED Lamps	Yes	3,814	2.4	-1	\$651	\$4,051	\$976	\$3,075	4.7	3,751
Lighting Control Measures			591	0.0	0	\$103	\$400	\$0	\$400	3.9	595
ECM 4	Install Photocell Controls	Yes	591	0.0	0	\$103	\$400	\$0	\$400	3.9	595
Motor Upgrades			18,808	3.5	0	\$3,273	\$19,257	\$0	\$19,257	5.9	18,939
ECM 5	Premium Efficiency Motors	Yes	18,808	3.5	0	\$3,273	\$19,257	\$0	\$19,257	5.9	18,939
Variable Frequency Drive (VFD) Measures			26,836	8.6	0	\$4,671	\$27,326	\$5,200	\$22,126	4.7	27,024
ECM 6	Install VFDs on Process Pumps	Yes	15,348	3.1	0	\$2,671	\$14,172	\$2,400	\$11,772	4.4	15,455
ECM 7	Install VFDs on Process Blowers	Yes	11,488	5.6	0	\$2,000	\$13,154	\$2,800	\$10,354	5.2	11,569
Domestic Water Heating Upgrade			226	0.0	0	\$39	\$36	\$16	\$20	0.5	227
ECM 8	Install Low-Flow DHW Devices	Yes	226	0.0	0	\$39	\$36	\$16	\$20	0.5	227
Custom Measures			22,436	0.0	0	\$3,905	\$1,920	\$0	\$1,920	0.5	22,593
ECM 9	Generator Block Heater Control	Yes	22,436	0.0	0	\$3,905	\$1,920	\$0	\$1,920	0.5	22,593
TOTALS (COST EFFECTIVE MEASURES)			79,682	15.6	-1	\$13,851	\$56,716	\$7,002	\$49,714	3.6	80,108
TOTALS (ALL MEASURES)			79,682	15.6	-1	\$13,851	\$56,716	\$7,002	\$49,714	3.6	80,108

* - 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).

WILDWOOD LOWER TWP. REGIONAL WASTEWATER TREATMENT FACILITY

ADMIN OFFICE, INFLUENT BLDG., SLUDGE PROCESSING, TUNNELS, EFFLUENT BLDG.

#	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		17,027	3.8	-4	\$2,094	\$9,798	\$1,597	\$8,201	3.9	16,699
ECM 1	Install LED Fixtures	7,709	1.7	-2	\$947	\$6,061	\$600	\$5,461	5.8	7,555
ECM 2	Retrofit Fixtures with LED Lamps	9,318	2.1	-2	\$1,146	\$3,736	\$997	\$2,739	2.4	9,144
Lighting Control Measures		11,415	2.4	-2	\$1,405	\$8,594	\$1,300	\$7,294	5.2	11,210
ECM 3	Install Occupancy Sensor Lighting Controls	10,565	2.4	-2	\$1,298	\$8,194	\$1,300	\$6,894	5.3	10,355
ECM 4	Install Photocell Controls	849	0.0	0	\$107	\$400	\$0	\$400	3.8	855
Motor Upgrades		774	0.1	0	\$97	\$1,495	\$0	\$1,495	15.4	780
ECM 5	Premium Efficiency Motors	774	0.1	0	\$97	\$1,495	\$0	\$1,495	15.4	780
Variable Frequency Drive (VFD) Measures		31,039	11.9	0	\$3,897	\$39,665	\$4,750	\$34,915	9.0	31,256
ECM 6	Install VFDs on Heating Water Pumps	5,934	1.1	0	\$745	\$8,152	\$1,800	\$6,352	8.5	5,976
ECM 7	Install VFDs on Process Pumps	25,105	10.8	0	\$3,152	\$31,512	\$2,950	\$28,562	9.1	25,280
Gas Heating (HVAC/Process) Replacement		0	0.0	0	\$0	\$65,193	\$5,975	\$59,218	0.0	0
ECM 8	Install High Efficiency Hot Water Boilers	0	0.0	0	\$0	\$65,193	\$5,975	\$59,218	0.0	0
Domestic Water Heating Upgrade		581	0.0	0	\$73	\$36	\$14	\$22	0.3	585
ECM 9	Install Low-Flow DHW Devices	581	0.0	0	\$73	\$36	\$14	\$22	0.3	585
Custom Measures		2,427	0.0	0	\$305	\$3,320	\$0	\$3,320	10.9	2,444
ECM 10	Install Heat Pump Water Heater	2,427	0.0	0	\$305	\$3,320	\$0	\$3,320	10.9	2,444
TOTALS		63,263	18.2	-6	\$7,871	\$128,101	\$13,636	\$114,465	14.5	62,974

* - 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).

SEVEN MILE PUMP STATIONS

39TH, 69TH, 81ST, AVALON MANOR, BURLEIGH, CAPE MAY COURT HOUSE, CREST HAVEN, STONE HARBOR, STONE HARBOR MANOR,

#	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			6,288	2.1	0	\$1,027	\$4,107	\$987	\$3,120	3.0	6,332
ECM 1	Install LED Fixtures	Yes	2,189	0.0	0	\$357	\$530	\$15	\$515	1.4	2,204
ECM 2	Retrofit Fixtures with LED Lamps	Yes	4,100	2.1	0	\$669	\$3,576	\$972	\$2,604	3.9	4,128
Lighting Control Measures			1,149	0.4	0	\$188	\$3,395	\$595	\$2,800	14.9	1,157
ECM 3	Install Occupancy Sensor Lighting Controls	No	813	0.4	0	\$133	\$2,970	\$385	\$2,585	19.5	819
ECM 4	Install Photocell Controls	Yes	263	0.0	0	\$43	\$200	\$0	\$200	4.7	265
ECM 5	Install High/Low Lighting Controls	Yes	73	0.0	0	\$12	\$225	\$210	\$15	1.3	73
Motor Upgrades			3,892	0.3	0	\$635	\$3,458	\$0	\$3,458	5.4	3,919
ECM 6	Premium Efficiency Motors	Yes	3,892	0.3	0	\$635	\$3,458	\$0	\$3,458	5.4	3,919
Variable Frequency Drive (VFD) Measures			26,820	4.5	0	\$4,379	\$6,811	\$1,200	\$5,611	1.3	27,008
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	26,820	4.5	0	\$4,379	\$6,811	\$1,200	\$5,611	1.3	27,008
HVAC System Improvements			40	0.0	0	\$7	\$69	\$24	\$45	6.9	41
ECM 8	Install Pipe Insulation	Yes	40	0.0	0	\$7	\$69	\$24	\$45	6.9	41
Custom Measures			18,073	0.0	0	\$2,951	\$29,324	\$0	\$29,324	9.9	18,199
ECM 9	Add Thermostatic Controls to Generator Block Heaters	Yes	5,272	0.0	0	\$861	\$2,160	\$0	\$2,160	2.5	5,309
ECM 10	Building Envelope Improvements	Yes	12,801	0.0	0	\$2,090	\$27,164	\$0	\$27,164	13.0	12,891
TOTALS (COST EFFECTIVE MEASURES)			55,449	6.9	0	\$9,054	\$44,194	\$2,421	\$41,773	4.6	55,837
TOTALS (ALL MEASURES)			56,263	7.3	0	\$9,187	\$47,164	\$2,806	\$44,358	4.8	56,656

* - 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).

SEVEN MILE MIDDLE REGIONAL WASTEWATER TREATMENT FACILITY

EFFLUENT & INFLUENT BLDGS, SLUDGE PROCESSING, PROJECT GARAGE, CLARIFIER CONTROL BLDG.

#	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			69,549	10.7	-15	\$8,317	\$21,536	\$3,880	\$17,656	2.1	68,257
ECM 1	Install LED Fixtures	Yes	22,581	1.6	-4	\$2,707	\$7,425	\$800	\$6,625	2.4	22,226
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	2,793	0.3	-1	\$334	\$550	\$80	\$470	1.4	2,738
ECM 3	Retrofit Fixtures with LED Lamps	Yes	44,175	8.8	-10	\$5,276	\$13,560	\$3,000	\$10,560	2.0	43,294
Lighting Control Measures			22,627	3.3	-5	\$2,703	\$10,589	\$1,900	\$8,689	3.2	22,176
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	22,088	3.2	-5	\$2,638	\$9,914	\$1,305	\$8,609	3.3	21,648
ECM 5	Install High/Low Lighting Controls	Yes	539	0.1	0	\$64	\$675	\$595	\$80	1.2	528
Motor Upgrades			754	0.1	0	\$92	\$2,547	\$0	\$2,547	27.6	760
ECM 6	Premium Efficiency Motors	No	754	0.1	0	\$92	\$2,547	\$0	\$2,547	27.6	760
Gas Heating (HVAC/Process) Replacement			0	0.0	128	\$1,563	\$80,296	\$6,263	\$74,032	47.4	15,033
ECM 7	Install High Efficiency Hot Water Boilers	No	0	0.0	128	\$1,563	\$80,296	\$6,263	\$74,032	47.4	15,033
HVAC System Improvements			135	0.0	0	\$16	\$40	\$14	\$26	1.6	136
ECM 8	Install Pipe Insulation	Yes	135	0.0	0	\$16	\$40	\$14	\$26	1.6	136
Domestic Water Heating Upgrade			0	0.0	2	\$20	\$29	\$16	\$13	0.6	196
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	2	\$20	\$29	\$16	\$13	0.6	196
TOTALS (COST EFFECTIVE MEASURES)			92,311	14.0	-19	\$11,056	\$32,194	\$5,810	\$26,384	2.4	90,765
TOTALS (ALL MEASURES)			93,065	14.1	110	\$12,711	\$115,036	\$12,073	\$102,963	8.1	106,558

* - 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).

SLUDGE TRANSFER FACILITY – ADMIN BLDG.

#	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			7,634	1.4	-2	\$1,213	\$2,078	\$532	\$1,546	1.3	7,502
ECM 1	Retrofit Fixtures with LED Lamps	Yes	7,634	1.4	-2	\$1,213	\$2,078	\$532	\$1,546	1.3	7,502
Lighting Control Measures			2,330	0.4	0	\$370	\$1,930	\$240	\$1,690	4.6	2,289
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	2,330	0.4	0	\$370	\$1,930	\$240	\$1,690	4.6	2,289
HVAC System Improvements			523	0.0	25	\$400	\$660	\$0	\$660	1.7	3,451
ECM 3	Install Programmable Thermostats	Yes	523	0.0	25	\$400	\$660	\$0	\$660	1.7	3,451
Domestic Water Heating Upgrade			0	0.0	2	\$28	\$29	\$16	\$13	0.4	261
ECM 4	Install Low-Flow DHW Devices	Yes	0	0.0	2	\$28	\$29	\$16	\$13	0.4	261
TOTALS (COST EFFECTIVE MEASURES)			10,487	1.9	25	\$2,011	\$4,696	\$788	\$3,908	1.9	13,503
TOTALS (ALL MEASURES)			10,487	1.9	25	\$2,011	\$4,696	\$788	\$3,908	1.9	13,503

* - 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).

CAPE MAY COUNTY MUA ADMIN BLDG.

#	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 Control Measures			3,848	1.3	0	\$576	\$5,369	\$2,535	\$2,834	4.9	3,875
ECM 1	Install Occupancy Sensor Lighting Controls	Yes	1,641	0.6	0	\$246	\$2,894	\$395	\$2,499	10.2	1,652
ECM 2	Install High/Low Lighting Controls	Yes	2,207	0.7	0	\$330	\$2,475	\$2,140	\$335	1.0	2,223
Custom Measures			9,980	0.0	0	\$1,494	\$500	\$0	\$500	0.3	10,050
ECM 3	Optimize HVAC Schedule	Yes	9,980	0.0	0	\$1,494	\$500	\$0	\$500	0.3	10,050
TOTALS (COST EFFECTIVE MEASURES)			13,828	1.3	0	\$2,070	\$5,869	\$2,535	\$3,334	1.6	13,925
TOTALS (ALL MEASURES)			13,828	1.3	0	\$2,070	\$5,869	\$2,535	\$3,334	1.6	13,925

SOLID WASTE TRANSFER FACILITY

#	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			4,228	0.9	-1	\$654	\$3,125	\$379	\$2,746	4.2	4,169
ECM 1	Install LED Fixtures	Yes	3,271	0.7	-1	\$507	\$2,788	\$300	\$2,488	4.9	3,231
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	145	0.0	0	\$22	\$49	\$3	\$46	2.0	142
ECM 3	Retrofit Fixtures with LED Lamps	Yes	812	0.2	0	\$125	\$288	\$76	\$212	1.7	796
Lighting Control Measures			1,496	0.5	0	\$231	\$2,393	\$375	\$2,018	8.7	1,474
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	1,137	0.5	0	\$175	\$1,968	\$270	\$1,698	9.7	1,114
ECM 5	Install Photocell Controls	Yes	263	0.0	0	\$41	\$200	\$0	\$200	4.8	265
ECM 6	Install High/Low Lighting Controls	Yes	97	0.0	0	\$15	\$225	\$105	\$120	8.0	95
Domestic Water Heating Upgrade			376	0.0	0	\$59	\$22	\$18	\$3	0.1	379
ECM 7	Install Low-Flow DHW Devices	Yes	376	0.0	0	\$59	\$22	\$18	\$3	0.1	379
Food Service & Refrigeration Measures			1,954	0.2	0	\$307	\$460	\$100	\$360	1.2	1,968
ECM 8	Vending Machine Control	Yes	1,954	0.2	0	\$307	\$460	\$100	\$360	1.2	1,968
TOTALS (COST EFFECTIVE MEASURES)			8,055	1.7	-1	\$1,252	\$5,999	\$872	\$5,127	4.1	7,990
TOTALS (ALL MEASURES)			8,055	1.7	-1	\$1,252	\$5,999	\$872	\$5,127	4.1	7,990

* - 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).

SOLID WASTE SANITARY LANDFILL

ADMIN/MAINTENANCE BLDG, MULCH BLDG, SCALE 1, SCALE 2, ELECTRIC PLANT

#	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			20,981	2.9	-8	\$1,239	\$15,064	\$2,916	\$12,148	9.8	19,779
ECM 1	Install LED Fixtures	Yes	13,624	1.4	-6	\$783	\$11,400	\$1,800	\$9,600	12.3	12,694
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,895	0.7	-1	\$109	\$951	\$146	\$805	7.4	1,766
ECM 3	Retrofit Fixtures with LED Lamps	Yes	5,463	0.8	-1	\$347	\$2,713	\$970	\$1,743	5.0	5,320
Lighting Control Measures			12,833	1.3	-6	\$737	\$2,932	\$460	\$2,472	3.4	11,957
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	118	0.1	0	\$7	\$232	\$40	\$192	28.3	110
ECM 5	Install Daylight Dimming/Photocell Controls	Yes	12,715	1.3	-6	\$731	\$2,700	\$420	\$2,280	3.1	11,847
Unitary HVAC Measures			294	0.2	0	\$20	\$1,406	\$0	\$1,406	70.0	296
ECM 6	Install High Efficiency Air Conditioning Units	No	294	0.2	0	\$20	\$1,406	\$0	\$1,406	70.0	296
HVAC System Improvements			297	0.0	0	\$20	\$434	\$33	\$401	19.8	299
ECM 7	Install Programmable Thermostats	No	186	0.0	0	\$13	\$330	\$0	\$330	26.0	187
ECM 8	Install Pipe Insulation	Yes	111	0.0	0	\$8	\$104	\$33	\$71	9.3	112
Domestic Water Heating Upgrade			143	0.0	0	\$10	\$65	\$32	\$33	3.3	144
ECM 9	Install Low-Flow DHW Devices	Yes	143	0.0	0	\$10	\$65	\$32	\$33	3.3	144
Food Service & Refrigeration Measures			1,954	0.2	0	\$133	\$460	\$50	\$410	3.1	1,968
ECM 10	Vending Machine Control	Yes	1,954	0.2	0	\$133	\$460	\$50	\$410	3.1	1,968
TOTALS (COST EFFECTIVE MEASURES)			36,023	4.4	-14	\$2,127	\$18,624	\$3,491	\$15,133	7.1	33,961
TOTALS (ALL MEASURES)			36,503	4.6	-14	\$2,159	\$20,360	\$3,491	\$16,869	7.8	34,445

* - 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).

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

WASTEWATER FACILITY BEST PRACTICES

WWTF Best Practices:

A well-executed Energy Management Plan will lead you to the fundamental measures applicable to your site conditions. There is no one measure or mix of measures that is appropriate for every facility. Measures should not be implemented in isolation since there are often interactive effects that will impact the overall savings of the combined measures.



Process	Best Practices Measure	Typical Energy Savings of unit of process (%)	Typical Payback (Years)
Operations	Operational Flexibility	10 – 25	< 2
	Staging of Treatment Capacity	10 – 30	< 2
	Manage for Seasonal/Tourist Peaks Variable	Variable	4 – 6
	Flexible Sequencing of Basin Use	15 – 40	2 – 5
	Cover Basins to Reduce Freezing and Aerosol or Odor Emissions	Variable	Variable
	Reduce Fresh Water Consumption through Final Effluent Recycling	10 – 50	2 – 3
Aeration	Optimize Aeration System	30 – 70	3 – 7
	Fine Bubble Aeration	20 – 75	1 – 5
	Variable Blower Air Flow Rate	15 – 50	<3
	Dissolved Oxygen Control	20 – 50	2 – 3
	Cascade Aeration	Variable	Variable
	Aerobic Digestion Options	20 – 50	Variable
	Blower Technology Options	10 – 25	1 – 7
	Assess Aeration System Configuration	Variable	Variable
Sludge and Biosolids	Improve Solids Capture in Dissolved Air Flotation (DAF)	Variable	Variable
	Evaluate Replacing Centrifuge with Screw Press	Variable	Variable
	Replace Centrifuge with Gravity Belt Thickener	Variable	Variable
	Digestion Options	Variable	Variable
	Mixing Options in Aerobic Digesters	10 – 50	1 – 3
	Mixing Options in Anaerobic Digesters	Variable	Variable
	Recover Heat from Wastewater	Variable	Variable
Special Treatment Options	Anoxic-Zone Mixing Options	25 – 50	3 – 5
	Side-stream De-ammonification	–	–
	Biotower Energy Efficiency	15 – 30	Variable
Biogas Enhancement	Optimize Anaerobic Digester Performance	Variable	Variable
	Use Biogas to Produce Combined Heat and/or Power (CHP)	Variable	Variable
	Assessment of Beneficial Utilization	Variable	Variable

Table based on information published by Wisconsin Focus on Energy in the "ENERGY BEST PRACTICES GUIDE: WATER & WASTEWATER INDUSTRY" (February 2020)– <https://focusonenergy.com>

MEASURES FOR FUTURE CONSIDERATION

- Variable Frequency Drives to Control Fixed Head Pump Motors
- Heating Low Occupancy Spaces with Mechanical (Pumping) Equipment
- Installation of an Energy Management System
- High Speed Insulated Overhead Doors



SOLAR ENERGY GENERATION POTENTIAL

	Cape May MUA Admin Building	Solid Waste Sanitary Landfill	Cape May Regional WWTF	Wildwood WWTF	Seven Mile Regional WWTF	Ocean City WWTF
<i>Potential:</i>	MEDIUM	HIGH	HIGH	HIGH	HIGH	HIGH
<i>System Potential: (kW)</i>	50	400	107	129	107	215
<i>Electric Generation: (kWh per year)</i>	59,569	476,549	127,477	153,687	127,477	256,145
<i>Displaced Cost: (per year)</i>	\$8,920	\$32,520	\$16,720	\$19,300	\$5,580	\$30,090

Successor Solar Incentive Program

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

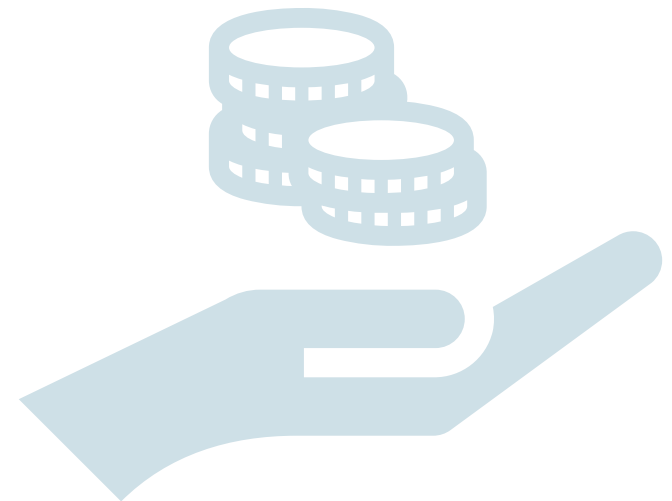
Community Solar Energy Pilot Program

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

FINANCING MECHANISM: ESIP

ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting – NJ ESIP
- Financing Mechanism that allows state 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 self-funding loan
- Recent Energy Efficiency Transition
 - NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Pandemic Relief Funds
- No upfront capital expenses
- No referendum or impact to tax payers

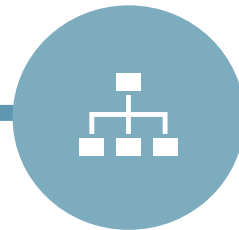


FINANCING MECHANISM: ESIP



**Preliminary
Energy Audit**

LGEA



Select Path

ESCO Model
Hybrid Model
DIY Model



**Investment Grade
Energy Audit**

Prioritize ECM's to
determine project

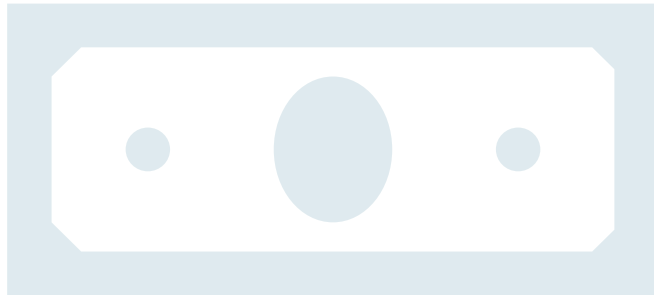


**Energy Savings Plan
Developed**

Cash Flow Positive
Third Part Audit of Plan



Submitted for
BPU
Approval



ENERGY SAVINGS IMPROVEMENT PROGRAM

FOR MORE INFORMATION

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C&I TRANSITION OF ENERGY EFFICIENCY PROGRAMS

<https://www.njcleanenergy.com/transition>

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

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

Atlantic City Electric

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THANK YOU

