

# New Jersey's Clean Energy Program

LGEA Presentation  
*Toms River Township*

November 10, 2020



# INTRODUCTIONS

- *Toms River Township*
  - Alexander Davidson – Chief Financial Officer
  - Robert J Chankalian – Township Engineer
  - Craig Ambrosio – Division Manager of Parks, Buildings & Grounds/Code Enforcement
  - Jim Rutala – Consultant
- *NJ Clean Energy Program*
  - Aimee Lalonde – TRC Program Manager
  - Yagna Otia – 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 Toms River Township



# 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

## Utility Consumption:

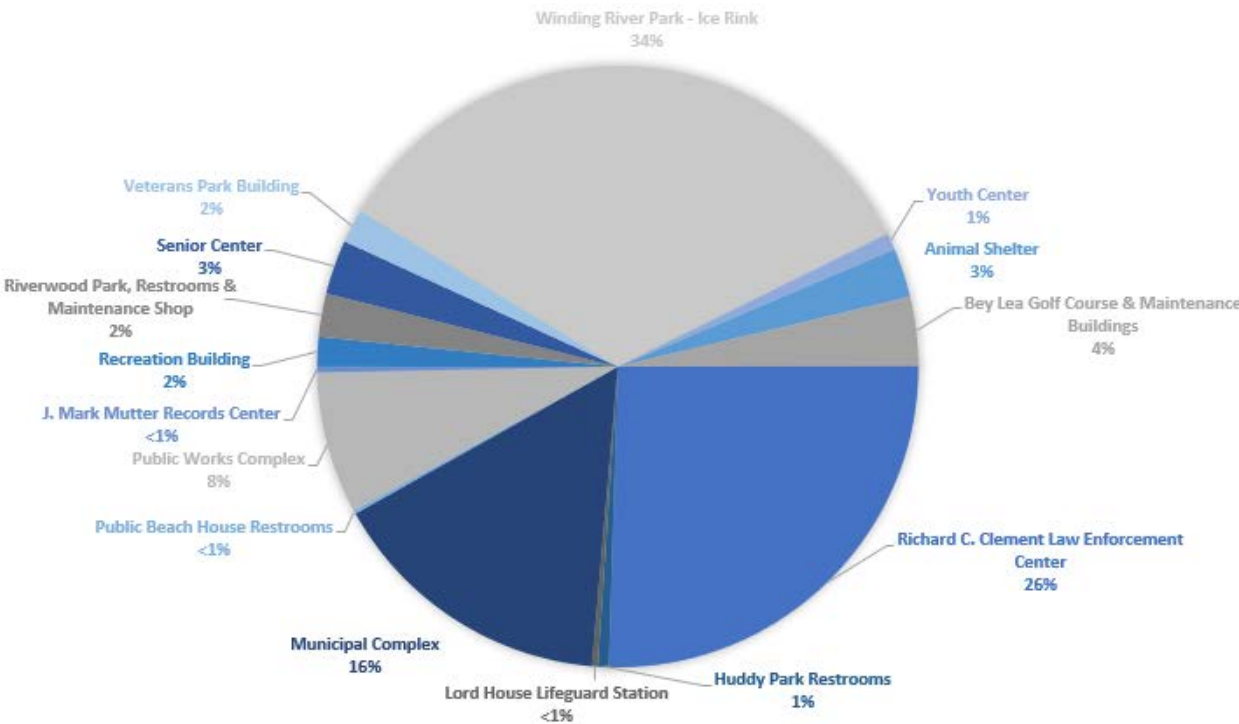
- Electric Consumption and Costs
- Natural Gas Consumption and Costs
- Solar Consumption and Costs

## Sites Visited/Analyzed

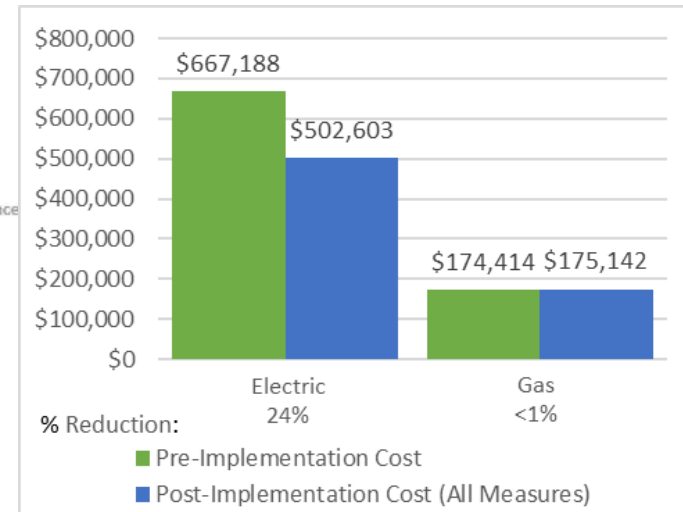
- Municipal Complex
- Public Works Complex
- Senior Center
- Richard C. Clement Law Enforcement Center
- Recreation Building
- Riverwood Park
- Youth Center
- Animal Facility
- Bey Lea Golf Course
- J. Mark Mutter Records Center
- Veterans Park Building
- Huddy Park Restrooms
- Lord House Lifeguard Station
- Winding River Park – Ice Rinks

# UTILITY BREAKOUT


Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



# BENCHMARKING



LEARN MORE AT [energystar.gov](http://energystar.gov)

## ENERGY STAR® Statement of Energy Performance

### Toms River Recreation Building

**N/A**

Primary Property Type: Other - Recreation  
Gross Floor Area (ft²): 10,000  
Built: 1992

For Year Ending: June 30, 2019  
Date Generated: June 09, 2020

ENERGY STAR® Score<sup>1</sup>

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		
<b>Property Address</b> Toms River Recreation Building 1810 Warren Point Road Toms River, New Jersey 08753	<b>Property Owner</b> Township of Toms River 33 Washington Street Toms River, NJ 08753 (742) 341-1000	<b>Primary Contact</b> Donald Guardian 33 Washington Street Toms River, NJ 08753 (742) 341-1000 dguardian@tomsvrertownship.com
Property ID: 10864936		
Energy Consumption and Energy Use Intensity (EUI)		
<b>Site EUI</b> 33.8 kBtu/ft²	<b>Annual Energy by Fuel</b> Gedco - Grid (kBtu) 338,050 (100%)	<b>National Median Comparison</b> National Median Site EUI (kBtu/ft²) 40 National Median Source EUI (kBtu/ft²) 112 % Diff from National Median Source EUI -16%
<b>Source EUI</b> 94.7 kBtu/ft²	Greenhouse Gas Emissions (Metric Tons CO2e/year) 34	

**Site EUI**  
33.8 kBtu/ft²

**Source EUI**  
94.7 kBtu/ft²

National Median Comparison	
National Median Site EUI (kBtu/ft²)	40
National Median Source EUI (kBtu/ft²)	112
% 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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

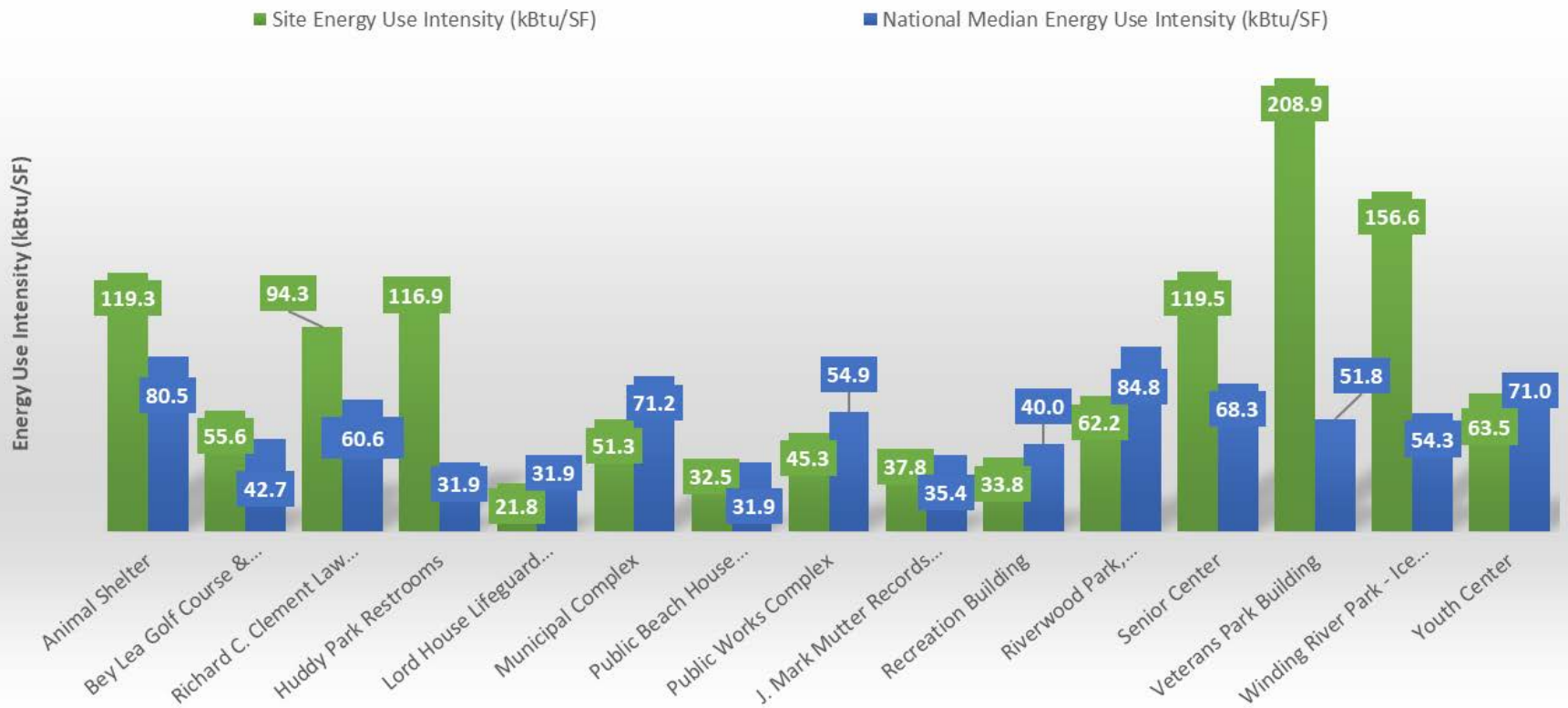


Professional Engineer or Registered Architect Stamp (If applicable)

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

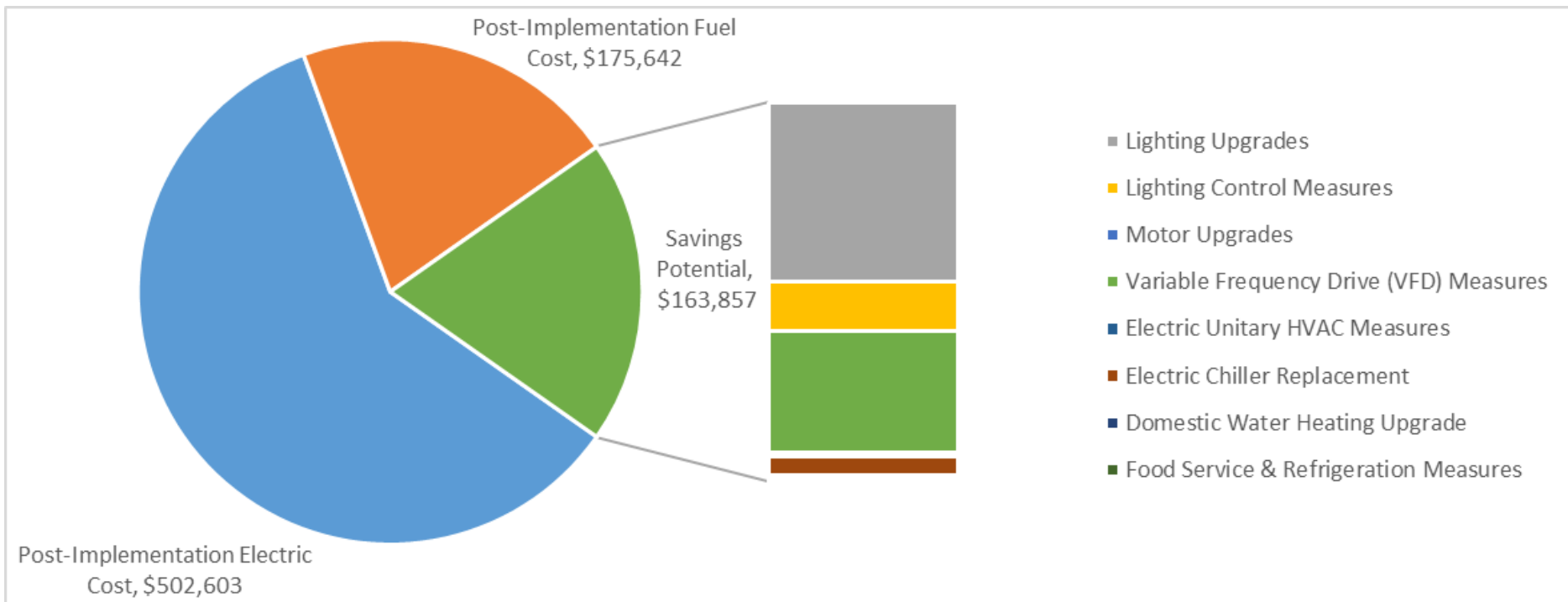
	<b>ENERGY STAR® Score</b>
All Sites	N/A





# ALL OPPORTUNITIES

## Savings Potential

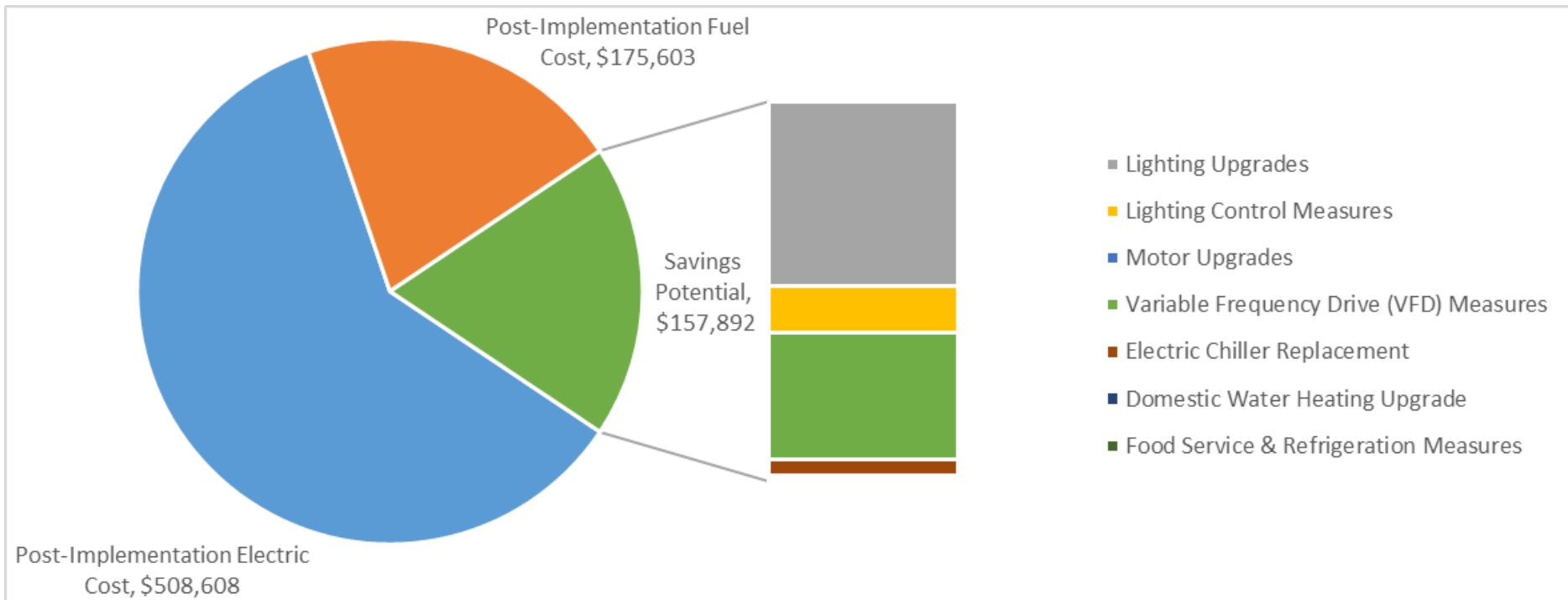


# ALL OPPORTUNITIES

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>		<b>589,051</b>	<b>113.4</b>	<b>-118.9</b>	<b>\$77,324</b>	<b>\$213,661</b>	<b>\$64,718</b>	<b>\$148,943</b>	<b>1.9</b>	<b>579,253</b>
ECM 1	Install LED Fixtures	138,779	22.8	-25.6	\$20,355	\$72,950	\$3,460	\$69,490	3.4	136,751
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	29,323	5.7	-6.4	\$3,707	\$9,648	\$2,850	\$6,798	1.8	28,779
ECM 3	Retrofit Fixtures with LED Lamps	420,375	84.8	-86.7	\$53,186	\$130,700	\$58,408	\$72,292	1.4	413,159
ECM 4	Install LED Exit Signs	574	0.1	-0.1	\$76	\$362	\$0	\$362	4.8	564
<b>Lighting Control Measures</b>		<b>169,688</b>	<b>33.0</b>	<b>-33.9</b>	<b>\$21,371</b>	<b>\$141,583</b>	<b>\$43,885</b>	<b>\$97,698</b>	<b>4.6</b>	<b>166,906</b>
ECM 5	Install Occupancy Sensor Lighting Controls	146,922	30.1	-29.1	\$18,539	\$122,758	\$26,595	\$96,163	5.2	144,545
ECM 6	Install Daylight Dimming/Photocell Controls	144	0.0	0.0	\$20	\$600	\$0	\$600	30.6	145
ECM 7	Install High/Low Lighting Controls	22,622	2.9	-4.8	\$2,812	\$18,225	\$17,290	\$935	0.3	22,216
<b>Motor Upgrades</b>		<b>322</b>	<b>0.1</b>	<b>0.0</b>	<b>\$47</b>	<b>\$1,264</b>	<b>\$0</b>	<b>\$1,264</b>	<b>27.0</b>	<b>325</b>
ECM 8	Premium Efficiency Motors	322	0.1	0.0	\$47	\$1,264	\$0	\$1,264	27.0	325
<b>Variable Frequency Drive (VFD) Measures</b>		<b>429,458</b>	<b>74.8</b>	<b>29.9</b>	<b>\$52,804</b>	<b>\$227,982</b>	<b>\$62,550</b>	<b>\$165,432</b>	<b>3.1</b>	<b>435,962</b>
ECM 9	Install VFD on Variable Air Volume (VAV) Fans	188,093	40.3	0.0	\$24,268	\$104,488	\$29,400	\$75,088	3.1	189,408
ECM 10	Install VFDs on Constant Volume (CV) Fans	112,096	19.4	0.0	\$13,090	\$45,443	\$13,600	\$31,843	2.4	112,880
ECM 11	Install VFDs on Chilled Water Pumps	72,533	10.8	0.0	\$8,385	\$27,012	\$7,600	\$19,412	2.3	73,040
ECM 12	Install VFDs on Heating Water Pumps	44,723	4.5	0.0	\$5,368	\$39,194	\$9,350	\$29,844	5.6	45,036
ECM 13	Install VFDs on Cooling Tower Fans	1,740	-0.2	0.0	\$198	\$7,768	\$800	\$6,968	35.2	1,752
ECM 14	Install VFDs on Kitchen Hood Fan Motors	10,273	0.0	29.9	\$1,494	\$4,076	\$1,800	\$2,276	1.5	13,846
<b>Electric Unitary HVAC Measures</b>		<b>12,603</b>	<b>7.0</b>	<b>0.0</b>	<b>\$1,700</b>	<b>\$89,218</b>	<b>\$10,345</b>	<b>\$78,873</b>	<b>46.4</b>	<b>12,692</b>
ECM 15	Install High Efficiency Air Conditioning Units	7,066	5.0	0.0	\$987	\$62,501	\$8,014	\$54,487	55.2	7,116
ECM 16	Install High Efficiency Heat Pumps	5,537	2.1	0.0	\$713	\$26,717	\$2,331	\$24,386	34.2	5,576
<b>Electric Chiller Replacement</b>		<b>70,059</b>	<b>26.6</b>	<b>0.0</b>	<b>\$8,104</b>	<b>\$200,671</b>	<b>\$32,400</b>	<b>\$168,271</b>	<b>20.8</b>	<b>70,549</b>
ECM 17	Install High Efficiency Chillers	70,059	26.6	0.0	\$8,104	\$200,671	\$32,400	\$168,271	20.8	70,549
<b>Domestic Water Heating Upgrade</b>		<b>3,306</b>	<b>0.0</b>	<b>58.7</b>	<b>\$1,078</b>	<b>\$2,229</b>	<b>\$1,323</b>	<b>\$905</b>	<b>0.8</b>	<b>10,207</b>
ECM 18	Install Low-Flow DHW Devices	3,306	0.0	58.7	\$1,078	\$2,229	\$1,323	\$905	0.8	10,207
<b>Food Service &amp; Refrigeration Measures</b>		<b>11,440</b>	<b>1.3</b>	<b>0.0</b>	<b>\$1,431</b>	<b>\$6,906</b>	<b>\$950</b>	<b>\$5,956</b>	<b>4.2</b>	<b>11,520</b>
ECM 19	Refrigeration Controls	172	0.0	0.0	\$20	\$252	\$150	\$102	5.2	173
ECM 20	Replace Refrigeration Equipment	630	0.1	0.0	\$85	\$4,124	\$100	\$4,024	47.4	634
ECM 21	Vending Machine Control	10,638	1.2	0.0	\$1,326	\$2,530	\$700	\$1,830	1.4	10,713
<b>TOTALS</b>		<b>1,285,927</b>	<b>256.1</b>	<b>-64.1</b>	<b>\$163,857</b>	<b>\$883,512</b>	<b>\$216,171</b>	<b>\$667,341</b>	<b>4.1</b>	<b>1,287,413</b>

# 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>		<b>587,018</b>	<b>113.4</b>	<b>-118.8</b>	<b>\$76,987</b>	<b>\$198,627</b>	<b>\$63,118</b>	<b>\$135,509</b>	<b>1.8</b>	<b>577,207</b>
ECM 1	Install LED Fixtures	136,781	22.8	-25.6	\$20,023	\$58,061	\$1,860	\$56,201	2.8	134,739
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	29,323	5.7	-6.4	\$3,707	\$9,648	\$2,850	\$6,798	1.8	28,779
ECM 3	Retrofit Fixtures with LED Lamps	420,375	84.8	-86.7	\$53,186	\$130,700	\$58,408	\$72,292	1.4	413,159
ECM 4	Install LED Exit Signs	539	0.1	-0.1	\$71	\$217	\$0	\$217	3.1	530
<b>Lighting Control Measures</b>		<b>153,344</b>	<b>29.1</b>	<b>-30.5</b>	<b>\$19,214</b>	<b>\$110,549</b>	<b>\$37,575</b>	<b>\$72,974</b>	<b>3.8</b>	<b>150,846</b>
ECM 5	Install Occupancy Sensor Lighting Controls	130,722	26.2	-25.7	\$16,401	\$92,324	\$20,285	\$72,039	4.4	128,630
ECM 6	Install Daylight Dimming/Photocell Controls	0	0.0	0.0	\$0	\$0	\$0	\$0	0.0	0
ECM 7	Install High/Low Lighting Controls	22,622	2.9	-4.8	\$2,812	\$18,225	\$17,290	\$935	0.3	22,216
<b>Motor Upgrades</b>		<b>214</b>	<b>0.0</b>	<b>0.0</b>	<b>\$29</b>	<b>\$352</b>	<b>\$0</b>	<b>\$352</b>	<b>12.2</b>	<b>216</b>
ECM 8	Premium Efficiency Motors	214	0.0	0.0	\$29	\$352	\$0	\$352	12.2	216
<b>Variable Frequency Drive (VFD) Measures</b>		<b>427,718</b>	<b>74.9</b>	<b>29.9</b>	<b>\$52,605</b>	<b>\$220,214</b>	<b>\$61,750</b>	<b>\$158,464</b>	<b>3.0</b>	<b>434,210</b>
ECM 9	Install VFD on Variable Air Volume (VAV) Fans	188,093	40.3	0.0	\$24,268	\$104,488	\$29,400	\$75,088	3.1	189,408
ECM 10	Install VFDs on Constant Volume (CV) Fans	112,096	19.4	0.0	\$13,090	\$45,443	\$13,600	\$31,843	2.4	112,880
ECM 11	Install VFDs on Chilled Water Pumps	72,533	10.8	0.0	\$8,385	\$27,012	\$7,600	\$19,412	2.3	73,040
ECM 12	Install VFDs on Heating Water Pumps	44,723	4.5	0.0	\$5,368	\$39,194	\$9,350	\$29,844	5.6	45,036
ECM 13	Install VFDs on Cooling Tower Fans	0	0.0	0.0	\$0	\$0	\$0	\$0	0.0	0
ECM 14	Install VFDs on Kitchen Hood Fan Motors	10,273	0.0	29.9	\$1,494	\$4,076	\$1,800	\$2,276	1.5	13,846
<b>Electric Chiller Replacement</b>		<b>58,273</b>	<b>20.5</b>	<b>0.0</b>	<b>\$6,633</b>	<b>\$118,167</b>	<b>\$21,600</b>	<b>\$96,567</b>	<b>14.6</b>	<b>58,680</b>
ECM 17	Install High Efficiency Chillers	58,273	20.5	0.0	\$6,633	\$118,167	\$21,600	\$96,567	14.6	58,680
<b>Domestic Water Heating Upgrade</b>		<b>3,306</b>	<b>0.0</b>	<b>58.7</b>	<b>\$1,078</b>	<b>\$2,229</b>	<b>\$1,323</b>	<b>\$905</b>	<b>0.8</b>	<b>10,207</b>
ECM 18	Install Low-Flow DHW Devices	3,306	0.0	58.7	\$1,078	\$2,229	\$1,323	\$905	0.8	10,207
<b>Food Service &amp; Refrigeration Measures</b>		<b>10,810</b>	<b>1.2</b>	<b>0.0</b>	<b>\$1,346</b>	<b>\$2,782</b>	<b>\$850</b>	<b>\$1,932</b>	<b>1.4</b>	<b>10,886</b>
ECM 19	Refrigeration Controls	172	0.0	0.0	\$20	\$252	\$150	\$102	5.2	173
ECM 21	Vending Machine Control	10,638	1.2	0.0	\$1,326	\$2,530	\$700	\$1,830	1.4	10,713
<b>TOTALS</b>		<b>1,240,683</b>	<b>239.1</b>	<b>-60.7</b>	<b>\$157,892</b>	<b>\$652,919</b>	<b>\$186,216</b>	<b>\$466,703</b>	<b>3.0</b>	<b>1,242,251</b>

\* - 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).

# MUNICIPAL COMPLEX

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			199,640	44.4	-42	\$26,303	\$57,239	\$16,408	\$40,831	1.6	196,074
ECM 1	Install LED Fixtures	Yes	117,122	21.8	-25	\$15,431	\$22,653	\$1,660	\$20,993	1.4	115,030
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	2,335	0.7	0	\$308	\$954	\$280	\$674	2.2	2,293
ECM 3	Retrofit Fixtures with LED Lamps	Yes	79,644	21.8	-17	\$10,493	\$33,415	\$14,468	\$18,947	1.8	78,220
ECM 4	Install LED Exit Signs	Yes	539	0.1	0	\$71	\$217	\$0	\$217	3.1	530
<b>Lighting Control Measures</b>			21,269	5.0	-5	\$2,802	\$39,060	\$15,720	\$23,340	8.3	20,887
ECM 5	Install Occupancy Sensor Lighting Controls	No	15,964	3.8	-3	\$2,103	\$29,160	\$6,020	\$23,140	11.0	15,678
ECM 6	Install High/Low Lighting Controls	Yes	5,304	1.2	-1	\$699	\$9,900	\$9,700	\$200	0.3	5,209
<b>Variable Frequency Drive (VFD) Measures</b>			9,833	1.3	0	\$1,319	\$8,814	\$3,800	\$5,014	3.8	9,901
ECM 7	Install VFDs on Heating Water Pumps	Yes	9,833	1.3	0	\$1,319	\$8,814	\$3,800	\$5,014	3.8	9,901
<b>Domestic Water Heating Upgrade</b>			523	0.0	6	\$140	\$194	\$194	\$0	0.0	1,246
ECM 8	Install Low-Flow DHW Devices	Yes	523	0.0	6	\$140	\$194	\$194	\$0	0.0	1,246
<b>Food Service &amp; Refrigeration Measures</b>			1,954	0.2	0	\$262	\$460	\$100	\$360	1.4	1,968
ECM 9	Vending Machine Control	Yes	1,954	0.2	0	\$262	\$460	\$100	\$360	1.4	1,968
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			217,255	47.1	-37	\$28,723	\$76,607	\$30,202	\$46,405	1.6	214,398
<b>TOTALS (ALL MEASURES)</b>			233,219	50.9	-41	\$30,826	\$105,767	\$36,222	\$69,545	2.3	230,076

\* - 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).

# PUBLIC WORKS COMPLEX

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			12,306	4.1	-3	\$1,695	\$5,937	\$2,778	\$3,159	1.9	12,085
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,067	0.4	0	\$147	\$512	\$160	\$352	2.4	1,048
ECM 2	Retrofit Fixtures with LED Lamps	Yes	11,239	3.7	-2	\$1,548	\$5,426	\$2,618	\$2,808	1.8	11,037
<b>Lighting Control Measures</b>			20,470	7.3	-4	\$2,819	\$11,032	\$2,530	\$8,502	3.0	20,102
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	20,470	7.3	-4	\$2,819	\$11,032	\$2,530	\$8,502	3.0	20,102
<b>Variable Frequency Drive (VFD) Measures</b>			52,120	14.8	0	\$7,300	\$33,212	\$10,800	\$22,412	3.1	52,485
ECM 4	Install VFD on Variable Air Volume (VAV) Fans	Yes	52,120	14.8	0	\$7,300	\$33,212	\$10,800	\$22,412	3.1	52,485
<b>Electric Unitary HVAC Measures</b>			1,022	0.5	0	\$143	\$2,244	\$276	\$1,968	13.8	1,029
ECM 5	Install High Efficiency Air Conditioning Units	No	1,022	0.5	0	\$143	\$2,244	\$276	\$1,968	13.8	1,029
<b>Domestic Water Heating Upgrade</b>			0	0.0	3	\$31	\$22	\$22	\$0	0.0	333
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	3	\$31	\$22	\$22	\$0	0.0	333
<b>Food Service &amp; Refrigeration Measures</b>			1,551	0.2	0	\$217	\$460	\$100	\$360	1.7	1,562
ECM 7	Vending Machine Control	Yes	1,551	0.2	0	\$217	\$460	\$100	\$360	1.7	1,562
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			86,447	26.4	-4	\$12,062	\$50,663	\$16,230	\$34,433	2.9	86,568
<b>TOTALS (ALL MEASURES)</b>			87,469	26.9	-4	\$12,205	\$52,907	\$16,506	\$36,402	3.0	87,597

\* - 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).

# SENIOR 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			10,248	4.0	-2	\$1,370	\$6,000	\$2,884	\$3,116	2.3	10,064
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	599	0.2	0	\$80	\$409	\$110	\$299	3.7	588
ECM 2	Retrofit Fixtures with LED Lamps	Yes	9,649	3.8	-2	\$1,290	\$5,591	\$2,774	\$2,817	2.2	9,476
<b>Lighting Control Measures</b>			3,206	1.2	-1	\$429	\$3,990	\$660	\$3,330	7.8	3,151
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	3,092	1.2	-1	\$413	\$3,590	\$660	\$2,930	7.1	3,036
ECM 4	Install Photocell Controls	No	114	0.0	0	\$16	\$400	\$0	\$400	25.7	115
<b>Variable Frequency Drive (VFD) Measures</b>			1,863	0.6	0	\$254	\$3,261	\$200	\$3,061	12.1	1,876
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	1,863	0.6	0	\$254	\$3,261	\$200	\$3,061	12.1	1,876
<b>Electric Unitary HVAC Measures</b>			5,651	3.9	0	\$770	\$57,605	\$7,462	\$50,143	65.1	5,690
ECM 6	Install High Efficiency Air Conditioning Units	No	4,787	3.3	0	\$652	\$51,687	\$6,818	\$44,869	68.8	4,820
ECM 7	Install High Efficiency Heat Pumps	No	864	0.6	0	\$118	\$5,918	\$644	\$5,274	44.8	870
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			15,203	5.8	-3	\$2,037	\$12,851	\$3,744	\$9,107	4.5	14,976
<b>TOTALS (ALL MEASURES)</b>			20,968	9.8	-3	\$2,823	\$70,856	\$11,206	\$59,650	21.1	20,782

\* - 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).

# RICHARD C. CLEMENT LAW ENFORCEMENT 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			241,633	40.2	-51	\$29,607	\$58,448	\$25,644	\$32,804	1.1	237,352
ECM 1	Install LED Fixtures	Yes	5,448	1.0	-1	\$672	\$2,377	\$160	\$2,217	3.3	5,399
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,418	0.4	0	\$174	\$481	\$140	\$341	2.0	1,393
ECM 3	Retrofit Fixtures with LED Lamps	Yes	234,766	38.8	-50	\$28,761	\$55,590	\$25,344	\$30,246	1.1	230,561
<b>Lighting Control Measures</b>			69,237	10.0	-13	\$8,497	\$46,011	\$16,510	\$29,501	3.5	68,160
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	52,636	8.5	-10	\$6,463	\$38,586	\$9,355	\$29,231	4.5	51,856
ECM 5	Install High/Low Lighting Controls	Yes	16,601	1.6	-4	\$2,034	\$7,425	\$7,155	\$270	0.1	16,303
<b>Variable Frequency Drive (VFD) Measures</b>			181,177	33.1	0	\$22,609	\$102,282	\$26,950	\$75,332	3.3	182,443
ECM 6	Install VFD on Variable Air Volume (VAV) Fans	Yes	135,972	25.5	0	\$16,968	\$71,277	\$18,600	\$52,677	3.1	136,923
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	26,349	5.6	0	\$3,288	\$16,152	\$5,800	\$10,352	3.1	26,533
ECM 8	Install VFDs on Chilled Water Pumps	Yes	11,756	1.6	0	\$1,467	\$5,321	\$2,000	\$3,321	2.3	11,839
ECM 9	Install VFDs on Heating Water Pumps	Yes	7,099	0.5	0	\$886	\$9,532	\$550	\$8,982	10.1	7,149
<b>Electric Unitary HVAC Measures</b>			3,511	1.1	0	\$438	\$11,345	\$920	\$10,425	23.8	3,536
ECM 10	Install High Efficiency Heat Pumps	No	3,511	1.1	0	\$438	\$11,345	\$920	\$10,425	23.8	3,536
<b>Electric Chiller Replacement</b>			11,786	6.1	0	\$1,471	\$82,504	\$10,800	\$71,704	48.8	11,869
ECM 11	Install High Efficiency Chillers	No	11,786	6.1	0	\$1,471	\$82,504	\$10,800	\$71,704	48.8	11,869
<b>Domestic Water Heating Upgrade</b>			0	0.0	29	\$306	\$251	\$251	\$0	0.0	3,340
ECM 12	Install Low-Flow DHW Devices	Yes	0	0.0	29	\$306	\$251	\$251	\$0	0.0	3,340
<b>Food Service &amp; Refrigeration Measures</b>			3,163	0.4	0	\$395	\$690	\$200	\$490	1.2	3,185
ECM 13	Vending Machine Control	Yes	3,163	0.4	0	\$395	\$690	\$200	\$490	1.2	3,185
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			495,210	83.7	-36	\$61,414	\$207,682	\$69,555	\$138,127	2.2	494,480
<b>TOTALS (ALL MEASURES)</b>			510,507	90.9	-36	\$63,323	\$301,530	\$81,275	\$220,255	3.5	509,885

\* - 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).



# RECREATION 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			6,641	2.4	0	\$897	\$4,354	\$2,210	\$2,144	2.4	6,687
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	370	0.2	0	\$50	\$344	\$100	\$244	4.9	373
ECM 2	Retrofit Fixtures with LED Lamps	Yes	6,271	2.2	0	\$847	\$4,010	\$2,110	\$1,900	2.2	6,315
<b>Lighting Control Measures</b>			1,862	0.6	0	\$251	\$3,742	\$780	\$2,962	11.8	1,875
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,862	0.6	0	\$251	\$3,742	\$780	\$2,962	11.8	1,875
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			8,503	3.0	0	\$1,148	\$8,096	\$2,990	\$5,106	4.4	8,562
<b>TOTALS (ALL MEASURES)</b>			8,503	3.0	0	\$1,148	\$8,096	\$2,990	\$5,106	4.4	8,562

\* - 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).

# RIVERWOOD PARK

#	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 <sub>2</sub> e Emissions Reduction (lbs)
Lighting Upgrades			1,998	0.7	0	\$296	\$1,224	\$440	\$784	2.6	1,963
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	1,593	0.5	0	\$236	\$901	\$280	\$621	2.6	1,564
ECM 2	Retrofit Fixtures with LED Lamps	Yes	406	0.2	0	\$60	\$323	\$160	\$163	2.7	398
Lighting Control Measures			2,478	0.8	-1	\$368	\$2,662	\$420	\$2,242	6.1	2,434
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	2,478	0.8	-1	\$368	\$2,662	\$420	\$2,242	6.1	2,434
Electric Unitary HVAC Measures			108	0.3	0	\$16	\$1,089	\$0	\$1,089	66.8	109
ECM 4	Install High Efficiency Air Conditioning Units	No	108	0.3	0	\$16	\$1,089	\$0	\$1,089	66.8	109
Domestic Water Heating Upgrade			164	0.0	1	\$41	\$50	\$50	\$0	0.0	328
ECM 5	Install Low-Flow DHW Devices	Yes	164	0.0	1	\$41	\$50	\$50	\$0	0.0	328
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			<b>4,640</b>	<b>1.5</b>	<b>0</b>	<b>\$705</b>	<b>\$3,936</b>	<b>\$910</b>	<b>\$3,026</b>	<b>4.3</b>	<b>4,724</b>
<b>TOTALS (ALL MEASURES)</b>			<b>4,748</b>	<b>1.8</b>	<b>0</b>	<b>\$721</b>	<b>\$5,025</b>	<b>\$910</b>	<b>\$4,115</b>	<b>5.7</b>	<b>4,833</b>

\* - 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).

# YOUTH 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			6,605	2.3	-1	\$994	\$3,256	\$1,730	\$1,526	1.5	6,494
ECM 1	Retrofit Fixtures with LED Lamps	Yes	6,605	2.3	-1	\$994	\$3,256	\$1,730	\$1,526	1.5	6,494
<b>Lighting Control Measures</b>			1,749	0.6	0	\$263	\$1,428	\$280	\$1,148	4.4	1,718
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,749	0.6	0	\$263	\$1,428	\$280	\$1,148	4.4	1,718
<b>Electric Unitary HVAC Measures</b>			1,150	0.8	0	\$176	\$7,481	\$920	\$6,561	37.4	1,158
ECM 3	Install High Efficiency Air Conditioning Units	No	1,150	0.8	0	\$176	\$7,481	\$920	\$6,561	37.4	1,158
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			8,355	2.9	-2	\$1,257	\$4,684	\$2,010	\$2,674	2.1	8,212
<b>TOTALS (ALL MEASURES)</b>			9,504	3.7	-2	\$1,432	\$12,165	\$2,930	\$9,235	6.4	9,370

\* - 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).

# ANIMAL FACILITY

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			10,914	2.4	-2	\$1,412	\$7,036	\$1,834	\$5,202	3.7	10,742
ECM 1	Retrofit Fixtures with LED Lamps	Yes	10,914	2.4	-2	\$1,412	\$7,036	\$1,834	\$5,202	3.7	10,742
<b>Lighting Control Measures</b>			1,242	0.2	0	\$160	\$618	\$190	\$428	2.7	1,220
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	1,242	0.2	0	\$160	\$618	\$190	\$428	2.7	1,220
<b>Domestic Water Heating Upgrade</b>			0	0.0	5	\$57	\$72	\$72	\$0	0.0	556
ECM 3	Install Low-Flow DHW Devices	Yes	0	0.0	5	\$57	\$72	\$72	\$0	0.0	556
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			12,157	2.6	2	\$1,629	\$7,725	\$2,096	\$5,630	3.5	12,518
<b>TOTALS (ALL MEASURES)</b>			12,157	2.6	2	\$1,629	\$7,725	\$2,096	\$5,630	3.5	12,518

\* - 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).

# BEY LEY GOLF COURSE

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			38,657	4.8	-8	\$5,089	\$12,147	\$3,918	\$8,229	1.6	37,938
ECM 1	Install LED Fixtures	Yes	1,927	0.0	0	\$260	\$2,389	\$0	\$2,389	9.2	1,941
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	13,322	1.8	-3	\$1,751	\$3,728	\$1,160	\$2,568	1.5	13,056
ECM 3	Retrofit Fixtures with LED Lamps	Yes	23,373	3.0	-5	\$3,073	\$5,885	\$2,758	\$3,127	1.0	22,907
ECM 4	Install LED Exit Signs	No	35	0.0	0	\$5	\$145	\$0	\$145	31.4	34
<b>Lighting Control Measures</b>			13,098	1.6	-3	\$1,722	\$8,146	\$1,650	\$6,496	3.8	12,838
ECM 5	Install Occupancy Sensor Lighting Controls	Yes	13,069	1.6	-3	\$1,718	\$7,946	\$1,650	\$6,296	3.7	12,808
ECM 6	Install Photocell Controls	No	30	0.0	0	\$4	\$200	\$0	\$200	50.0	30
<b>Motor Upgrades</b>			214	0.0	0	\$29	\$352	\$0	\$352	12.2	216
ECM 7	Premium Efficiency Motors	Yes	214	0.0	0	\$29	\$352	\$0	\$352	12.2	216
<b>Electric Unitary HVAC Measures</b>			1,162	0.4	0	\$157	\$9,454	\$767	\$8,687	55.4	1,170
ECM 8	Install High Efficiency Heat Pumps	No	1,162	0.4	0	\$157	\$9,454	\$767	\$8,687	55.4	1,170
<b>Domestic Water Heating Upgrade</b>			556	0.0	1	\$83	\$36	\$36	\$0	0.0	625
ECM 9	Install Low-Flow DHW Devices	Yes	556	0.0	1	\$83	\$36	\$36	\$0	0.0	625
<b>Food Service &amp; Refrigeration Measures</b>			630	0.1	0	\$85	\$4,124	\$100	\$4,024	47.4	634
ECM 10	Replace Refrigeration Equipment	No	630	0.1	0	\$85	\$4,124	\$100	\$4,024	47.4	634
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			52,461	6.4	-11	\$6,914	\$20,336	\$5,604	\$14,733	2.1	51,553
<b>TOTALS (ALL MEASURES)</b>			54,317	6.9	-11	\$7,165	\$34,259	\$6,471	\$27,788	3.9	53,421

\* - 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. MARK MUTTER RECORDS 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			343	0.1	0	\$58	\$301	\$54	\$247	4.3	345
ECM 1	Retrofit Fixtures with LED Lamps	Yes	343	0.1	0	\$58	\$301	\$54	\$247	4.3	345
<b>Lighting Control Measures</b>			329	0.1	0	\$55	\$926	\$0	\$926	16.9	323
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	329	0.1	0	\$55	\$926	\$0	\$926	16.9	323
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			673	0.2	0	\$112	\$1,227	\$54	\$1,173	10.4	668
<b>TOTALS (ALL MEASURES)</b>			673	0.2	0	\$112	\$1,227	\$54	\$1,173	10.4	668

\* - 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).



# VETERANS PARK 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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			12,360	0.8	0	\$3,942	\$29,900	\$664	\$29,236	7.4	12,405
ECM 1	Install LED Fixtures	Yes	10,777	0.0	0	\$3,441	\$28,668	\$0	\$28,668	8.3	10,853
ECM 2	Retrofit Fixtures with LED Lamps	Yes	1,582	0.8	0	\$501	\$1,232	\$664	\$568	1.1	1,553
<b>Lighting Control Measures</b>			405	0.2	0	\$128	\$1,196	\$280	\$916	7.1	397
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	405	0.2	0	\$128	\$1,196	\$280	\$916	7.1	397
<b>Domestic Water Heating Upgrade</b>			0	0.0	0	\$2	\$7	\$4	\$3	1.3	23
ECM 4	Install Low-Flow DHW Devices	Yes	0	0.0	0	\$2	\$7	\$4	\$3	1.3	23
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			12,765	1.0	0	\$4,072	\$31,103	\$948	\$30,155	7.4	12,825
<b>TOTALS (ALL MEASURES)</b>			12,765	1.0	0	\$4,072	\$31,103	\$948	\$30,155	7.4	12,825

\* - 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).

# HUDDY PARK RESTROOMS

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			2,324	0.3	0	\$339	\$2,450	\$300	\$2,150	6.3	2,340
ECM 1	Install LED Fixtures	Yes	1,506	0.0	0	\$220	\$1,975	\$40	\$1,935	8.8	1,517
ECM 2	Retrofit Fixtures with LED Lamps	Yes	818	0.3	0	\$119	\$475	\$260	\$215	1.8	823
<b>Lighting Control Measures</b>			223	0.1	0	\$32	\$1,042	\$290	\$752	23.2	224
ECM 3	Install Occupancy Sensor Lighting Controls	No	223	0.1	0	\$32	\$1,042	\$290	\$752	23.2	224
<b>Domestic Water Heating Upgrade</b>			278	0.0	0	\$41	\$22	\$18	\$3	0.1	280
ECM 4	Install Low-Flow DHW Devices	Yes	278	0.0	0	\$41	\$22	\$18	\$3	0.1	280
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			2,602	0.3	0	\$379	\$2,471	\$318	\$2,153	5.7	2,620
<b>TOTALS (ALL MEASURES)</b>			2,825	0.4	0	\$412	\$3,513	\$608	\$2,905	7.1	2,844

\* - 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).



# PUBLIC BEACH HOUSE RESTROOMS

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			2,459	0.2	0	\$409	\$15,157	\$1,724	\$13,433	32.9	2,476
ECM 1	Install LED Fixtures	No	1,998	0.0	0	\$332	\$14,889	\$1,600	\$13,289	40.0	2,012
ECM 2	Retrofit Fixtures with LED Lamps	Yes	462	0.2	0	\$77	\$268	\$124	\$144	1.9	465
<b>Lighting Control Measures</b>			13	0.0	0	\$2	\$232	\$0	\$232	109.7	13
ECM 3	Install Occupancy Sensor Lighting Controls	No	13	0.0	0	\$2	\$232	\$0	\$232	109.7	13
<b>Motor Upgrades</b>			108	0.0	0	\$18	\$912	\$0	\$912	50.7	109
ECM 4	Premium Efficiency Motors	No	108	0.0	0	\$18	\$912	\$0	\$912	50.7	109
<b>Domestic Water Heating Upgrade</b>			164	0.0	0	\$27	\$14	\$14	\$0	0.0	165
ECM 5	Install Low-Flow DHW Devices	Yes	164	0.0	0	\$27	\$14	\$14	\$0	0.0	165
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			625	0.2	0	\$104	\$282	\$138	\$144	1.4	629
<b>TOTALS (ALL MEASURES)</b>			2,744	0.2	0	\$456	\$16,315	\$1,738	\$14,576	32.0	2,763

\* - 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).

# LORD HOUSE LIFE GUARD STATION

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			2,393	0.7	0	\$388	\$1,326	\$684	\$642	1.7	2,410
ECM 1	Retrofit Fixtures with LED Lamps	Yes	2,393	0.7	0	\$388	\$1,326	\$684	\$642	1.7	2,410
<b>Lighting Control Measures</b>			665	0.6	0	\$108	\$3,086	\$670	\$2,416	22.4	670
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	665	0.6	0	\$108	\$3,086	\$670	\$2,416	22.4	670
<b>Domestic Water Heating Upgrade</b>			196	0.0	0	\$32	\$29	\$22	\$6	0.2	198
ECM 3	Install Low-Flow DHW Devices	Yes	196	0.0	0	\$32	\$29	\$22	\$6	0.2	198
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			3,255	1.3	0	\$528	\$4,441	\$1,376	\$3,064	5.8	3,278
<b>TOTALS (ALL MEASURES)</b>			3,255	1.3	0	\$528	\$4,441	\$1,376	\$3,064	5.8	3,278

\* - 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).



# WINDING RIVER PARK – ICE RINKS

#	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 <sub>2</sub> e Emissions Reduction (lbs)
<b>Lighting Upgrades</b>			40,529	6.0	-8	\$4,526	\$8,886	\$3,446	\$5,440	1.2	39,877
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	8,619	1.4	-2	\$961	\$2,319	\$620	\$1,699	1.8	8,464
ECM 2	Retrofit Fixtures with LED Lamps	Yes	31,910	4.5	-6	\$3,565	\$6,567	\$2,826	\$3,741	1.0	31,413
<b>Lighting Control Measures</b>			33,441	4.5	-7	\$3,734	\$18,412	\$3,905	\$14,507	3.9	32,894
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	32,724	4.3	-7	\$3,654	\$17,512	\$3,470	\$14,042	3.8	32,190
ECM 4	Install High/Low Lighting Controls	Yes	716	0.1	0	\$80	\$900	\$435	\$465	5.8	703
<b>Variable Frequency Drive (VFD) Measures</b>			184,466	25.0	30	\$21,321	\$80,413	\$20,800	\$59,613	2.8	189,256
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	83,884	13.2	0	\$9,548	\$26,030	\$7,600	\$18,430	1.9	84,471
ECM 6	Install VFDs on Chilled Water Pumps	Yes	60,777	9.3	0	\$6,918	\$21,690	\$5,600	\$16,090	2.3	61,202
ECM 7	Install VFDs on Heating Water Pumps	Yes	27,791	2.7	0	\$3,163	\$20,848	\$5,000	\$15,848	5.0	27,986
ECM 8	Install VFDs on Cooling Tower Fans	No	1,740	-0.2	0	\$198	\$7,768	\$800	\$6,968	35.2	1,752
ECM 9	Install VFDs on Kitchen Hood Fan Motors	Yes	10,273	0.0	30	\$1,494	\$4,076	\$1,800	\$2,276	1.5	13,846
<b>Electric Chiller Replacement</b>			58,273	20.5	0	\$6,633	\$118,167	\$21,600	\$96,567	14.6	58,680
ECM 10	Install High Efficiency Chillers	Yes	58,273	20.5	0	\$6,633	\$118,167	\$21,600	\$96,567	14.6	58,680
<b>Domestic Water Heating Upgrade</b>			1,425	0.0	14	\$318	\$1,533	\$640	\$893	2.8	3,114
ECM 11	Install Low-Flow DHW Devices	Yes	1,425	0.0	14	\$318	\$1,533	\$640	\$893	2.8	3,114
<b>Food Service &amp; Refrigeration Measures</b>			4,141	0.5	0	\$471	\$1,172	\$450	\$722	1.5	4,170
ECM 12	Refrigeration Controls	Yes	172	0.0	0	\$20	\$252	\$150	\$102	5.2	173
ECM 13	Vending Machine Control	Yes	3,969	0.5	0	\$452	\$920	\$300	\$620	1.4	3,997
<b>TOTALS (COST EFFECTIVE MEASURES)</b>			320,533	56.6	30	\$36,806	\$220,815	\$50,041	\$170,774	4.6	326,239
<b>TOTALS (ALL MEASURES)</b>			322,273	56.4	30	\$37,004	\$228,583	\$50,841	\$177,742	4.8	327,991

\* - 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

- **Retro-Commissioning Study**
- **Pool System Upgrades**
- **Upgrade to a Heat Pump System**



# SOLAR ENERGY GENERATION POTENTIAL

	Public Works Complex	Law Enforcement Center	Bey Lea Golf Course	Winding River Park, Ice Rinks
<i>Potential:</i>	<b>HIGH</b>	<b>HIGH</b>	<b>HIGH</b>	<b>HIGH</b>
<i>System Potential: (kW)</i>	128	240	78	500
<i>Electric Generation: (kWh per year)</i>	152,495	285,929	92,927	595,685
<i>Displaced Cost: (per year)</i>	\$21,360	\$35,680	\$12,540	\$67,800

## 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

Toms River Township	P4P	Direct Install	SS	CTEEP
Municipal Complex		X	X	X
Public Works Complex		X	X	X
Senior Center		X	X	X
Richard C. Clement Law Enforcement Center	X	X	X	X
Recreation Building		X	X	X
Riverwood Park		X	X	X
Youth Center		X	X	X

Toms River Township	P4P	Direct Install	SS	CTEEP
Animal Facility		X	X	X
Bey Lea Golf Course		X	X	X
J. Mark Mutter Records Center		X	X	X
Veterans Park Bldg.		X	X	X
Public Beach House Restrooms		X	X	X
Lord House Lifeguard Station		X	X	X
Winding River Park – Ice Rinks	X		X	X

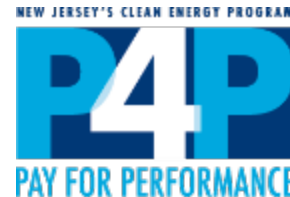
\*Some sites with only lighting upgrades will need further assessment for DI eligibility. They are eligible for a full free assessment with the DI Participating Contractor to submit the waiver or to identify other measure/s to enable participation. Buildings are marked with a lighter X.

\*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

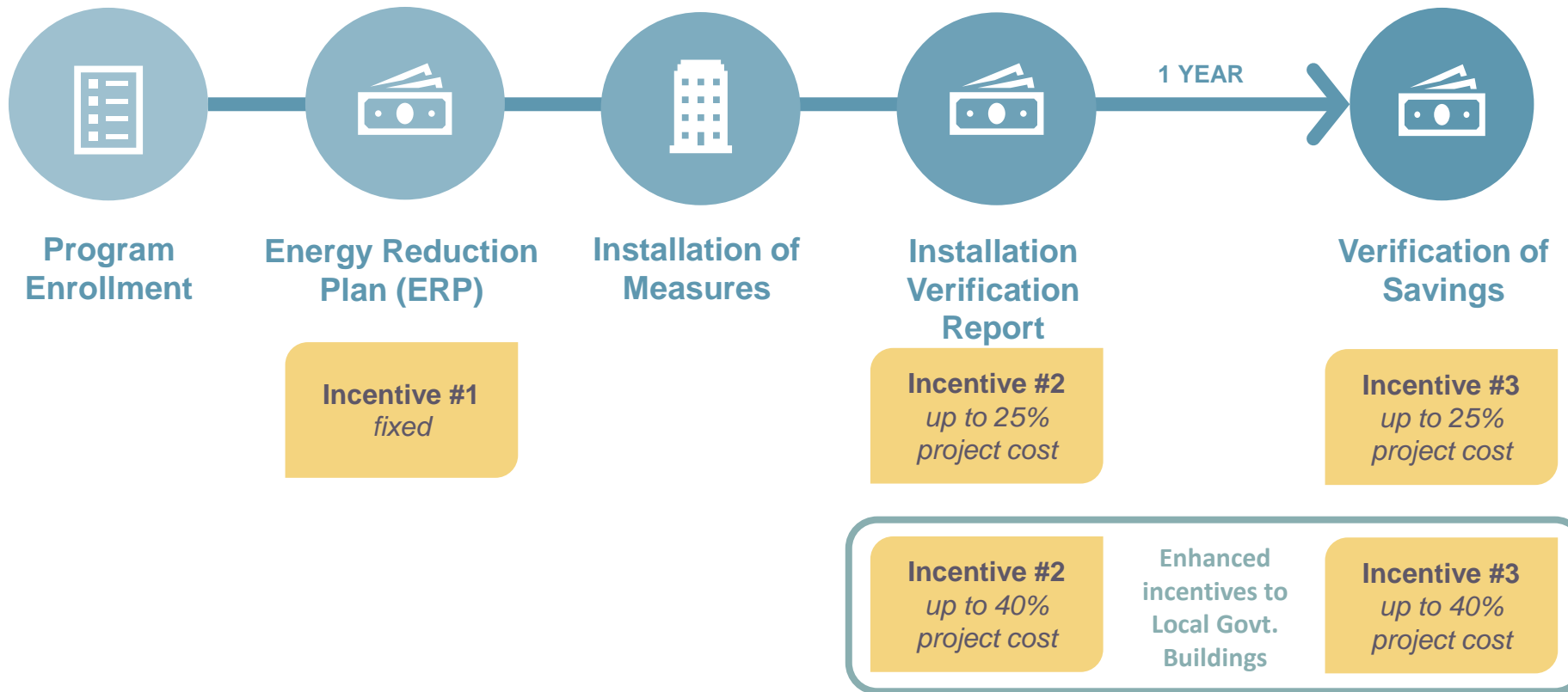
**About:** Customer choose from a network of pre-approved *Participating Partners*

**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](http://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](mailto: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](http://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**



# DIRECT INSTALL, SMARTSTART & CTEEP: FINANCING OPTION

- **Direct Install:** Eligible NJNG customers can finance the remaining 30 percent balance at 0% APR through the “SAVEGREEN Project® On-Bill Repayment Program” (OBRP) for 36 months
- NJNG 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 NJNG to confirm project qualifies.



- Questions? Contact:

## **Jerry Ryan**

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New Jersey Natural Gas  
732-433-4362 (cell)  
732 378 4920 (office)  
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# 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**



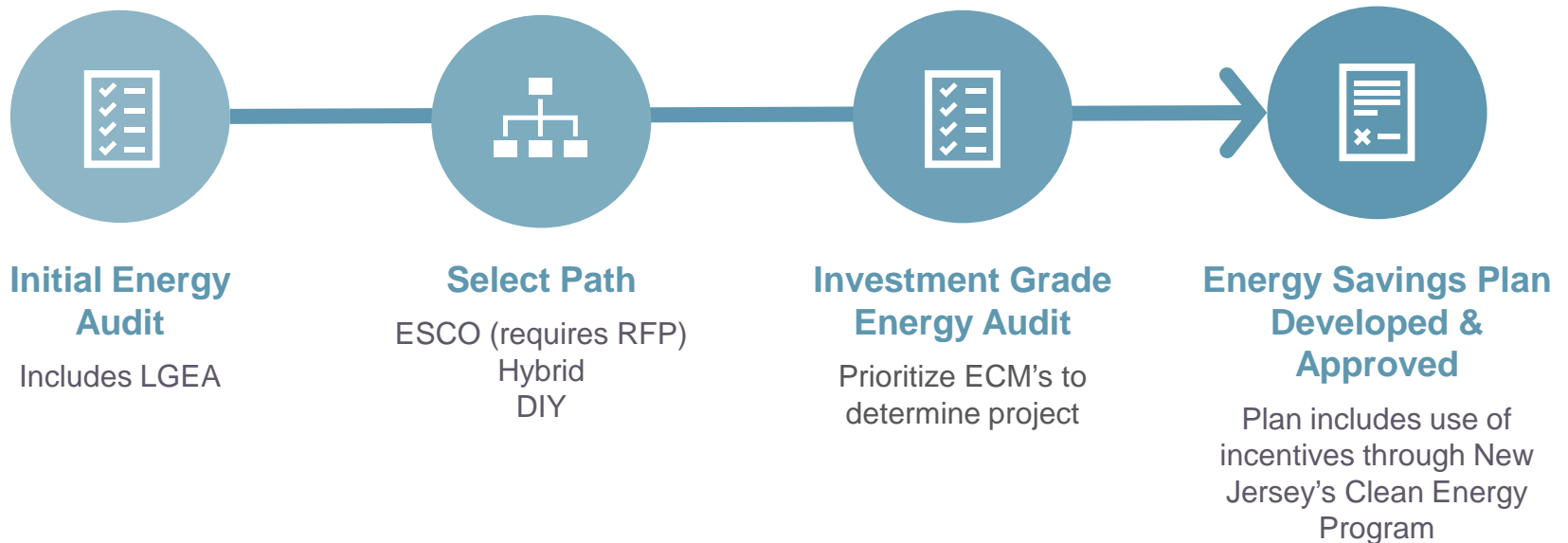
# FINANCING MECHANISM: ESIP

## 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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# FOR MORE INFORMATION

## *NJ Clean Energy Program*

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# QUESTIONS

