

LGEA Presentation

Camden County Technical Schools

May 30, 2024

New Jersey's
Clean Energy Program

Lighting the way to New Jersey's Clean Energy Future



INTRODUCTIONS

- *Camden County Technical Schools*
 - Dino Acevedo – Chief Buildings & Grounds Officer
 - William Gerson – Interim School Business Administrator
 - Dawn Haberle – Asst. to School Business Administrator
- *NJ Clean Energy Program*
 - Sarah Walters – LGEA Project Manager
 - Moussa Traore – LGEA Technical Manager
 - Amanda Muench – LGEA Account Manager
 - Michelle Rossi – ESIP Coordinator (BPU)
- *Utility Energy Efficiency Programs*
 - SJG – Kimberly Byk
 - SJG – Kimberly Bodine
 - ACE – Alex Haver

AGENDA

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

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:

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

Utility Consumption:

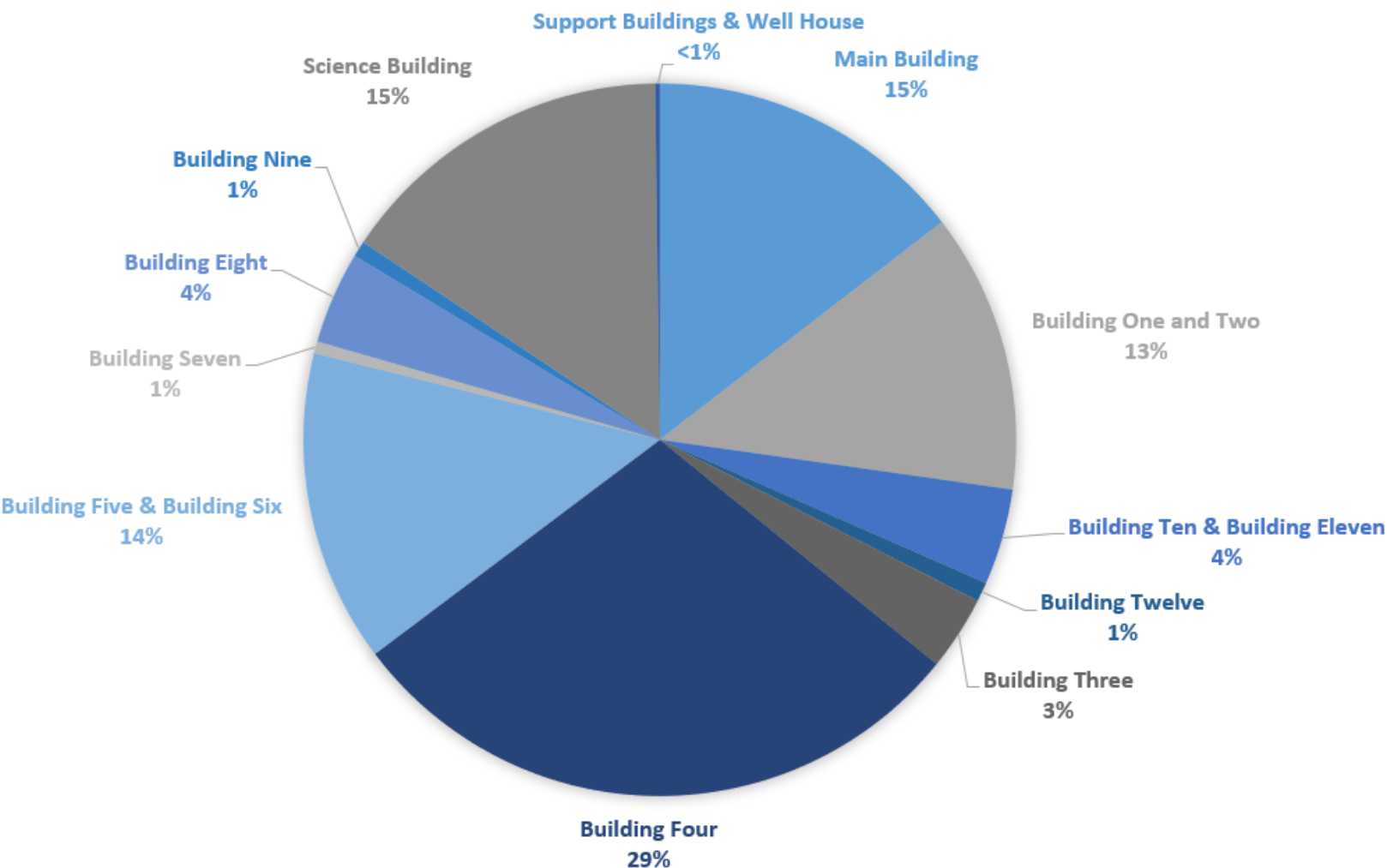
- Electric Consumption and Costs
- Natural Gas Consumption and Costs

Sites Visited/Analyzed

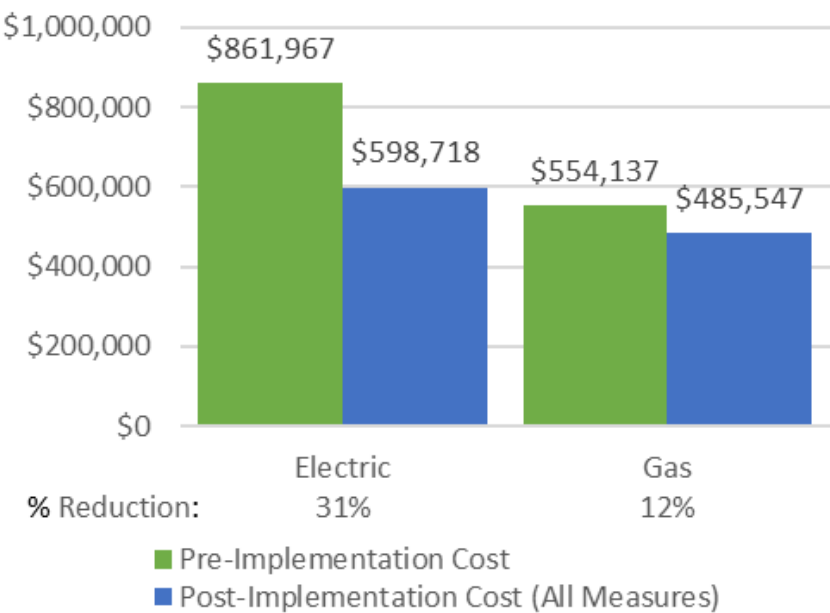
- Main Building
- Science Building & Maintenance Garage
- Building One & Two
- Building Three
- Building Four
- Building Five & Six
- Building Seven
- Building Eight
- Building Nine
- Building Ten & Eleven
- Building Twelve
- Support Buildings
 - Well Pump House
 - Greenhouse Garage
 - Shed 1
 - Shed 3

UTILITY BREAKOUT

Percent of Total Annual Energy Costs



Pre & Post Implementation Cost



BENCHMARKING



ENERGY STAR® Statement of Energy Performance

LEARN MORE AT energystar.gov

30

ENERGY STAR® Score¹

Camden County Technical Schools (Pennsauken Campus)

Primary Property Type: K-12 School
Gross Floor Area (ft²): 224,100
Built: 1926

For Year Ending: August 31, 2022
Date Generated: March 13, 2024

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

Property & Contact Information

Property Address	Property Owner	Primary Contact
Camden County Technical Schools (Pennsauken Campus) 6008 Browning Road Pennsauken, New Jersey 08109	Camden County Technical Schools 343 Berlin Cross Keys Road Sicklerville, NJ 08081 (856) 767-7000	Scott Kipers 343 Berlin Cross Keys Road Sicklerville, NJ 08081 (856) 767-7000 dacevedo@ccts.org

Property ID: 27898653

Energy Consumption and Energy Use Intensity (EUI)

Annual Energy by Fuel		National Median Comparison
Site EUI		
82.6 kBtu/ft²	Natural Gas (kBtu) 10,474,642 (57%) Electric - Grid (kBtu) 8,046,421 (43%)	National Median Site EUI (kBtu/ft²) 67.7 National Median Source EUI (kBtu/ft²) 122.5 % Diff from National Median Source EUI 22%
Source EUI		Annual Emissions
149.6 kBtu/ft²		Total (Location-Based) GHG Emissions (Metric Tons CO2e/year) 1,279

Signature & Stamp of Verifying Professional

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

LP Signature: _____ Date: _____

Licensed Professional

() _____



Professional Engineer or Registered Architect Stamp (if applicable)

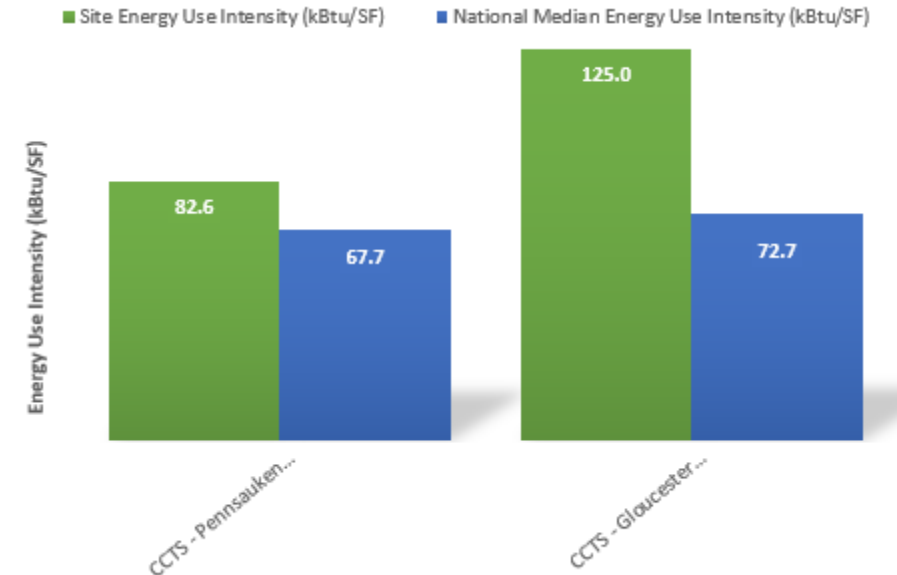
Site EUI
82.6 kBtu/ft²

Source EUI
149.6 kBtu/ft²

National Median Comparison

National Median Site EUI (kBtu/ft²)	67.7
National Median Source EUI (kBtu/ft²)	122.5
% Diff from National Median Source EUI	22%

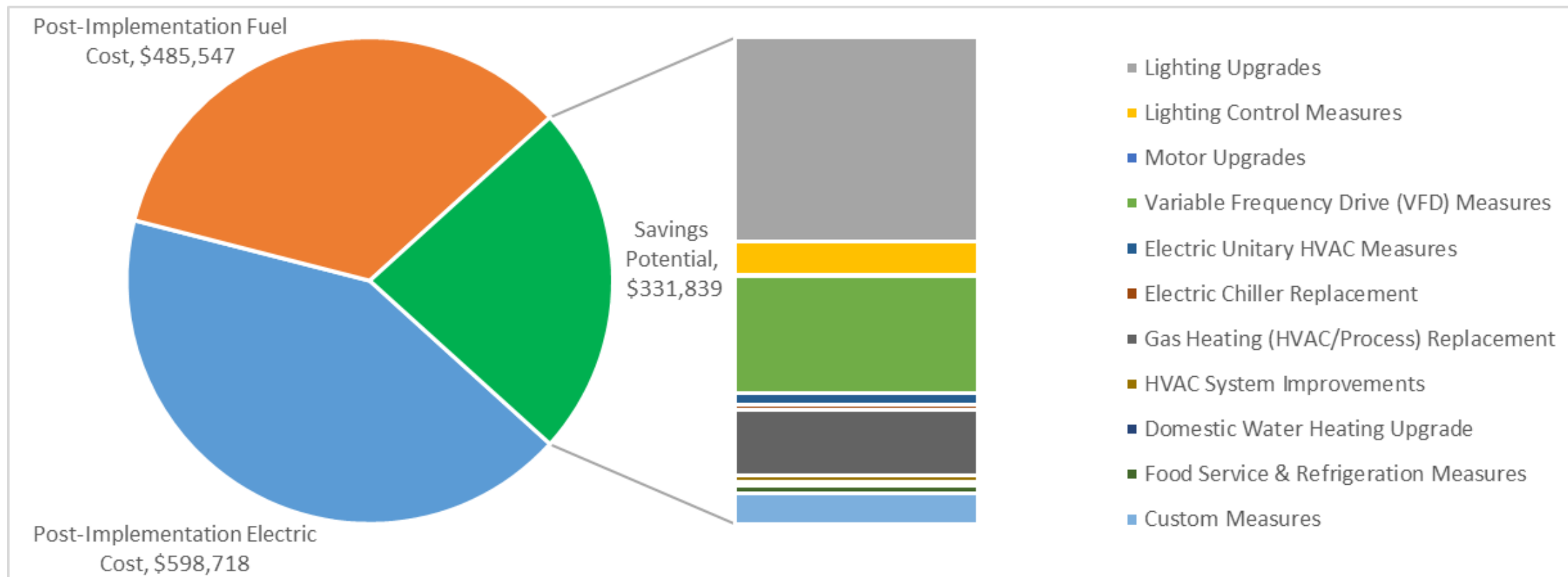
Site Name	ENERGY STAR® Score
CCTS - Pennsauken Campus	30
CCTS - Gloucester Campus	7



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.

ALL OPPORTUNITIES

Savings Potential



ALL OPPORTUNITIES (1 OF 2)

#	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		1,004,091	208.6	-201.8	\$139,454	\$519,100	\$97,260	\$421,840	3.0	987,482
ECM 1	Install LED Fixtures	101,161	5.9	-16.2	\$14,522	\$82,890	\$9,290	\$73,600	5.1	99,968
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	669	0.0	0.0	\$92	\$310	\$30	\$280	3.1	670
ECM 3	Retrofit Fixtures with LED Lamps	902,261	202.7	-185.5	\$124,840	\$435,900	\$87,940	\$347,960	2.8	886,844
Lighting Control Measures		165,032	35.4	-34.2	\$22,754	\$189,610	\$31,670	\$157,940	6.9	162,176
ECM 4	Install Occupancy Sensor Lighting Controls	150,509	32.9	-31.4	\$20,757	\$167,620	\$19,470	\$148,150	7.1	147,884
ECM 5	Install Daylight Dimming/Photocell Controls	942	0.0	0.0	\$135	\$1,450	\$0	\$1,450	10.8	949
ECM 6	Install High/Low Lighting Controls	13,580	2.5	-2.8	\$1,862	\$20,540	\$12,200	\$8,340	4.5	13,343
Motor Upgrades		6,418	1.8	0.0	\$902	\$27,800	\$0	\$27,800	30.8	6,463
ECM 7	Premium Efficiency Motors	6,418	1.8	0.0	\$902	\$27,800	\$0	\$27,800	30.8	6,463
Variable Frequency Drive (VFD) Measures		557,254	143.9	82.1	\$79,349	\$666,800	\$62,900	\$603,900	7.6	570,759
ECM 8	Install VFDs on Constant Volume (CV) Fans	416,974	114.2	0.0	\$58,315	\$500,100	\$45,500	\$454,600	7.8	419,890
ECM 9	Install VFDs on Chilled Water Pumps	61,355	9.6	0.0	\$8,942	\$39,800	\$4,600	\$35,200	3.9	61,784
ECM 10	Install VFDs on Heating Water Pumps	24,217	3.4	0.0	\$3,461	\$58,400	\$4,500	\$53,900	15.6	24,386
ECM 11	Install Boiler Draft Fan VFDs	9,983	9.0	0.0	\$1,493	\$19,900	\$2,400	\$17,500	11.7	10,053
ECM 12	Install VFDs on Boiler Feedwater Pumps	3,492	7.6	0.0	\$522	\$16,900	\$2,700	\$14,200	27.2	3,516
ECM 13	Install VFDs on Kitchen Hood Fan Motors	26,787	0.0	82.1	\$4,631	\$25,000	\$2,200	\$22,800	4.9	36,583
ECM 14	Install VFDs on Process/Pool Filtration Pumps	14,445	0.0	0.0	\$1,985	\$6,700	\$1,000	\$5,700	2.9	14,546
Unitary HVAC Measures		59,473	44.0	0.9	\$8,538	\$400,700	\$19,900	\$380,800	44.6	59,992
ECM 15	Install High Efficiency Air Conditioning Units	45,402	33.6	0.9	\$6,479	\$366,600	\$18,700	\$347,900	53.7	45,823
ECM 16	Install High Efficiency Heat Pumps	14,070	10.4	0.0	\$2,059	\$34,100	\$1,200	\$32,900	16.0	14,169

ALL OPPORTUNITIES (2 OF 2)

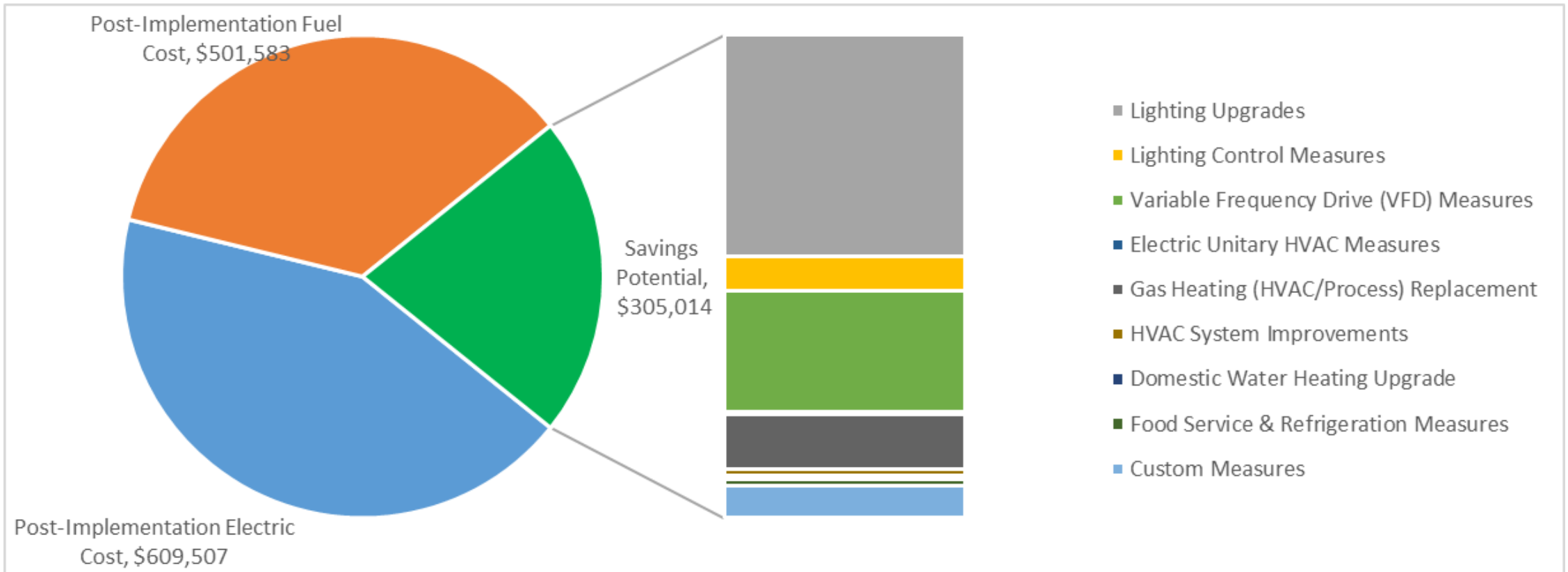
#	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Electric Chiller Replacement		19,998	8.9	0.0	\$2,914	\$231,700	\$3,700	\$228,000	78.2	20,138
ECM 17	Install High Efficiency Chillers	19,998	8.9	0.0	\$2,914	\$231,700	\$3,700	\$228,000	78.2	20,138
Gas Heating (HVAC/Process) Replacement		0	0.0	4,295.9	\$44,936	\$936,200	\$48,000	\$888,200	19.8	502,992
ECM 18	Install High Efficiency Hot Water Boilers	0	0.0	2,978.4	\$34,876	\$699,500	\$39,000	\$660,500	18.9	348,733
ECM 19	Install High Efficiency Steam Boilers	0	0.0	1,118.6	\$7,976	\$208,400	\$8,000	\$200,400	25.1	130,975
ECM 20	Install High Efficiency Furnaces	0	0.0	198.9	\$2,084	\$28,300	\$1,000	\$27,300	13.1	23,284
HVAC System Improvements		3,894	0.0	345.8	\$4,556	\$23,400	\$460	\$22,940	5.0	44,410
ECM 21	Implement Demand Control Ventilation (DCV)	1,842	0.0	54.1	\$735	\$19,100	\$0	\$19,100	26.0	8,194
ECM 22	Install Pipe Insulation	2,052	0.0	291.7	\$3,821	\$4,300	\$460	\$3,840	1.0	36,216
Domestic Water Heating Upgrade		654	0.0	234.6	\$2,827	\$71,730	\$5,410	\$66,320	23.5	28,132
ECM 23	Install High Efficiency Gas-Fired Water Heater	0	0.0	168.8	\$2,048	\$70,200	\$4,700	\$65,500	32.0	19,765
ECM 24	Install Low-Flow DHW Devices	654	0.0	65.8	\$778	\$1,530	\$710	\$820	1.1	8,368
Food Service & Refrigeration Measures		36,733	3.7	2.0	\$5,198	\$74,720	\$3,790	\$70,930	13.6	37,230
ECM 25	Food Service Equipment Replacement	1,480	0.9	2.0	\$228	\$18,900	\$800	\$18,100	79.3	1,730
ECM 26	Dishwasher Replacement	9,072	1.0	0.0	\$1,247	\$10,800	\$700	\$10,100	8.1	9,136
ECM 27	Refrigerator/Freezer Case Electrically Commutated Motors	4,969	0.6	0.0	\$696	\$6,730	\$720	\$6,010	8.6	5,004
ECM 28	Refrigeration Controls	13,380	0.2	0.0	\$1,882	\$27,140	\$1,220	\$25,920	13.8	13,473
ECM 29	Replace Refrigeration Equipment	2,714	0.3	0.0	\$406	\$9,800	\$200	\$9,600	23.7	2,733
ECM 30	Vending Machine Control	5,118	0.6	0.0	\$739	\$1,350	\$150	\$1,200	1.6	5,153
Custom Measures		18,464	0.0	1,473.0	\$20,413	\$304,700	\$0	\$304,700	14.9	191,063
ECM 31	Electric Sub Metering	0	0.0	0.0	\$0	\$192,200	\$0	\$192,200	0.0	0
ECM 32	Replace Electric Water Heater with Heat Pump Water Heater	18,464	0.0	0.0	\$2,538	\$6,700	\$0	\$6,700	2.6	18,593
ECM 33	Install Semi-Automatic Cover for Swimming Pool	0	0.0	1,473.0	\$17,875	\$105,800	\$0	\$105,800	5.9	172,470
TOTALS (ALL MEASURES)		1,872,010	446.3	6,198.2	\$331,839	\$3,446,460	\$273,090	\$3,173,370	9.6	2,610,836

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

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

COST EFFECTIVE OPPORTUNITIES

Savings Potential



COST EFFECTIVE OPPORTUNITIES (1 OF 2)

#	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		1,004,091	208.6	-201.8	\$139,454	\$519,100	\$97,260	\$421,840	3.0	987,482
ECM 1	Install LED Fixtures	101,161	5.9	-16.2	\$14,522	\$82,890	\$9,290	\$73,600	5.1	99,968
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	669	0.0	0.0	\$92	\$310	\$30	\$280	3.1	670
ECM 3	Retrofit Fixtures with LED Lamps	902,261	202.7	-185.5	\$124,840	\$435,900	\$87,940	\$347,960	2.8	886,844
Lighting Control Measures		162,294	34.9	-33.7	\$22,359	\$181,620	\$30,730	\$150,890	6.7	159,486
ECM 4	Install Occupancy Sensor Lighting Controls	147,772	32.4	-30.8	\$20,362	\$159,630	\$18,530	\$141,100	6.9	145,195
ECM 5	Install Daylight Dimming/Photocell Controls	942	0.0	0.0	\$135	\$1,450	\$0	\$1,450	10.8	949
ECM 6	Install High/Low Lighting Controls	13,580	2.5	-2.8	\$1,862	\$20,540	\$12,200	\$8,340	4.5	13,343
Variable Frequency Drive (VFD) Measures		535,726	133.0	72.1	\$76,141	\$591,200	\$56,500	\$534,700	7.0	547,916
ECM 8	Install VFDs on Constant Volume (CV) Fans	413,264	113.4	0.0	\$57,805	\$488,300	\$45,300	\$443,000	7.7	416,153
ECM 9	Install VFDs on Chilled Water Pumps	61,355	9.6	0.0	\$8,942	\$39,800	\$4,600	\$35,200	3.9	61,784
ECM 10	Install VFDs on Heating Water Pumps	10,128	1.1	0.0	\$1,392	\$17,100	\$1,900	\$15,200	10.9	10,199
ECM 11	Install Boiler Draft Fan VFDs	9,983	9.0	0.0	\$1,493	\$19,900	\$2,400	\$17,500	11.7	10,053
ECM 13	Install VFDs on Kitchen Hood Fan Motors	26,551	0.0	72.1	\$4,525	\$19,400	\$1,300	\$18,100	4.0	35,181
ECM 14	Install VFDs on Process/Pool Filtration Pumps	14,445	0.0	0.0	\$1,985	\$6,700	\$1,000	\$5,700	2.9	14,546
Unitary HVAC Measures		11,265	6.3	0.0	\$1,642	\$22,500	\$800	\$21,700	13.2	11,343
ECM 16	Install High Efficiency Heat Pumps	11,265	6.3	0.0	\$1,642	\$22,500	\$800	\$21,700	13.2	11,343

COST EFFECTIVE OPPORTUNITIES (2 OF 2)

#	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	2,835.9	\$34,412	\$574,800	\$31,500	\$543,300	15.8	332,043
ECM 18	Install High Efficiency Hot Water Boilers	0	0.0	2,702.7	\$32,796	\$561,000	\$31,000	\$530,000	16.2	316,454
ECM 20	Install High Efficiency Furnaces	0	0.0	133.1	\$1,616	\$13,800	\$500	\$13,300	8.2	15,589
HVAC System Improvements		2,052	0.0	291.7	\$3,821	\$4,300	\$460	\$3,840	1.0	36,216
ECM 22	Install Pipe Insulation	2,052	0.0	291.7	\$3,821	\$4,300	\$460	\$3,840	1.0	36,216
Domestic Water Heating Upgrade		654	0.0	227.9	\$2,744	\$70,130	\$5,310	\$64,820	23.6	27,339
ECM 23	Install High Efficiency Gas-Fired Water Heater	0	0.0	162.0	\$1,966	\$68,600	\$4,600	\$64,000	32.6	18,971
ECM 24	Install Low-Flow DHW Devices	654	0.0	65.8	\$778	\$1,530	\$710	\$820	1.1	8,368
Food Service & Refrigeration Measures		28,951	2.4	0.0	\$4,028	\$37,920	\$2,400	\$35,520	8.8	29,154
ECM 26	Dishwasher Replacement	9,072	1.0	0.0	\$1,247	\$10,800	\$700	\$10,100	8.1	9,136
ECM 27	Refrigerator/Freezer Case Electrically Commutated Motors	4,969	0.6	0.0	\$696	\$6,730	\$720	\$6,010	8.6	5,004
ECM 28	Refrigeration Controls	9,792	0.1	0.0	\$1,346	\$19,040	\$830	\$18,210	13.5	9,861
ECM 30	Vending Machine Control	5,118	0.6	0.0	\$739	\$1,350	\$150	\$1,200	1.6	5,153
Custom Measures		18,464	0.0	1,473.0	\$20,413	\$304,700	\$0	\$304,700	14.9	191,063
ECM 31	Electric Sub Metering	0	0.0	0.0	\$0	\$192,200	\$0	\$192,200	0.0	0
ECM 32	Replace Electric Water Heater with Heat Pump Water Heater	18,464	0.0	0.0	\$2,538	\$6,700	\$0	\$6,700	2.6	18,593
ECM 33	Install Semi-Automatic Cover for Swimming Pool	0	0.0	1,473.0	\$17,875	\$105,800	\$0	\$105,800	5.9	172,470
TOTALS		1,763,497	385.1	4,665.0	\$305,014	\$2,306,270	\$224,960	\$2,081,310	6.8	2,322,043

* - 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).

MAIN BUILDING

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MM Btu)	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			165,932	40.3	-34	\$24,575	\$87,680	\$17,370	\$70,310	2.9	163,168
ECM 1	Install LED Fixtures	Yes	1,590	0.0	0	\$238	\$1,340	\$100	\$1,240	5.2	1,601
ECM 2	Retrofit Fixtures with LED Lamps	Yes	164,342	40.3	-34	\$24,338	\$86,340	\$17,270	\$69,070	2.8	161,567
Lighting Control Measures			34,563	8.1	-7	\$5,118	\$44,050	\$6,930	\$37,120	7.3	33,966
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	32,379	7.6	-7	\$4,794	\$39,630	\$4,610	\$35,020	7.3	31,813
ECM 4	Install Photocell Controls	Yes	302	0.0	0	\$45	\$480	\$0	\$480	10.6	304
ECM 5	Install High/Low Lighting Controls	Yes	1,882	0.4	0	\$279	\$3,940	\$2,320	\$1,620	5.8	1,849
Motor Upgrades			1,638	0.6	0	\$245	\$9,200	\$0	\$9,200	37.6	1,650
ECM 6	Premium Efficiency Motors	No	1,638	0.6	0	\$245	\$9,200	\$0	\$9,200	37.6	1,650
Variable Frequency Drive (VFD) Measures			54,046	30.2	10	\$8,153	\$109,900	\$11,900	\$98,000	12.0	55,589
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	33,151	12.5	0	\$4,958	\$47,000	\$5,300	\$41,700	8.4	33,383
ECM 8	Install VFDs on Heating Water Pumps	No	7,184	1.1	0	\$1,074	\$20,500	\$600	\$19,900	18.5	7,234
ECM 9	Install Boiler Draft Fan VFDs	Yes	9,983	9.0	0	\$1,493	\$19,900	\$2,400	\$17,500	11.7	10,053
ECM 10	Install VFDs on Boiler Feedwater Pumps	No	3,492	7.6	0	\$522	\$16,900	\$2,700	\$14,200	27.2	3,516
ECM 11	Install VFDs on Kitchen Hood Fan Motors	No	236	0.0	10	\$106	\$5,600	\$900	\$4,700	44.2	1,402
Unitary HVAC Measures			21,189	12.0	0	\$3,169	\$103,400	\$3,800	\$99,600	31.4	21,337
ECM 12	Install High Efficiency Air Conditioning Units	No	18,599	8.6	0	\$2,781	\$96,300	\$3,600	\$92,700	33.3	18,729
ECM 13	Install High Efficiency Heat Pumps	No	2,589	3.4	0	\$387	\$7,100	\$200	\$6,900	17.8	2,608
Gas Heating (HVAC/Process) Replacement			0	0.0	1,184	\$8,444	\$222,900	\$8,500	\$214,400	25.4	138,670
ECM 14	Install High Efficiency Steam Boilers	No	0	0.0	1,119	\$7,976	\$208,400	\$8,000	\$200,400	25.1	130,975
ECM 15	Install High Efficiency Furnaces	No	0	0.0	66	\$469	\$14,500	\$500	\$14,000	29.9	7,695
HVAC System Improvements			1,413	0.0	39	\$486	\$14,700	\$0	\$14,700	30.3	5,931
ECM 16	Implement Demand Control Ventilation (DCV)	No	1,413	0.0	39	\$486	\$14,700	\$0	\$14,700	30.3	5,931
Domestic Water Heating Upgrade			0	0.0	8	\$55	\$140	\$60	\$80	1.4	908
ECM 17	Install Low-Flow DHW Devices	Yes	0	0.0	8	\$55	\$140	\$60	\$80	1.4	908
Food Service & Refrigeration Measures			8,962	0.7	0	\$1,340	\$19,670	\$800	\$18,870	14.1	9,025
ECM 18	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	1,049	0.1	0	\$157	\$1,500	\$160	\$1,340	8.5	1,056
ECM 19	Refrigeration Controls	No	3,587	0.1	0	\$536	\$8,100	\$390	\$7,710	14.4	3,612
ECM 20	Replace Refrigeration Equipment	No	2,714	0.3	0	\$406	\$9,800	\$200	\$9,600	23.7	2,733
ECM 21	Vending Machine Control	Yes	1,612	0.2	0	\$241	\$270	\$50	\$220	0.9	1,623
TOTALS (COST EFFECTIVE MEASURES)			246,290	70.2	-33	\$36,597	\$200,540	\$32,270	\$168,270	4.6	244,157
TOTALS (ALL MEASURES)			287,743	91.8	1,200	\$51,586	\$611,640	\$49,360	\$562,280	10.9	430,244

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

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

SCIENCE BUILDING & GARAGE

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$) *	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs) **	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			187,030	25.5	-37	\$26,979	\$108,700	\$16,660	\$92,040	3.4	184,026
ECM 1	Install LED Fixtures	Yes	87,204	5.7	-16	\$12,588	\$70,770	\$8,130	\$62,640	5.0	85,945
ECM 2	Retrofit Fixtures with LED Lamps	Yes	99,827	19.8	-21	\$14,391	\$37,930	\$8,530	\$29,400	2.0	98,081
Lighting Control Measures			3,508	0.5	-1	\$506	\$9,040	\$1,190	\$7,850	15.5	3,451
ECM 3	Install Occupancy Sensor Lighting Controls	No	2,737	0.4	-1	\$395	\$7,990	\$940	\$7,050	17.9	2,690
ECM 4	Install Photocell Controls	Yes	164	0.0	0	\$24	\$490	\$0	\$490	20.5	165
ECM 5	Install High/Low Lighting Controls	Yes	606	0.0	0	\$87	\$560	\$250	\$310	3.5	596
Variable Frequency Drive (VFD) Measures			139,471	22.5	0	\$20,326	\$86,200	\$10,900	\$75,300	3.7	140,446
ECM 6	Install VFDs on Constant Volume (CV) Fans	Yes	72,653	11.8	0	\$10,588	\$30,000	\$4,400	\$25,600	2.4	73,161
ECM 7	Install VFDs on Chilled Water Pumps	Yes	61,355	9.6	0	\$8,942	\$39,800	\$4,600	\$35,200	3.9	61,784
ECM 8	Install VFDs on Heating Water Pumps	No	5,463	1.2	0	\$796	\$16,400	\$1,900	\$14,500	18.2	5,501
Unitary HVAC Measures			11,638	6.5	0	\$1,696	\$25,000	\$800	\$24,200	14.3	11,720
ECM 9	Install High Efficiency Air Conditioning Units	No	374	0.2	0	\$54	\$2,500	\$0	\$2,500	45.9	376
ECM 10	Install High Efficiency Heat Pumps	Yes	11,265	6.3	0	\$1,642	\$22,500	\$800	\$21,700	13.2	11,343
Electric Chiller Replacement			19,998	8.9	0	\$2,914	\$231,700	\$3,700	\$228,000	78.2	20,138
ECM 11	Install High Efficiency Chillers	No	19,998	8.9	0	\$2,914	\$231,700	\$3,700	\$228,000	78.2	20,138
Gas Heating (HVAC/Process) Replacement			0	0.0	276	\$2,079	\$138,500	\$8,000	\$130,500	62.8	32,279
ECM 12	Install High Efficiency Hot Water Boilers	No	0	0.0	276	\$2,079	\$138,500	\$8,000	\$130,500	62.8	32,279
Domestic Water Heating Upgrade			0	0.0	16	\$118	\$280	\$130	\$150	1.3	1,833
ECM 13	Install Low-Flow DHW Devices	Yes	0	0.0	16	\$118	\$280	\$130	\$150	1.3	1,833
Food Service & Refrigeration Measures			1,954	0.2	0	\$285	\$540	\$50	\$490	1.7	1,968
ECM 14	Vending Machine Control	Yes	1,954	0.2	0	\$285	\$540	\$50	\$490	1.7	1,968
TOTALS (COST EFFECTIVE MEASURES)			335,028	53.4	-21	\$48,665	\$202,870	\$26,890	\$175,980	3.6	334,877
TOTALS (ALL MEASURES)			363,600	64.2	254	\$54,904	\$599,960	\$41,430	\$558,530	10.2	395,860

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

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

BUILDING 1 & 2

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			171,340	35.2	-36	\$23,117	\$76,840	\$15,380	\$61,460	2.7	168,356
ECM 1	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	491	0.0	0	\$67	\$180	\$20	\$160	2.4	494
ECM 2	Retrofit Fixtures with LED Lamps	Yes	170,849	35.2	-36	\$23,050	\$76,660	\$15,360	\$61,300	2.7	167,861
Lighting Control Measures			15,972	2.5	-3	\$2,155	\$16,320	\$1,940	\$14,380	6.7	15,692
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	15,972	2.5	-3	\$2,155	\$16,320	\$1,940	\$14,380	6.7	15,692
Motor Upgrades			1,130	0.3	0	\$155	\$4,800	\$0	\$4,800	30.9	1,138
ECM 4	Premium Efficiency Motors	No	1,130	0.3	0	\$155	\$4,800	\$0	\$4,800	30.9	1,138
Variable Frequency Drive (VFD) Measures			52,476	17.4	0	\$7,213	\$90,700	\$6,000	\$84,700	11.7	52,843
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	52,476	17.4	0	\$7,213	\$90,700	\$6,000	\$84,700	11.7	52,843
Unitary HVAC Measures			2,057	3.4	0	\$283	\$34,400	\$1,600	\$32,800	116.0	2,071
ECM 6	Install High Efficiency Air Conditioning Units	No	1,841	2.6	0	\$253	\$29,900	\$1,400	\$28,500	112.7	1,853
ECM 7	Install High Efficiency Heat Pumps	No	216	0.8	0	\$30	\$4,500	\$200	\$4,300	144.8	218
HVAC System Improvements			1,026	0.0	88	\$1,210	\$1,790	\$200	\$1,590	1.3	11,352
ECM 8	Install Pipe Insulation	Yes	1,026	0.0	88	\$1,210	\$1,790	\$200	\$1,590	1.3	11,352
Domestic Water Heating Upgrade			0	0.0	5	\$58	\$150	\$70	\$80	1.4	556
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	5	\$58	\$150	\$70	\$80	1.4	556
Custom Measures			6,155	0.0	0	\$846	\$39,100	\$0	\$39,100	46.2	6,198
ECM 10	Electric Sub Metering	Yes	0	0.0	0	\$0	\$34,900	\$0	\$34,900	0.0	0
ECM 11	Replace Electric Water Heater with Heat Pump Water Heater	Yes	6,155	0.0	0	\$846	\$4,200	\$0	\$4,200	5.0	6,198
TOTALS (COST EFFECTIVE MEASURES)			246,968	55.1	54	\$34,599	\$224,900	\$23,590	\$201,310	5.8	254,996
TOTALS (ALL MEASURES)			250,155	58.8	54	\$35,037	\$264,100	\$25,190	\$238,910	6.8	258,205

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

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

BUILDING 3

#	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			28,037	4.4	-5	\$3,787	\$13,420	\$2,140	\$11,280	3.0	27,590
ECM 1	Install LED Fixtures	Yes	3,041	0.2	0	\$415	\$4,450	\$350	\$4,100	9.9	3,031
ECM 2	Retrofit Fixtures with LED Lamps	Yes	24,996	4.2	-5	\$3,372	\$8,970	\$1,790	\$7,180	2.1	24,559
Lighting Control Measures			2,204	0.3	0	\$297	\$3,720	\$710	\$3,010	10.1	2,166
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,986	0.3	0	\$268	\$2,880	\$350	\$2,530	9.4	1,951
ECM 4	Install High/Low Lighting Controls	Yes	219	0.0	0	\$29	\$840	\$360	\$480	16.3	215
Variable Frequency Drive (VFD) Measures			9,259	4.7	0	\$1,273	\$16,900	\$2,700	\$14,200	11.2	9,324
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	9,259	4.7	0	\$1,273	\$16,900	\$2,700	\$14,200	11.2	9,324
Unitary HVAC Measures			965	1.0	1	\$143	\$15,000	\$500	\$14,500	101.2	1,075
ECM 6	Install High Efficiency Air Conditioning Units	No	965	1.0	1	\$143	\$15,000	\$500	\$14,500	101.2	1,075
Gas Heating (HVAC/Process) Replacement			0	0.0	151	\$1,832	\$35,100	\$2,000	\$33,100	18.1	17,682
ECM 7	Install High Efficiency Hot Water Boilers	Yes	0	0.0	151	\$1,832	\$35,100	\$2,000	\$33,100	18.1	17,682
Domestic Water Heating Upgrade			0	0.0	8	\$94	\$1,620	\$110	\$1,510	16.1	904
ECM 8	Install High Efficiency Gas-Fired Water Heater	No	0	0.0	7	\$82	\$1,600	\$100	\$1,500	18.2	793
ECM 9	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$12	\$20	\$10	\$10	0.9	111
Custom Measures			0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
ECM 10	Electric Sub Metering	Yes	0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
TOTALS (COST EFFECTIVE MEASURES)			39,500	9.4	146	\$7,201	\$86,660	\$7,560	\$79,100	11.0	56,872
TOTALS (ALL MEASURES)			40,465	10.5	154	\$7,426	\$103,260	\$8,160	\$95,100	12.8	58,740

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

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

BUILDING 4

#	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			173,431	40.8	-36	\$23,404	\$91,440	\$17,820	\$73,620	3.1	170,459
ECM 1	Install LED Fixtures	Yes	2,250	0.0	0	\$309	\$1,120	\$100	\$1,020	3.3	2,266
ECM 2	Retrofit Fixtures with LED Lamps	Yes	171,180	40.8	-36	\$23,095	\$90,320	\$17,720	\$72,600	3.1	168,192
Lighting Control Measures			57,528	12.8	-12	\$7,762	\$58,450	\$11,630	\$46,820	6.0	56,533
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	49,218	11.5	-10	\$6,640	\$48,390	\$5,580	\$42,810	6.4	48,358
ECM 4	Install Photocell Controls	Yes	476	0.0	0	\$65	\$480	\$0	\$480	7.3	479
ECM 5	Install High/Low Lighting Controls	Yes	7,834	1.3	-2	\$1,057	\$9,580	\$6,050	\$3,530	3.3	7,697
Motor Upgrades			1,772	0.5	0	\$244	\$7,600	\$0	\$7,600	31.2	1,784
ECM 6	Premium Efficiency Motors	No	1,772	0.5	0	\$244	\$7,600	\$0	\$7,600	31.2	1,784
Variable Frequency Drive (VFD) Measures			184,066	36.7	72	\$26,174	\$198,500	\$16,400	\$182,100	7.0	193,797
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	132,942	35.7	0	\$18,272	\$155,300	\$12,200	\$143,100	7.8	133,871
ECM 8	Install VFDs on Heating Water Pumps	Yes	10,128	1.1	0	\$1,392	\$17,100	\$1,900	\$15,200	10.9	10,199
ECM 9	Install VFDs on Kitchen Hood Fan Motors	Yes	26,551	0.0	72	\$4,525	\$19,400	\$1,300	\$18,100	4.0	35,181
ECM 10	Install VFDs on Process/Pool Filtration Pumps	Yes	14,445	0.0	0	\$1,985	\$6,700	\$1,000	\$5,700	2.9	14,546
Unitary HVAC Measures			6,663	7.3	0	\$916	\$79,000	\$4,900	\$74,100	80.9	6,710
ECM 11	Install High Efficiency Air Conditioning Units	No	6,663	7.3	0	\$916	\$79,000	\$4,900	\$74,100	80.9	6,710
Gas Heating (HVAC/Process) Replacement			0	0.0	2,251	\$27,319	\$459,800	\$25,400	\$434,400	15.9	263,602
ECM 12	Install High Efficiency Hot Water Boilers	Yes	0	0.0	2,251	\$27,319	\$459,800	\$25,400	\$434,400	15.9	263,602
HVAC System Improvements			0	0.0	204	\$2,470	\$2,370	\$240	\$2,130	0.9	23,831
ECM 13	Install Pipe Insulation	Yes	0	0.0	204	\$2,470	\$2,370	\$240	\$2,130	0.9	23,831
Domestic Water Heating Upgrade			0	0.0	179	\$2,174	\$68,910	\$4,750	\$64,160	29.5	20,978
ECM 14	Install High Efficiency Gas-Fired Water Heater	Yes	0	0.0	162	\$1,966	\$68,600	\$4,600	\$64,000	32.6	18,971
ECM 15	Install Low-Flow DHW Devices	Yes	0	0.0	17	\$208	\$310	\$150	\$160	0.8	2,006
Food Service & Refrigeration Measures			25,304	2.7	2	\$3,503	\$54,140	\$2,900	\$51,240	14.6	25,721
ECM 16	Food Service Equipment Replacement	No	1,480	0.9	2	\$228	\$18,900	\$800	\$18,100	79.3	1,730
ECM 17	Dishwasher Replacement	Yes	9,072	1.0	0	\$1,247	\$10,800	\$700	\$10,100	8.1	9,136
ECM 18	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	3,408	0.4	0	\$468	\$4,860	\$520	\$4,340	9.3	3,432
ECM 19	Refrigeration Controls	Yes	9,792	0.1	0	\$1,346	\$19,040	\$830	\$18,210	13.5	9,861
ECM 20	Vending Machine Control	Yes	1,551	0.2	0	\$213	\$540	\$50	\$490	2.3	1,562
Custom Measures			0	0.0	1,473	\$17,875	\$105,800	\$0	\$105,800	5.9	172,470
ECM 21	Install Semi-Automatic Cover for Swimming Pool	Yes	0	0.0	1,473	\$17,875	\$105,800	\$0	\$105,800	5.9	172,470
TOTALS (COST EFFECTIVE MEASURES)			438,848	92.1	4,131	\$110,453	\$1,020,510	\$78,340	\$942,170	8.5	925,661
TOTALS (ALL MEASURES)			448,764	100.9	4,134	\$111,841	\$1,126,010	\$84,040	\$1,041,970	9.3	935,886

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

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

BUILDING 5 & 6

#	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			194,554	39.4	-40	\$26,254	\$86,260	\$17,060	\$69,200	2.6	191,223
ECM 1	Install LED Fixtures	Yes	2,961	0.0	0	\$407	\$1,390	\$100	\$1,290	3.2	2,982
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	Yes	178	0.0	0	\$24	\$130	\$10	\$120	5.0	175
ECM 3	Retrofit Fixtures with LED Lamps	Yes	191,414	39.4	-40	\$25,823	\$84,740	\$16,950	\$67,790	2.6	188,066
Lighting Control Measures			35,321	6.8	-7	\$4,765	\$38,500	\$5,070	\$33,430	7.0	34,704
ECM 4	Install Occupancy Sensor Lighting Controls	Yes	34,362	6.7	-7	\$4,636	\$36,540	\$4,180	\$32,360	7.0	33,761
ECM 5	Install High/Low Lighting Controls	Yes	959	0.2	0	\$129	\$1,960	\$890	\$1,070	8.3	942
Motor Upgrades			1,878	0.4	0	\$258	\$6,200	\$0	\$6,200	24.0	1,891
ECM 6	Premium Efficiency Motors	No	1,878	0.4	0	\$258	\$6,200	\$0	\$6,200	24.0	1,891
Variable Frequency Drive (VFD) Measures			89,370	23.3	0	\$12,283	\$112,300	\$10,600	\$101,700	8.3	89,995
ECM 7	Install VFDs on Constant Volume (CV) Fans	Yes	89,370	23.3	0	\$12,283	\$112,300	\$10,600	\$101,700	8.3	89,995
Unitary HVAC Measures			222	0.2	0	\$30	\$2,800	\$0	\$2,800	91.8	223
ECM 8	Install High Efficiency Air Conditioning Units	No	222	0.2	0	\$30	\$2,800	\$0	\$2,800	91.8	223
Gas Heating (HVAC/Process) Replacement			0	0.0	133	\$1,616	\$13,800	\$500	\$13,300	8.2	15,589
ECM 9	Install High Efficiency Furnaces	Yes	0	0.0	133	\$1,616	\$13,800	\$500	\$13,300	8.2	15,589
Domestic Water Heating Upgrade			0	0.0	15	\$186	\$460	\$220	\$240	1.3	1,797
ECM 10	Install Low-Flow DHW Devices	Yes	0	0.0	15	\$186	\$460	\$220	\$240	1.3	1,797
Custom Measures			0	0.0	0	\$0	\$34,900	\$0	\$34,900	0.0	0
ECM 11	Electric Sub Metering	Yes	0	0.0	0	\$0	\$34,900	\$0	\$34,900	0.0	0
TOTALS (COST EFFECTIVE MEASURES)			319,245	69.6	101	\$45,105	\$286,220	\$33,450	\$252,770	5.6	333,308
TOTALS (ALL MEASURES)			321,344	70.3	101	\$45,393	\$295,220	\$33,450	\$261,770	5.8	335,423

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

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

BUILDING 7

#	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			284	0.0	0	\$38	\$280	\$180	\$100	2.6	279
ECM 1	Install High/Low Lighting Controls	Yes	284	0.0	0	\$38	\$280	\$180	\$100	2.6	279
Variable Frequency Drive (VFD) Measures			3,710	0.9	0	\$510	\$11,800	\$200	\$11,600	22.7	3,736
ECM 2	Install VFDs on Constant Volume (CV) Fans	No	3,710	0.9	0	\$510	\$11,800	\$200	\$11,600	22.7	3,736
Custom Measures			0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
ECM 3	Electric Sub Metering	Yes	0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
TOTALS (COST EFFECTIVE MEASURES)			284	0.0	0	\$38	\$17,780	\$180	\$17,600	459.8	279
TOTALS (ALL MEASURES)			3,994	0.9	0	\$548	\$29,580	\$380	\$29,200	53.3	4,015

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

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

BUILDING 8

#	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			45,409	13.0	-9	\$6,128	\$28,620	\$5,950	\$22,670	3.7	44,635
ECM 1	Install LED Fixtures	Yes	635	0.0	0	\$87	\$440	\$50	\$390	4.5	640
ECM 2	Retrofit Fixtures with LED Lamps	Yes	44,774	13.0	-9	\$6,041	\$28,180	\$5,900	\$22,280	3.7	43,995
Lighting Control Measures			12,222	3.4	-3	\$1,649	\$13,330	\$2,450	\$10,880	6.6	12,008
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	11,170	3.2	-2	\$1,507	\$11,640	\$1,360	\$10,280	6.8	10,974
ECM 4	Install High/Low Lighting Controls	Yes	1,052	0.3	0	\$142	\$1,690	\$1,090	\$600	4.2	1,034
Variable Frequency Drive (VFD) Measures			15,917	5.0	0	\$2,188	\$25,400	\$2,300	\$23,100	10.6	16,028
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	14,475	4.9	0	\$1,989	\$21,000	\$2,200	\$18,800	9.4	14,576
ECM 6	Install VFDs on Heating Water Pumps	No	1,443	0.2	0	\$198	\$4,400	\$100	\$4,300	21.7	1,453
Unitary HVAC Measures			13,656	11.4	0	\$1,877	\$122,000	\$6,800	\$115,200	61.4	13,752
ECM 7	Install High Efficiency Air Conditioning Units	No	13,656	11.4	0	\$1,877	\$122,000	\$6,800	\$115,200	61.4	13,752
Gas Heating (HVAC/Process) Replacement			0	0.0	300	\$3,645	\$66,100	\$3,600	\$62,500	17.1	35,170
ECM 8	Install High Efficiency Hot Water Boilers	Yes	0	0.0	300	\$3,645	\$66,100	\$3,600	\$62,500	17.1	35,170
HVAC System Improvements			1,455	0.0	16	\$390	\$4,540	\$20	\$4,520	11.6	3,295
ECM 9	Implement Demand Control Ventilation (DCV)	No	429	0.0	16	\$249	\$4,400	\$0	\$4,400	17.7	2,262
ECM 10	Install Pipe Insulation	Yes	1,026	0.0	0	\$141	\$140	\$20	\$120	0.9	1,033
Domestic Water Heating Upgrade			164	0.0	0	\$22	\$20	\$10	\$10	0.4	165
ECM 11	Install Low-Flow DHW Devices	Yes	164	0.0	0	\$22	\$20	\$10	\$10	0.4	165
Custom Measures			12,309	0.0	0	\$1,692	\$20,000	\$0	\$20,000	11.8	12,395
ECM 12	Electric Sub Metering	Yes	0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
ECM 13	Replace Electric Water Heater with Heat Pump Water Heater	Yes	12,309	0.0	0	\$1,692	\$2,500	\$0	\$2,500	1.5	12,395
TOTALS (COST EFFECTIVE MEASURES)			85,604	21.3	288	\$15,267	\$149,210	\$14,230	\$134,980	8.8	119,981
TOTALS (ALL MEASURES)			101,132	32.9	304	\$17,591	\$280,010	\$21,130	\$258,880	14.7	137,447

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

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

BUILDING 9

#	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			8,135	2.7	-1	\$1,103	\$8,180	\$1,530	\$6,650	6.0	8,043
ECM 1	Install LED Fixtures	Yes	2,039	0.0	0	\$280	\$2,210	\$350	\$1,860	6.6	2,053
ECM 2	Retrofit Fixtures with LED Lamps	Yes	6,097	2.7	-1	\$823	\$5,970	\$1,180	\$4,790	5.8	5,990
Lighting Control Measures			581	0.2	0	\$78	\$1,340	\$490	\$850	10.8	571
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	399	0.2	0	\$54	\$780	\$100	\$680	12.6	392
ECM 4	Install High/Low Lighting Controls	Yes	183	0.1	0	\$25	\$560	\$390	\$170	6.9	180
Variable Frequency Drive (VFD) Measures			3,751	1.4	0	\$515	\$5,600	\$900	\$4,700	9.1	3,777
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	3,751	1.4	0	\$515	\$5,600	\$900	\$4,700	9.1	3,777
Domestic Water Heating Upgrade			0	0.0	1	\$17	\$40	\$20	\$20	1.2	163
ECM 6	Install Low-Flow DHW Devices	Yes	0	0.0	1	\$17	\$40	\$20	\$20	1.2	163
Custom Measures			0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
ECM 7	Electric Sub Metering	Yes	0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
TOTALS (COST EFFECTIVE MEASURES)			12,468	4.4	0	\$1,713	\$32,660	\$2,940	\$29,720	17.3	12,555
TOTALS (ALL MEASURES)			12,468	4.4	0	\$1,713	\$32,660	\$2,940	\$29,720	17.3	12,555

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

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

BUILDING 10 & 11

#	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			25,228	4.8	-4	\$3,420	\$12,660	\$2,350	\$10,310	3.0	24,955
ECM 1	Install LED Fixtures	Yes	1,441	0.0	0	\$198	\$1,170	\$110	\$1,060	5.4	1,451
ECM 2	Retrofit Fixtures with LED Lamps	Yes	23,787	4.8	-4	\$3,222	\$11,490	\$2,240	\$9,250	2.9	23,504
Lighting Control Measures			2,551	0.6	-1	\$344	\$3,920	\$1,000	\$2,920	8.5	2,506
ECM 3	Install Occupancy Sensor Lighting Controls	Yes	1,989	0.4	0	\$268	\$2,790	\$330	\$2,460	9.2	1,954
ECM 4	Install High/Low Lighting Controls	Yes	562	0.1	0	\$76	\$1,130	\$670	\$460	6.1	552
Variable Frequency Drive (VFD) Measures			5,188	1.7	0	\$713	\$9,500	\$1,000	\$8,500	11.9	5,224
ECM 5	Install VFDs on Constant Volume (CV) Fans	Yes	5,188	1.7	0	\$713	\$9,500	\$1,000	\$8,500	11.9	5,224
Unitary HVAC Measures			3,083	2.2	0	\$424	\$19,100	\$1,500	\$17,600	41.5	3,104
ECM 6	Install High Efficiency Air Conditioning Units	No	3,083	2.2	0	\$424	\$19,100	\$1,500	\$17,600	41.5	3,104
Domestic Water Heating Upgrade			245	0.0	3	\$69	\$80	\$30	\$50	0.7	580
ECM 7	Install Low-Flow DHW Devices	Yes	245	0.0	3	\$69	\$80	\$30	\$50	0.7	580
Food Service & Refrigeration Measures			513	0.0	0	\$70	\$370	\$40	\$330	4.7	516
ECM 8	Refrigerator/Freezer Case Electrically Commutated Motors	Yes	513	0.0	0	\$70	\$370	\$40	\$330	4.7	516
Custom Measures			0	0.0	0	\$0	\$34,900	\$0	\$34,900	0.0	0
ECM 9	Electric Sub Metering	Yes	0	0.0	0	\$0	\$34,900	\$0	\$34,900	0.0	0
TOTALS (COST EFFECTIVE MEASURES)			33,725	7.1	-2	\$4,616	\$61,430	\$4,420	\$57,010	12.3	33,783
TOTALS (ALL MEASURES)			36,808	9.3	-2	\$5,040	\$80,530	\$5,920	\$74,610	14.8	36,887

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

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

BUILDING 12

#	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			3,869	1.9	0	\$532	\$4,210	\$820	\$3,390	6.4	3,896
ECM 1	Retrofit Fixtures with LED Lamps	Yes	3,869	1.9	0	\$532	\$4,210	\$820	\$3,390	6.4	3,896
Lighting Control Measures			297	0.1	0	\$41	\$660	\$80	\$580	14.2	299
ECM 2	Install Occupancy Sensor Lighting Controls	Yes	297	0.1	0	\$41	\$660	\$80	\$580	14.2	299
Domestic Water Heating Upgrade			245	0.0	0	\$34	\$30	\$10	\$20	0.6	247
ECM 3	Install Low-Flow DHW Devices	Yes	245	0.0	0	\$34	\$30	\$10	\$20	0.6	247
Custom Measures			0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
ECM 4	Electric Sub Metering	Yes	0	0.0	0	\$0	\$17,500	\$0	\$17,500	0.0	0
TOTALS (COST EFFECTIVE MEASURES)			4,412	2.0	0	\$606	\$22,400	\$910	\$21,490	35.4	4,442
TOTALS (ALL MEASURES)			4,412	2.0	0	\$606	\$22,400	\$910	\$21,490	35.4	4,442

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

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

ADDITIONAL SUPPORT BUILDINGS

#	Energy Conservation Measure	Cost Effective?	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Fuel Savings (MMBtu)	Annual Energy Cost Savings (\$)	Estimated M&L Cost (\$)	Estimated Incentive (\$)*	Estimated Net M&L Cost (\$)	Simple Payback Period (yrs)**	CO ₂ e Emissions Reduction (lbs)
Lighting Upgrades			1,125	0.4	0	\$155	\$1,090	\$180	\$910	5.9	1,133
ECM 1	Retrofit Fixtures with LED Lamps	Yes	1,125	0.4	0	\$155	\$1,090	\$180	\$910	5.9	1,133
TOTALS (COST EFFECTIVE MEASURES)			1,125	0.4	0	\$155	\$1,090	\$180	\$910	5.9	1,133
TOTALS (ALL MEASURES)			1,125	0.4	0	\$155	\$1,090	\$180	\$910	5.9	1,133

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

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

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 Best Practices by building

WATER BEST PRACTICES



- Leak Detection and Repair
- Toilets and Urinals
- Faucets and Showerheads
- Commercial Kitchen Equipment
- Laundry Equipment
- Cooling Towers
- Steam Boiler System
- Pools and Spas
- Laboratory and Medical Equipment
- Water Metering and Submetering
- Vehicle Washing
- Single Pass Cooling System
- Landscaping and Irrigation
- On-Site Alternative Water Sources

See individual reports for specific Water Best Practices by building

MEASURES FOR FUTURE CONSIDERATION

- Retro-Commissioning Study
- Upgrade to a Building Automation System
- Electric Submetering
- Pool Heating System Upgrades
- Heating System Conversion from Steam to Hot Water
- Upgrade to a Heat Pump System
- Disaggregate Boiler System
- VRF System

EV CHARGING STATION POTENTIAL

NJCleanEnergy.com/EV

Know your EV Charging Stations



LEVEL 1	LEVEL 2	DIRECT CURRENT (DC) FAST CHARGING*
4-6 miles/hour Replenish Rate	10-20 miles/hour Replenish Rate	120-200 miles/hour Replenish Rate
7-30 hours for full charge Approximate time to charge a battery*	2-10 hours for full charge Approximate time to charge a battery*	20-90 minutes for full charge Approximate time to charge a battery*
CHARGE 110/120V	CHARGE 208/240V	CHARGE 480V or 208V

*dependent on the size of the battery

	CCTS
Potential:	Medium/High



SOLAR ENERGY GENERATION POTENTIAL

NJCleanEnergy.com/renewable-energy

	Main Building	Science Building	Gloucester Campus
<i>Potential:</i>	HIGH	HIGH	HIGH
<i>System Potential: (kW)</i>	285	354	813
<i>Electric Generation: (kWh per year)</i>	339,540	421,745	968,584
<i>Displaced Cost: (per year)</i>	\$50,780	\$61,460	\$133,130

FINANCING MECHANISM: ESIP

NJCleanEnergy.com/ESIP

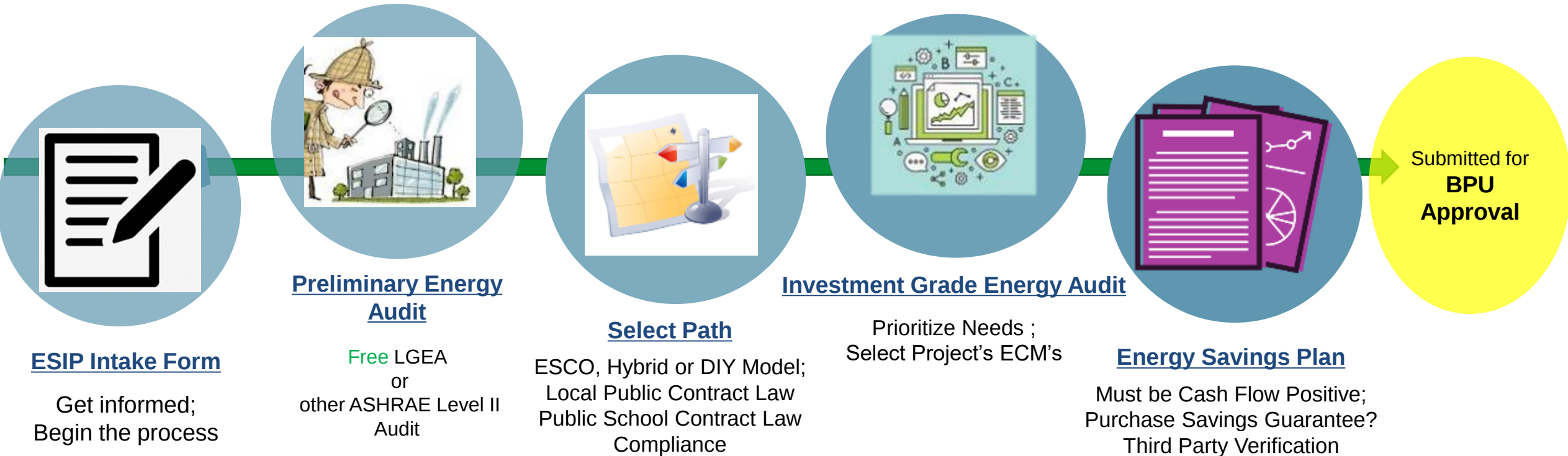
ENERGY SAVINGS IMPROVEMENT PROGRAM (ESIP)

- Energy Performance Contracting = NJ ESIP Program
- A creative tool and financing mechanism that allows public entities to make energy efficiency improvements without impacting their budgets
- Administered by the NJBPU
- Project is paid for with the value of its own energy savings
- 2 Options: Lease Purchase Loan or Bond
- 15 or 20 year pay back term
- NJBPU Approved Incentive Programs
 - Utility or NJCEP
- Can be combined with Federal/State Grants
- No upfront capital expenses
- No referendum or impact to tax payers



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP



ENERGY SAVINGS IMPROVEMENT PROGRAM

NJCleanEnergy.com/ESIP

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C&I ENERGY EFFICIENCY PROGRAMS

NJCleanEnergy.com

LOCAL
GOVERNMENT
CUSTOMERS

COMMERCIAL &
INSTITUTIONAL
CUSTOMERS

LARGE
ENERGY
CUSTOMERS

EXISTING BUILDINGS

MEASUREMENT & AUDITS

FREE Energy Audits



RETROFITS

Prescriptive &
Custom Rebates

Direct Install

Engineered Solutions

And more from
your local utility!



Incentives up
to \$4 million
for eligible projects



NEW CONSTRUCTION

Prescriptive & Custom
Rebates for New
Construction and
Gut Rehabs

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



DISTRIBUTED ENERGY RESOURCES

Combined Heat & Power
and Fuel Cell Installation
Incentives

Microgrid Development

Battery Storage

Muni EV Fleets



Key:
Programs run by investor-owned utility companies



Programs run by NJCEP 

UTILITY RUN ENERGY EFFICIENCY PROGRAMS*

NJCleanEnergy.com/Transition

PRESCRIPTIVE & CUSTOM REBATES:

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

DIRECT INSTALL:

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

ENERGY MANAGEMENT :

- Includes the Building Tune-up (BT), Retro-commissioning (RCx), and Strategic Energy Management (SEM) subprograms. These subprograms offer a comprehensive mix of custom energy-savings measures such as basic HVAC tune-ups, building systems tune-ups, controls' calibration, diagnostic testing, and installation of measures to enhance your building's energy performance and savings.

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



**Other programs may be available to you. Check with your Utility Provider to see a full list of offering and what you may be qualified for.*

UTILITY RUN ENERGY EFFICIENCY PROGRAMS

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THANK YOU

