

# New Jersey's Clean Energy Program

## LGEA Exit Meeting for: Little Egg Harbor School District

Tom Page, TRC

March 9, 2017

NJCleanEnergy.com

## Introductions



- Little Egg Harbor School District
  - Trina Reigelman Energy Manager
  - Melissa McCooley Superintendent of Schools

#### NJ Clean Energy Program – TRC

- Auditor: Tom Page
- Case Manager: Amanda Muench
- Outreach Manager: Jim Friedl

#### ESIP Staff

- Mike Thulen ESIP Coordinator
- Gary Finger BPU Ombudsman

## Agenda



- Overview of LGEA process
- Energy use & existing conditions by building
- Review of Energy Conservation Measures (ECMs) identified
- Questions or concerns regarding the draft audit reports
- Overview of NJCEP equipment incentives
- Energy Savings Improvement Program (ESIP) financing opportunities
- Next steps for Little Egg Harbor School District

### **Process Overview**



- Application submitted to NJCEP
- Site Visit Performed
- Utility Analysis
- Baseline Condition
- Analysis
- Recommendations
- Report





### (1) Frog Pond Elementary School



#### **Overview of Systems, Baseline & Existing Conditions (page 10)**:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load
- Solar PV

#### **Utility Consumption (page 19):**

Utility Summary for Frog Pond								
Fuel	Fuel Usage							
Electricity	953,550 kWh	\$148,302						
Natural Gas	29,289 Therms	\$30,462						
Total	\$178,764							

### (1) Frog Pond Elementary School



#### See page 24:

	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	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	109,329	39.1	\$17,003.48	\$140,552.84	\$19,565.00	\$120,987.84	7.12	110,093
ECM 1	Install LED Fixtures	938	0.2	\$145.84	\$966.40	\$0.00	\$966.40	6.63	944
ECM 2	Retrofit Fluorescent Fix tures with LED Lamps and Drivers	102,422	37.1	\$15,929.33	\$139,116.19	\$19,395.00	\$119,721.19	7.52	103,139
ECM 3	Retrofit Fixtures with LED Lamps	5,969	1.8	\$928.31	\$470.25	\$170.00	\$300.25	0.32	6,011
	Lighting Control Measures	24,691	9.1	\$3,840.15	\$34,148.00	\$4,640.00	\$29,508.00	7.68	24,864
ECM 4	Install Occupancy Sensor Lighting Controls	24,691	9.1	\$3,840.15	\$34,148.00	\$4,640.00	\$29,508.00	7.68	24,864
Р	lug Load Equipment Control - Vending Machine	3,224	0.0	\$501.37	\$742.24	\$0.00	\$742.24	1.48	3,246
ECM 5	Vending Machine Control	3,224	0.0	\$501.37	\$742.24	\$0.00	\$742.24	1.48	3,246
	TOTALS	137,244	48.2	\$21,345.00	\$175,443.08	\$24,205.00	\$151,238.08	7.09	138,204





(2) George J. Mitchell Elementary School



#### **Overview of Systems, Baseline & Existing Conditions (page 10)**:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load
- Solar PV

#### **Utility Consumption (page 18)**:

Utility Summary for George Mitchell Elementary School								
Fuel	Cost							
Electricity	1,217,349 kWh	\$173,426						
Natural Gas	21,243 Therms	\$23,189						
Total	\$196,616							

(2) George J. Mitchell Elementary School 💬



#### See page 23:

	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (Ibs)
	Lighting Upgrades	176,625	47.6	\$25,162.33	\$148,036.49	\$19,405.00	\$128,631.49	5.11	177,860
ECM 1	Install LED Fixtures	52,398	9.4	\$7,464.68	\$17,723.43	\$2,200.00	\$15,523.43	2.08	52,764
ECM 2	Retrofit Fluorescent Fix tures with LED Lamps and Drivers	113,711	35.0	\$16,199.51	\$128,333.15	\$17,185.00	\$111,148.15	6.86	114,506
ECM 3	Retrofit Fixtures with LED Lamps	10,516	3.2	\$1,498.15	\$1,979.91	\$20.00	\$1,959.91	1.31	10,590
	Lighting Control Measures	22,508	6.7	\$3,206.57	\$27,894.00	\$3,735.00	\$24,159.00	7.53	22,666
ECM 4	Install Occupancy Sensor Lighting Controls	22,508	6.7	\$3,206.57	\$27,894.00	\$3,735.00	\$24,159.00	7.53	22,666
Р	lug Load Equipment Control - Vending Machine	1,612	0.0	\$229.63	\$371.12	\$0.00	\$371.12	1.62	1,623
ECM 5	Vending Machine Control	1,612	0.0	\$229.63	\$371.12	\$0.00	\$371.12	1.62	1,623
	TOTALS	200,745	54.2	\$28,598.52	\$176,301.61	\$23,140.00	\$153,161.61	5.36	202,148







### (3) Robert C. Wood Early Childhood Center

#### **Overview of Systems, Baseline & Existing Conditions (page 10)**:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load
- Solar PV

#### **Utility Consumption (page 14):**

Utility Summary for Robert C. Wood Early Childhood Center								
Fuel	Cost							
Electricity	154,523 kWh	\$31,332						
Total	\$31,332							

(3) Robert C. Wood Early Childhood Center



#### See page 18:

	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 (Ibs)
	Lighting Upgrades	25,244	9.7	0.0	\$5,118.63	\$31,468.62	\$4,900.00	\$26,568.62	5.19	25,421
ECM 1	Install LED Fix tures	3,113	0.8	0.0	\$631.18	\$1,413.64	\$400.00	\$1,013.64	1.61	3,135
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	19,787	8.2	0.0	\$4,012.00	\$29,621.18	\$4,200.00	\$25,421.18	6.34	19,925
ECM 3	Retrofit Fixtures with LED Lamps	2,345	0.6	0.0	\$475.46	\$433.80	\$300.00	\$133.80	0.28	2,361
	Lighting Control Measures	1,741	0.6	0.0	\$352.99	\$2,200.00	\$310.00	\$1,890.00	5.35	1,753
ECM 4	Install Occupancy Sensor Lighting Controls	1,741	0.6	0.0	\$352.99	\$2,200.00	\$310.00	\$1,890.00	5.35	1,753
	TOTALS	26,985	10.2	0.0	\$5,471.62	\$33,668.62	\$5,210.00	\$28,458.62	5.20	27,174









#### **Overview of Systems, Baseline & Existing Conditions (page 10)**:

- Building Envelope
- Lighting System
- HVAC and Mechanical Systems
- Plug Load

#### **Utility Consumption (page 15)**:

Utility Summary for Little Egg Harbor District Offices									
Fuel	Cost								
Electricity	74,077 kWh	\$15,020							
Natural Gas	1,649 Therms	\$1,765							
Total	\$16,784								

### (4) Joan C. Bard Administration Building



#### See page 20:

	Energy Conservation Measure	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (Ibs)
	Lighting Upgrades	30,763	8.6	\$6,237.53	\$18,902.77	\$3,260.00	\$15,642.77	2.51	30,979
ECM 1	Install LED Fix tures	25,380	5.9	\$5,146.08	\$12,837.91	\$2,300.00	\$10,537.91	2.05	25,558
ECM 2	Retrofit Fluorescent Fixtures with LED Lamps and Drivers	519	0.4	\$105.33	\$990.06	\$60.00	\$930.06	8.83	523
ECM 3	Retrofit Fixtures with LED Lamps	4,864	2.4	\$986.12	\$5,074.80	\$900.00	\$4,174.80	4.23	4,898
	Lighting Control Measures	1,202	0.6	\$243.69	\$2,934.00	\$425.00	\$2,509.00	10.30	1,210
ECM 4	Install Occupancy Sensor Lighting Controls	1,202	0.6	\$243.69	\$2,934.00	\$425.00	\$2,509.00	10.30	1,210
	Electric Unitary HVAC Measures	3,780	2.9	\$766.48	\$11,969.76	\$736.00	\$11,233.76	14.66	3,807
ECM 5	Install High Efficiency Electric AC	3,780	2.9	\$766.48	\$11,969.76	\$736.00	\$11,233.76	14.66	3,807
	TOTALS	35,746	12.1	\$7,247.70	\$33,806.53	\$4,421.00	\$29,385.53	4.05	35,996



#### Summary – All Buildings

	Annual Electric Savings (kWh)	Peak Demand Savings (kW)	Annual Energy Cost Savings (\$)	Estimated Install Cost (\$)	Estimated Incentive (\$)*	Estimated Net Cost (\$)	Simple Payback Period (yrs)**	CO <sub>2</sub> e Emissions Reduction (Ibs)
Frog Pond Elem Sch	137,244	48.2	\$21,345.00	\$175,443.08	\$24,205.00	\$151,238.08	7.09	138,204
Gerorge Mitchell Elem Sch	200,745	54.2	\$28,598.52	\$176,301.61	\$23,140.00	\$153,161.61	5.36	202,148
Robert Wood ECC	26,985	10.2	\$5,471.62	\$33,668.62	\$5,210.00	\$28,458.62	5.20	27,174
BOE Admin Office	35,746	12.1	\$7,247.70	\$33,806.53	\$4,421.00	\$29,385.53	4.05	35,996
TOTAL	400,719	124.8	\$62,662.85	\$419,219.84	\$56,976.00	\$362,243.84	5.78	403,521

			<b>Proposed</b>
		<u>PM</u>	<b>Energy</b>
	<u>Site EUI</u>	<u>Score</u>	<u>Savings</u>
Frog Pond Elem Sch	59	78	7.60%
Gerorge Mitchell Elem Sch	54.2	75	10.9%
Robert Wood ECC	22.7	N/A	17.50%
BOE Admin Office	103.2	N/A	29.20%

#### Some Energy Efficient Practices



- Reduce Air Leakage
- Close Doors and Windows
- Practice Proper Use of Thermostat Schedules and Temperature Resets
- Ensure Lighting Controls Are Operating Properly
- Clean Evaporator/Condenser Coils on AC Systems
- Clean and/or Replace HVAC Filters
- Use Fans to Reduce Cooling Load
- Perform Proper Boiler Maintenance
- Perform Proper Water Heater Maintenance
- Replace Computer Monitors

See individual reports for specific EE practices by building

## **PROGRAM PORTFOLIO**









#### Direct Install

#### **Hutchinson Mechanical Services**

Ed Hutchinson 856-429-5828 x215 <u>edhutchinson@hutchbiz.com</u>

- Pay for Performance (P4P)
- SmartStart Buildings (i.e Retrofit Existing Buildings)

#### Energy Savings Improvement Program (ESIP)



- Program administered by BPU Staff
- Provides alternative financing for energy savings projects at public institutions.
- Value of energy savings leveraged to pay for cost of EE projects over a 15 year contract (in most cases). Does not count as debt/require voter approval.
- Requires an audit as 1<sup>st</sup> step (LGEA satisfies requirement)





## FOR MORE INFORMATION

Visit NJCleanEnergy.com Call (866) NJSMART

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