

Carbon Free Assessment

Prepared for
D201 Crete-Monee High School

By: Anvesh Masa • Engineer - PSCFA • (971) 346-6429 • amasa@michaelsenergy.com

Acct. Number ending in 2222 • 1515 W Exchange St, Crete, IL 60417 • 5/7/2025

EXECUTIVE SUMMARY

Financial Benefit

We estimate your Facility has the potential for:

	Annual Savings	\$521,051
ComEd® Energy Efficiency Program Incentive		\$333,620

Annual Energy Benefit

Up to 2,828,800 kWh Reduced

Annual Environmental Benefit

Can Reduce Your Carbon Footprint by up to...

4,215 Metric Tons of CO₂ Equivalent
or 1,179 Cars off the Road Annually

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

Public School Assessment

Financial Benefit by Simple Payback

Estimated <2 Year Payback Opportunities

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Retrofit HVAC Fans with Variable Speed Drives	\$58,900	\$150,300	\$128,000	0.4
Subtotal	\$58,900	\$150,300	\$128,000	0.4

Estimated 2-5 Year Payback Opportunities

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Replace Evaporator Fan Motors and Install Controls	\$1,370	\$7,000	\$2,960	2.9
Install Lighting Controls	\$3,320	\$22,500	\$12,080	3.1
Install Demand Defrost Controls in Walk-in Freezers and Coolers	\$330	\$1,750	\$280	4.5
Subtotal	\$5,020	\$31,250	\$15,320	3.2

Estimated >5 Year Payback Opportunities

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Replace High Intensity Discharge Lighting	\$13,800	\$200,000	\$85,000	8.3
Retrofit HVAC Pumps with Variable Speed Drives	\$1,840	\$24,200	\$8,000	8.8
Install Building Energy Management System	\$35,600	\$591,200	\$90,100	14.1
Subtotal	\$51,240	\$815,400	\$183,100	12.3

For the Standard Incentives program, the total incentives paid cannot exceed 90% of the incremental measure cost or 90% of the total project cost.

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Public School Assessment

Illinois Commercial Food Services Program

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Kitchen Fume Hood Exhaust Controls	\$2,100	\$2,400 ^A	\$800	0.8
Install ENERGY STAR Convection Ovens	\$540	\$3,800	\$3,200	1.1
Replace Commercial Dishwashers	\$520	\$660 ^A	\$100	1.1
Replace Refrigerator	\$40	\$250 ^A	\$100	3.8
Install ENERGY STAR Electric Steam Cookers	\$1,300	\$8,200	\$3,000	4.0
Subtotal	\$4,500	\$15,310	\$7,200	1.8

Please see section titled "Energy Efficiency Measure Details" later on in this report for further information on listed Opportunities

Building Envelope and Mechanical Insulation

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Weather Stripping	\$290	\$200	\$0	0.7
Install Piping Insulation	\$720	\$4,200	\$0	5.8
Install Cool Roof	\$8,600	\$750,000	\$0	
Subtotal	\$9,610	\$754,400	\$0	78.5

Please see section titled "Building Envelope and Mechanical Insulation" later on in this report for further information on listed Opportunities

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Public School Assessment

Energy Efficiency Electrification

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Heat Pump Clothes Dryers	- \$3,700	\$150 ^A	\$0	
Install Ground Source Heat Pumps	\$51,400	\$4,297,800	\$0	
Install Heat Pump Water Heaters	- \$8,690	\$208,900	\$0	
Subtotal	\$39,010	\$4,506,850	\$0	115.5

Please see section titled "Energy Efficiency Electrification" later on in this report for further information on listed Opportunities

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ADDITIONAL PROGRAM OFFERINGS

Available Offerings

In addition to Standard Incentives, your facility may also be eligible for the following:

☒ Building Operator Certification

- | | |
|---|---|
| ☒ Retro-Commissioning | ☒ Strategic Energy Management |
| ☐ Industrial Systems | ☐ New Construction |
| ☐ Small Business | ☐ Multi-Family Assessment |

Building Operator Certification

Offering Description:

Building Operator Certification® (BOC) is a nationally recognized training and certification program focusing on energy-efficient building O&M procedures. Facilities with BOC graduates are proven to save energy, have lower energy bills, and offer improved comfort for occupants. Facility staff with at least one year work experience plus an additional year of work and/or training are eligible. Go to BOCCentral.org/ComEd for information on Illinois tuition and training schedules. ComEd customers are eligible for a full tuition rebate upon completion of training.

Opportunity at Your Facility:

ComEd customers in Illinois can benefit from discounted rates for BOC training, with tuition set at \$1400, nearly \$300 lower than standard fees. Furthermore, in addition to full tuition reimbursement upon successful completion of the training, ComEd customers are also eligible for an additional incentive of up to \$6,850 (dependent upon facility area and building operator pay scale). Eligible participants must meet course requirements, including attending classes, passing assessments, completing homework assignments, and submitting a signed Training Certificate of Completion Application. Various BOC training sessions are available, including in-person and online options, with detailed schedules provided for registration. For further inquiries or to join the mailing list, individuals can contact boc@mwalliance.org.

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ADDITIONAL PROGRAM OFFERINGS

Retro-Commissioning

Offering Description:

Retro-Commissioning is a building efficiency tune-up process that is designed to help your commercial or industrial building perform optimally. Through a systematic evaluation of mechanical and electrical systems, retro-commissioning helps you identify low-cost and no-cost energy saving operational improvements that will pay for themselves in 18 months or less.

Opportunity at Your Facility: Retro-Commissioning Flex

ComEd's Retro-Commissioning (RCx) Flex Program is a fully funded study that the school is eligible for. It involves a time commitment of 3-6 hours per month for 6-15 months and a financial commitment of at least \$1,000 to implement any energy savings measures. The RCx program identifies low cost energy savings measures and can be expected to save 5-10% of the school's annual energy usage. We expect this program will help the school optimize their HVAC schedule, economizers setpoints etc.

Estimated Electricity Energy Savings: 218,000 kWh/yr

Estimated Gas Energy Savings: 4,500 Therms/yr

Estimated Annual Savings: \$28,300

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ADDITIONAL PROGRAM OFFERINGS

Strategic Energy Management

Offering Description:

Strategic Energy Management (SEM) is a holistic program identifying opportunities to save energy through operational and behavioral projects. SEM provides coaching and other resources so customers can develop their own energy management capabilities in a peer learning environment.

Opportunity at Your Facility:

ComEd's Strategic Energy Management (SEM) Program is a good next step for the school to take in improving energy efficiency. SEM offers a long-term partnership with the school through workshops and coaching sessions. At no cost, ComEd will assign the school an energy coach and a support team. They will perform an energy assessment of the site, model and monitor the school's energy consumption over the course of a year, identify operational and behavioral changes that can help reduce energy usage, as well as provide materials and training to help school employees save energy while on the job. In addition to the direct cost savings from reduced energy use, ComEd offers \$0.02/kWh saved from implementing behavioral and/or operational changes, along with an opportunity to earn up to \$2,000 in additional savings.

Estimated Electricity Energy Savings: 109,900 kWh/yr

Estimated Annual Savings: \$12,700

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SOLAR OPPORTUNITIES

The facility's solar potential has been evaluated and determined there is enough area with adequate sunlight to be a good candidate for solar deployment. Below is an aerial view of the facility and surrounding property, highlighting where solar panels would be most productive along with the project economics.



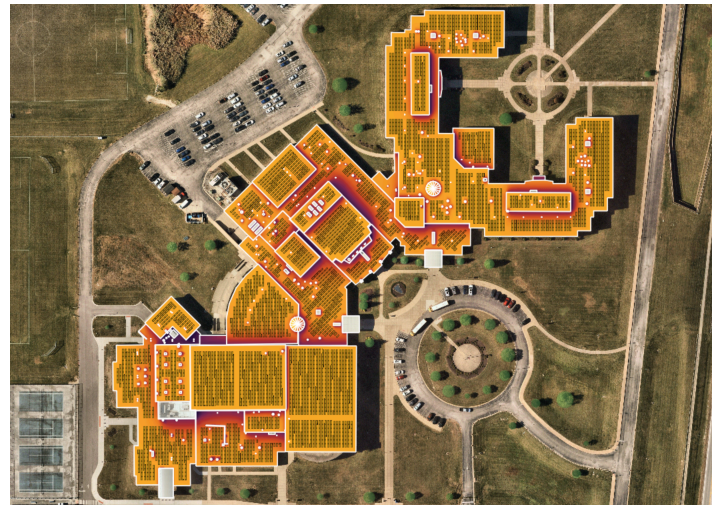
Project Details

Estimated Solar Capacity: **2,100 kW**

Estimated Annual Generation: **2,704,000 kWh**

Estimated # of Solar Panels: **3,800**

Annual Energy Use Offset: **62%**



Financial Details

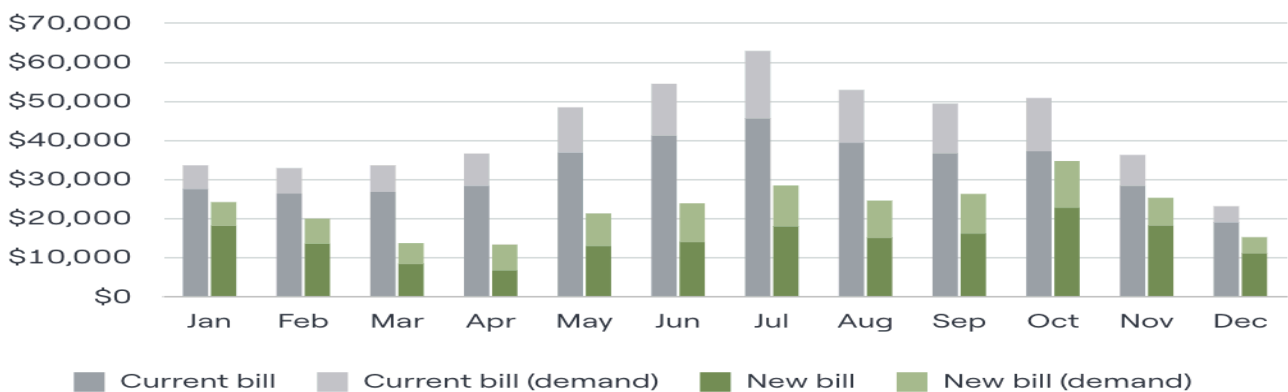
Estimated Project Cost: **\$4,745,700**

Estimated Incentive: **\$4,355,800**

Simple Payback with Grants: **6.9 Years**

Lifetime Savings: **\$7,795,000**

Monthly utility bill savings



The calculation above is based on a satellite overview of the facilities' property, as well as on-site observations made by the assessment Engineer. Total incentives are based on available local, state, federal and tax incentives, further broken out in the "Additional Funding Sources" section of this report.

Learn more about the benefits of solar energy and adjust your own design at ComEd.com/Solar.

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ELECTRIC VEHICLE OPPORTUNITIES

The following sections provide various metrics observed upon electrifying your vehicle fleet. Please note, specific make and models have been selected based on your existing fleet usage. Program eligibility is not limited to selection of these vehicles but only used as a point of reference.

Plan Scope

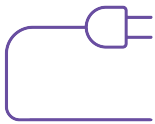
Proposed Vehicle replacement and chargers:



- 3 Replace Light Duty Vehicles
- 3 Replace Transit and Shuttle Buses
- 6 Upgrade Infrastructure for Level 2 Chargers

Operations

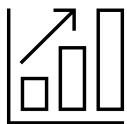
Operational impact of full implementation:



- Average of \$8,850 year of O&M savings
- 6,500 Gallons Estimated Annual Fuel Savings
- 9 Metric Tons of CO₂ Equivalent

Investments

Return on investment:



- \$274,500 incremental cost of EVs and charging infrastructure
- \$430,500 available rebates
- - \$156,000 net, incremental investment

**Including rebates*

Charging Infrastructure cost assumes make-ready and charger costs

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ELECTRIC VEHICLE OPPORTUNITIES

EV Model Specifications



Charging Infrastructure Plan

Start Time	End Time	Charging ?
8:00 PM ▼	6:00 AM ▼	☒ Staggered ☐ Simultaneous
Equipment	Miles/Day	Configure
11.5 kW / 48 ▼	50 ▼	☒ Together ☐ Individually

Cost of Ownership Calculation

Cost of ownership is the total cost operating, maintaining, and owning the proposed electrical vehicle. This is a calculated based on existing information provided and standard industry assumptions where needed.

EV Star Mobility+ 118 kWh					Shuttle Class 2 - Gas - 3.5L				
Upfront Costs					Upfront Costs				
3	MSRP		250000	\$750,000	3	MSRP	80000	\$240,000	
3	Charger	11.5 kW / 48 A / Level 2	3500	\$10,500				\$0	
3	Charger	Design & Construction / EVSE Est.	6500	\$19,500				\$0	
	Adjustment	If you would like to add fees						\$0	
3	Incentive	To apply per unit	(8000)	\$24,000				\$0	
	Incentive	To apply per project		(360000)				\$0	
				\$396,000					
Annual Costs					Annual Costs				
	Charging	All Vehicles	\$1,831.69	\$1,831.69		Fuel Cost	\$9,634.63	\$9,634.63	
36000	Maintenance	Est. maintenance per mile	0.06	\$2,160.00	36000	Maintenance	0.1	\$3,600.00	
				\$3,991.69					
Carbon Use					Carbon Use				
				11.3285 MT					18.8640 MT

ELECTRIC VEHICLE OPPORTUNITIES

EV Model Specifications

Charging Infrastructure Plan



Start Time	End Time	Charging ?
8:00 PM ▼	6:00 AM ▼	☒ Staggered
		☐ Simultaneous
Equipment	Miles/Day	Configure
11.5 kW / 48 ▼	30 ▼	☒ Together
		☐ Individually

Cost of Ownership Calculation

Cost of ownership is the total cost operating, maintaining, and owning the proposed electrical vehicle. This is a calculated based on existing information provided and standard industry assumptions where needed.

EV9 Long Range AWD					Mid-Size Sedan 32 mpg				
Upfront Costs					Upfront Costs				
3	MSRP		50000	\$150,000	3	MSRP	25000	\$75,000	
3	Charger	11.5 kW / 48 A / Level 2	3500	\$10,500				\$0	
3	Charger	Design & Construction / EVSE Est.	6500	\$19,500				\$0	
	Adjustment	If you would like to add fees						\$0	
3	Incentive	To apply per unit	(8000)	\$24,000				\$0	
	Incentive	To apply per project		(22500)				\$0	
\$133,500					\$75,000				
Annual Costs					Annual Costs				
	Charging	All Vehicles	\$1,831.69	\$1,831.69		Fuel Cost	\$9,495.00	\$9,495.00	
21600	Maintenance	Est. maintenance per mile	0.06	\$1,296.00	21600	Maintenance	0.1	\$2,160.00	
\$3,127.69					\$11,655.00				
Carbon Use					Carbon Use				
3.5424 MT					5.9832 MT				

Energy Efficiency Measure Details

Lighting Solutions

Install Lighting Controls

Install sensors which turn lights on/off based on space occupancy and/or ambient light levels

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Hallways	125	18W LED Troffer Fixtures (18W)	Install Occupancy Sensors and Daylighting Controls	1,800	\$210	\$1,200	\$680	2.5
Fieldhouse	56	165W LED High Bay Fixtures (165W)	Install Occupancy Sensors	6,700	\$770	\$4,300	\$2,300	2.6
Bridges Gym	25	165W LED High Bay Fixtures (165W)	Install Occupancy Sensors	3,000	\$350	\$1,900	\$1,000	2.6
Gym	60	165W LED High Bay Fixtures (165W)	Install Occupancy Sensors	7,100	\$820	\$4,700	\$2,500	2.7
Classrooms	200	18W LED Troffer Fixtures (18W)	Install Occupancy Sensors and Daylighting Controls	2,300	\$270	\$1,900	\$1,100	3.0
Hallways	400	18W LED Troffer Fixtures (18W)	Install Occupancy Sensors	3,500	\$400	\$3,400	\$1,800	4.0
Classrooms	600	18W LED Troffer Fixtures (18W)	Install Occupancy Sensors	4,300	\$500	\$5,100	\$2,700	4.8
Subtotal				28,700	\$3,320	\$22,500	\$12,080	3.1

Energy Efficiency Measure Details

Lighting Solutions

Replace High Intensity Discharge Lighting

Replace High Intensity Discharge (HID) Fixtures with LED Fixtures, which are more efficient and provide comparable lighting levels

Location	Qty	Existing	Proposed ^B	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)	
Auditorium	100	Mercury Vapor (1000W)	LED Fixtures with Integrated Integrated Indoor Networked Lighting Control System (400W)	120,000	\$13,800	\$200,000	\$85,000	8.3	
Subtotal				120,000	\$13,800	\$200,000	\$85,000	8.3	
Lighting Solutions Total				Subtotal	148,700	\$17,120	\$222,500	\$97,080	7.3

Energy Efficiency Measure Details

HVAC Solutions

Retrofit HVAC Fans with Variable Speed Drives

Install Variable Speed Drives on fan motors, which control the motor load to meet demand, reducing the energy consumed by the motor

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
AHU - 8	1	100 HP HVAC Supply Fan without Variable Speed Controls	Add Variable Speed Drive Controls to the Fan	79,400	0	\$9,200	\$21,000	\$20,000	0.1
AHU - 4,6	2	75 HP HVAC Supply Fans without Variable Speed Controls	Add Variable Speed Drive Controls to each Fan	119,000	0	\$13,700	\$33,000	\$30,000	0.2
AHU - 7, 9, 10	3	40 HP HVAC Supply Fans without Variable Speed Controls	Add Variable Speed Drive Controls to each Fan	96,100	0	\$11,100	\$29,100	\$24,000	0.5
AHU - 1, 2, 3, 5	4	60 HP HVAC Supply Fans without Variable Speed Controls	Add Variable Speed Drive Controls to each Fan	191,300	0	\$22,100	\$58,800	\$48,000	0.5
AHU - 11	1	30 HP HVAC Supply Fan without Variable Speed Controls	Add Variable Speed Drive Controls to the Fan	24,100	0	\$2,800	\$8,400	\$6,000	0.9
Subtotal				509,900	0	\$58,900	\$150,300	\$128,000	0.4

Energy Efficiency Measure Details

HVAC Solutions

Retrofit HVAC Pumps with Variable Speed Drives

Install Variable Speed Drives on pump motors, which control the motor speed to meet demand, reducing the energy consumed by the motor

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^C	Estimated Incentive (\$)	Payback (Years)
Mechanical Room	2	15 HP Hot Water Circulation Pumps without Variable Speed Controls	Add Variable Speed Drive Controls to the Pumps	8,200	0	\$950	\$10,000	\$3,000	7.4
Mechanical Room	2	25 HP Chilled Water Pumps without Variable Speed Controls	Add Variable Speed Drive Controls to the Pumps	7,700	0	\$890	\$14,200	\$5,000	10.3
Subtotal				15,900	0	\$1,840	\$24,200	\$8,000	8.8

Energy Efficiency Measure Details

HVAC Solutions

Replace Rooftop Units^D

Replace existing Rooftop Units with higher efficiency models

Location	Qty	Baseline	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^A	Estimated Incentive (\$)	Payback (Years)
DOAS	1	6 Ton Rooftop Unit	New High Efficiency 6 Ton Rooftop Unit with IEER of 16	370	70	\$90	\$720	\$170	6.1
RTU - 4	1	8 Ton Rooftop Unit	New High Efficiency 8 Ton Rooftop Unit with IEER of 16	500	70	\$110	\$960	\$220	6.7
RTU - 3	1	15 Ton Rooftop Unit	New High Efficiency 15 Ton Rooftop Unit with IEER of 15	740	140	\$180	\$1,800	\$300	8.3
RTU - 1	1	25 Ton Rooftop Unit	New High Efficiency 25 Ton Rooftop Unit with IEER of 14	1,400	120	\$250	\$3,000	\$500	10.0
RTU - 2	1	26 Ton Rooftop Unit	New High Efficiency 26 Ton Rooftop Unit with IEER of 14	1,500	60	\$220	\$3,100	\$520	11.7
Subtotal				4,510	460	\$850	\$9,580	\$1,710	9.3

Energy Efficiency Measure Details

HVAC Solutions

Install Building Energy Management System

Install a Building Energy Management System, which controls building temperature more efficiently

Location	Size (sqft)	Existing	Proposed ^E	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^F	Estimated Incentive (\$)	Payback (Years)
Entire Facility	360,492	Digital Building Automation System (over 15 years old)	Install a Modern Building Energy Management System with at least 3 Enhanced Control Strategies	180,000	21,000	\$35,600	\$591,200	\$90,100	14.1
Subtotal				180,000	21,000	\$35,600	\$591,200	\$90,100	14.1
HVAC Solutions Total			Subtotal	705,800	21,000	\$96,340	\$765,700	\$226,100	5.6

Energy Efficiency Measure Details

Refrigeration Solutions

Replace Evaporator Fan Motors and Install Controls

Install more efficient motors and controls that reduce fan air-flow when there is no refrigerant flow

Location	Qty	Existing ^G	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Kitchen - Freezer	8	1/15 Horsepower Shaded Pole Motors with No Controls	Install Electronically Commutated Motors with Evaporator Fan Controls	6,800	\$780	\$3,500	\$1,700	2.3
Kitchen - Cooler 1	4	1/15 Horsepower Shaded Pole Motors with No Controls	Install Electronically Commutated Motors with Evaporator Fan Controls	3,400	\$390	\$2,300	\$840	3.7
Kitchen - Cooler 2	2	1/15 Horsepower Shaded Pole Motors with No Controls	Install Electronically Commutated Motors with Evaporator Fan Controls	1,700	\$200	\$1,200	\$420	3.9
Subtotal				11,900	\$1,370	\$7,000	\$2,960	2.9

Replace Refrigerator

Replace the existing Refrigerator with an ENERGY STAR rated model. It is recommended that this change be made near the end of an existing refrigerator's life.

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^A	Estimated Incentive (\$) ^H	Payback (Years)
Kitchen	1	Standard Efficiency 40 Cubic Foot Solid Door Refrigerator	ENERGY STAR Solid Door Refrigerator	330	\$40	\$250	\$100	3.8
Subtotal				330	\$40	\$250	\$100	3.8

Energy Efficiency Measure Details

Refrigeration Solutions

Install Demand Defrost Controls in Walk-in Freezers and Coolers

Install Demand Defrost Controls to monitor the refrigeration system and delay the defrost cycle as necessary

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Kitchen - Freezer	8	Evaporator Fans without Demand Defrost Controls	Install Demand Defrost Controls	1,800	\$210	\$1,000	\$160	4.0
Kitchen - Cooler 1	4	Evaporator Fans without Demand Defrost Controls	Install Demand Defrost Controls	680	\$80	\$500	\$80	5.3
Kitchen - Cooler 2	2	Evaporator Fans without Demand Defrost Controls	Install Demand Defrost Controls	340	\$40	\$250	\$40	5.3
Subtotal				2,820	\$330	\$1,750	\$280	4.5
Refrigeration Solutions Total			Subtotal	15,050	\$1,740	\$9,000	\$3,340	3.3

Energy Efficiency Measure Details

Commercial Kitchen Solutions

Replace Commercial Dishwashers

Replace existing Commercial Dishwashers with ENERGY STAR rated models. It is recommended that this change be made near the end of an existing equipment's life.

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^A	Estimated Incentive (\$) ^H	Payback (Years)
Kitchen	1	Low Temperature Stationary Single Tank Door Commercial Dishwasher	ENERGY STAR Commercial Dishwasher	590	330	46,400	\$520	\$660	\$100	1.1
			Subtotal	590	330	46,400	\$520	\$660	\$100	1.1
Commercial Kitchen Solutions Total			Subtotal	590	330	46,400	\$520	\$660	\$100	1.1

Energy Efficiency Measure Details

Special Purpose Equipment Solutions

Install Kitchen Fume Hood Exhaust Controls

Add control to Kitchen Fans to vary exhaust rate based on cooking load and/or occupancy

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^A	Estimated Incentive (\$) ^H	Payback (Years)
Kitchen	2	1 Horsepower Kitchen Fume Hood Exhaust Fans	Install Kitchen Demand Ventilation Controls	8,800	1,500	\$2,100	\$2,400	\$800	0.8
Subtotal				8,800	1,500	\$2,100	\$2,400	\$800	0.8
Special Purpose Equipment Solutions Total				8,800	1,500	\$2,100	\$2,400	\$800	0.8

Energy Efficiency Measure Details

Energy Efficiency Electrification

Install ENERGY STAR Convection Ovens

Install ENERGY STAR Electric Convection Ovens to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed	Estimated Electric	Estimated Energy	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$) ^H	Payback (Years)
				Energy Usage (kWh/Yr)	Savings (Therm/Yr)					
Kitchen	4	Natural Gas Convection Ovens	ENERGY STAR Electric Convection Ovens	13,100	2,900	0	\$540	\$3,800	\$3,200	1.1
Subtotal				13,100	2,900	0	\$540	\$3,800	\$3,200	1.1

Install ENERGY STAR Electric Steam Cookers

Install ENERGY STAR Electric Steam Cookers to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed	Estimated Electric	Estimated Energy	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$) ^H	Payback (Years)
				Energy Usage (kWh/Yr)	Savings (Therm/Yr)					
Kitchen	1	Natural Gas Steam Cooker	ENERGY STAR Electric Steam Cooker	2,000	1,600	81,100	\$1,300	\$8,200	\$3,000	4.0
Subtotal				2,000	1,600	81,100	\$1,300	\$8,200	\$3,000	4.0

Energy Efficiency Measure Details

Energy Efficiency Electrification

Install Heat Pump Clothes Dryers

Install Heat Pump Clothes Dryers to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed ^J	Estimated Electric	Estimated Energy	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^A	Estimated Incentive (\$)	Payback (Years)
				Energy Usage (kWh/Yr)	Savings (Therm/Yr)					
Mechanical Room	1	Vented Natural Gas Dryer	ENERGY STAR Vented Dryer	46,400	2,400	0	- \$3,700	\$150	\$0	
Subtotal				46,400	2,400	0	- \$3,700	\$150	\$0	

Install Heat Pump Water Heaters

Install Heat Pump Water Heaters to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed ^J	Estimated Electric	Estimated Energy	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
				Energy Usage (kWh/Yr)	Savings (Therm/Yr)					
Mechanical Room	2	Natural Gas-Fired Water Heaters	Heat Pump Water Heaters	22,200	2,500	0	- \$790	\$23,200	\$0	
Mechanical Room	1	Natural Gas-Fired Boiler	Heat Pump Water Heater	212,700	23,600	0	- \$7,900	\$185,700	\$0	
Subtotal				234,900	26,100	0	- \$8,690	\$208,900	\$0	

Energy Efficiency Measure Details

Energy Efficiency Electrification

Install Ground Source Heat Pumps

Install Ground Source Heat Pumps to improve HVAC system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed ^J	Estimated Electric	Estimated Energy	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
				Energy Usage (kWh/Yr)	Savings (Therm/Yr)					
Entire Facility	1	Air Handling Units with Hot Water Heating and Chilled Water Cooling, and Rooftop Units with Gas Heating and DX Cooling	Brine to Air Ground Loop System Heat Pump System	862,300	213,500	0	\$51,400	\$4,297,800 ^K	\$0	
			Subtotal	862,300	213,500	0	\$51,400	\$4,297,800	\$0	

Energy Efficiency Measure Details

Energy Efficiency Electrification

Install Air Source Heat Pumps^D

Install Air Source Heat Pumps to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Baseline	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Water Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$) ^L	Payback (Years)
Entire Facility	62	Air Handling Units with Hot Water Heating and Chilled Water Cooling, and Rooftop Units with Gas Heating and DX Cooling	Electric Air Cooled (Electric Backup) Cold Climate Air Source Heat Pump	1,103,000	213,500	0	\$23,600	\$6,189,400 ^M	\$0	
Subtotal				1,103,000	213,500	0	\$23,600	\$6,189,400	\$0	

Energy Efficiency Electrification Total **Subtotal** **1,158,700** **246,500** **81,100** **\$40,850** **\$4,518,850** **\$6,200** **110.5**

Building Envelope and Mechanical Insulation

Building Envelope and Mechanical Insulation address the insulation or efficient material use for Walls, Windows Roof and Mechanical Equipment such as pipes and valves. Using efficient insulation or materials helps improve efficiency for supporting systems such as HVAC and Water heating by reducing the loss of energy through heat transfer to the outside or surrounding environment.

Install Weather Stripping

Install or replace Weather Stripping on external facing doors to eliminate drafts, reduce energy costs, and enhance indoor comfort.

Location	Length (ft)	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Exterior Doors	22 ¹	Total Feet of Visible Gaps on External Doors	Install Weather Stripping	2,000	90	\$290	\$200	0.7
Subtotal				2,000	90	\$290	\$200	0.7

Install Piping Insulation

Install or Replace Insulation on your Piping to reduce unnecessary energy loss to surrounding space

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Mechanical Room	50	Total Feet of Under Insulated Hydronic Hot Water Pipe	Install 2-inch Pipe Insulation (R-Value $\geq$ 3.25)	0	340	\$240	\$1,300	5.4
Mechanical Room	40	Total Feet of Under Insulated Domestic Water Pipe	Install 1.5-inch Pipe Insulation (R-Value $\geq$ 3.25)	0	230	\$160	\$900	5.6
Mechanical Room	12	Quantity of Under Insulated Valves/Pipe Fittings	Install 2-inch Pipe Insulation (R-Value $\geq$ 3.25)	0	460	\$320	\$2,000	6.3
Subtotal				0	1,030	\$720	\$4,200	5.8

Building Envelope and Mechanical Insulation

Install Cool Roof

Install Cool Roof Insulation to improve building envelope and reduce unnecessary space cooling energy use

Location	Size (sqft)	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Old Section	250,000	Roof Assembly with Thermal Resistance as Mandated by Building Code	Roof Assembly with High Efficiency Thermal Resistance Insulation	74,700	0	\$8,600	\$750,000	
Subtotal				74,700	0	\$8,600	\$750,000	
Building Envelope and Mechanical Insulation Total			Subtotal	76,700	1,120	\$9,610	\$754,400	78.5

Electrification Baseline Conditions

Baseline System Conditions

Facility System: Building Condition

Crete-Monee High School was constructed in 2006, with an addition in 2007 (called Bridges). The total facility area is estimated to be about 360,492 square feet. From the natural gas bills provided, the facility's annual natural gas usage is estimated to be about 210,591 therms. We considered a buffer factor in our analysis to accommodate year-to-year weather variation.

Facility System: Building and Mechanical Insulation

The facility's building envelope and mechanical insulation was visually inspected during the site visit, yielding the following findings:

1. The facility had solid brick walls, which would make it difficult to add insulation. As a result, no recommendations are being made.
2. The piping in the building was inspected and relevant measures are recommended.
3. The seams and glass of the windows in the building were inspected, and no measures are deemed necessary.
4. The exterior doors of the building were examined for conditioned air loss and relevant measures are recommended.
5. The roof was assessed and relevant measures are recommended.

Facility System: Domestic Hot Water

Domestic hot water (DHW) for the main facility is provided by (1) 1,600 MBH natural gas boiler and for the Bridges section is provided by (2) 199 MBH natural gas water heaters. For DHW electrification, it is recommended that you replace the current natural gas water heaters with an air source heat pump water heater system.

Facility System: Transportation

According to facility staff, three Driver's Ed passenger vehicles and three shuttle buses are parked at this location. Therefore, an EV analysis has been included for these vehicles.

Facility System: HVAC

The main facility is conditioned by (11) air handling units with hot water heating and chilled water cooling on VAV boxes, and rooftop units with gas heating and DX cooling on VAV boxes. The Bridges section is conditioned by a variable refrigerant flow (VRF) system. The hot water is provided by (2) 14,645 MBH natural gas boilers and the chilled water is provided by (2) 485-tons water-cooled chillers. The HVAC equipment is controlled by a building automation system that is original to the building. For HVAC system electrification, it is recommended that you replace the existing gas HVAC equipment with a ground source heat pump system (GSHP). We also included an air source heat pump (ASHP) system in this report as an alternative for your reference.

Facility System: Lighting

The interior of the facility is illuminated by LED fixtures controlled through a BAS program, except for the auditorium which is on HID fixtures. Similarly, the exterior perimeter lighting is also LED and operated via the BAS.

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

Electrification Infrastructure

Electrification Infrastructure Upgrades

The following opportunities were identified for electrical infrastructure upgrades to your facility needed to support added load of suggested building and transportation electrification measures. While ComEd suggests these upgrades to the following system, it is strongly recommended you work with an electrical designer to investigate the required changes further.

Opportunity at Your Facility: **Upgrade Electric Infrastructure**

Upgrading your electrical infrastructure may be necessary if the load on the system is increased significantly. With electrification, the electric load is expected to increase and it would likely be necessary to upgrade your current electric infrastructure to accommodate this. This might include installing new transformers, main and sub distribution panels, wiring and conduit in the walls and ceilings. The cost shown here is a rough estimate of that upgrade, which is separate from the cost of electrification measures.

Estimated Cost: **\$294,300**

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

ADDITIONAL FUNDING OFFERINGS

Available Funding Offerings

In addition to Energy Efficiency Incentives Incentives, your facility may also be eligible for the following third party funding offerings:

- | | |
|--|---|
| ☒ School Construction Grant | ☒ School Maintenance Grant |
| ☐ Charging Incentive Program | ☒ Illinois Shines Renewable Energy Credits |
| ☐ K-12 Solar Schools Grant | ☐ Cook County Solar Schools Grant |
| ☐ Clean School Bus Program | ☒ Distributed Generation Rebate |
| ☒ The Investment Tax Credit | ☒ The Investment Tax Credit - GSHP |

School Construction Grant

Offering Description:

The School Construction Grant Program (<https://www.isbe.net/Pages/School-Construction.aspx>) contributes to the cost of building or renovating public school buildings, based on enrollment and needs of the district. The program historically has covered between 35% and 75% of the cost to build or renovate buildings. School districts that apply for a grant on or after 6/1/23 must submit a copy of their PSCFA Report.

Funding Opportunity: \$150,000

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William Gumbiner
 Outreach Professional
 (773) 269-4037
william.gumbiner@elevatenp.org

ADDITIONAL FUNDING OFFERINGS

School Maintenance Grant

Offering Description:

The School Maintenance Grant Program (<https://www.isbe.net/Pages/School-Maintenance-Project-Grant.aspx>) is a dollar-for-dollar state matching grant open to school districts, cooperative high schools, vocational centers, and special education cooperatives. Eligible applicants can receive up to \$50,000 to put toward completing proposed maintenance projects. This grant is awarded by school district not individual school and the district must provide matching funds for the project, equal to the awarded grant.

Funding Opportunity: \$50,000

Illinois Shines Renewable Energy Credits

Offering Description:

Illinois Shines (<https://illinoisshines.com/illinois-shines-accepting-new-applications/>) is the brand name of the Adjustable Block Program, a state-administered program for new solar photovoltaic systems. The program provides payments in exchange for 20 years of Renewable Energy Credits (RECs) generated by new PV systems on site. Payments vary depending on the system's size and where it is located.

Funding Opportunity: \$1,928,851

Distributed Generation Rebate

Offering Description:

The Distributed Generation Rebate is an optional ComEd incentive. It is included in the rebate total shown on the "Solar Opportunities" page. You can qualify for this by installing a smart inverter and allowing ComEd to control it for purposes of grid reliability. For more information visit the [Distributed Generation Rebates](#) page

Funding Opportunity: \$528,688

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

ADDITIONAL FUNDING OFFERINGS

The Investment Tax Credit

Offering Description:

The Investment Tax Credit (ITC) is a federal incentive equal to 30% of eligible expenses for qualifying installations and entities. It is included in the rebate total shown on the “Solar Opportunities” page. Through provisions established in the Inflation Reduction Act, tax exempt organizations can take advantage of the tax credits through either direct pay or a transfer of credit. For more information, please visit the [Office of Energy Efficiency & Renewable Energy](#) page.

Funding Opportunity: \$1,898,272

The Investment Tax Credit - GSHP

Offering Description:

The Investment Tax Credit (ITC) is a federal tax credit available up to 49% of eligible expenses for qualifying installations and entities. To be conservative, we considered a 30% credit in our analysis, and it is shown as the incentive on the “EEE” page under Ground Source Heat Pump measure. Through provisions established in the Inflation Reduction Act, tax exempt organizations can take advantage of the tax credits through either direct pay or a transfer of credit. For more information, please visit the White House website([Inflation-Reduction-Act-Guidebook.pdf \(whitehouse.gov\)](#))-Page 14.

Funding Opportunity: \$3,824,200

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

Footnotes

Values rounded for simplicity

The majority of estimated costs in this report are based on the [2025 Illinois Statewide Technical Reference Manual for Energy Efficiency](#).

For the Standard Incentives program, the total incentive paid cannot exceed 90% of the incremental measure cost or 90% of the total project cost

Programmed Start ballasts are recommended for all lighting sensor applications. (i.e. Occupancy Sensors, Daylighting Controls, etc.)

- A** Indicates that the estimated cost of this solution is equal to the incremental cost difference between the energy-efficient equipment and the standard efficiency option.
- B** Product must be listed on DesignLights™ Consortium (DLC) Qualified Products list, available at www.designlights.org.
- C** To realize savings with VSDs, any three-way valve systems must be replaced with two-way valves to allow the flow to modulate at part load. The estimated project cost is for the Variable Speed Drives only and does not account for valve replacements or piping modifications. It is recommended to work with an Energy Efficiency Service Provider or other design consultant to further develop this measure before implementation.
- D** Presented as an alternative to a previous measure and shown for comparison purposes. Please note this recommendation is not included in the totals
- E** For a list of applicable Enhanced Building Control Strategies, please consult the [ComEd Energy Efficiency Program Energy Management System Incentives Worksheet](#).
- F** Building Energy Management System Prices vary widely depending on facility type and equipment. The cost value listed is an average of many different building types, to get a more specific cost value, please consult a vendor.
- G** Evaporator Fan Motors are concealed and assumed to be Shaded-Pole type. If motors are Electronically Commutated, there is still an incentive to retrofit with fan controls.
- H** Discounts are available through participating distributors in the Illinois Commercial Food Services Program. Incentive is in the form of a discounted product cost provided at the time of purchase. Learn more and find a list of participating distributors at il-foodservicerebates.com
- I** Estimated based on the doors by the cafeteria.
- J** Incentives for these types of fuel-switching measures are not currently available but may be available in the future. Please consult with your Outreach Professional to determine eligibility.
- K** Indicates that the estimated cost of this solution is equal to the incremental cost difference between the energy-efficient equipment and the standard efficiency option. The total project cost for this measure is \$12,747,000
- L** Discounts are available through participating distributors in the Instant Discounts Program. Incentive is in the form of a discounted product cost provided at the time of purchase. Learn more and find a list of participating distributors at ComEd.com/InstantDiscounts.
- M** Indicates that the estimated cost of this solution is equal to the incremental cost difference between the energy-efficient equipment and the standard efficiency option. The total project cost for this measure is \$10,814,000



= Does Not Payback



= Project will only result in carbon emission savings. Total utility charges may increase as a result of the project.

Electricity Cost = \$0.1153/kWh (provided by the customer)

Natural Gas Cost = \$0.706/therm (provided by the customer)

Water Cost = \$0.00470/gallon (City of Chicago water and sewer rate effective 6/1/2024)

APPLICATION PROCESS

1**CHECK PROJECT AND EQUIPMENT ELIGIBILITY**

- Project must be a new improvement at an existing facility that results in a permanent reduction in electrical usage (kWh).
- All installed equipment must meet or exceed the ComEd Energy Efficiency Program incentive specifications and be installed in facilities served by ComEd. Customers must have a valid ComEd account number on a ComEd non-residential rate.

2**SUBMIT A PRE-APPLICATION (IF REQUIRED)**

- A pre-application is required for certain projects, including all Custom projects. A pre-application is not required for a Standard project when requesting incentives of less than \$1,000 or DX tune-up incentives.
- If your Standard project requires a pre-application, complete and submit the ComEd Energy Efficiency Program Standard Application and applicable Incentive Worksheets. If your project requires pre-application, you'll need to wait to start your project until you receive a reservation letter.
- If you are applying for custom incentives, complete and submit a Custom Application. Wait to start your project until you receive a reservation letter.
- Once you receive your reservation letter, incentive funds for your project will be set aside for 90 days or until the end of the program year, whichever comes first.
- A pre-installation inspection may be required. If so, we will contact you to schedule the inspection.

3**INSTALL EQUIPMENT OR PERFORM PROJECT WORK**

- The incentive reservation allows you 90 days to complete your project. Contact the ComEd Energy Efficiency Program team if you think your project will require more than 90 days.
- Verify that the equipment to be installed meets or exceeds the specifications found on the ComEd Energy Efficiency Program Incentive Worksheet.

4**SUBMIT A FINAL APPLICATION**

- Submit a Final Application as soon as your project is completed, but no more than 60 days after completion. Final Applications received more than 60 days after completion will be rejected.
- The ComEd Energy Efficiency Program team will review your Final Application. You may be contacted during the final review to schedule a post-installation inspection.

5**RECEIVE INCENTIVE PAYMENT**

- The incentive check will be sent four to six weeks after your complete Final Application is submitted.

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

ENERGY MANAGEMENT RESOURCES

Business Energy Analyzer

The ComEd Business Energy Analyzer is a free tool that allows non-residential customers to analyze their facility's energy usage, learn how the facility's energy-use patterns compare with similar facilities, and track energy usage savings before and after implementing energy efficiency project. To sign up, please visit www.ComEd.com/BEA and register using the facility's ComEd account number and zip code.

Voluntary Load Reduction

The ComEd Voluntary Load Reduction (VLR) program offers all non-residential customers financial rewards for reducing electricity use during peak periods on the grid. This program is strictly voluntary and there are never any penalties. Incentive levels and the frequency of VLR events will vary depending upon market and/or system conditions. To sign up, please email VLR@ComEd.com. For more information, please visit www.ComEd.com/VLR.

Energy Usage Data System

Building owners, property managers, and benchmarking representatives can use the Energy Usage Data System (EUDS) tool to help retrieve the aggregate energy usage data of their single-tenant and multi-tenant (4 tenants or more) commercial, residential and industrial buildings. EUDS enables users to view whole building energy usage data per month, send usage data to ENERGY STAR® Portfolio Manager® and retrieve building performance metrics from ENERGY STAR Portfolio Manager. Please note that this tool can be used to meet local benchmarking ordinances. Learn more at www.ComEd.com/EnergyUsageData.

Electric Vehicles

Driving an electric vehicle can be three to five times cheaper than gasoline and diesel-powered cars, depending on your local gasoline and electric rates. If your facility is considering adding an electric vehicle infrastructure, ComEd has tools to help you determine the savings, benefits & incentives associated with electric vehicles. To learn more, please visit www.ComEd.com/EV.

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org

DISCLAIMER

All values shown in this report are estimates, including potential incentive amounts. Further development and cost analysis of the opportunities are recommended prior to investment. The incentive amounts and application approvals are subject to the terms and conditions of the ComEd Energy Efficiency Program. This letter in no way implies approval of incentive amounts or applications or serves as a pre-approval.

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William Gumbiner
Outreach Professional
(773) 269-4037
william.gumbiner@elevatenp.org