

# Carbon Free Assessment

Prepared for  
***Thornwood High School***

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## EXECUTIVE SUMMARY

### Financial Benefit

We estimate your Facility has the potential for:

|                                                   |                       |                  |
|---------------------------------------------------|-----------------------|------------------|
|                                                   | <b>Annual Savings</b> | <b>\$143,466</b> |
| <b>ComEd® Energy Efficiency Program Incentive</b> |                       | <b>\$465,670</b> |

### Annual Energy Benefit

Before

5,774,400 kWh/yr

**Up to 13% Energy Savings**

**After**

5,016,700 kWh/yr

**Up to 757,700 kWh Reduced**

### Annual Environmental Benefit

Can Reduce Your Carbon Footprint by up to...

**3,897 Metric Tons of CO<sub>2</sub> Equivalent**  
**or 938 Cars off the Road Annually**

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# Public School Assessment

## Financial Benefit by Simple Payback

### Estimated <2 Year Payback Opportunities

| Measure                   | Annual Cost Savings | Project Cost    | Incentive      | Simple Payback (Years) |
|---------------------------|---------------------|-----------------|----------------|------------------------|
| Install Lighting Controls | \$1,890             | \$10,600        | \$9,400        | 0.6                    |
| <b>Subtotal</b>           | <b>\$1,890</b>      | <b>\$10,600</b> | <b>\$9,400</b> | <b>0.6</b>             |

### Estimated 2-5 Year Payback Opportunities

| Measure                              | Annual Cost Savings | Project Cost    | Incentive      | Simple Payback (Years) |
|--------------------------------------|---------------------|-----------------|----------------|------------------------|
| Install Chilled Water Reset Controls | \$980               | \$6,000         | \$4,000        | 2.0                    |
| Replace Evaporator Fan Motors        | \$690               | \$2,340         | \$450          | 2.7                    |
| Retrofit Pool Pumps                  | \$1,700             | \$9,000         | \$500          | 5.0                    |
| <b>Subtotal</b>                      | <b>\$3,370</b>      | <b>\$17,340</b> | <b>\$4,950</b> | <b>3.7</b>             |

### Estimated >5 Year Payback Opportunities

| Measure                                   | Annual Cost Savings | Project Cost     | Incentive       | Simple Payback (Years) |
|-------------------------------------------|---------------------|------------------|-----------------|------------------------|
| Install Building Energy Management System | \$29,400            | \$390,000        | \$90,000        | 10.2                   |
| Install Commercial Clothes Washer         | \$20                | \$380            | \$20            | 18.0                   |
| Replace Metal Halide Lighting             | \$510               | \$9,000          | \$4,500         | 8.8                    |
| <b>Subtotal</b>                           | <b>\$29,930</b>     | <b>\$399,380</b> | <b>\$94,520</b> | <b>10.2</b>            |

*For the Standard Incentives program, the total incentive paid cannot exceed 100 percent of the incremental measure cost and 100 percent of the total project cost.*

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## Public School Assessment

### Instant Discount Incentives

| Measure            | Annual Cost Savings | Project Cost     | Incentive       | Simple Payback (Years) |
|--------------------|---------------------|------------------|-----------------|------------------------|
| Relamp T8 Lighting | \$38,500            | \$180,000        | \$48,000        | 3.4                    |
| <b>Subtotal</b>    | <b>\$38,500</b>     | <b>\$180,000</b> | <b>\$48,000</b> | <b>3.4</b>             |

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 | \$7,060             | \$5,400         | \$0              | 0.8                    |
| Install Piping Insulation | \$2,788             | \$5,400         | \$800            | 1.6                    |
| Install Roof Insulation   | \$4,420             | \$70            | \$308,000        | DNP                    |
| <b>Subtotal</b>           | <b>\$14,268</b>     | <b>\$10,870</b> | <b>\$308,800</b> | <b>- 20.9</b>          |

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 ENERGY STAR Combination Oven   | - \$3,172           | \$300              | \$0              | DNP                    |
| Install Ground Source Heat Pump        | \$58,080            | \$8,738,400        | \$0              | DNP                    |
| Install ENERGY STAR Electric Vat Fryer | - \$346             | \$1,000            | \$0              | DNP                    |
| Install ENERGY STAR Griddle            | - \$654             | \$2,100            | \$0              | DNP                    |
| <b>Subtotal</b>                        | <b>\$53,908</b>     | <b>\$8,741,800</b> | <b>\$0</b>       | <b>162.2</b>           |
| <b>ASSESSMENT TOTAL</b>                | <b>\$141,866</b>    | <b>\$9,359,990</b> | <b>\$465,670</b> | <b>62.7</b>            |

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

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## OPERATIONAL OPPORTUNITIES

*Operational Opportunities offer simple, effective ways to reduce energy costs at your facility. The following recommendations are based on meter data and engineer observations during the site visit. While the following opportunities identified do not offer ComEd incentives, they have no cost and can provide immediate energy savings when implemented.*

### Optimization Opportunities

#### Repair Photocells

Many of the exterior lights appear to have defective controls and are on during daytime hours.

**Estimated Electric Savings (kWh/yr): 15,500**

**Estimated Cost Savings (\$/yr): \$1,600**

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## ADDITIONAL PROGRAM OFFERINGS

### Available Offerings

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

- |                                                                            |                                                         |
|----------------------------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> <b>Strategic Energy Management</b>     | <input type="checkbox"/> <b>Retro-Commissioning</b>     |
| <input checked="" type="checkbox"/> <b>Building Operator Certification</b> | <input type="checkbox"/> <b>Industrial Systems</b>      |
| <input type="checkbox"/> <b>New Construction</b>                           | <input type="checkbox"/> <b>Multi-Family Assessment</b> |

### Strategic Energy Management

#### Offering Description:

*Strategic Energy Management is a holistic program that systematically identifies opportunities to save energy helping customers to develop their own energy management capabilities in a peer learning environment.*

#### Opportunity at Your Facility:

By efficiently managing your facility's energy use and implementing simple, low-cost changes, Strategic Energy Management can lower your energy consumption and operating costs while boosting your bottom line.

At no cost to you, ComEd will assign an energy coach and support team who, perform an energy assessment of your site, model and monitor your energy consumption over the course of a year, identify operational changes and behaviors that can help reduce your energy bill, provide materials and training to help your employees save energy while on the job.

The year-long engagement includes a series of workshops and monthly coaching sessions focused on identifying and implementing changes. For participating, 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 incentives.

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## ADDITIONAL PROGRAM OFFERINGS

### 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](http://BOCCentral.org/ComEd) for information on Illinois tuition and training schedules. ComEd customers are eligible for a partial tuition rebate upon completion of training.*

**Opportunity at Your Facility:**

Building Operator Certification (BOC) is a training and certification for commercial building operators. The curriculum teaches participants how to improve building comfort and efficiency by optimizing the building's systems.

ComEd's BOC Pilot offers partial participant tuition-reimbursement for ComEd customers who complete the curriculum. The goal is to implement energy-saving practices at this location. BOC training has two curricula: BOC Level-I and BOC Level-II. Both curricula require a time commitment for class training and assigned projects spread over several months.

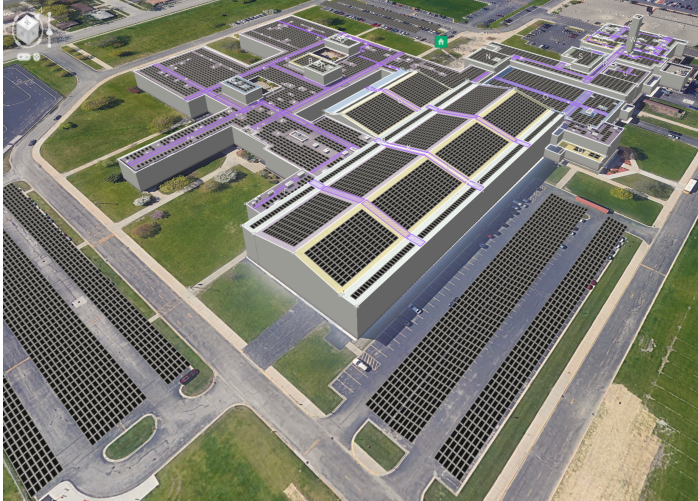
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# SOLAR OPPORTUNITIES

The solar production potential of the facility's rooftop has been evaluated and it was determined that there is enough area with adequate sunlight to be considered a good candidate for solar deployment. Below please find an aerial view of the facility highlighting where solar panels would be most productive on the rooftop along with the economics of implementing this type of project.



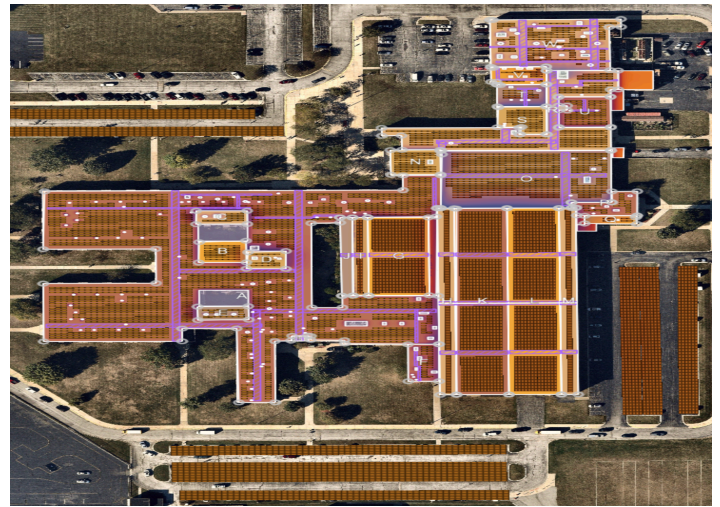
## Project Details

Estimated Solar Capacity: **3,900 kW**

Estimated Annual Generation: **4,837,900 kWh**

Estimated # of Solar Panels: **7,700**

Annual Energy Use Offset: **80%**



## Financial Details

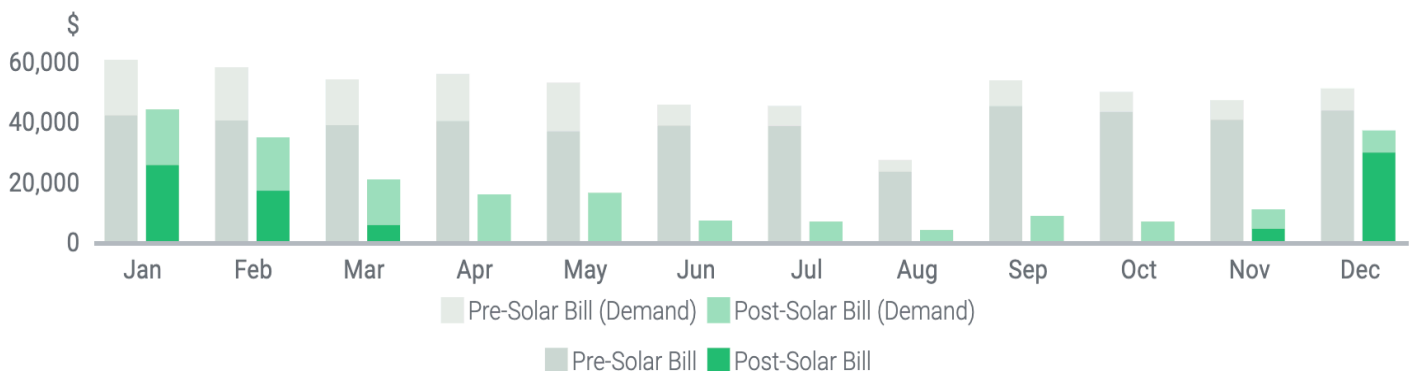
Estimated Project Cost: **\$8,924,100**

Estimated Incentive: **\$6,253,814**

Estimated Simple Payback: **5.5 Years**

Lifetime Savings: **\$12,095,000**

## MONTHLY UTILITY BILL SAVINGS



The calculation above is based on a type of solar panel with an 18% efficiency and 5 feet 5 inches by 3 feet 3 inches in size, with a cost based on the Illinois Power Agency cost curve for solar energy systems.

Learn more about the benefits of solar energy and adjust your own design at [ComEd.com/Solar](http://ComEd.com/Solar).

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# WELL CERTIFICATION

The WELL Building Standard™ provides evidence-based applications that could transform healthy learning environments and improve the wellness and well-being of its students, faculties and supporting staff members. promoting physical fitness, providing mental health support and education, reducing air and noise pollution, and engaging teachers and community members. Through these interventions, educational spaces can create an environment that optimizes student well-being and academic performance, allowing them to reach their full potential.

**Total Estimated Cost to Achieve Pre-Requisites \$0**

**Total Estimated Cost to Achieve Certification \$9,250**

| Air |   |   |     | 0                                    |
|-----|---|---|-----|--------------------------------------|
| Y   | N |   |     |                                      |
|     | N | P | A01 | Air Quality                          |
| Y   |   | P | A02 | Smoke-Free Environment               |
| Y   |   | P | A03 | Ventilation Design                   |
|     | N | P | A04 | Construction Pollution Management    |
|     | N | O | A05 | Enhanced Air Quality                 |
|     | N | O | A06 | Enhanced Ventilation Design          |
|     | N | O | A07 | Operable Windows                     |
|     | N | O | A08 | Air Quality Monitoring and Awareness |
|     | N | O | A09 | Pollution Infiltration Management    |
|     | N | O | A10 | Combustion Minimization              |
|     | N | O | A11 | Source Separation                    |
|     | N | O | A12 | Air Filtration                       |
|     | N | O | A13 | Enhanced Supply Air                  |
|     | N | O | A14 | Microbe and Mold Control             |

## Feature Description

The Air features in WELL provide an improved, comprehensive approach to address problems of indoor air Quality and its effects on student health.

Questionnaire was taken from another facility and adjusted from information gathered onsite. The list shown is for WELL 2.0 a much more robust and detailed certification. This location opted for the WELL Health and Safety which only uses specific measures from WELL 2.0 A01.5 (not all air pollutants monitored that are required) A02.1 A03.1 A13.1 (It appears as if this measure would qualify but, at present, unknown) WELL Health and Safety cost a minimum of \$3,250 per building to certify. Some measures may require additional cost to qualify. It appears the facility qualifies for 12 of the opportunities, 15 are needed to certify.

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**

# WELL CERTIFICATION

| Water |   |   | 0                                     |
|-------|---|---|---------------------------------------|
| Y     | N |   |                                       |
|       | N | P | W01 Water Quality Indicators          |
|       | N | P | W02 Drinking Water Quality            |
|       | N | P | W03 Basic Water Management            |
|       | N | O | W04 Enhanced Water Quality            |
|       | N | O | W05 Drinking Water Quality Management |
|       | N | O | W06 Drinking Water Promotion          |
|       | N | O | W07 Moisture Management               |
|       | N | O | W08 Hygiene Support                   |
|       | N | O | W09 β Onsite Non-Potable Water Reuse  |

| Feature Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>The Water features in WELL provide an improved, comprehensive approach to address problems of water quality and its effects on student health.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>The list shown is for WELL 2.0 a much more robust and detailed certification. This location opted for the WELL Health and Safety which only uses specific measures from WELL 2.0: W03.2 (unknown) W07.3 (no known official process) W08.4 (Signage was not observed at all locations) WELL Health and Safety cost a minimum of \$3,250 per building to certify. Some measures may require additional cost to qualify. It appears the facility qualifies for 12 of the opportunities, 15 are needed to certify. W03.2 and W08.4 are being recommended. They are policy changes and an assumed \$1000 per measure is being used.</i> |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$2,000**



# WELL CERTIFICATION

## Nourishment

0

| Y | N |   |                               |
|---|---|---|-------------------------------|
|   | N | P | N01 Fruits and Vegetables     |
| Y |   | P | N02 Nutritional Transparency  |
|   | N | O | N03 Refined Ingredients       |
|   | N | O | N04 Food Advertising          |
|   | N | O | N05 Artificial Ingredients    |
|   | N | O | N06 Portion Sizes             |
|   | N | O | N07 Nutrition Education       |
|   | N | O | N08 Mindful Eating            |
|   | N | O | N09 Special Diets             |
|   | N | O | N10 Food Preparation          |
|   | N | O | N11 Responsible Food Sourcing |
|   | N | O | N12 Food Production           |
|   | N | O | N13 Local Food Environment    |
|   | N | O | N14 β Red and Processed Meats |

## Feature Description

*The Nourishment features in WELL provide an improved, comprehensive approach to address problems of nutrition quality and its effects on student health.*

*The list shown is for WELL 2.0 a much more robust and detailed certification. This location opted for the WELL Health and Safety which only uses specific measures from WELL 2.0. N02.1 (unknown assumed yes) WELL Health and Safety cost a minimum of \$3,250 per building to certify. Some measures may require additional cost to qualify. It appears the facility qualifies for 12 of the opportunities, 15 are needed to certify.*

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**

# WELL CERTIFICATION

| Light |   |   | 0                                |
|-------|---|---|----------------------------------|
| Y     | N |   |                                  |
|       | N | P | L01 Light Exposure               |
|       | N | P | L02 Visual Lighting Design       |
|       | N | O | L03 Circadian Lighting Design    |
|       | N | O | L04 Electric Light Glare Control |
|       | N | O | L05 Daylight Design Strategies   |
|       | N | O | L06 Daylight Simulation          |
|       | N | O | L07 Visual Balance               |
|       | N | O | L08 Electric Light Quality       |
|       | N | O | L09 Occupant Lighting Control    |

| Feature Description                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>The Light features in WELL provide an improved, comprehensive approach to address problems of light quality and its effects on student health.</i> |
| <i>None for WELL Health and Safety</i>                                                                                                                |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**



# WELL CERTIFICATION

| Movement |   |   |     | 0                                      |
|----------|---|---|-----|----------------------------------------|
| Y        | N |   |     |                                        |
|          | N | P | V01 | Active Buildings and Communities       |
|          | N | P | V02 | Ergonomic Workstation Design           |
|          | N | O | V03 | Circulation Network                    |
|          | N | O | V04 | Facilities for Active Occupants        |
|          | N | O | V05 | Site Planning and Selection            |
|          | N | O | V06 | Physical Activity Opportunities        |
|          | N | O | V07 | Active Furnishings                     |
|          | N | O | V08 | Physical Activity Spaces and Equipment |
|          | N | O | V09 | Physical Activity Promotion            |
|          | N | O | V10 | Self-Monitoring                        |
|          | N | O | V11 | β Ergonomics Programming               |

| Feature Description                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Movement features promote active living and discourage sedentary behaviors, implemented through environmental design strategies, programs, and policies.</i> |
| <i>None for WELL Health and Safety</i>                                                                                                                          |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**

# WELL CERTIFICATION

## Thermal Comfort

| Y | N |   |                                 |
|---|---|---|---------------------------------|
|   | N | P | T01 Thermal Performance         |
|   | N | O | T02 Verified Thermal Comfort    |
|   | N | O | T03 Thermal Zoning              |
|   | N | O | T04 Individual Thermal Control  |
|   | N | O | T05 Radiant Thermal Comfort     |
|   | N | O | T06 Thermal Comfort Monitoring  |
|   | N | O | T07 Humidity Control            |
|   | N | O | T08 β Enhanced Operable Windows |
|   | N | O | T09 β Outdoor Thermal Comfort   |

## Feature Description

*The Thermal Comfort features in WELL provide an improved, comprehensive approach to address problems of thermal comfort and its effects on student health.*

**Estimated Cost to Achieve Pre-Requisite**

**Estimated Cost to Achieve Certification**

# WELL CERTIFICATION

| Sound |   |   |     | 0                             |
|-------|---|---|-----|-------------------------------|
| Y     | N |   |     |                               |
|       | N | P | S01 | Sound Mapping                 |
|       | N | O | S02 | Maximum Noise Levels          |
|       | N | O | S03 | Sound Barriers                |
|       | N | O | S04 | Reverberation Time            |
|       | N | O | S05 | Sound Reducing Surfaces       |
|       | N | O | S06 | Minimum Background Sound      |
|       | N | O | S07 | β Impact Noise Management     |
|       | N | O | S08 | β Enhanced Audio Devices      |
|       | N | O | S09 | β Hearing Health Conservation |

| Feature Description                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>The Sound feature also addresses noise pollution by ensuring that indoor spaces are equipped with acoustics that support the learning environment and influence the number of days missed at school.</i> |
| <i>None for WELL Health and Safety</i>                                                                                                                                                                      |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**

# WELL CERTIFICATION

| Materials |   |   | 2                                           |
|-----------|---|---|---------------------------------------------|
| Y         | N |   |                                             |
|           | N | P | X01 Material Restrictions                   |
|           | N | P | X02 Interior Hazardous Materials Management |
|           | N | P | X03 CCA and Lead Management                 |
|           | N | O | X04 Site Remediation                        |
|           | N | O | X05 Enhanced Material Restrictions          |
|           | N | O | X06 VOC Restrictions                        |
|           | N | O | X07 Materials Transparency                  |
|           | N | O | X08 Materials Optimization                  |
|           | N | O | X09 Waste Management                        |
|           | N | O | X10 Pest Management and Pesticide Use       |
| Y         |   | O | X11 Cleaning Products and Protocols         |
|           | N | O | X12 β Contact Reduction                     |

| Feature Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Classrooms or communal spaces that have direct access to sunlight, green walls, natural materials or smart space design may provide better outcomes for students.</i>                                                                                                                                                                                                                                                                                                                                                                    |
| <i>The list shown is for WELL 2.0 a much more robust and detailed certification. This location opted for the WELL Health and Safety which only uses specific measures from WELL 2.0. X11.1 X11.2 X12.1 (not all steps available to comply with measure) X12.2 (not all steps available to comply with measure) WELL Health and Safety cost a minimum of \$3,250 per building to certify. Some measures may require additional cost to qualify. It appears the facility qualifies for 12 of the opportunities, 15 are needed to certify.</i> |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**

# WELL CERTIFICATION

| Mind |   |   | 0                             |
|------|---|---|-------------------------------|
| Y    | N |   |                               |
|      | N | P | M01 Mental Health Promotion   |
|      | N | O | M02 Nature and Place          |
|      | N | O | M03 Mental Health Services    |
|      | N | O | M04 Mental Health Education   |
|      | N | O | M05 Stress Management         |
|      | N | O | M06 Restorative Opportunities |
|      | N | O | M07 Restorative Spaces        |
|      | N | O | M08 Restorative Programming   |
|      | N | O | M09 Enhanced Access to Nature |
|      | N | O | M10 Tobacco Cessation         |
|      | N | O | M11 Substance Use Services    |

| Feature Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Schools have the opportunity to positively impact students' mental health, physical health and academic performance through educational materials and by incorporating natural elements into the space.</i>                                                                                                                                                                                                                                                                |
| <i>The list shown is for WELL 2.0 a much more robust and detailed certification. This location opted for the WELL Health and Safety which only uses specific measures from WELL 2.0 M03.4 (contact was unsure if district complied with measure) WELL Health and Safety cost a minimum of \$3,250 per building to certify. Some measures may require additional cost to qualify. It appears the facility qualifies for 12 of the opportunities, 15 are needed to certify.</i> |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$0**

# WELL CERTIFICATION

| Community |   |   |     | 6                                          |
|-----------|---|---|-----|--------------------------------------------|
| Y         | N |   |     |                                            |
|           | N | P | C01 | Health and Well-Being Promotion            |
|           | N | P | C02 | Integrative Design                         |
| Y         |   | P | C03 | Emergency Preparedness                     |
|           | N | P | C04 | Occupant Survey                            |
|           | N | O | C05 | Enhanced Occupant Survey                   |
|           | N | O | C06 | Health Services and Benefits               |
|           | N | O | C07 | Enhanced Health and Well-Being Promotion   |
|           | N | O | C08 | New Parent Support                         |
|           | N | O | C09 | New Mother Support                         |
|           | N | O | C10 | Family Support                             |
|           | N | O | C11 | Civic Engagement                           |
|           | N | O | C12 | Diversity and Inclusion                    |
|           | N | O | C13 | Accessibility and Universal Design         |
| Y         |   | O | C14 | Emergency Resources                        |
| Y         |   | O | C15 | β Emergency Resilience and Recovery        |
|           | N | O | C16 | β Housing Equity                           |
|           | N | O | C17 | β Responsible Labor Practices              |
|           | N | O | C18 | β Support for Victims of Domestic Violence |

| Feature Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>The Community feature aims to support access to essential healthcare, workplace health promotion and establish inclusive, integrated community through social equity, civic engagement and accessible design.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <i>Questionnaire was taken from another facility and adjusted from information The list shown is for WELL 2.0 a much more robust and detailed certification. This location opted for the WELL Health and Safety which only uses specific measures from WELL 2.0 C02.2 (not known) C03.1 C06.1 C06.3 C06.4 C14.1 C15.1 C15.2 C15.3 C15.4 WELL Health and Safety cost a minimum of \$3,250 per building to certify. Some measures may require additional cost to qualify. It appears the facility qualifies for 12 of the opportunities, 15 are needed to certify. C06.1 is being recommended. It is a policy change and an assumed \$1000 per measure is being used.</i> |

**Estimated Cost to Achieve Pre-Requisite \$0**

**Estimated Cost to Achieve Certification \$1,000**

## Energy Efficiency Measure Details

### Lighting Solutions

#### Replace Metal Halide Lighting

Replace Metal Halide Fixtures with LED Fixtures, which are more efficient and provide comparable lighting levels

| Location                      | Qty | Existing                                    | Proposed <sup>A</sup>            | Estimated Energy Savings (kWh/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) | Payback (Years) |     |
|-------------------------------|-----|---------------------------------------------|----------------------------------|-----------------------------------|---------------------------|---------------------|--------------------------|-----------------|-----|
| Stadium                       | 8   | 1000W High Pressure Sodium Fixtures (1100W) | 300W LED Outdoor Fixtures (300W) | 5,100                             | \$510                     | \$9,000             | \$4,500                  | 8.8             |     |
| Replace Metal Halide Lighting |     |                                             |                                  | Subtotal                          | 5,100                     | \$510               | \$9,000                  | \$4,500         | 8.8 |

#### 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) |
|---------------------------|-------|--------------------------------|---------------------------|-----------------------------------|---------------------------|---------------------|--------------------------|-----------------|
| Utility Rooms             | 50    | 36W LED TLED Fixtures (36W)    | Install Occupancy Sensors | 890                               | \$90                      | \$500               | \$400                    | 1.1             |
| Classrooms                | 1,000 | 36W LED Troffer Fixtures (36W) | Install Occupancy Sensors | 17,800                            | \$1,800                   | \$10,100            | \$9,000                  | 0.6             |
| Install Lighting Controls |       |                                | Subtotal                  | 18,690                            | \$1,890                   | \$10,600            | \$9,400                  | 0.6             |

## Energy Efficiency Measure Details

### Lighting Solutions

#### Relamp T8 Lighting

Relamp T8 Fluorescent Fixtures with Tubular LED (TLED) lamps, which are more efficient than Standard Fluorescent T8 Lamps and provide comparable light levels

| Location                        | Qty   | Existing                                                      | Proposed <sup>B</sup>  | Estimated Energy Savings (kWh/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) <sup>C</sup> | Payback (Years) |
|---------------------------------|-------|---------------------------------------------------------------|------------------------|-----------------------------------|---------------------------|---------------------|---------------------------------------|-----------------|
| Throughout Facility             | 2,400 | 4-Lamp 4-ft F32 T8 with Standard BF Electronic Ballast (114W) | LED Bypass Lamps (36W) | 385,300                           | \$38,500                  | \$180,000           | \$48,000                              | 3.4             |
| Relamp T8 Lighting              |       |                                                               | Subtotal               | 385,300                           | \$38,500                  | \$180,000           | \$48,000                              | 3.4             |
| <b>Lighting Solutions Total</b> |       |                                                               | <b>Subtotal</b>        | <b>409,090</b>                    | <b>\$40,900</b>           | <b>\$199,600</b>    | <b>\$61,900</b>                       | <b>3.4</b>      |



## Energy Efficiency Measure Details

### HVAC Solutions

#### Install Chilled Water Reset Controls

Install chilled water reset controls on existing chillers to allow them to operate at higher chilled water temperatures during periods of low cooling loads

| Location                             | Qty | Existing                                                         | Proposed                             | Estimated Energy Savings (kWh/Yr) | Estimated Energy Savings (Therm/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) | Payback (Years) |
|--------------------------------------|-----|------------------------------------------------------------------|--------------------------------------|-----------------------------------|-------------------------------------|---------------------------|---------------------|--------------------------|-----------------|
| Outside                              | 2   | 400 Ton Air Cooled Chillers without Chilled Water Reset Controls | Install Chilled Water Reset Controls | 9,800                             | 0                                   | \$980                     | \$6,000             | \$4,000                  | 2.0             |
| Install Chilled Water Reset Controls |     |                                                                  | Subtotal                             | 9,800                             | 0                                   | \$980                     | \$6,000             | \$4,000                  | 2.0             |

#### Install Building Energy Management System

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

| Location                                  | Size (sqft) | Existing                                           | Proposed <sup>D</sup>                                                                          | Estimated Energy Savings (kWh/Yr) | Estimated Energy Savings (Therm/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) <sup>E</sup> | Estimated Incentive (\$) | Payback (Years) |
|-------------------------------------------|-------------|----------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------|---------------------------|----------------------------------|--------------------------|-----------------|
| Entire Facility                           | 300,000     | Digital Building Automation System (>15 years old) | Install a Modern Building Energy Management System with at least 6 Enhanced Control Strategies | 246,000                           | 7,000                               | \$29,400                  | \$390,000                        | \$90,000                 | 10.2            |
| Install Building Energy Management System |             |                                                    | Subtotal                                                                                       | 246,000                           | 7,000                               | \$29,400                  | \$390,000                        | \$90,000                 | 10.2            |

|                             |                 |                |              |                 |                  |                 |            |
|-----------------------------|-----------------|----------------|--------------|-----------------|------------------|-----------------|------------|
| <b>HVAC Solutions Total</b> | <b>Subtotal</b> | <b>255,800</b> | <b>7,000</b> | <b>\$30,380</b> | <b>\$396,000</b> | <b>\$94,000</b> | <b>9.9</b> |
|-----------------------------|-----------------|----------------|--------------|-----------------|------------------|-----------------|------------|

## Energy Efficiency Measure Details

### Refrigeration Solutions

#### Replace Evaporator Fan Motors

Replace existing standard efficiency shaded pole evaporator fan motor with Electronically Commutated (EC) or Q-Sync motors

| Location                             | Qty | Existing <sup>F</sup>                               | Proposed                                                                      | Estimated Energy Savings (kWh/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) | Payback (Years) |
|--------------------------------------|-----|-----------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------|---------------------------|---------------------|--------------------------|-----------------|
| Cafeteria                            | 2   | 1/15 Horsepower Shaded Pole Motors with No Controls | 1/15 Horsepower Electronically Commutated Motors with Evaporator Fan Controls | 2,800                             | \$280                     | \$940               | \$180                    | 2.7             |
| Kitchen                              | 3   | 1/15 Horsepower Shaded Pole Motors with No Controls | 1/15 Horsepower Electronically Commutated Motors with Evaporator Fan Controls | 4,100                             | \$410                     | \$1,400             | \$270                    | 2.8             |
| Replace Evaporator Fan Motors        |     |                                                     | Subtotal                                                                      | 6,900                             | \$690                     | \$2,340             | \$450                    | 2.7             |
| <b>Refrigeration Solutions Total</b> |     |                                                     | <b>Subtotal</b>                                                               | <b>6,900</b>                      | <b>\$690</b>              | <b>\$2,340</b>      | <b>\$450</b>             | <b>2.7</b>      |

## Energy Efficiency Measure Details

### VSD Solutions

#### Retrofit Pool Pumps

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 Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) | Payback (Years) |
|----------------------------|-----|------------------------------------------------------|-----------------------------------------------|-----------------------------------|---------------------------|---------------------|--------------------------|-----------------|
| Utility Room               | 1   | 5 HP Pool Pump without Variable Speed Drive Controls | Add Variable Speed Drive Controls to the Pump | 16,600                            | \$1,700                   | \$9,000             | \$500                    | 5.0             |
| Retrofit Pool Pumps        |     |                                                      | Subtotal                                      | 16,600                            | \$1,700                   | \$9,000             | \$500                    | 5.0             |
| <b>VSD Solutions Total</b> |     |                                                      | <b>Subtotal</b>                               | <b>16,600</b>                     | <b>\$1,700</b>            | <b>\$9,000</b>      | <b>\$500</b>             | <b>5.0</b>      |

## Energy Efficiency Measure Details

### Special Purpose Equipment Solutions

#### Install Commercial Clothes Washer

Install a new ENERGY STAR rated electric commercial clothes washer

| Location                                         | Qty | Existing                                                 | Proposed                                         | Estimated Energy Savings (kWh/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) | Payback (Years) |
|--------------------------------------------------|-----|----------------------------------------------------------|--------------------------------------------------|-----------------------------------|---------------------------|---------------------|--------------------------|-----------------|
| Laundry Room                                     | 1   | Standard Efficiency Top-Loaded Commercial Clothes Washer | ENERGY STAR Top-Loaded Commerical Clothes Washer | 180                               | \$20                      | \$380               | \$20                     | 18.0            |
| Install Commercial Clothes Washer                |     |                                                          | Subtotal                                         | 180                               | \$20                      | \$380               | \$20                     | 18.0            |
| <b>Special Purpose Equipment Solutions Total</b> |     |                                                          | <b>Subtotal</b>                                  | <b>180</b>                        | <b>\$20</b>               | <b>\$380</b>        | <b>\$20</b>              | <b>18.0</b>     |

## 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**

| Location                  | length(ft) | Existing                         | Proposed                  | Estimated Energy Savings (kWh/Yr) | Estimated Energy Savings (Therm/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Estimated Incentive (\$) | Payback (Years) |
|---------------------------|------------|----------------------------------|---------------------------|-----------------------------------|-------------------------------------|---------------------------|---------------------|--------------------------|-----------------|
| Hallway                   | 24         | External Doors with Visible Gaps | Install Weather Stripping | 53,600                            | 2,500                               | \$7,060                   | \$5,400             | \$0                      | 0.8             |
| Install Weather Stripping |            |                                  | Subtotal                  | 53,600                            | 2,500                               | \$7,060                   | \$5,400             | \$0                      | 0.8             |

### 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 (\$) <sup>G</sup> | Estimated Incentive (\$) | Payback (Years) |
|---------------------------|-----|------------------------------------------------------------------|-----------------------------------------------|-----------------------------------|-------------------------------------|---------------------------|----------------------------------|--------------------------|-----------------|
| Mechanical Room           | 200 | 200-ft Uninsulated Hydronic Hot Water Pipe with 12-inch Diameter | Install 2-inch Pipe Insulation (R-Value 3.25) | 0                                 | 4,100                               | \$2,788                   | \$5,400                          | \$800                    | 1.6             |
| Install Piping Insulation |     |                                                                  | Subtotal                                      | 0                                 | 4,100                               | \$2,788                   | \$5,400                          | \$800                    | 1.6             |

## Building Envelope and Mechanical Insulation

### Install Roof Insulation

Install or replace Roof Insulation to improve building envelope and reduce unnecessary HVAC energy use

| Location                                                 | Size<br>(sqft) | Existing                                                                 | Proposed                                                               | Estimated<br>Energy Savings<br>(kWh/Yr) | Estimated<br>Energy Savings<br>(Therm/Yr) | Estimated<br>Savings (\$/Yr) | Estimated<br>Cost (\$) | Estimated<br>Incentive (\$) | Payback<br>(Years) |
|----------------------------------------------------------|----------------|--------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-------------------------------------------|------------------------------|------------------------|-----------------------------|--------------------|
| MainRooftop                                              | 220,000        | Roof Assembly with Thermal<br>Resistance as Mandated by<br>Building Code | Roof Assembly with High<br>Efficiency Thermal<br>Resistance Insulation | 0                                       | 6,500                                     | \$4,420                      | \$70                   | \$308,000                   | DNP                |
| Install Roof Insulation                                  |                |                                                                          | Subtotal                                                               | 0                                       | 6,500                                     | \$4,420                      | \$70                   | \$308,000                   | DNP                |
| <b>Building Envelope and Mechanical Insulation Total</b> |                |                                                                          | <b>Subtotal</b>                                                        | <b>53,600</b>                           | <b>13,100</b>                             | <b>\$14,268</b>              | <b>\$10,870</b>        | <b>\$308,800</b>            | <b>- 20.9</b>      |

## Energy Efficiency Electrification

*Energy Efficiency Electrification (EEE) refers to the process of replacing equipment powered directly by fossil fuel with all-electric equipment. EEE is an important step towards decarbonization and it includes a broad range of environmentally-friendly solutions that enable facilities to achieve their sustainability goals.*

### Install ENERGY STAR Combination Oven

Install an ENERGY STAR Combination Oven to improve system efficiency and reduce your building's overall carbon emissions

| Location                             | Qty | Existing                               | Proposed                   | Estimated<br>Electric Energy<br>Usage (kWh/Yr) | Estimated Energy<br>Savings (Therm/Yr) | Estimated<br>Savings (\$/Yr) | Estimated<br>Cost (\$) | Payback<br>(Years) |
|--------------------------------------|-----|----------------------------------------|----------------------------|------------------------------------------------|----------------------------------------|------------------------------|------------------------|--------------------|
| Kitchen                              | 5   | Natural Gas-Fired<br>Combination Ovens | Electric Combination Ovens | 59,600                                         | 4,100                                  | - \$3,172                    | \$300                  | DNP                |
| Install ENERGY STAR Combination Oven |     |                                        | Subtotal                   | 59,600                                         | 4,100                                  | - \$3,172                    | \$300                  | DNP                |

### Install ENERGY STAR Griddle

Install an ENERGY STAR Griddle to improve system efficiency and reduce your building's overall carbon emissions

| Location                    | Qty | Existing             | Proposed                      | Estimated<br>Electric Energy<br>Usage (kWh/Yr) | Estimated Energy<br>Savings (Therm/Yr) | Estimated<br>Savings (\$/Yr) | Estimated<br>Cost (\$) | Payback<br>(Years) |
|-----------------------------|-----|----------------------|-------------------------------|------------------------------------------------|----------------------------------------|------------------------------|------------------------|--------------------|
| Cafeteria                   | 1   | Natural Gas Griddles | ENERGY STAR Electric Griddles | 14,700                                         | 1,200                                  | - \$654                      | \$2,100                | DNP                |
| Install ENERGY STAR Griddle |     |                      | Subtotal                      | 14,700                                         | 1,200                                  | - \$654                      | \$2,100                | DNP                |

# Energy Efficiency Electrification

## Install ENERGY STAR Electric Vat Fryer

Install an ENERGY STAR Electric Vat Fryer to improve system efficiency and reduce your building's overall carbon emissions

| Location                               | Qty | Existing               | Proposed                        | Estimated                      | Estimated Energy Savings (Therm/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Payback (Years) |
|----------------------------------------|-----|------------------------|---------------------------------|--------------------------------|-------------------------------------|---------------------------|---------------------|-----------------|
|                                        |     |                        |                                 | Electric Energy Usage (kWh/Yr) |                                     |                           |                     |                 |
| Cafeteria                              | 1   | Natural Gas Vat Fryers | ENERGY STAR Electric Vat Fryers | 15,700                         | 1,800                               | - \$346                   | \$1,000             | DNP             |
| Install ENERGY STAR Electric Vat Fryer |     |                        |                                 | <b>Subtotal</b>                | <b>15,700</b>                       | <b>- \$346</b>            | <b>\$1,000</b>      | <b>DNP</b>      |

## Install Ground Source Heat Pump

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

| Location <sup>H</sup>           | Qty | Existing                                                               | Proposed                           | Estimated                      | Estimated Energy Savings (Therm/Yr) | Estimated Savings (\$/Yr) | Estimated Cost (\$) | Payback (Years) |
|---------------------------------|-----|------------------------------------------------------------------------|------------------------------------|--------------------------------|-------------------------------------|---------------------------|---------------------|-----------------|
|                                 |     |                                                                        |                                    | Electric Energy Usage (kWh/Yr) |                                     |                           |                     |                 |
| Replace on Fail                 | 1   | 800 Ton Packaged DX Unit and 6500 kBTU/hr Natural Gas Hot Water Boiler | Brine to Air Ground Loop Heat Pump | 418,800                        | 147,000                             | \$58,080                  | \$8,738,400         | DNP             |
| Install Ground Source Heat Pump |     |                                                                        |                                    | <b>Subtotal</b>                | <b>147,000</b>                      | <b>\$58,080</b>           | <b>\$8,738,400</b>  | <b>DNP</b>      |

|                                                |                 |                |                |                 |                    |            |
|------------------------------------------------|-----------------|----------------|----------------|-----------------|--------------------|------------|
| <b>Energy Efficiency Electrification Total</b> | <b>Subtotal</b> | <b>508,800</b> | <b>154,100</b> | <b>\$53,908</b> | <b>\$8,741,800</b> | <b>DNP</b> |
|------------------------------------------------|-----------------|----------------|----------------|-----------------|--------------------|------------|



# Electrification Baseline Conditions

## Baseline System Conditions

### Facility System: Vehicles

The are no school-owned vehicles kept at this location.

### Facility System: Existing Building

Thornwood High School was completed in 1972 and has not had any additions or major renovations since. Most of the HVAC equipment and insulation are original to the building.

HVAC is provided by constant volume air handling units with chilled and hot water coils. Chilled water is supplied by (2) 400-ton air-cooled chillers. The existing chillers are in very poor condition-new chillers have been purchased with installation expected to occur in December, 2022. Heating and domestic hot water during the heating season is supplied by (2) forced-draft boilers with each having 22,500 MBH capacity. When minimal or no heating is needed, hot water is furnished by (2) efficient boilers with 400 MBH capacity each.

### Facility System: Insulation

The roof is in poor condition and replacement is planned during the next few years. Current insulation levels are not known but should be brought up to code during the roofing project.

The exterior walls are not insulated, but adding insulation is not financially reasonable.

Pipe insulation appears to be in good condition. Valves and piping accessories are generally not insulated and adding insulation or removable covers may have reasonable payback.

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# 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 Electrical Infrastructure**

Upgrading your electrical infrastructure may be necessary if increasing the load on the system significantly. With geothermal the increase in overall demand is minimal and may not require an increase in the main electrical entering the building. This cost is separate from the cost of any electrification measures.

Estimated Cost: **\$400,000**

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## 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:*

- |                                                                   |                                                                              |
|-------------------------------------------------------------------|------------------------------------------------------------------------------|
| <input type="checkbox"/> K-12 Wind Schools Grant                  | <input checked="" type="checkbox"/> K-12 Solar Schools Grant                 |
| <input checked="" type="checkbox"/> Distributed Generation Rebate | <input checked="" type="checkbox"/> The Investment Tax Credit                |
| <input checked="" type="checkbox"/> School Maintenance Grant      | <input type="checkbox"/> Charging Incentive Program                          |
| <input type="checkbox"/> Cook County Solar Schools Grant          | <input type="checkbox"/> Clean School Bus Program                            |
| <input checked="" type="checkbox"/> School Construction Grant     | <input checked="" type="checkbox"/> Illinois Shines Renewable Energy Credits |

### 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 15 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: \$2,609,209**

### 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: \$967,375**

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## 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: \$2,677,230**

### K-12 Solar Schools Grant

**Offering Description:**

The K-12 Solar Schools Grant program (<https://www.illinoiscleanenergy.org/energy-program/k-12-solar-schools/>) supports the installation of a 1 kW photovoltaic (PV) system. Public K-12 schools may apply for up to \$6,400 or 90% of solar system and installation costs, whichever is less.

**Funding Opportunity: \$6,400**

### 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: \$900,000**

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## 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.

**Funding Opportunity: \$50,000**

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## Footnotes

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Values rounded for simplicity.

For the Standard Incentives program, the total incentives paid cannot exceed 100% of the incremental measure cost or 100% of the total project cost.

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

- A** Product must be listed on DesignLights™ Consortium (DLC) Qualified Products list, available at [www.designlights.org](http://www.designlights.org).
- B** Both A-Type and B-Type TLEDs are eligible for incentives through the Instant Discounts program. A-Type TLEDs operate using the existing electronic fluorescent ballast, while B-Type TLEDs bypass the existing ballast and the lamp operates using an internal integrated driver. Lamp life may vary depending on TLED lamp type and existing installed ballasts. If installing A-Type TLEDs, check compatibility with existing ballasts before implementing.
- C** 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 [www.ComEd.com/InstantDiscounts](http://www.ComEd.com/InstantDiscounts)
- D** For a list of applicable Enhanced Building Control Strategies, please consult the ComEd Energy Efficiency Program HVAC Incentives Worksheet.
- E** 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.
- F** 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.
- G** Diameter and length were estimated from easily observable and more may exist. This measure is also intended to include the insulation of valves and other appurtenances.
- H** The proposed system will also replace the domestic hot water and pool heater boilers, which are only used during shoulder and summer months. The property appears to have over 1,000,000 SF available for installation of the ground loops.

**DNP** = Does Not Payback

Electricity Cost = \$0.1000/kWh (average commercial retail price for the State of Illinois in 2021) - Energy Information Administration

Natural Gas Cost = \$0.680/therm (average commercial retail price for the State of Illinois in 2021) - Energy Information Administration

# 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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# 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 [ComEd.com/BEA](http://ComEd.com/BEA) and register using the facility's ComEd account number and zip code.

## Voluntary Load Reduction

The ComEd Smart Returns 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 [SmartReturns@exeloncorp.com](mailto:SmartReturns@exeloncorp.com) or call ComEd at 1-877-426-6331. For more information, please visit [ComEd.com/VLR](http://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 [ComEd.com/EnergyUsageData](http://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 [ComEd.com/EV](http://ComEd.com/EV).

Want to get Started?... Let us help  
Or visit: [ComEd.com/BizIncentives](http://ComEd.com/BizIncentives) to learn more



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## DISCLAIMER

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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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