

ANNUAL REPORT



Performance Services

COVINGTON INDEPENDENT PUBLIC SCHOOLS

Year 3

July 2020 – June 2021

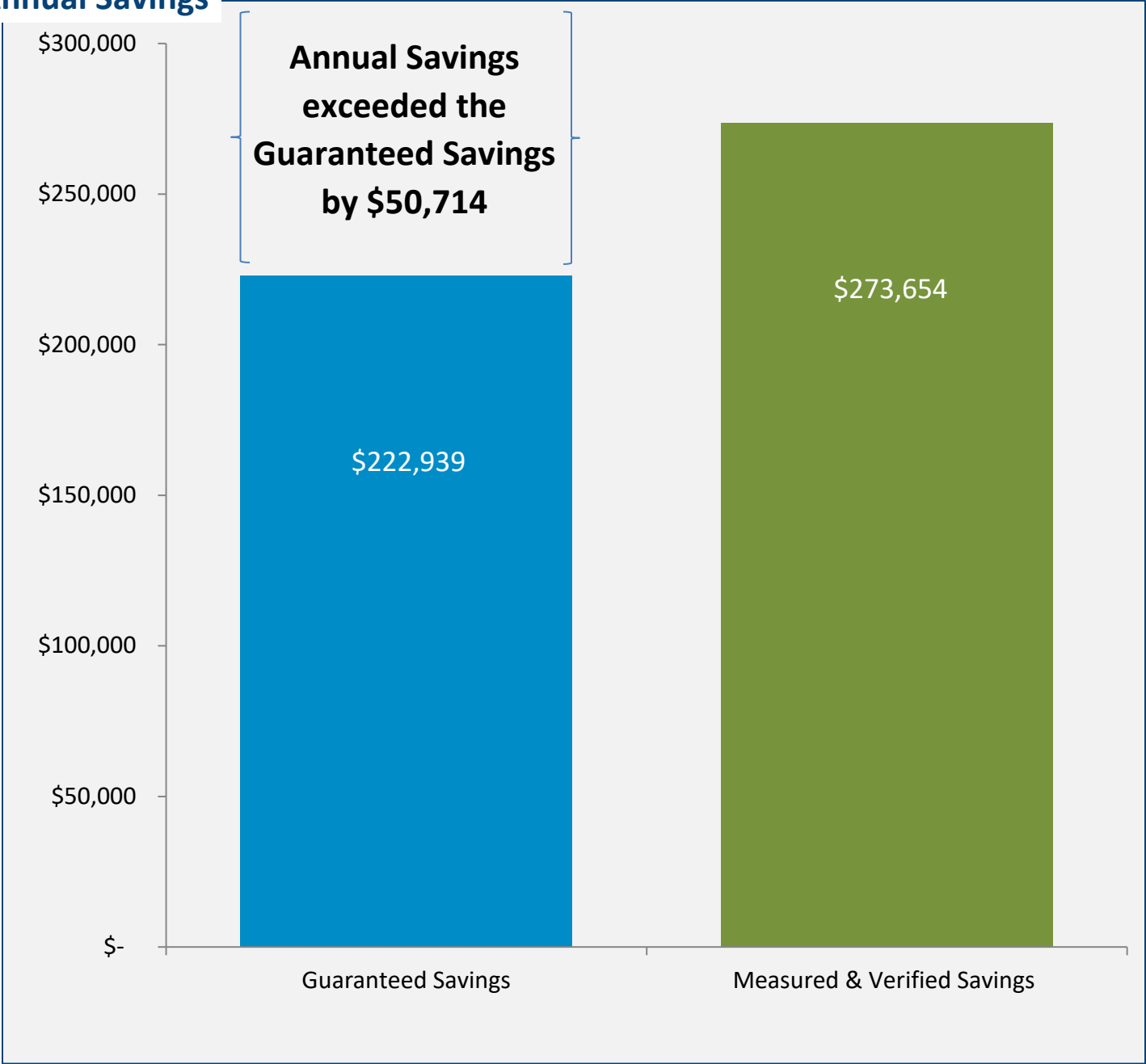


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Executive Summary

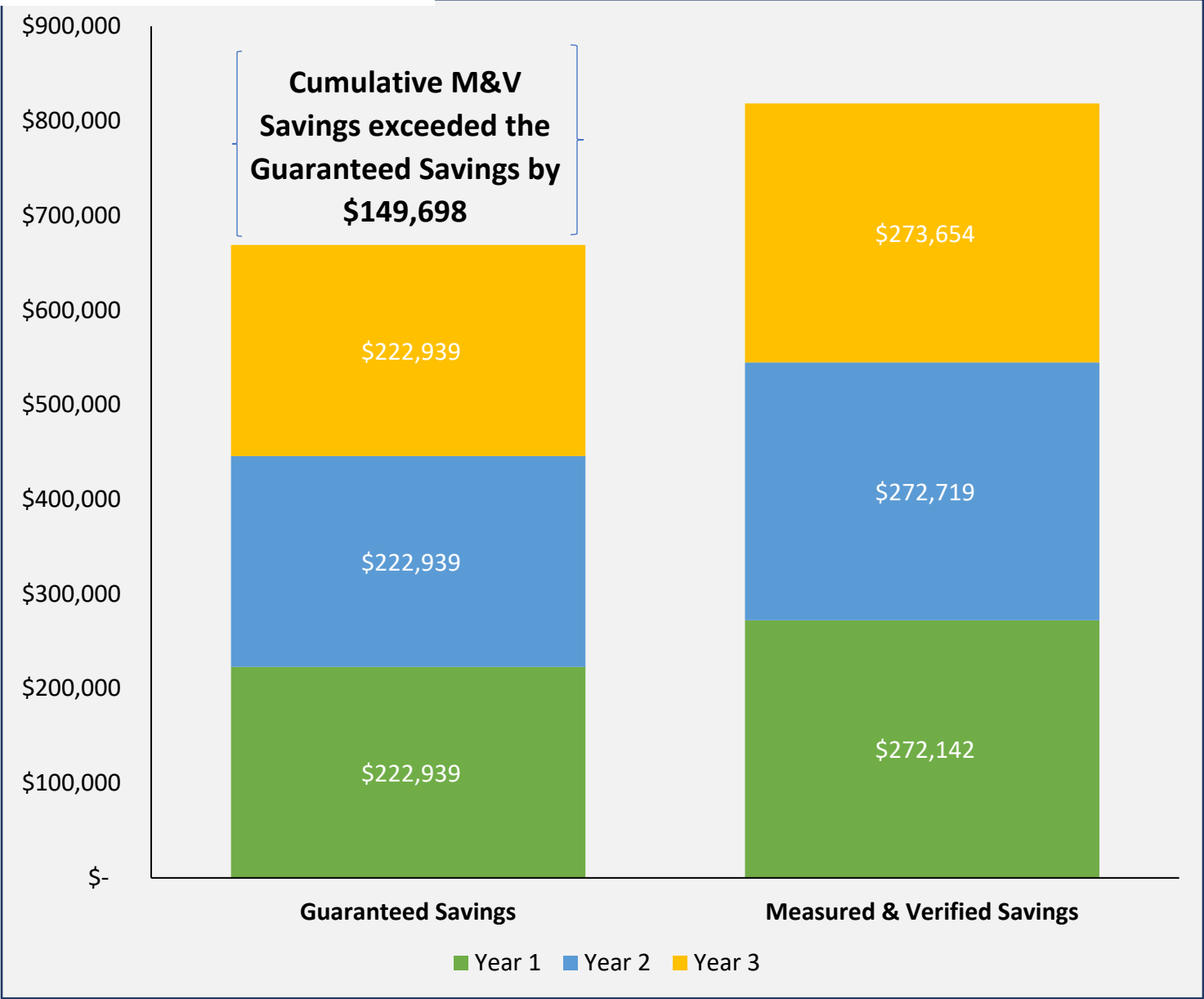
This Year 3 Annual Report provides an overview of energy performance resulting from the efficiency project completed by Performance Services (PSI) in 2018. Our Performance Assurance team is committed to measuring and monitoring project performance, recognizing customer successes, and identifying opportunities for increased efficiency. The following Annual Savings table shows guaranteed energy savings compared to actual savings measured for the period of July 2020 – June 2021. Measured savings surpassed guaranteed savings by **\$50,714**, or **22.7%**.

Annual Savings



The following Cumulative Project Savings table shows cumulative guaranteed energy savings compared to actual measured savings during the monitoring term of July 2018 – June 2021. Measured savings surpassed guaranteed savings by **\$149,698**, or **22.4%**.

Cumulative Project Savings



Project Description

In January 2016 Covington Independent Schools selected Performance Services to perform district-wide energy upgrades as spelled out in the approved District Facility Plan. Upgrades included the replacement of all existing interior and exterior lighting with LEDs, the targeted replacement of aging HVAC equipment with high-efficiency infrastructure, and the installation of solar arrays at John G. Carlisle Elementary and Chapman Child Development Center.



Project Highlights

- LED interior and exterior lighting retrofit on all buildings - reduced energy consumption by 1,077,144 kWh in the first year
- Digital control system upgrade
- Water conservation retrofit
- Upgrade fans to variable speed motors
- Replace chillers and pumps
- Replace boilers and pumps
- Replace rooftop units
- Replace cooling towers

Complete HVAC Retrofit of Ninth District Elementary School

- Replace all existing heating, ventilation, and air conditioning systems, much of which was 60 years old
- Dual temperature design used for comfort and energy efficiency
- Replace 59-year-old hot water boilers, and 25-year-old chillers and pumps
- Replace 59-year-old horizontal unit ventilators with new dual temperature classroom unit ventilators
- Replace gym and office units

Solar PV - 480 kW

- Chapman Child Development Center rooftop mounted solar PV system / Duke net metering
- John G. Carlisle Elementary School rooftop mounted sole PV system / Duke net metering



“Covington’s School Board should be very proud of their achievement in reducing energy costs for their District. As solar energy is becoming more and more cost effective, innovative school districts are recognizing it as a viable way to reduce their energy costs and carbon footprint at the same time.”

Ryan Stout
NATIONAL SOLAR DIRECTOR

Project Benefits

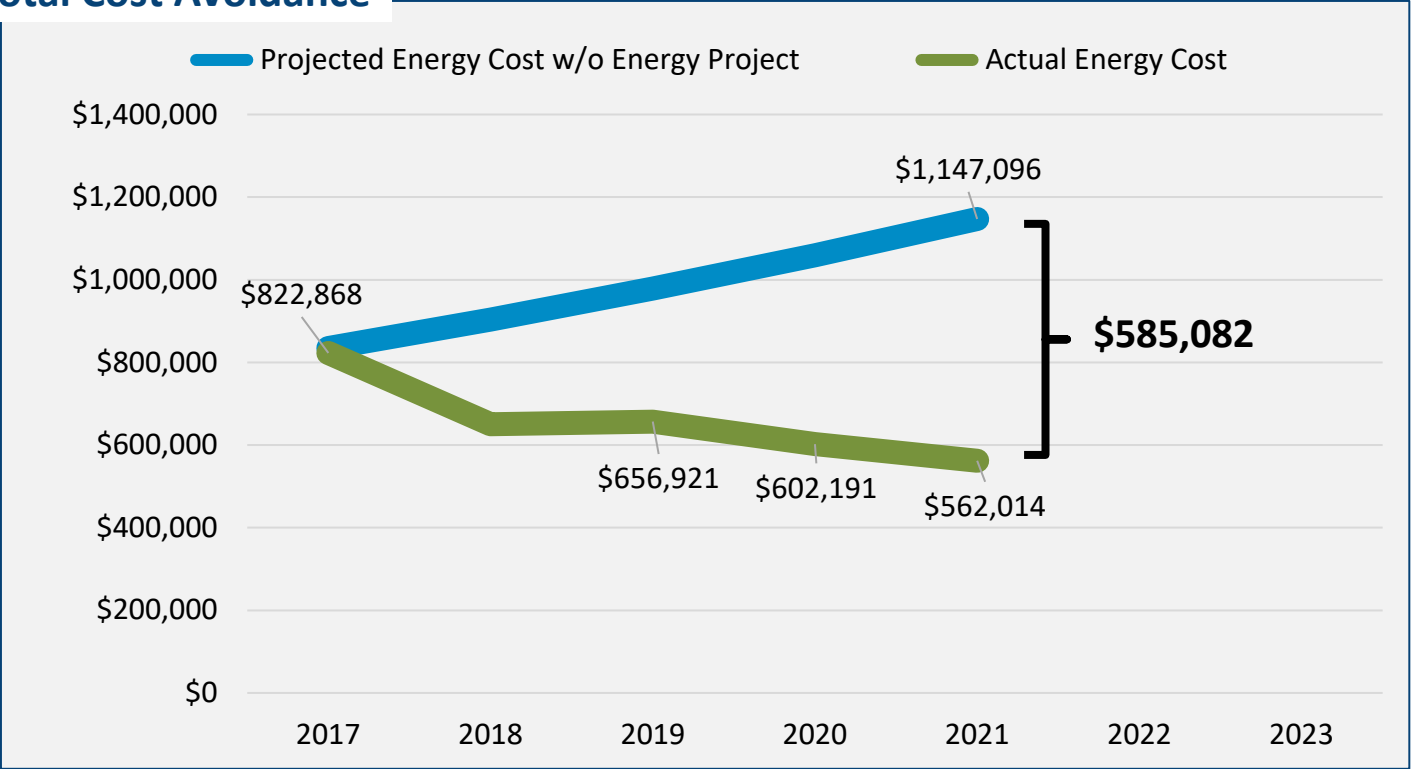
Performance Services provides systems and solutions with the goal of providing high-performing learning and working environments for our customers. Our Four-Season Optimization process ensures that your building systems are energy-efficient while also providing an optimal learning environment. We also design reliable and resilient systems in order to minimize operational costs.



Financial Impact of the Project

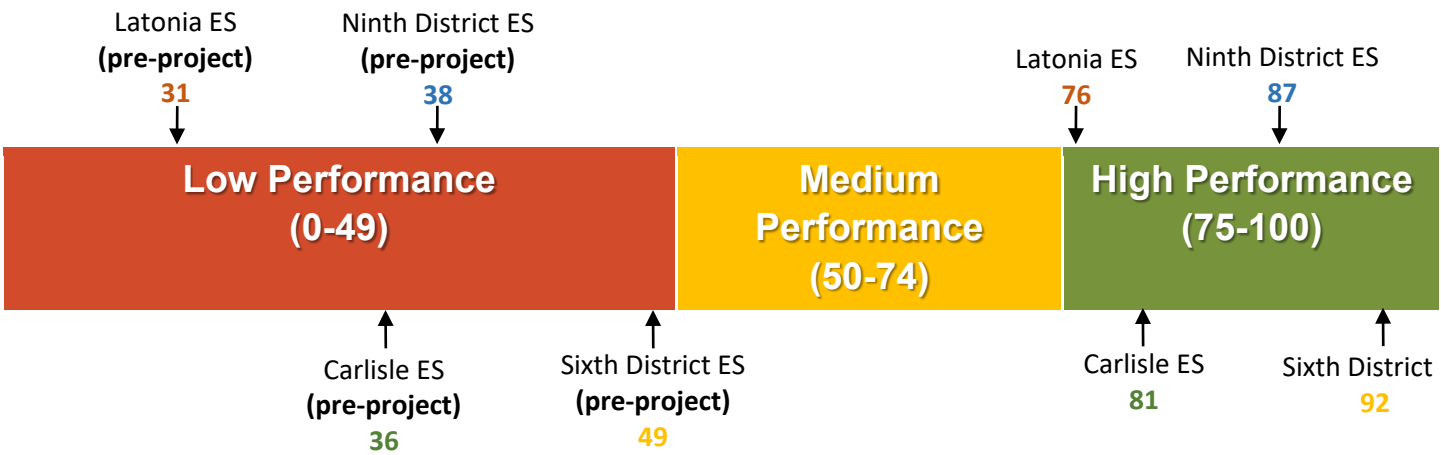
The avoided cost calculation examines projected energy expenditure had the district chosen not to perform efficiency upgrades. This metric is demonstrated by applying actual utility rate inflation to pre-project equipment performance and usage. As shown in the following chart, Covington Schools avoided \$585,082 in energy costs during the third full year following project implementation.

Total Cost Avoidance



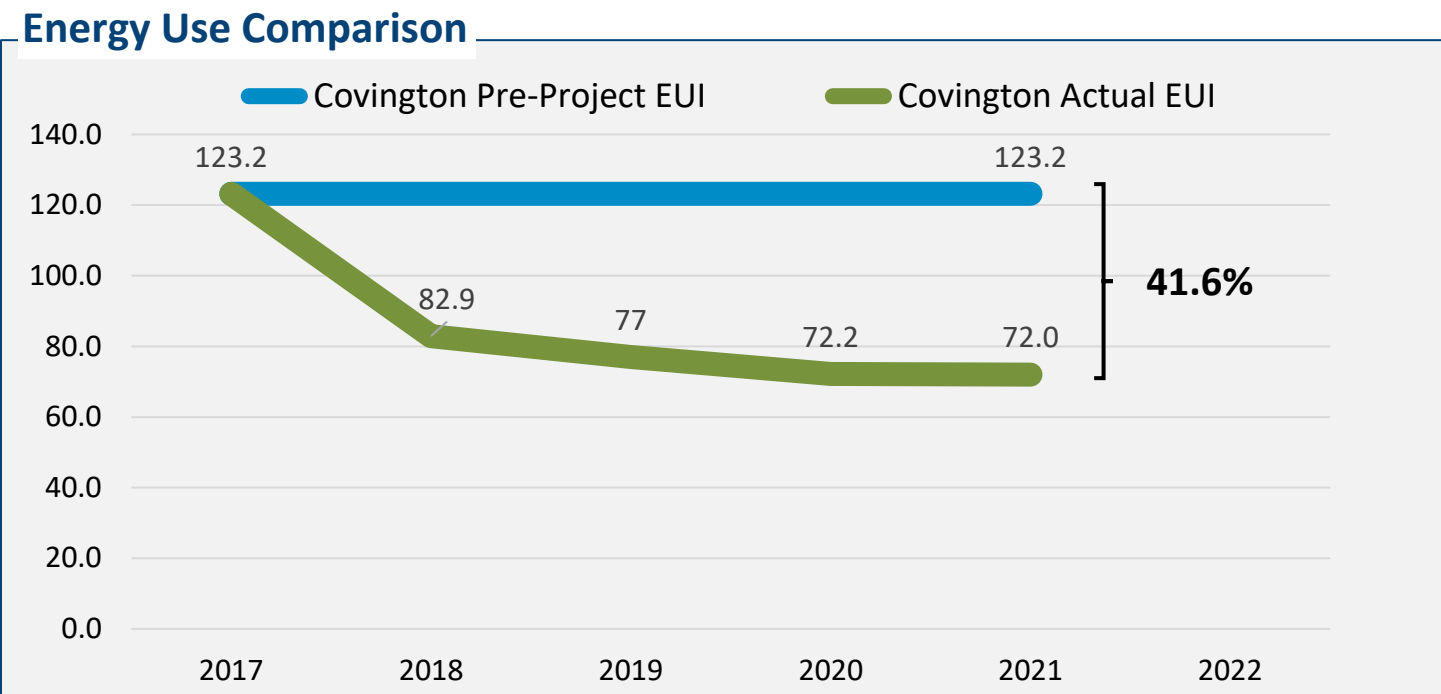
Energy Impact of the Project

A widely adopted metric used to gauge energy impact is the ENERGY STAR score. ENERGY STAR, a federal program administered by the Environmental Protection Agency, provides recognition to facilities that meet their enhanced criteria for energy efficiency and indoor quality standards. Each facility is scored on a scale from 0 to 100 based on a variety of indicators like facility function, local climate, hours of operation, and the number of occupants. A building must achieve a score of 75 or better in order to qualify for ENERGY STAR certification. The chart below illustrates the improvement of your facilities' that are candidates for ENERGY STAR certification.



Energy Usage

The Energy Use Index (EUI), referred to generally as “energy intensity,” demonstrates the volume of energy consumed per square foot at a set of facilities over the course of a year. Prior to project completion, the Covington facilities included in this project scored a combined EUI of 123.2. After the installation of equipment upgrades and Four-Season Optimization, the EUI of these facilities is now 72.0, which is a 41.6% reduction in energy intensity.

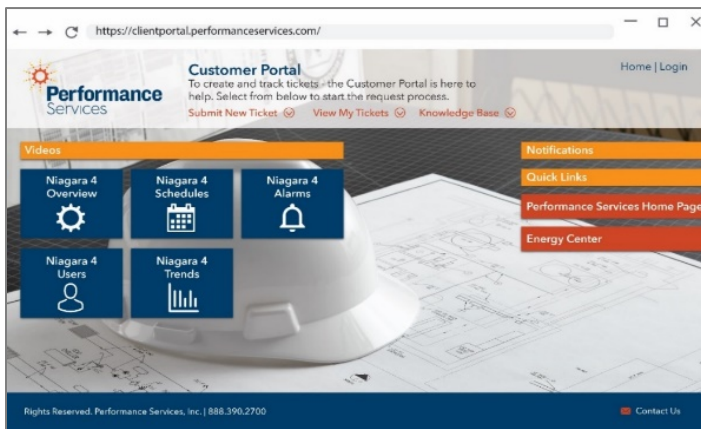


Customer Portal

Performance Services provides a **Customer Portal** to our customers with access to training videos, an in-depth searchable knowledge base, and a ticketing system to create and track work requests. This portal allows for ease of communication and ensures a convenient way to request assistance, and document system performance.

Customer Portal Data

- 18 tickets from Covington staff
- All but one resolved as it requires the customer to schedule mechanical service.



Glenn O. Swing Elementary

2/12/2021, Customer reported temperature control network issues at Glenn O Swing school.

2/13/2021, PSI Controls team discovered a bug within the Jace. They determined the solution is to upgrade firmware within the Jace software.

2/24/2021, Failed Jace received by mail from customer. PSI upgraded the software and returned to customer.

Ninth District Elementary

8/14/2021, Customer reported a failed controller on equipment in the Ninth District kitchen.

8/20/2021, PSI received approval to order a new controller and spare controllers.

8/23/2021, PSI Controls team configured new controller and shipped to the customer for install.



Who We Are

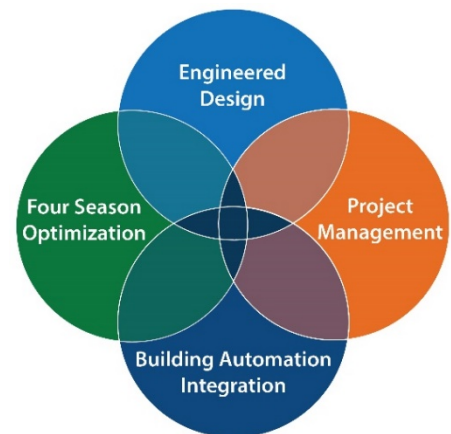
Performance Services is a high-performance specialist, creating and delivering facility and environmental solutions using integrated design and delivery with sole accountability. We do this by utilizing either design-build or guaranteed energy savings contracts. Our focus since the company's founding in 1998 is serving education and local governments to provide sustainable solutions and 100% customer satisfaction on every project.

What We Do



How We Do It

Performance Services provides **integrated design and delivery** that is enabled and focused on quality results for our customers. We prefer not to relinquish our design, project management, optimization, or performance assurance work to subcontractors and perform these essential functions in-house. Our team utilizes a cohesive and collaborative team approach throughout project development and implementation to maximize quality results and customer satisfaction.



How We're Different

Performance Services conducts master planning and completes both new construction and major renovation projects using a design-to-budget and collaborative process to save our customers time and money.

- **A multidisciplinary approach**
- **Unparalleled performance guarantees**
- **No change orders guarantee**
- **Transparent, open-book pricing**
- **Vendor independence**
- **Sole accountability for results**

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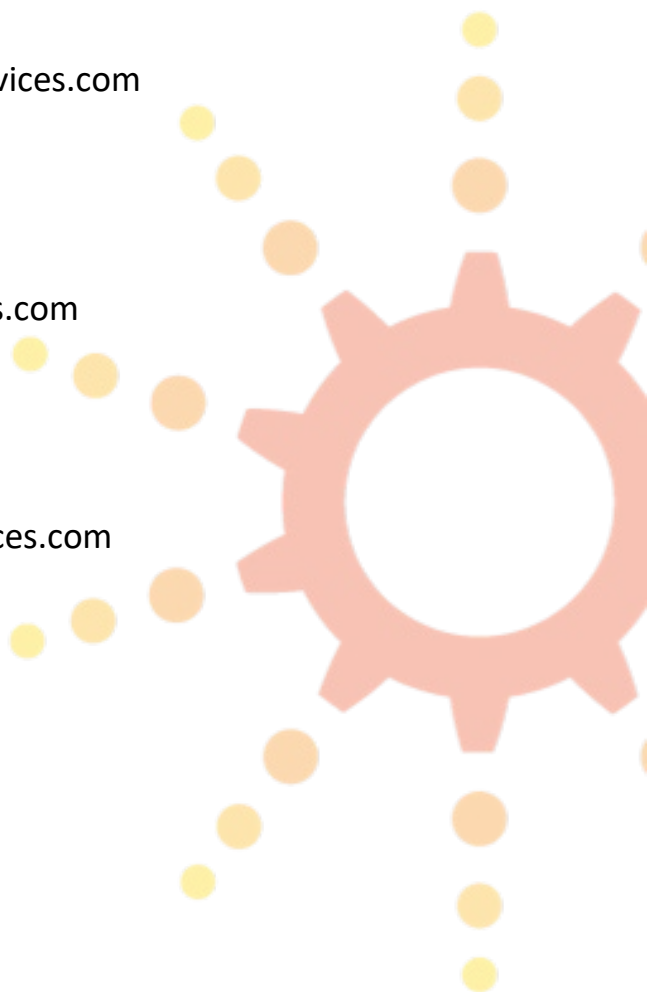
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OUR WORD IS OUR BOND

When we commit to implementing a project at a set price, we implement that project for that price without asking customers for change orders to cover design or construction errors.

RELATIONSHIPS MATTER

We work with customers that believe in a collaborative and partnership approach. We value long-term relationships.

WE FULFILL PROMISES

Promises and commitments to customers always take priority over profits. Our employees are empowered and expected to make this happen.

CUSTOMER IS IN CONTROL

Quality performance and value is defined by our customers. Customer feedback is always taken into consideration.



Performance
Services

Performance Services

Appendix

PROPRIETARY

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Annual Guaranteed Savings Report Summary Year 3 (July 1, 2020 - June 30, 2021)			
Description	Guaranteed Savings	Calculated Savings	Net Difference
ENERGY SAVINGS			
HOLMES HIGH SCHOOL, MIDDLE SCHOOL, AND ADMINISTRATION BUILDING			
* Electric	\$ 35,417	\$ 52,184	\$ 16,768
* Gas	\$ 7,897	\$ 10,682	\$ 2,786
* Water	\$ 12,040	\$ 13,377	\$ 1,338
FIELDHOUSE, SCIENCE BUILDING, AND CHAPMAN VOCATIONAL EDUCATION CENTER			
* Electric	\$ 61,113	\$ 66,575	\$ 5,463
* Gas	\$ 3,581	\$ 4,985	\$ 1,405
* Water	\$ 166	\$ 185	\$ 18
SIXTH DISTRICT ELEMENTARY SCHOOL			
* Electric	\$ 9,150	\$ 11,299	\$ 2,149
* Gas	\$ 406	\$ 520	\$ 115
* Water	\$ 2,754	\$ 3,060	\$ 306
NINTH DISTRICT ELEMENTARY SCHOOL			
* Electric	\$ 10,343	\$ 18,624	\$ 8,281
* Gas	\$ 3,898	\$ 4,884	\$ 987
* Water	\$ 2,698	\$ 2,997	\$ 300
JOHN G. CARLISLE ELEMENTARY SCHOOL			
* Electric	\$ 37,656	\$ 40,760	\$ 3,104
* Gas	\$ 168	\$ 211	\$ 42
* Water	\$ 485	\$ 539	\$ 54
LATONIA ELEMENTARY SCHOOL			
* Electric	\$ 12,430	\$ 16,149	\$ 3,719
* Gas	\$ 75	\$ 97	\$ 21
* Water	\$ 3,015	\$ 3,350	\$ 335
GLENN O. SWING ELEMENTARY SCHOOL			
* Electric	\$ 7,188	\$ 9,840	\$ 2,652
* Water	\$ 3,228	\$ 3,587	\$ 359
JAMES E. BIGGS EARLY CHILDHOOD EDUCATION CENTER			
* Electric	\$ 2,069	\$ 2,178	\$ 109
* Water	\$ 489	\$ 543	\$ 54
COVINGTON CENTRAL OFFICE			
* Electric	\$ 1,776	\$ 1,869	\$ 93
TRANSPORTATION AND MAINTENANCE BUILDING			
* Electric	\$ 1,120	\$ 1,179	\$ 59
TITLE 1 PIKE ST. BUILDING			
* Electric	\$ 1,321	\$ 1,390	\$ 70
COVINGTON INSTRUCTIONAL SUPPORT & ADULT HIGH SCHOOL (LEVIASSOR)			
* Electric	\$ 2,459	\$ 2,588	\$ 129
Total Savings	\$ 222,939	\$ 273,654	\$ 50,714
OPERATIONAL SAVINGS			
* HVAC Renovation	\$ 37,383	\$ 37,383	\$ -
SAVINGS	\$ 260,322	\$ 311,037	\$ 50,714

The operational savings are expenditures that the School Corporation would have incurred had they not addressed their repair and replacement needs under this contract. Operational savings are impossible to accurately track after the equipment is replaced because it is impossible to know when the equipment would have failed or required repairs. Therefore, the operational savings were agreed to as part of the contract and have been averaged over the ten year term. This is why the actual and guaranteed operational savings are the same value.

Detailed Energy Savings Summary Year 3 (July 1, 2020 - June 30, 2021)

Improvements	Electric Savings			Gas Savings			Water Savings			Total Savings		
	Guaranteed YTD	Calculated YTD	Difference YTD	Guaranteed YTD	Calculated YTD	Difference YTD	Guaranteed YTD	Calculated YTD	Difference YTD	Guaranteed YTD	Calculated YTD	Difference YTD
HOLMES HIGH SCHOOL												
* Savings due to fan motor replacement (AHU-East)	\$ 97	\$ 225	\$ 128							\$ 97	\$ 225	\$ 128
* Savings due to fan runtime reduction	\$ 1,049	\$ 2,429	\$ 1,381							\$ 1,049	\$ 2,429	\$ 1,381
* Savings due to reducing fan speed on AHUs & RTU via VFDs	\$ 3,294	\$ 7,633	\$ 4,338							\$ 3,294	\$ 7,633	\$ 4,338
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 129	\$ 300	\$ 170	\$ 2,141	\$ 2,896	\$ 755				\$ 2,270	\$ 3,196	\$ 926
* Savings due to more efficient auditorium rooftop air conditioning unit	\$ 809	\$ 1,873	\$ 1,065							\$ 809	\$ 1,873	\$ 1,065
* Savings due to interior & exterior lighting retrofit	\$ 13,097	\$ 13,786	\$ 689							\$ 13,097	\$ 13,786	\$ 689
* Savings due to water conservation retrofit							\$ 6,670	\$ 7,411	\$ 741	\$ 6,670	\$ 7,411	\$ 741
Sub-Total	\$ 18,475	\$ 26,246	\$ 7,771	\$ 2,141	\$ 2,896	\$ 755	\$ 6,670	\$ 7,411	\$ 741	\$ 27,286	\$ 36,553	\$ 9,268
HOLMES MIDDLE SCHOOL												
* Savings due to fan motor replacement (AHU-West)	\$ 175	\$ 406	\$ 231							\$ 175	\$ 406	\$ 231
* Savings due to fan runtime reduction	\$ 1,647	\$ 3,817	\$ 2,169							\$ 1,647	\$ 3,817	\$ 2,169
* Savings due to reducing fan speed on AHUs via VFDs	\$ 1,834	\$ 4,250	\$ 2,416							\$ 1,834	\$ 4,250	\$ 2,416
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 18	\$ 41	\$ 23	\$ 5,291	\$ 7,158	\$ 1,867				\$ 5,309	\$ 7,199	\$ 1,890
* Savings due to interior & exterior lighting retrofit	\$ 6,404	\$ 6,741	\$ 337							\$ 6,404	\$ 6,741	\$ 337
* Savings due to water conservation retrofit							\$ 4,876	\$ 5,418	\$ 542	\$ 4,876	\$ 5,418	\$ 542
Sub-Total	\$ 10,079	\$ 15,255	\$ 5,176	\$ 5,291	\$ 7,158	\$ 1,867	\$ 4,876	\$ 5,418	\$ 542	\$ 20,246	\$ 27,831	\$ 7,585
ADMINISTRATION BUILDING												
* Savings due to fan motor replacement (Kitchen & Teacher's Lounge AHUs)	\$ 56	\$ 130	\$ 74							\$ 56	\$ 130	\$ 74
* Savings due to fan runtime reduction	\$ 454	\$ 1,052	\$ 598							\$ 454	\$ 1,052	\$ 598
* Savings due to reducing fan speed on AHUs via VFDs	\$ 1,155	\$ 2,675	\$ 1,520							\$ 1,155	\$ 2,675	\$ 1,520
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 94	\$ 217	\$ 124	\$ 464	\$ 628	\$ 164				\$ 558	\$ 845	\$ 287
* Savings due to more efficient chiller	\$ 776	\$ 1,798	\$ 1,022							\$ 776	\$ 1,798	\$ 1,022
* Savings due to replacing (1) CW pump/motors	\$ 202	\$ 468	\$ 266							\$ 202	\$ 468	\$ 266
* Savings due to interior & exterior lighting retrofit	\$ 4,127	\$ 4,344	\$ 217							\$ 4,127	\$ 4,344	\$ 217
* Savings due to water conservation retrofit							\$ 493	\$ 548	\$ 55	\$ 493	\$ 548	\$ 55
Sub-Total	\$ 6,863	\$ 10,683	\$ 3,820	\$ 464	\$ 628	\$ 164	\$ 493	\$ 548	\$ 55	\$ 7,821	\$ 11,860	\$ 4,039
CHAPMAN VOCATIONAL EDUCATION CENTER												
* Savings due to fan runtime reduction	\$ 304	\$ 493	\$ 189							\$ 304	\$ 493	\$ 189
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 704	\$ 1,141	\$ 436							\$ 704	\$ 1,141	\$ 436
* Savings due to replacing (2) HHW pump/motors	\$ 907	\$ 1,469	\$ 562							\$ 907	\$ 1,469	\$ 562
* Savings due to converting (2) HHW pumps to variable speed	\$ 1,775	\$ 2,876	\$ 1,100							\$ 1,775	\$ 2,876	\$ 1,100
* Savings due to replacement of (1) cooling tower with variable speed cooling tower	\$ 736	\$ 1,192	\$ 456							\$ 736	\$ 1,192	\$ 456
* Savings due to replacement of (1) electric boiler with (1) new electric boiler	\$ 491	\$ 796	\$ 305							\$ 491	\$ 796	\$ 305
* Savings due to interior & exterior lighting retrofit	\$ 8,094	\$ 8,520	\$ 426							\$ 8,094	\$ 8,520	\$ 426
* Savings due to water conservation retrofit							\$ 124	\$ 138	\$ 14	\$ 124	\$ 138	\$ 14
Sub-Total	\$ 13,012	\$ 16,487	\$ 3,474			\$ -	\$ 124	\$ 138	\$ 14	\$ 13,136	\$ 16,624	\$ 3,488
FIELDHOUSE & SCIENCE BUILDING												
* Savings due to fan runtime reduction	\$ 753	\$ 1,220	\$ 467							\$ 753	\$ 1,220	\$ 467
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 83	\$ 134	\$ 51	\$ 1,071	\$ 1,848	\$ 777				\$ 1,154	\$ 1,983	\$ 829
* Savings due to reducing fan speed on (7) AHUs via VFDs	\$ 641	\$ 1,039	\$ 398							\$ 641	\$ 1,039	\$ 398
* Savings due to replacing (3) gym AHU fan motors	\$ 118	\$ 270	\$ 152							\$ 118	\$ 270	\$ 152
* Savings due to replacing (2) HHW pump/motors	\$ 166	\$ 269	\$ 103							\$ 166	\$ 269	\$ 103
* Savings due to converting (2) HHW pumps to variable speed	\$ 619	\$ 1,002	\$ 383							\$ 619	\$ 1,002	\$ 383
* Savings due to replacement of (2) boilers with high efficiency units				\$ 2,509	\$ 3,137	\$ 627				\$ 2,509	\$ 3,137	\$ 627
* Savings due to interior & exterior lighting retrofit	\$ 8,260	\$ 8,695	\$ 435							\$ 8,260	\$ 8,695	\$ 435
* Savings due to water conservation retrofit							\$ 42	\$ 47	\$ 5	\$ 42	\$ 47	\$ 5
* Savings due to rooftop solar PV system	\$ 30,456	\$ 30,456	\$ -							\$ 30,456	\$ 30,456	\$ -
* Savings due to the sale of Solar Renewable Energy Credits (SREC) - see note 1	\$ 7,003	\$ 7,003	\$ -							\$ 7,003	\$ 7,003	\$ -
Sub-Total	\$ 48,100	\$ 50,089	\$ 1,988	\$ 3,581	\$ 4,985	\$ 1,405	\$ 42	\$ 47	\$ 5	\$ 51,723	\$ 55,121	\$ 3,398

Detailed Energy Savings Summary (con't)

Year 3 (July 1, 2020 - June 30, 2021)

Improvements	Electric Savings			Gas Savings			Water Savings			Total Savings		
	Guaranteed YTD	Calculated YTD	Difference YTD	Guaranteed YTD	Calculated YTD	Difference YTD	Guaranteed YTD	Calculated YTD	Difference YTD	Guaranteed YTD	Calculated YTD	Difference YTD
SIXTH DISTRICT ELEMENTARY SCHOOL												
* Savings due to fan runtime reduction	\$ 233	\$ 629	\$ 396							\$ 233	\$ 629	\$ 396
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 121	\$ 327	\$ 206	\$ 406	\$ 520	\$ 115				\$ 527	\$ 847	\$ 321
* Savings due to reducing fan speed on (6) AHUs via VFDs	\$ 573	\$ 1,550	\$ 976							\$ 573	\$ 1,550	\$ 976
* Savings due to replacing (3) classroom AHU fan motors	\$ 83	\$ 225	\$ 142							\$ 83	\$ 225	\$ 142
* Savings due to interior & exterior lighting retrofit	\$ 8,140	\$ 8,568	\$ 428							\$ 8,140	\$ 8,568	\$ 428
* Savings due to water conservation retrofit							\$ 2,754	\$ 3,060	\$ 306	\$ 2,754	\$ 3,060	\$ 306
Sub-Total	\$ 9,150	\$ 11,299	\$ 2,149	\$ 406	\$ 520	\$ 115	\$ 2,754	\$ 3,060	\$ 306	\$ 12,309	\$ 14,879	\$ 2,569
NINTH DISTRICT ELEMENTARY SCHOOL												
* Savings due to fan runtime reduction	\$ 1,336	\$ 3,564	\$ 2,228							\$ 1,336	\$ 3,564	\$ 2,228
* Savings due to replacing HVAC terminal units (motor eff & ECM fan motor)	\$ 954	\$ 2,543	\$ 1,590							\$ 954	\$ 2,543	\$ 1,590
* Savings due to reducing fan speed on (2) gym AHUs via VFDs	\$ 788	\$ 2,100	\$ 1,313							\$ 788	\$ 2,100	\$ 1,313
* Adjustment due to replacement of (2) CW & (2) HW pumps w/ (2) DT pumps & (2) boiler circs	\$ 48	\$ 119	\$ 71							\$ 48	\$ 119	\$ 71
* Savings due to converting (2) DT pumps to variable speed	\$ 704	\$ 1,877	\$ 1,173							\$ 704	\$ 1,877	\$ 1,173
* Savings due to replacement of existing 1991 chiller	\$ 652	\$ 1,510	\$ 858							\$ 652	\$ 1,510	\$ 858
* Savings due to replacement of (2) 1956 boilers with (2) high efficiency units				\$ 3,464	\$ 4,330	\$ 866				\$ 3,464	\$ 4,330	\$ 866
* Savings due to replacement of office RTU (gas-fired & DX)	\$ 83	\$ 220	\$ 138	\$ 434	\$ 555	\$ 121				\$ 516	\$ 775	\$ 259
* Savings due to replacing exhaust fans and converting them to variable speed	\$ 376	\$ 1,003	\$ 627							\$ 376	\$ 1,003	\$ 627
* Savings due to interior & exterior lighting retrofit	\$ 5,404	\$ 5,688	\$ 284							\$ 5,404	\$ 5,688	\$ 284
* Savings due to water conservation retrofit							\$ 2,698	\$ 2,997	\$ 300	\$ 2,698	\$ 2,997	\$ 300
Sub-Total	\$ 10,343	\$ 18,624	\$ 8,281	\$ 3,898	\$ 4,884	\$ 987	\$ 2,698	\$ 2,997	\$ 300	\$ 16,939	\$ 26,506	\$ 9,567
JOHN G. CARLISLE ELEMENTARY SCHOOL												
* Savings due to fan runtime reduction	\$ 274	\$ 843	\$ 570							\$ 274	\$ 843	\$ 570
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 54	\$ 166	\$ 112	\$ 168	\$ 211	\$ 42				\$ 222	\$ 377	\$ 154
* Savings due to reducing fan speed on (2) AHUs & (3) exh fans via VFDs	\$ 436	\$ 1,163	\$ 727							\$ 436	\$ 1,163	\$ 727
* Savings due to replacing (2) HHW & (2) CW pump/motors	\$ 39	\$ 119	\$ 80							\$ 39	\$ 119	\$ 80
* Savings due to converting (2) HHW & (2) CW pumps to variable speed	\$ 562	\$ 1,732	\$ 1,170							\$ 562	\$ 1,732	\$ 1,170
* Savings due to interior & exterior lighting retrofit	\$ 8,469	\$ 8,915	\$ 446							\$ 8,469	\$ 8,915	\$ 446
* Savings due to water conservation retrofit							\$ 485	\$ 539	\$ 54	\$ 485	\$ 539	\$ 54
* Savings due to rooftop solar PV system	\$ 23,623	\$ 23,623	\$ -							\$ 23,623	\$ 23,623	\$ -
* Savings due to the sale of Solar Renewable Energy Credits (SREC) - see note 2	\$ 4,200	\$ 4,200	\$ -							\$ 4,200	\$ 4,200	\$ -
Sub-Total	\$ 37,656	\$ 40,760	\$ 3,104	\$ 168	\$ 211	\$ 42	\$ 485	\$ 539	\$ 54	\$ 38,310	\$ 41,510	\$ 3,200
LATONIA ELEMENTARY SCHOOL												
* Savings due to fan runtime reduction	\$ 142	\$ 372	\$ 229							\$ 142	\$ 372	\$ 229
* Savings due to reduced outside air heating and cooling based upon fan runtime	\$ 160	\$ 418	\$ 258							\$ 160	\$ 418	\$ 258
* Savings due to replacement of office RTU (gas-fired & DX)	\$ 147	\$ 383	\$ 236	\$ 75	\$ 97	\$ 21				\$ 222	\$ 480	\$ 258
* Savings due to interior & exterior lighting retrofit	\$ 11,981	\$ 14,976	\$ 2,995							\$ 11,981	\$ 14,976	\$ 2,995
* Savings due to water conservation retrofit							\$ 3,015	\$ 3,350	\$ 335	\$ 3,015	\$ 3,350	\$ 335
Sub-Total	\$ 12,430	\$ 16,149	\$ 3,719	\$ 75	\$ 97	\$ 21	\$ 3,015	\$ 3,350	\$ 335	\$ 15,521	\$ 19,596	\$ 4,075
GLENN O. SWING ELEMENTARY SCHOOL												
* Savings due to fan runtime reduction	\$ 1,260	\$ 3,600	\$ 2,340							\$ 1,260	\$ 3,600	\$ 2,340
* Savings due to interior & exterior lighting retrofit	\$ 5,928	\$ 6,240	\$ 312							\$ 5,928	\$ 6,240	\$ 312
* Savings due to water conservation retrofit							\$ 3,228	\$ 3,587	\$ 359	\$ 3,228	\$ 3,587	\$ 359
Sub-Total	\$ 7,188	\$ 9,840	\$ 2,652	\$ -	\$ -	\$ -	\$ 3,228	\$ 3,587	\$ 359	\$ 10,416	\$ 13,427	\$ 3,011
JAMES E. BIGGS EARLY CHILDHOOD EDUCATION CENTER												
* Savings due to interior & exterior lighting retrofit	\$ 2,069	\$ 2,178	\$ 109							\$ 2,069	\$ 2,178	\$ 109
* Savings due to water conservation retrofit							\$ 489	\$ 543	\$ 54	\$ 489	\$ 543	\$ 54
Sub-Total	\$ 2,069	\$ 2,178	\$ 109	\$ -	\$ -	\$ -	\$ 489	\$ 543	\$ 54	\$ 2,558	\$ 2,721	\$ 163
COVINGTON CENTRAL OFFICE												
* Savings due to interior & exterior lighting retrofit	\$ 1,776	\$ 1,869	\$ 93							\$ 1,776	\$ 1,869	\$ 93
TRANSPORTATION & MAINTENANCE BUILDING												
* Savings due to interior & exterior lighting retrofit	\$ 1,120	\$ 1,179	\$ 59							\$ 1,120	\$ 1,179	\$ 59
TITLE 1 PIKE ST. BUILDING												
* Savings due to interior & exterior lighting retrofit	\$ 1,321	\$ 1,390	\$ 70							\$ 1,321	\$ 1,390	\$ 70
COVINGTON INSTRUCTIONAL SUPPORT & ADULT HIGH SCHOOL (LEVASSOR)												
* Savings due to interior & exterior lighting retrofit	\$ 2,459	\$ 2,588	\$ 129							\$ 2,459	\$ 2,588	\$ 129
Savings Total	\$ 182,040	\$ 224,635	\$ 42,595	\$ 16,024	\$ 21,380	\$ 5,356	\$ 24,875	\$ 27,639	\$ 2,764	\$ 222,939	\$ 273,654	\$ 50,714

Note:

- Solar Photovoltaic Annual Electricity Production (kWh/year) x SRECs rate (\$/kWh) = Annual SRECs Savings (\$/year) = 406,082 kWh/year x \$0.17245/kWh = \$7,003/year
- Solar Photovoltaic Annual Electricity Production (kWh/year) x SRECs rate (\$/kWh) = Annual SRECs Savings (\$/year) = 243,538 kWh/year x \$0.17245/kWh = \$4,200/year

Utility Bill vs. Calculated Savings Comparison

Year 3

Description	Guaranteed Savings	Weather Adjusted Utility Savings	Equipment Overage Adjustments	Calculated Savings	Difference
UTILITY SAVINGS					
HOLMES HIGH SCHOOL, MIDDLE SCHOOL, AND ADMINISTRATION BUILDING					
* Electric	\$ 35,417	\$ 68,447	\$ 13,143	\$ 52,184	\$ 29,406
* Gas (Weather Adjusted)	\$ 7,897	\$ (1,795)	\$ 5,057	\$ 10,682	\$ (7,420)
FIELDHOUSE, SCIENCE BUILDING, AND CHAPMAN VOCATIONAL EDUCATION CENTER					
* Electric	\$ 61,113	\$ 69,327	\$ 545	\$ 66,575	\$ 3,297
* Gas (Weather Adjusted)	\$ 3,581	\$ 24,699	\$ (67)	\$ 4,985	\$ 19,647
SIXTH DISTRICT ELEMENTARY SCHOOL					
* Electric	\$ 9,150	\$ 34,143	\$ (6,858)	\$ 11,299	\$ 15,986
* Gas (Weather Adjusted)	\$ 406	\$ 1,392	\$ (146)	\$ 520	\$ 725
NINTH DISTRICT ELEMENTARY SCHOOL					
* Electric	\$ 10,343	\$ 22,681	\$ 257	\$ 18,624	\$ 4,313
* Gas (Weather Adjusted)	\$ 3,898	\$ 5,062	\$ 92	\$ 4,884	\$ 269
JOHN G. CARLISLE ELEMENTARY SCHOOL					
* Electric	\$ 37,656	\$ 38,447	\$ 2,662	\$ 40,760	\$ 349
* Gas (Weather Adjusted)	\$ 168	\$ (2,786)	\$ 402	\$ 211	\$ (2,594)
LATONIA ELEMENTARY SCHOOL					
* Electric	\$ 12,430	\$ 34,548	\$ 962	\$ 16,149	\$ 19,361
* Gas (Weather Adjusted)	\$ 75	\$ 471	\$ 43	\$ 97	\$ 417
GLENN O. SWING ELEMENTARY SCHOOL					
* Electric	\$ 7,188	\$ 20,515	\$ (8,024)	\$ 9,840	\$ 2,651
JAMES E. BIGGS EARLY CHILDHOOD EDUCATION CENTER					
* Electric	\$ 2,069	\$ 6,990		\$ 2,178	\$ 4,812
COVINGTON CENTRAL OFFICE					
* Electric	\$ 1,776	\$ 450		\$ 1,869	\$ (1,419)
TRANSPORTATION AND MAINTENANCE BUILDING					
* Electric	\$ 1,120	\$ 5,768		\$ 1,179	\$ 4,589
TITLE 1 PIKE ST. BUILDING					
* Electric	\$ 1,321	\$ 2,600		\$ 1,390	\$ 1,210
COVINGTON INSTRUCTIONAL SUPPORT & ADULT HIGH SCHOOL (LEVASSOR)					
* Electric	\$ 2,459	\$ 2,175		\$ 2,588	\$ (413)
SAVINGS	\$ 198,065	\$ 333,135	\$ 8,068	\$ 246,015	\$ 95,188

* Guaranteed and calculated savings totals do not include water savings

Calculated savings are defined in the Performance Guarantee Agreement, not based on raw utility data. Raw utility data is not used to calculate energy savings because it is inaccurate and very time consuming. However, we feel it is important to compare raw utility data to the calculated savings as a cross check. Therefore, we have provided raw utility data with this report. After adjusting for rate changes, weather and owner overrides, the raw utility data corresponds to within 39% or \$95,188 of the calculated savings.

Utility Bill Savings

Buildings:

Holmes High School, Middle School, and Administration Building

Timeframe			ELECTRIC								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	119,210	\$ 0.0931	\$ 10,510	182,805	\$ 0.0794	\$ 14,903	63,595	\$ 0.0931	\$ 5,920
2015	2020	Aug	135,832	\$ 0.0931	\$ 11,398	245,941	\$ 0.0794	\$ 18,779	110,109	\$ 0.0931	\$ 10,249
2015	2020	Sept	164,464	\$ 0.0931	\$ 13,848	174,367	\$ 0.0794	\$ 14,230	9,903	\$ 0.0931	\$ 922
2015	2020	Oct	95,744	\$ 0.0931	\$ 9,080	150,247	\$ 0.0794	\$ 12,122	54,503	\$ 0.0931	\$ 5,073
2015	2020	Nov	89,696	\$ 0.0931	\$ 8,561	153,653	\$ 0.0794	\$ 12,865	63,957	\$ 0.0931	\$ 5,953
2014	2020	Dec	91,467	\$ 0.0931	\$ 9,108	150,977	\$ 0.0794	\$ 11,009	59,510	\$ 0.0931	\$ 5,539
2015	2021	Jan	92,527	\$ 0.0931	\$ 9,082	156,877	\$ 0.0794	\$ 10,978	64,350	\$ 0.0931	\$ 5,990
2015	2021	Feb	89,179	\$ 0.0931	\$ 9,086	141,868	\$ 0.0794	\$ 10,494	52,689	\$ 0.0931	\$ 4,904
2015	2021	March	86,747	\$ 0.0931	\$ 8,633	135,240	\$ 0.0794	\$ 10,668	48,493	\$ 0.0931	\$ 4,514
2015	2021	April	88,188	\$ 0.0931	\$ 8,905	166,008	\$ 0.0794	\$ 14,841	77,820	\$ 0.0931	\$ 7,244
2015	2021	May	99,582	\$ 0.0931	\$ 9,443	177,193	\$ 0.0794	\$ 14,635	77,611	\$ 0.0931	\$ 7,224
2015	2021	June	125,746	\$ 0.0931	\$ 11,341	178,539	\$ 0.0794	\$ 14,269	52,793	\$ 0.0931	\$ 4,914
Total			1,278,382	\$ 0.0931	\$ 118,995	2,013,715	\$ 0.0794	\$ 159,792	735,333	\$ 0.0931	\$ 68,447

Total Savings: \$ 66,652

Timeframe			GAS												
Base Year	Current Year	Month	Current Year				Base Year						Savings		
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather Adjustment	Adj. Usage (therms)	Usage (Therms)	Rate (\$ / Therm)	Savings (\$)
2015	2020	July	-	240	\$ 0.6261	\$ 529	-	351	0.5786	611	1.00	351	111	\$ 0.6261	\$ 70
2015	2020	Aug	-	230	\$ 0.6261	\$ 523	-	518	0.5786	692	1.00	518	288	\$ 0.6261	\$ 180
2015	2020	Sept	60	280	\$ 0.6261	\$ 549	19	1,858	0.5786	1,473	1.00	1,858	1,578	\$ 0.6261	\$ 988
2015	2020	Oct	275	240	\$ 0.6261	\$ 536	258	13,649	0.5786	8,319	1.07	14,548	14,308	\$ 0.6261	\$ 8,959
2015	2020	Nov	489	2,950	\$ 0.6261	\$ 1,506	508	16,179	0.5786	8,153	0.96	15,574	12,624	\$ 0.6261	\$ 7,904
2014	2020	Dec	906	11,100	\$ 0.6261	\$ 7,987	974	30,714	0.5786	17,930	0.93	28,570	17,470	\$ 0.6261	\$ 10,939
2015	2021	Jan	962	24,080	\$ 0.6261	\$ 13,868	1,224	31,684	0.5786	17,313	0.79	24,902	822	\$ 0.6261	\$ 515
2015	2021	Feb	951	28,180	\$ 0.6261	\$ 16,354	1,249	21,731	0.5786	12,051	0.76	16,546	(11,634)	\$ 0.6261	\$ (7,284)
2015	2021	Mar	501	24,510	\$ 0.6261	\$ 14,603	790	6,850	0.5786	3,756	0.63	4,344	(20,166)	\$ 0.6261	\$ (12,626)
2015	2021	Apr	373	11,910	\$ 0.6261	\$ 8,000	313	1,004	0.5786	928	1.19	1,197	(10,713)	\$ 0.6261	\$ (6,708)
2015	2021	May	183	7,570	\$ 0.6261	\$ 4,821	79	320	0.5786	595	1.00	320	(7,250)	\$ 0.6261	\$ (4,539)
2015	2021	June	5	520	\$ 0.6261	\$ 732	16	215	0.5786	542	1.00	215	(305)	\$ 0.6261	\$ (191)
Total			4,705	111,810	\$ 0.6261	\$ 70,008	5,430	125,074	\$ 0.5786	\$ 72,362	0.87	108,944	(2,866)	\$ 0.6261	\$ (1,795)

Utility Bill Savings

Buildings:

Fieldhouse, Science Building, and Chapman Vocational Education Center

Timeframe			ELECTRIC								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	36,602	\$ 0.0916	\$ 6,947	109,463	\$ 0.0698	\$ 8,423	72,861	\$ 0.0916	\$ 6,675
2015	2020	Aug	54,678	\$ 0.0916	\$ 8,119	130,589	\$ 0.0698	\$ 9,858	75,911	\$ 0.0916	\$ 6,955
2015	2020	Sept	50,956	\$ 0.0916	\$ 8,266	107,255	\$ 0.0698	\$ 7,144	56,299	\$ 0.0916	\$ 5,158
2015	2020	Oct	42,743	\$ 0.0916	\$ 3,142	90,116	\$ 0.0698	\$ 5,532	47,373	\$ 0.0916	\$ 4,340
2015	2020	Nov	57,280	\$ 0.0916	\$ 4,080	112,015	\$ 0.0698	\$ 7,291	54,735	\$ 0.0916	\$ 5,015
2014	2020	Dec	83,946	\$ 0.0916	\$ 6,386	178,213	\$ 0.0698	\$ 12,148	94,267	\$ 0.0916	\$ 8,636
2015	2021	Jan	119,014	\$ 0.0916	\$ 8,889	164,273	\$ 0.0698	\$ 11,079	45,259	\$ 0.0916	\$ 4,146
2015	2021	Feb	118,359	\$ 0.0916	\$ 8,916	179,452	\$ 0.0698	\$ 12,292	61,093	\$ 0.0916	\$ 5,597
2015	2021	March	86,183	\$ 0.0916	\$ 6,316	110,140	\$ 0.0698	\$ 7,543	23,957	\$ 0.0916	\$ 2,195
2015	2021	April	53,122	\$ 0.0916	\$ 4,005	105,367	\$ 0.0698	\$ 7,271	52,245	\$ 0.0916	\$ 4,786
2015	2021	May	46,795	\$ 0.0916	\$ 3,457	123,385	\$ 0.0698	\$ 9,403	76,590	\$ 0.0916	\$ 7,017
2015	2021	June	13,968	\$ 0.0916	\$ 1,439	110,089	\$ 0.0698	\$ 8,205	96,121	\$ 0.0916	\$ 8,806
Total			763,646	\$ 0.0916	\$ 69,962	1,520,357	\$ 0.0698	\$ 106,189	756,711	\$ 0.0916	\$ 69,327

Total Savings: \$ 94,026

Timeframe			GAS											
Base Year	Current Year	Month	Current Year				Base Year				Savings			
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather Adjustment	Adj. Usage (therms)	Usage (Therms)	Savings (\$)
2015	2020	July	-	360	\$ 0.8868	\$ 646	-	2,311	0.6424	1,615	1.00	2,311	1,951	\$ 1,730
2015	2020	Aug	-	680	\$ 0.8868	\$ 707	-	1,752	0.6424	1,315	1.00	1,752	1,072	\$ 951
2015	2020	Sept	60	630	\$ 0.8868	\$ 634	19	2,406	0.6424	1,777	1.00	2,406	1,776	\$ 1,575
2015	2020	Oct	275	350	\$ 0.8868	\$ 612	258	3,158	0.6424	2,761	1.07	3,366	3,016	\$ 2,675
2015	2020	Nov	489	640	\$ 0.8868	\$ 1,235	508	4,556	0.6424	2,682	0.96	4,385	3,745	\$ 3,321
2014	2020	Dec	906	1,380	\$ 0.8868	\$ 1,832	974	8,859	0.6424	5,477	0.93	8,240	6,860	\$ 6,084
2015	2021	Jan	962	2,990	\$ 0.8868	\$ 2,378	1,224	9,334	0.6424	5,413	0.79	7,336	4,346	\$ 3,854
2015	2021	Feb	951	3,670	\$ 0.8868	\$ 2,758	1,249	6,204	0.6424	3,740	0.76	4,724	1,054	\$ 935
2015	2021	March	501	4,200	\$ 0.8868	\$ 1,988	790	3,740	0.6424	2,246	0.63	2,372	(1,828)	\$ (1,621)
2015	2021	April	373	1,750	\$ 0.8868	\$ 1,478	313	3,255	0.6424	2,043	1.19	3,878	2,128	\$ 1,888
2015	2021	May	183	910	\$ 0.8868	\$ 975	79	2,659	0.6424	1,787	1.00	2,659	1,749	\$ 1,551
2015	2021	June	5	350	\$ 0.8868	\$ 640	16	2,331	0.6424	1,628	1.00	2,331	1,981	\$ 1,757
Total			4,705	17,910	\$ 0.8868	\$ 15,883	5,430	50,565	\$ 0.6424	\$ 32,483	0.87	45,762	27,852	\$ 24,699

Utility Bill Savings

Buildings:

Sixth District Elementary School

Timeframe			ELECTRIC								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	44,700	\$ 0.1086	\$ 4,106	68,700	\$ 0.0840	\$ 5,465	24,000	\$ 0.1086	\$ 2,606
2015	2020	Aug	45,900	\$ 0.1086	\$ 4,329	85,800	\$ 0.0840	\$ 6,555	39,900	\$ 0.1086	\$ 4,333
2015	2020	Sept	49,800	\$ 0.1086	\$ 4,977	68,700	\$ 0.0840	\$ 5,437	18,900	\$ 0.1086	\$ 2,053
2015	2020	Oct	35,100	\$ 0.1086	\$ 3,996	50,400	\$ 0.0840	\$ 4,356	15,300	\$ 0.1086	\$ 1,662
2015	2020	Nov	24,300	\$ 0.1086	\$ 2,980	53,700	\$ 0.0840	\$ 4,556	29,400	\$ 0.1086	\$ 3,193
2014	2020	Dec	24,900	\$ 0.1086	\$ 2,931	49,500	\$ 0.0840	\$ 4,365	24,600	\$ 0.1086	\$ 2,672
2015	2021	Jan	25,800	\$ 0.1086	\$ 2,966	49,500	\$ 0.0840	\$ 4,329	23,700	\$ 0.1086	\$ 2,574
2015	2021	Feb	25,200	\$ 0.1086	\$ 3,014	47,700	\$ 0.0840	\$ 4,279	22,500	\$ 0.1086	\$ 2,443
2015	2021	March	27,600	\$ 0.1086	\$ 3,041	47,700	\$ 0.0840	\$ 4,730	20,100	\$ 0.1086	\$ 2,183
2015	2021	April	26,400	\$ 0.1086	\$ 3,393	64,800	\$ 0.0840	\$ 5,684	38,400	\$ 0.1086	\$ 4,170
2015	2021	May	29,700	\$ 0.1086	\$ 3,648	75,000	\$ 0.0840	\$ 5,998	45,300	\$ 0.1086	\$ 4,919
2015	2021	June	50,700	\$ 0.1086	\$ 5,155	63,000	\$ 0.0840	\$ 5,097	12,300	\$ 0.1086	\$ 1,336
Total			410,100	\$ 0.1086	\$ 44,536	724,500	\$ 0.0840	\$ 60,850	314,400	\$ 0.1086	\$ 34,143

Total Savings: \$ 35,535

Timeframe			GAS												
Base Year	Current Year	Month	Current Year				Base Year						Savings		
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather Adjustment	Adj. Usage (therms)	Usage (Therms)	Rate (\$ / Therm)	Savings (\$)
2015	2020	July	-	145	\$ 0.7127	\$ 127	-	89	\$ 0.6945	\$ 103	1.00	89	(56)	\$ 0.7127	\$ (40)
2015	2020	Aug	-	119	\$ 0.7127	\$ 113	-	129	\$ 0.6945	\$ 129	1.00	129	10	\$ 0.7127	\$ 7
2015	2020	Sept	60	117	\$ 0.7127	\$ 117	19	144	\$ 0.6945	\$ 135	1.00	144	27	\$ 0.7127	\$ 19
2015	2020	Oct	275	122	\$ 0.7127	\$ 120	258	253	\$ 0.6945	\$ 213	1.07	269	147	\$ 0.7127	\$ 105
2015	2020	Nov	489	797	\$ 0.7127	\$ 528	508	2,752	\$ 0.6945	\$ 1,632	0.96	2,649	1,852	\$ 0.7127	\$ 1,320
2014	2020	Dec	906	2,244	\$ 0.7127	\$ 1,682	974	4,902	\$ 0.6945	\$ 3,623	0.93	4,560	2,316	\$ 0.7127	\$ 1,650
2015	2021	Jan	962	3,814	\$ 0.7127	\$ 2,676	1,224	4,083	\$ 0.6945	\$ 2,785	0.79	3,209	(605)	\$ 0.7127	\$ (431)
2015	2021	Feb	951	3,636	\$ 0.7127	\$ 2,468	1,249	5,326	\$ 0.6945	\$ 3,610	0.76	4,055	419	\$ 0.7127	\$ 299
2015	2021	March	501	2,635	\$ 0.7127	\$ 1,749	790	1,586	\$ 0.6945	\$ 1,035	0.63	1,006	(1,629)	\$ 0.7127	\$ (1,161)
2015	2021	April	373	641	\$ 0.7127	\$ 507	313	243	\$ 0.6945	\$ 204	1.19	290	(351)	\$ 0.7127	\$ (250)
2015	2021	May	183	273	\$ 0.7127	\$ 227	79	127	\$ 0.6945	\$ 127	1.00	127	(146)	\$ 0.7127	\$ (104)
2015	2021	June	5	128	\$ 0.7127	\$ 142	16	96	\$ 0.6945	\$ 107	1.00	96	(32)	\$ 0.7127	\$ (23)
Total			4,705	14,671	\$ 0.7127	\$ 10,456	5,430	19,731	\$ 0.6945	\$ 13,703	0.87	16,624	1,953	\$ 0.7127	\$ 1,392

Utility Bill Savings

Buildings:

Ninth District Elementary School

Timeframe			ELECTRIC								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	30,080	\$ 0.1071	\$ 3,070	53,440	\$ 0.0860	\$ 4,186	23,360	\$ 0.1071	\$ 2,503
2015	2020	Aug	34,240	\$ 0.1071	\$ 3,431	66,720	\$ 0.0860	\$ 5,323	32,480	\$ 0.1071	\$ 3,480
2015	2020	Sept	38,400	\$ 0.1071	\$ 3,708	53,600	\$ 0.0860	\$ 4,348	15,200	\$ 0.1071	\$ 1,629
2015	2020	Oct	25,280	\$ 0.1071	\$ 3,057	38,720	\$ 0.0860	\$ 3,539	13,440	\$ 0.1071	\$ 1,440
2015	2020	Nov	22,400	\$ 0.1071	\$ 2,746	31,360	\$ 0.0860	\$ 3,084	8,960	\$ 0.1071	\$ 960
2014	2020	Dec	19,680	\$ 0.1071	\$ 2,513	29,280	\$ 0.0860	\$ 2,934	9,600	\$ 0.1071	\$ 1,029
2015	2021	Jan	21,120	\$ 0.1071	\$ 1,822	27,520	\$ 0.0860	\$ 2,815	6,400	\$ 0.1071	\$ 686
2015	2021	Feb	15,520	\$ 0.1071	\$ 1,531	29,600	\$ 0.0860	\$ 2,962	14,080	\$ 0.1071	\$ 1,509
2015	2021	March	21,120	\$ 0.1071	\$ 1,976	31,200	\$ 0.0860	\$ 3,108	10,080	\$ 0.1071	\$ 1,080
2015	2021	April	24,640	\$ 0.1071	\$ 3,050	46,400	\$ 0.0860	\$ 3,992	21,760	\$ 0.1071	\$ 2,332
2015	2021	May	26,560	\$ 0.1071	\$ 3,004	54,240	\$ 0.0860	\$ 4,310	27,680	\$ 0.1071	\$ 2,966
2015	2021	June	33,120	\$ 0.1071	\$ 3,539	61,760	\$ 0.0860	\$ 4,433	28,640	\$ 0.1071	\$ 3,069
Total			312,160	\$ 0.1071	\$ 33,447	523,840	\$ 0.0860	\$ 45,034	211,680	\$ 0.1071	\$ 22,681

Total Savings: \$ 27,742

Timeframe			GAS												
Base Year	Current Year	Month	Current Year				Base Year						Savings		
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather Adjustment	Adj. Usage (therms)	Usage (Therms)	Rate (\$ / Therm)	Savings (\$)
2015	2020	July	-	95	\$ 0.7004	\$ 100	-	340	\$ 0.6847	\$ 255	1.00	340	245	\$ 0.7004	\$ 172
2015	2020	Aug	-	129	\$ 0.7004	\$ 118	-	443	\$ 0.6847	\$ 323	1.00	443	314	\$ 0.7004	\$ 220
2015	2020	Sept	60	138	\$ 0.7004	\$ 129	19	419	\$ 0.6847	\$ 299	1.00	419	281	\$ 0.7004	\$ 197
2015	2020	Oct	275	445	\$ 0.7004	\$ 304	258	1,087	\$ 0.6847	\$ 754	1.07	1,158	713	\$ 0.7004	\$ 500
2015	2020	Nov	489	1,196	\$ 0.7004	\$ 794	508	3,751	\$ 0.6847	\$ 2,206	0.96	3,610	2,414	\$ 0.7004	\$ 1,691
2014	2020	Dec	906	2,440	\$ 0.7004	\$ 1,778	974	7,151	\$ 0.6847	\$ 5,263	0.93	6,652	4,212	\$ 0.7004	\$ 2,950
2015	2021	Jan	962	3,395	\$ 0.7004	\$ 2,416	1,224	6,527	\$ 0.6847	\$ 4,423	0.79	5,130	1,735	\$ 0.7004	\$ 1,215
2015	2021	Feb	951	4,798	\$ 0.7004	\$ 3,140	1,249	5,181	\$ 0.6847	\$ 3,513	0.76	3,945	(853)	\$ 0.7004	\$ (597)
2015	2021	March	501	2,421	\$ 0.7004	\$ 1,674	790	1,644	\$ 0.6847	\$ 1,071	0.63	1,043	(1,378)	\$ 0.7004	\$ (965)
2015	2021	April	373	1,051	\$ 0.7004	\$ 756	313	487	\$ 0.6847	\$ 358	1.19	580	(471)	\$ 0.7004	\$ (330)
2015	2021	May	183	587	\$ 0.7004	\$ 430	79	400	\$ 0.6847	\$ 295	1.00	400	(187)	\$ 0.7004	\$ (131)
2015	2021	June	5	205	\$ 0.7004	\$ 198	16	408	\$ 0.6847	\$ 299	1.00	408	203	\$ 0.7004	\$ 142
Total			4,705	16,900	\$ 0.7004	\$ 11,837	5,430	27,836	\$ 0.6847	\$ 19,059	0.87	24,126	7,226	\$ 0.7004	\$ 5,062

Utility Bill Savings

Buildings:

John G. Carlisle Elementary School

Timeframe			ELECTRIC								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	18,004	\$ 0.1238	\$ 2,901	64,000	\$ 0.0939	\$ 5,547	45,996	\$ 0.1238	\$ 5,694
2015	2020	Aug	20,904	\$ 0.1238	\$ 3,205	75,040	\$ 0.0939	\$ 6,226	54,136	\$ 0.1238	\$ 6,702
2015	2020	Sept	40,064	\$ 0.1238	\$ 4,397	60,000	\$ 0.0939	\$ 5,430	19,936	\$ 0.1238	\$ 2,468
2015	2020	Oct	27,273	\$ 0.1238	\$ 3,304	48,640	\$ 0.0939	\$ 4,451	21,367	\$ 0.1238	\$ 2,645
2015	2020	Nov	29,942	\$ 0.1238	\$ 3,410	42,560	\$ 0.0939	\$ 4,309	12,618	\$ 0.1238	\$ 1,562
2014	2020	Dec	28,740	\$ 0.1238	\$ 3,476	40,000	\$ 0.0939	\$ 4,168	11,260	\$ 0.1238	\$ 1,394
2015	2021	Jan	31,007	\$ 0.1238	\$ 3,590	38,240	\$ 0.0939	\$ 4,041	7,233	\$ 0.1238	\$ 895
2015	2021	Feb	28,566	\$ 0.1238	\$ 3,550	39,680	\$ 0.0939	\$ 4,163	11,114	\$ 0.1238	\$ 1,376
2015	2021	March	26,614	\$ 0.1238	\$ 3,305	49,760	\$ 0.0939	\$ 5,104	23,146	\$ 0.1238	\$ 2,865
2015	2021	April	24,155	\$ 0.1238	\$ 3,223	60,960	\$ 0.0939	\$ 5,667	36,805	\$ 0.1238	\$ 4,556
2015	2021	May	25,287	\$ 0.1238	\$ 3,265	67,360	\$ 0.0939	\$ 5,996	42,073	\$ 0.1238	\$ 5,208
2015	2021	June	33,516	\$ 0.1238	\$ 3,731	58,400	\$ 0.0939	\$ 5,455	24,884	\$ 0.1238	\$ 3,081
Total			334,072	\$ 0.1238	\$ 41,357	644,640	\$ 0.0939	\$ 60,555	310,568	\$ 0.1238	\$ 38,447

Total Savings: \$ 35,661

Timeframe			GAS												
Base Year	Current Year	Month	Current Year				Base Year						Savings		
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather Adjustment	Adj. Usage (therms)	Usage (Therms)	Rate (\$ / Therm)	Savings (\$)
2015	2020	July	-	111	\$ 0.7104	\$ 109	-	131	\$ 0.7212	\$ 129	1.00	131	20	\$ 0.7212	\$ 15
2015	2020	Aug	-	103	\$ 0.7104	\$ 104	-	153	\$ 0.7212	\$ 144	1.00	153	50	\$ 0.7212	\$ 36
2015	2020	Sept	60	121	\$ 0.7104	\$ 119	19	153	\$ 0.7212	\$ 140	1.00	153	32	\$ 0.7212	\$ 23
2015	2020	Oct	275	124	\$ 0.7104	\$ 121	258	160	\$ 0.7212	\$ 153	1.07	171	47	\$ 0.7212	\$ 34
2015	2020	Nov	489	955	\$ 0.7104	\$ 643	508	1,066	\$ 0.7212	\$ 662	0.96	1,026	71	\$ 0.7212	\$ 51
2014	2020	Dec	906	2,047	\$ 0.7104	\$ 1,494	974	3,220	\$ 0.7212	\$ 2,396	0.93	2,995	948	\$ 0.7212	\$ 684
2015	2021	Jan	962	2,912	\$ 0.7104	\$ 2,088	1,224	3,076	\$ 0.7212	\$ 2,110	0.79	2,417	(495)	\$ 0.7212	\$ (357)
2015	2021	Feb	951	3,750	\$ 0.7104	\$ 2,444	1,249	2,678	\$ 0.7212	\$ 1,840	0.76	2,039	(1,711)	\$ 0.7212	\$ (1,234)
2015	2021	March	501	2,391	\$ 0.7104	\$ 1,666	790	533	\$ 0.7212	\$ 380	0.63	338	(2,053)	\$ 0.7212	\$ (1,481)
2015	2021	April	373	705	\$ 0.7104	\$ 526	313	182	\$ 0.7212	\$ 164	1.19	217	(488)	\$ 0.7212	\$ (352)
2015	2021	May	183	398	\$ 0.7104	\$ 308	79	134	\$ 0.7212	\$ 131	1.00	134	(264)	\$ 0.7212	\$ (191)
2015	2021	June	5	161	\$ 0.7104	\$ 166	16	141	\$ 0.7212	\$ 135	1.00	141	(20)	\$ 0.7212	\$ (15)
Total			4,705	13,778	\$ 0.7104	\$ 9,788	5,430	11,627	\$ 0.7212	\$ 8,385	0.87	9,915	(3,863)	\$ 0.7212	\$ (2,786)

Utility Bill Savings

Buildings:

Latonia Elementary School

Timeframe			ELECTRIC								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	40,800	\$ 0.1049	\$ 3,605	66,600	\$ 0.0908	\$ 5,832	25,800	\$ 0.1049	\$ 2,706
2015	2020	Aug	48,600	\$ 0.1049	\$ 4,235	76,500	\$ 0.0908	\$ 6,746	27,900	\$ 0.1049	\$ 2,926
2015	2020	Sept	33,600	\$ 0.1049	\$ 5,338	62,700	\$ 0.0908	\$ 5,725	29,100	\$ 0.1049	\$ 3,052
2015	2020	Oct	35,400	\$ 0.1049	\$ 3,489	55,800	\$ 0.0908	\$ 4,907	20,400	\$ 0.1049	\$ 2,140
2015	2020	Nov	29,700	\$ 0.1049	\$ 2,900	62,400	\$ 0.0908	\$ 5,466	32,700	\$ 0.1049	\$ 3,430
2014	2020	Dec	27,600	\$ 0.1049	\$ 2,539	55,500	\$ 0.0908	\$ 5,314	27,900	\$ 0.1049	\$ 2,926
2015	2021	Jan	10,800	\$ 0.1049	\$ 2,907	51,900	\$ 0.0908	\$ 5,073	41,100	\$ 0.1049	\$ 4,311
2015	2021	Feb	35,400	\$ 0.1049	\$ 3,298	65,400	\$ 0.0908	\$ 5,893	30,000	\$ 0.1049	\$ 3,146
2015	2021	March	35,100	\$ 0.1049	\$ 3,292	56,400	\$ 0.0908	\$ 5,379	21,300	\$ 0.1049	\$ 2,234
2015	2021	April	32,700	\$ 0.1049	\$ 3,404	63,300	\$ 0.0908	\$ 5,861	30,600	\$ 0.1049	\$ 3,209
2015	2021	May	35,400	\$ 0.1049	\$ 3,487	60,000	\$ 0.0908	\$ 5,399	24,600	\$ 0.1049	\$ 2,580
2015	2021	June	43,200	\$ 0.1049	\$ 4,329	61,200	\$ 0.0908	\$ 5,399	18,000	\$ 0.1049	\$ 1,888
Total			408,300	\$ 0.1049	\$ 42,823	737,700	\$ 0.0908	\$ 66,994	329,400	\$ 0.1049	\$ 34,548

Total Savings: \$ 35,019

Timeframe			GAS												
Base Year	Current Year	Month	Current Year				Base Year						Savings		
			Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather (HDD)	Usage (Therms)	Rate (\$ / Therm)	Costs (\$)	Weather Adjustment	Adj. Usage (therms)	Usage (Therms)	Rate (\$ / Therm)	Savings (\$)
2015	2020	July	-	112	\$ 0.7313	\$ 109	-	99	\$ 0.7114	\$ 109	1.00	99	(13)	\$ 0.7313	\$ (10)
2015	2020	Aug	-	82	\$ 0.7313	\$ 93	-	182	\$ 0.7114	\$ 161	1.00	182	100	\$ 0.7313	\$ 73
2015	2020	Sept	60	93	\$ 0.7313	\$ 103	19	166	\$ 0.7114	\$ 148	1.00	166	73	\$ 0.7313	\$ 54
2015	2020	Oct	275	134	\$ 0.7313	\$ 127	258	438	\$ 0.7114	\$ 333	1.07	466	332	\$ 0.7313	\$ 243
2015	2020	Nov	489	322	\$ 0.7313	\$ 251	508	953	\$ 0.7114	\$ 597	0.96	917	595	\$ 0.7313	\$ 435
2014	2020	Dec	906	1,306	\$ 0.7313	\$ 984	974	2,530	\$ 0.7114	\$ 1,893	0.93	2,353	1,047	\$ 0.7313	\$ 766
2015	2021	Jan	962	2,332	\$ 0.7313	\$ 1,663	1,224	2,475	\$ 0.7114	\$ 1,708	0.79	1,945	(387)	\$ 0.7313	\$ (283)
2015	2021	Feb	951	2,555	\$ 0.7313	\$ 1,731	1,249	2,927	\$ 0.7114	\$ 2,006	0.76	2,229	(326)	\$ 0.7313	\$ (239)
2015	2021	March	501	1,643	\$ 0.7313	\$ 1,113	790	1,422	\$ 0.7114	\$ 933	0.63	902	(741)	\$ 0.7313	\$ (542)
2015	2021	April	373	550	\$ 0.7313	\$ 433	313	532	\$ 0.7114	\$ 387	1.19	634	84	\$ 0.7313	\$ 61
2015	2021	May	183	357	\$ 0.7313	\$ 281	79	213	\$ 0.7114	\$ 180	1.00	213	(144)	\$ 0.7313	\$ (106)
2015	2021	June	5	100	\$ 0.7313	\$ 122	16	124	\$ 0.7114	\$ 125	1.00	124	24	\$ 0.7313	\$ 18
Total			4,705	9,586	\$ 0.7313	\$ 7,010	5,430	12,060	\$ 0.7114	\$ 8,580	0.87	10,230	644	\$ 0.7313	\$ 471

Utility Bill Savings

Buildings:

Glenn O. Swing Elementary School

Timeframe			<i>ELECTRIC</i>								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	31,200	\$ 0.1148	\$ 3,315	46,240	\$ 0.1046	\$ 4,358	15,040	\$ 0.1148	\$ 1,726
2015	2020	Aug	30,400	\$ 0.1148	\$ 3,335	57,760	\$ 0.1046	\$ 5,307	27,360	\$ 0.1148	\$ 3,141
2015	2020	Sept	32,960	\$ 0.1148	\$ 3,896	42,880	\$ 0.1046	\$ 4,152	9,920	\$ 0.1148	\$ 1,139
2015	2020	Oct	20,800	\$ 0.1148	\$ 2,596	36,960	\$ 0.1046	\$ 3,634	16,160	\$ 0.1148	\$ 1,855
2015	2020	Nov	18,880	\$ 0.1148	\$ 2,159	33,600	\$ 0.1046	\$ 3,594	14,720	\$ 0.1148	\$ 1,690
2014	2020	Dec	15,840	\$ 0.1148	\$ 1,533	26,880	\$ 0.1046	\$ 3,342	11,040	\$ 0.1148	\$ 1,267
2015	2021	Jan	16,800	\$ 0.1148	\$ 1,637	29,600	\$ 0.1046	\$ 3,473	12,800	\$ 0.1148	\$ 1,469
2015	2021	Feb	15,680	\$ 0.1148	\$ 1,574	29,440	\$ 0.1046	\$ 3,496	13,760	\$ 0.1148	\$ 1,579
2015	2021	March	18,080	\$ 0.1148	\$ 1,817	30,400	\$ 0.1046	\$ 3,548	12,320	\$ 0.1148	\$ 1,414
2015	2021	April	17,760	\$ 0.1148	\$ 2,755	41,440	\$ 0.1046	\$ 4,373	23,680	\$ 0.1148	\$ 2,718
2015	2021	May	20,960	\$ 0.1148	\$ 2,649	35,840	\$ 0.1046	\$ 3,874	14,880	\$ 0.1148	\$ 1,708
2015	2021	June	31,040	\$ 0.1148	\$ 3,773	38,080	\$ 0.1046	\$ 3,826	7,040	\$ 0.1148	\$ 808
Total			270,400	\$ 0.1148	\$ 31,039	449,120	\$ 0.1046	\$ 46,978	178,720	\$ 0.1148	\$ 20,515

Utility Bill Savings

Buildings:

James E. Biggs Early Childhood Education Center

Timeframe			<i>ELECTRIC</i>								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	20,000	\$ 0.0948	\$ 1,604	32,160	\$ 0.0856	\$ 2,413	12,160	\$ 0.0948	\$ 1,152
2015	2020	Aug	21,600	\$ 0.0948	\$ 1,804	36,960	\$ 0.0856	\$ 2,728	15,360	\$ 0.0948	\$ 1,456
2015	2020	Sept	21,600	\$ 0.0948	\$ 2,021	21,920	\$ 0.0856	\$ 1,877	320	\$ 0.0948	\$ 30
2015	2020	Oct	15,520	\$ 0.0948	\$ 1,561	12,800	\$ 0.0856	\$ 1,277	(2,720)	\$ 0.0948	\$ (258)
2015	2020	Nov	9,920	\$ 0.0948	\$ 1,001	17,760	\$ 0.0856	\$ 1,589	7,840	\$ 0.0948	\$ 743
2014	2020	Dec	13,760	\$ 0.0948	\$ 1,267	17,760	\$ 0.0856	\$ 1,688	4,000	\$ 0.0948	\$ 379
2015	2021	Jan	14,240	\$ 0.0948	\$ 1,344	19,680	\$ 0.0856	\$ 1,782	5,440	\$ 0.0948	\$ 516
2015	2021	Feb	14,080	\$ 0.0948	\$ 1,295	20,640	\$ 0.0856	\$ 1,857	6,560	\$ 0.0948	\$ 622
2015	2021	March	12,960	\$ 0.0948	\$ 1,252	15,360	\$ 0.0856	\$ 1,557	2,400	\$ 0.0948	\$ 227
2015	2021	April	12,640	\$ 0.0948	\$ 1,421	15,360	\$ 0.0856	\$ 1,565	2,720	\$ 0.0948	\$ 258
2015	2021	May	13,440	\$ 0.0948	\$ 1,517	23,840	\$ 0.0856	\$ 1,964	10,400	\$ 0.0948	\$ 986
2015	2021	June	19,040	\$ 0.0948	\$ 1,806	28,320	\$ 0.0856	\$ 2,174	9,280	\$ 0.0948	\$ 879
Total			188,800	\$ 0.0948	\$ 17,893	262,560	\$ 0.0856	\$ 22,472	73,760	\$ 0.0948	\$ 6,990

Utility Bill Savings

Buildings:

Covington Central Office

Timeframe			<i>ELECTRIC</i>								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	13,800	\$ 0.0950	\$ 1,209	15,280	\$ 0.0845	\$ 1,271	1,480	\$ 0.0950	\$ 141
2015	2020	Aug	14,940	\$ 0.0950	\$ 1,315	18,160	\$ 0.0845	\$ 1,412	3,220	\$ 0.0950	\$ 306
2015	2020	Sept	15,500	\$ 0.0950	\$ 1,452	13,640	\$ 0.0845	\$ 1,425	(1,860)	\$ 0.0950	\$ (177)
2015	2020	Oct	10,800	\$ 0.0950	\$ 1,132	11,540	\$ 0.0845	\$ 1,206	740	\$ 0.0950	\$ 70
2015	2020	Nov	12,260	\$ 0.0950	\$ 1,180	12,860	\$ 0.0845	\$ 1,054	600	\$ 0.0950	\$ 57
2014	2020	Dec	15,560	\$ 0.0950	\$ 1,516	15,060	\$ 0.0845	\$ 1,286	(500)	\$ 0.0950	\$ (47)
2015	2021	Jan	17,060	\$ 0.0950	\$ 1,569	13,700	\$ 0.0845	\$ 1,102	(3,360)	\$ 0.0950	\$ (319)
2015	2021	Feb	16,220	\$ 0.0950	\$ 1,512	13,400	\$ 0.0845	\$ 1,195	(2,820)	\$ 0.0950	\$ (268)
2015	2021	March	14,200	\$ 0.0950	\$ 1,338	11,580	\$ 0.0845	\$ 1,149	(2,620)	\$ 0.0950	\$ (249)
2015	2021	April	11,720	\$ 0.0950	\$ 1,199	12,180	\$ 0.0845	\$ 1,023	460	\$ 0.0950	\$ 44
2015	2021	May	10,760	\$ 0.0950	\$ 1,102	14,220	\$ 0.0845	\$ 1,023	3,460	\$ 0.0950	\$ 329
2015	2021	June	12,640	\$ 0.0950	\$ 1,188	18,580	\$ 0.0845	\$ 1,230	5,940	\$ 0.0950	\$ 564
Total			165,460	\$ 0.0950	\$ 15,712	170,200	\$ 0.0845	\$ 14,375	4,740	\$ 0.0950	\$ 450

Utility Bill Savings

Buildings:

Transportation and Maintenance Building

Timeframe			<i>ELECTRIC</i>								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	6,384	\$ 0.1033	\$ 589	9,008	\$ 0.0910	\$ 822	2,624	\$ 0.1033	\$ 271
2015	2020	Aug	6,346	\$ 0.1033	\$ 592	8,745	\$ 0.0910	\$ 804	2,399	\$ 0.1033	\$ 248
2015	2020	Sept	6,169	\$ 0.1033	\$ 616	6,866	\$ 0.0910	\$ 635	697	\$ 0.1033	\$ 72
2015	2020	Oct	3,659	\$ 0.1033	\$ 379	5,454	\$ 0.0910	\$ 485	1,795	\$ 0.1033	\$ 185
2015	2020	Nov	3,694	\$ 0.1033	\$ 379	6,684	\$ 0.0910	\$ 611	2,990	\$ 0.1033	\$ 309
2015	2020	Dec	4,317	\$ 0.1033	\$ 457	17,028	\$ 0.0910	\$ 1,528	12,711	\$ 0.1033	\$ 1,313
2015	2021	Jan	4,255	\$ 0.1033	\$ 445	14,821	\$ 0.0910	\$ 1,330	10,566	\$ 0.1033	\$ 1,092
2015	2021	Feb	3,790	\$ 0.1033	\$ 414	11,628	\$ 0.0910	\$ 1,069	7,838	\$ 0.1033	\$ 810
2015	2021	March	3,821	\$ 0.1033	\$ 464	7,001	\$ 0.0910	\$ 654	3,180	\$ 0.1033	\$ 329
2015	2021	April	3,982	\$ 0.1033	\$ 424	7,491	\$ 0.0910	\$ 701	3,509	\$ 0.1033	\$ 363
2015	2021	May	3,542	\$ 0.1033	\$ 393	8,278	\$ 0.0910	\$ 748	4,736	\$ 0.1033	\$ 489
2014	2021	June	4,844	\$ 0.1033	\$ 511	7,621	\$ 0.0910	\$ 683	2,777	\$ 0.1033	\$ 287
Total			54,803	\$ 0.1033	\$ 5,663	110,625	\$ 0.0910	\$ 10,071	55,822	\$ 0.1033	\$ 5,768

Utility Bill Savings

Buildings:

Title 1 Pike St. Building

Timeframe			<i>ELECTRIC</i>								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	July	5,666	\$ 0.1134	\$ 562	3,610	\$ 0.0968	\$ 338	(2,056)	\$ 0.1134	\$ (233)
2015	2020	Aug	4,758	\$ 0.1134	\$ 486	3,372	\$ 0.0968	\$ 319	(1,386)	\$ 0.1134	\$ (157)
2015	2020	Sept	3,637	\$ 0.1134	\$ 407	1,900	\$ 0.0968	\$ 189	(1,737)	\$ 0.1134	\$ (197)
2015	2020	Oct	1,524	\$ 0.1134	\$ 192	1,424	\$ 0.0968	\$ 140	(100)	\$ 0.1134	\$ (11)
2015	2020	Nov	1,797	\$ 0.1134	\$ 215	1,295	\$ 0.0968	\$ 134	(502)	\$ 0.1134	\$ (57)
2015	2020	Dec	1,762	\$ 0.1134	\$ 220	27,951	\$ 0.0968	\$ 2,711	26,189	\$ 0.1134	\$ 2,969
2015	2021	Jan	1,435	\$ 0.1134	\$ 187	2,675	\$ 0.0968	\$ 259	1,240	\$ 0.1134	\$ 141
2015	2021	Feb	1,228	\$ 0.1134	\$ 174	1,822	\$ 0.0968	\$ 186	594	\$ 0.1134	\$ 67
2015	2021	March	2,561	\$ 0.1134	\$ 293	1,380	\$ 0.0968	\$ 146	(1,181)	\$ 0.1134	\$ (134)
2015	2021	April	1,594	\$ 0.1134	\$ 205	2,025	\$ 0.0968	\$ 205	431	\$ 0.1134	\$ 49
2015	2021	May	1,815	\$ 0.1134	\$ 224	3,280	\$ 0.0968	\$ 305	1,465	\$ 0.1134	\$ 166
2014	2021	June	3,748	\$ 0.1134	\$ 409	3,729	\$ 0.0968	\$ 340	(19)	\$ 0.1134	\$ (2)
Total			31,525	\$ 0.1134	\$ 3,574	54,463	\$ 0.0968	\$ 5,272	22,938	\$ 0.1134	\$ 2,600

Utility Bill Savings

Buildings:

Covington Instructional Support & Adult High School (Levassor)

Timeframe			<i>ELECTRIC</i>								
Base Year	Current Year	Month	Current Year			Base Year			Savings		
			Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Costs (\$)	Usage (kWh)	Rate (\$ / kWh)	Savings (\$)
2015	2020	Jul	8,325	\$ 0.1072	\$ 813	5,710	\$ 0.0947	\$ 550	(2,615)	\$ 0.1072	\$ (280)
2015	2020	Aug	8,274	\$ 0.1072	\$ 829	10,275	\$ 0.0947	\$ 959	2,001	\$ 0.1072	\$ 215
2015	2020	Sep	9,009	\$ 0.1072	\$ 964	6,215	\$ 0.0947	\$ 576	(2,794)	\$ 0.1072	\$ (300)
2015	2020	Oct	3,993	\$ 0.1072	\$ 431	4,305	\$ 0.0947	\$ 386	312	\$ 0.1072	\$ 33
2015	2020	Nov	2,575	\$ 0.1072	\$ 287	5,060	\$ 0.0947	\$ 467	2,485	\$ 0.1072	\$ 266
2014	2020	Dec	2,504	\$ 0.1072	\$ 291	5,030	\$ 0.0947	\$ 499	2,526	\$ 0.1072	\$ 271
2015	2021	Jan	2,717	\$ 0.1072	\$ 311	5,820	\$ 0.0947	\$ 565	3,103	\$ 0.1072	\$ 333
2015	2021	Feb	3,063	\$ 0.1072	\$ 353	4,505	\$ 0.0947	\$ 454	1,442	\$ 0.1072	\$ 155
2015	2021	March	2,865	\$ 0.1072	\$ 322	4,385	\$ 0.0947	\$ 443	1,520	\$ 0.1072	\$ 163
2015	2021	April	2,503	\$ 0.1072	\$ 293	5,105	\$ 0.0947	\$ 509	2,602	\$ 0.1072	\$ 279
2015	2021	May	2,742	\$ 0.1072	\$ 314	8,020	\$ 0.0947	\$ 742	5,278	\$ 0.1072	\$ 566
2015	2021	June	5,759	\$ 0.1072	\$ 618	10,180	\$ 0.0947	\$ 917	4,421	\$ 0.1072	\$ 474
Total			54,329	\$ 0.1072	\$ 5,826	74,610	\$ 0.0947	\$ 7,067	20,281	\$ 0.1072	\$ 2,175

Solar Performance Guarantee Measurement

Performance Guarantee Overview

The Performance Guarantee Agreement executed between PSI and Covington Independent Public Schools outlines the terms of the performance guarantee for this project. PSI estimates the energy production of solar PV systems by using sophisticated solar modeling software which incorporates historical weather data. The performance of solar PV is highly dependent upon weather. Since PSI cannot guarantee or control the weather, PSI instead guarantees system performance by taking a one-time measurement of the solar power output and associated ambient weather conditions. This measurement is then compared to the calculated power output that the system should generate at those weather conditions, per the formulas contained in the Performance Guarantee Agreement and included below for reference. If the measured power output exceeds the calculated power output, then it is assumed the system is performing as expected and the stipulated, guaranteed energy savings are achieved. Any variation between the stipulated savings and calculated savings is due to weather and/or operating parameters outside of PSI control.

Calculated Power Output Equation

$$GO_{AC} = (S_{IM} / (1000 \text{ W/m}^2)) \times NO_{SUM} \times TC \times PT \times IE \times DC$$

Where:

GO_{AC} =	Guaranteed AC output for all Solar PV systems combined (kW)
S_{IM} =	Measured solar irradiance (W/m^2)
NO_{SUM} =	Sum of all Solar Panels DC nameplate output (kW)
TC =	Solar panel temperature coefficient based upon the ambient temperature at the time of test and solar panel manufacturer data (%)
PT =	Power tolerance coefficient based upon the lowest value of the range published by the solar panel manufacturer (%)
IE =	Inverter efficiency as published by the inverter manufacturer (%)
DC =	Sum of the derating coefficients shown on Schedule B for system losses, including: AC system, wiring, clipping, mismatch, shading, reflection and soiling losses.

Guarantee Measurement Results

The following tables describe the results of the one-time guarantee measurement, which was performed on September 21, 2018. The measured power output exceeded the calculated power output, therefore the guaranteed energy savings have been achieved, per the terms of the Performance Guarantee Agreement. Any variation between guaranteed savings and calculated savings is due to weather and/or operating parameters outside of PSI control.

Solar Measurement Calculation

Covington Independent Public Schools		
Site	Holmes High School, Middle School, and Administration Building	John G. Carlisle Elementary School
Date	9/21/2018	9/21/2018
Solar Irradiance (W/m ²)	750	520
Panel Temperature (°C)	35.2	38.7
Calculated AC Output (kW)	183	75
Measured AC Output (kW)	183.61	79.18
Guarantee Achieved?	YES	YES

Covington Independent Public Schools		
Site	Holmes High School, Middle School, and Administration Building	John G. Carlisle Elementary School
SI _M =	750	520
NO _{SUM} =	302	179
TC =	96.7%	94.5%
PT =	100.0%	100.0%
IE =	97.5%	97.5%
Derating Coefficients (DC)		
AC System =	0.5%	0.2%
Wiring =	0.2%	0.5%
Clipping =	1.3%	0.1%
Mismatch =	2.3%	2.3%
Shading =	0.8%	0.7%
Reflection =	3.7%	3.7%
Soiling =	2.0%	2.0%
Panel Degredation =	3.3%	3.3%
Total DC =	85.90%	87.20%
GO _{AC} =	183.3	74.7
AC Output _M =	183.6	79.2

Solar Production Results and Energy Savings Year 3 (July 1, 2020 - June 30, 2021)

Covington Public Schools - Solar Production Results										
Site		Carlisle Elementary			Fieldhouse, Science Bldg, & Chapman Education Center			Total		
		Predicted	Actual	%	Predicted	Actual	%	Predicted	Actual	%
2020	July	26,449	22,100	84%	44,083	36,834	84%	70,532	58,934	84%
2020	August	24,445	18,737	77%	40,852	34,511	84%	65,297	53,248	82%
2020	September	20,864	18,590	89%	40,852	30,590	75%	61,716	49,180	80%
2020	October	15,313	11,650	76%	25,616	19,590	76%	40,929	31,240	76%
2020	November	10,801	9,870	91%	18,001	16,660	93%	28,803	26,530	92%
2020	December	8,557	5,710	67%	14,275	9,550	67%	22,832	15,260	67%
2021	January	10,323	6,080	59%	17,175	10,470	61%	27,497	16,550	60%
2021	February	13,174	5,410	41%	21,948	9,180	42%	35,123	14,590	42%
2021	March	19,366	18,150	94%	31,911	29,860	94%	51,277	48,010	94%
2021	April	21,857	19,720	90%	35,803	31,760	89%	57,660	51,480	89%
2021	May	26,341	22,850	87%	43,456	37,500	86%	69,796	60,350	86%
2021	June	27,845	20,920	75%	46,012	33,158	72%	73,857	54,078	73%
TOTAL		225,335	179,787	80%	379,984	299,663	79%	605,319	479,450	79%

Covington Public Schools - Solar Energy Savings										
Site		Carlisle Elementary			Fieldhouse, Science Bldg, & Chapman Education Center			Total		
		Rate (\$/kWh)	Production (kWh)	Savings (\$)	Rate (\$/kWh)	Production (kWh)	Savings (\$)	Production (kWh)	Savings (\$)	
2020	July	\$ 0.1238	22,100	\$ 2,736	\$ 0.0916	36,834	\$ 3,375	58,934	\$ 6,110	
2020	August	\$ 0.1238	18,737	\$ 2,320	\$ 0.0916	34,511	\$ 3,162	53,248	\$ 5,481	
2020	September	\$ 0.1238	18,590	\$ 2,301	\$ 0.0916	30,590	\$ 2,803	49,180	\$ 5,104	
2020	October	\$ 0.1238	11,650	\$ 1,442	\$ 0.0916	19,590	\$ 1,795	31,240	\$ 3,237	
2020	November	\$ 0.1238	9,870	\$ 1,222	\$ 0.0916	16,660	\$ 1,526	26,530	\$ 2,748	
2020	December	\$ 0.1238	5,710	\$ 707	\$ 0.0916	9,550	\$ 875	15,260	\$ 1,582	
2021	January	\$ 0.1238	6,080	\$ 753	\$ 0.0916	10,470	\$ 959	16,550	\$ 1,712	
2021	February	\$ 0.1238	5,410	\$ 670	\$ 0.0916	9,180	\$ 841	14,590	\$ 1,511	
2021	March	\$ 0.1238	18,150	\$ 2,247	\$ 0.0916	29,860	\$ 2,736	48,010	\$ 4,983	
2021	April	\$ 0.1238	19,720	\$ 2,441	\$ 0.0916	31,760	\$ 2,910	51,480	\$ 5,351	
2021	May	\$ 0.1238	22,850	\$ 2,829	\$ 0.0916	37,500	\$ 3,436	60,350	\$ 6,264	
2021	June	\$ 0.1238	20,920	\$ 2,590	\$ 0.0916	33,158	\$ 3,038	54,078	\$ 5,628	
TOTAL		\$ 0.1238	179,787	\$ 22,257	\$ 0.0916	299,663	\$ 27,454	479,450	\$ 49,711	

Actual Equipment Runtimes Quarter 1

Year 3 - Quarter 1 (July 1, 2020 - September 30, 2020)

Building	System ID	July			August			September			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			31			30					
Holmes High School, Middle School, and Administration Building	HS - AHU East	319	744	(425)	332	744	(412)	353	720	(367)	1,003	2,207	(1,204)
Holmes High School, Middle School, and Administration Building	HS - AHU West	319	744	(425)	332	744	(412)	353	720	(367)	1,003	2,207	(1,204)
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	112	0	112	177	0	177	326	0	326	615	-	615
Holmes High School, Middle School, and Administration Building	HS - Computer Lab	-	0	-	-	735	-	-	552	-	-	1,287	0
Holmes High School, Middle School, and Administration Building	MS - AHU East	386	744	(357)	383	744	(360)	364	720	(356)	1,133	2,207	(1,074)
Holmes High School, Middle School, and Administration Building	MS - AHU West	386	744	(357)	383	744	(360)	364	720	(356)	1,133	2,207	(1,074)
Holmes High School, Middle School, and Administration Building	MS - Band RTU	290	377	(87)	287	288	(1)	268	194	74	845	859	(14)
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	390	253	137	386	231	155	364	242	122	1,140	726	414
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science AHU 3)	337	11	326	334	225	109	315	203	112	986	439	548
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	243	243	-	239	512	(273)	221	404	(182)	704	1,159	(455)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	405	405	-	402	512	(110)	383	404	(21)	1,190	1,321	(131)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	337	337	-	334	512	(178)	315	404	(89)	986	1,253	(267)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	337	337	-	334	512	(178)	315	404	(89)	986	1,253	(267)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-1 (7.5 HP)	405	405	-	402	512	(110)	383	404	(21)	1,190	1,321	(131)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-2 (7.5 HP)	386	386	-	383	512	(129)	364	404	(40)	1,133	1,302	(169)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-3 (3 HP)	366	366	-	362	512	(149)	343	403	(60)	1,071	1,281	(209)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-4 (3 HP)	366	366	-	362	0	362	343	0	343	1,071	366	706
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (33) FCU	309	336	(26)	306	260	45	287	248	39	902	843	58
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	433	412	22	431	367	63	411	363	48	1,275	1,142	133
Sixth District Elementary School	Gymnasium AHU 3A	433	350	83	431	317	114	411	339	71	1,275	1,006	269
Sixth District Elementary School	Gymnasium AHU 3B	433	355	78	431	321	110	411	336	75	1,275	1,012	263
Sixth District Elementary School	Classroom AHU 1	433	398	36	431	366	65	411	362	49	1,275	1,126	149
Sixth District Elementary School	Classroom AHU 2	433	399	35	431	367	64	411	366	44	1,275	1,132	143
Sixth District Elementary School	Classroom AHU 4	433	334	100	431	294	137	411	249	162	1,275	876	399
Sixth District Elementary School	Family Resource AHU-2	433	744	(310)	431	744	(313)	411	720	(309)	1,275	2,207	(933)
Sixth District Elementary School	Heat Recovery Unit HX-1	398	333	64	395	304	90	375	319	56	1,167	957	211
Sixth District Elementary School	HRU-2 (& MagicAire)	433	0	433	431	0	431	411	0	411	1,275	-	1,275
Sixth District Elementary School	HRU-1 (& MagicAire)	433	330	103	431	303	128	411	319	92	1,275	952	323
Sixth District Elementary School	Fan Coil Units (47)	433	209	224	431	184	247	411	127	284	1,275	520	755

* Highlighted cells indicate guaranteed runtime hours used due to inaccessible runtime data.

Actual Equipment Runtimes Quarter 1 (continued)

Year 3 - Quarter 1 (July 1, 2020 - September 30, 2020)

Building	System ID	July			August			September			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			30			31					
Ninth District Elementary School	Unit Vents (38)	336	307	29	341	380	(39)	341	452	(111)	1,017	1,138	(121)
Ninth District Elementary School	Fan Coil Units (4)	336	358	(22)	341	409	(68)	341	459	(118)	1,017	1,226	(208)
Ninth District Elementary School	Gym AHUs (2)	341	242	99	349	429	(80)	356	465	(109)	1,047	1,136	(90)
Ninth District Elementary School	Relief Air Fans (4)	336	168	167	341	224	117	341	409	(68)	1,017	802	216
John G. Carlisle Elementary School	Blower Coil Units (41)	300	215	84	307	468	(161)	315	538	(223)	922	1,221	(299)
John G. Carlisle Elementary School	Gym AHUs (2)	281	196	85	302	647	(345)	296	720	(423)	879	1,562	(683)
John G. Carlisle Elementary School	Gym Exhaust Fans (2)	319	0	319	302	67	234	296	77	220	917	144	773
John G. Carlisle Elementary School	Chiller (S1 system)	-	137	-	-	430	-	-	386	-	-	-	0
Latonia Elementary School	RTU-7	281	441	(160)	281	520	(239)	272	363	(91)	834	1,324	(490)
Latonia Elementary School	RTU-8	281	208	73	281	238	43	272	214	58	834	659	175
Glenn O. Swing Elementary School	RTU-1	300	199	101	296	109	187	278	103	174	873	411	462
Glenn O. Swing Elementary School	RTU-2	300	743	(443)	296	0	296	278	710	(432)	873	1,453	(580)
Glenn O. Swing Elementary School	RTU-3	300	185	115	296	138	158	278	65	213	873	388	486
Glenn O. Swing Elementary School	RTU-4	300	0	300	296	216	80	278	132	145	873	349	525
Glenn O. Swing Elementary School	RTU-5	300	86	214	296	113	183	278	61	216	873	260	613
Glenn O. Swing Elementary School	RTU-6	300	139	161	296	0	296	278	52	226	873	190	683
Glenn O. Swing Elementary School	RTU-7	300	558	(259)	296	736	(440)	278	720	(442)	873	2,014	(1,140)
Glenn O. Swing Elementary School	RTU-8	300	304	(4)	296	255	41	278	173	105	873	731	142
Glenn O. Swing Elementary School	RTU-9	300	191	108	296	131	165	278	71	207	873	393	480
Glenn O. Swing Elementary School	RTU-10	300	130	170	296	80	216	278	53	224	873	263	610
Glenn O. Swing Elementary School	RTU-11	300	295	5	296	148	148	278	0	278	873	443	431
Glenn O. Swing Elementary School	RTU-12	300	353	(54)	296	286	10	278	205	73	873	844	29
Glenn O. Swing Elementary School	RTU-13	300	108	192	296	49	247	278	43	235	873	200	673
Glenn O. Swing Elementary School	RTU-14	300	193	107	296	209	87	278	135	143	873	537	337
Glenn O. Swing Elementary School	RTU-15	300	66	234	296	54	242	278	40	238	873	160	713

Actual Equipment Runtimes Quarter 2

Year 3 - Quarter 2 (October 1, 2020 - December 31, 2020)

Building	System ID	October			November			December			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			31			30					
Holmes High School, Middle School, and Administration Building	HS - AHU East	364	744	(380)	353	717	(364)	364	744	(380)	1,081	2,204	(1,123)
Holmes High School, Middle School, and Administration Building	HS - AHU West	364	744	(380)	353	717	(364)	364	744	(380)	1,081	2,204	(1,123)
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	337	161	176	326	717	(391)	337	744	(407)	1,001	1,621	(621)
Holmes High School, Middle School, and Administration Building	HS - Computer Lab	-	183	-	-	415	-	-	338	-	-	935	0
Holmes High School, Middle School, and Administration Building	MS - AHU East	376	744	(368)	364	717	(353)	376	744	(368)	1,116	2,204	(1,089)
Holmes High School, Middle School, and Administration Building	MS - AHU West	376	744	(368)	364	717	(353)	376	744	(368)	1,116	2,204	(1,089)
Holmes High School, Middle School, and Administration Building	MS - Band RTU	277	1	276	268	8	260	277	0	277	822	9	813
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	376	242	134	364	231	133	376	253	123	1,116	726	390
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science AHU 3)	326	159	167	315	178	137	326	180	145	966	517	449
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	229	407	(178)	221	385	(164)	229	419	(191)	679	1,211	(533)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	395	407	(12)	383	385	(3)	395	419	(24)	1,173	1,212	(39)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	326	407	(82)	315	218	97	326	0	326	966	625	341
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	326	407	(82)	315	385	(70)	326	327	(2)	966	1,120	(154)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-1 (7.5 HP)	395	428	(33)	383	485	(103)	395	503	(108)	1,173	1,417	(244)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-2 (7.5 HP)	376	428	(52)	364	482	(118)	376	511	(135)	1,116	1,421	(305)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-3 (3 HP)	355	472	(118)	343	721	(378)	355	744	(389)	1,052	1,937	(885)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-4 (3 HP)	355	0	355	343	0	343	355	0	355	1,052	-	1,052
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (33) FCU	296	253	44	287	226	61	296	246	51	880	724	156
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	424	380	45	411	380	31	424	424	-	1,259	1,184	75
Sixth District Elementary School	Gymnasium AHU 3A	424	580	(156)	411	302	109	424	424	-	1,259	1,306	(47)
Sixth District Elementary School	Gymnasium AHU 3B	424	279	145	411	300	111	424	424	-	1,259	1,003	256
Sixth District Elementary School	Classroom AHU 1	424	305	119	411	313	98	424	424	-	1,259	1,042	217
Sixth District Elementary School	Classroom AHU 2	424	249	176	411	310	101	424	424	-	1,259	983	277
Sixth District Elementary School	Classroom AHU 4	424	41	383	411	0	411	424	424	-	1,259	465	794
Sixth District Elementary School	Family Resource AHU-2	424	743	(319)	411	721	(310)	424	424	-	1,259	1,889	(629)
Sixth District Elementary School	Heat Recovery Unit HX-1	388	207	181	375	0	375	388	388	-	1,150	594	556
Sixth District Elementary School	HRU-2 (& MagicAire)	424	49	375	411	0	411	424	424	-	1,259	474	786
Sixth District Elementary School	HRU-1 (& MagicAire)	424	300	124	411	304	106	424	424	-	1,259	1,029	231
Sixth District Elementary School	Fan Coil Units (47)	424	26	398	411	41	369	424	424	-	1,259	492	768

* Highlighted cells indicate guaranteed runtime hours used due to inaccessible runtime data.

Actual Equipment Runtimes Quarter 2 (continued)

Year 3 - Quarter 2 (October 1, 2020 - December 31, 2020)

Building	System ID	October			November			December			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			30			31					
Ninth District Elementary School	Unit Vents (38)	353	386	(33)	341	278	63	353	233	119	1,047	896	150
Ninth District Elementary School	Fan Coil Units (4)	353	383	(30)	341	261	81	353	232	120	1,047	876	171
Ninth District Elementary School	Gym AHUs (2)	368	409	(41)	356	342	14	368	259	109	1,093	1,010	82
Ninth District Elementary School	Relief Air Fans (4)	353	447	(95)	341	351	(9)	353	302	50	1,047	1,100	(54)
John G. Carlisle Elementary School	Blower Coil Units (41)	326	707	(382)	315	686	(371)	326	708	(382)	966	2,100	(1,134)
John G. Carlisle Elementary School	Gym AHUs (2)	306	743	(437)	296	721	(425)	306	744	(438)	909	2,208	(1,300)
John G. Carlisle Elementary School	Gym Exhaust Fans (2)	306	25	281	296	37	260	306	40	266	909	102	807
John G. Carlisle Elementary School	Chiller (S1 system)	-	0	-	-	0	-	-	0	-	-	-	0
Latonia Elementary School	RTU-7	281	460	(179)	272	245	27	281	336	(55)	834	1,041	(207)
Latonia Elementary School	RTU-8	281	250	31	272	209	63	281	191	90	834	650	184
Glenn O. Swing Elementary School	RTU-1	287	48	239	278	43	234	287	123	164	851	214	637
Glenn O. Swing Elementary School	RTU-2	287	744	(457)	278	626	(348)	287	744	(457)	851	2,113	(1,262)
Glenn O. Swing Elementary School	RTU-3	287	13	274	278	41	237	287	97	189	851	151	700
Glenn O. Swing Elementary School	RTU-4	287	32	254	278	34	243	287	103	184	851	170	681
Glenn O. Swing Elementary School	RTU-5	287	12	274	278	15	262	287	163	123	851	191	660
Glenn O. Swing Elementary School	RTU-6	287	39	248	278	26	251	287	71	215	851	137	714
Glenn O. Swing Elementary School	RTU-7	287	0	287	278	52	225	287	98	189	851	150	701
Glenn O. Swing Elementary School	RTU-8	287	48	239	278	0	278	287	0	287	851	48	803
Glenn O. Swing Elementary School	RTU-9	287	22	265	278	22	255	287	81	206	851	125	726
Glenn O. Swing Elementary School	RTU-10	287	16	271	278	151	127	287	0	287	851	167	684
Glenn O. Swing Elementary School	RTU-11	287	40	246	278	86	191	287	204	82	851	331	520
Glenn O. Swing Elementary School	RTU-12	287	60	227	278	10	268	287	52	235	851	122	729
Glenn O. Swing Elementary School	RTU-13	287	21	266	278	48	230	287	77	210	851	145	707
Glenn O. Swing Elementary School	RTU-14	287	19	268	278	38	239	287	73	214	851	130	721
Glenn O. Swing Elementary School	RTU-15	287	5	282	278	15	262	287	37	249	851	57	794

Actual Equipment Runtimes Quarter 3

Year 3 - Quarter 3 (January 1, 2021 - March 31, 2021)

Building	System ID	January			February			March			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			31			30					
Holmes High School, Middle School, and Administration Building	HS - AHU East	364	744	(380)	329	329	-	364	364	-	1,058	1,437	(380)
Holmes High School, Middle School, and Administration Building	HS - AHU West	364	744	(380)	329	329	-	364	364	-	1,058	1,437	(380)
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	337	744	(407)	305	305	-	337	337	-	979	1,385	(407)
Holmes High School, Middle School, and Administration Building	HS - Computer Lab	-	464	-	-	0	-	-	432	-	-	896	0
Holmes High School, Middle School, and Administration Building	MS - AHU East	376	744	(368)	340	340	-	376	376	-	1,091	1,459	(368)
Holmes High School, Middle School, and Administration Building	MS - AHU West	376	744	(368)	340	340	-	376	376	-	1,091	1,459	(368)
Holmes High School, Middle School, and Administration Building	MS - Band RTU	277	0	277	250	250	-	277	0	277	804	250	554
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	376	231	145	340	220	120	376	253	123	1,091	703	388
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science AHU 3)	326	182	144	294	160	134	326	189	137	945	531	415
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	229	392	(164)	207	368	(162)	229	419	(191)	664	1,180	(516)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	395	392	3	357	368	(11)	395	419	(24)	1,148	1,180	(32)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	326	19	306	294	0	294	326	0	326	945	20	925
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	326	19	306	294	87	207	326	419	(94)	945	526	419
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-1 (7.5 HP)	395	407	(11)	357	386	(29)	395	419	(24)	1,148	1,212	(65)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-2 (7.5 HP)	376	427	(51)	340	398	(59)	376	419	(43)	1,091	1,244	(153)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-3 (3 HP)	355	744	(389)	320	551	(231)	355	451	(96)	1,029	1,746	(716)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-4 (3 HP)	355	0	355	320	315	5	355	420	(65)	1,029	735	295
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (33) FCU	296	232	64	268	219	49	296	233	64	861	684	177
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	424	588	(163)	383	437	(54)	424	408	16	1,232	1,433	(201)
Sixth District Elementary School	Gymnasium AHU 3A	424	428	(4)	383	299	84	424	328	96	1,232	1,055	176
Sixth District Elementary School	Gymnasium AHU 3B	424	426	(2)	383	297	86	424	325	100	1,232	1,048	184
Sixth District Elementary School	Classroom AHU 1	424	486	(62)	383	322	62	424	345	79	1,232	1,153	79
Sixth District Elementary School	Classroom AHU 2	424	468	(43)	383	322	62	424	350	75	1,232	1,139	93
Sixth District Elementary School	Classroom AHU 4	424	253	171	383	3	380	424	1	424	1,232	257	975
Sixth District Elementary School	Family Resource AHU-2	424	424	-	383	672	(289)	424	743	(318)	1,232	1,839	(607)
Sixth District Elementary School	Heat Recovery Unit HX-1	388	263	125	350	0	350	388	0	388	1,125	263	862
Sixth District Elementary School	HRU-2 (& MagicAire)	424	0	424	383	0	383	424	0	424	1,232	-	1,232
Sixth District Elementary School	HRU-1 (& MagicAire)	424	411	14	383	290	93	424	333	91	1,232	1,034	198
Sixth District Elementary School	Fan Coil Units (47)	424	217	208	383	101	282	424	27	397	1,232	345	886

* Highlighted cells indicate guaranteed runtime hours used due to inaccessible runtime data.

Actual Equipment Runtimes Quarter 3 (continued)

Year 3 - Quarter 3 (January 1, 2021 - March 31, 2021)

Building	System ID	January			February			March			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			30			31					
Ninth District Elementary School	Unit Vents (38)	353	353	-	319	319	-	353	552	(199)	1,024	1,223	(199)
Ninth District Elementary School	Fan Coil Units (4)	353	353	-	319	319	-	353	553	(200)	1,024	1,224	(200)
Ninth District Elementary School	Gym AHUs (2)	368	368	-	333	333	-	368	585	(217)	1,069	1,286	(217)
Ninth District Elementary School	Relief Air Fans (4)	353	353	-	319	319	-	353	631	(279)	1,024	1,302	(279)
John G. Carlisle Elementary School	Blower Coil Units (41)	326	719	(393)	294	653	(359)	326	717	(392)	945	2,089	(1,144)
John G. Carlisle Elementary School	Gym AHUs (2)	306	744	(438)	277	672	(395)	306	743	(436)	889	2,158	(1,269)
John G. Carlisle Elementary School	Gym Exhaust Fans (2)	306	182	124	277	247	29	306	20	286	889	450	439
John G. Carlisle Elementary School	Chiller (S1 system)	-	0	-	-	0	-	-	21	-	-	-	0
Latonia Elementary School	RTU-7	281	378	(97)	254	272	(19)	281	332	(51)	816	982	(167)
Latonia Elementary School	RTU-8	281	203	78	254	254	(1)	281	293	(12)	816	750	65
Glenn O. Swing Elementary School	RTU-1	287	193	93	259	259	-	287	129	158	833	581	252
Glenn O. Swing Elementary School	RTU-2	287	374	(88)	259	259	-	287	75	212	833	708	124
Glenn O. Swing Elementary School	RTU-3	287	107	179	259	259	-	287	65	222	833	431	402
Glenn O. Swing Elementary School	RTU-4	287	97	190	259	259	-	287	64	223	833	420	413
Glenn O. Swing Elementary School	RTU-5	287	99	188	259	259	-	287	74	213	833	432	400
Glenn O. Swing Elementary School	RTU-6	287	79	208	259	259	-	287	46	241	833	383	449
Glenn O. Swing Elementary School	RTU-7	287	77	209	259	259	-	287	54	233	833	391	442
Glenn O. Swing Elementary School	RTU-8	287	0	287	259	259	-	287	0	287	833	259	574
Glenn O. Swing Elementary School	RTU-9	287	85	202	259	259	-	287	52	234	833	396	436
Glenn O. Swing Elementary School	RTU-10	287	34	252	259	259	-	287	68	219	833	361	472
Glenn O. Swing Elementary School	RTU-11	287	231	55	259	259	-	287	143	144	833	634	199
Glenn O. Swing Elementary School	RTU-12	287	51	236	259	259	-	287	30	257	833	340	492
Glenn O. Swing Elementary School	RTU-13	287	53	234	259	259	-	287	47	240	833	358	475
Glenn O. Swing Elementary School	RTU-14	287	96	191	259	259	-	287	17	270	833	372	461
Glenn O. Swing Elementary School	RTU-15	287	42	245	259	259	-	287	28	259	833	329	503

* Highlighted cells indicate guaranteed runtime hours used due to inaccessible runtime data.

Actual Equipment Runtimes Quarter 4

Year 3 - Quarter 4 (April 1, 2021 - June 30, 2021)

Building	System ID	April			May			June			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			31			30					
Holmes High School, Middle School, and Administration Building	HS - AHU East	353	720	(367)	364	744	(380)	308	744	(435)	1,025	2,207	(1,182)
Holmes High School, Middle School, and Administration Building	HS - AHU West	353	720	(367)	364	744	(380)	308	744	(435)	1,025	2,207	(1,182)
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	326	294	33	337	0	337	108	0	108	771	294	478
Holmes High School, Middle School, and Administration Building	HS - Computer Lab	-	381	-	-	280	-	-	280	-	-	941	0
Holmes High School, Middle School, and Administration Building	MS - AHU East	364	720	(356)	376	744	(368)	374	744	(370)	1,114	2,207	(1,094)
Holmes High School, Middle School, and Administration Building	MS - AHU West	364	720	(356)	376	744	(368)	374	744	(370)	1,114	2,207	(1,094)
Holmes High School, Middle School, and Administration Building	MS - Band RTU	268	0	268	277	31	246	281	31	250	826	61	765
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	364	242	122	376	231	145	378	231	147	1,117	704	413
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science)	315	193	122	326	0	326	327	0	327	967	193	774
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	221	402	(181)	229	395	(166)	236	236	-	685	1,033	(347)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	383	402	(20)	395	395	0	392	392	-	1,170	1,190	(20)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	315	0	315	326	1	325	327	327	-	967	327	640
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	315	402	(87)	326	47	279	327	327	-	967	775	192
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-1 (7.5 HP)	383	402	(20)	395	395	0	392	392	-	1,170	1,189	(20)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-2 (7.5 HP)	364	402	(38)	376	395	(19)	374	397	(23)	1,114	1,194	(81)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-3 (3 HP)	343	428	(84)	355	395	(40)	354	396	(42)	1,052	1,219	(167)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-4 (3 HP)	343	403	(59)	355	395	(41)	354	397	(43)	1,052	1,195	(144)
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (33) FCU	287	226	60	296	226	70	299	187	112	883	640	243
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	411	381	30	424	381	43	419	419	-	1,254	1,181	73
Sixth District Elementary School	Gymnasium AHU 3A	411	328	83	424	328	97	419	419	-	1,254	1,075	179
Sixth District Elementary School	Gymnasium AHU 3B	411	321	89	424	321	103	419	419	-	1,254	1,062	192
Sixth District Elementary School	Classroom AHU 1	411	348	63	424	348	77	419	419	-	1,254	1,115	139
Sixth District Elementary School	Classroom AHU 2	411	338	73	424	338	87	419	419	-	1,254	1,095	160
Sixth District Elementary School	Classroom AHU 4	411	47	364	424	47	377	419	419	-	1,254	513	741
Sixth District Elementary School	Family Resource AHU-2	411	720	(309)	424	720	(295)	419	419	-	1,254	1,859	(605)
Sixth District Elementary School	Heat Recovery Unit HX-1	375	0	375	388	0	388	385	385	-	1,147	385	763
Sixth District Elementary School	HRU-2 (& MagicAire)	411	0	411	424	0	424	419	419	-	1,254	419	835
Sixth District Elementary School	HRU-1 (& MagicAire)	411	319	92	424	319	105	419	419	-	1,254	1,057	197
Sixth District Elementary School	Fan Coil Units (47)	411	35	376	424	35	389	419	419	-	1,254	490	765

* Highlighted cells indicate guaranteed runtime hours used due to inaccessible runtime data.

Actual Equipment Runtimes Quarter 4 (continued)

Year 3 - Quarter 4 (April 1, 2021 - June 30, 2021)

Building	System ID	April			May			June			Quarterly Runtime Savings		
		Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guar. (Hours)	Actual (Hours)	Saved (Hours)	Guaranteed (Hours)	Actual (Hours)	Total Saved (Hours)
		31			30			31					
Ninth District Elementary School	Unit Vents (38)	341	367	(26)	353	377	(25)	325	377	(53)	1,019	1,122	(103)
Ninth District Elementary School	Fan Coil Units (4)	341	371	(30)	353	381	(28)	325	381	(56)	1,019	1,132	(114)
Ninth District Elementary School	Gym AHUs (2)	356	372	(16)	368	375	(7)	330	375	(45)	1,055	1,123	(68)
Ninth District Elementary School	Relief Air Fans (4)	341	431	(90)	353	431	(79)	325	431	(106)	1,019	1,294	(275)
John G. Carlisle Elementary School	Blower Coil Units (41)	315	708	(393)	326	731	(405)	290	731	(440)	931	2,169	(1,238)
John G. Carlisle Elementary School	Gym AHUs (2)	296	720	(424)	306	744	(438)	272	744	(472)	874	2,207	(1,333)
John G. Carlisle Elementary School	Gym Exhaust Fans (2)	296	25	271	306	88	218	308	88	221	911	201	710
John G. Carlisle Elementary School	Chiller (S1 system)	-	60	-	-	75	-	-	75	-	-	-	0
Latonia Elementary School	RTU-7	272	321	(49)	281	357	(76)	272	357	(85)	825	1,034	(209)
Latonia Elementary School	RTU-8	272	271	1	281	248	33	272	248	24	825	767	58
Glenn O. Swing Elementary School	RTU-1	278	80	197	287	93	193	290	93	197	854	267	587
Glenn O. Swing Elementary School	RTU-2	278	34	244	287	63	223	290	63	227	854	161	694
Glenn O. Swing Elementary School	RTU-3	278	35	243	287	83	204	290	83	207	854	201	654
Glenn O. Swing Elementary School	RTU-4	278	42	235	287	98	189	290	98	192	854	238	616
Glenn O. Swing Elementary School	RTU-5	278	19	258	287	51	236	290	51	239	854	122	733
Glenn O. Swing Elementary School	RTU-6	278	40	238	287	291	(4)	290	291	(0)	854	621	233
Glenn O. Swing Elementary School	RTU-7	278	22	256	287	57	230	290	57	233	854	135	719
Glenn O. Swing Elementary School	RTU-8	278	37	241	287	102	185	290	102	189	854	240	615
Glenn O. Swing Elementary School	RTU-9	278	40	237	287	88	199	290	88	202	854	217	638
Glenn O. Swing Elementary School	RTU-10	278	25	253	287	50	237	290	50	240	854	125	730
Glenn O. Swing Elementary School	RTU-11	278	55	222	287	181	106	290	181	109	854	417	438
Glenn O. Swing Elementary School	RTU-12	278	39	239	287	109	178	290	109	181	854	257	598
Glenn O. Swing Elementary School	RTU-13	278	28	249	287	76	211	290	76	215	854	179	675
Glenn O. Swing Elementary School	RTU-14	278	34	243	287	86	201	290	86	204	854	207	648
Glenn O. Swing Elementary School	RTU-15	278	9	269	287	22	265	290	22	268	854	52	802

FAN MOTOR RUNTIME SAVINGS

Building	System ID	Motor HP	Break HP / Motor HP	kW / HP	Fan Speed	Fan kW	Saved Hrs / Yr	Motor Efficiency	Savings (kWh)	Rate (¢/kWh)	Savings (\$)
Holmes High School, Middle School, and Administration Building	HS - AHU East	15.0	0.80	0.746	100%	11	680	85%	7,166	\$ 0.093	\$ 667
Holmes High School, Middle School, and Administration Building	HS - AHU West	10.0	0.80	0.746	100%	7	1,291	85%	9,063	\$ 0.093	\$ 844
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	10.0	0.80	0.746	100%	7	342	85%	2,400	\$ 0.093	\$ 223
Holmes High School, Middle School, and Administration Building	HS - Aud RTU	30.0	0.80	0.746	100%	21	355	85%	7,469	\$ 0.093	\$ 695
Subtotal									26,098		\$ 2,429
Holmes High School, Middle School, and Administration Building	MS - AHU East	15.0	0.80	0.746	100%	11	1,722	85%	18,131	\$ 0.093	\$ 1,688
Holmes High School, Middle School, and Administration Building	MS - AHU West	15.0	0.80	0.746	100%	11	1,874	85%	19,739	\$ 0.093	\$ 1,837
Holmes High School, Middle School, and Administration Building	MS - Cafeteria Aaon RTU-1	10.0	0.80	0.746	100%	7	302	85%	2,119	\$ 0.093	\$ 197
Holmes High School, Middle School, and Administration Building	MS - PC Lab Aaon RTU-2	5.0	0.80	0.746	100%	4	193	85%	677	\$ 0.093	\$ 63
Holmes High School, Middle School, and Administration Building	MS - Band RTU	2.5	0.80	0.746	100%	2	193	85%	338	\$ 0.093	\$ 32
Subtotal									41,004		\$ 3,817
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	7.5	0.80	0.746	100%	5	992	85%	5,224	\$ 0.093	\$ 486
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science AHU 3)	7.5	0.80	0.746	100%	5	1,154	85%	6,076	\$ 0.093	\$ 566
Subtotal									11,300		\$ 1,052
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	2.5	0.80	0.746	100%	2	758	85%	1,330	\$ 0.092	\$ 122
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	2.5	0.80	0.746	100%	2	863	85%	1,516	\$ 0.092	\$ 139
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	2.5	0.80	0.746	100%	2	282	85%	495	\$ 0.092	\$ 45
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	2.5	0.80	0.746	100%	2	827	85%	1,451	\$ 0.092	\$ 133
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-1 (7.5 HP)	7.5	0.80	0.746	100%	5	340	85%	1,791	\$ 0.092	\$ 164
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-2 (7.5 HP)	7.5	0.80	0.746	100%	5	566	85%	2,982	\$ 0.092	\$ 273
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-3 (3 HP)	3.0	0.80	0.746	100%	2	531	85%	1,119	\$ 0.092	\$ 103
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-4 (3 HP)	3.0	0.80	0.746	100%	2	531	85%	1,119	\$ 0.092	\$ 103
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - Exhaust fan	2.5	0.80	0.746	100%	2	863	85%	1,516	\$ 0.092	\$ 139
Subtotal									13,319		\$ 1,220
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - HP-1 (Band)	0.3	0.80	0.746	100%	0	731	85%	171	\$ 0.092	\$ 16
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - HP-2 (Band)	0.3	0.80	0.746	100%	0	731	85%	171	\$ 0.092	\$ 16
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (35) WSHPs	9.8	0.80	0.746	100%	7	730	85%	5,040	\$ 0.092	\$ 462
Subtotal									5,382		\$ 493
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	10.0	0.80	0.746	100%	7	132	85%	927	\$ 0.109	\$ 101
Sixth District Elementary School	Gymnasium AHU 3A	5.0	0.80	0.746	100%	4	132	85%	463	\$ 0.109	\$ 50
Sixth District Elementary School	Gymnasium AHU 3B	5.0	0.80	0.746	100%	4	132	85%	463	\$ 0.109	\$ 50
Sixth District Elementary School	Classroom AHU 1	2.0	0.80	0.746	100%	1	132	85%	185	\$ 0.109	\$ 20
Sixth District Elementary School	Classroom AHU 2	3.0	0.80	0.746	100%	2	132	85%	278	\$ 0.109	\$ 30
Sixth District Elementary School	Classroom AHU 4	5.0	0.80	0.746	100%	4	132	85%	463	\$ 0.109	\$ 50
Sixth District Elementary School	Family Resource AHU-2	0.8	0.80	0.746	100%	1	132	85%	70	\$ 0.109	\$ 8
Sixth District Elementary School	(17) FCUs	5.8	0.80	0.746	100%	4	132	85%	540	\$ 0.109	\$ 59
Sixth District Elementary School	Heat Recovery Unit HX-1	3.5	0.80	0.746	100%	2	147	85%	362	\$ 0.109	\$ 39
Sixth District Elementary School	HRU-2 (& MagicAire)	11.0	0.80	0.746	100%	8	132	85%	1,019	\$ 0.109	\$ 111
Sixth District Elementary School	HRU-1 (& MagicAire)	11.0	0.80	0.746	100%	8	132	85%	1,019	\$ 0.109	\$ 111
Subtotal									5,790		\$ 629
Ninth District Elementary School	(38) unit vents	15.0	0.80	0.746	100%	11	2,200	85%	23,171	\$ 0.107	\$ 2,483
Ninth District Elementary School	(4) fan coil units	0.88	0.80	0.746	100%	1	2,200	85%	1,359	\$ 0.107	\$ 146
Ninth District Elementary School	(2) gym AHUs	10.0	0.80	0.746	100%	7	780	85%	5,479	\$ 0.107	\$ 587
Ninth District Elementary School	Office RTU	2.5	0.80	0.746	100%	2	1,852	85%	3,252	\$ 0.107	\$ 348
Subtotal									33,261		\$ 3,564
John G. Carlisle Elementary School	(42) Blower coil units	37.75	0.80	0.746	100%	27	179	85%	4,739	\$ 0.124	\$ 587
John G. Carlisle Elementary School	(2) Gym AHUs	10.0	0.80	0.746	100%	7	187	85%	1,312	\$ 0.124	\$ 162
John G. Carlisle Elementary School	(2) Gym exhaust fans	6.0	0.80	0.746	100%	4	181	85%	762	\$ 0.124	\$ 94
Subtotal									6,812		\$ 843
Latonia Elementary School	RTU-1	5.0	0.80	0.746	100%	4	68	85%	238	\$ 0.105	\$ 25
Latonia Elementary School	RTU-2	10.0	0.80	0.746	100%	7	68	85%	476	\$ 0.105	\$ 50
Latonia Elementary School	RTU-3	10.0	0.80	0.746	100%	7	68	85%	476	\$ 0.105	\$ 50
Latonia Elementary School	RTU-4	10.0	0.80	0.746	100%	7	68	85%	476	\$ 0.105	\$ 50
Latonia Elementary School	RTU-5	5.0	0.80	0.746	100%	4	68	85%	238	\$ 0.105	\$ 25
Latonia Elementary School	RTU-6	10.0	0.80	0.746	100%	7	68	85%	476	\$ 0.105	\$ 50
Latonia Elementary School	RTU-7	15.0	0.80	0.746	100%	11	74	85%	777	\$ 0.105	\$ 82
Latonia Elementary School	RTU-8	7.5	0.80	0.746	100%	5	74	85%	389	\$ 0.105	\$ 41
Subtotal									3,546		\$ 372
Glenn O. Swing Elementary School	RTU-1	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-2	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-3	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-4	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-5	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-6	5.0	0.80	0.746	100%	4	843	85%	2,959	\$ 0.115	\$ 340
Glenn O. Swing Elementary School	RTU-7	5.0	0.80	0.746	100%	4	843	85%	2,959	\$ 0.115	\$ 340
Glenn O. Swing Elementary School	RTU-8	5.0	0.80	0.746	100%	4	843	85%	2,959	\$ 0.115	\$ 340
Glenn O. Swing Elementary School	RTU-9	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-10	5.0	0.80	0.746	100%	4	843	85%	2,959	\$ 0.115	\$ 340
Glenn O. Swing Elementary School	RTU-11	5.0	0.80	0.746	100%	4	843	85%	2,959	\$ 0.115	\$ 340
Glenn O. Swing Elementary School	RTU-12	5.0	0.80	0.746	100%	4	843	85%	2,959	\$ 0.115	\$ 340
Glenn O. Swing Elementary School	RTU-13	3.0	0.80	0.746	100%	2	843	85%	1,775	\$ 0.115	\$ 204
Glenn O. Swing Elementary School	RTU-14	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Glenn O. Swing Elementary School	RTU-15	2.5	0.80	0.746	100%	2	843	85%	1,479	\$ 0.115	\$ 170
Subtotal									31,362		\$ 3,600

FAN MOTOR RUNTIME SAVINGS ADJUSTMENT

Building	System ID	Motor HP	Break HP / Motor HP	kW / HP	Fan Speed	Fan kW	Saved Hrs / Yr	Motor Efficiency	Savings (kWh)	Rate (kWh)	Savings (\$)
Holmes High School, Middle School, and Administration Building	HS - AHU East	15.0	0.80	0.746	100%	11	(3,890)	85%	(40,964)	\$ 0.093	\$ (3,813)
Holmes High School, Middle School, and Administration Building	HS - AHU West	10.0	0.80	0.746	100%	7	(3,890)	85%	(27,310)	\$ 0.093	\$ (2,542)
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	10.0	0.80	0.746	100%	7	65	85%	457	\$ 0.093	\$ 42
Holmes High School, Middle School, and Administration Building	HS - Aud RTU	30.0	0.80	0.746	100%	21		85%		\$ 0.093	\$ -
Subtotal									(67,817)		\$ (6,313)
Holmes High School, Middle School, and Administration Building	MS - AHU East	15.0	0.80	0.746	100%	11	(3,624)	85%	(38,165)	\$ 0.093	\$ (3,552)
Holmes High School, Middle School, and Administration Building	MS - AHU West	15.0	0.80	0.746	100%	11	(3,624)	85%	(38,165)	\$ 0.093	\$ (3,552)
Holmes High School, Middle School, and Administration Building	MS - Cafeteria Aaon RTU-1	10.0	0.80	0.746	100%	7		85%	-	\$ 0.093	\$ -
Holmes High School, Middle School, and Administration Building	MS - PC Lab Aaon RTU-2	5.0	0.80	0.746	100%	4		85%	-	\$ 0.093	\$ -
Holmes High School, Middle School, and Administration Building	MS - Band RTU	2.5	0.80	0.746	100%	2	2,119	85%	3,719	\$ 0.093	\$ 346
Subtotal									(72,611)		\$ (6,759)
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	7.5	0.80	0.746	100%	5	1,605	85%	8,454	\$ 0.093	\$ 787
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science AHU 3)	7.5	0.80	0.746	100%	5	2,186	85%	11,509	\$ 0.093	\$ 1,071
Subtotal									19,963		\$ 1,858
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	2.5	0.80	0.746	100%	2	(1,852)	85%	(3,250)	\$ 0.092	\$ (298)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	2.5	0.80	0.746	100%	2	(222)	85%	(389)	\$ 0.092	\$ (36)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	2.5	0.80	0.746	100%	2	1,639	85%	2,877	\$ 0.092	\$ 264
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	2.5	0.80	0.746	100%	2	191	85%	335	\$ 0.092	\$ 31
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-1 (7.5 HP)	7.5	0.80	0.746	100%	5	(459)	85%	(2,417)	\$ 0.092	\$ (221)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-2 (7.5 HP)	7.5	0.80	0.746	100%	5	(708)	85%	(3,726)	\$ 0.092	\$ (341)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-3 (3 HP)	3.0	0.80	0.746	100%	2	(1,977)	85%	(4,165)	\$ 0.092	\$ (382)
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - HVU-4 (3 HP)	3.0	0.80	0.746	100%	2	1,909	85%	4,021	\$ 0.092	\$ 368
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - Exhaust fan	2.5	0.80	0.746	100%	2	634	85%	1,112	\$ 0.092	\$ 102
Subtotal									(5,602)		\$ (513)
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - HP-1 (Band)	0.3	0.80	0.746	100%	0		85%	-	\$ 0.092	\$ -
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - HP-2 (Band)	0.3	0.80	0.746	100%	0		85%	-	\$ 0.092	\$ -
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (35) WSHPs	0.0	0.80	0.746	100%	-		85%	-	\$ 0.092	\$ -
Subtotal									-		\$ -
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	10.0	0.80	0.746	100%	7	81	85%	567	\$ 0.109	\$ 62
Sixth District Elementary School	Gymnasium AHU 3A	5.0	0.80	0.746	100%	4	578	85%	2,029	\$ 0.109	\$ 220
Sixth District Elementary School	Gymnasium AHU 3B	5.0	0.80	0.746	100%	4	895	85%	3,142	\$ 0.109	\$ 341
Sixth District Elementary School	Classroom AHU 1	2.0	0.80	0.746	100%	1	584	85%	821	\$ 0.109	\$ 89
Sixth District Elementary School	Classroom AHU 2	3.0	0.80	0.746	100%	2	672	85%	1,416	\$ 0.109	\$ 154
Sixth District Elementary School	Classroom AHU 4	5.0	0.80	0.746	100%	4	2,909	85%	10,212	\$ 0.109	\$ 1,109
Sixth District Elementary School	Family Resource AHU-2	0.8	0.80	0.746	100%	1	(2,773)	85%	(1,460)	\$ 0.109	\$ (159)
Sixth District Elementary School	(17) FCUs	0.0	0.80	0.746	100%	-	3,174	85%	-	\$ 0.109	\$ -
Sixth District Elementary School	Heat Recovery Unit HX-1	3.5	0.80	0.746	100%	2	2,391	85%	5,876	\$ 0.109	\$ 638
Sixth District Elementary School	HRU-2 (& MagicAire)	11.0	0.80	0.746	100%	8	4,127	85%	31,877	\$ 0.109	\$ 3,462
Sixth District Elementary School	HRU-1 (& MagicAire)	11.0	0.80	0.746	100%	8	949	85%	7,327	\$ 0.109	\$ 796
Subtotal									61,807		\$ 6,712
Ninth District Elementary School	(38) unit vents	0.0	0.80	0.746	100%	-	(273)	85%	-	\$ 0.107	\$ -
Ninth District Elementary School	(4) fan coil units	0.00	0.80	0.746	100%	-	(352)	85%	-	\$ 0.107	\$ -
Ninth District Elementary School	(2) gym AHUs	10.0	0.80	0.746	100%	7	(293)	85%	(2,056)	\$ 0.107	\$ (220)
Ninth District Elementary School	Office RTU	2.5	0.80	0.746	100%	2		85%	-	\$ 0.107	\$ -
Subtotal									(2,056)		\$ (220)
John G. Carlisle Elementary School	(42) Blower coil units	0.00	0.80	0.746	100%	-	(3,816)	85%	-	\$ 0.124	\$ -
John G. Carlisle Elementary School	(2) Gym AHUs	10.0	0.80	0.746	100%	7	(4,585)	85%	(32,194)	\$ 0.124	\$ (3,985)
John G. Carlisle Elementary School	(2) Gym exhaust fans	6.0	0.80	0.746	100%	4	2,728	85%	11,492	\$ 0.124	\$ 1,423
Subtotal									(20,701)		\$ (2,563)
Latonia Elementary School	RTU-1	5.0	0.80	0.746	100%	4		85%	-	\$ 0.105	\$ -
Latonia Elementary School	RTU-2	10.0	0.80	0.746	100%	7		85%	-	\$ 0.105	\$ -
Latonia Elementary School	RTU-3	10.0	0.80	0.746	100%	7		85%	-	\$ 0.105	\$ -
Latonia Elementary School	RTU-4	10.0	0.80	0.746	100%	7		85%	-	\$ 0.105	\$ -
Latonia Elementary School	RTU-5	5.0	0.80	0.746	100%	4		85%	-	\$ 0.105	\$ -
Latonia Elementary School	RTU-6	10.0	0.80	0.746	100%	7		85%	-	\$ 0.105	\$ -
Latonia Elementary School	RTU-7	15.0	0.80	0.746	100%	11	(1,073)	85%	(11,303)	\$ 0.105	\$ (1,185)
Latonia Elementary School	RTU-8	7.5	0.80	0.746	100%	5	483	85%	2,543	\$ 0.105	\$ 267
Subtotal									(8,760)		\$ (919)
Glenn O. Swing Elementary School	RTU-1	2.5	0.80	0.746	100%	2	1,939	85%	3,403	\$ 0.115	\$ 391
Glenn O. Swing Elementary School	RTU-2	2.5	0.80	0.746	100%	2	(1,024)	85%	(1,797)	\$ 0.115	\$ (206)
Glenn O. Swing Elementary School	RTU-3	2.5	0.80	0.746	100%	2	2,241	85%	3,934	\$ 0.115	\$ 452
Glenn O. Swing Elementary School	RTU-4	2.5	0.80	0.746	100%	2	2,235	85%	3,923	\$ 0.115	\$ 450
Glenn O. Swing Elementary School	RTU-5	2.5	0.80	0.746	100%	2	2,406	85%	4,224	\$ 0.115	\$ 485
Glenn O. Swing Elementary School	RTU-6	5.0	0.80	0.746	100%	4	2,080	85%	7,300	\$ 0.115	\$ 838
Glenn O. Swing Elementary School	RTU-7	5.0	0.80	0.746	100%	4	721	85%	2,533	\$ 0.115	\$ 291
Glenn O. Swing Elementary School	RTU-8	5.0	0.80	0.746	100%	4	2,133	85%	7,490	\$ 0.115	\$ 860
Glenn O. Swing Elementary School	RTU-9	2.5	0.80	0.746	100%	2	2,280	85%	4,002	\$ 0.115	\$ 459
Glenn O. Swing Elementary School	RTU-10	5.0	0.80	0.746	100%	4	2,496	85%	8,762	\$ 0.115	\$ 1,006
Glenn O. Swing Elementary School	RTU-11	5.0	0.80	0.746	100%	4	1,587	85%	5,572	\$ 0.115	\$ 640
Glenn O. Swing Elementary School	RTU-12	5.0	0.80	0.746	100%	4	1,849	85%	6,490	\$ 0.115	\$ 745
Glenn O. Swing Elementary School	RTU-13	3.0	0.80	0.746	100%	2	2,530	85%	5,328	\$ 0.115	\$ 612
Glenn O. Swing Elementary School	RTU-14	2.5	0.80	0.746	100%	2	2,166	85%	3,802	\$ 0.115	\$ 436
Glenn O. Swing Elementary School	RTU-15	2.5	0.80	0.746	100%	2	2,813	85%	4,937	\$ 0.115	\$ 567
Subtotal									69,904		\$ 8,024

Outside Air Heating & Cooling Calculations

Formula:

Heating energy (BTU) = [1.085 BTU / (HR-CFM-°F)] x outside air saved (CFM) x [avg. interior temperature (F) - avg. exterior temperature (F)] x HR

Heating energy (\$) = $\frac{\text{wasted heating energy (BTU)} \times \text{heating fuel cost (\$/CCF)}}{\text{heating fuel conversion factor (BTU / CCF)} \times \text{boiler seasonal efficiency (\%)}}$

Cooling energy (BTU) = 4.45 x outside air saved (CFM) x (outside air average enthalpy - inside air average enthalpy) x Summer hours

Cooling energy (\$) = $\frac{\text{cooling energy (BTU)} \times \text{air conditioning fuel cost (\$/kWh)}}{\text{air conditioning fuel conversion factor (BTU / kWh)} \times \text{chiller efficiency (COP)}}$

Where:

- * Average winter interior temperature =
- * Average winter temperature (from National Weather Service) =
- * Average summer interior temperature (composite temperature accounting for occupied and unoccupied temperatures) =
- * Outside air enthalpy average for May through September, above 26 BTU / lb dry air
 - assumes outside air below 26 BTU / lb dry air the chiller would be off on OAT.
- * Inside air enthalpy during occupied (8 am - 4 pm) air-conditioned periods (OA > 65F)
 - assumes space air is 72 F drybulb & 50% RH
- * Boiler seasonal efficiency =
- * Heating fuel conversion factor =
- * Chiller efficiency =
- * Air conditioning conversion factor =

72 °F
 37 °F
 74 °F
 32.57 BTU / lb dry air
 26.5 BTU / lb dry air
 92%
 100,000 BTU / Therm
 2.95 COP
 3,414 BTU / kWh

Outside Air Heating & Cooling Costs Resulting From HVAC System Modifications

Building	Unit Type	Quantity	Future Hours		Reduced Hours		Current OA		Energy Savings/Penalties		Savings/Costs	
			Winter (Hours)	Summer (Hours)	Winter (Hours)	Summer (Hours)	Heating (CFM)	Cooling (CFM)	Heating (BTU)	Cooling (BTU)	Heating (BTU)	polir BTU
Holmes High School, Middle School, and Administration Building	HS - AHU East	1	2,961	1,192	348	332	7,000	7,000	(92,586,848)		\$ 773	#
Holmes High School, Middle School, and Administration Building	HS - AHU West	1	2,961	1,192	777	514	7,000	7,000	(206,466,278)		\$ 1,724	#
Holmes High School, Middle School, and Administration Building	HS - AHU Aud	1	2,741	607	217	125	2,000	2,000	(16,473,555)		\$ 138	#
Holmes High School, Middle School, and Administration Building	HS - Aud RTU	1	1,229	1,010	138	217	6,000	6,000	(31,374,945)	(35,152,766)	\$ 262	#
Subtotal									(346,901,625)	(35,152,766)	2,896	#
Holmes High School, Middle School, and Administration Building	MS - AHU East	1	3,056	1,387	1,187	535	9,000	9,000	(405,721,103)		\$ 3,387	#
Holmes High School, Middle School, and Administration Building	MS - AHU West	1	3,056	1,387	1,294	580	9,000	9,000	(442,325,205)		\$ 3,693	#
Holmes High School, Middle School, and Administration Building	MS - Cafeteria Aaon RTU-1	1	2,252	1,037	185	117	1,080	1,080	(7,585,354)	(3,408,797)	\$ 63	#
Holmes High School, Middle School, and Administration Building	MS - PC Lab Aaon RTU-2	1	2,252	1,037	108	84	440	440	(1,812,091)	(1,002,505)	\$ 15	#
Holmes High School, Middle School, and Administration Building	MS - Band RTU	-	2,252	1,037	108	84	440	440	-	-	\$ -	#
Subtotal									(857,443,753)	(4,411,302)	7,158	#
Holmes High School, Middle School, and Administration Building	AD - Kitchen AHU (OAU)	1	3,056	1,397	682	310	1,850	1,850	(47,927,108)	(15,481,101)	\$ 400	#
Holmes High School, Middle School, and Administration Building	AD - Teach Lnge AHU (Science AHU 3)	1	2,646	1,208	786	368	915	915	(27,300,816)	(9,097,784)	\$ 228	#
Subtotal									(75,227,924)	(24,578,885)	628	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-1 Band Room	1	1,859	866	502	256	600	600	(11,442,627)	(4,142,484)	\$ 135	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-2 Coaches Office	1	3,213	1,455	586	278	600	600	(13,349,732)	(4,497,415)	\$ 158	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-3 Girls Lckr Rms	1	2,646	1,208	174	108	600	600	(3,957,755)	(1,751,966)	\$ 47	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	FH - AHU-4 Boys Lckr Rms	1	2,646	1,208	556	271	600	600	(12,673,017)	(4,385,587)	\$ 150	#
Subtotal									(156,314,214)	(14,777,451)	1,848	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - HP-1 (Band)	1	2,756	1,129	400	331	380	380	(5,772,922)	(3,393,914)	\$ 69	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - HP-2 (Band)	1	2,756	1,129	400	331	380	380	(5,772,922)	(3,393,914)	\$ 69	#
Fieldhouse, Science Building, and Chapman Vocational Education Center	CV - (35) WSHPS	1	2,410	1,106	486	243	3,360	3,360	(62,069,074)	(22,086,115)	\$ 740	#
Subtotal									(73,614,917)	(28,873,943)	878	#
Sixth District Elementary School	Kitchen/Cafeteria AHU 1	1	3,449	1,558	74	58	3,500	3,500	(9,868,753)	(5,459,699)	\$ 94	#
Sixth District Elementary School	Gymnasium AHU 3A	1	3,449	1,558	74	58	1,000	1,000	(2,819,644)	(1,559,914)	\$ 27	#
Sixth District Elementary School	Gymnasium AHU 3B	1	3,449	1,558	74	58	1,000	1,000	(2,819,644)	(1,559,914)	\$ 27	#
Sixth District Elementary School	Classroom AHU 1	1	3,449	1,558	74	58	480	480	(1,353,429)	(748,759)	\$ 13	#
Sixth District Elementary School	Classroom AHU 2	1	3,449	1,558	74	58	800	800	(2,255,715)	(1,247,931)	\$ 21	#
Sixth District Elementary School	Classroom AHU 4	1	3,449	1,558	74	58	754	754	(2,126,011)	(1,176,175)	\$ 20	#
Sixth District Elementary School	Family Resource AHU-2	1	3,449	1,558	74	58	500	500	(1,409,822)	(779,957)	\$ 13	#
Sixth District Elementary School	Heat Recovery Unit HX-1	1	3,150	1,428	83	64	2,500	2,500	(7,860,825)	(4,348,852)	\$ 75	#
Sixth District Elementary School	HRU-2 (& MagicAire)	1	3,449	1,558	74	58	4,300	4,300	(12,124,468)	(6,707,631)	\$ 115	#
Sixth District Elementary School	HRU-1 (& MagicAire)	1	3,449	1,558	74	58	4,300	4,300	(12,124,468)	(6,707,631)	\$ 115	#
Subtotal									(30,513,843)	(16,881,202)	520	#
Ninth District Elementary School	(38) unit vents	1	2,867	1,228	1,468	732	8,850	8,850	(493,329,997)	(175,033,710)	\$ 3,756	#
Ninth District Elementary School	(4) fan coil units	1	2,867	1,228	1,468	732	200	200	(11,148,701)	(3,955,564)	\$ 85	#
Ninth District Elementary School	(2) gym AHUs	1	2,993	1,257	455	326	3,000	3,000	(51,778,913)	(26,409,144)	\$ 394	#
Ninth District Elementary School	Office RTU	1	3,056	1,387	1,279	574	400	400	(19,426,491)	(6,196,438)	\$ 148	#
Subtotal									(575,684,101)	(211,594,855)	4,383	#
John G. Carlisle Elementary School	(42) Blower coil units	1	2,646	1,106	97	82	5,738	5,738	(21,181,164)	(12,648,081)	\$ 189	#
John G. Carlisle Elementary School	(2) Gym AHUs	1	2,489	1,038	102	85	640	640	(2,471,717)	(1,471,154)	\$ 22	#
Subtotal									(23,652,881)	(14,119,235)	211	#
Latonia Elementary School	RTU-1	1	2,590	1,151	-	68	800	800	-	(1,465,104)	\$ -	#
Latonia Elementary School	RTU-2	1	2,590	1,151	-	68	1,200	1,200	-	(2,197,656)	\$ -	#
Latonia Elementary School	RTU-3	1	2,590	1,151	-	68	1,200	1,200	-	(2,197,656)	\$ -	#
Latonia Elementary School	RTU-4	1	2,590	1,151	-	68	1,200	1,200	-	(2,197,656)	\$ -	#
Latonia Elementary School	RTU-5	1	2,590	1,151	-	68	800	800	-	(1,465,104)	\$ -	#
Latonia Elementary School	RTU-6	1	2,590	1,151	-	68	1,200	1,200	-	(2,197,656)	\$ -	#
Latonia Elementary School	RTU-7	1	2,284	1,015	-	74	1,200	1,200	-	(2,392,138)	\$ -	#
Latonia Elementary School	RTU-8	1	2,284	1,015	-	74	1,200	1,200	-	(2,392,138)	\$ -	#
Subtotal									-	(16,505,107)	\$ -	#

Constant Volume to Variable Speed Pump Motor Conversion

Electric Motor Savings

Description	Full Load Power		Motor Speed		Average kW Savings (kWh)	Future Operating Hours	Savings (kWh)	Energy Consumption Rate (\$)	Utility Savings (\$)
	(HP)	(kW)	Current Average Amount	Future Average Amount					
Chapman Vocational Education Center									
(2) hot water pumps	40.00	28.085	100%	85%	10.84	2,896	31,387	\$ 0.092	\$ 2,876
Subtotal							31,387		\$ 2,876
Fieldhouse and Science Building									
5 hp Science Bldng HW pump	5.00	3.511	100%	80%	1.71	4,397	7,532	\$ 0.092	\$ 690
2 hp Fieldhouse HW pump	2.00	1.404	100%	75%	0.81	4,193	3,404	\$ 0.092	\$ 312
Subtotal							10,937		\$ 1,002
Ninth District Elementary School									
(2) CW pumps (S1 system, P1 chiller)	30.00	21.064	100%	75%	12.18	1,438	17,515	\$ 0.107	\$ 1,877
Subtotal							17,515		\$ 1,877
John G. Carlisle Elementary School									
(2) CW pumps (S1 system, P1 chiller)	17.50	12.287	100%	85%	4.74	1,438	6,819	\$ 0.124	\$ 844
(2) HHW pumps	10.00	7.021	100%	85%	2.71	2,646	7,169	\$ 0.124	\$ 887
Subtotal							13,988		\$ 1,732

FAN MOTOR SAVINGS - EFFICIENCY SAVINGS

Building	System ID	HP	Speed	Motor Effic.	kW	Operating Hours / Year	Usage (kWh)	Rate (kWh)	Cost (\$)
Existing									
Holmes High School	AHU-East fan motor	15.0	100%	87.5%	10.2	4,834	49,454	\$ 0.093	\$ 4,603
Proposed									
Holmes High School	AHU-East fan motor	15.0	100%	92.0%	9.7	4,834	47,035	\$ 0.093	\$ 4,378
TOTAL					0.5		2,419		\$ 225
Existing									
Holmes Middle School	AHU-West fan motor	15.0	100%	85.0%	10.5	5,444	57,337	\$ 0.093	\$ 5,337
Proposed									
Holmes Middle School	AHU-West fan motor	15.0	100%	92.0%	9.7	5,444	52,974	\$ 0.093	\$ 4,931
TOTAL					0.8		4,363		\$ 406
Existing									
Administration Building	AHU - Kitchen	7.5	100%	85.0%	5.3	3,482	18,337	\$ 0.093	\$ 1,707
Administration Building	AHU - Teachers Lounge	7.5	100%	89.0%	5.0	3,482	17,513	\$ 0.093	\$ 1,630
Proposed									
Administration Building	AHU - Kitchen	7.5	100%	92.0%	4.9	3,482	16,942	\$ 0.093	\$ 1,577
Administration Building	AHU - Teachers Lounge	7.5	100%	92.0%	4.9	3,482	16,942	\$ 0.093	\$ 1,577
TOTAL					0.4		1,395		\$ 130
Existing									
Fieldhouse	FH - HVU-1 (7.5 HP)	7.5	100%	88.0%	5.1	4,681	23,810	\$ 0.092	\$ 2,181
Fieldhouse	FH - HVU-2 (7.5 HP)	7.5	100%	88.0%	5.1	5,008	25,474	\$ 0.092	\$ 2,334
Fieldhouse	FH - HVU-3 (3 HP)	3.0	100%	85.0%	2.1	5,008	10,549	\$ 0.092	\$ 966
Proposed									
Fieldhouse	FH - HVU-1 (7.5 HP)	7.5	100%	92.0%	4.9	4,681	22,775	\$ 0.092	\$ 2,087
Fieldhouse	FH - HVU-2 (7.5 HP)	7.5	100%	92.0%	4.9	5,008	24,366	\$ 0.092	\$ 2,232
Fieldhouse	FH - HVU-3 (3 HP)	3.0	100%	92.0%	1.9	5,008	9,746	\$ 0.092	\$ 893
TOTAL					0.6		2,945		\$ 270
Existing									
Sixth District Elementary School	Classroom AHU 1	2.0	100%	88.0%	1.4	5,007	6,791	\$ 0.109	\$ 738
Sixth District Elementary School	Classroom AHU 2	3.0	100%	88.0%	2.0	5,007	10,187	\$ 0.109	\$ 1,106
Sixth District Elementary School	Classroom AHU 4	5.0	100%	85.0%	3.5	5,007	17,578	\$ 0.109	\$ 1,909
Proposed									
Sixth District Elementary School	Classroom AHU 1	2.0	100%	92.0%	1.3	5,007	6,496	\$ 0.109	\$ 705
Sixth District Elementary School	Classroom AHU 2	3.0	100%	92.0%	1.9	5,007	9,744	\$ 0.109	\$ 1,058
Sixth District Elementary School	Classroom AHU 4	5.0	100%	92.0%	3.2	5,007	16,240	\$ 0.109	\$ 1,764
TOTAL					0.4		2,076		\$ 225
Existing									
Ninth District Elementary School	(38) unit vents	15.0	100%	80.0%	11.2	4,094	45,815	\$ 0.107	\$ 4,909
Proposed									
Ninth District Elementary School	(38) unit vents	15.0	100%	85.0%	10.5	4,094	43,120	\$ 0.107	\$ 4,620
TOTAL					0.7		2,695		\$ 289
Existing									
Ninth District Elementary School	Relief air fans	10.0	100%	80.0%	7.5	4,094	30,543	\$ 0.107	\$ 3,273
Proposed									
Ninth District Elementary School	Relief air fans	12.0	85%	85.0%	5.2	4,094	21,185	\$ 0.107	\$ 2,270
TOTAL					2.3		9,359		\$ 1,003

BOILER REPLACEMENT SAVINGS

Chapman Vocational Education Center

Existing Boiler Data		
* Burner manufacturer, age, model number:	Precision boiler	1979
* Burner size:		1728 kW
* Burner size (converted):	5,896,178	Btu/hr
* Number of boilers:		1
* Catalog boiler seasonal efficiency:		100%
* Jacket losses (radiation & convection)		4%
* Element degradation losses		
* Average seasonal efficiency		96%
* Fuel type:		Electric
* Cost of fuel:		\$0.092 / kWh
* Building heating costs:	\$	19,896 / year
* Building heating requirement boiler output:		208,479 BTU / year
Proposed Boiler Data		
* Number of boilers:		1
* Proposed boiler seasonal heating efficiency:		100%
* Building heating costs:	\$	19,100 / year
Boiler replacement savings:	\$	796 / year

BOILER REPLACEMENT SAVINGS

Fieldhouse and Science Building

Existing Boiler Data		
* Burner manufacturer, age, model number:	Weil-McClain 1968	
* Burner size:	2,352,000	Btu/hr each
* Number of boilers:	2	
* Catalog boiler seasonal efficiency:	80%	
* Jacket losses (radiation & convection)	3%	
* Burner firing rate losses	7%	
* Average seasonal efficiency	70%	
* Fuel type:	Natural gas	
* Cost of fuel:	\$0.89	/ therm
* Fuel conversion factor:	100,000	BTU / therm
* Total heating cost:	\$	14,617 / year
* Domestic HW heating costs:	\$	1,500 / year
* Building heating costs:	\$	13,117 / year
* Building heating requirement boiler output:	1,035,419,391	BTU / year
Proposed Boiler Data		
* Number of boilers:	2	
* Percent "design day" load carried per boiler:	50%	
* Proposed boiler seasonal heating efficiency:	92%	
* Building heating costs:	\$	9,981 / year
Boiler replacement savings:	\$	3,137 / year

BOILER REPLACEMENT SAVINGS

Ninth District Elementary School

Existing Boiler Data	
	1956 Peerless
* Burner manufacturer, age, model number:	atmospheric HW boiler
* Burner size:	2,400,000 Btu/hr each
* Number of boilers:	2
* Catalog boiler seasonal efficiency:	80%
* Jacket losses (radiation & convection)	3%
* Burner firing rate losses	7%
* Average seasonal efficiency	70%
* Fuel type:	Natural gas
* Cost of fuel:	\$0.70 / therm
* Fuel conversion factor:	100,000 BTU / therm
* Total heating cost:	\$ 19,059 / year
* Domestic HW heating costs:	\$ 953 / year
* Building heating costs:	\$ 18,106 / year
* Building heating requirement boiler output:	1,809,493,444 BTU / year
Proposed Boiler Data	
* Number of boilers:	2
* Percent "design day" load carried per boiler:	50%
* Proposed boiler seasonal heating efficiency:	92%
* Building heating costs:	\$ 13,776 / year
Boiler replacement savings:	\$ 4,330 / year

RTU REPLACEMENT SAVINGS Ninth District Elementary School

* Total building area	63,935	ft ²
* Approximation of RTU service area	10,656	ft ²
* Existing natural gas energy use per area	43,538	Btu/ft ²
* Cost of fuel:	\$0.70	/ therm
* Fuel conversion factor:	100,000	BTU / therm
* Existing RTU natural gas input requirement:	463,930,133	Btu's
* Existing RTU heating costs:	\$ 3,249	/year
* Existing RTU efficiency:	68%	
* Existing RTU heating output:	315,472,491	Btu's
* Proposed new RTU heating efficiency:	82%	
* New RTU natural gas input requirement:	384,722,550	
* New RTU heating costs:	\$ 2,695	
RTU replacement savings:	\$ 555	/year

RTU REPLACEMENT SAVINGS Latonia Elementary School

* Total building area		62,818	ft ²
* Approximation of RTU service area		15,705	ft ²
* Existing natural gas energy use per area		19,198	Btu/ft ²
* Assumption of percentage of gas that is used for space heating		90%	
* Existing heating natural gas energy use per area		17,279	Btu/ft ²
* Cost of fuel:		\$0.73	/ therm
* Fuel conversion factor:		100,000	BTU / therm
* Existing RTU natural gas input requirement:		271,351,373	Btu's
* Existing RTU heating costs:	\$	1,984	/year
* Existing RTU efficiency:		78%	
* Existing RTU heating output:		211,654,071	Btu's
* Proposed new RTU heating efficiency:		82%	
* New RTU natural gas input requirement:		258,114,720	
* New RTU heating costs:	\$	1,888	
RTU replacement savings:	\$	97	/year

Replacement of Cooling Tower <i>Electric Fan Motor and Pump Motor Savings</i>								
Description	Motor Rated Power (HP)	Motor Efficiency %	Load Factor %	Electrical Demand (kW)	Annual Operating Hours	Annual Electricity Usage (kWh)	Energy Rate (\$/kWh)	Annual Electricity Cost (\$)
Chapman Vocational Education Center								
<i>Existing</i>								
Cooling Tower Fan Motor	10.0	85.0%	80.0%	7.02	1,242	8,718	\$ 0.092	\$ 799
Cooling Tower Pump Motor	1.0	85.0%	80.0%	0.70	4,274	3,001	\$ 0.092	\$ 275
Subtotal	11.0			7.7		11,719		\$ 1,074
Chapman Vocational Education Center								
<i>Proposed</i>								
Cooling Tower Fan Motor	7.5	92.0%	80.0%	4.87	1,129	5,492	\$ 0.092	\$ 503
Cooling Tower Pump Motor	2.0	92.0%	80.0%	1.30	3,885	5,040	\$ 0.092	\$ 462
Subtotal	9.5			6.2		10,533		\$ 965
SAVINGS				1.6		1,186		\$ 109

Lighting Savings	
Building	Savings (\$)
Holmes High School	\$ 13,620
Holmes HS High Bays	\$ 166
Holmes Middle School	\$ 6,336
Holmes MS High Bays	\$ 405
Administration Building	\$ 4,344
Fieldhouse and Science Building	\$ 5,244
Fieldhouse High bays	\$ 3,451
Chapman Vocational Education Center	\$ 8,520
Sixth District Elementary School	\$ 8,568
Ninth District Elementary School	\$ 5,688
John G. Carlisle Elementary School	\$ 8,520
Carlisle High Bays	\$ 395
Latonia Elementary School	\$ 14,976
Glenn O. Swing Elementary School	\$ 6,240
James E. Biggs Early Childhood Education Center	\$ 2,178
Covington Central Office	\$ 1,869
Transportation and Maintenance Building	\$ 1,179
Title 1 Pike St. Building	\$ 1,390
Covington Instructional Support & Adult High School (Levassor)	\$ 1,903
Instructional Support (Levassor) High Bays	\$ 685
<i>Total Lighting Savings:</i>	\$ 95,677

Water Savings	
Building	\$
Holmes High School	\$ 7,411
Holmes Middle School	\$ 5,418
Administration Building	\$ 548
Fieldhouse and Science Building	\$ 47
Chapman Vocational Education Center	\$ 138
Sixth District Elementary School	\$ 3,060
Ninth District Elementary School	\$ 2,997
John G. Carlisle Elementary School	\$ 539
Latonia Elementary School	\$ 3,350
Glenn O. Swing Elementary School	\$ 3,587
James E. Biggs Early Childhood Education Center	\$ 543
<i>Total Water Savings:</i>	\$ 27,639