

School Benchmarking Report for

# Burlington Area School District

Thank you for participating in Focus on Energy's School Benchmarking Initiative!

Focus on Energy serves K-12 schools across the state through its Agriculture, Schools and Government Program. The following analysis is provided by Focus on Energy as a service to Wisconsin K-12 public and private schools. The primary goals of this analysis are to:

- Help you understand how your buildings are doing relative to similar schools
- Identify and implement opportunities for improving operations and reducing costs in your district so that more of your budget can be spent in the classroom

Our analysis is based on school building descriptions you provided including size, number of students, types of heating and cooling used, cooking facilities, etc. In addition, we used your most recent utility bills to assess your electricity and heating fuel consumption. All of this information was compared against three sets of school energy data:

- B3 Benchmarking each building is scored based on potential savings relative to the current energy code
- ENERGY STAR® each building is measured to buildings of similar properties
- Peer Comparison each building is compared to other Wisconsin schools participating in this benchmarking study

A user account has been created for you at <a href="https://focusonenergy.b3benchmarking.com">https://focusonenergy.b3benchmarking.com</a>. First time visitors, please visit <a href="https://focusonenergy.b3benchmarking.com/Password-Reminder">https://focusonenergy.b3benchmarking.com/Password-Reminder</a> to request a password key and establish your account. Once logged in you will have access to a variety of metrics, along with the ability to adjust your building and meter data.

The following report identifies the magnitude of potential energy savings. If you are interested in pursuing a project or have further questions, visit <a href="www.focusonenergy.com/ea-map">www.focusonenergy.com/ea-map</a> to find your local Energy Advisor or call the Agriculture, Schools and Government Program at 888.947.7828.

Thank you again for participating. We hope the following information will be helpful to your district for years to come.

Sincerely,

Heather Feigum, Program Manager

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Focus on Energy Agriculture, Schools and Government Program





# **Quick Start Guide**

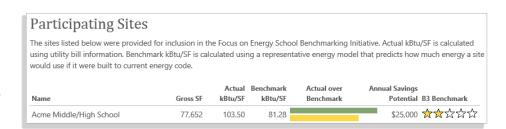
Use this guide to walk you through each item in the report, what it means and how to use the information. In this report you will find a District Summary and a report for each building that is participating in the study.

## **District Summary**

This report details all the buildings you have submitted data for in the benchmarking study. Use this site summary to prioritize the buildings that should be evaluated first for energy savings potential. Focus on buildings with the lowest B3 Benchmark ratings.

# **Participating Sites**

Provides details of the actual energy usage and benchmark energy usage for each building, the B3 Benchmark result, and the energy savings potential at the building.



- The 'Actual kBtu/SF' value is a result of all electric and gas usage converted to kBtu and divided by the total square footage provided for the building (represented by the green bar in the Actual over Benchmark graph).
- The 'Benchmark kBtu/SF' estimates the amount of energy a similar building type would use if built to current code, which references ASHRAE 90.1-2013 standards (represented by the yellow bar in the Actual over Benchmark graph).
- The Annual Savings Potential is an estimate of the dollar savings attainable if the building was operating 15% more efficiently than code.
- The B3 Benchmark score is reported in a five-star system. A five-star rating translates to a school using the lowest
  amount of energy compared to building code. A two-and-a-half-star rating translates to the school using the same
  amount as code would require, and any less than two and a half stars indicates the school is using more energy than
  code.

### **Energy Savings Opportunities**

Each building that is using more energy than code will show energy savings potential. Keep in mind, even if there is no energy savings listed for your site - there is always room for improvement. Work with your energy advisor to help identify savings beyond the "low hanging fruit". Energy



Savings Opportunities are reported if the building uses more than 15% less than the current energy code. For example - if your building uses the same amount of energy as the benchmark, there is still 15% energy savings available because it is feasible to achieve 15% better than code with current technologies. The pie chart shows the amount of savings potential by fuel source which can help prioritize which technologies to upgrade.



# **Quick Start Guide**

Use this guide to walk you through each item in the report, what it means and how to use the information. In this report you will find a District Summary and a report for each building that is participating in the study.

## **Building Summary**

This section details the building information provided to Focus on Energy to analyze the building. If something looks wrong in this section, please contact your energy advisor to get it updated as the data here will change the report and scores.

Acme Area School District

Acme Middle/High School

123 Test St
Boscobel, WI 53805

Acme Middle/High School

77,652 Gross Bldg SF
2 electric meters
1 natural gas meter

## B3 Benchmark, Peer Rating and ENERGY STAR® Score

There are three scores listed for each building. The B3 Benchmark score was also reported on the district summary and compares the building data to the current energy code. The B3 Peer Rating is reported as a number between 1 to 100 with 50 being average of Wisconsin Schools participating in this study. Higher than 50 means your school is using less energy than a typical Wisconsin school and lower than 50 means your school is using more energy than a typical Wisconsin school. The ENERGY STAR score is reported as a number between 1 and 100. A score of 50 translates to using the average amount of energy. Higher than 50 means a customer uses less energy than similar properties and lower than 50 means a customer uses more energy than like properties.



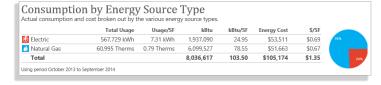
## **Monthly Consumption Compared to Benchmark**



The Monthly Consumption graph shows the amount of energy broken out by fuel type used to heat, cool and operate the building each month of the year. Using an engineered model of yearly consumption of a typical facility built to code, the yellow benchmark line can help you identify which energy source is dominating energy charges and at what time of year you are using too much.

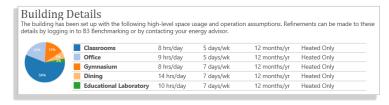
# **Consumption by Energy Source Type**

This table details the total energy used by fuel, how much is spent in the previous 12 months on that fuel, and the usage breakdown for that building. Use this section to



identify the energy source you should be focusing on for your next upgrade.

# **Building Details**



This section shows the assumptions of space type that are used for calculating the benchmarks for your building. If an assumption is incorrect, please contact your energy advisor and they will assist you in updating it in the B3 software.



#### **716,710 Gross Bldg SF**

# **Participating Sites**

The sites listed below were provided for inclusion in the Focus on Energy School Benchmarking Initiative. Actual kBtu/SF is calculated using utility bill information. Benchmark kBtu/SF is calculated using a representative energy model that predicts how much energy a site would use if it were built to current energy code.

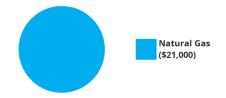
Name	Gross SF	Actual kBtu/SF	Benchmark kBtu/SF	Actual over Benchmark	Annual Pot. Savings	B3 Benchmark
Burlington School Forest	3,500	429.23	96.56			****
Burlington Area School District Office	7,640	108.02	65.49		\$3,000	****
Karcher Middle School	182,728	58.52	63.69		\$18,000	<b>☆☆☆☆☆</b>
Burlington High School	266,000	51.69	68.24		-	***
Lyons Elementary School	23,600	59.69	79.06		\$1,000	***
Dyer Intermediate School	81,451	51.11	67.78		\$2,000	***
Waller Elementary	64,943	45.05	69.00		-	****
Winkler Elementary	26,000	48.69	78.24		-	****
Cooper Elementary School	58,548	41.66	69.60		-	****
Project Active Citizen	2,300	43.86	99.90		-	****

# **Energy Savings Opportunities**

88 % of the potential savings (\$21,000/yr) comes from 2 sites.

- Karcher Middle School (\$18,000)
- Burlington Area School District Office (\$3,000)

Improvement Potential by Fuel Source



Even if some or all sites indicate no savings potential compared to code, there's always room for savings. Contact your energy advisor to discuss savings opportunities for your sites.





#### **Burlington Area School District Office**

100 N Kane St Burlington, WI 53105 **Built 1857** 

# 7,640 Gross Bldg SF

1 electric meter 1 natural gas meter



B3 Peer Rating

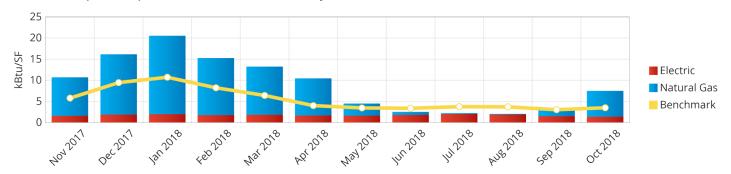
24

This site is ranked in the lower 24th percentile amongst 63 similar sites.



# **Monthly Consumption Compared to Benchmark**

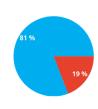
Actual consumption compared to the modeled benchmark by month.



# **Consumption by Energy Source Type**

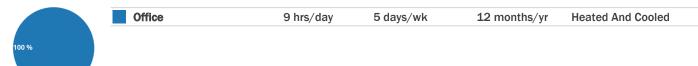
Actual consumption and cost broken out by the various energy source types.

	Total Usage	Usage/SF	kBtu	kBtu/SF	<b>Energy Cost</b>	\$/SF
<b>Ø</b> Electric	46,266 kWh	6.06 kWh	157,859	20.66	\$6,281	\$0.82
Natural Gas	6,674 Therms	0.87 Therms	667,448	87.36	\$3,919	\$0.51
Total			825,307	108.02	\$10,200	\$1.34



Using period November 2017 to October 2018

## **Building Details**





#### **Burlington High School**

400 McCanna Pkwy Burlington, WI 53105

#### 266,000 Gross Bldg SF

3 electric meters 1 natural gas meter

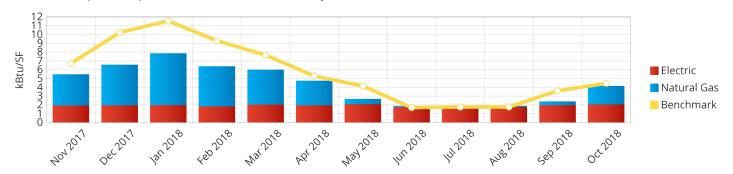






## **Monthly Consumption Compared to Benchmark**

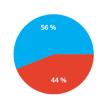
Actual consumption compared to the modeled benchmark by month.



# Consumption by Energy Source Type

Actual consumption and cost broken out by the various energy source types.

	Total Usage	Usage/SF	kBtu	kBtu/SF	<b>Energy Cost</b>	\$/SF
<b>(</b> ) Electric	1,773,809 kWh	6.67 kWh	6,052,237	22.75	\$209,626	\$0.79
// Natural Gas	76,963 Therms	0.29 Therms	7,696,327	28.93	\$41,543	\$0.16
Total			13,748,565	51.69	<b>\$251,169</b>	\$0.94



Using period November 2017 to October 2018

# **Building Details**



Classrooms	8 hrs/day	5 days/wk	9 months/yr	Heated Only
Office	9 hrs/day	5 days/wk	12 months/yr	<b>Heated And Cooled</b>
Gymnasium	8 hrs/day	5 days/wk	9 months/yr	Heated Only
Dining	14 hrs/day	5 days/wk	9 months/yr	Heated Only
Educational Laboratory	10 hrs/day	5 days/wk	9 months/yr	Heated Only
Kitchen	14 hrs/day	5 days/wk	9 months/yr	Heated Only





#### **Burlington School Forest**

7850 S English Settlement Ave Burlington, WI 53105 **Built 2010** 

# 3,500 Gross Bldg SF

1 electric meter 1 natural gas meter

#### **B3 Benchmark**



energy than the B3 Benchmark. Check building data for accuracy.

#### **B3 Peer Rating**

N/A

This site does not have enough peers of similar space usage to calculate a peer rating.

#### **ENERGY STAR® Score**

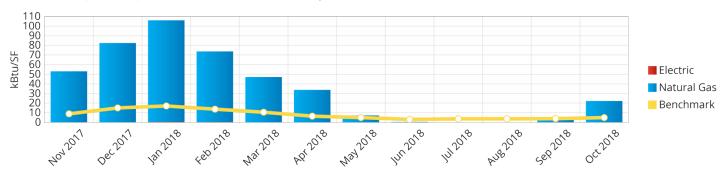


1

This site has received an ENERGY STAR score of 1

#### **Monthly Consumption Compared to Benchmark**

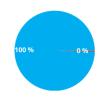
Actual consumption compared to the modeled benchmark by month.



## **Consumption by Energy Source Type**

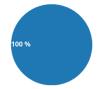
Actual consumption and cost broken out by the various energy source types.

	Total Usage	Usage/SF	kBtu	kBtu/SF	Energy Cost	\$/SF
<b>( Electric</b>	1,864 kWh	0.53 kWh	6,359	1.82	\$436	\$0.12
// Natural Gas	14,960 Therms	4.27 Therms	1,495,961	427.42	\$8,608	\$2.46
Total			1,502,320	429.23	\$9,044	\$2.58



Using period November 2017 to October 2018

### **Building Details**



Classrooms	8 hrs/day	5 days/wk	9 months/vr	Heated And Cooled	



#### **Cooper Elementary School**

249 Conkey St Burlington, WI 53105 **Built 1968** 

# 58,548 Gross Bldg SF

1 electric meter 1 natural gas meter



B3 Peer Rating

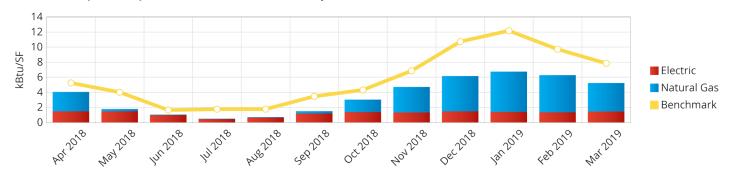
76

This site is ranked in the upper 76th percentile amongst 225 similar sites.



# **Monthly Consumption Compared to Benchmark**

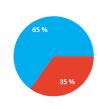
Actual consumption compared to the modeled benchmark by month.



# **Consumption by Energy Source Type**

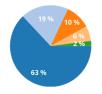
Actual consumption and cost broken out by the various energy source types.

	Total Usage	Usage/SF	kBtu	kBtu/SF	<b>Energy Cost</b>	\$/SF
<b>6</b> Electric	249,218 kWh	4.26 kWh	850,333	14.52	\$27,259	\$0.47
Natural Gas	15,889 Therms	0.27 Therms	1,588,904	27.14	\$11,003	\$0.19
Total			2,439,238	41.66	\$38,262	\$0.65



Using period April 2018 to March 2019

# **Building Details**



Classrooms	8 hrs/day	5 days/wk	9 months/yr	Heated Only
Office	9 hrs/day	5 days/wk	12 months/yr	<b>Heated And Cooled</b>
Gymnasium	8 hrs/day	5 days/wk	9 months/yr	Heated Only
Dining	14 hrs/day	5 days/wk	9 months/yr	Heated Only
Kitchen	14 hrs/day	5 days/wk	9 months/yr	Heated Only



#### **Dyer Intermediate School**

201 S Kendrick Ave Burlington, WI 53105 **Built 1964** 

# 81,451 Gross Bldg SF

1 electric meter
1 natural gas meter

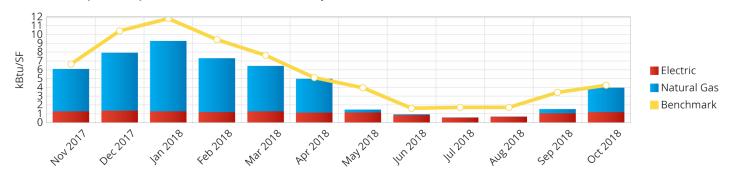






# **Monthly Consumption Compared to Benchmark**

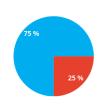
Actual consumption compared to the modeled benchmark by month.



# Consumption by Energy Source Type

Actual consumption and cost broken out by the various energy source types.

	Total Usage	Usage/SF	kBtu	kBtu/SF	<b>Energy Cost</b>	\$/SF
<b>(</b> Electric	305,490 kWh	3.75 kWh	1,042,333	12.80	\$44,406	\$0.55
// Natural Gas	31,208 Therms	0.38 Therms	3,120,840	38.32	\$17,476	\$0.21
Total			4,163,173	51.11	\$61,882	\$0.76



Using period November 2017 to October 2018

## **Building Details**





#### Karcher Middle School

225 Robert St Burlington, WI 53105 **Built 1924** 

# 182,728 Gross Bldg SF

4 electric meters
1 natural gas meter

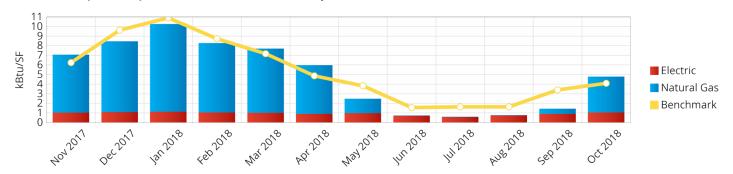






# **Monthly Consumption Compared to Benchmark**

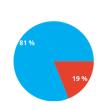
Actual consumption compared to the modeled benchmark by month.



# **Consumption by Energy Source Type**

Actual consumption and cost broken out by the various energy source types.

Total			10,692,525	58.52	\$138,015	\$0.76
// Natural Gas	86,678 Therms	0.47 Therms	8,667,789	47.44	\$57,008	\$0.31
<b>6</b> Electric	593,416 kWh	3.25 kWh	2,024,736	11.08	\$81,007	\$0.44
	Total Usage	Usage/SF	kBtu	kBtu/SF	<b>Energy Cost</b>	\$/SF



Using period November 2017 to October 2018

## **Building Details**





#### **Lyons Elementary School**

1622 Mill St Burlington, WI 53105 **Built 1961** 

# 23,600 Gross Bldg SF

2 electric meters 1 natural gas meter





This site is ranked in the lower 48th percentile amongst 223 similar sites.

**ENERGY STAR® Score** 

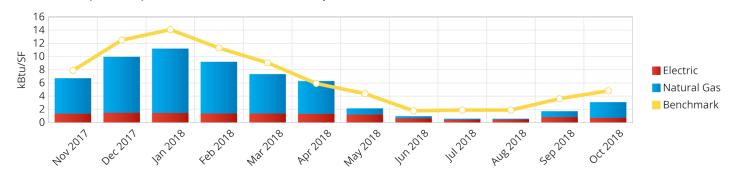


**78** 

This site has received an ENERGY STAR score of 78

# **Monthly Consumption Compared to Benchmark**

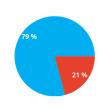
Actual consumption compared to the modeled benchmark by month.



# Consumption by Energy Source Type

Actual consumption and cost broken out by the various energy source types.

Total			1,408,689	59.69	\$18,021	\$0.76
Natural Gas	<b>11,152</b> Therms	0.47 Therms	1,115,239	47.26	\$6,387	\$0.27
<b>6</b> Electric	86,005 kWh	3.64 kWh	293,450	12.43	<b>\$11</b> ,634	\$0.49
	Total Usage	Usage/SF	kBtu	kBtu/SF	Energy Cost	\$/SF



Using period November 2017 to October 2018

## **Building Details**





#### **Project Active Citizen**

340 Church St Burlington, WI 53105 **Built 1976** 

# 2,300 Gross Bldg SF

1 electric meter 1 natural gas meter

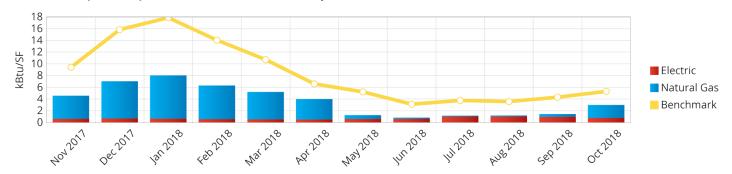






# **Monthly Consumption Compared to Benchmark**

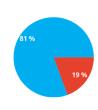
Actual consumption compared to the modeled benchmark by month.



# Consumption by Energy Source Type

Actual consumption and cost broken out by the various energy source types.

Total			100,873	43.86	<b>\$1,530</b>	\$0.67
Natural Gas	813 Therms	0.35 Therms	81,307	35.35	\$576	\$0.25
Electric	5,735 kWh	2.49 kWh	19,566	8.51	\$954	\$0.41
	Total Usage	Usage/SF	kBtu	kBtu/SF	Energy Cost	\$/SF



Using period November 2017 to October 2018

# **Building Details**



Classrooms	8 hrs/day	5 days/wk	9 months/yr	Heated And Cooled
Office	9 hrs/day	5 days/wk	12 months/yr	Heated And Cooled



#### Waller Elementary

195 Gardner Ave Burlington, WI 53105 **Built 1954** 

# 64,943 Gross Bldg SF

3 electric meters 2 natural gas meters



B3 Peer Rating

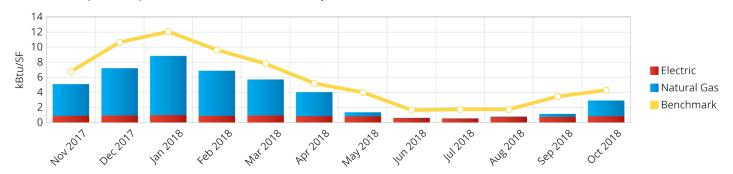
63

This site is ranked in the upper 63rd percentile amongst 225 similar sites.



# **Monthly Consumption Compared to Benchmark**

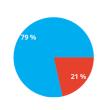
Actual consumption compared to the modeled benchmark by month.



# **Consumption by Energy Source Type**

Actual consumption and cost broken out by the various energy source types.

Electric  Natural Gas	183,786 kWh	2.83 kWh	627,077	9.66	\$26,091	\$0.40
	22,988 Therms	0.35 Therms	2,298,827	35.40	\$13,272	\$0.20
Total			2,925,904	45.05	\$39,363	\$0.61



Using period November 2017 to October 2018

# **Building Details**





#### Winkler Elementary

34150 Fulton St Burlington, WI 53105 **Built 1999** 

# 26,000 Gross Bldg SF

1 electric meter
1 natural gas meter

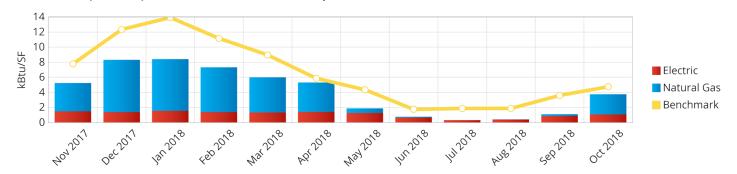






# **Monthly Consumption Compared to Benchmark**

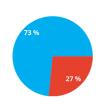
Actual consumption compared to the modeled benchmark by month.



# Consumption by Energy Source Type

Actual consumption and cost broken out by the various energy source types.

Total			1,265,932	48.69	\$19,162	\$0.74
Natural Gas	9,291 Therms	0.36 Therms	929,134	35.74	\$5,395	\$0.21
<b>(</b> ) Electric	98,710 kWh	3.80 kWh	336,797	12.95	\$13,767	\$0.53
	Total Usage	Usage/SF	kBtu	kBtu/SF	Energy Cost	\$/SF



Using period November 2017 to October 2018

# **Building Details**

