MACALESTER COLLEGE

2018 – 2019

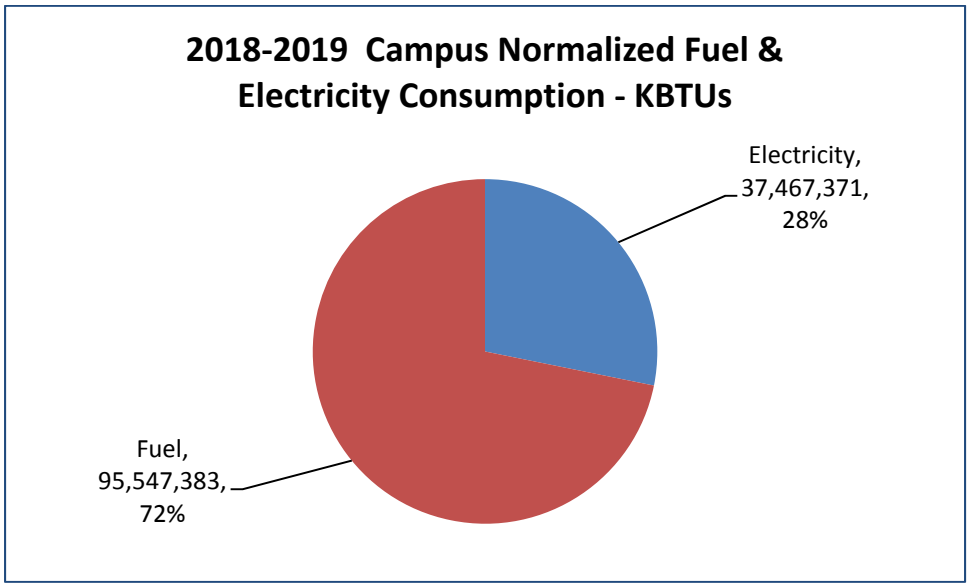
Campus Annual Energy Use Report

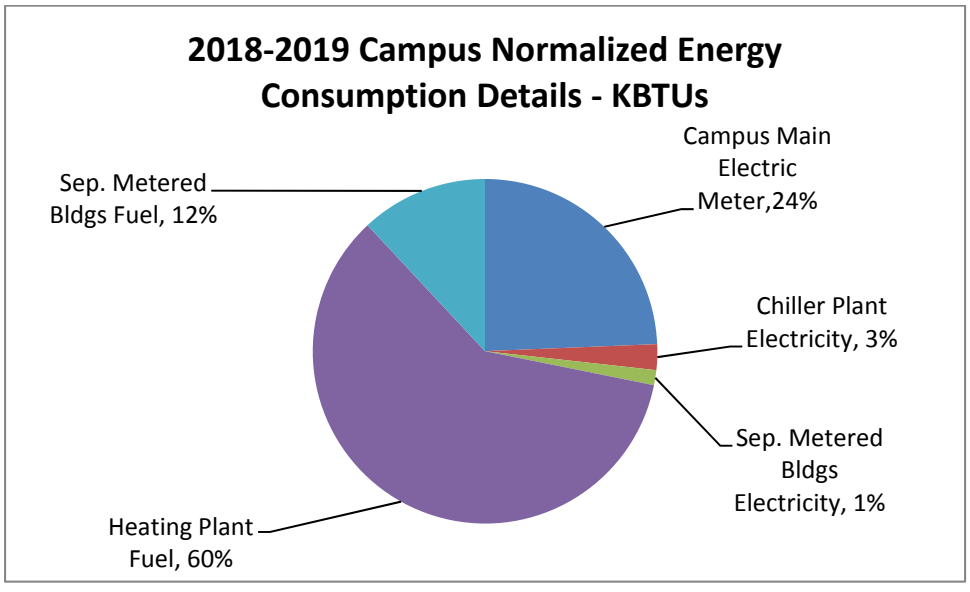
Contents

Fuel, Electricity, & Water Consumption

FY 2018-2019 Total Energy Consumption

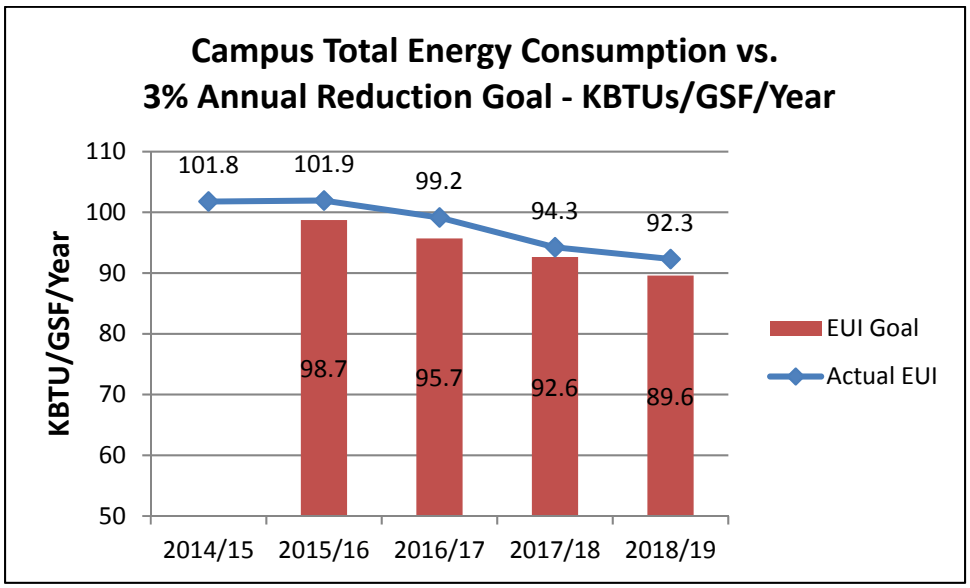
In fiscal year 2018-19, Macalester College consumed 134,028,968 kBTUs of energy on its campus. 72% of the energy was comprised of natural gas and #2 fuel oil and the balance was electricity usage. The largest single consumer of energy on campus was the heating plant – its consumption accounted for 60% of the campus' total energy usage.





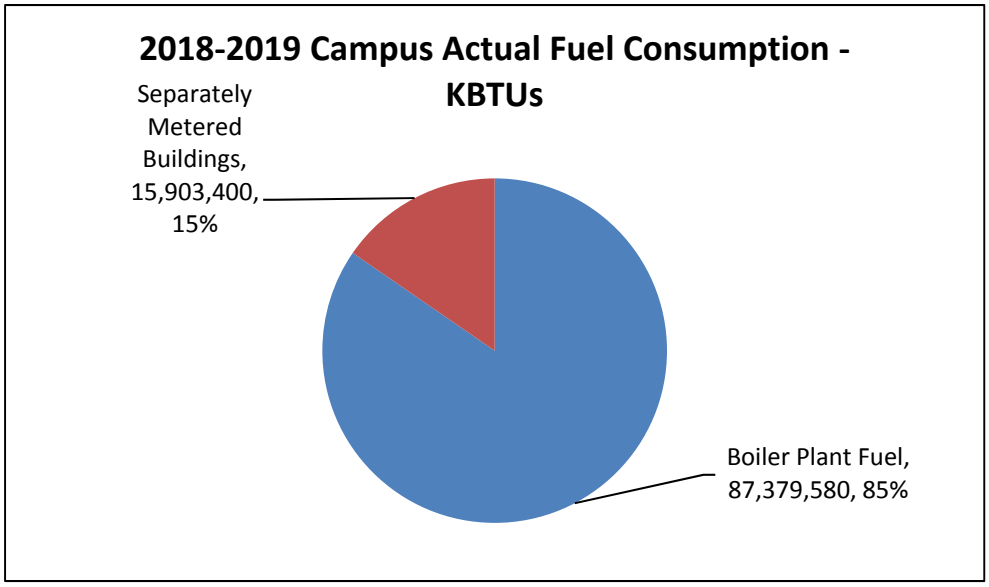
Energy Consumption vs. Annual Reduction Target:

In 2015, Macalester College set a goal to reduce the College's total energy consumption by 15% within five years, with fiscal year 2014-2015 selected as the base year for comparison. In FY 2018-19, the College's energy utilization index value (EUI) was 92.3 kBTUs/GSF/Year, which equates to a reduction of 9.3% vs. the desired 12% cumulative reduction target.



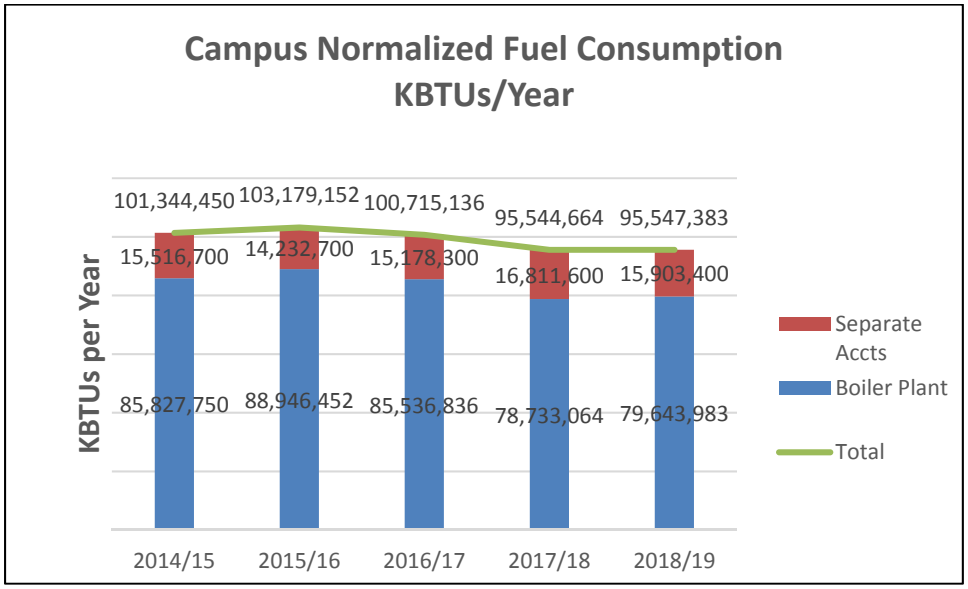
Fuel Energy Consumption

Approximately 103,000,000 kBTUs of fuel were consumed on campus during FY 2018-19. 85% of the fuel energy was used by the central heating plant, and the balance was used in separately metered buildings and houses on campus for space heating, domestic water heating, and cooking applications. The Art building's kilns and forges consume a significant amount of natural gas.



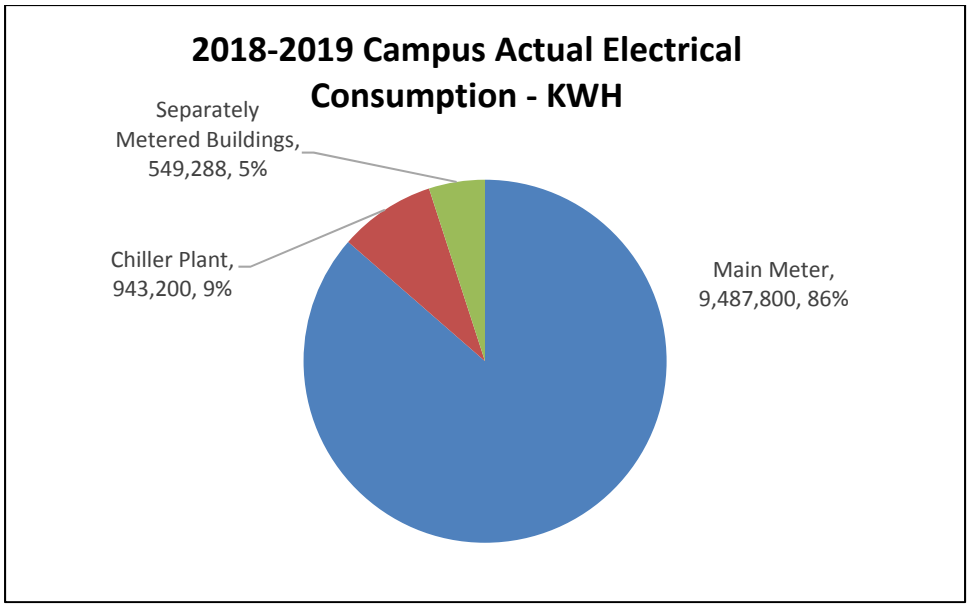
In addition to its use of natural gas, in FY 2018-19 approximately 17,000 gallons of #2 fuel oil were used in the campus' central heating plant due to curtailments of natural gas usage that were requested by Xcel Energy. (Macalester benefits from a reduced rate for natural gas due to an agreement with Xcel Energy whereby the College will use fuel oil in the boiler plant instead of natural gas during periods of extremely cold weather.)

The actual amount of fuel consumed in any given year is adjusted via weather normalization calculations to provide an "apples to apples" comparison with the fuel consumption in other years. The winter of FY 2018-19 was colder than usual, with 8,021 heating degree days (HDD) vs. the average of 7,347 HDD for the period from 1995-96 through 2017-2018. As noted above, the actual amount of fuel consumed on campus in FY 2018-2019 was approximately 103,000,000 kBTUs. After weather normalization, however, the total fuel consumption for the campus was approximately 95,500,000 KBTUs. This amount is 6% less than the weather normalized fuel use in the FY 2014-2015 base year, and nearly identical to the weather-normalized usage in FY 2017-2018. (The natural gas consumed on campus outside of the central heating plant is not weather normalized because the amount of gas consumed does not correlate with the weather.)



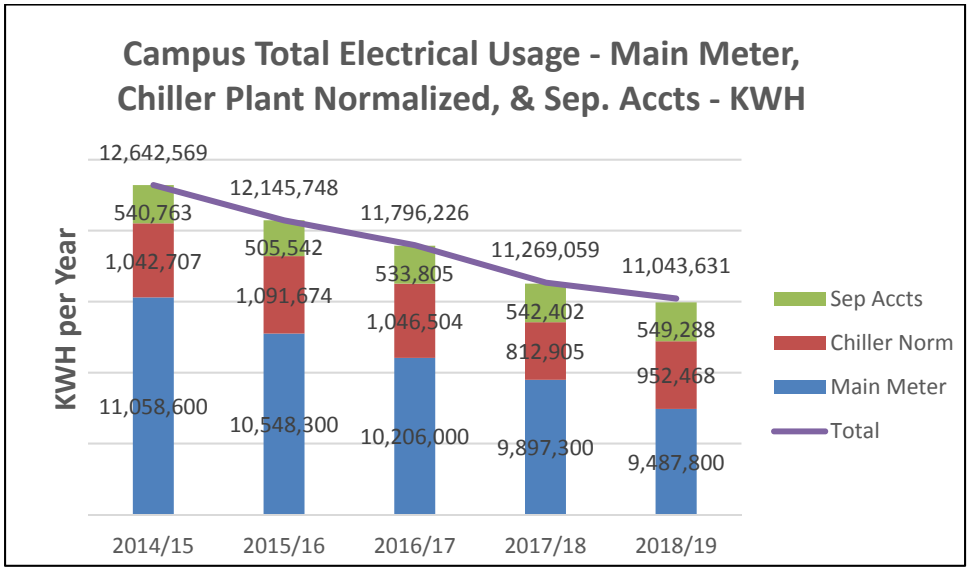
Electrical Energy Consumption

Macalester College's actual electrical consumption in FY 2018-2019 was approximately 11,034,000 KWH. 86% of the electricity was used for the electrical loads that are served by the campus main electric service, such as building lighting, distributed HVAC equipment, and plug loads. The College's chiller plant used about 9% of the campus' total electric energy, and the remaining 5% was used in the various buildings and houses on campus that have individual electric services.



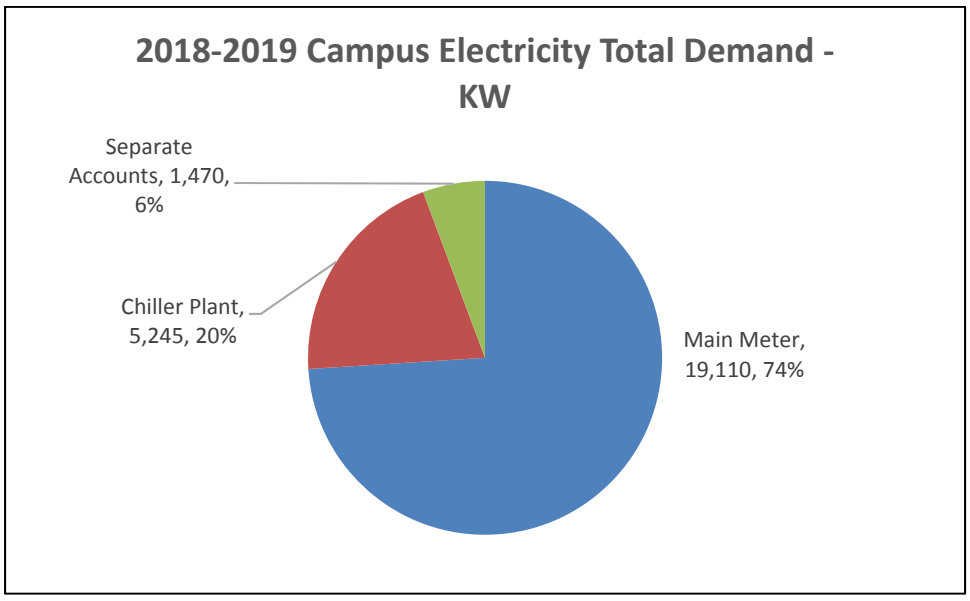
Like the boiler plant's fuel consumption, the amount of electricity used in Macalester College's central cooling plant is affected by seasonal weather variations and is adjusted via weather normalization calculations to provide a standardized method of measuring year-to-year progress toward the College's energy reduction goals.

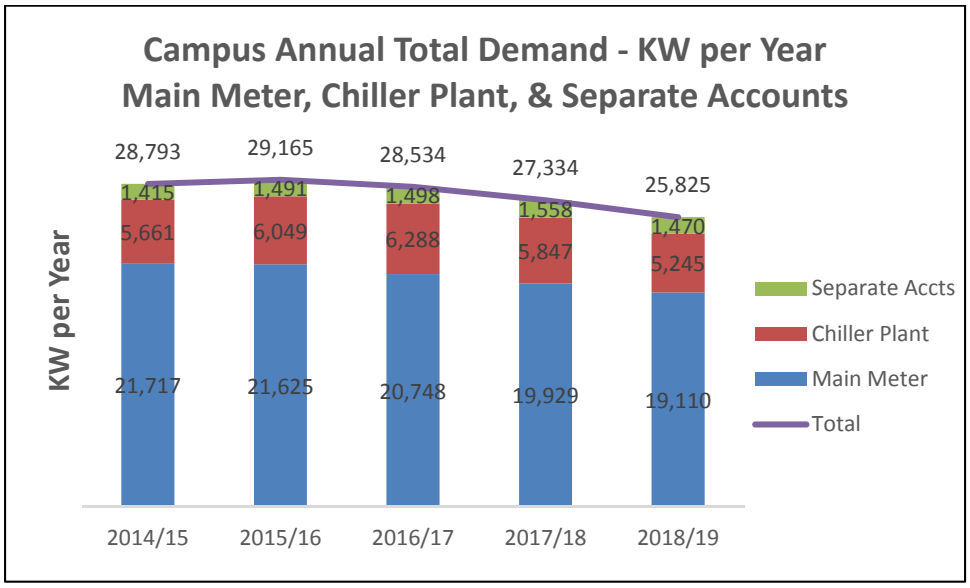
Fiscal year 2018-2019's cooling season was fairly typical, with 2,249 cooling degree days (CDD) vs the average of 2,172 CDD for the period from 1995-96 through 2017-18. Weather normalization of the amount of electricity consumed by the chiller plant thus had very little effect on the total amount of electricity consumed on campus during FY 2018-2019. The weather-normalized total was 11,043,000 KWH, which was 12.6% less than the 2014-2015 baseline period and on track with the 12% cumulative energy reduction goal for the year.



Electrical Demand

In addition to the amount of electricity consumed on campus (measured in kilowatt-hours or kWh), the College is also charged for the rate at which it uses electricity (demand, which is measured in kilowatts or kW). Macalester used 25,825 kW in FY 2018-2019, which was 10% less than the 28,793 kW used in the 2014-2015 base year.

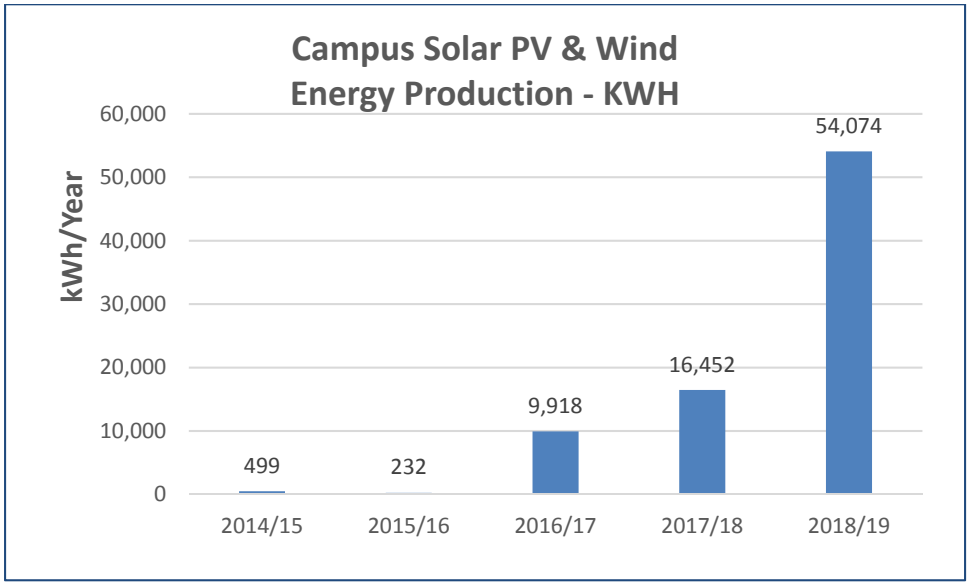




Campus Solar & Wind Energy Production

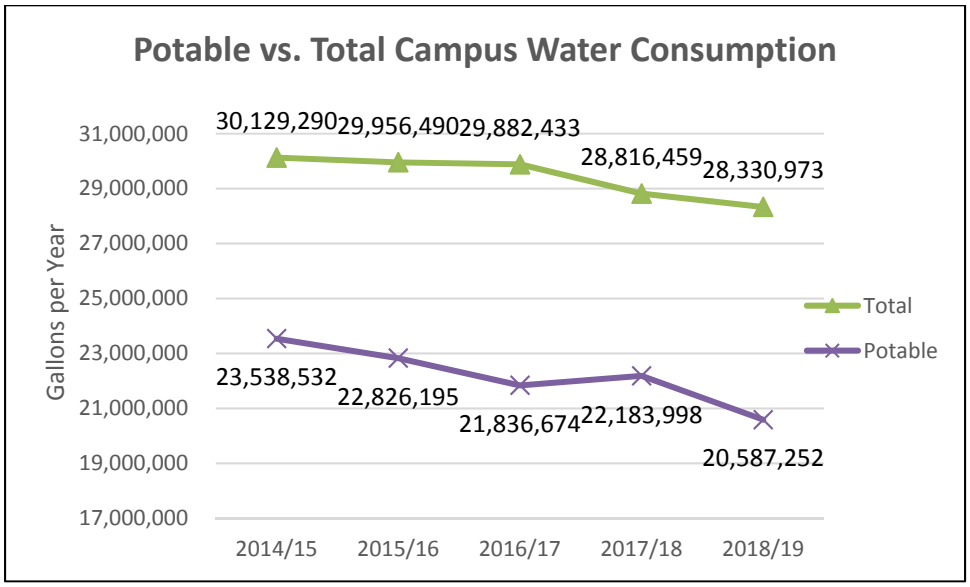
Prior to FY 2018-19, the solar & wind power installations on Macalester's campus consisted of a 13.1 kW solar array installed on the roof of the International Global Center (IGC) and a 9 kW demonstration wind turbine installed next to the Olin-Rice Science Building. In early 2019, a 132 kW PV array was installed on the roof of the new Theater building, and in FY 2019-20 a 13 kW PV array will be installed at the Ordway

Field Station. The three existing systems produced 54,074 kWh in 2018-19. In FY 2019-20 the total combined electrical production from the Theater, IGC, and Ordway PV installations should be approximately 200,000 kWh and comprise about 2% of the campus' total electrical consumption.

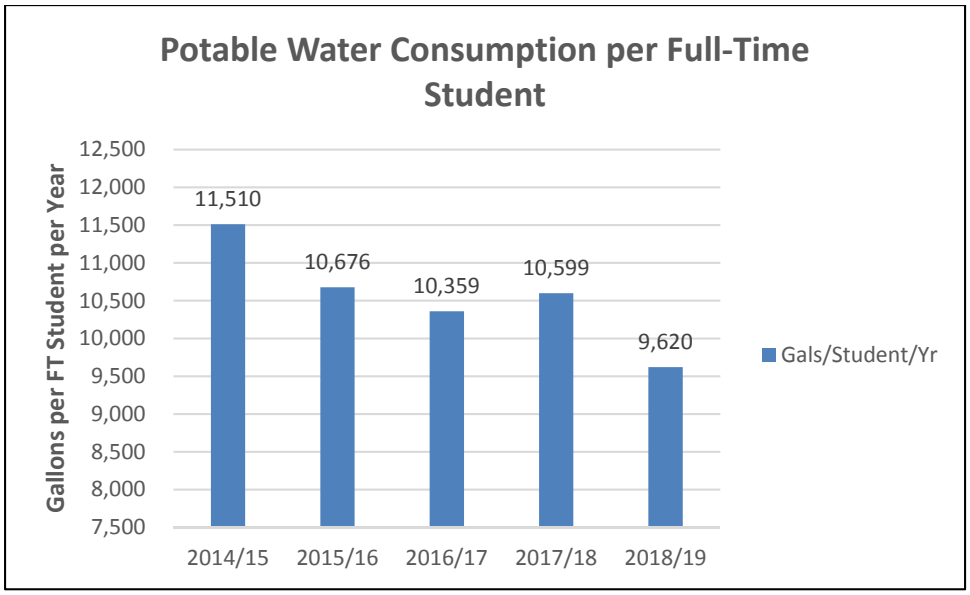


Water Consumption

Macalester consumed approximately 28,331,000 gallons of water on its campus in FY 2018-2019. Approximately 25% of the water consumed on Macalester's campus each year is used for the irrigation of campus vegetation and as makeup water in the central heating & cooling plant's boilers and cooling towers. After deducting the non-potable consumption, approximately 20,600,000 gallons of water was used for drinking, cooking, and in restrooms in FY 2018-19.



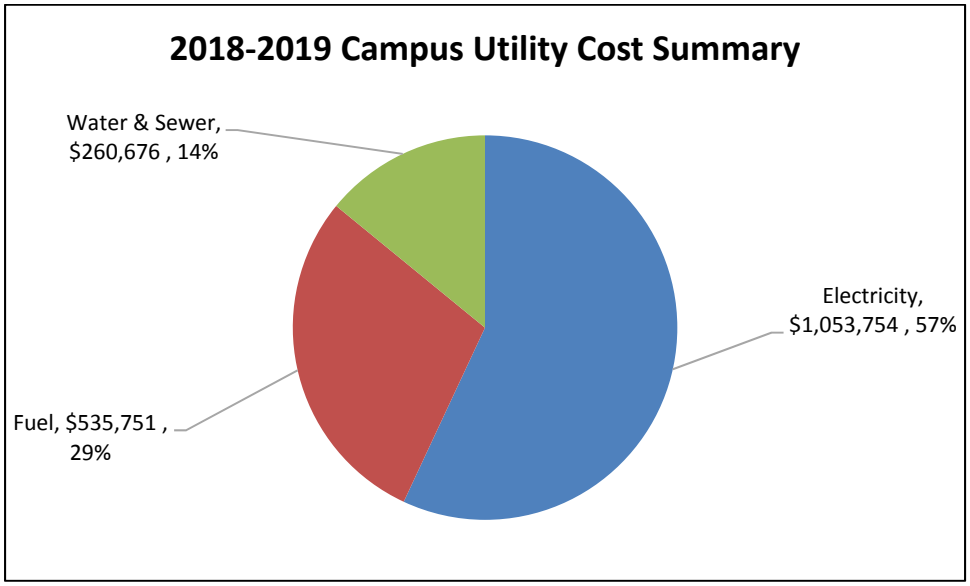
The amount of potable water consumed on Macalester's campus in any given year is directly related to the number of full-time students on campus. Compared to FY 2014-15, the amount of potable water used on campus per full time student has decreased by 16%, from 11,510 gallons/student/year to 9,620 gallons/student/year.



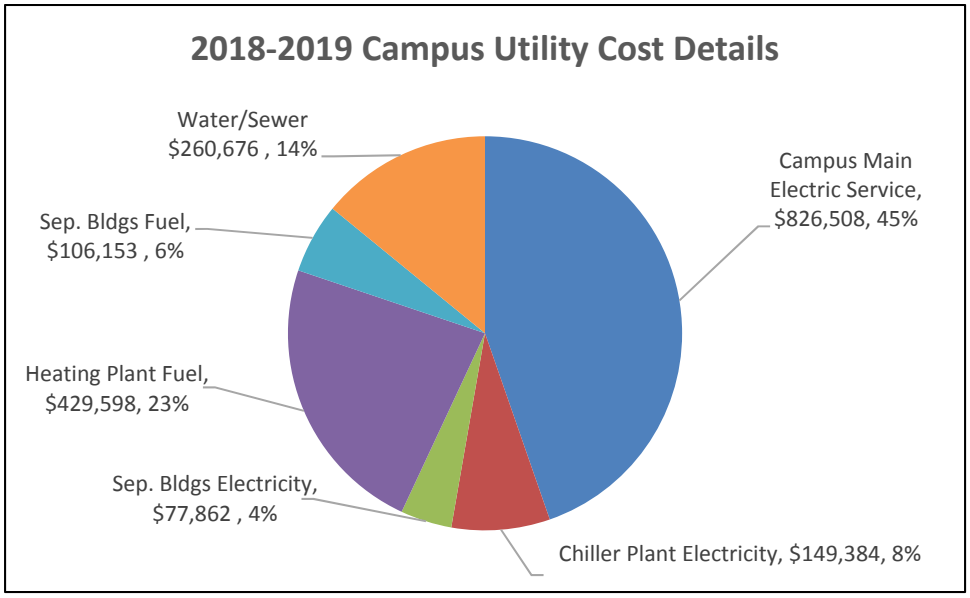
Total Utility Costs

FY 2018-2019 Annual Utility Costs:

Macalester College's total expenditures for electricity, fuel, and water/sewer charges in FY 2018-2019 were $1,850,182. Electricity costs accounted for most (57%) of the total amount spent, while fuel costs and water/sewer charges comprised 29% and 14% of the total costs for the year, respectively.

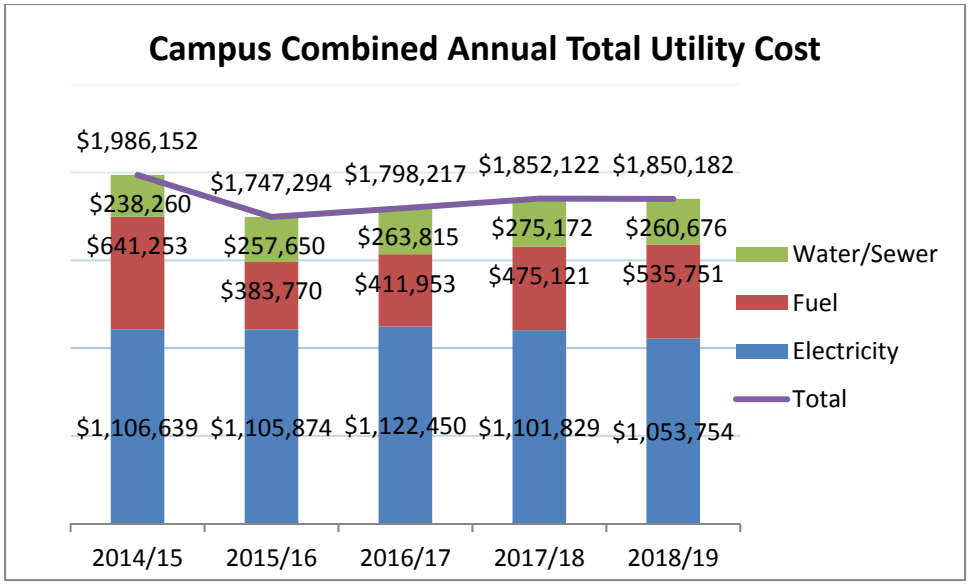


The chart displayed below shows the allocation of the campus utility costs in further detail. Electrical costs are split between the main campus electric service, the central chiller plant, and the combined costs for electricity for the houses and other smaller buildings on campus that have individually billed electric services. Fuel costs are split between the central heating plant and the buildings on campus that have their own, separately billed, natural gas services.

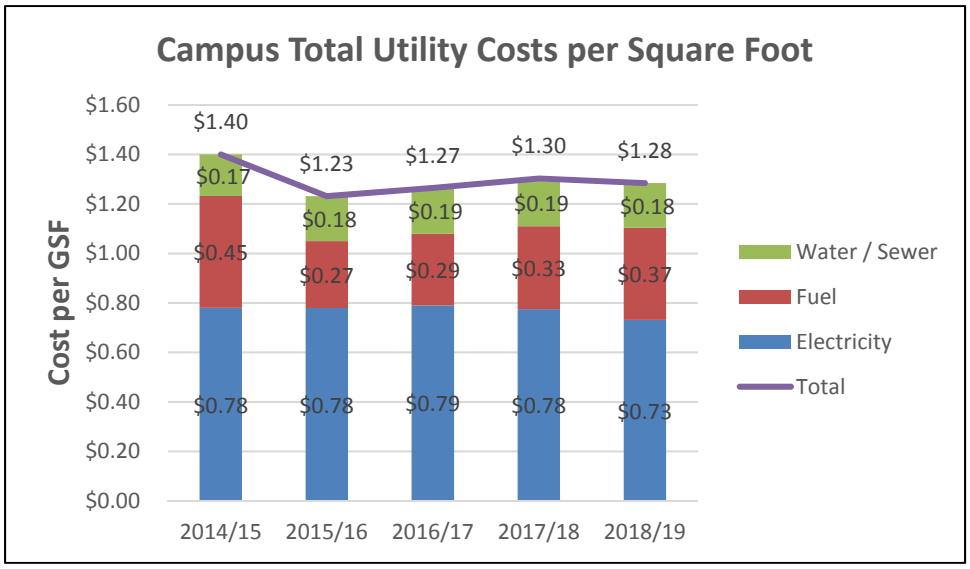


Total Utility Costs over Time

Although the total amount spent for utilities in FY 2018-19 was nearly identical to the previous fiscal year's expenditures, the component costs varied significantly - the amounts paid for electricity and water/sewer charges both declined by about 5%, while the total amount paid for fuel increased by 13%..

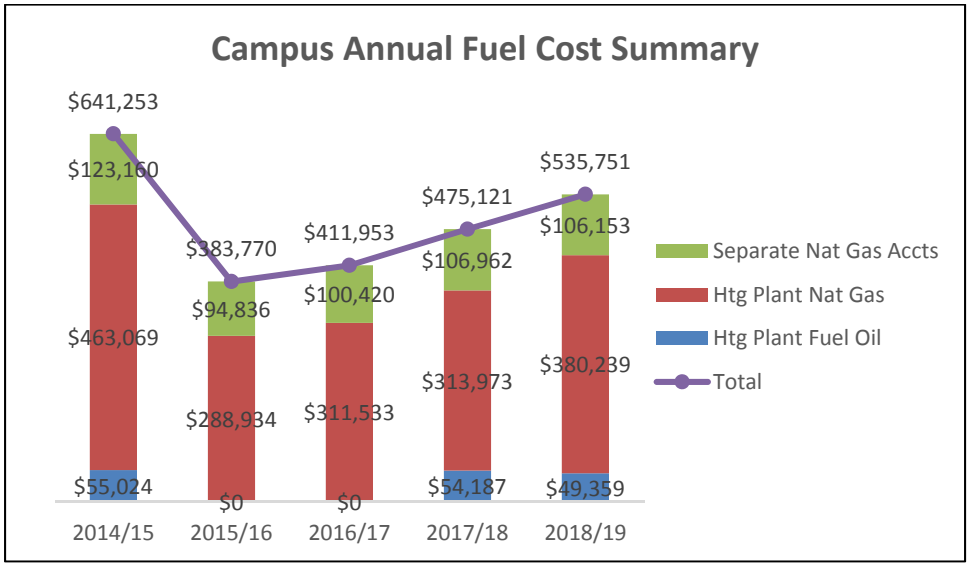


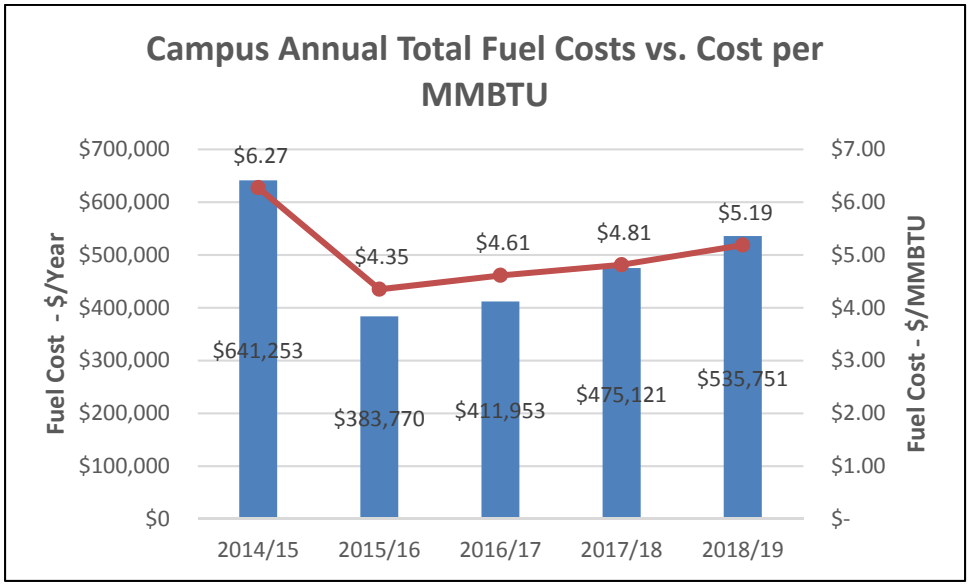
The chart displayed below shows Macalester's total annual utility expenditures for the last five years on a cost per square foot basis. Since the total amount spent on utilities compared to the previous year did not change and the area of the campus increased by about 20,000 SF due to the construction of the new Theater building, the cost per square foot of campus area decreased slightly, from $1.30/SF to $1.28/SF.



Fuel Costs

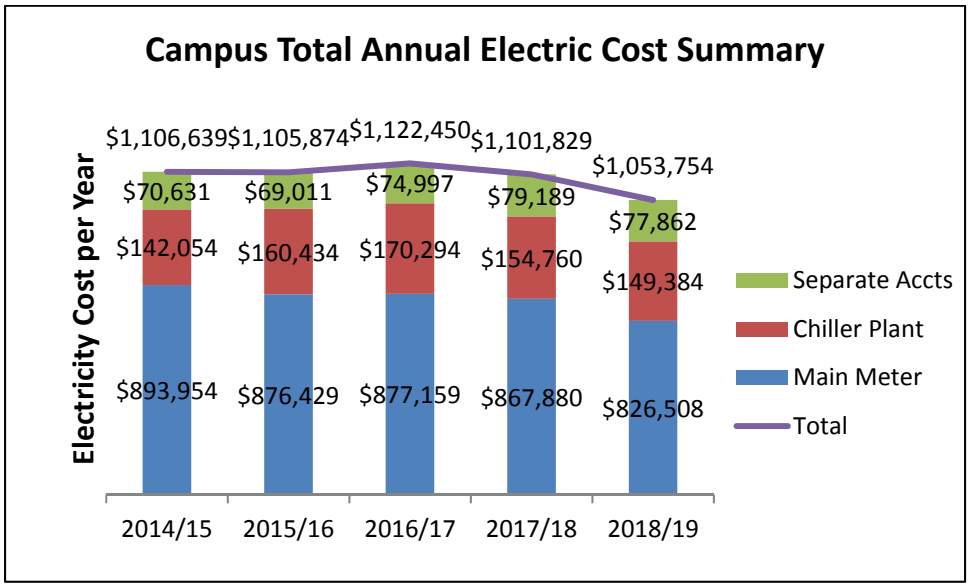
The total cost for the natural gas and #2 fuel oil consumed on Macalester College's campus in FY 2018-19 was $535,751. As noted above, this expenditure was 13% higher than the $475,121 spent on fuel in FY 2017-2018. While the cost per million BTU (MMBtu) of natural gas paid by Macalester College declined by 4% in FY 2018-19, the College's cost per gallon of #2 fuel oil was 73% higher compared to the cost in the previous fiscal year. When the expenditures for natural gas & fuel oil are factored together, Macalester's cost per MMBtu of fuel increased by 8% compared to FY 2017-18.





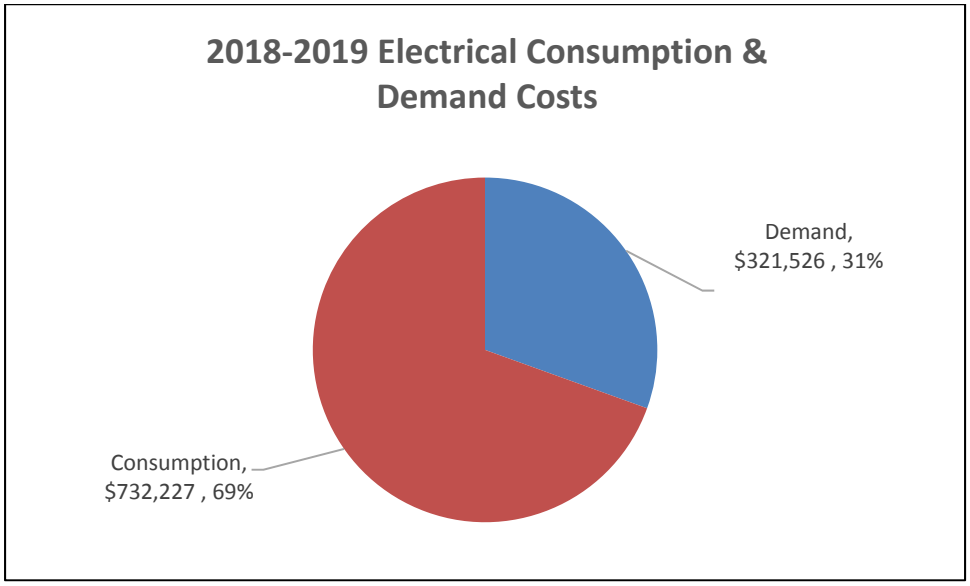
Electrical Costs

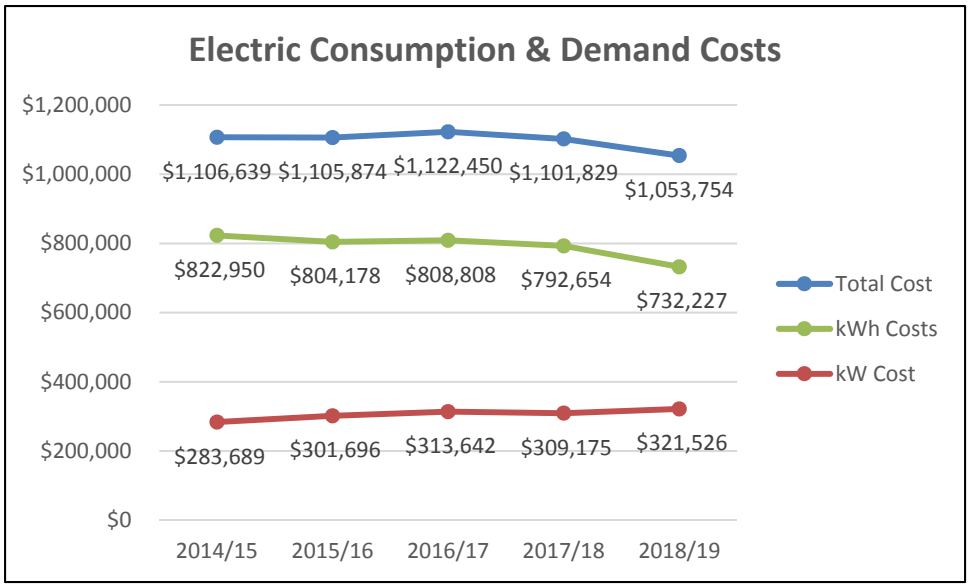
Macalester College spent $1,053,754 on electricity in FY 2018-19. Although the amount of electricity consumed on Macalester's campus has decreased every year since FY 2014-15, the amount spent for electricity has not declined at the same rate due to increases in electric utility rates that have been implemented during the intervening years.



Electrical Consumption Costs vs. Demand Costs

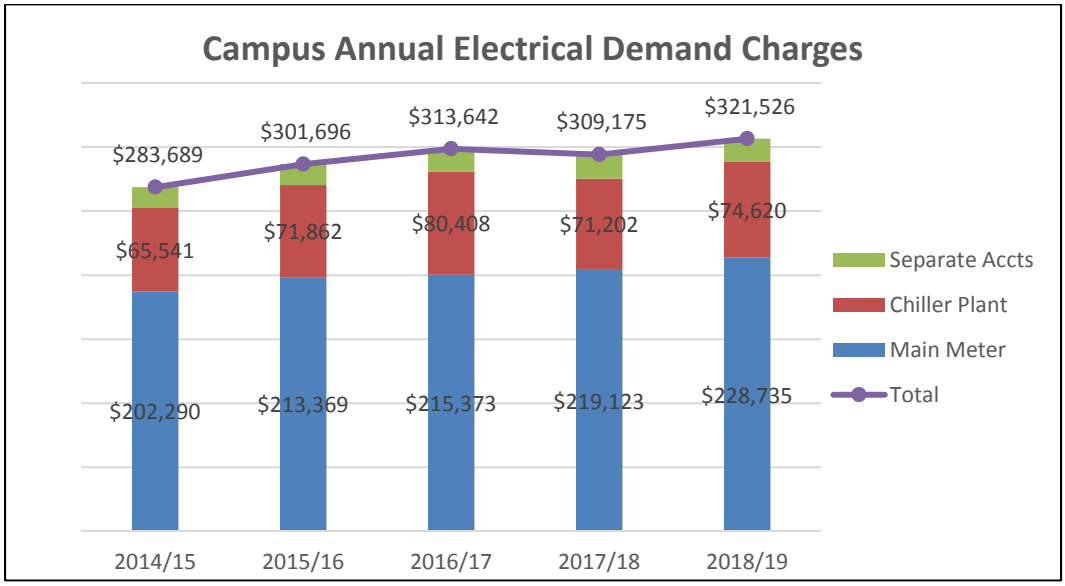
Macalester's expenditures for electricity are comprised of costs for consumption, measured in kilowatt-hours (kWh), and costs for demand, measured in kilowatts (kW). Historically, the ratio of consumption to demand charges has been in the 75% consumption/25% demand range, but that has changed as electrical efficiency measures have been implemented. During the last five years, the amount that Macalester has spent on charges for consumption as a percentage of the total expenditures for electricity have decreased from 74% to 69%.

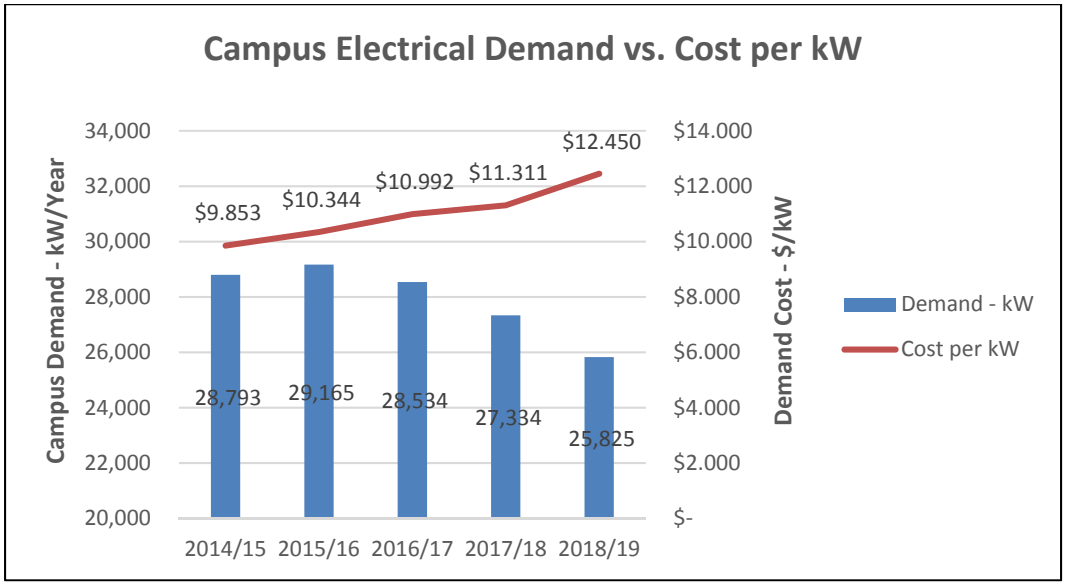




Electrical Demand Costs

Macalester pays electrical demand charges for the campus main electric service, chiller plant, and several buildings on campus that are billed individually. As noted previously, Macalester's electrical demand in FY 2018-19 was 10% less than in the FY 2014-15 base year. Despite this reduction, the amount spent for demand charges in the current fiscal year was 13% higher than in the base year due to increases in electrical demand utility rates. Since FT 2014-15, the demand charge per kW paid by Macalester has increased from $9.85 per kW to $12.45 per kW, which is an increase of 26%.



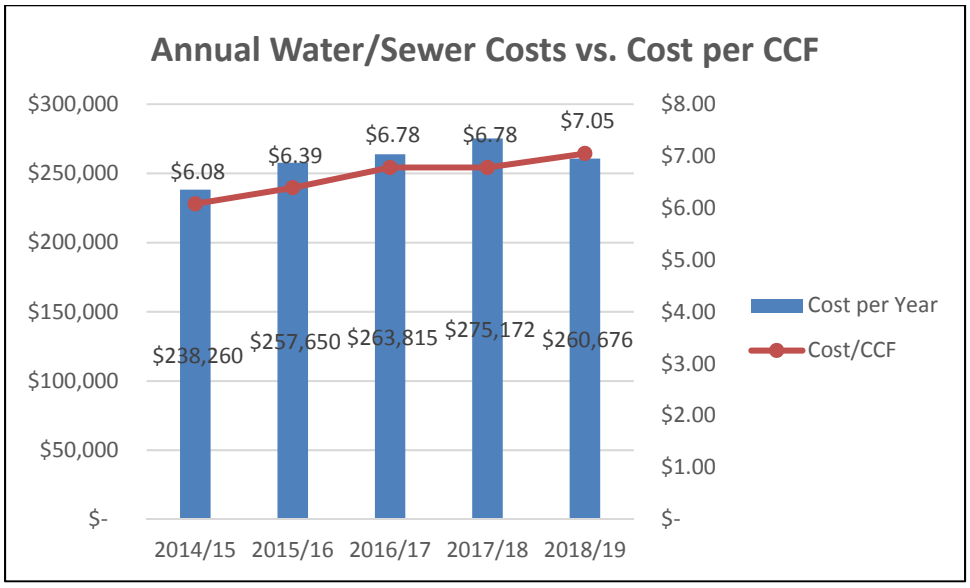


Solar Garden Energy Purchases

In FY 2018-19 Macalester College contracted to purchase and resell an amount of electricity that is equal to approximately 20% of its current electrical consumption from two regional solar gardens as a partial hedge against future increases in electric utility rates. Under this agreement, Macalester's cost per kWh produced by the solar gardens is locked in for the term of the contract while the amount that the College will be paid by the electric utility will be set at market rates, which are expected to rise over time. The first garden started production in August 2018 and provided a financial benefit to the College of approximately $10,500 for FY 2018-19. The second solar garden is expected to be operational by September 2019.

Water & Sewer Costs

Macalester College's total water & sewer charges in FY 2018-2019 were approximately $261,000, which represents 14% of the College's total expenditures for utilities. The rate that the College paid for water & sewer costs in FY 2018-19 was 15% higher than in the 2014-2015 base year. Due to reductions in water consumption, however, the total amount spent for water & sewer costs in FY 2018-19 was only 9% higher than the base year cost.



FY 2018-19 Energy Conservation Projects & Initiatives:

Lighting Retrofit & Control Projects:

The light fixtures and lighting controls in the buildings & campus areas listed below were upgraded to reduce energy consumption:

- Leonard Center Fieldhouse – The original high bay fluorescent light fixtures were replaced with LED fixtures.
- Doty Hall Corridors – Fluorescent lighting fixtures in the residence hall corridors were replaced with bi-level LED fixtures equipped with integrated occupancy sensors.
- Bi-Level LED Fixtures – Fluorescent light fixtures located in stairwells and corridors in campus buildings were replaced with 24" & 48" bi-level LED light fixtures that have integrated occupancy sensors.
- Recessed Can Lights - 6" & 8" recessed "can" fixtures with compact fluorescent lamps were replaced with LED retrofit kits in several campus buildings.
- Olin-Rice & Neill Hall occupancy sensors – non-functional corridor lighting occupancy controls were replaced with new devices.

Building Automation System Upgrades:

Obsolete controls for the HVAC equipment in the buildings listed below were upgraded to newer direct digital control equipment. The new controls provide the ability to implement energy conservation strategies that were not possible with the original equipment.

- 1550 Summit Ave rental property – Air handling unit & low-pressure boiler
- 77 Mac Business Offices Building – Hot water boiler
- Chapel – Air handling units and steam/how water heat exchanger
- Neill Hall – Air handling units and steam/hot water heat exchanger
- Wallace Hall - Heat recovery air handing unit

Electrical/Mechanical Projects:

- Bigelow Residence Hall & Campus Center Heat Tape Controls – Installed electrical equipment and controls that allow the heat trace tapes that melt ice and snow from the buildings' roofs and gutters to be turned off when their use is not necessary.
- Leonard Center - Installed a variable frequency drive (VFD) and to reduce the amount of energy used by the air-handling unit that serves the Leonard Center atrium.

Solar & Wind Energy Projects:

- Olin-Rice Wind Turbine – Replaced the wind turbine's electrical inverter.
- New Theater Building Solar Panels – 132 kW of solar panels were installed on the roof of the Macalester College's new Theater building as part of that building's construction project.

Water Conservation & O&M Projects:

- Replaced more than 600 faucet aerators with lower-flow devices that meet the EPA's current WaterSense standard.

Appendices

Appendix 1: Heating & Cooling Degree Day Data

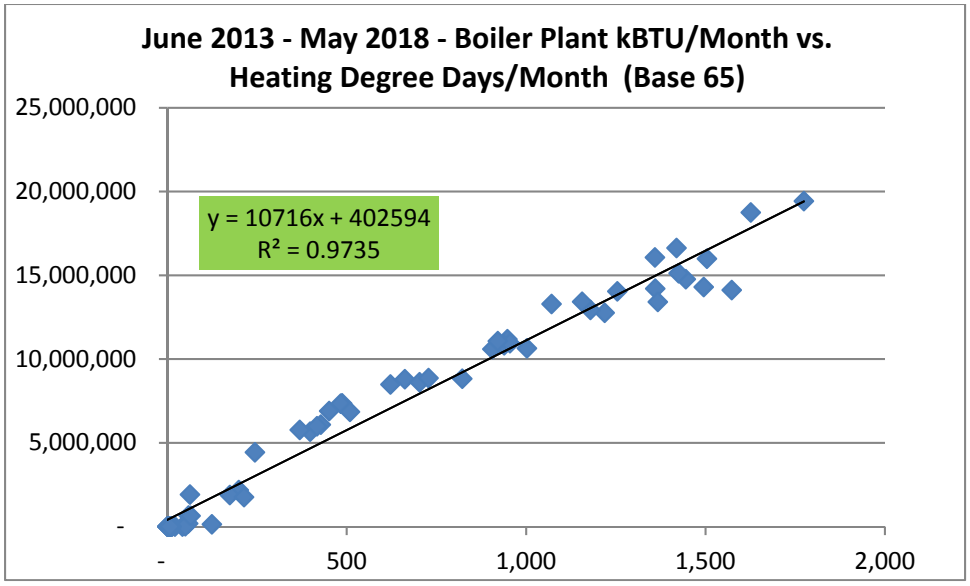
5 Year Average Heating Degree Days, Base = 65 Degrees Fahrenheit, Fiscal Year													
Fiscal Year	**Jun**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Total**
06/07-10/11	24	2	5	120	483	840	1432	1599	1330	955	505	196	7490
07/08-11/12	26	2	5	121	445	837	1449	1584	1264	907	493	202	7334
08/09-12/13	28	2	4	124	482	821	1407	1561	1233	914	512	198	7284
09/10-13/14	34	3	4	115	489	830	1413	1565	1301	956	541	215	7468
10/11-14/15	24	3	1	129	452	933	1370	1528	1350	990	573	211	7565
11/12-15/16	23	3	3	112	462	897	1284	1490	1324	917	563	201	7280
12/13-16/17	19	4	4	82	454	856	1319	1496	1291	995	553	216	7289
13/14-17/18	18	4	4	71	431	875	1347	1499	1308	962	574	179	7271
14/15-18/19	10	2	6	82	451	904	1263	1457	1284	943	554	191	7147

5 Year Average Cooling Degree Days, Base = 55 Degrees Fahrenheit, Fiscal Year													
Fiscal Year	**Jun**	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Total**
06/07-10/11	455	643	557	262	62	6	0	0	0	7	42	209	2243
07/08-11/12	446	638	550	265	74	5	0	0	0	16	29	197	2220
08/09-12/13	434	649	543	260	58	5	0	0	0	16	33	215	2214
09/10-13/14	434	644	557	281	63	1	0	0	0	16	28	208	2234
10/11-14/15	443	654	581	260	64	1	0	0	0	14	23	190	2229
11/12-15/16	447	636	542	304	53	2	0	0	0	15	35	204	2237
12/13-16/17	457	613	555	333	46	4	0	0	0	1	38	189	2236
13/14-17/18	461	598	540	349	54	3	0	0	0	1	34	234	2274
14/15-18/19	484	599	535	342	42	3	0	0	0	1	39	221	2266

Appendix 2: Boiler Plant Fuel Usage Weather Normalization

Weather normalization of energy usage allows an "apples to apples" evaluation of year-to-year energy consumption by estimating the energy that would have been used in a year with average weather based on the rate that energy was used in the current year. Two major values need to be determined in order to make this calculation:

- Base year weather: For this document, the average number of heating degree days (HDD) in the five years prior to the current year was used for the base temperature period. Through trial and error, HDD data based on a balance point temperature of 65F was shown to correlate very well with the boiler plant's fuel consumption.
- Average year energy usage: The boiler plant's actual fuel usage for the five-year period prior to the current year was used with the average HDD data from the same period to calculate the linear regression formula shown below. The chart shows a very high correlation rate (or R^2 value) of 0.97 for the five-year period prior to the current fiscal year.



Using the linear regression formula displayed above, the amount of fuel expected to be used in an average year can be predicted, as shown below. Note that this value is based on the previous five years, so will vary over time due to changes in weather patterns, implementation of new technology in the heating plant and campus buildings, and changes in the number of buildings served by the central heating plant.

2013/14 - 2017/18		
Month	**5 Year Ave - HDD/ Month**	**Predicted Usage - kBTUs**
JUN	17.8	593,339
JUL	3.6	441,172
AUG	4.4	449,744
SEP	71.2	1,165,573
OCT	430.8	5,019,047
NOV	874.6	9,774,808
DEC	1347.0	14,837,046

2013/14 - 2017/18		
Month	**5 Year Ave - HDD/ Month**	**Predicted Usage - kBTUs**
JAN	1498.6	16,461,592
FEB	1307.8	14,416,979
MAR	962.0	10,711,386
APR	574.4	6,557,864
MAY	178.8	2,318,615
Average Year (Last 5 years)	**7,271**	**82,747,164**

The linear regression formula developed above is then used with the current year's HDD data to predict the amount of fuel that would be used in the current fiscal year, as shown below:

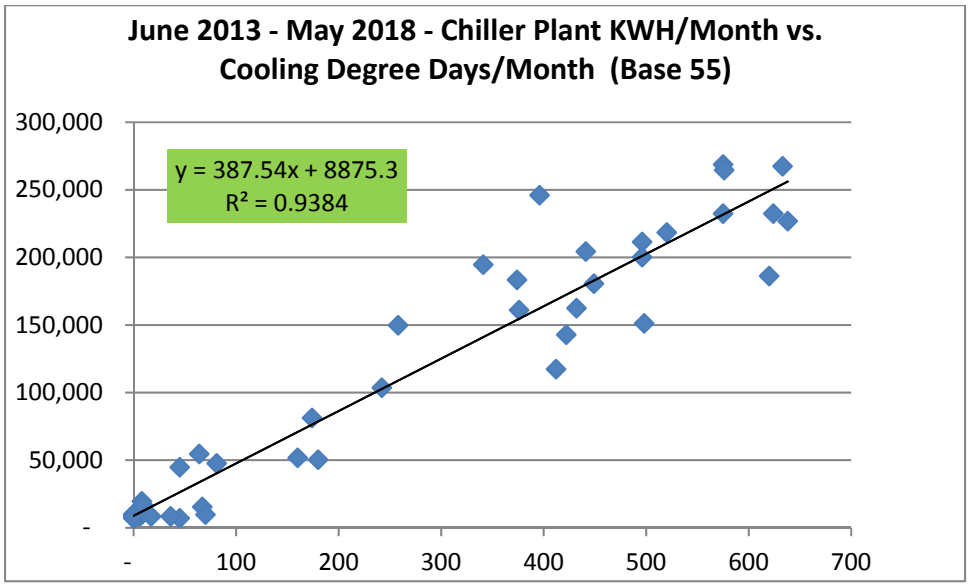
Month	Monthly HDD (Base 65F)	Predicted Fuel Usage – KBTU	Actual Fuel Usage - KBTU
JUN-18	1	413,310	0
JUL-18	0	402,594	0
AUG-18	7	477,606	0
SEP-18	114	1,624,218	1,188,400
OCT-18	586	6,682,170	8,473,660
NOV-18	1,096	12,147,330	13,192,680
DEC-18	1,207	13,336,806	12,783,320
JAN-19	1,568	17,205,282	17,539,640
FEB-19	1,455	15,994,374	16,218,280
MAR-19	1,125	12,458,094	9,357,500
APR-19	559	6,392,838	5,938,800
MAY-19	303	3,649,838	2,687,300
Annual Totals	**8,021**	**90,784,164**	**87,379,580**

The actual amount of fuel used by the boiler plant in FY 2018-19 was less than the amount that was predicted. Dividing the actual amount by the predicted amount provides a ratio of 0.96, and multiplying the amount of fuel expected to be used in an average year by this ratio provides the weather-normalized usage for the year. For FY 2018-19, the weather-normalized consumption was 79,643,983 kBTUs vs. the actual usage of 87,379,580 kBTUs. The table below shows the number of HDD and the predicted, actual, and normalized fuel usage for the boiler plant for the last five fiscal years.

Fiscal Year	Heating Degree Days (HDD)	Predicted Fuel Usage - kBTUs	Actual Fuel Usage – kBTUs	Normalized Fuel Usage - kBTUs
2014-15	7,547	81,321,267	86,711,760	85,827,750
2015-16	6,265	68,455,325	73,998,600	88,946,452
2016-17	6,306	68,017,482	74,136,500	85,536,836
2017-18	7,596	86,153,256	81,890,460	78,733,064
2018-19	8,021	90,784,164	83,379,580	79,643,873

Appendix 3: Chiller Plant Electrical Usage Weather Normalization

- Base year weather: For this document, the average number of cooling degree days (CDD) in the five years prior to the current year was used for the base temperature period. Through trial and error, CDD data based on a balance point temperature of 55F was shown to correlate very well with the chiller plant's electric consumption.
- Average year energy usage: The chiller plant's actual electrical consumption for the five-year period prior to the current year was used with the average CDD data from the same period to calculate the linear regression formula shown below. The chart below shows a very high correlation rate (or R^2 value) of 0.94 for the five-year period prior to the current fiscal year.



Using the linear regression formula displayed above, the amount of electricity expected to be used in an average year can be predicted, as shown below. Note that this value is based on the previous five years, so will vary over time due to changes in weather patterns, implementation of new technology in the chiller plant and campus buildings, and changes in the number of buildings served by the chiller plant.

2013/14 - 2017/18		
Month	**5 Year Ave - CDD/ Month**	**Predicted Usage - KWH**
JUN	461.2	187,609
JUL	598.0	240,624
AUG	539.8	218,069
SEP	349.0	144,127
OCT	53.6	29,647
NOV	3.4	10,193
DEC	0.0	8,875
JAN	0.0	8,875
FEB	0.0	8,875
MAR	1.0	9,263
APR	34.2	22,129
MAY	233.6	99,405

2013/14 - 2017/18		
Month	**5 Year Ave - CDD/ Month**	**Predicted Usage - KWH**
Average Year (Last 5 Years)	**2,274**	**987,692**

The linear regression formula developed above is then used with the current year's HDD data to predict the amount of fuel that would be used in the current fiscal year, as shown below:

Month	Monthly CDD (Base 55F	Predicted Elect. Usage – KWH	Actual Elect Usage - KWH
JUN-18	538	217,372	201,600
JUL-18	627	251,863	273,000
AUG-18	595	239,462	200,200
SEP-18	338	139,864	168,000
OCT-18	7	11,588	14,000
NOV-18	0	8,875	8,400
DEC-18	0	8,875	8,400
JAN-19	0	8,875	9,800
FEB-19	0	8,875	8,400
MAR-19	0	8,875	8,400
APR-19	28	19,726	8,400
MAY-19	116	53,830	34,600
Annual Totals	**2,249**	**978,081**	**943,200**

The actual amount of electricity used by the chiller plant in FY 2018-19 was slightly less than the amount that was predicted. Dividing the actual amount by the predicted amount provides a ratio of 0.96, and multiplying the amount of electricity expected to be used in an average year by this ratio provides the weather-normalized usage for the year. For FY 2018-19, the weather-normalized consumption was 952,468 KWH. The table below shows the number of CDD and predicted, actual, and normalized electrical consumption for the chiller plant for the last five fiscal years.

Fiscal Year	Cooling Degree Days (CDD)	Predicted Elect. Usage - KWH	Actual Electrical Usage – KWH	Normalized Elect Usage - KWH
2014-15	2,021	966,888	957,600	1,042,707
2015-16	2,283	1,100,048	1,114,000	1,091,674
2016-17	2,332	1,142,823	1,085,000	1,046,504
2017-18	2,443	1,093,573	880,000	812,905
2018-19	2,249	978,081	943,200	952,468

Appendix 4: Campus Gross Square Footage - Last 5 Years

In FY 2018-19 Macalester College's gross square footage increased by approximately 20,000 SF due to the replacement of its Theater building with a larger facility. In FY 2019-20 the house located at 1657 Lincoln Avenue will be converted from a High Winds rental property to administrative use by the College.

Residence Halls	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
30 Macalester	9,062	9,062	9,062	9,062	9,062
37 Macalester (Cultural House)	6,294	6,294	6,294	6,294	6,294
Bigelow Hall	37,890	37,890	37,890	37,890	37,890
George Draper Dayton Hall	42,423	42,423	42,423	42,423	42,423
Doty Hall	43,474	43,474	43,474	43,474	43,474
Dupre Hall	65,459	65,459	65,459	65,459	65,459
Kirk Hall	53,515	53,515	53,515	53,515	53,515
Turck Hall	40,377	40,377	40,377	40,377	40,377
Wallace Hall	49,328	49,328	49,328	49,328	49,328
Stadium (Veggie Co-op)	18,305	18,305	18,305	18,305	18,305
Residence Halls Total:	**366,757**	**366,757**	**366,757**	**366,757**	**366,757**

Admin & Support Buildings	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Campus Center	76,065	76,065	76,065	76,065	76,065
Weyerhaeuser Hall	31,144	31,144	31,144	31,144	31,144
77 Macalester	11,944	11,944	11,944	11,944	11,944
Weyerhaeuser Chapel	17,682	17,682	17,682	17,682	17,682
Kagin Commons	41,377	41,377	41,377	41,377	41,377
Alumni House	7,109	7,109	7,109	7,109	7,109
Leonard Center	174,617	174,617	174,617	174,617	174,617
Wallace Library	86,910	86,910	86,910	86,910	86,910
Dean of Students House			2,565	2,565	2,565
President's House	3,976	3,976	3,976	3,976	3,976
Summit House	7,320	7,320	7,320	7,320	7,320
Lampert Building	28,999	28,999	28,999	28,999	28,999
1653 Lincoln Ave.	1,265	1,265	1,265	1,265	1,265
1657 Lincoln Ave.					
Humphrey House	1,625	1,625	1,625	1,625	1,625
100 Cambridge Garage	709	709	709	709	709
Admin / Support Buildings Total:	**490,742**	**490,742**	**493,307**	**493,307**	**493,307**

Academic Buildings	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Carnegie Hall	33,905	33,905	33,905	33,905	33,905
Fine Arts – Art & Heating Plant	54,260	54,260	54,260	54,260	54,260
Fine Arts – Chiller Plant	6,525	6,525	6,525	6,525	6,525
Fine Arts – Commons	32,027	32,027	32,027	32,027	32,027
Fine Arts – Humanities	55,735	55,735	55,735	55,735	55,735
Fine Arts – Music	76,440	76,440	76,440	76,440	76,440
Fine Arts – Orig. Theater	39,677	39,677	39,677	39,677	
Fine Arts – New Theater					59,145

Old Main	28,007	28,007	28,007	28,007	28,007
Markim Hall – IGC	16,585	16,585	16,585	16,585	16,585
Olin-Rice Halls	172,020	172,020	172,020	172,020	172,020
Ordway Biology Station	5,072	5,072	5,072	5,072	5,072
Academic Buildings Total:	**520,353**	**520,253**	**520,253**	**520,253**	**539,721**
Student Houses & Apartments	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
53 Macalester St	1,200	1,200	1,200	1,200	1,200
57 Macalester St	1,200	1,200	1,200	1,200	1,200
63 Macalester St	1,216	1,216	1,216	1,216	1,216
1661/1663 Princeton	2,080	2,080	2,080	2,080	2,080
1662 Princeton	1,242	1,242	1,242	1,242	1,242
1665/1667 Princeton	2,080	2,080	2,080	2,080	2,080
1668 Princeton – Russian House	1,144	1,144	1,144	1,144	1,144
176 Vernon – Arabic House	1.477	1.477	1.477	1.477	1.477
180/182 Vernon – French House	2,656	2,656	2,656	2,656	2,656
188/190 Vernon – German House	3,837	3,837	3,837	3,837	3,837
196 Vernon – Spanish House	2,882	2,882	2,882	2,882	2,882
200 Vernon – Eco House	1,176	1,176	1,176	1,176	1,176
216 Vernon – Chinese House	1,928	1,928	1,928	1,928	1,928
Grand Cambridge Apartments	17,049	17,049	17,049	17,049	17,049
Student Houses & Apts Total:	**41,167**	**41,167**	**41,167**	**41,167**	**41,167**
Grand Total GSF:					
Residence Halls Total:	366,757	366,757	366,757	366,757	366,757
Admin / Support Buildings Total:	490,742	490,742	493,307	493,307	493,307
Academic Buildings Total:	520,353	520,253	520,253	520,253	539,721
Student Houses & Apts Total:	41,167	41,167	41,167	41,167	41,167
Grand Total GSF:	**1,418,919**	**1,418,919**	**1,421,484**	**1,421,484**	**1,440,952**

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