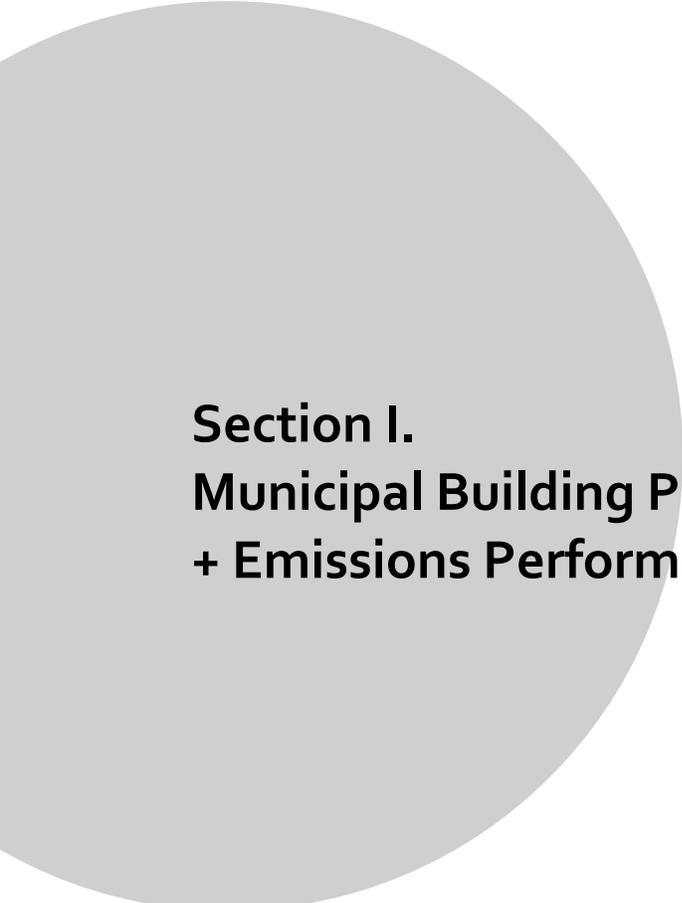




City of Seattle Building Energy
Performance and Carbon Emissions
2016-2017

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Section I.
Municipal Building Portfolio Energy
+ Emissions Performance

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

The City has the goal of reducing energy use across City-owned buildings 20% by 2020 (from 2008), adopted by Resolution in 2016. Beyond our 2020 goal, in Mayor Durkan's 2018 Climate Action Strategy the City set a longer-term goal of reducing both energy use and carbon emissions by 40% by 2025. In addition, the 2013 Climate Action Plan calls for a community-wide carbon neutrality goal by 2050.

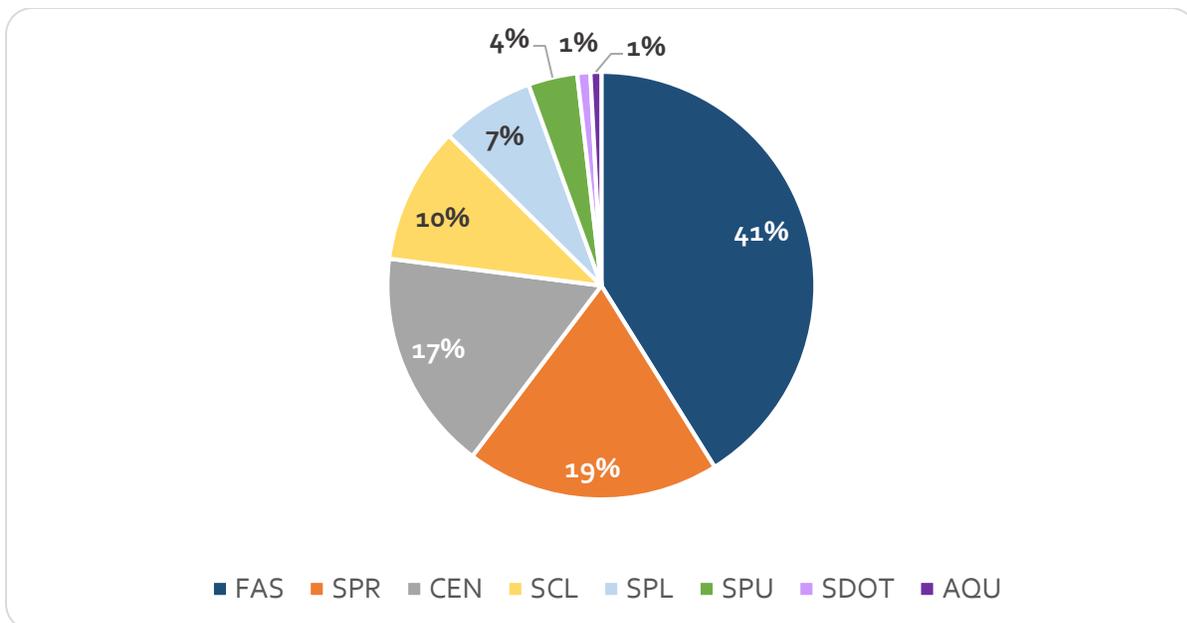
This report covers City-owned building energy use and greenhouse gas (GHG) emissions for calendar years 2016-2017. It includes:

- An overview of the municipal building portfolio energy and GHG emissions performance.
- An analysis of benchmarked buildings.
- An analysis of building performance, by department and by building type.

The City owns more than 650 buildings, totaling approximately 10 million square feet. These range from small storage sheds, to libraries, to the Seattle Municipal Tower, an office building of 1.4 million gross square feet. Offices, community facilities (e.g. performance halls and community centers), and operations support buildings make up most of the square footage. Libraries, police stations, and fire stations are numerous, but each building is relatively small, so they account for a smaller percentage of the total building area.

Of the 10 million square feet of City buildings, 182 benchmarked buildings account for 80% of the City's total building area. This report covers more than 8 million square feet of buildings with at least two years of consumption history and weather-normalized results.

Figure 1. Benchmarked floor area share, by department.



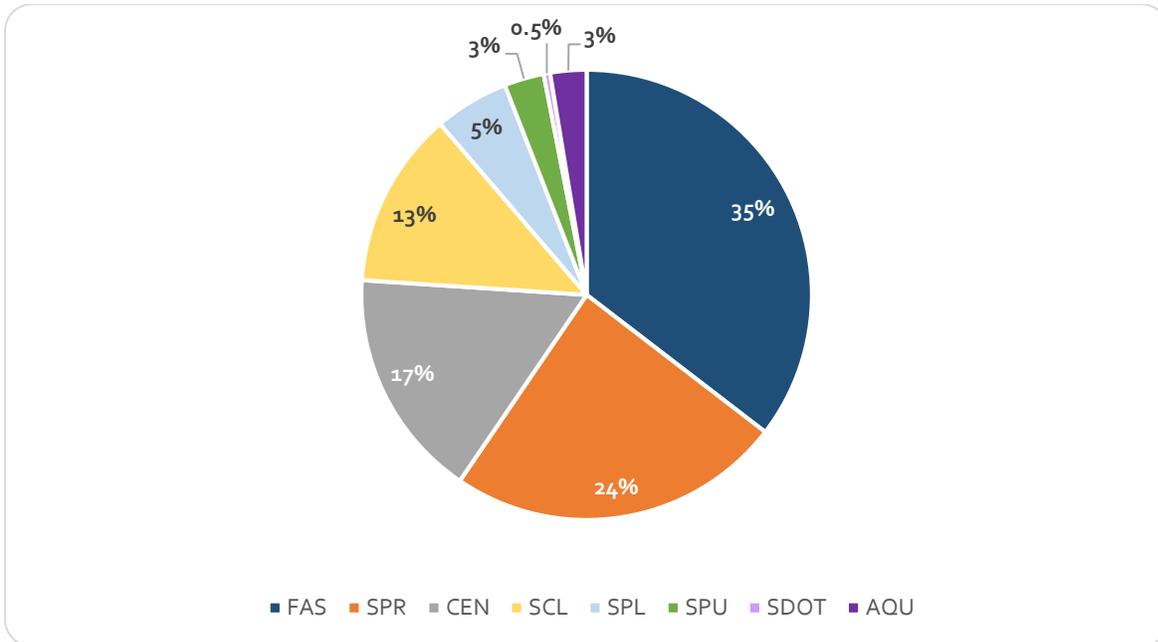
Normalized results were based on Portfolio Manager weather normalization¹ for all buildings. The purpose of normalization is to see the changes in consumption if the weather were held the same for the two periods being compared.

¹ Seatac weather was 20% colder in 2017 than in 2016 for the heating season, and 25% warmer for the cooling season.

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

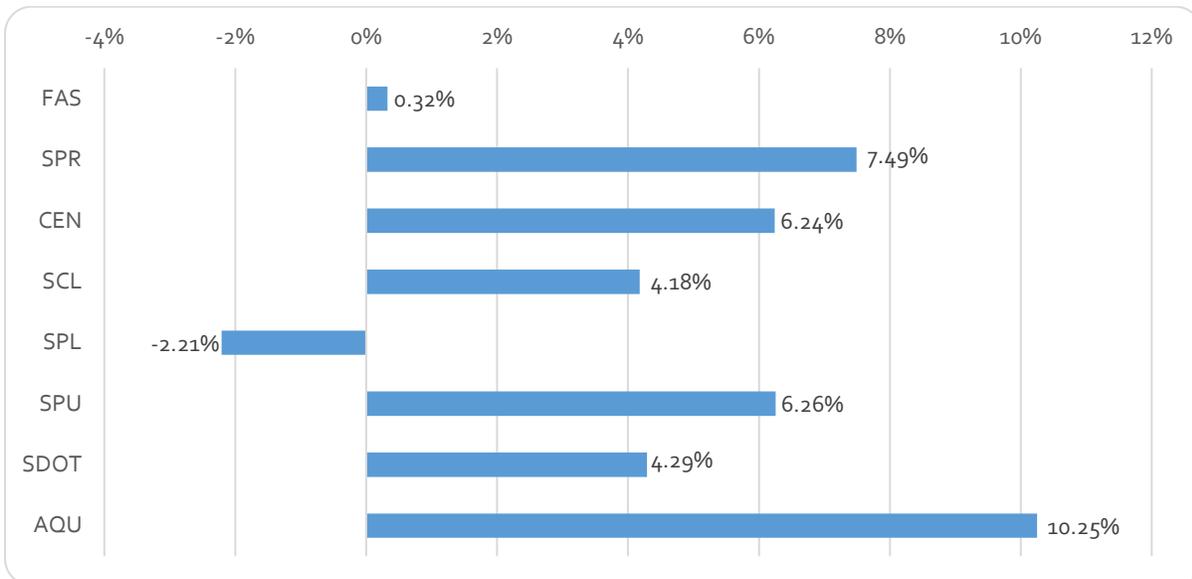
The total relative energy use in 2017 by department is shown below:

Figure 2. Weather-normalized energy use (KBTU) by department, 2017.



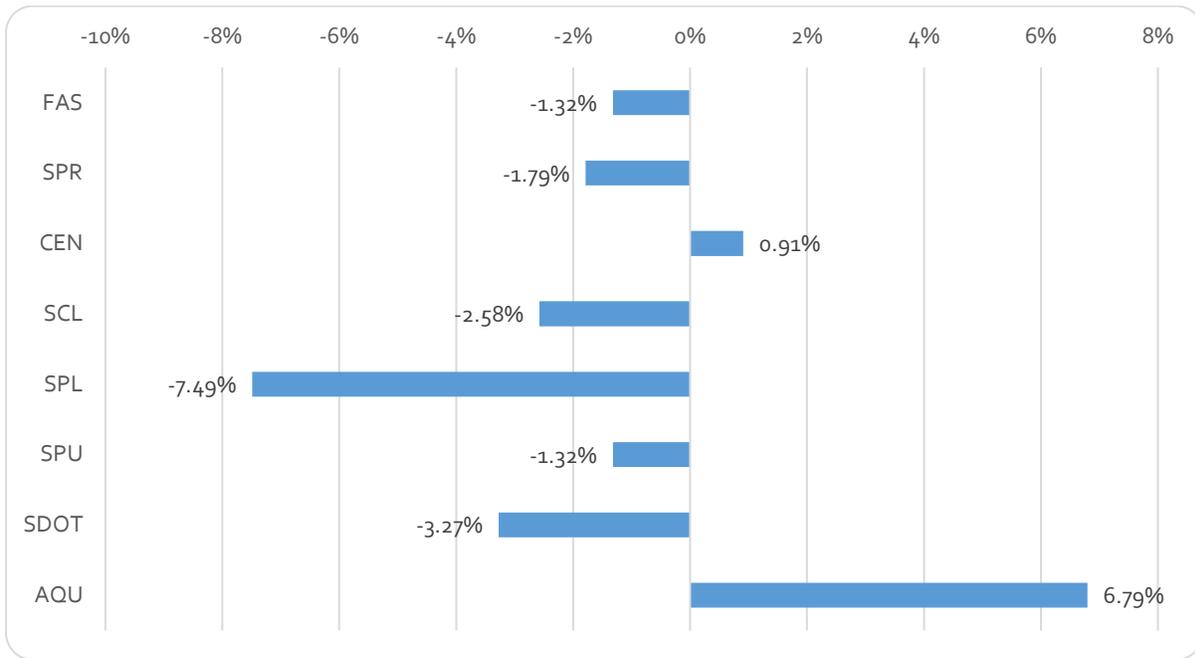
Metered energy use across the municipal portfolio increased by 3.71% from 2016 to 2017. Adjusted for weather, energy use declined by 2.71%. Each department's year-over-year energy use is graphed below on a metered and weather normalized basis.

Figure 3. Metered energy use from 2016 to 2017, % change.



2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Figure 4. Weather-normalized energy use from 2016 to 2017, % change.



The City set a goal of reducing energy use across City-owned buildings 20% by 2020 (from 2008). Based on this analysis, we have achieved 14.5% reduction in energy use across the municipal portfolio through 2017.

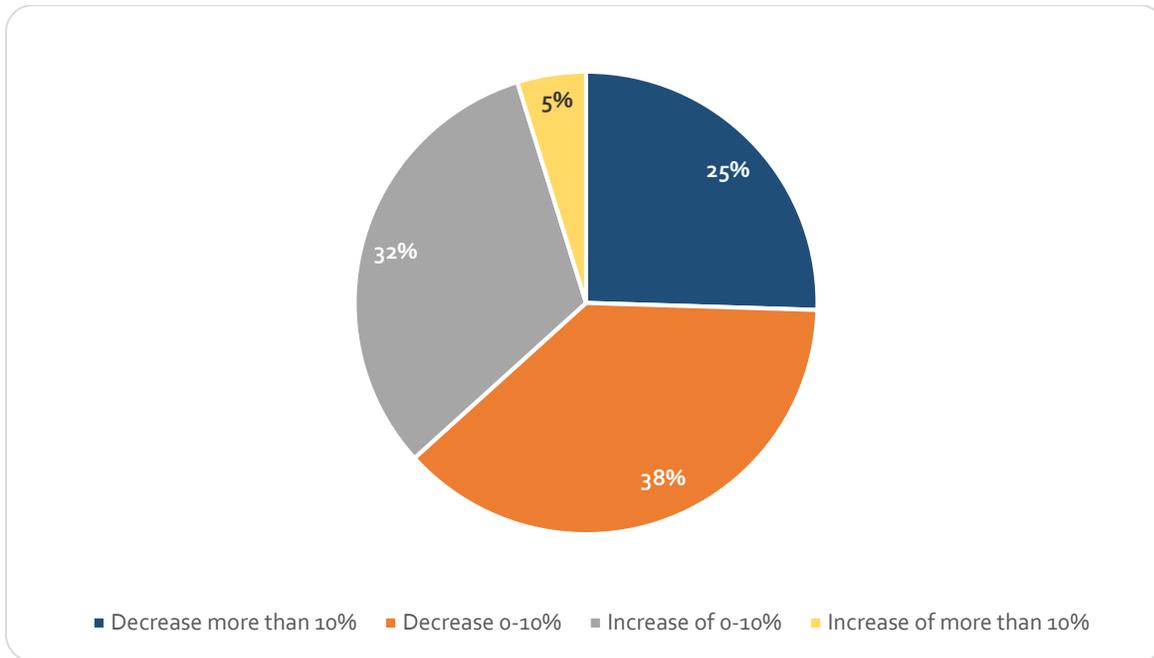
Figure 5. City of Seattle portfolio energy reductions, plan versus actual, 20% by 2020 progress.



2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Approximately 63% of the benchmarked portfolio saw a reduction in normalized energy use, while 37% used more energy. The focus of the City’s Municipal Energy Efficiency Program in 2017 was on Tune-Ups in larger buildings, those 200,000 sf and above. The Tune-Ups were completed in the last half of the year. They therefore had partial impacts in 2017, but will contribute to additional savings in 2018. Department-led improvements at SMT, Central Library, and community centers, as well as a bevy of LED lighting projects, helped us secure the 2017 progress towards our savings targets.

Figure 6. Seattle municipal portfolio performance, by area share (weather-normalized).



Year-over-year change in energy use by department – in kbtu, in % change, and as a proportion of the 2.71% normalized reduction in energy use across the municipal portfolio – can be seen below.

Table 1. Weather-normalized change in energy use from 2016 to 2017.

DEPARTMENT	CHANGE IN ENERGY USE, (KBTU)	CHANGE IN ENERGY USE, %	PORTFOLIO IMPACT, %
FAS	(11,473,060)	-4.92%	-1.78%
SPR	(2,744,183)	-1.79%	-0.43%
CEN	932,664	0.91%	0.15%
SCL	(2,100,215)	-2.58%	-0.33%
SPL	(2,711,904)	-7.49%	-0.42%
SPU ²	(239,187)	-1.32%	-0.04%
SDOT	(97,197)	-3.27%	-0.02%
AQU	1,034,821	6.79%	0.16%
Total	(17,398,261)		-2.71%

² Excludes water treatment plants.

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Year-over-year change in carbon³ – in lbCO₂e, as a percent change, and as a proportion of the overall reduction in carbon across the municipal portfolio – can be seen below.

Table 2. As-metered change in carbon emissions from 2016 to 2017.

DEPARTMENT	2016 TOTAL CARBON, (lbCO ₂ e)	2017 TOTAL CARBON, (lbCO ₂ e)	CHANGE IN CARBON, %	PORTFOLIO IMPACT, %
FAS	8,712,579	9,921,848	13.88%	3.86%
SPR	10,651,909	11,966,262	12.34%	4.65%
CEN	5,569,983	6,231,629	11.88%	2.42%
SCL	1,092,229	1,167,644	6.90%	0.45%
SPL	1,085,117	1,256,940	15.83%	0.49%
SPU ⁴	660,522	727,593	10.15%	0.28%
SDOT	53,152	62,553	17.69%	0.02%
AQU	608,339	631,589	3.82%	0.25%
Total	28,433,829	31,966,057		12.42%

While as-metered carbon emissions increased by 12% from 2016 to 2017, total carbon emissions decreased by 1% when normalized for weather.

Table 3. Normalized change in carbon emissions from 2016 to 2017.

DEPARTMENT	2016 TOTAL CARBON, (lbCO ₂ e)	2017 TOTAL CARBON, (lbCO ₂ e)	CHANGE IN CARBON, %	PORTFOLIO IMPACT, %
FAS	9,808,088	9,641,754	-1.70%	-0.53%
SPR	11,911,169	11,770,005	-1.19%	-0.45%
CEN	5,981,428	6,034,326	0.88%	0.17%
SCL	1,192,811	1,156,158	-3.07%	-0.12%
SPL	1,251,914	1,203,412	-3.87%	-0.15%
SPU ⁵	757,135	720,456	-4.84%	-0.12%
SDOT	58,189	62,282	7.03%	0.01%
AQU	654,766	621,130	-5.14%	-0.11%
Total	31,615,501	31,209,524		-1.28%

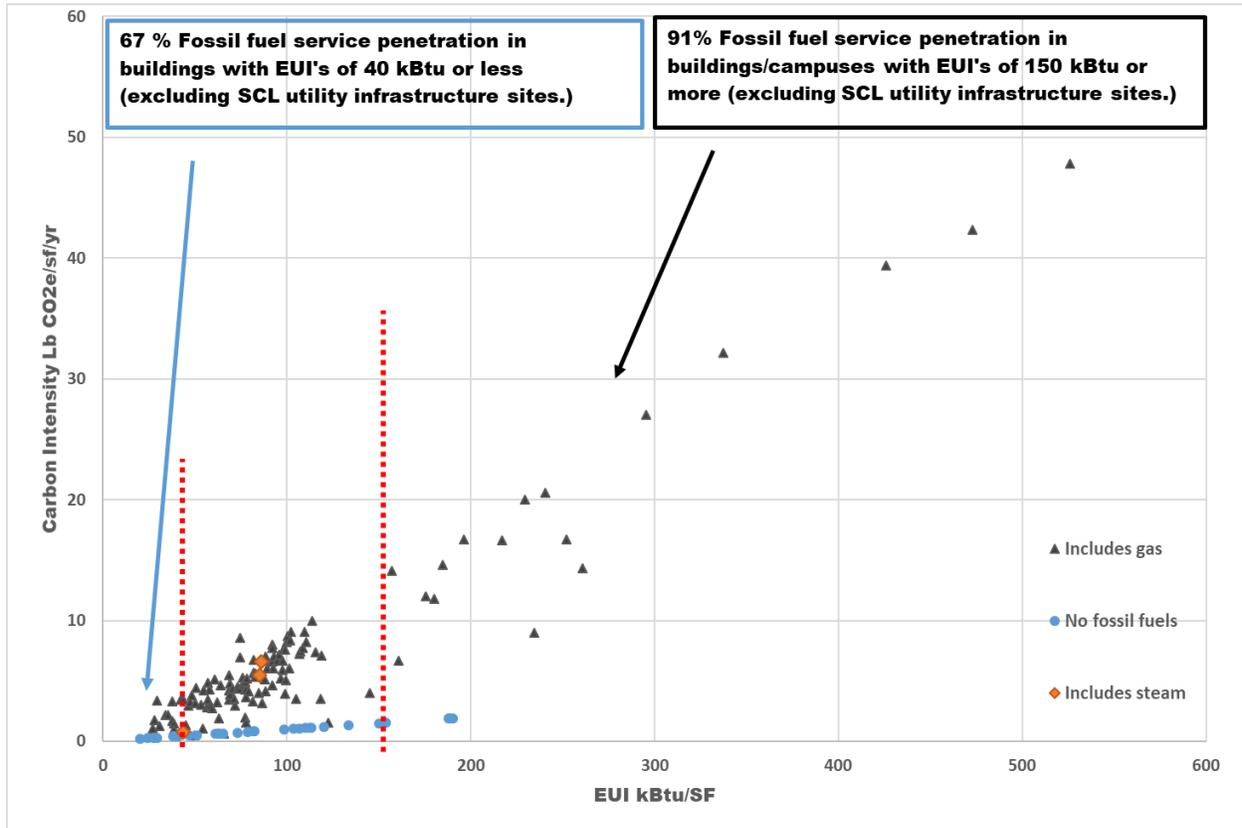
³ Carbon factors for the purposes of this analysis are: electric 0.095 lb CO₂e/kbtu (average of SCL data reported to the Climate Registry 2012-2016), steam 0.1702 lb CO₂e/kbtu (2013 data from EPA), gas 0.1171 lb CO₂e/kbtu (Portfolio Manager standard value for gas emissions). Please see end not for source references.

⁴ Excludes water treatment plants.

⁵ Excludes water treatment plants.

Carbon intensities range from almost zero lb CO₂e/sf/yr to nearly 50 lb CO₂e/sf/yr. Below, the intensities are plotted by the presence and type of fossil fuel service at each of 156 sites. A site is a point where all of the energy for an entire building or group of buildings is metered. The 156 sites noted on the graph below represent 182 buildings.

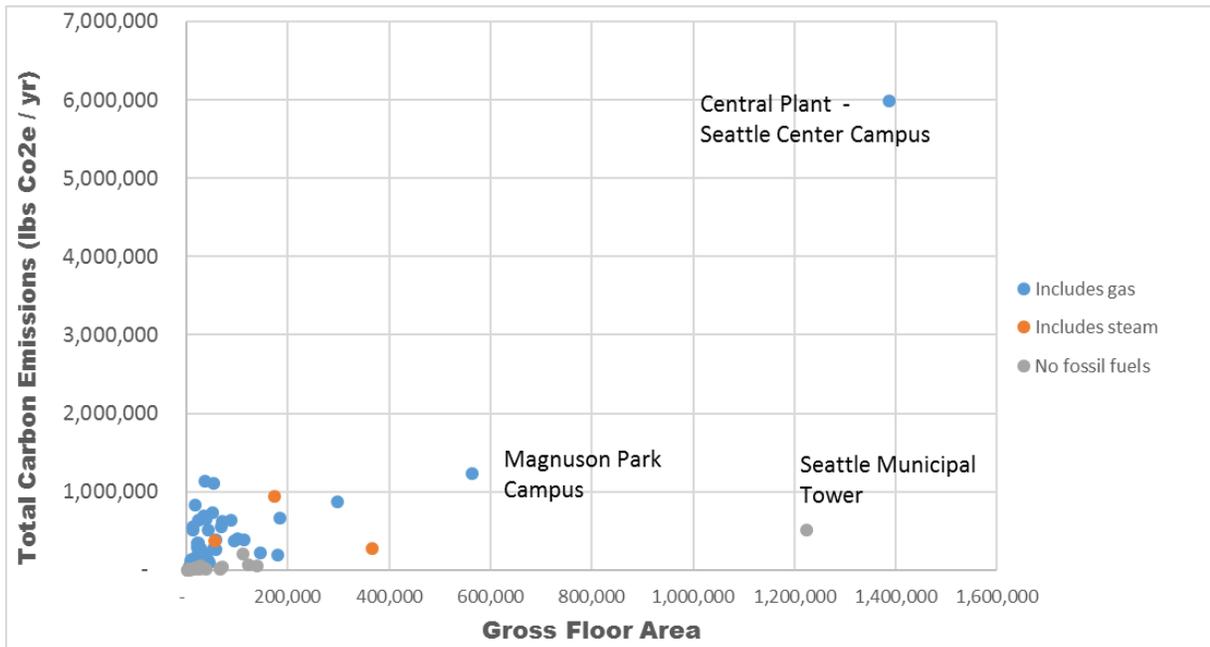
Figure 7. Carbon emissions intensity by building energy use intensity (EUI).



As depicted above, approximately 75% of our benchmarked portfolio has fossil fuel service, with either gas at the building or buildings served by a gas-fired district steam system. Carbon intensities for buildings with no fossil fuels range from 0.2 to 2.0 lbs CO₂e/sf/yr, while buildings with fossil fuel service typically range from 1.0 to 50 lbs CO₂e/sf/yr. There is a strong correlation between the highest EUIs and the highest carbon intensities, reflecting the historic use of fossil fuels to serve large thermal loads. This can be seen in the higher penetration of fossil fuel service to buildings with site EUIs of over 150 kBtu/sf/yr (91%) compared to buildings with EUIs of less than 40 kBtu/sf/yr (67%), as noted above. For buildings that utilize fossil fuel, only those with a low fossil fuel load, possibly using fossil fuels just for water heating or partial space conditioning, can attain comparable emissions to buildings with no fossil fuels.

Carbon emission are plotted below versus gross building floor area:

Figure 8. Carbon emissions by gross floor area.



Each point on the plot is a metering point, representing a building or in a few cases, an entire campus. The plot above is distorted by three large properties. Although none is particularly energy intensive, they each generate over 500,000 lbs CO₂e/year. If we remove the Seattle Center and Magnuson campuses, as well as Seattle Municipal Tower, we can better see other key contributors to our carbon emissions:

Figure 9. Carbon emissions of high-impact buildings.

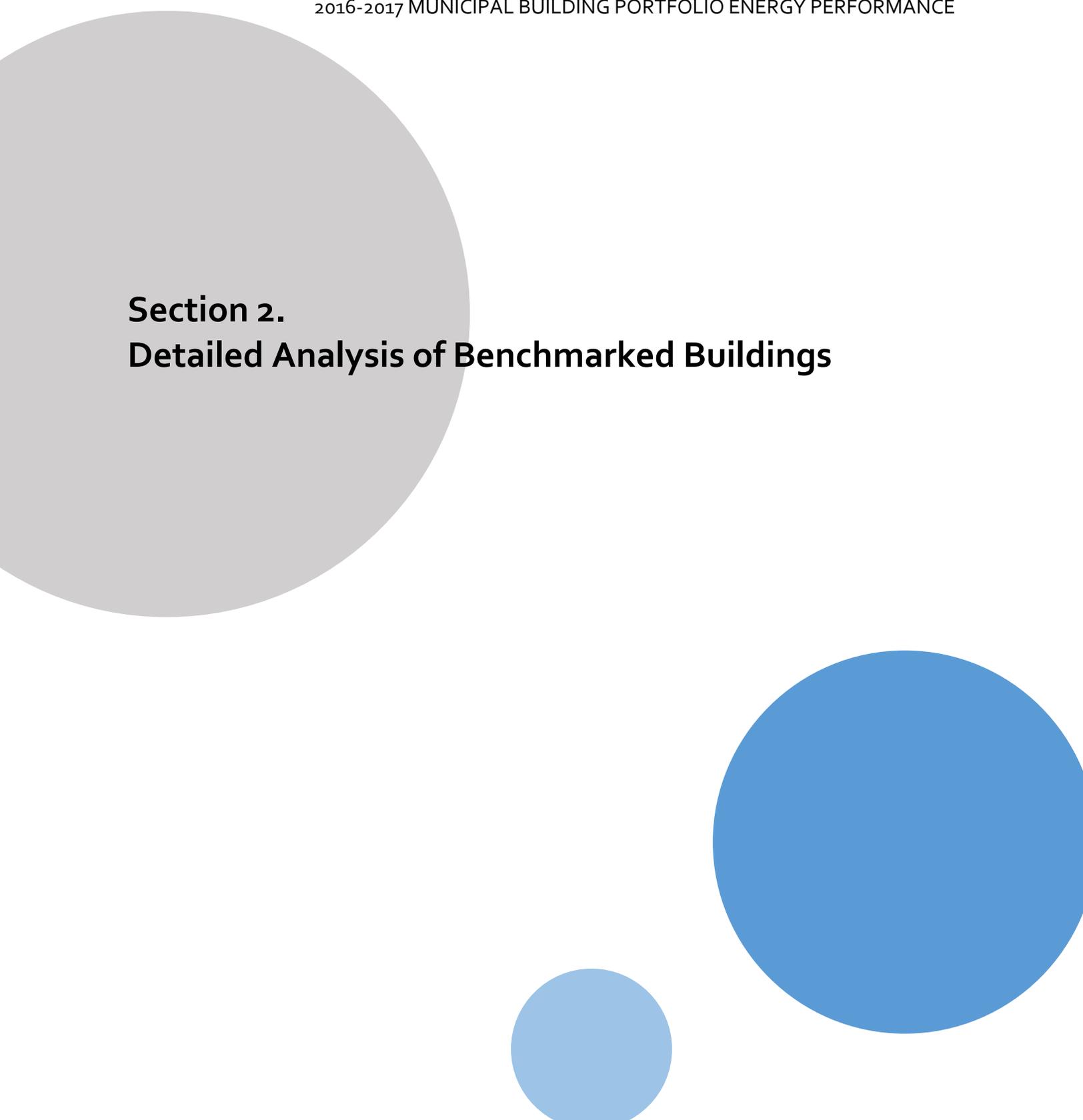


2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

In the plot above, three types of high-impact buildings, those generating over 250,000 lbs CO₂e/yr (~1,100 MTCO₂e), are highlighted; (1) large buildings (over 100,000 sf), (2) pools, and (3) Other High-use buildings. Predictably, large buildings emit significant amounts of carbon each year because of their size. Pools, although typically smaller buildings, have very high energy use, and all of the municipal pools have fossil fuel service. Similarly, Other High-use buildings have high energy intensities coupled with fossil fuel use, and are defined here to be less than 100,000 sf. Other High-use buildings are typically headquarter-type facilities, as well as other specialty buildings. Examples of Other High-use buildings across the portfolio include:

- West Precinct
- Fire Headquarters
- Fire Station 10/FAC/EOC/
- SPU Operations Control Center
- SCL North Operating Base
- Charles Street Complex Vehicle Maintenance
- Conservatory Campus
- Aquarium

These three building types may be priority candidates for conservation action which would in turn reduce carbon emissions, particularly if other upcoming asset preservation or improvement work is planned. However, significant energy reductions and/or changes to must be achieved at all municipal buildings served by fossil fuels to achieve required progress on carbon reductions. Collectively, the three types of high-impact buildings plus Seattle Center Campus, Magnuson Park Campus and Seattle Municipal Tower account for nearly 75% of the portfolio GHG emissions.



Section 2.
Detailed Analysis of Benchmarked Buildings

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

To help identify the best opportunities to improve efficiency and the largest and the most intensive sources of carbon emissions within the portfolio, this section offers data and analysis on energy intensity and carbon emissions by total carbon emitted per building and by pounds of carbon emitted per square foot. This information will aid in planning and prioritizing future projects to best address climate impacts.

Below, all buildings in the City's portfolio are ranked by year-over-year energy performance.

Table 4. Building energy performance, 2017, rank ordered by % change in EUI.

Dept	Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, (%) normalized	2017 EUI, metered	2017 EUI, normalized
SPR	Carkeek Park Environmental Learning Center	1,756	90%	73.3	73.3
SPR	Loyal Heights Community Center	29,732	50%	93.2	91.9
FAS	Fire Station 26	5,427	40%	114.3	108.8
SPR	Miller Community Center	19,273	34%	78.2	74.4
SCL	Georgetown Steamplant	39,212	34%	24.6	24.3
FAS	Byrd Barr Place	13,632	33%	94.0	92.1
SPR	Montlake Community Center	16,242	32%	109.2	102.1
SPR	Belltown Community Center	6,480	23%	31.8	30.9
SPU	Old South Transfer Station	20,000	21%	30.3	29.6
SPR	Westbridge	113,780	19%	42.7	42.1
SPR	Central East Headquarters	6,238	16%	88.6	88.2
SPL	University Branch	8,140	15%	102.5	99.1
SPR	Rainier Community Center	28,384	13%	95.2	92.5
CEN	West Court Building	10,596	13%	44.9	43.7
SPL	Greenwood Branch	12,806	12%	105.8	101.2
FAS	Fire Station 29	5,115	12%	83.9	81.7
FAS	Fire Station 20	12,338	11%	38.7	38.6
SPR	Delridge Community Center	17,693	11%	104.2	101.9
SDOT	Street Car Maintenance	9,428	11%	77.9	78.0
FAS	Fire Station 39	11,285	11%	71.5	69.2
FAS	Joint Training Facilities Campus	57,952	10%	64.2	63.9
SPL	South Park Branch	5,019	10%	65.7	65.7
FAS	Pearl Warren Building	43,813	10%	36.5	35.2
FAS	Fire Station 24	4,936	9%	129.8	122.7
FAS	Fire Station o8	8,273	9%	90.0	88.5
SCL	SCL SSC Building B	70,320	9%	65.2	63.4
FAS	CSC Vehicle Maintenance (E)	67,772	9%	103.4	99.9
SPR	Queen Anne Community Center	25,809	9%	110.9	109.7

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, (%) normalized	2017 EUI, metered	2017 EUI, normalized
FAS	SE Seattle Community Health Center	27,492	8%	82.6	82.6
SPL	Ballard Branch	18,100	8%	100.4	97.8
SCL	Environmental Learning Center	34,992	7%	62.0	63.0
AQU	Seattle Aquarium	69,400	7%	235.6	234.4
SPU	Watershed Education Center	9,864	6%	99.8	98.4
FAS	Fire Station 41	5,664	6%	118.2	115.7
SPR	Dexter Building	7,381	6%	199.1	196.4
SPR	High Point Community Center	18,261	5%	60.6	59.2
FAS	West Precinct	50,755	5%	261.1	261.0
FAS	Fire Station 34	5,861	5%	94.2	91.9
FAS	Fire Station 16	4,039	5%	108.6	105.1
SCL	Diablo Powerhouse	22,695	5%	191.2	190.2
SPR	Ravenna-Eckstein Community Center	15,814	5%	52.6	50.5
FAS	Fire Station 38	9,137	4%	102.0	99.5
SPR	Rainier Beach Community Center and Pool	53,775	4%	241.8	240.6
SPR	Conservatory Campus	23,445	3%	299.4	295.3
CEN	Blue Spruce	14,036	3%	29.1	29.1
FAS	Fire Station 40	6,639	3%	83.0	82.0
SPR	Queen Anne Pool	13,157	3%	474.2	472.8
FAS	City Hall	184,042	3%	79.3	78.0
FAS	Fire Station 02	38,939	2%	90.0	88.1
SPL	West Seattle Branch	9,460	2%	85.1	82.9
FAS	Fire Station 35	11,968	2%	75.0	73.0
SPL	Southwest Branch	15,000	2%	57.8	56.8
FAS	CSC Engineering (A)	20,424	2%	158.9	157.3
FAS	Fire Station 13	14,440	1%	38.2	37.5
SPL	Rainier Beach Branch	15,000	1%	51.1	49.5
SPL	Lake City Branch	20,017	1%	73.6	71.4
SPR	Ballard Pool	12,769	1%	425.7	425.8
SCL	North Substation	25,978	1%	47.6	47.0
CEN	Central Plant	1,386,736	1%	75.1	73.9
SPR	Horticulture Building	12,294	1%	78.4	77.4
SPU	OCC Complex	87,459	1%	107.4	106.8
FAS	Fire Station 14	18,436	1%	111.1	107.1
SPL	Fremont Branch	6,840	1%	78.9	78.5
SPL	Montlake Branch	5,652	0%	86.5	84.5
SPR	Genesee/SC SE HQ	15,398	0%	27.2	27.0

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, (%) normalized	2017 EUI, metered	2017 EUI, normalized
SPR	Magnuson, Building 67, Mountaineers	29,275	0%	38.4	37.9
FAS	Animal Shelter	10,868	0%	178.3	175.3
FAS	Airport Way Center, Building A	99,950	0%	146.6	145.0
SPR	Southwest Teen Life Center and Pool	39,333	0%	217	217.1
SPL	Green Lake Branch	8,090	0%	78.4	76.1
SPL	Queen Anne Branch	7,931	0%	59.8	58.1
SCL	Union St Substation	16,728	-1%	27.8	27.8
SPL	Magnolia Branch	7,000	-1%	93.4	91.9
SDOT	Fairview Building	8,488	-1%	29.3	29.3
FAS	Fire Station 31	12,834	-1%	85.0	81.9
FAS	Benaroya Hall	172,411	-1%	86.4	85.4
FAS	First Hill Street Car Maintenance Shop	20,983	-1%	46.3	45.3
FAS	Fire Station 30	9,417	-1%	77.8	76.4
FAS	CSC Meter Shop (G)	19,930	-1%	112.7	110.6
SCL	System Operations Center	27,744	-1%	188.0	188.0
SCL	SCL SSC Building A	180,725	-1%	55.5	54.2
SPR	Garfield Community Center	20,050	-2%	98.8	97.7
SPL	Delridge Branch	5,600	-2%	67.0	65.5
FAS	SDOT Traffic Shop	41,939	-2%	48.3	46.6
SCL	Boundary Project	111,858	-2%	188.9	188.4
SPL	North East Branch	15,000	-2%	70.8	68.4
FAS	Fire Station 10/FAC/EOC	57,960	-2%	162.8	160.9
SPL	Douglass-Truth Branch	16,493	-2%	71.2	68.7
SPR	Hiawatha Community Center	17,190	-2%	64.8	63.1
SCL	Newhalem Service Center (Machine Shop/Mezz)	17,600	-2%	103.8	103.7
FAS	Justice Center	298,278	-3%	72.5	71.8
SPR	Armory Building	43,000	-3%	181.6	180.0
FAS	Airport Way Center, Building B	16,725	-3%	59.4	57.3
FAS	Fire Station 36	5,876	-3%	83.4	82.0
SCL	Newhalem Service Center (Warehouse/Mezz)	17,747	-3%	79.2	78.8
SPU	South Transfer Station	138,602	-3%	39.2	38.9
SPR	Van Asselt Community Center	18,258	-3%	70.1	68.5
SPR	Medgar Evers Pool	20,740	-4%	252.1	252.2
SPR	Helene Madison Pool	17,407	-4%	534.5	525.9
FAS	Fire Station 28	14,031	-4%	90.8	86.7
SCL	Ross Powerhouse	121,630	-4%	50.8	51.1
SCL	Gorge Powerhouse	29,369	-4%	119.9	120.0

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, (%) normalized	2017 EUI, metered	2017 EUI, normalized
SPR	Northgate Campus	30,498	-5%	83.3	83.0
FAS	East Precinct	36,280	-5%	120.5	118.2
FAS	Fire Station 17	21,886	-5%	97.2	94.8
SPL	Columbia Branch	12,420	-5%	80.7	77.2
FAS	Fire Station 27	6,329	-6%	91.3	89.2
FAS	Fire Station 11	6,191	-6%	99.5	95.9
SPR	Densmore/NW NC HQ	19,246	-6%	28.5	28.0
FAS	Airport Way Center, Building D	22,803	-6%	50.6	48.3
FAS	Fire Headquarters	56,074	-6%	87.8	86.2
FAS	Airport Way Center, Building E	23,100	-6%	189.3	184.6
SPR	Central West HQ / Brown Bear	13,661	-6%	39.3	38.3
SPR	Green Lake Community Center and Pool	35,143	-7%	337.0	337.1
FAS	CSC Fire Garage (C)	18,545	-7%	71.6	69.1
SPL	Broadview Branch	15,000	-7%	60.5	57.3
SCL	Broad St Substation	23,802	-7%	153.8	153.8
FAS	Southwest Precinct	28,303	-7%	119.6	118.7
SPR	Meadowbrook Community Center/Pool	34,639	-7%	229.2	229.3
FAS	South Precinct	12,603	-8%	117.0	113.2
SPL	High Point Branch	7,100	-8%	100.3	96.7
SPR	Magnuson	564,258	-8%	34.9	33.8
SPR	Laurelhurst Community Center	11,003	-8%	56.1	54.8
FAS	Fire Station 09	9,424	-8%	72.6	70.5
SPL	Capitol Hill Branch	11,615	-8%	78.2	77.5
SDOT	King Street Station	65,490	-8%	29.3	28.8
FAS	HLF FAS Vehicle Maintenance (A)	26,994	-8%	118.3	113.6
SPU	Landsburg LOC Building	4,514	-8%	134.9	133.7
SPR	Jefferson Park Golf Clubhouse & Driving Range	9,963	-8%	155.1	152.8
SPL	Beacon Hill Branch	10,800	-8%	83.5	79.4
SCL	North Service Center	94,288	-9%	100.0	99.2
SPR	Ballard Community Center	16,795	-9%	54.1	53.6
FAS	North Precinct	16,434	-9%	113.8	112.3
SPR	Bitter Lake Community Center	20,595	-10%	91.1	88.4
SPR	South Park Community Center	14,101	-10%	51.2	50.1
SCL	157 Roy Building	12,122	-10%	110.1	110.2
SPR	Citywide Athletics	1,263	-11%	149.9	150.0
FAS	Fire Station 33	5,974	-11%	93.2	93.1
SPR	Yesler Community Center	22,347	-13%	99.1	97.9

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, (%) normalized	2017 EUI, metered	2017 EUI, normalized
SPR	Amy Yee Tennis Center	66,597	-14%	20.1	20.0
FAS	Seattle Municipal Tower	1,222,878	-14%	41.0	41.0
FAS	Fire Station 25	17,991	-14%	88.1	87.2
FAS	Fire Station 21	8,654	-15%	63.2	62.2
SPL	Central Library	365,987	-15%	43.7	43.6
SCL	Newhalem Phantom Warehouse/Sickler Bldg	14,400	-15%	59.7	61.1
SPR	Seattle Asian Art Museum	53,776	-17%	61.8	60.9
SPU	Cedar River Hatchery	15,887	-18%	65.1	62.7
FAS	Fire Station 37	9,375	-19%	78.5	77.1
SPR	Jefferson Community Center	16,447	-19%	101.9	100.5
SPR	Langston Hughes Performing Arts Center	30,890	-20%	75.6	74.4
FAS	Fire Station 18	16,196	-22%	60.2	58.4
SCL	Canal Substation	13,914	-23%	108.8	106.7
FAS	Fire Station o6	11,685	-23%	80.2	77.9
FAS	Airport Way Center, Building C	145,923	-27%	39.7	38.5
SPR	International District/Chinatown CC	16,000	-28%	47.8	47.4

Below, all buildings and campuses in the City's portfolio are ranked first by total carbon (lbCO₂e) and then by carbon index (lbCO₂e/SF).⁶

Table 5. Total 2017 GHG emissions (lbCo₂e), rank ordered by total carbon.

Dept	Property Name	Total carbon (lbCo ₂ e)	Carbon index (lbCO ₂ e/SF)
CEN	Central Plant	5,993,471	4.3
SPR	Magnuson	1,234,038	2.2
SPR	Green Lake Community Center and Pool	1,129,193	32.1
SPR	Rainier Beach Community Center and Pool	1,106,657	20.6
FAS	Benaroya Hall	942,716	5.5
FAS	Justice Center	875,498	2.9
SPR	Helene Madison Pool	832,018	47.8
FAS	West Precinct	725,759	14.3
SPR	Meadowbrook Community Center/Pool	691,923	20.0
FAS	City Hall	665,746	3.6
SPR	Southwest Teen Life Center and Pool	654,514	16.6

⁶ This carbon index uses units of lbs CO₂e/SF of building area. Most facilities that use fossil fuels will have a high carbon index.

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
SPU	OCC Complex	634,947	7.3
SPR	Conservatory Campus	633,376	27.0
AQU	Seattle Aquarium	621,130	9.0
FAS	CSC Vehicle Maintenance (E)	558,205	8.2
SPR	Queen Anne Pool	556,759	42.3
FAS	Seattle Municipal Tower	507,074	0.4
SPR	Armory Building	506,268	11.8
SPR	Ballard Pool	503,190	39.4
FAS	Airport Way Center, Building A	399,924	4.0
SPR	Westbridge	390,390	3.4
FAS	Fire Station 10/FAC/EOC	385,501	6.7
FAS	Fire Headquarters	369,121	6.6
SCL	North Service Center	367,912	3.9
SPR	Medgar Evers Pool	346,133	16.7
FAS	Airport Way Center, Building E	337,235	14.6
FAS	CSC Engineering (A)	288,094	14.1
SPL	Central Library	276,945	0.8
SPR	Seattle Asian Art Museum	274,119	5.1
FAS	HLF FAS Vehicle Maintenance (A)	269,154	10.0
FAS	Joint Training Facilities Campus	266,614	4.6
SPR	Loyal Heights Community Center	237,245	8.0
SPR	Queen Anne Community Center	234,187	9.1
SPR	Langston Hughes Performing Arts Center	215,630	7.0
FAS	Airport Way Center, Building C	214,189	1.5
SCL	Boundary Project	210,726	1.9
FAS	Southwest Precinct	200,993	7.1
FAS	Fire Station 02	200,084	5.1
SCL	SCL SSC Building A	185,907	1.0
SPR	Northgate Campus	171,868	5.6
SPR	Rainier Community Center	171,755	6.1
SPR	Yesler Community Center	169,477	7.6
SPR	Miller Community Center	164,380	8.5
FAS	CSC Meter Shop (G)	163,465	8.2
SPR	Montlake Community Center	147,450	9.1
SPR	Delridge Community Center	147,351	8.3
FAS	Fire Station 17	145,923	6.7
SPR	Jefferson Community Center	143,718	8.7
FAS	Fire Station 14	137,617	7.5
SPR	Bitter Lake Community Center	137,386	6.7
SPR	Garfield Community Center	133,850	6.7
FAS	Animal Shelter	130,714	12.0

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
FAS	East Precinct	126,143	3.5
FAS	SDOT Traffic Shop	124,625	3.0
SPR	Dexter Building	123,522	16.7
FAS	Fire Station 25	119,584	6.6
SPL	Ballard Branch	106,686	5.9
FAS	Byrd Barr Place	105,468	7.7
SPR	Van Asselt Community Center	99,874	5.5
SPR	Magnuson, Building 67, Mountaineers	95,729	3.3
FAS	Pearl Warren Building	94,692	2.2
FAS	CSC Fire Garage (C)	88,447	4.8
FAS	Airport Way Center, Building D	87,025	3.8
FAS	Airport Way Center, Building B	80,518	4.8
SPL	Greenwood Branch	77,127	6.0
FAS	Fire Station 31	72,673	5.7
SPL	Lake City Branch	70,534	3.5
SPR	Ravenna-Eckstein Community Center	69,386	4.4
SPL	North East Branch	63,107	4.2
SCL	Ross Powerhouse	62,174	0.5
SPL	University Branch	61,732	7.6
SPL	Columbia Branch	61,390	4.9
FAS	Fire Station 08	57,843	7.0
SPL	Douglass-Truth Branch	57,150	3.5
FAS	Fire Station 35	53,956	4.5
SPU	South Transfer Station	53,879	0.4
SPR	Horticulture Building	52,670	4.3
SCL	System Operations Center	52,161	1.9
SPL	Broadview Branch	51,411	3.4
SPR	Ballard Community Center	51,147	3.0
SPR	International District/Chinatown CC	51,113	3.2
SPL	West Seattle Branch	50,732	5.4
SPR	High Point Community Center	50,397	2.8
FAS	Fire Station 06	49,733	4.3
FAS	Fire Station 18	47,950	3.0
FAS	Fire Station 37	46,696	5.0
SPR	Laurelhurst Community Center	46,035	4.2
FAS	Fire Station 38	45,948	5.0
SPR	South Park Community Center	44,799	3.2
FAS	Fire Station 40	44,787	6.7
FAS	Fire Station 28	44,720	3.2
SCL	SCL SSC Building B	44,594	0.6
SPL	Beacon Hill Branch	44,337	4.1

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
FAS	Fire Station 11	44,295	7.2
FAS	Fire Station 30	43,969	4.7
FAS	Fire Station 39	43,827	3.9
SCL	Diablo Powerhouse	43,162	1.9
SPL	Green Lake Branch	42,300	5.2
SPL	Southwest Branch	42,112	2.8
FAS	Fire Station 26	42,016	7.7
FAS	Fire Station 33	41,724	7.0
FAS	Fire Station 41	41,616	7.3
FAS	Fire Station 09	40,880	4.3
FAS	Fire Station 34	38,509	6.6
FAS	Fire Station 27	38,370	6.1
SPL	High Point Branch	36,950	5.2
CEN	West Court Building	36,773	3.5
SCL	Broad St Substation	36,619	1.5
SPL	Fremont Branch	35,377	5.2
SCL	Gorge Powerhouse	35,238	1.2
SPL	Queen Anne Branch	33,710	4.3
SPR	Densmore/NW NC HQ	33,200	1.7
SPL	Magnolia Branch	32,428	4.6
SPR	Hiawatha Community Center	32,290	1.9
SDOT	Fairview Building	28,686	3.4
FAS	First Hill Street Car Maintenance Shop	28,623	1.4
FAS	Fire Station 21	27,918	3.2
SPR	Central East Headquarters	25,811	4.1
FAS	Fire Station 13	24,509	1.7
FAS	SE Seattle Community Health Center	22,717	0.8
SPL	Montlake Branch	22,570	4.0
SPL	Capitol Hill Branch	22,418	1.9
SCL	Environmental Learning Center	22,040	0.6
SDOT	King Street Station	18,890	0.3
FAS	North Precinct	18,461	1.1
SCL	Newhalem Service Center (Machine Shop/Mezz)	18,255	1.0
FAS	Fire Station 29	16,871	3.3
SPR	Genesee/SC SE HQ	15,848	1.0
SPR	Jefferson Park Golf Clubhouse & Driving Range	15,224	1.5
SCL	Canal Substation	14,847	1.1
SDOT	Street Car Maintenance	14,706	1.6
FAS	South Precinct	14,263	1.1
FAS	Fire Station 16	14,029	3.5
SCL	Newhalem Service Center (Warehouse/Mezz)	13,989	0.8

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
SCL	157 Roy Building	13,357	1.1
SPR	Amy Yee Tennis Center	13,317	0.2
FAS	Fire Station 20	12,442	1.0
SCL	North Substation	12,222	0.5
SPU	Cedar River Hatchery	9,967	0.6
SPU	Watershed Education Center	9,707	1.0
SCL	Georgetown Steamplant	9,512	0.2
SCL	Newhalem Phantom Warehouse (Sickler Bldg)	8,795	0.6
SPR	Belltown Community Center	8,350	1.3
FAS	Fire Station 24	7,464	1.5
SPL	Rainier Beach Branch	7,429	0.5
SPU	Landsburg LOC Building	6,035	1.3
SPU	Old South Transfer Station	5,922	0.3
SPR	Central West HQ / Brown Bear	5,235	0.4
FAS	Fire Station 36	4,817	0.8
SCL	Union St Substation	4,647	0.3
CEN	Blue Spruce	4,082	0.3
SPL	Delridge Branch	3,667	0.7
SPL	South Park Branch	3,298	0.7
SPR	Citywide Athletics	1,894	1.5
SPR	Carkeek Park Environmental Learning Center	1,288	0.7

Table 6. Total 2017 GHG emissions (lbCo_{2e}), rank ordered by total carbon index.

Dept	Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
SPR	Helene Madison Pool	832,018	47.8
SPR	Queen Anne Pool	556,759	42.3
SPR	Ballard Pool	503,190	39.4
SPR	Green Lake Community Center and Pool	1,129,193	32.1
SPR	Conservatory Campus	633,376	27.0
SPR	Rainier Beach Community Center and Pool	1,106,657	20.6
SPR	Meadowbrook Community Center/Pool	691,923	20.0
SPR	Dexter Building	123,522	16.7
SPR	Medgar Evers Pool	346,133	16.7
SPR	Southwest Teen Life Center and Pool	654,514	16.6
FAS	Airport Way Center, Building E	337,235	14.6
FAS	West Precinct	725,759	14.3
FAS	CSC Engineering (A)	288,094	14.1
FAS	Animal Shelter	130,714	12.0

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
SPR	Armory Building	506,268	11.8
FAS	HLF FAS Vehicle Maintenance (A)	269,154	10.0
SPR	Montlake Community Center	147,450	9.1
SPR	Queen Anne Community Center	234,187	9.1
AQU	Seattle Aquarium	621,130	9.0
SPR	Jefferson Community Center	143,718	8.7
SPR	Miller Community Center	164,380	8.5
SPR	Delridge Community Center	147,351	8.3
FAS	CSC Vehicle Maintenance (E)	558,205	8.2
FAS	CSC Meter Shop (G)	163,465	8.2
SPR	Loyal Heights Community Center	237,245	8.0
FAS	Fire Station 26	42,016	7.7
FAS	Byrd Barr Place	105,468	7.7
SPR	Yesler Community Center	169,477	7.6
SPL	University Branch	61,732	7.6
FAS	Fire Station 14	137,617	7.5
FAS	Fire Station 41	41,616	7.3
SPU	OCC Complex	634,947	7.3
FAS	Fire Station 11	44,295	7.2
FAS	Southwest Precinct	200,993	7.1
FAS	Fire Station 08	57,843	7.0
FAS	Fire Station 33	41,724	7.0
SPR	Langston Hughes Performing Arts Center	215,630	7.0
FAS	Fire Station 40	44,787	6.7
SPR	Garfield Community Center	133,850	6.7
SPR	Bitter Lake Community Center	137,386	6.7
FAS	Fire Station 17	145,923	6.7
FAS	Fire Station 10/FAC/EOC	385,501	6.7
FAS	Fire Station 25	119,584	6.6
FAS	Fire Headquarters	369,121	6.6
FAS	Fire Station 34	38,509	6.6
FAS	Fire Station 27	38,370	6.1
SPR	Rainier Community Center	171,755	6.1
SPL	Greenwood Branch	77,127	6.0
SPL	Ballard Branch	106,686	5.9
FAS	Fire Station 31	72,673	5.7
SPR	Northgate Campus	171,868	5.6
SPR	Van Asselt Community Center	99,874	5.5
FAS	Benaroya Hall	942,716	5.5
SPL	West Seattle Branch	50,732	5.4
SPL	Green Lake Branch	42,300	5.2

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

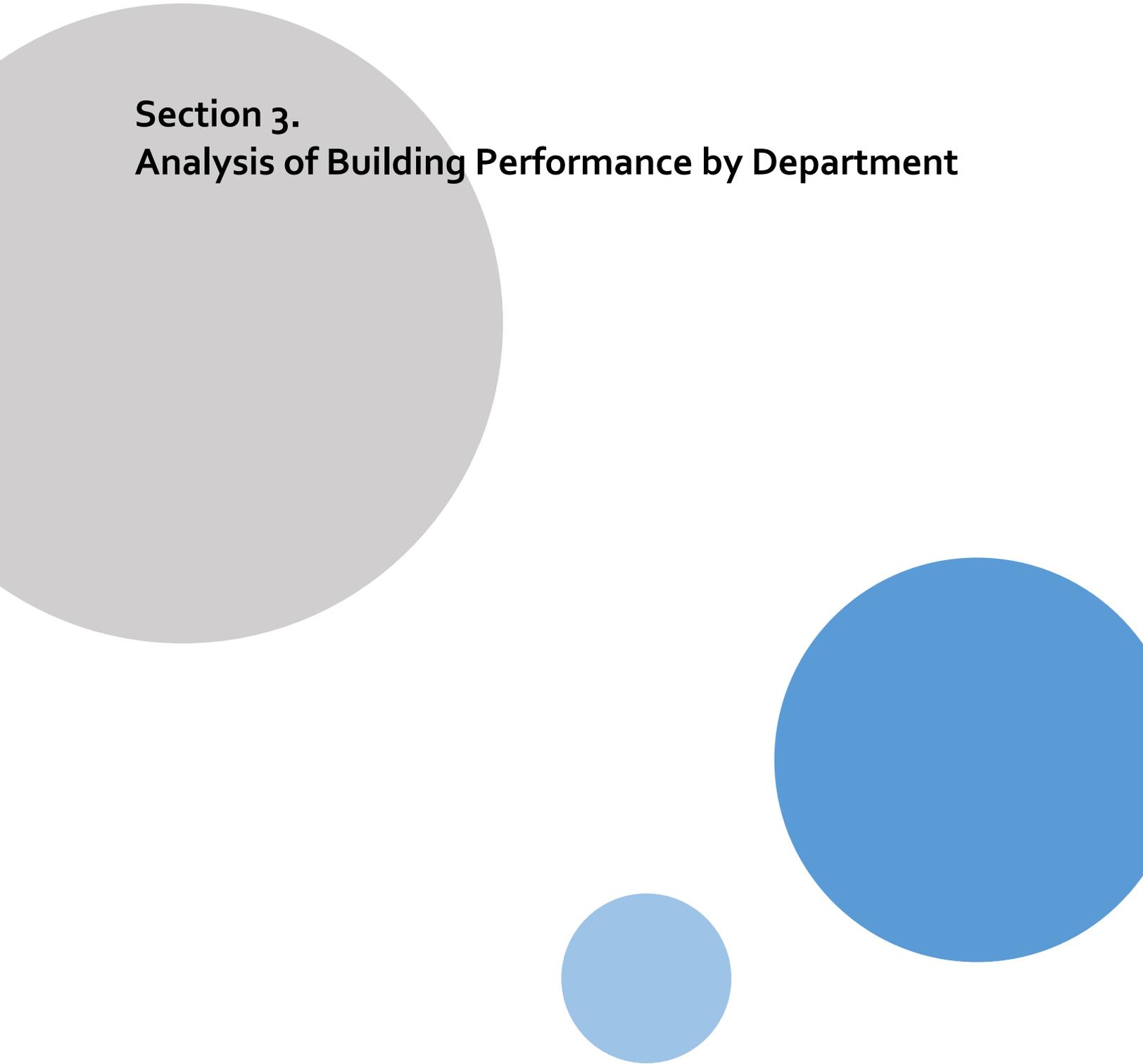
Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
SPL	High Point Branch	36,950	5.2
SPL	Fremont Branch	35,377	5.2
FAS	Fire Station 02	200,084	5.1
SPR	Seattle Asian Art Museum	274,119	5.1
FAS	Fire Station 38	45,948	5.0
FAS	Fire Station 37	46,696	5.0
SPL	Columbia Branch	61,390	4.9
FAS	Airport Way Center, Building B	80,518	4.8
FAS	CSC Fire Garage (C)	88,447	4.8
FAS	Fire Station 30	43,969	4.7
SPL	Magnolia Branch	32,428	4.6
FAS	Joint Training Facilities Campus	266,614	4.6
FAS	Fire Station 35	53,956	4.5
SPR	Ravenna-Eckstein Community Center	69,386	4.4
FAS	Fire Station 09	40,880	4.3
CEN	Central Plant	5,993,471	4.3
SPR	Horticulture Building	52,670	4.3
FAS	Fire Station 06	49,733	4.3
SPL	Queen Anne Branch	33,710	4.3
SPL	North East Branch	63,107	4.2
SPR	Laurelhurst Community Center	46,035	4.2
SPR	Central East Headquarters	25,811	4.1
SPL	Beacon Hill Branch	44,337	4.1
SPL	Montlake Branch	22,570	4.0
FAS	Airport Way Center, Building A	399,924	4.0
SCL	North Service Center	367,912	3.9
FAS	Fire Station 39	43,827	3.9
FAS	Airport Way Center, Building D	87,025	3.8
FAS	City Hall	665,746	3.6
SPL	Lake City Branch	70,534	3.5
FAS	East Precinct	126,143	3.5
FAS	Fire Station 16	14,029	3.5
CEN	West Court Building	36,773	3.5
SPL	Douglass-Truth Branch	57,150	3.5
SPR	Westbridge	390,390	3.4
SPL	Broadview Branch	51,411	3.4
SDOT	Fairview Building	28,686	3.4
FAS	Fire Station 29	16,871	3.3
SPR	Magnuson, Building 67, Mountaineers	95,729	3.3
FAS	Fire Station 21	27,918	3.2
SPR	International District/Chinatown CC	51,113	3.2

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
FAS	Fire Station 28	44,720	3.2
SPR	South Park Community Center	44,799	3.2
SPR	Ballard Community Center	51,147	3.0
FAS	SDOT Traffic Shop	124,625	3.0
FAS	Fire Station 18	47,950	3.0
FAS	Justice Center	875,498	2.9
SPL	Southwest Branch	42,112	2.8
SPR	High Point Community Center	50,397	2.8
SPR	Magnuson	1,234,038	2.2
FAS	Pearl Warren Building	94,692	2.2
SPL	Capitol Hill Branch	22,418	1.9
SCL	Diablo Powerhouse	43,162	1.9
SCL	Boundary Project	210,726	1.9
SCL	System Operations Center	52,161	1.9
SPR	Hiawatha Community Center	32,290	1.9
SPR	Densmore/NW NC HQ	33,200	1.7
FAS	Fire Station 13	24,509	1.7
SDOT	Street Car Maintenance	14,706	1.6
SCL	Broad St Substation	36,619	1.5
SPR	Jefferson Park Golf Clubhouse & Driving Range	15,224	1.5
FAS	Fire Station 24	7,464	1.5
SPR	Citywide Athletics	1,894	1.5
FAS	Airport Way Center, Building C	214,189	1.5
FAS	First Hill Street Car Maintenance Shop	28,623	1.4
SPU	Landsburg LOC Building	6,035	1.3
SPR	Belltown Community Center	8,350	1.3
SCL	Gorge Powerhouse	35,238	1.2
FAS	South Precinct	14,263	1.1
FAS	North Precinct	18,461	1.1
SCL	157 Roy Building	13,357	1.1
SCL	Canal Substation	14,847	1.1
SCL	Newhalem Service Center (Machine Shop/Mezz)	18,255	1.0
SPR	Genesee/SC SE HQ	15,848	1.0
SCL	SCL SSC Building A	185,907	1.0
FAS	Fire Station 20	12,442	1.0
SPU	Watershed Education Center	9,707	1.0
FAS	SE Seattle Community Health Center	22,717	0.8
FAS	Fire Station 36	4,817	0.8
SCL	Newhalem Service Center (Warehouse/Mezz)	13,989	0.8
SPL	Central Library	276,945	0.8
SPR	Carkeek Park Environmental Learning Center	1,288	0.7

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Dept	Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
SPL	South Park Branch	3,298	0.7
SPL	Delridge Branch	3,667	0.7
SCL	SCL SSC Building B	44,594	0.6
SCL	Environmental Learning Center	22,040	0.6
SPU	Cedar River Hatchery	9,967	0.6
SCL	Newhalem Phantom Warehouse (Sickler Bldg)	8,795	0.6
SCL	Ross Powerhouse	62,174	0.5
SPL	Rainier Beach Branch	7,429	0.5
SCL	North Substation	12,222	0.5
FAS	Seattle Municipal Tower	507,074	0.4
SPU	South Transfer Station	53,879	0.4
SPR	Central West HQ / Brown Bear	5,235	0.4
SPU	Old South Transfer Station	5,922	0.3
CEN	Blue Spruce	4,082	0.3
SDOT	King Street Station	18,890	0.3
SCL	Union St Substation	4,647	0.3
SCL	Georgetown Steamplant	9,512	0.2
SPR	Amy Yee Tennis Center	13,317	0.2



Section 3. Analysis of Building Performance by Department

Finance & Administrative Services

Figure 10. FAS portfolio performance by area share, 2017.

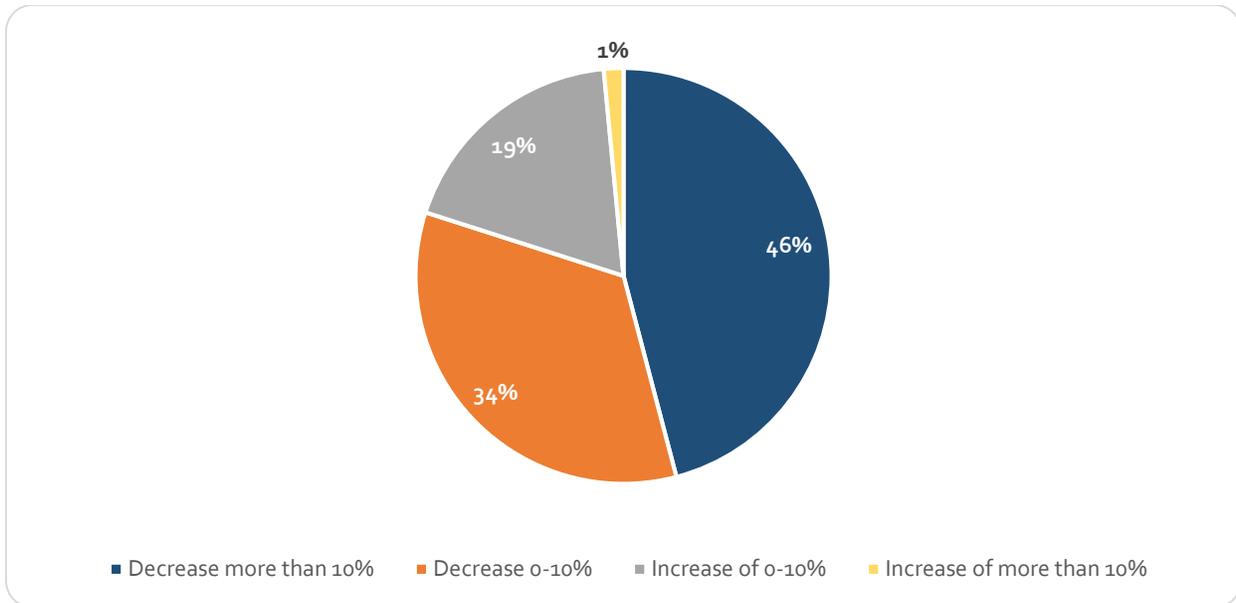


Table 7. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Fire Station 26	5,427	40%	114.3	108.8
Byrd Barr Place	13,632	33%	94.0	92.1
Fire Station 29	5,115	12%	83.9	81.7
Fire Station 20	12,338	11%	38.7	38.6
Fire Station 39	11,285	11%	71.5	69.2
Joint Training Facilities Campus	57,952	10%	64.2	63.9
Pearl Warren Building	43,813	10%	36.5	35.2
Fire Station 24	4,936	9%	129.8	122.7
Fire Station 08	8,273	9%	90.0	88.5
CSC Vehicle Maintenance (E)	67,772	9%	103.4	99.9
SE Seattle Community Health Center	27,492	8%	82.6	82.6
Fire Station 41	5,664	6%	118.2	115.7
West Precinct	50,755	5%	261.1	261
Fire Station 34	5,861	5%	94.2	91.9
Fire Station 16	4,039	5%	108.6	105.1
Fire Station 38	9,137	4%	102.0	99.5

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Fire Station 40	6,639	3%	83.0	82
City Hall	184,042	3%	79.3	78
Fire Station 02	38,939	2%	90.0	88.1
Fire Station 35	11,968	2%	75.0	73
CSC Engineering (A)	20,424	2%	158.9	157.3
Fire Station 13	14,440	1%	38.2	37.5
Fire Station 14	18,436	1%	111.1	107.1
Animal Shelter	10,868	0%	178.3	175.3
Airport Way Center, Building A	99,950	0%	146.6	145
Fire Station 31	12,834	-1%	85.0	81.9
Benaroya Hall	172,411	-1%	86.4	85.4
First Hill Street Car Maintenance Shop	20,983	-1%	46.3	45.3
Fire Station 30	9,417	-1%	77.8	76.4
CSC Meter Shop (G)	19,930	-1%	112.7	110.6
SDOT Traffic Shop	41,939	-2%	48.3	46.6
Fire Station 10/FAC/EOC	57,960	-2%	162.8	160.9
Justice Center	298,278	-3%	72.5	71.8
Airport Way Center, Building B	16,725	-3%	59.4	57.3
Fire Station 36	5,876	-3%	83.4	82
Fire Station 28	14,031	-4%	90.8	86.7
East Precinct	36,280	-5%	120.5	118.2
Fire Station 17	21,886	-5%	97.2	94.8
Fire Station 27	6,329	-6%	91.3	89.2
Fire Station 11	6,191	-6%	99.5	95.9
Airport Way Center, Building D	22,803	-6%	50.6	48.3
Fire Headquarters	56,074	-6%	87.8	86.2
Airport Way Center, Building E	23,100	-6%	189.3	184.6
CSC Fire Garage (C)	18,545	-7%	71.6	69.1
Southwest Precinct	28,303	-7%	119.6	118.7
South Precinct	12,603	-8%	117.0	113.2
Fire Station 09	9,424	-8%	72.6	70.5
HLF FAS Vehicle Maintenance (A)	26,994	-8%	118.3	113.6
North Precinct	16,434	-9%	113.8	112.3
Fire Station 33	5,974	-11%	93.2	93.1
Seattle Municipal Tower	1,222,878	-14%	41.0	41
Fire Station 25	17,991	-14%	88.1	87.2
Fire Station 21	8,654	-15%	63.2	62.2

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Fire Station 37	9,375	-19%	78.5	77.1
Fire Station 18	16,196	-22%	60.2	58.4
Fire Station 06	11,685	-23%	80.2	77.9
Airport Way Center, Building C	145,923	-27%	39.7	38.5

Table 8. Total 2017 GHG emissions (lbCO₂e), rank ordered by total carbon.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Benaroya Hall	942,716	5.5
Justice Center	875,498	2.9
West Precinct	725,759	14.3
City Hall	665,746	3.6
CSC Vehicle Maintenance (E)	558,205	8.2
Seattle Municipal Tower	507,074	0.4
Airport Way Center, Building A	399,924	4.0
Fire Station 10/FAC/EOC	385,501	6.7
Fire Headquarters	369,121	6.6
Airport Way Center, Building E	337,235	14.6
CSC Engineering (A)	288,094	14.1
HLF FAS Vehicle Maintenance (A)	269,154	10.0
Joint Training Facilities Campus	266,614	4.6
Airport Way Center, Building C	214,189	1.5
Southwest Precinct	200,993	7.1
Fire Station 02	200,084	5.1
CSC Meter Shop (G)	163,465	8.2
Fire Station 17	145,923	6.7
Fire Station 14	137,617	7.5
Animal Shelter	130,714	12.0
East Precinct	126,143	3.5
SDOT Traffic Shop	124,625	3.0
Fire Station 25	119,584	6.6
Byrd Barr Place	105,468	7.7
Pearl Warren Building	94,692	2.2
CSC Fire Garage (C)	88,447	4.8
Airport Way Center, Building D	87,025	3.8
Airport Way Center, Building B	80,518	4.8
Fire Station 31	72,673	5.7
Fire Station 08	57,843	7.0

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Fire Station 35	53,956	4.5
Fire Station 06	49,733	4.3
Fire Station 18	47,950	3.0
Fire Station 37	46,696	5.0
Fire Station 38	45,948	5.0
Fire Station 40	44,787	6.7
Fire Station 28	44,720	3.2
Fire Station 11	44,295	7.2
Fire Station 30	43,969	4.7
Fire Station 39	43,827	3.9
Fire Station 26	42,016	7.7
Fire Station 33	41,724	7.0
Fire Station 41	41,616	7.3
Fire Station 09	40,880	4.3
Fire Station 34	38,509	6.6
Fire Station 27	38,370	6.1
First Hill Street Car Maintenance Shop	28,623	1.4
Fire Station 21	27,918	3.2
Fire Station 13	24,509	1.7
SE Seattle Community Health Center	22,717	0.8
North Precinct	18,461	1.1
Fire Station 29	16,871	3.3
South Precinct	14,263	1.1
Fire Station 16	14,029	3.5
Fire Station 20	12,442	1.0
Fire Station 24	7,464	1.5
Fire Station 36	4,817	0.8

Table 9. Total 2017 GHG emissions (lbCO₂e), rank ordered by carbon index.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Airport Way Center, Building E	337,235	14.6
West Precinct	725,759	14.3
CSC Engineering (A)	288,094	14.1
Animal Shelter	130,714	12.0
HLF FAS Vehicle Maintenance (A)	269,154	10.0
CSC Vehicle Maintenance (E)	558,205	8.2
CSC Meter Shop (G)	163,465	8.2
Fire Station 26	42,016	7.7
Byrd Barr Place	105,468	7.7

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Fire Station 14	137,617	7.5
Fire Station 41	41,616	7.3
Fire Station 11	44,295	7.2
Southwest Precinct	200,993	7.1
Fire Station 08	57,843	7.0
Fire Station 33	41,724	7.0
Fire Station 40	44,787	6.7
Fire Station 17	145,923	6.7
Fire Station 10/FAC/EOC	385,501	6.7
Fire Station 25	119,584	6.6
Fire Headquarters	369,121	6.6
Fire Station 34	38,509	6.6
Fire Station 27	38,370	6.1
Fire Station 31	72,673	5.7
Benaroya Hall	942,716	5.5
Fire Station 02	200,084	5.1
Fire Station 38	45,948	5.0
Fire Station 37	46,696	5.0
Airport Way Center, Building B	80,518	4.8
CSC Fire Garage (C)	88,447	4.8
Fire Station 30	43,969	4.7
Joint Training Facilities Campus	266,614	4.6
Fire Station 35	53,956	4.5
Fire Station 09	40,880	4.3
Fire Station 06	49,733	4.3
Airport Way Center, Building A	399,924	4.0
Fire Station 39	43,827	3.9
Airport Way Center, Building D	87,025	3.8
City Hall	665,746	3.6
East Precinct	126,143	3.5
Fire Station 16	14,029	3.5
Fire Station 29	16,871	3.3
Fire Station 21	27,918	3.2
Fire Station 28	44,720	3.2
SDOT Traffic Shop	124,625	3.0
Fire Station 18	47,950	3.0
Justice Center	875,498	2.9
Pearl Warren Building	94,692	2.2
Fire Station 13	24,509	1.7
Fire Station 24	7,464	1.5
Airport Way Center, Building C	214,189	1.5

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
First Hill Street Car Maintenance Shop	28,623	1.4
South Precinct	14,263	1.1
North Precinct	18,461	1.1
Fire Station 20	12,442	1.0
SE Seattle Community Health Center	22,717	0.8
Fire Station 36	4,817	0.8
Seattle Municipal Tower	507,074	0.4

Seattle Public Libraries

Figure 11. SPL portfolio performance by area share, 2017 (weather-normalized).

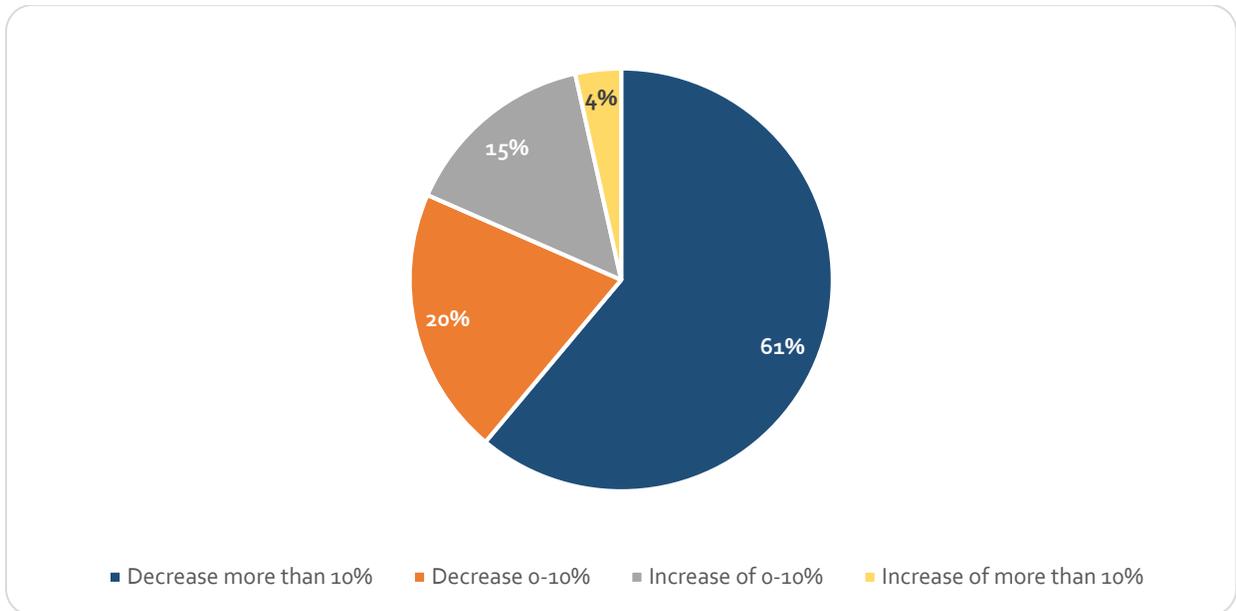


Table 10. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
University Branch	8,140	15%	102.5	99.1
Greenwood Branch	12,806	12%	105.8	101.2
South Park Branch	5,019	10%	65.7	65.7
Ballard Branch	18,100	8%	100.4	97.8
West Seattle Branch	9,460	2%	85.1	82.9
Southwest Branch	15,000	2%	57.8	56.8
Rainier Beach Branch	15,000	1%	51.1	49.5
Lake City Branch	20,017	1%	73.6	71.4
Fremont Branch	6,840	1%	78.9	78.5
Montlake Branch	5,652	0%	86.5	84.5
Green Lake Branch	8,090	0%	78.4	76.1
Queen Anne Branch	7,931	0%	59.8	58.1
Magnolia Branch	7,000	-1%	93.4	91.9
Delridge Branch	5,600	-2%	67.0	65.5
North East Branch	15,000	-2%	70.8	68.4
Douglass-Truth Branch	16,493	-2%	71.2	68.7
Columbia Branch	12,420	-5%	80.7	77.2

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Broadview Branch	15,000	-7%	60.5	57.3
High Point Branch	7,100	-8%	100.3	96.7
Capitol Hill Branch	11,615	-8%	78.2	77.5
Beacon Hill Branch	10,800	-8%	83.5	79.4
Central Library	365,987	-15%	43.7	43.6

Table 11. Total 2017 GHG emissions (lbCo₂e), rank ordered by total carbon.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Central Library	276,945	0.8
Ballard Branch	106,686	5.9
Greenwood Branch	77,127	6.0
Lake City Branch	70,534	3.5
North East Branch	63,107	4.2
University Branch	61,732	7.6
Columbia Branch	61,390	4.9
Douglass-Truth Branch	57,150	3.5
Broadview Branch	51,411	3.4
West Seattle Branch	50,732	5.4
Beacon Hill Branch	44,337	4.1
Green Lake Branch	42,300	5.2
Southwest Branch	42,112	2.8
High Point Branch	36,950	5.2
Fremont Branch	35,377	5.2
Queen Anne Branch	33,710	4.3
Magnolia Branch	32,428	4.6
Montlake Branch	22,570	4.0
Capitol Hill Branch	22,418	1.9
Rainier Beach Branch	7,429	0.5
Delridge Branch	3,667	0.7
South Park Branch	3,298	0.7

Table 12. Total 2017 GHG emissions (lbCo₂e), rank ordered by carbon index.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
University Branch	61,732	7.6
Greenwood Branch	77,127	6.0
Ballard Branch	106,686	5.9
West Seattle Branch	50,732	5.4

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Green Lake Branch	42,300	5.2
High Point Branch	36,950	5.2
Fremont Branch	35,377	5.2
Columbia Branch	61,390	4.9
Magnolia Branch	32,428	4.6
Queen Anne Branch	33,710	4.3
North East Branch	63,107	4.2
Beacon Hill Branch	44,337	4.1
Montlake Branch	22,570	4.0
Lake City Branch	70,534	3.5
Douglass-Truth Branch	57,150	3.5
Broadview Branch	51,411	3.4
Southwest Branch	42,112	2.8
Capitol Hill Branch	22,418	1.9
Central Library	276,945	0.8
South Park Branch	3,298	0.7
Delridge Branch	3,667	0.7
Rainier Beach Branch	7,429	0.5

Seattle Parks & Recreation

Figure 12. SPR portfolio performance by area share, 2017 (weather-normalized).

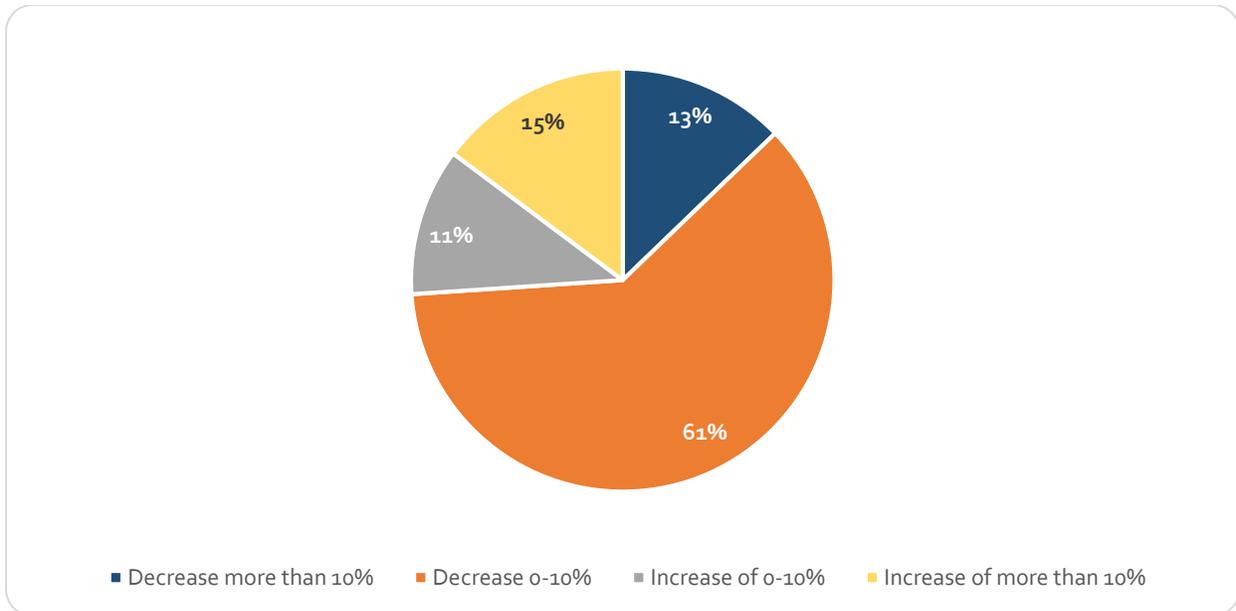


Table 13. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Carkeek Park Environmental Learning Center	1,756	90%	73.3	73.3
Loyal Heights Community Center	29,732	50%	93.2	91.9
Miller Community Center	19,273	34%	78.2	74.4
Montlake Community Center	16,242	32%	109.2	102.1
Belltown Community Center	6,480	23%	31.8	30.9
Westbridge	113,780	19%	42.7	42.1
Central East Headquarters	6,238	16%	88.6	88.2
Rainier Community Center	28,384	13%	95.2	92.5
Delridge Community Center	17,693	11%	104.2	101.9
Queen Anne Community Center	25,809	9%	110.9	109.7
Dexter Building	7,381	6%	199.1	196.4
High Point Community Center	18,261	5%	60.6	59.2
Ravenna-Eckstein Community Center	15,814	5%	52.6	50.5
Rainier Beach Community Center and Pool	53,775	4%	241.8	240.6
Conservatory Campus	23,445	3%	299.4	295.3
Queen Anne Pool	13,157	3%	474.2	472.8

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Ballard Pool	12,769	1%	425.7	425.8
Horticulture Building	12,294	1%	78.4	77.4
Genesee/SC SE HQ	15,398	0%	27.2	27.0
Magnuson, Building 67, Mountaineers	29,275	0%	38.4	37.9
Southwest Teen Life Center and Pool	39,333	0%	217	217.1
Garfield Community Center	20,050	-2%	98.8	97.7
Hiawatha Community Center	17,190	-2%	64.8	63.1
Armory Building	43,000	-3%	181.6	180.0
Van Asselt Community Center	18,258	-3%	70.1	68.5
Medgar Evers Pool	20,740	-4%	252.1	252.2
Helene Madison Pool	17,407	-4%	534.5	525.9
Northgate Campus	30,498	-5%	83.3	83.0
Densmore/NW NC HQ	19,246	-6%	28.5	28.0
Central West HQ / Brown Bear	13,661	-6%	39.3	38.3
Green Lake Community Center and Pool	35,143	-7%	337	337.1
Meadowbrook Community Center/Pool	34,639	-7%	229.2	229.3
Magnuson	564,258	-8%	34.9	33.8
Laurelhurst Community Center	11,003	-8%	56.1	54.8
Jefferson Park Golf Clubhouse & Driving Range	9,963	-8%	155.1	152.8
Ballard Community Center	16,795	-9%	54.1	53.6
Bitter Lake Community Center	20,595	-10%	91.1	88.4
South Park Community Center	14,101	-10%	51.2	50.1
Citywide Athletics	1,263	-11%	149.9	150
Yesler Community Center	22,347	-13%	99.1	97.9
Amy Yee Tennis Center	66,597	-14%	20.1	20.0
Seattle Asian Art Museum	53,776	-17%	61.8	60.9
Jefferson Community Center	16,447	-19%	101.9	100.5
Langston Hughes Performing Arts Center	30,890	-20%	75.6	74.4
International District/Chinatown CC	16,000	-28%	47.8	47.4

Table 14. Total 2017 GHG emissions (lbCO₂e), rank ordered by total carbon.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Magnuson	1,234,038	2.2
Green Lake Community Center and Pool	1,129,193	32.1
Rainier Beach Community Center and Pool	1,106,657	20.6
Helene Madison Pool	832,018	47.8
Meadowbrook Community Center/Pool	691,923	20.0

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Southwest Teen Life Center and Pool	654,514	16.6
Conservatory Campus	633,376	27.0
Queen Anne Pool	556,759	42.3
Armory Building	506,268	11.8
Ballard Pool	503,190	39.4
Westbridge	390,390	3.4
Medgar Evers Pool	346,133	16.7
Seattle Asian Art Museum	274,119	5.1
Loyal Heights Community Center	237,245	8.0
Queen Anne Community Center	234,187	9.1
Langston Hughes Performing Arts Center	215,630	7.0
Northgate Campus	171,868	5.6
Rainier Community Center	171,755	6.1
Yesler Community Center	169,477	7.6
Miller Community Center	164,380	8.5
Montlake Community Center	147,450	9.1
Delridge Community Center	147,351	8.3
Jefferson Community Center	143,718	8.7
Bitter Lake Community Center	137,386	6.7
Garfield Community Center	133,850	6.7
Dexter Building	123,522	16.7
Van Asselt Community Center	99,874	5.5
Magnuson, Building 67, mountaineers	95,729	3.3
Ravenna-Eckstein Community Center	69,386	4.4
Horticulture building	52,670	4.3
Ballard Community Center	51,147	3.0
International district/Chinatown CC	51,113	3.2
High Point Community Center	50,397	2.8
Laurelhurst Community Center	46,035	4.2
South Park Community Center	44,799	3.2
Densmore/NW NC HQ	33,200	1.7
Hiawatha Community Center	32,290	1.9
Central East Headquarters	25,811	4.1
Genesee/SC SE HQ	15,848	1.0
Jefferson Park Golf Clubhouse & Driving Range	15,224	1.5
Amy Yee Tennis Center	13,317	0.2
Belltown Community Center	8,350	1.3
Central West HQ / Brown Bear	5,235	0.4
Citywide Athletics	1,894	1.5
Carkeek Park Environmental Learning Center	1,288	0.7

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 15. Total 2017 GHG emissions (lbCO₂e), rank ordered by carbon index.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e)/SF
Helene Madison Pool	832,018	47.8
Queen Anne Pool	556,759	42.3
Ballard Pool	503,190	39.4
Green Lake Community Center and Pool	1,129,193	32.1
Conservatory Campus	633,376	27.0
Rainier Beach Community Center and Pool	1,106,657	20.6
Meadowbrook Community Center/Pool	691,923	20.0
Dexter Building	123,522	16.7
Medgar Evers Pool	346,133	16.7
Southwest Teen Life Center and Pool	654,514	16.6
Armory Building	506,268	11.8
Montlake Community Center	147,450	9.1
Queen Anne Community Center	234,187	9.1
Jefferson Community Center	143,718	8.7
Miller Community Center	164,380	8.5
Delridge Community Center	147,351	8.3
Loyal Heights Community Center	237,245	8.0
Yesler Community Center	169,477	7.6
Langston Hughes Performing Arts Center	215,630	7.0
Garfield Community Center	133,850	6.7
Bitter Lake Community Center	137,386	6.7
Rainier Community Center	171,755	6.1
Northgate Campus	171,868	5.6
Van Asselt Community Center	99,874	5.5
Seattle Asian Art Museum	274,119	5.1
Ravenna-Eckstein Community Center	69,386	4.4
Horticulture building	52,670	4.3
Laurelhurst Community Center	46,035	4.2
Central East Headquarters	25,811	4.1
Westbridge	390,390	3.4
Magnuson, Building 67, mountaineers	95,729	3.3
International district/Chinatown CC	51,113	3.2
South Park Community Center	44,799	3.2
Ballard Community Center	51,147	3.0
High Point Community Center	50,397	2.8
Magnuson	1,234,038	2.2
Hiawatha Community Center	32,290	1.9
Densmore/NW NC HQ	33,200	1.7

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e)/SF
Jefferson Park Golf Clubhouse & Driving Range	15,224	1.5
Citywide Athletics	1,894	1.5
Belltown Community Center	8,350	1.3
Genesee/SC SE HQ	15,848	1.0
Carkeek Park Environmental Learning Center	1,288	0.7
Central West HQ / Brown Bear	5,235	0.4
Amy Yee Tennis Center	13,317	0.2

Seattle Center

Figure 13. CEN portfolio performance by area share, 2017 (weather-normalized).

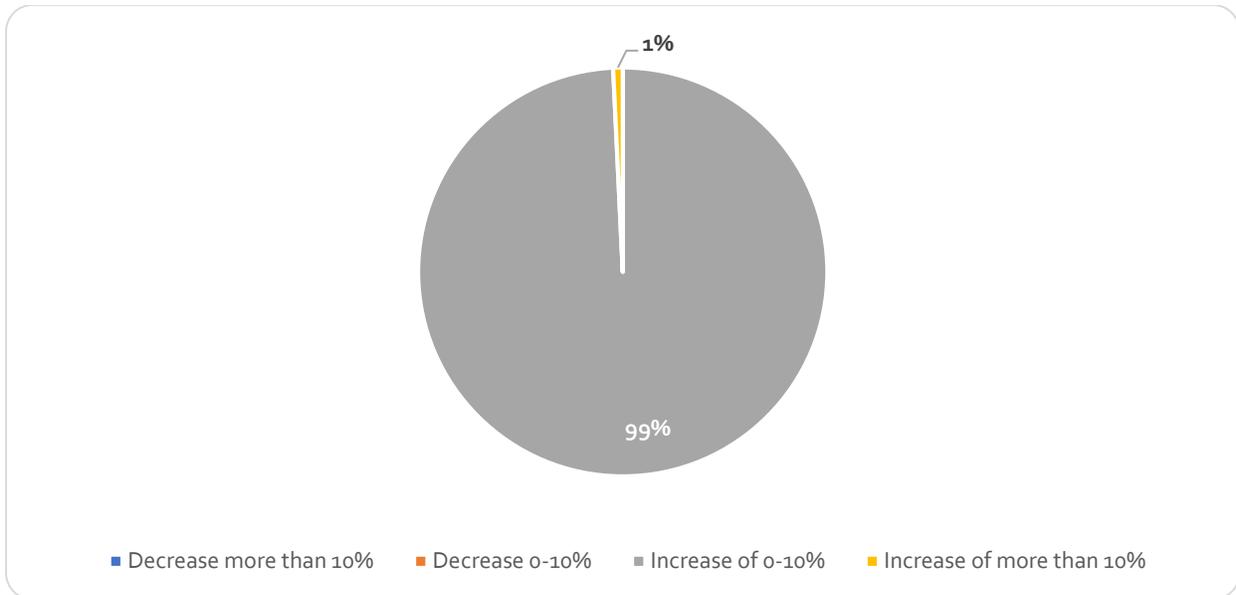


Table 16. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
West Court Building	10,596	13%	44.9	43.7
Blue Spruce	14,036	3%	29.1	29.1
Central Plant	1,386,736	1%	75.1	73.9

Table 17. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by total carbon.

Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
Central Plant	5,993,471	4.3
West Court Building	36,773	3.5
Blue Spruce	4,082	0.3

Table 18. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by carbon index.

Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
Central Plant	5,993,471	4.3
West Court Building	36,773	3.5
Blue Spruce	4,082	0.3

Seattle City Light

In this analysis, savings and consumption values include both process and non-process loads at SCL sites.

Figure 14. SCL portfolio performance by area share, 2017 (weather-normalized).

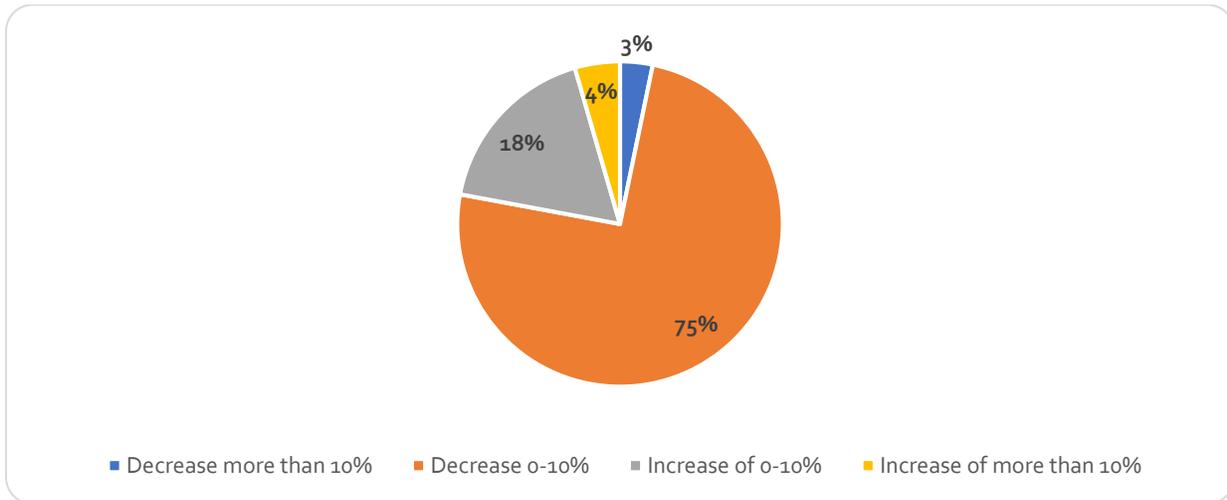


Table 19. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Georgetown Steamplant	39,212	34%	24.6	24.3
SCL SSC Building B	70,320	9%	65.2	63.4
Environmental Learning Center	34,992	7%	62	63.0
Diablo Powerhouse	22,695	5%	191.2	190.2
North Substation	25,978	1%	47.6	47.0
Union St Substation	16,728	-1%	27.8	27.8
System Operations Center	27,744	-1%	188	188.0
SCL SSC Building A	180,725	-1%	55.5	54.2
Boundary Project	111,858	-2%	188.9	188.4
Newhalem Service Center- Machine Shop & Mezz	17,600	-2%	103.8	103.7
Newhalem Service Center- Warehouse & Mezz	17,747	-3%	79.2	78.8
Ross Powerhouse	121,630	-4%	50.8	51.1
Gorge Powerhouse	29,369	-4%	119.9	120
Broad St Substation	23,802	-7%	153.8	153.8
North Service Center	94,288	-9%	100	99.2
157 Roy Building	12,122	-10%	110.1	110.2
Newhalem Phantom Warehouse/Sickler Bldg	14,400	-15%	59.7	61.1
Canal Substation	13,914	-23%	108.8	106.7

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 20. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by total carbon.

Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
North Service Center	367,912	3.9
Boundary Project	210,726	1.9
SCL SSC Building A	185,907	1.0
Ross Powerhouse	62,174	0.5
System Operations Center	52,161	1.9
SCL SSC Building B	44,594	0.6
Diablo Powerhouse	43,162	1.9
Broad St Substation	36,619	1.5
Gorge Powerhouse	35,238	1.2
Environmental Learning Center	22,040	0.6
Newhalem Service Center- Machine Shop & Mezz	18,255	1.0
Canal Substation	14,847	1.1
Newhalem Service Center- Warehouse & Mezz	13,989	0.8
157 Roy Building	13,357	1.1
North Substation	12,222	0.5
Georgetown Steamplant	9,512	0.2
Newhalem Phantom Warehouse/Sickler Bldg	8,795	0.6
Union St Substation	4,647	0.3

Table 21. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by carbon index.

Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
North Service Center	367,912	3.9
Diablo Powerhouse	43,162	1.9
Boundary Project	210,726	1.9
System Operations Center	52,161	1.9
Broad St Substation	36,619	1.5
Gorge Powerhouse	35,238	1.2
157 Roy Building	13,357	1.1
Canal Substation	14,847	1.1
Newhalem Service Center- Machine Shop & Mezz	18,255	1.0
SCL SSC Building A	185,907	1.0
Newhalem Service Center- Warehouse & Mezz	13,989	0.8
SCL SSC Building B	44,594	0.6
Environmental Learning Center	22,040	0.6
Newhalem Phantom Warehouse/Sickler Bldg	8,795	0.6
Ross Powerhouse	62,174	0.5
North Substation	12,222	0.5
Union St Substation	4,647	0.3
Georgetown Steamplant	9,512	0.2

Seattle Public Utilities

Figure 15. SPU portfolio performance by area share, 2017 (weather-normalized).

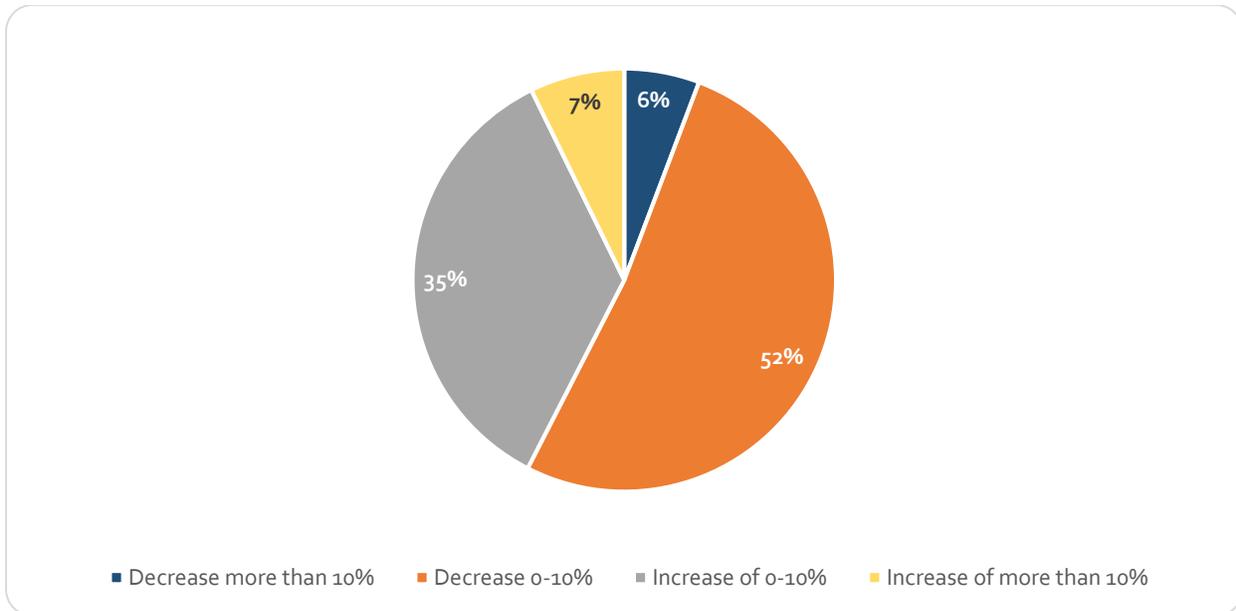


Table 22. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Old South Transfer Station	20,000	21%	30.3	29.6
Watershed Education Center	9,864	6%	99.8	98.4
OCC Complex	87,459	1%	107.4	106.8
South Transfer Station	138,602	-3%	39.2	38.9
Landsburg LOC Building	4,514	-8%	134.9	133.7
Cedar River Hatchery	15,887	-18%	65.1	62.7

Table 23. Total 2017 GHG emissions (lbCO₂e), rank ordered by total carbon.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
OCC Complex	634,947	7.3
South Transfer Station	53,879	0.4
Cedar River Hatchery	9,967	0.6
Watershed Education Center	9,707	1.0
Landsburg LOC Building	6,035	1.3
Old South Transfer Station	5,922	0.3

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 24. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by carbon index.

Property Name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
OCC Complex	634,947	7.3
Lansburg LOC Building	6,035	1.3
Watershed Education Center	9,707	1.0
Cedar River Hatchery	9,967	0.6
South Transfer Station	53,879	0.4
Old South Transfer Station	5,922	0.3

Seattle Department of Transportation

Figure 16. SDOT portfolio performance by area share, 2017 (weather-normalized).

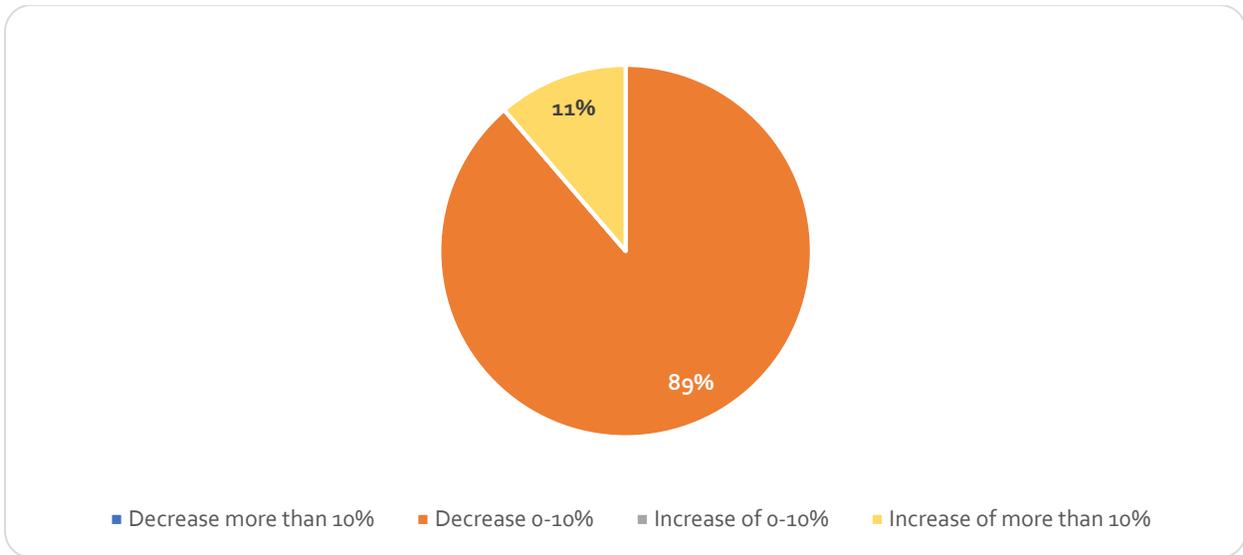


Table 25. Building energy performance, 2017, rank ordered by % change in EUI.

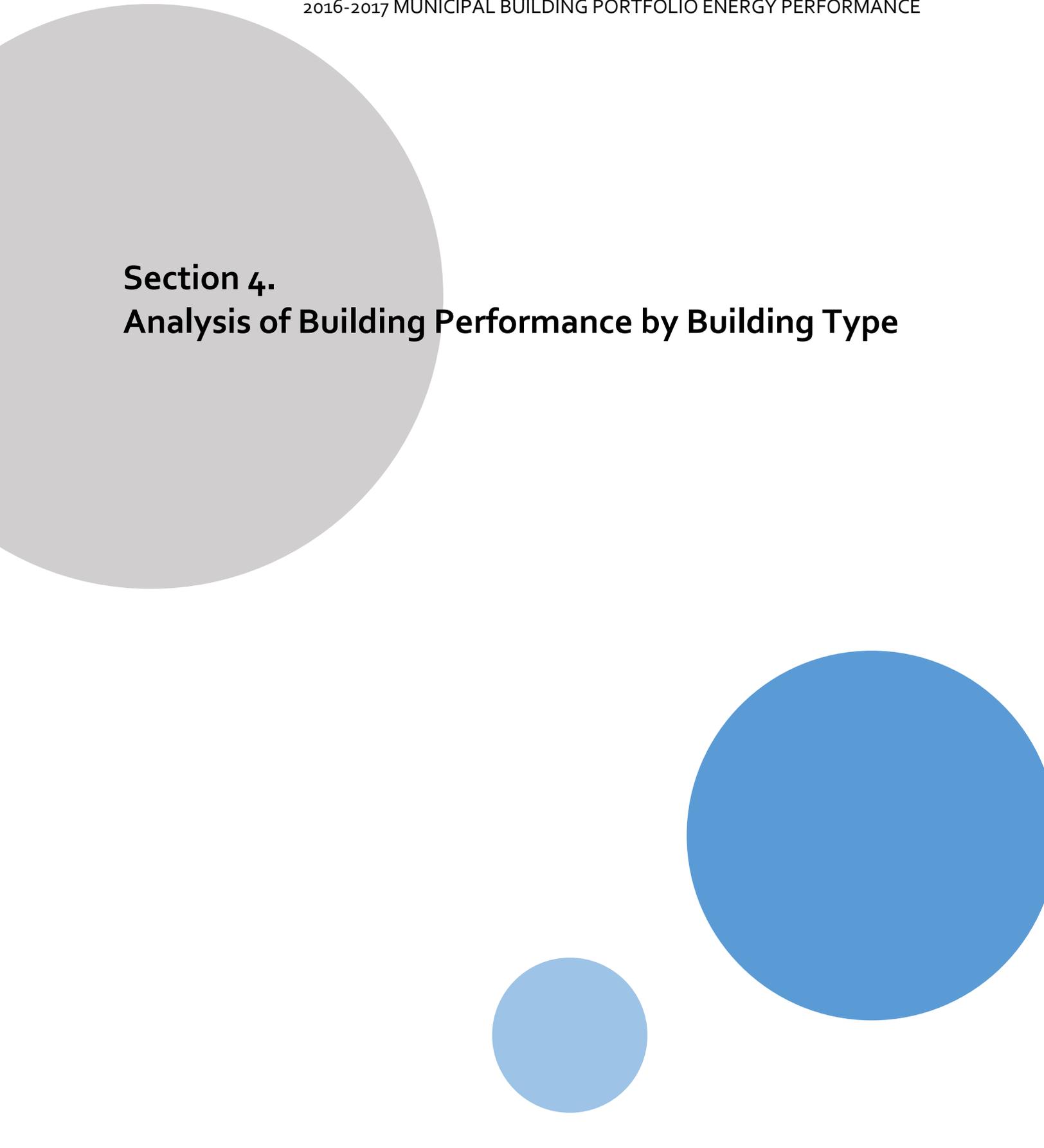
Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Street Car Maintenance	9,428	11%	77.9	78.0
Fairview Building	8,488	-1%	29.3	29.3
King Street Station	65,490	-8%	29.3	28.8

Table 26. Total 2017 GHG emissions (lbCO₂e), rank ordered by total carbon.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Fairview Building	28,686	3.4
King Street Station	18,890	0.3
Street Car Maintenance	14,706	1.6

Table 27. Total 2017 GHG emissions (lbCO₂e), rank ordered by carbon index.

Property Name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Fairview Building	28,686	3.4
Street Car Maintenance	14,706	1.6
King Street Station	18,890	0.3



Section 4.
Analysis of Building Performance by Building Type

Building type: Police precincts

Table 28. Building energy performance, 2017, rank ordered by % change in EUI.

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2016 EUI, metered	2016 EUI, normalized
West Precinct	50,755	5%	261.1	261.0
East Precinct	36,280	-5%	120.5	118.2
Southwest Precinct	28,303	-7%	119.6	118.7
South Precinct	12,603	-8%	117	113.2
North Precinct	16,434	-9%	113.8	112.3

Table 29. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by total carbon.

Property	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
West Precinct	725,759	14.3
Southwest Precinct	200,993	7.1
East Precinct	126,143	3.5
North Precinct	18,461	1.1
South Precinct	14,263	1.1

Table 30. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by carbon index.

Property	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
West Precinct	725,759	14.3
Southwest Precinct	200,993	7.1
East Precinct	126,143	3.5
South Precinct	14,263	1.1
North Precinct	18,461	1.1

Building type: Neighborhood fire stations*Table 31. Building energy performance, 2017, rank ordered by % change in EUI.*

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Fire Station 26	5,427	40%	114.3	108.8
Fire Station 29	5,115	12%	83.9	81.7
Fire Station 20	12,338	11%	38.7	38.6
Fire Station 39	11,285	11%	71.5	69.2
Fire Station 24	4,936	9%	129.8	122.7
Fire Station 08	8,273	9%	90.0	88.5
Fire Station 41	5,664	6%	118.2	115.7
Fire Station 34	5,861	5%	94.2	91.9
Fire Station 16	4,039	5%	108.6	105.1
Fire Station 38	9,137	4%	102.0	99.5
Fire Station 40	6,639	3%	83.0	82.0
Fire Station 02	38,939	2%	90.0	88.1
Fire Station 35	11,968	2%	75.0	73.0
Fire Station 13	14,440	1%	38.2	37.5
Fire Station 14	18,436	1%	111.1	107.1
Fire Station 31	12,834	-1%	85.0	81.9
Fire Station 30	9,417	-1%	77.8	76.4
Fire Station 10/FAC/EOC	57,960	-2%	162.8	160.9
Fire Station 36	5,876	-3%	83.4	82.0
Fire Station 28	14,031	-4%	90.8	86.7
Fire Station 17	21,886	-5%	97.2	94.8
Fire Station 27	6,329	-6%	91.3	89.2
Fire Station 11	6,191	-6%	99.5	95.9
Fire Station 09	9,424	-8%	72.6	70.5
Fire Station 33	5,974	-11%	93.2	93.1
Fire Station 25	17,991	-14%	88.1	87.2
Fire Station 21	8,654	-15%	63.2	62.2
Fire Station 37	9,375	-19%	78.5	77.1
Fire Station 18	16,196	-22%	60.2	58.4
Fire Station 06	11,685	-23%	80.2	77.9

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 32. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by total carbon.

Property name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
Fire Station 10/FAC/EOC	385,501	6.7
Fire Station 02	200,084	5.1
Fire Station 17	145,923	6.7
Fire Station 14	137,617	7.5
Fire Station 25	119,584	6.6
Fire Station 31	72,673	5.7
Fire Station 08	57,843	7.0
Fire Station 35	53,956	4.5
Fire Station 06	49,733	4.3
Fire Station 18	47,950	3.0
Fire Station 37	46,696	5.0
Fire Station 38	45,948	5.0
Fire Station 40	44,787	6.7
Fire Station 28	44,720	3.2
Fire Station 11	44,295	7.2
Fire Station 30	43,969	4.7
Fire Station 39	43,827	3.9
Fire Station 26	42,016	7.7
Fire Station 33	41,724	7.0
Fire Station 41	41,616	7.3
Fire Station 09	40,880	4.3
Fire Station 34	38,509	6.6
Fire Station 27	38,370	6.1
Fire Station 21	27,918	3.2
Fire Station 13	24,509	1.7
Fire Station 29	16,871	3.3
Fire Station 16	14,029	3.5
Fire Station 20	12,442	1.0
Fire Station 24	7,464	1.5
Fire Station 36	4,817	0.8

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 33. Total 2017 GHG emissions (lbCO_{2e}), rank ordered by carbon index.

Property name	Total carbon (lbCO _{2e})	Carbon index (lbCO _{2e} /SF)
Fire Station 26	42,016	7.7
Fire Station 14	137,617	7.5
Fire Station 41	41,616	7.3
Fire Station 11	44,295	7.2
Fire Station 08	57,843	7.0
Fire Station 33	41,724	7.0
Fire Station 40	44,787	6.7
Fire Station 17	145,923	6.7
Fire Station 10/FAC/EOC	385,501	6.7
Fire Station 25	119,584	6.6
Fire Station 34	38,509	6.6
Fire Station 27	38,370	6.1
Fire Station 31	72,673	5.7
Fire Station 02	200,084	5.1
Fire Station 38	45,948	5.0
Fire Station 37	46,696	5.0
Fire Station 30	43,969	4.7
Fire Station 35	53,956	4.5
Fire Station 09	40,880	4.3
Fire Station 06	49,733	4.3
Fire Station 39	43,827	3.9
Fire Station 16	14,029	3.5
Fire Station 29	16,871	3.3
Fire Station 21	27,918	3.2
Fire Station 28	44,720	3.2
Fire Station 18	47,950	3.0
Fire Station 13	24,509	1.7
Fire Station 24	7,464	1.5
Fire Station 20	12,442	1.0
Fire Station 36	4,817	0.8

Building type: Community centers and pools*Table 34. Building energy performance, 2017, rank ordered by % change in EUI.*

Property Name	Property GFA (ft ²)	EUI change from 2016 to 2017, % normalized	2017 EUI, metered	2017 EUI, normalized
Loyal Heights Community Center	29,732	50%	93.2	91.9
Miller Community Center	19,273	34%	78.2	74.4
Montlake Community Center	16,242	32%	109.2	102.1
Belltown Community Center	6,480	23%	31.8	30.9
Rainier Community Center	28,384	13%	95.2	92.5
Delridge Community Center	17,693	11%	104.2	101.9
Queen Anne Community Center	25,809	9%	110.9	109.7
High Point Community Center	18,261	5%	60.6	59.2
Ravenna-Eckstein Community Center	15,814	5%	52.6	50.5
Garfield Community Center	20,050	-2%	98.8	97.7
Hiawatha Community Center	17,190	-2%	64.8	63.1
Van Asselt Community Center	18,258	-3%	70.1	68.5
Laurelhurst Community Center	11,003	-8%	56.1	54.8
Ballard Community Center	16,795	-9%	54.1	53.6
Bitter Lake Community Center	20,595	-10%	91.1	88.4
South Park Community Center	14,101	-10%	51.2	50.1
Yesler Community Center	22,347	-13%	99.1	97.9
Jefferson Community Center	16,447	-19%	101.9	100.5
International District/Chinatown CC	16,000	-28%	47.8	47.4
Rainier Beach Community Center and Pool	53,775	4%	241.8	240.6
Southwest Teen Life Center and Pool	39,333	0%	217.0	217.1
Green Lake Community Center and Pool	35,143	-7%	337.0	337.1
Meadowbrook Community Center/Pool	34,639	-7%	229.2	229.3
Queen Anne Pool	13,157	3%	474.2	472.8
Ballard Pool	12,769	1%	425.7	425.8
Medgar Evers Pool	20,740	-4%	252.1	252.2
Helene Madison Pool	17,407	-4%	534.5	525.9

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 35. Total 2017 GHG emissions (lbCo2e), rank ordered by total carbon.

Property name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Loyal Heights Community Center	237,245	8.0
Queen Anne Community Center	234,187	9.1
Rainier Community Center	171,755	6.1
Yesler Community Center	169,477	7.6
Miller Community Center	164,380	8.5
Montlake Community Center	147,450	9.1
Delridge Community Center	147,351	8.3
Jefferson Community Center	143,718	8.7
Bitter Lake Community Center	137,386	6.7
Garfield Community Center	133,850	6.7
Van Asselt Community Center	99,874	5.5
Ravenna-Eckstein Community Center	69,386	4.4
Ballard Community Center	51,147	3.0
International District/Chinatown CC	51,113	3.2
High Point Community Center	50,397	2.8
Laurelhurst Community Center	46,035	4.2
South Park Community Center	44,799	3.2
Hiawatha Community Center	32,290	1.9
Belltown Community Center	8,350	1.3
Helene Madison Pool	832,018	47.8
Queen Anne Pool	556,759	42.3
Ballard Pool	503,190	39.4
Medgar Evers Pool	346,133	16.7
Green Lake Community Center and Pool	1,129,193	32.1
Rainier Beach Community Center and Pool	1,106,657	20.6
Meadowbrook Community Center/Pool	691,923	20.0
Southwest Teen Life Center and Pool	654,514	16.6

2016-2017 MUNICIPAL BUILDING PORTFOLIO ENERGY PERFORMANCE

Table 36. Total 2017 GHG emissions (lbCO₂e), rank ordered by carbon index.

Property name	Total carbon (lbCO ₂ e)	Carbon index (lbCO ₂ e/SF)
Montlake Community Center	147,450	9.1
Queen Anne Community Center	234,187	9.1
Jefferson Community Center	143,718	8.7
Miller Community Center	164,380	8.5
Delridge Community Center	147,351	8.3
Loyal Heights Community Center	237,245	8.0
Yesler Community Center	169,477	7.6
Garfield Community Center	133,850	6.7
Bitter Lake Community Center	137,386	6.7
Rainier Community Center	171,755	6.1
Van Asselt Community Center	99,874	5.5
Ravenna-Eckstein Community Center	69,386	4.4
Laurelhurst Community Center	46,035	4.2
International District/Chinatown CC	51,113	3.2
South Park Community Center	44,799	3.2
Ballard Community Center	51,147	3.0
High Point Community Center	50,397	2.8
Hiawatha Community Center	32,290	1.9
Belltown Community Center	8,350	1.3
Helene Madison Pool	832,018	47.8
Queen Anne Pool	556,759	42.3
Ballard Pool	503,190	39.4
Medgar Evers Pool	346,133	16.7
Green Lake Community Center and Pool	1,129,193	32.1
Rainier Beach Community Center and Pool	1,106,657	20.6
Meadowbrook Community Center/Pool	691,923	20.0
Southwest Teen Life Center and Pool	654,514	16.6

Carbon factors sources:

<https://portfoliomanager.energystar.gov/pdf/reference/Emissions.pdf>

<https://ghgdata.epa.gov/ghgp/service/html/2016?id=1002677&et=undefined>

<https://www.theclimateregistry.org/our-members/cris-public-reports/>