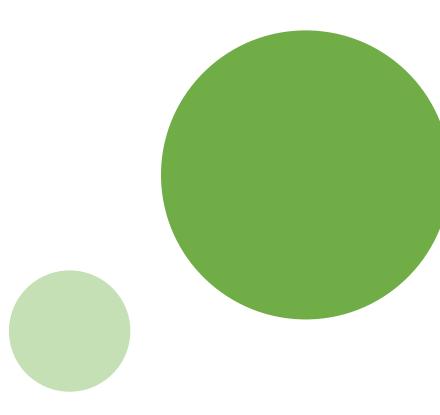


# City of Seattle Building Energy Performance and Carbon Emissions 2015-2016

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# Section I. Municipal Portfolio Energy Performance



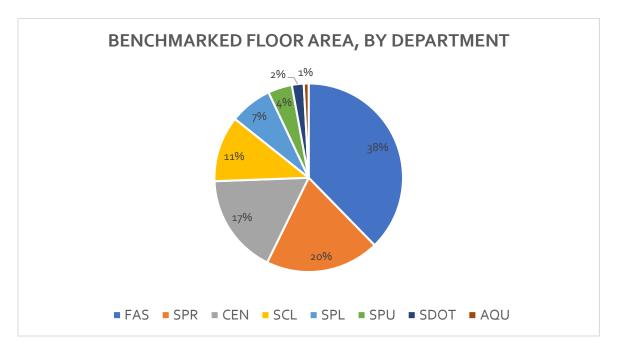
This report covers City-owned building energy use for calendar years 2015-2016. It includes:

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

For previous reports, see the 2014-2013 report <u>here</u>; the 2012-2013 report <u>here</u>; and the 2011-2012 report <u>here</u>.

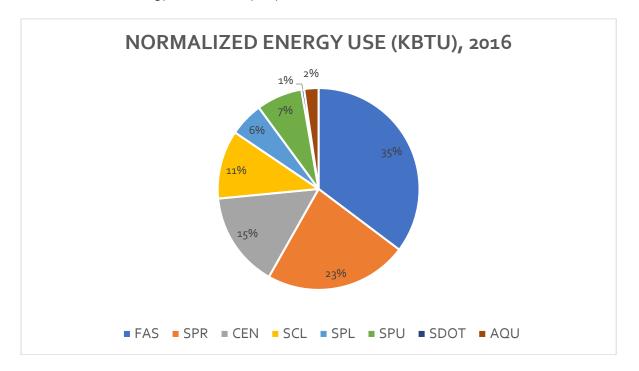
The City owns more than 650 buildings, totaling approximately 10 million square feet. These range from small storage sheds, to libraries, to the Seattle Municipal Tower, an office building of 1.4 million gross square feet. Offices, community facilities (e.g. performance halls and community centers), and operations support buildings make up the majority 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, benchmarked buildings account for 80% of the City's total building area. This report covers 8.2 million square feet of buildings with at least two years of consumption history and weather-normalized results.



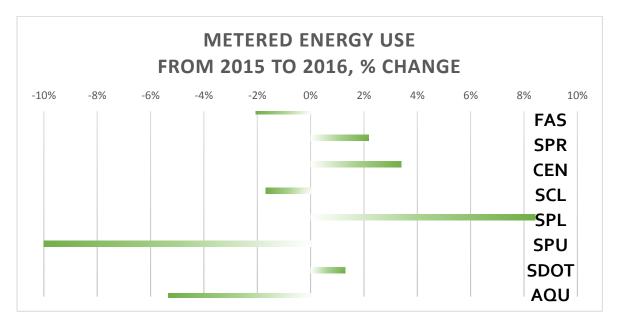
Normalized results were based on Portfolio Manager weather normalization<sup>1</sup> for all buildings except water treatment plants, which are normalized by the volume of water treated. The purpose of normalization is to see the changes in consumption if the weather, or volume of water treated, were held the same for the two periods being compared.

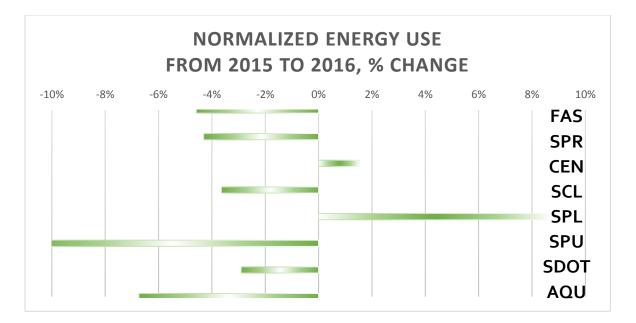
<sup>&</sup>lt;sup>1</sup> SeaTac weather was 2-3% colder in 2016 than in 2015 for the heating season, and 18-23% colder for the cooling season.



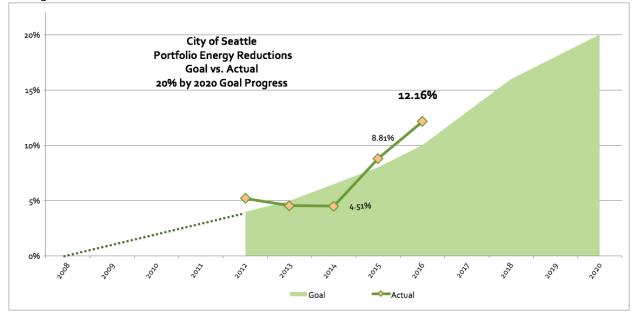
The total relative energy use in 2016 by department is shown below:

Adjusted for weather, energy use across the municipal portfolio declined by 3.68% from 2015 to 2016 (0.58%, as metered). Each department's year-over-year energy use is graphed below on a metered and normalized basis.

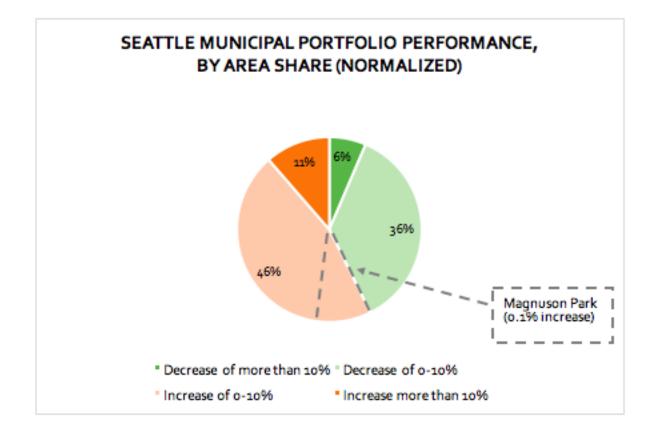




The City has the goal of reducing energy use across City-owned buildings 20% by 2020 (from 2008). Based on this analysis, we have achieved 12% reduction in energy use across the municipal portfolio through 2016.



Approximately 42% of the benchmarked portfolio saw reduced energy use, while 58% had increased energy use. The greater proportion of buildings showing increases in 2016 is a result, in part, of a steam leak on the Seattle Center Campus distribution system that caused increased consumption in part of 2016 and 2017. Performance testing in the Central Library and branch library construction projects also contributed to the increases. Additionally, the Magnuson Campus saw a very small increase in energy use from 2015 to 2016 (+0.1%), which because of its large area, represents a disproportionate impact on the overall portfolio. Meanwhile, Seattle Public Utilities had significantly improved performance at their water treatment plants, where a 16% reduction in the energy used to treat a gallon of water contributed significantly to the 3.68% annual reduction (normalized).



Year-over-year change in energy use by department – in kbtu, in % change, and as a proportion of the 3.68% normalized reduction in energy use across the municipal portfolio – can be seen in the table below.

DEPARTMENT	CHANGE IN ENERGY USE, (KBTU)	CHANGE IN ENERGY USE, %	PORTFOLIO IMPACT, %
FAS	-11,227,101	-4.59%	-1.76%
SPR	-6,832,917	-4.31%	-1.07%
CEN	+ 1,524,901	+1.53%	+0.24%
SCL	-2,745,514	-3.64%	-0.43%
SPL	+ 2,897,700	+8.71%	+0.45%
SPU	-5,990,084	-10.97%	-0.94%
SDOT	-88,128	-2.90%	-0.01%
AQU	-1,099,935	-6.74%	-0.17%
TOTAL	-23,561,078		-3.68%

#### NORMALIZED CHANGE IN ENERGY USE FROM 2015 TO 2016

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

DEPARTMENT	2015 TOTAL CARBON, (lbCO2e)	2016 TOTAL CARBON, (lbCO2e)	CHANGE IN CARBON, %	PORTFOLIO IMPACT, %
FAS	8,542,081	8,559,594	+0.21%	+0.06%
SPR	10,397,622	10,635,576	+2.29%	+0.86%
CEN	4,929,639	5,433,492	+10.22%	+1.82%
SCL	997,448	1,004,446	+0.70%	+0.03%
SPL	961,072	1,084,433	+12.84%	+0.45%
SPU	1,200,637	1,079,968	-10.05%	-0.44%
SDOT	59,054	53,005	-10.24%	-0.02%
AQU	611,011	608,339	-0.44%	-0.01%
TOTAL	27,698,564	28,458,854		2.74%

#### AS-METERED CHANGE IN CARBON EMISSIONS FROM 2015 TO 2016

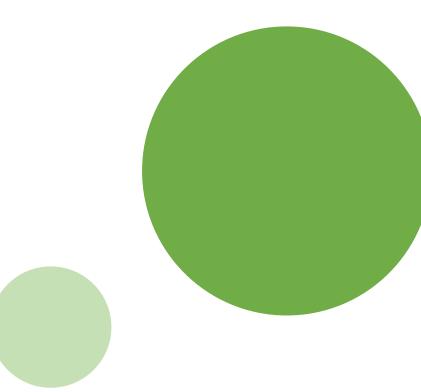
The as-metered carbon emissions (lbCO<sub>2</sub>) increased by 2.74% from 2015 to 2016. As discussed above, this increase is due almost entirely to non-routine gas increases at Seattle Center and Seattle Public Library, as well as pressure from LED conversions in spaces heated primarily by gas.

When normalized for weather, change in carbon decreased by 4.47%.

#### NORMALIZED CHANGE IN CARBON EMISSIONS FROM 2015 TO 2016

DEPARTMENT	2015 TOTAL CARBON, (lbCO2e)	2016 TOTAL CARBON, (lbCO2e)	CHANGE IN CARBON, %	PORTFOLIO IMPACT, %
FAS	10,247,490	9,530,314	-7.00%	-2.18%
SPR	12,740,035	11,893,025	-6.65%	-2.57%
CEN	5,530,731	5,838,781	+5.57%	+0.93%
SCL	1,157,098	1,104,825	-4.52%	-0.16%
SPL	1,135,964	1,231,137	+8.38%	+0.29%
SPU	1,401,769	1,186,592	-15.35%	-0.65%
SDOT	69,612	57,963	-16.73%	-0.04%
AQU	688,112	654,766	-4.85%	-0.10%
TOTAL	32,970,810	31,497,403		-4.47%

# Section 2. Detailed Analysis of Benchmarked Buildings



In addition to the 20 % reduction by 2020 goal, the City has a goal for the community to be carbon neutral by 2050. To help identify the largest and the most intensive sources of carbon emissions within the portfolio, we are also providing information on carbon emissions by total carbon emitted per building<sup>2</sup> and by pounds of carbon emitted/SF.<sup>3</sup> 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.

#### % change Property from 2015 2016 EUI, 2016 EUI, Dept **Property Name** GFA (ft<sup>2</sup>) to 2016, metered normalized normalized SCL 157 Roy Building 193% 111 111 12,122 FAS Airport Way Ctr - Bldg D 22,803 41% 38 34 CSC Fire Garage (C) FAS 20,000 37% 69 59 SPU Landsburg LOC Building 35% 146 146 4,514 SPL **Ballard Branch** 18,100 33% 85 91 SPL **High Point Branch** 24% 7,100 93 105 SPL **Beacon Hill Branch** 80 10,800 24% 87 SPR **Citywide Athletics** 22% 160 168 1,263 SCL Union St Substation 16,728 15% 28 27 SCL Newhalem Phantom Warehouse/Sickler 15% 61 14,400 74 SPL **Central Library** 13% 365,987 51 51 SPR Langston Hughes Performing Arts Center 30,890 12% 80 93 SPL Fremont Branch 6,840 12% 78 72 SCL System Operations Center 12% 27,744 193 193 SPL Montlake Branch 5,652 12% 77 84 FAS Fire Station 17 21,886 11% 100 93 **Broadview Branch** SPL 10% 56 62 15,000 84 SPL **Capitol Hill Branch** 10% 82 11,615 SPR **Belltown Community Center** 6,480 10% 23 25 SPL South Park Branch 9% 58 60 5,019 Ceder River Hatchery SPU 15,887 9% 67 77 SPR Amy Yee Tennis Center 66,597 9% 22 23 SPR 8% Yesler Community Center 112 22,347 99 SPR Loyal Heights Community Center 8% 61 29,732 55 FAS Fire Station 31 12,187 7% 80 87 SCL **Environmental Learning Center** 7% 34,992 54 59

#### 2016 BUILDING ENERGY PERFORMANCE, RANK ORDERED by % change

<sup>2</sup> Carbon factors for the purposes of this analysis are 0.034 per kWh of electricity, 11.7 per therm of gas, and 0.17 per KBTU of steam.

<sup>3</sup> This carbon index uses units of lbs CO2e/SF of building area. Most facilities that use fossil fuels will have a high carbon index.

FAS	Fire Headquarters	56,074	7%	02	101
SPL	Delridge Branch	5,600	6%	92 67	67
SPL	Rainier Beach Branch	15,000	5%	49	49
FAS	CSC Vehicle Maintenance (E)	68,359	5% 5%	49 109	49 118
SCL	Ross Powerhouse	121,630	5% 5%	49	
FAS	Benaroya Hall	189,750	5% 5%	49 77	53 78
FAS	Fire Station 16	7,441	5% 4%	// 51	-
SPR	Green Lake Community Center and Pool		3%	•	54 361
FAS	CSC Meter Shop (G)	35,143	3%	342 100	301 112
FAS	Fire Station 38	19,930	3%	88	
SPR	Horticulture building	9,137	3%	69	95
SPL	Magnolia Branch	12,294		-	77
FAS	-	7,000	3%	87	93
	Fire Station 24	4,936	2%	102	112
SPL	Queen Anne Branch	7,931	2%	53	58
FAS	Fire Station 13	5,605	2%	89	95
SPR	Garfield Community Center	20,050	2%	90	99
SCL	Newhalem Service Center-Machine Shop	17,600	2%	85	102
CEN	Central Plant	1,386,736	2%	70	72
SPR	Conservatory Campus	23,445	1%	255	287
SPR	Montlake Community Center	16,242	1%	67	77
SPR	Bitter Lake Community Center	20,595	1%	91	98
FAS	SE Seattle Community Health Center	27,492	1%	77	77
SPU	South Transfer Station	138,602	1%	40	40
SDOT	King Street Station	65,490	1%	29	31
SPL	Columbia Branch	12,420	о%	74	82
SCL	Gorge Powerhouse	29,369	0%	117	125
SPU	Watershed Education Center	9,864	٥%	84	92
FAS	Airport Way Ctr - Bldg A	99,122	٥%	146	147
SPR	Magnuson	564,258	٥%	33	37
SPR	Laurelhurst Community Center	11,003	0%	53	59
SCL	North Service Center	94,288	о%	101	106
FAS	North Precinct	16,434	о%	119	124
FAS	Southwest Precinct	28,303	-1%	124	128
FAS	South Precinct	12,603	-1%	115	122
CEN	Blue Spruce	14,036	-1%	26	28
SPR	Medgar Evers Pool	20,740	-1%	249	262
SPL	University Branch	8,140	-1%	77	86
SPR	Southwest Teen Life Center and Pool	39,333	-1%	205	218
SPR	Meadowbrook Community Center/Pool	34,639	-1%	234	247
SPL	West Seattle Branch	9,460	-1%	74	81
SPR	Queen Anne Pool	13,157	-2%	438	460
SPR	Helene Madison Pool	17,407	-2%	525	548
FAS	City Hall	180,495	-2%	73	77

FAS	Fire Station 28 (New)	14,031	-2%	82	90
SPR	Ravenna-Eckstein Community Center	15,814	-2%	42	48
SDOT	Street Car Maintenance	9,428	-3%	68	71
SPR	Central West HQ / Brown Bear	13,661	-3%	37	41
SCL	Boundary Project	111,858	-3%	116	124
FAS	Airport Way Ctr - Bldg B	16,725	-3%	51	58
SPL	Lake City Branch	20,017	-3%	65	70
FAS	Justice Center	298,278	-3%	71	74
SPR	Central East Headquarters	6,238	-3%	73	76
SPL	Green Lake Branch	8,090	-3%	67	76
FAS	Fire Station 40	6,639	-3%	71	80
SPR	Seattle Asian Art Museum	53,776	-3%	66	73
FAS	West Precinct	57,417	-4%	211	219
SPR	Queen Anne Community Center	25,809	-4%	90	101
FAS	Airport Way Ctr - Bldg E	23,100	-4%	187	201
SPR	MOHAI	43,000	-4%	176	185
FAS	Fire Station 26	5,427	-5%	96	96
SPL	Southwest Branch	15,000	-5%	52	56
FAS	Animal Control	10,868	-5%	161	176
CEN	West Court Building	10,596	-5%	34	39
SPL	North East Branch	15,000	-5%	63	70
SPR	Ballard Pool	12,769	-6%	401	421
SPR	Hiawatha Community Center	17,190	-6%	59	65
SPR	Van Asselt Community Center	18,258	-6%	63	71
SPL	Greenwood Branch	12,806	-6%	85	90
FAS	Fire Station 21 (New)	8,654	-6%	68	73
FAS	Fire Station 35 (New)	11,968	-6%	66	72
FAS	Joint Training Facilities Campus	57,952	-6%	53	58
FAS	Seattle Municipal Tower (2030)	1,209,771	-6%	51	51
SPL	Douglass-Truth Branch	16,493	-7%	66	70
AQU	Seattle Aquarium	69,400	-7%	214	220
SCL	North Substation	25,978	-7%	43	47
FAS	Haller Lake Vehicle Maintenance	26,994	-7%	114	123
SCL	Canal Substation	13,914	-7%	122	138
FAS	Airport Way Ctr - Bldg C	160,447	-7%	52	54
FAS	Fire Station 39 (New)	11,285	-7%	57	63
SPR	High Point Community Center	18,261	-7%	51	56
SPR	Genesee/SC SE HQ	15,398	-8%	25	27
FAS	CSC Engineering (A)	20,424	-8%	137	, 155
FAS	East Precinct	36,280	-8%	116	124
SPR	Westbridge	113,780	-8%	31	35
SPU	OCC Complex	87,459	-8%	97	106
SPR	Miller Community Center	19,273	-8%	47	55
<b>-</b>		-71-15	5,0	+/	, CC

LVC	Fire Station (a	- 66 /	004	100	100
FAS FAS	Fire Station 41 Fire Station 02	5,664	-8%	103 80	109 86
SCL		38,939	-9%		
SPR	SCL SSC Building A	180,725	-9%	52	56
	Densmore/NW NC HQ	19,246	-9%	27	30
SPR	International district/Chinatown CC	16,000	-10%	59	66
FAS	Fire Station 34	5,861	-10%	79	87
SPR	Jefferson Community Center	16,447	-11%	112	125
SCL	SCL SSC Building B	70,320	-11%	56	62
SPR	Northgate Campus	30,498	-12%	80	87
FAS	Fire Station 33	5,974	-13%	98	105
FAS	Fire Station 37	9,375	-13%	86	95
FAS	Fire Station 10/FAC/EOC	71,974	-13%	130	133
FAS	SDOT Traffic Shop	41,939	-14%	43	47
SCL	Broad St Substation	23,802	-14%	166	166
FAS	Fire Station 36	5,876	-14%	79	85
SPR	Magnuson, Building 67, mountaineers	29,275	-15%	34	38
SPR	South Park Community Center	14,101	-16%	51	56
SCL	Newhalem Service Center-Warehouse/Mezz	17,747	-17%	21	24
SPR	Rainier Beach Community Center and Pool	53,775	-17%	225	231
FAS	Fire Station 14	18,436	-17%	95	106
SPR	Dexter Building	7,381	-18%	167	186
SCL	Diablo Powerhouse	22,695	-19%	163	181
FAS	Fire Station og (New)	9,424	-20%	62	67
FAS	Fire Station 11	6,191	-20%	91	99
FAS	Fire Station o6 (New)	11,685	-21%	73	83
SPR	Delridge Community Center	17,693	-22%	82	92
SDOT	Fairview Building	8,488	-26%	26	30
FAS	Fire Station 25	17,991	-27%	75	84
SPU	Old South Transfer Station	20,000	-27%	25	25
SPR	Ballard Community Center	16,795	-27%	56	59
FAS	Fire Station o8	8,273	-27%	62	68
FAS	Central Area Motivation Program	13,632	-28%	62	69
FAS	Fire Station 27	6,570	-32%	66	75
SPR	Rainier Community Center	28,384	-32%	75	82
SPU	, DWW-SOC 4500 W. Marginal Way SW	37,460	-33%	40	43
SCL	SCL Roy Street Warehouse	53,944	-40%	8	8
FAS	Fire Station 22 (Old)	3,830	-67%	16	16
FAS	Fire Station 32 (Old)	8,732	-73%	24	24
SCL	Georgetown Steamplant	39,212	-91%	24	24
JCL		271212	51/0	2	2

Below, all buildings in the City's portfolio are ranked first by TOTAL CARBON (IbCO2e) and then by CARBON INDEX (IbCO2e/SF).

DEPT	PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (IbCO2e/SF)
CEN	Central Plant	5,402,632	3.9
SPR	Magnuson	1,159,522	2.1
SPR	Green Lake Community Center and Pool	1,147,850	32.7
SPR	Rainier Beach Community Center and Pool	986,419	18.3
FAS	Benaroya Hall	892,623	4.7
SPR	Helene Madison Pool	797,474	45.8
FAS	Justice Center	751,560	2.5
SPR	Meadowbrook Community Center/Pool	667,054	19.3
FAS	West Precinct	625,391	10.9
FAS	Seattle Municipal Tower (2030)	615,762	0.5
SPR	Southwest Teen Life Center and Pool	615,650	15.7
FAS	City Hall	611,017	3.4
AQU	Seattle Aquarium	608,339	8.8
SPU	OCC Complex	575,338	6.6
SPR	Conservatory Campus	564,308	24.1
SPR	Queen Anne Pool	482,849	36.7
SPR	MOHAI	476,832	11.1
SPR	Ballard Pool	469,772	36.8
FAS	CSC Vehicle Maintenance (E)	427,168	6.2
FAS	Fire Headquarters	397,038	7.1
FAS	Fire Station 10/FAC/EOC	352,157	4.9
SCL	North Service Center	349,209	3.7
FAS	Airport Way Ctr - Bldg E	337,597	14.6
SPR	Medgar Evers Pool	335,923	16.2
FAS	Airport Way Ctr - Bldg A	326,924	3.3
SPL	The Seattle Public Library - Central Library	303,898	0.8
FAS	Haller Lake Vehicle Maintenance	265,649	9.8
SPR	Westbridge	260,837	2.3
SPR	Seattle Asian Art Museum	260,800	4.8
FAS	CSC Engineering (A)	239,385	11.7
SPR	Langston Hughes Performing Arts Center	227,649	7.4
FAS	Airport Way Ctr - Bldg C	225,340	1.4
FAS	Joint Training Facilities Campus	203,926	3.5

#### 2016 BUILDING EMISSIONS, RANK ORDERED BY TOTAL CARBON

FAS	Southwest Precinct	102 / 2/	6.8
FAS	Fire Station 02	193,434 180,386	4.6
SPR	Queen Anne Community Center	178,339	4.0 6.9
SPR	Yesler Community Center	174,724	7.8
SPR	Northgate	170,933	7.0 5.6
SCL	SCL SSC Building A	165,444	0.9
FAS	CSC Meter Shop (G)	141,811	7.1
SPR	Bitter Lake Community Center	140,186	6.8
FAS	East Precinct	135,341	3.7
FAS	Fire Station 17	134,097	6.1
SPR	Garfield Community Center	129,837	6.5
SCL	Boundary Project	129,690	1.2
SPR	Loyal Heights Community Center	120,376	4.0
SPR	Rainier Community Center	119,617	4.2
FAS	Fire Station 25	117,052	6.5
FAS	Fire Station 14	113,240	6.1
SPR	Delridge Community Center	112,616	6.4
SPR	Jefferson Community Center	111,873	6.8
FAS	Animal Control	110,507	10.2
FAS	SDOT Traffic Shop	103,812	2.5
SPR	Miller Community Center	103,174	5.4
SPR	Dexter Building	100,518	13.6
SPR	Van Asselt Community Center	88,606	4.9
SPR	Magnuson, Building 67, mountaineers	81,513	2.8
FAS	CSC Fire Garage (C)	80,397	4.0
SPL	The Seattle Public Library - Ballard Branch	79,876	' 4.4
SPR	Montlake Community Center	79,449	4.9
SPU	DWW-SOC 4500 W. Marginal Way SW	78,015	2.1
SPR	International district/Chinatown CC	68,752	4.3
FAS	Fire Station 31	65,807	5.4
FAS	Fire Station o6 (New)	62,413	5.3
FAS	Central Area Motivation Program	61,030	4.5
FAS	Airport Way Ctr - Bldg B	60,296	3.6
SPL	The Seattle Public Library - Lake City Branch	59,681	3.0
SCL	Ross Powerhouse	59,331	0.5
SPL	The Seattle Public Library - Columbia Branch	55,552	4.5
SPL	The Seattle Public Library - Greenwood Branch	55,169	4.3
SPU	South Transfer Station	54,754	0.4
SPL	The Seattle Public Library - North East Branch	54,093	3.6
SCL	System Operations Center	53,558	1.9
SPR	Ravenna-Eckstein Community Center	53,125	3.4
SPR	Ballard Community Center	51,576	3.1
SPL	The Seattle Public Library - Douglass-Truth Branch	51,165	3.1

FAS	Fire Station 37	50 107	5.0
SPL	The Seattle Public Library - Broadview Branch	50,107	5.3
FAS	Fire Station 35 (New)	49,392	3.3
FAS	Fire Station 28 (New)	48,513	4.1
SPR	South Park Community Center	48,171	3.4
FAS	Airport Way Ctr - Bldg D	46,849	3.3
FAS	Fire Station o8	45,138	2.0
SPR		44,469	5.4
SPR	Laurelhurst Community Center Horticulture building	43,919	4.0
SPR	5	43,323	3.5
	The Seattle Public Library - University Branch	43,114	5.3
SPL	The Seattle Public Library - Beacon Hill Branch	42,310	3.9
FAS	Fire Station 33	42,298	7.1
FAS	Fire Station 11	41,997	6.8
SPR	High Point Community Center	41,391	2.3
SPL	The Seattle Public Library - West Seattle Branch	39,995	4.2
SCL	Broad St Substation	39,401	1.7
SCL	SCL SSC Building B	39,287	0.6
SPL	The Seattle Public Library - Southwest Branch	39,226	2.6
FAS	Fire Station og (New)	39,151	4.2
FAS	Fire Station 40	37,804	5.7
FAS	Fire Station 26	37,079	6.8
SCL	Diablo Powerhouse	36,869	1.6
SPL	The Seattle Public Library - Green Lake Branch	36,216	4.5
FAS	Fire Station 27	35,667	5.4
SPL	The Seattle Public Library - High Point Branch	34,956	4.9
FAS	Fire Station 38	34,881	3.8
SCL	Gorge Powerhouse	34,328	1.2
FAS	Fire Station 41	31,941	5.6
SPR	Densmore/NW NC HQ	30,883	1.6
SPL	The Seattle Public Library - Fremont Branch	30,548	4.5
FAS	Fire Station 34	30,161	5.1
FAS	Fire Station 39 (New)	29,341	2.6
SPL	The Seattle Public Library - Magnolia Branch	28,981	4.1
SPR	Hiawatha Community Center	28,720	1.7
SPL	The Seattle Public Library - Queen Anne Branch	28,064	3.5
FAS	Fire Station 21 (New)	27,989	3.2
CEN	West Court Building	27,287	2.6
SDOT	Fairview Building	25,519	3.0
FAS	SE Seattle Community Health Center	21,089	0.8
FAS	Fire Station 13	20,210	3.6
SPL	The Seattle Public Library - Montlake Branch	19,986	3.5
FAS	North Precinct	19,501	1.2
SPR	Central East Headquarters	19,182	3.1

SDOT	King Street Station	19,045	0.3
SCL	Environmental Learning Center	18,746	0.5
SPL	The Seattle Public Library - Capitol Hill Branch	18,229	1.6
SCL	Canal Substation	16,942	1.2
SPR	Genesee/SC SE HQ	15,677	1.0
SCL	Newhalem Service Center- Machine Shop & Mezz	15,037	0.9
FAS	South Precinct	14,479	1.1
SPR	Amy Yee Tennis Center	14,417	0.2
SCL	157 Roy Building	13,422	1.1
SCL	North Substation	11,144	0.4
SPU	Cedar River Hatchery	10,633	0.7
FAS	Fire Station 16	10,476	, 1.4
SCL	Newhalem Phantom Warehouse/Sickler Bldg	8,826	0.6
SDOT	Street Car Maintenance	, 8,442	0.9
SPU	Watershed Education Center	8,308	0.8
SPL	The Seattle Public Library - Rainier Beach Branch	7,336	0.5
SPU	Landsburg LOC Building	6,584	1.5
FAS	Fire Station 24	6,192	1.3
SPR	Belltown Community Center	6,018	0.9
SPR	Central West HQ / Brown Bear	5,027	0.4
SPU	Old South Transfer Station	4,906	0.2
FAS	Fire Station 36	4,622	0.8
SCL	Union St Substation	4,504	0.3
FAS	Fire Station 32 (Old)	4,484	0.5
SCL	SCL Roy Street Warehouse	4,305	0.1
SPL	The Seattle Public Library - Delridge Branch	3,732	0.7
SCL	Newhalem Service Center- Warehouse & Mezz	3,679	0.2
CEN	Blue Spruce	3,573	0.3
SPL	The Seattle Public Library - South Park Branch	2,913	0.6
FAS	Fire Station 22 (Old)	2,671	0.7
SPR	Citywide Athletics	2,017	1.6
SCL	Georgetown Steamplant	724	0.0

# 2016 BUILDING EMISSIONS, RANK ORDERED BY CARBON INDEX

DEPT	PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (IbCO2e/SF)
SPR	Helene Madison Pool	797,474	45.8
SPR	Ballard Pool	469,772	36.8
SPR	Queen Anne Pool	482,849	36.7
SPR	Green Lake Community Center and Pool	1,147,850	32.7

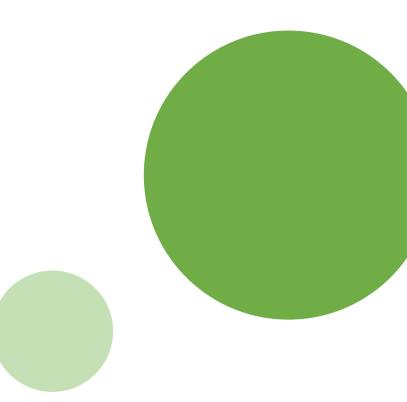
SPR	Conservatory Campus	564,308	2/1
SPR	Meadowbrook Community Center/Pool	667,054	24.1 19.3
SPR	Rainier Beach Community Center and Pool	986,419	19.3 18.3
SPR	Medgar Evers Pool	335,923	16.2
SPR	Southwest Teen Life Center and Pool	535,9 <del>2</del> 3 615,650	15.7
FAS	Airport Way Ctr - Bldg E	337,597	14.6
SPR	Dexter Building	100,518	13.6
FAS	CSC Engineering (A)	239,385	13.0
SPR	MOHAI	476,832	11.1
FAS	West Precinct	625,391	10.9
FAS	Animal Control	110,507	10.2
FAS	Haller Lake Vehicle Maintenance	265,649	9.8
AQU	Seattle Aquarium	608,339	8.8
SPR	Yesler Community Center	174,724	7.8
SPR	Langston Hughes Performing Arts Center	227,649	7.4
FAS	CSC Meter Shop (G)	141,811	7.1
FAS	Fire Headquarters	397,038	7.1
FAS	Fire Station 33	42,298	7.1
SPR	Queen Anne Community Center	178,339	6.9
FAS	Southwest Precinct	193,434	6.8
FAS	Fire Station 26	37,079	6.8
SPR	Bitter Lake Community Center	140,186	6.8
SPR	, Jefferson Community Center	111,873	6.8
FAS	, Fire Station 11	41,997	6.8
SPU	OCC Complex	575,338	6.6
FAS	Fire Station 25	117,052	6.5
SPR	Garfield Community Center	129,837	6.5
SPR	Delridge Community Center	112,616	6.4
FAS	CSC Vehicle Maintenance (E)	427,168	6.2
FAS	Fire Station 14	113,240	6.1
FAS	Fire Station 17	134,097	6.1
FAS	Fire Station 40	37,804	5.7
FAS	Fire Station 41	31,941	5.6
SPR	Northgate	170,933	5.6
FAS	Fire Station 27	35,667	5.4
FAS	Fire Station 31	65,807	5.4
FAS	Fire Station o8	44,469	5.4
SPR	Miller Community Center	103,174	5.4
FAS	Fire Station 37	50,107	5.3
FAS	Fire Station o6 (New)	62,413	5.3
SPL	The Seattle Public Library - University Branch	43,114	5.3
FAS	Fire Station 34	30,161	5.1
SPL	The Seattle Public Library - High Point Branch	34,956	4.9

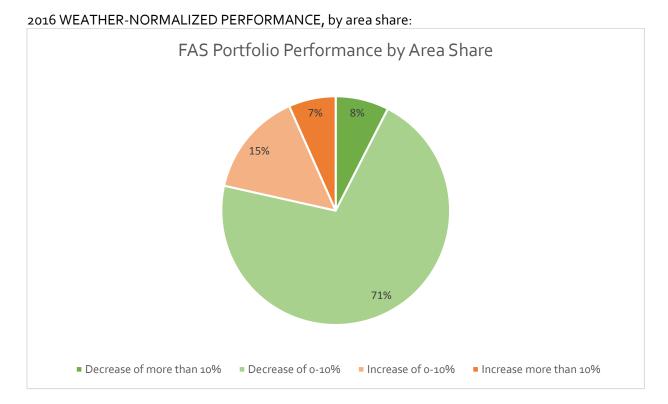
FAS	Fire Station 10/FAC/EOC	252 157	6.0
SPR	Montlake Community Center	352,157 79,449	4·9 4·9
SPR	Van Asselt Community Center	88,606	4.9 4.9
SPR	Seattle Asian Art Museum	260,800	4.9 4.8
FAS	Benaroya Hall	892,623	4.0
FAS	Fire Station 02	180,386	4.7 4.6
FAS	Central Area Motivation Program	61,030	4.0
SPL	The Seattle Public Library - Green Lake Branch	36,216	4.5
SPL	The Seattle Public Library - Columbia Branch	55,552	4.5
SPL	The Seattle Public Library - Fremont Branch	30,548	4.5
SPL	The Seattle Public Library - Ballard Branch	79,876	4.4
SPL	The Seattle Public Library - Greenwood Branch	55,169	4.4
SPR	International district/Chinatown CC	68,752	4.3
SPL	The Seattle Public Library - West Seattle Branch	39,995	4.2
SPR	Rainier Community Center	119,617	4.2
FAS	Fire Station 09 (New)	39,151	4.2
SPL	The Seattle Public Library - Magnolia Branch	28,981	4.2
FAS	Fire Station 35 (New)	48,513	4.1 4.1
SPR	Loyal Heights Community Center	120,376	4.± 4.0
FAS	CSC Fire Garage (C)	80,397	4.0 4.0
SPR	Laurelhurst Community Center	43,919	4.0 4.0
SPL	The Seattle Public Library - Beacon Hill Branch	42,310	3.9
CEN	Central Plant	5,402,632	3.9
FAS	Fire Station 38	34,881	3.8
FAS	East Precinct	135,341	3.7
SCL	North Service Center	349,209	3.7
SPL	The Seattle Public Library - North East Branch	54,093	3.6
FAS	Fire Station 13	20,210	3.6
FAS	Airport Way Ctr - Bldg B	60,296	3.6
SPL	The Seattle Public Library - Queen Anne Branch	28,064	3.5
SPL	The Seattle Public Library - Montlake Branch	19,986	3.5
SPR	Horticulture building	43,323	3.5
FAS	Joint Training Facilities Campus	203,926	3.5
FAS	Fire Station 28 (New)	48,171	3.4
FAS	City Hall	611,017	3.4
SPR	Ravenna-Eckstein Community Center	53,125	3.4
SPR	South Park Community Center	46,849	3.3
FAS	Airport Way Ctr - Bldg A	326,924	3.3
SPL	The Seattle Public Library - Broadview Branch	49,392	3.3
FAS	Fire Station 21 (New)	27,989	3.2
SPL	The Seattle Public Library - Douglass-Truth Branch	51,165	3.1
SPR	Central East Headquarters	19,182	3.1
SPR	Ballard Community Center	51,576	3.1
		5-101-	J.=

SDOT	Fairview Building	25,519	3.0
SPL	The Seattle Public Library - Lake City Branch	59,681	3.0
SPR	Magnuson, Building 67, mountaineers	81,513	2.8
SPL	The Seattle Public Library - Southwest Branch	39,226	2.6
FAS	Fire Station 39 (New)	29,341	2.6
CEN	West Court Building	27,287	2.6
FAS	Justice Center	751,560	2.5
FAS	SDOT Traffic Shop	103,812	2.5
SPR	Westbridge	260,837	2.3
SPR	High Point Community Center	41,391	2.3
SPU	DWW-SOC 4500 W. Marginal Way SW	78,015	2.1
SPR	Magnuson	1,159,522	2.1
FAS	Airport Way Ctr - Bldg D	45,138	2.0
SCL	System Operations Center	53,558	1.9
SPR	Hiawatha Community Center	28,720	1.7
SCL	, Broad St Substation	,, 39,401	, 1.7
SCL	Diablo Powerhouse	36,869	, 1.6
SPR	Densmore/NW NC HQ	30,883	1.6
SPR	Citywide Athletics	2,017	1.6
SPL	The Seattle Public Library - Capitol Hill Branch	18,229	1.6
SPU	Landsburg LOC Building	6,584	1.5
FAS	Fire Station 16	10,476	1.4
FAS	Airport Way Ctr - Bldg C	225,340	1.4
FAS	Fire Station 24	6,192	1.3
SCL	Canal Substation	16,942	1.2
FAS	North Precinct	19,501	1.2
SCL	Gorge Powerhouse	34,328	1.2
SCL	Boundary Project	129,690	1.2
FAS	South Precinct	14,479	1.1
SCL	157 Roy Building	13,422	1.1
SPR	Genesee/SC SE HQ	15,677	1.0
SPR	Belltown Community Center	6,018	0.9
SCL	SCL SSC Building A	165,444	0.9
SDOT	Street Car Maintenance	8,442	0.9
SCL	Newhalem Service Center- Machine Shop & Mezz	15,037	0.9
SPU	Watershed Education Center	8,308	0.8
SPL	The Seattle Public Library - Central Library	303,898	0.8
FAS	Fire Station 36	4,622	0.8
FAS	SE Seattle Community Health Center	21,089	0.8
FAS	Fire Station 22 (Old)	2,671	0.7
SPU	Cedar River Hatchery	10,633	0.7
SPL	The Seattle Public Library - Delridge Branch	3,732	0.7
SCL	Newhalem Phantom Warehouse/Sickler Bldg	8,826	0.6

SPL	The Seattle Public Library - South Park Branch	2,913	0.6
SCL	SCL SSC Building B	39,287	0.6
SCL	Environmental Learning Center	18,746	0.5
FAS	Fire Station 32 (Old)	4,484	0.5
FAS	Seattle Municipal Tower (2030)	615,762	0.5
SPL	The Seattle Public Library - Rainier Beach Branch	7,336	0.5
SCL	Ross Powerhouse	59,331	0.5
SCL	North Substation	11,144	0.4
SPU	South Transfer Station	54,754	0.4
SPR	Central West HQ / Brown Bear	5,027	0.4
SDOT	King Street Station	19,045	0.3
SCL	Union St Substation	4,504	0.3
CEN	Blue Spruce	3,573	0.3
SPU	Old South Transfer Station	4,906	0.2
SPR	Amy Yee Tennis Center	14,417	0.2
SCL	Newhalem Service Center- Warehouse & Mezz	3,679	0.2
SCL	SCL Roy Street Warehouse	4,305	0.1
SCL	Georgetown Steamplant	724	0.0

# Section 3. Analysis of Building Performance by Department





### FINANCE AND ADMINISTRATIVE SERVICES

#### % change from 2015 2016 EUI, 2016 EUI, Property **Property Name** GFA (ft<sup>2</sup>) to 2016, metered normalized normalized Airport Way Ctr - Bldg D 22,803 41% 34 38 CSC Fire Garage (C) 37% 20,000 69 59 Fire Station 17 21,886 11% 93 100 Fire Station 31 12,187 7% 80 87 **Fire Headquarters** 56,074 7% 92 101 CSC Vehicle Maintenance (E) 68,359 5% 118 109 Benaroya Hall 5% 78 189,750 77 Fire Station 16 4% 7,441 51 54 CSC Meter Shop (G) 3% 100 112 19,930 Fire Station 38 88 3% 9,137 95 Fire Station 24 2% 4,936 102 112 Fire Station 13 2% 5,605 89 95 SE Seattle Community Health Center 1% 27,492 77 77 Airport Way Ctr - Bldg A о% 99,122 146 147 North Precinct 16,434 о% 119 124 Southwest Precinct 28,303 -1% 124 128

#### 2016 BUILDING ENERGY PERFORMANCE, by % change

South Precinct	12,603	-1%	115	122
City Hall	180,495	-2%	73	77
Fire Station 28 (New)	14,031	-2%	82	90
Airport Way Ctr - Bldg B	16,725	-3%	51	58
Justice Center	298,278	-3%	71	74
Fire Station 40	6,639	-3%	71	80
West Precinct	57,417	-4%	211	219
Airport Way Ctr - Bldg E	23,100	-4%	187	201
Fire Station 26	5,427	-5%	96	96
Animal Control	10,868	-5%	161	176
Fire Station 21 (New)	8,654	-6%	68	73
Fire Station 35 (New)	11,968	-6%	66	72
Joint Training Facilities Campus	57,952	-6%	53	58
Seattle Municipal Tower (2030)	1,209,771	-6%	51	51
Haller Lake Vehicle Maintenance	26,994	-7%	114	123
Airport Way Ctr - Bldg C	160,447	-7%	52	54
Fire Station 39 (New)	11,285	-7%	57	63
CSC Engineering (A)	20,424	-8%	137	155
East Precinct	36,280	-8%	116	124
Fire Station 41	5,664	-8%	103	109
Fire Station 02	38,939	-9%	80	86
Fire Station 34	5,861	-10%	79	87
Fire Station 33	5,974	-13%	98	105
Fire Station 37	9,375	-13%	86	95
Fire Station 10/FAC/EOC	71,974	-13%	130	133
SDOT Traffic Shop	41,939	-14%	43	47
Fire Station 36	5,876	-14%	79	85
Fire Station 14	18,436	-17%	95	106
Fire Station og (New)	9,424	-20%	62	67
Fire Station 11	6,191	-20%	91	99
Fire Station o6 (New)	11,685	-21%	73	83
Fire Station 25	17,991	-27%	75	84
Fire Station o8	8,273	-27%	62	68
Central Area Motivation Program	13,632	-28%	62	69
Fire Station 27	6,570	-32%	66	75
Fire Station 22 (Old)	3,830	-67%	16	16
Fire Station 32 (Old)	8,732	-73%	24	24

# 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Demorrou a Hall	800 600	<i>.</i> -
Benaroya Hall Justice Center	892,623	4.7
West Precinct	751,560	2.5
Seattle Municipal Tower (2030)	625,391 615,762	10.9
City Hall		0.5
	611,017	3.4 6.2
CSC Vehicle Maintenance (E)	427,168	
Fire Headquarters Fire Station 10/FAC/EOC	397,038	7.1
Airport Way Ctr - Bldg E	352,157	4.9
Airport Way Ctr - Bldg A	337,597 326,924	14.6
Haller Lake Vehicle Maintenance		3.3 9.8
CSC Engineering (A)	265,649	-
Airport Way Ctr - Bldg C	239,385 225,340	11.7
Joint Training Facilities Campus	225,340 203,926	1.4
Southwest Precinct		3.5 6.8
Fire Station 02	193,434 180,386	4.6
CSC Meter Shop (G)	141,811	7.1
East Precinct	135,341	3.7
Fire Station 17	134,097	6.1
Fire Station 25	117,052	6.5
Fire Station 14	113,240	6.1
Animal Control	110,507	10.2
SDOT Traffic Shop	103,812	2.5
CSC Fire Garage (C)	80,397	4.0
Fire Station 31	65,807	5.4
Fire Station of (New)	62,413	5.3
Central Area Motivation Program	61,030	4.5
Airport Way Ctr - Bldg B	60,296	3.6
Fire Station 37	50,107	5.3
Fire Station 35 (New)	48,513	4.1
Fire Station 28 (New)	48,171	3.4
Airport Way Ctr - Bldg D	45,138	2.0
Fire Station o8	44,469	5.4
Fire Station 33	42,298	7.1
Fire Station 11	41,997	6.8
Fire Station og (New)	39,151	4.2
Fire Station 40	37,804	5.7

Fire Station 26	37,079	6.8
Fire Station 27	35,667	5.4
Fire Station 38	34,881	3.8
Fire Station 41	31,941	5.6
Fire Station 34	30,161	5.1
Fire Station 39 (New)	29,341	2.6
Fire Station 21 (New)	27,989	3.2
SE Seattle Community Health Center	21,089	0.8
Fire Station 13	20,210	3.6
North Precinct	19,501	1.2
South Precinct	14,479	1.1
Fire Station 16	10,476	1.4
Fire Station 24	6,192	1.3
Fire Station 36	4,622	0.8
Fire Station 32 (Old)	4,484	0.5
Fire Station 22 (Old)	2,671	0.7

# 2016 BUILDING EMISSIONS, by Carbon Index:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Airport Way Ctr - Bldg E	227 507	1/6
, , ,	337,597	14.6
CSC Engineering (A)	239,385	11.7
West Precinct	625,391	10.9
Animal Control	110,507	10.2
Haller Lake Vehicle Maintenance	265,649	9.8
CSC Meter Shop (G)	141,811	7.1
Fire Headquarters	397,038	7.1
Fire Station 33	42,298	7.1
Southwest Precinct	193,434	6.8
Fire Station 26	37,079	6.8
Fire Station 11	41,997	6.8
Fire Station 25	117,052	6.5
CSC Vehicle Maintenance (E)	427,168	6.2
Fire Station 14	113,240	6.1
Fire Station 17	134,097	6.1
Fire Station 40	37,804	5.7
•	571 - 1	57

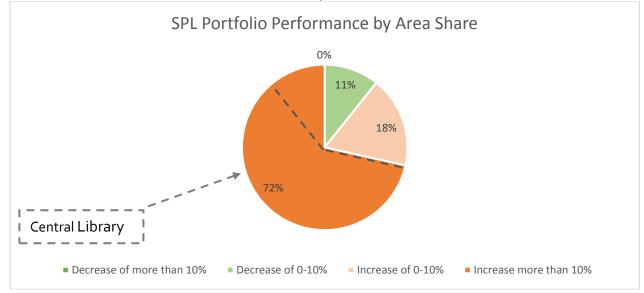
Fire Station 41	31,941	5.6
Fire Station 27	35,667	5.4
Fire Station 31	65,807	5.4
Fire Station o8	44,469	5.4
Fire Station 37	50,107	5.3
Fire Station o6 (New)	62,413	5.3
Fire Station 34	30,161	5.1
Fire Station 10/FAC/EOC	352,157	4.9
Benaroya Hall	892,623	4.7
Fire Station 02	180,386	4.6
Central Area Motivation Program	61,030	4.5
Fire Station 09 (New)	39,151	4.2
Fire Station 35 (New)	48,513	4.1
CSC Fire Garage (C)	80,397	4.0
Fire Station 38	34,881	3.8
East Precinct	135,341	3.7
Fire Station 13	20,210	3.6
Airport Way Ctr - Bldg B	60,296	3.6
Joint Training Facilities Campus	203,926	3.5
Fire Station 28 (New)	48,171	3.4
City Hall	611,017	3.4
Airport Way Ctr - Bldg A	326,924	3.3
Fire Station 21 (New)	27,989	3.2
Fire Station 39 (New)	29,341	2.6
Justice Center	751,560	2.5
SDOT Traffic Shop	103,812	2.5
Airport Way Ctr - Bldg D	45,138	2.0
Fire Station 16	10,476	1.4
Airport Way Ctr - Bldg C	225,340	1.4
Fire Station 24	6,192	1.3
North Precinct	19,501	1.2
South Precinct	14,479	1.1
Fire Station 36	4,622	0.8
SE Seattle Community Health Center	21,089	0.8
Fire Station 22 (Old)	2,671	0.7
Fire Station 32 (Old)	4,484	0.5
Seattle Municipal Tower (2030)	615,762	0.5

#### SEATTLE PUBLIC LIBRARIES

#### A NOTE ABOUT THIS DEPARTMENT:

Seattle Public Libraries had a number of branch construction projects during the year, and ran the Central Library under 24 hour operations in the 4<sup>th</sup> quarter as part of their retro-commissioning assessment.

#### 2016 WEATHER-NORMALIZED PERFORMANCE, by area share:



Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
Ballard Branch	18,100	33%	85	91
High Point Branch	7,100	24%	93	105
Beacon Hill Branch	10,800	24%	80	87
Central Library	365,987	13%	51	51
Fremont Branch	6,840	12%	72	78
Montlake Branch	5,652	12%	77	84
Broadview Branch	15,000	10%	56	62
Capitol Hill Branch	11,615	10%	82	84
South Park Branch	5,019	9%	58	60
Delridge Branch	5,600	6%	67	67
Rainier Beach Branch	15,000	5%	49	49
Magnolia Branch	7,000	3%	87	93
Queen Anne Branch	7,931	2%	53	58
Columbia Branch	12,420	٥%	74	82

#### 2016 BUILDING ENERGY PERFORMANCE, by % change:

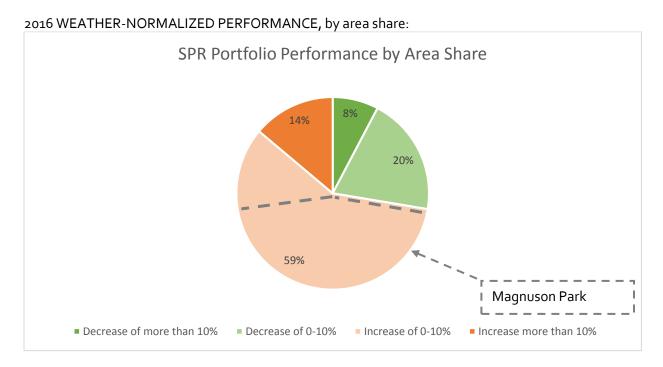
University Branch	8,140	-1%	77	86
West Seattle Branch	9,460	-1%	74	81
Lake City Branch	20,017	-3%	65	70
Green Lake Branch	8,090	-3%	67	76
Southwest Branch	15,000	-5%	52	56
North East Branch	15,000	-5%	63	70
Greenwood Branch	12,806	-6%	85	90
Douglass-Truth Branch	16,493	-7%	66	70

# 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Central Library	303,898	0.8
Ballard Branch	79,876	4.4
Lake City Branch	59,681	3.0
Columbia Branch	55,552	4.5
Greenwood Branch	55,169	4.3
North East Branch	54,093	3.6
Douglass-Truth Branch	51,165	3.1
Broadview Branch	49,392	3.3
University Branch	43,114	5.3
Beacon Hill Branch	42,310	3.9
West Seattle Branch	39,995	4.2
Southwest Branch	39,226	2.6
Green Lake Branch	36,216	4.5
High Point Branch	34,956	4.9
Fremont Branch	30,548	4.5
Magnolia Branch	28,981	4.1
Queen Anne Branch	28,064	3.5
Montlake Branch	19,986	3.5
Capitol Hill Branch	18,229	1.6
Rainier Beach Branch	7,336	0.5
Delridge Branch	3,732	0.7
South Park Branch	2,913	0.6

# 2016 BUILDING EMISSIONS, by Carbon Index:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
University Branch	43,114	5.3
High Point Branch	34,956	4.9
Green Lake Branch	36,216	4.5
Columbia Branch	55,55 <sup>2</sup>	4.5
Fremont Branch	30,548	4.5
Ballard Branch	79,876	4.4
Greenwood Branch	55,169	4.3
West Seattle Branch	39,995	4.2
Magnolia Branch	28,981	4.1
Beacon Hill Branch	42,310	3.9
North East Branch	54,093	3.6
Queen Anne Branch	28,064	3.5
Montlake Branch	19,986	3.5
Broadview Branch	49,392	3.3
Douglass-Truth Branch	51,165	3.1
Lake City Branch	59,681	3.0
Southwest Branch	39,226	2.6
Capitol Hill Branch	18,229	1.6
Central Library	303,898	0.8
Delridge Branch	3,732	0.7
South Park Branch	2,913	0.6
Rainier Beach Branch	7,336	0.5



#### **SEATTLE PARKS & RECREATION**

#### 2016 BUILDING ENERGY PERFORMANCE, by % change:

Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
Citywide Athletics	1,263	22%	160	168
Langston Hughes Performing Arts Center	30,890	12%	80	93
Belltown Community Center	6,480	10%	23	25
Amy Yee Tennis Center	66,597	9%	22	23
Yesler Community Center	22,347	8%	99	112
Loyal Heights Community Center	29,732	8%	55	61
Green Lake Community Center and Pool	35,143	3%	342	361
Horticulture building	12,294	3%	69	77
Garfield Community Center	20,050	2%	90	99
Conservatory Campus	23,445	1%	255	287
Montlake Community Center	16,242	1%	67	77
Bitter Lake Community Center	20,595	1%	91	98
Magnuson	564,258	0%	33	37
Laurelhurst Community Center	11,003	0%	53	59
Medgar Evers Pool	20,740	-1%	249	262
Southwest Teen Life Center and Pool	39,333	-1%	205	218
Meadowbrook Community Center/Pool	34,639	-1%	234	247
Queen Anne Pool	13,157	-2%	438	460

Helene Madison Pool	17,407	-2%	525	548
Ravenna-Eckstein Community Center	15,814	-2%	42	48
Central West HQ / Brown Bear	13,661	-3%	37	41
Central East Headquarters	6,238	-3%	73	76
Seattle Asian Art Museum	53,776	-3%	66	73
Queen Anne Community Center	25,809	-4%	90	101
MOHAI	43,000	-4%	176	185
Ballard Pool	12,769	-6%	401	421
Hiawatha Community Center	17,190	-6%	59	65
Van Asselt Community Center	18,258	-6%	63	71
High Point Community Center	18,261	-7%	51	56
Genesee/SC SE HQ	15,398	-8%	25	27
Westbridge	113,780	-8%	31	35
Miller Community Center	19,273	-8%	47	55
Densmore/NW NC HQ	19,246	-9%	27	30
International district/Chinatown CC	16,000	-10%	59	66
Jefferson Community Center	16,447	-11%	112	125
Northgate Campus	30,498	-12%	80	87
Magnuson, Building 67, mountaineers	29,275	-15%	34	38
South Park Community Center	14,101	-16%	51	56
Rainier Beach Community Center and Pool	53,775	-17%	225	231
Dexter Building	7,381	-18%	167	186
Delridge Community Center	17,693	-22%	82	92
Ballard Community Center	16,795	-27%	56	59
Rainier Community Center	28,384	-32%	75	82

# 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Magnuson	1,159,522	2.1
Green Lake Community Center and Pool	1,147,850	32.7
Rainier Beach Community Center and Pool	986,419	18.3
Helene Madison Pool	797,474	45.8
Meadowbrook Community Center/Pool	667,054	19.3
Southwest Teen Life Center and Pool	615,650	15.7
Conservatory Campus	564,308	24.1
Queen Anne Pool	482,849	36.7
MOHAI	476,832	11.1
Ballard Pool	469,772	36.8

Madgar Evers Dool	225 022	16.2
Medgar Evers Pool Westbridge	335,923	
Seattle Asian Art Museum	260,837	2.3
	260,800	4.8
Langston Hughes Performing Arts Center	227,649	7.4
Queen Anne Community Center	178,339	6.9
Yesler Community Center	174,724	7.8
Northgate	170,933	5.6
Bitter Lake Community Center	140,186	6.8
Garfield Community Center	129,837	6.5
Loyal Heights Community Center	120,376	4.0
Rainier Community Center	119,617	4.2
Delridge Community Center	112,616	6.4
Jefferson Community Center	111,873	6.8
Miller Community Center	103,174	5.4
Dexter Building	100,518	13.6
Van Asselt Community Center	88,606	4.9
Magnuson, Building 67, mountaineers	81,513	2.8
Montlake Community Center	79,449	4.9
International district/Chinatown CC	68,752	4.3
Ravenna-Eckstein Community Center	53,125	3.4
Ballard Community Center	51,576	3.1
South Park Community Center	46,849	3.3
Laurelhurst Community Center	43,919	4.0
Horticulture building	43,323	3.5
High Point Community Center	41,391	2.3
Densmore/NW NC HQ	30,883	1.6
Hiawatha Community Center	28,720	1.7
Central East Headquarters	19,182	3.1
Genesee/SC SE HQ	15,677	1.0
Amy Yee Tennis Center	14,417	0.2
, Belltown Community Center	6,018	0.9
Central West HQ / Brown Bear	5,027	0.4
Citywide Athletics	2,017	1.6
	_/~_/	

# 2016 BUILDING EMISSIONS, by Carbon Index:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Helene Madison Pool	797,474	45.8
Ballard Pool	469,772	36.8

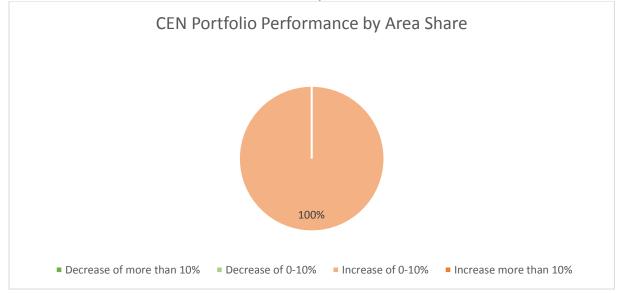
Queen Anne Pool	482,849	36.7
Green Lake Community Center and Pool	1,147,850	32.7
Conservatory Campus	564,308	24.1
Meadowbrook Community Center/Pool	667,054	19.3
Rainier Beach Community Center and Pool	986,419	18.3
Medgar Evers Pool	335,923	16.2
Southwest Teen Life Center and Pool	615,650	15.7
Dexter Building	100,518	- <u>-</u> 3.7 13.6
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Garfield Community Center	129,837	6.5
Delridge Community Center	112,616	6.4
Northgate	-	5.6
Miller Community Center	170,933	-
Montlake Community Center	103,174	5.4
,	79,449	4.9
Van Asselt Community Center Seattle Asian Art Museum	88,606	4.9
	260,800	4.8
International district/Chinatown CC	68,752	4.3
Rainier Community Center	119,617	4.2
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South Park Community Center	46,849	3.3
Central East Headquarters	19,182	3.1
Ballard Community Center	51,576	3.1
Magnuson, Building 67, mountaineers	81,513	2.8
Westbridge	260,837	2.3
High Point Community Center	41,391	2.3
Magnuson	1,159,522	2.1
Hiawatha Community Center	28,720	1.7
Densmore/NW NC HQ	30,883	1.6
Citywide Athletics	2,017	1.6
Genesee/SC SE HQ	15,677	1.0
Belltown Community Center	6,018	0.9
Central West HQ / Brown Bear	5,027	0.4
Amy Yee Tennis Center	14,417	0.2

# SEATTLE CENTER

#### A NOTE ABOUT THIS DEPARTMENT:

Seattle Center had a steam leak in their campus distribution system, which has been repaired.

# 2016 WEATHER-NORMALIZED PERFORMANCE, by area share:



#### 2016 BUILDING ENERGY PERFORMANCE, by % change

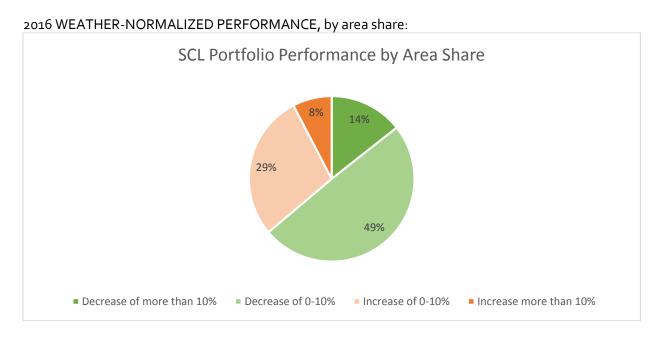
Property GFA (ft²)	from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
1,386,736	2%	70	72
14,036	-1%	26	28
10,596	-5%	34	39
	GFA (ft²) 1,386,736 14,036	GFA (ft <sup>2</sup> ) to 2016, normalized 1,386,736 2% 14,036 -1%	normalized 1,386,736 2% 70 14,036 -1% 26

### 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Central Plant	5,402,632	3.9
West Court Building	27,287	2.6
Blue Spruce	3,573	0.3

# 2016 BUILDING EMISSIONS, by Carbon Index:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Central Plant	5,402,632	3.9
West Court Building	27,287	2.6
Blue Spruce	3,573	0.3



### SEATTLE CITY LIGHT

# 2016 BUILDING ENERGY PERFORMANCE, by % change

Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
157 Roy Building	12,122	193%	111	111
Union St Substation	16,728	15%	27	28
Newhalem Phantom Warehouse/Sickler Bldg	14,400	15%	61	74
System Operations Center	27,744	12%	193	193
Environmental Learning Center	34,992	7%	54	59
Ross Powerhouse	121,630	5%	49	53
Newhalem Service Center- Machine Shop & Mezz	17 600	2%	0-	100
	17,600		85	102
Gorge Powerhouse	29,369	0%	117	125
North Service Center	94,288	٥%	101	106
Boundary Project	111,858	-3%	116	124
North Substation	25,978	-7%	43	47
Canal Substation	13,914	-7%	122	138
SCL SSC Building A	180,725	-9%	52	56
SCL SSC Building B	70,320	-11%	56	62
Broad St Substation	23,802	-14%	166	166
Newhalem Service Center- Warehouse & Mezz	17,747	-17%	21	24

Diablo Powerhouse	22,695	-19%	163	181
SCL Roy Street Warehouse	53,944	-40%	8	8
Georgetown Steamplant	39,212	-91%	2	2

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
North Service Center	349,209	3.7
SCL SSC Building A	165,444	0.9
Boundary Project	129,690	1.2
Ross Powerhouse	59,331	0.5
System Operations Center	53,55 <sup>8</sup>	1.9
Broad St Substation	39,401	1.7
SCL SSC Building B	39,287	0.6
Diablo Powerhouse	36,869	1.6
Gorge Powerhouse	34,328	1.2
Environmental Learning Center	18,746	0.5
Canal Substation	16,942	1.2
Newhalem Service Center- Machine Shop & Mezz	15,037	0.9
157 Roy Building	13,422	1.1
North Substation	11,144	0.4
Newhalem Phantom Warehouse/Sickler Bldg	8,826	0.6
Union St Substation	4,504	0.3
SCL Roy Street Warehouse	4,305	0.1
Newhalem Service Center- Warehouse & Mezz	3,679	0.2
Georgetown Steamplant	724	0.0

## 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
North Service Center	349,209	3.7
System Operations Center	53,558	1.9
Broad St Substation	39,401	1.7

Diablo Powerhouse	36,869	1.6
Canal Substation	16,942	1.2
Gorge Powerhouse	34,328	1.2
Boundary Project	129,690	1.2
157 Roy Building	13,422	1.1
SCL SSC Building A	165,444	0.9
Newhalem Service Center	15,037	0.9
Newhalem Phantom Warehouse/Sickler Bldg	8,826	0.6
SCL SSC Building B	39,287	o.6
Environmental Learning Center	18,746	0.5
Ross Powerhouse	59,331	0.5
North Substation	11,144	0.4
Union St Substation	4,504	0.3
Newhalem Service Center- Warehouse & Mezz	3,679	0.2
SCL Roy Street Warehouse	4,305	0.1
Georgetown Steamplant	724	0.0

### SEATTLE PUBLIC UTILITIES

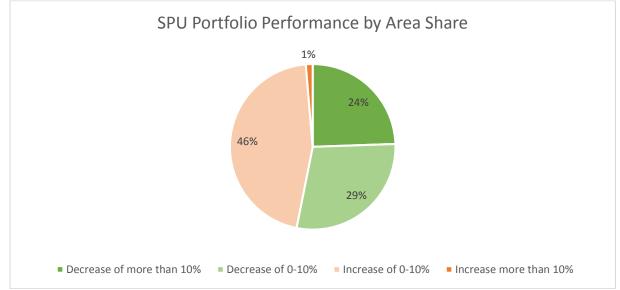
#### A NOTE ABOUT THIS DEPARTMENT:

Seattle Public Utilities had improved operations at water treatment facilities.

- Tolt used 15% less energy per unit of water treated in 2016 than in 2015.
- Cedar River used 16% less energy per unit of water treated in 2016 than in 2015.

The chart and tables below do not include Tolt or Cedar River.

2016 WEATHER-NORMALIZED PERFORMANCE, by area share:



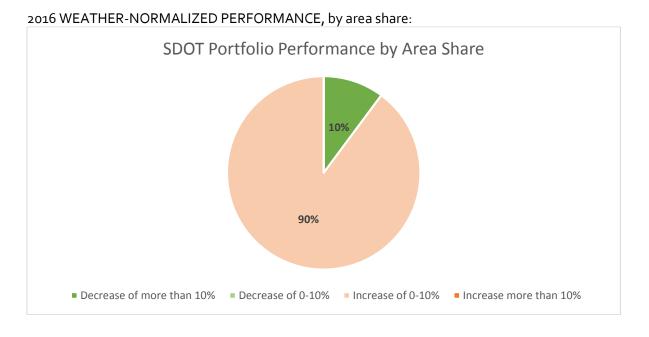
### 2016 BUILDING ENERGY PERFORMANCE, by % change:

Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
4,514	35%	146	146
15,887	9%	67	77
138,602	1%	40	40
9,864	0%	84	92
87,459	-8%	97	106
20,000	-27%	25	25
37,460	-33%	40	43
	GFA (ft²) 4,514 15,887 138,602 9,864 87,459 20,000	Property GFA (ft²) from 2015 to 2016, normalized   4,514 35%   15,887 9%   138,602 1%   9,864 0%   87,459 -8%   20,000 -27%	Property GFA (ft²) from 2015 to 2016, normalized 2016 EUI, metered   4,514 35% 146   15,887 9% 67   138,602 1% 40   9,864 0% 84   87,459 -8% 97   20,000 -27% 25

# 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
OCC Complex	575,338	6.6
DWW-SOC 4500 W. Marginal Way SW	78,015	2.1
South Transfer Station	54,754	0.4
Cedar River Hatchery	10,633	0.7
Watershed Education Center	8,308	o.8
Landsburg LOC Building	6,584	1.5
Old South Transfer Station	4,906	0.2

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
OCC Complex	575,338	6.6
DWW-SOC 4500 W. Marginal Way SW	78,015	2.1
Landsburg LOC Building	6,584	1.5
Watershed Education Center	8,308	0.8
Cedar River Hatchery	10,633	0.7
South Transfer Station	54,754	0.4
Old South Transfer Station	4,906	0.2



### SEATTLE DEPARTMENT OF TRANSPORTATION

### 2016 BUILDING ENERGY PERFORMANCE, by % change:

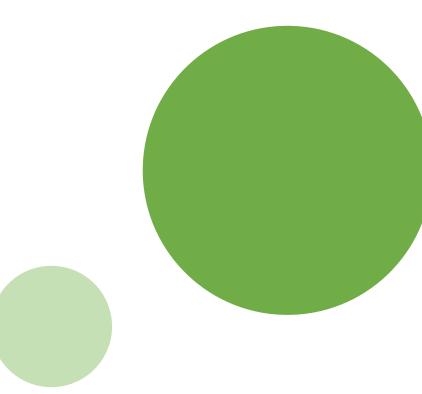
Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
King Street Station	65,490	1%	29	31
Street Car Maintenance	9,428	-3%	68	71
Fairview Building	8,488	-26%	26	30

### 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Fairview Building	25,519	3.0
King Street Station	19,045	0.3
Street Car Maintenance	8,442	0.9

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Fairview Building	25,519	3.0
Street Car Maintenance	8,442	0.9
King Street Station	19,045	0.3

# Section 4. Analysis of Building Performance by Building Type



## **BUILDING TYPE: POLICE PRECINCTS**

### 2016 BUILDING ENERGY PERFORMANCE, by % change:

Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
North Precinct	16,434	0%	119	124
Southwest Precinct	28,303	-1%	124	128
South Precinct	12,603	-1%	115	122
West Precinct	57,417	-4%	211	219
East Precinct	36,280	-8%	116	124

### 2016 BUILDING EMISSIONS, by carbon total:

PI	ROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
West Precinct		625,391	10.9
Southwest Precinct		193,434	6.8
East Precinct		135,341	3.7
North Precinct		19,501	1.2
South Precinct		14,479	1.1

	PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
West Precinct		625,391	10.9
Southwest Precinct		193,434	6.8
East Precinct		135,341	3.7
North Precinct		19,501	1.2
South Precinct		14,479	1.1

## BUILDING TYPE: NEIGHBORHOOD FIRE STATIONS

Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
<b>F</b> . <b>C</b> :	000	0/		
Fire Station 17	21,886	11%	93	100
Fire Station 31	12,187	7%	80	87
Fire Station 16	7,441	4%	51	54
Fire Station 38	9,137	3%	88	95
Fire Station 24	4,936	2%	102	112
Fire Station 13	5,605	2%	89	95
Fire Station 28 (New)	14,031	-2%	82	90
Fire Station 40	6,639	-3%	71	80
Fire Station 26	5,427	-5%	96	96
Fire Station 21 (New)	8,654	-6%	68	73
Fire Station 35 (New)	11,968	-6%	66	72
Fire Station 39 (New)	11,285	-7%	57	63
Fire Station 41	5,664	-8%	103	109
Fire Station 02	38,939	-9%	80	86
Fire Station 34	5,861	-10%	79	87
Fire Station 33	5,974	-13%	98	105
Fire Station 37	9,375	-13%	86	95
Fire Station 10/FAC/EOC	71,974	-13%	130	133
Fire Station 36	5,876	-14%	79	85
Fire Station 14	18,436	-17%	95	106
Fire Station og (New)	9,424	-20%	62	67
Fire Station 11	6,191	-20%	91	99
Fire Station o6 (New)	11,685	-21%	73	83
Fire Station 25	17,991	-27%	75	84
Fire Station o8	8,273	-27%	62	68
Fire Station 27	6,570	-32%	66	75
Fire Station 22 (Old)	3,830	-67%	16	16
Fire Station 32 (Old)	8,732	-73%	24	24

# 2016 BUILDING ENERGY PERFORMANCE, by % change:

# 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Fire Station 10/FAC/EOC	352,157	4.9
Fire Station 02	180,386	4.6
Fire Station 17	134,097	6.1
Fire Station 25	117,052	6.5
Fire Station 14	113,240	6.1
Fire Station 31	65,807	5.4
Fire Station o6 (New)	62,413	5.3
Fire Station 37	50,107	5.3
Fire Station 35 (New)	48,513	4.1
Fire Station 28 (New)	48,171	3.4
Fire Station o8	44,469	5.4
Fire Station 33	42,298	7.1
Fire Station 11	41,997	6.8
Fire Station 09 (New)	39,151	4.2
Fire Station 40	37,804	5.7
Fire Station 26	37,079	6.8
Fire Station 27	35,667	5.4
Fire Station 38	34,881	3.8
Fire Station 41	31,941	5.6
Fire Station 34	30,161	5.1
Fire Station 39 (New)	29,341	2.6
Fire Station 21 (New)	27,989	3.2
Fire Station 13	20,210	3.6
Fire Station 16	10,476	1.4
Fire Station 24	6,192	1.3
Fire Station 36	4,622	0.8
Fire Station 32 (Old)	4,484	0.5
Fire Station 22 (Old)	2,671	0.7

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e)/SF)
Fire Station 33	(2.208	7.1
Fire Station 26	42,298 37,079	7.1 6.8
Fire Station 11	37,079 41,997	6.8
Fire Station 25	4+,997 117,052	6.5
Fire Station 14	113,240	6.1
Fire Station 17	134,097	6.1
Fire Station 40	37,804	5.7
Fire Station 41	31,941	5.7 5.6
Fire Station 27	35,667	5.0 5.4
Fire Station 31	65,807	5.4
Fire Station o8	44,469	5.4 5.4
Fire Station 37	50,107	5.3
Fire Station of (New)	62,413	5.3
Fire Station 34	30,161	5.5
Fire Station 10/FAC/EOC	352,157	4.9
Fire Station 02	180,386	4.6
Fire Station 09 (New)	39,151	4.2
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Fire Station 24	6,192	1.3
Fire Station 36	4,622	0.8
Fire Station 22 (Old)	2,671	0.7
Fire Station 32 (Old)	4,484	0.5

## **BUILDING TYPE: COMMUNITY CENTERS + POOLS**

Property Name	Property GFA (ft²)	% change from 2015 to 2016, normalized	2016 EUI, metered	2016 EUI, normalized
Belltown Community Center	6,480	10%	23	25
Yesler Community Center	22,347	8%	99	112
Loyal Heights Community Center	29,732	8%	55	61
Garfield Community Center	20,050	2%	90	99
Montlake Community Center	16,242	1%	67	77
Bitter Lake Community Center	20,595	1%	91	98
Laurelhurst Community Center	11,003	о%	53	59
Ravenna-Eckstein Community Center	15,814	-2%	42	48
Queen Anne Community Center	25,809	-4%	90	101
Hiawatha Community Center	17,190	-6%	59	65
Van Asselt Community Center	18,258	-6%	63	71
High Point Community Center	18,261	-7%	51	56
Miller Community Center	19,273	-8%	47	55
International district/Chinatown CC	16,000	-10%	59	66
Jefferson Community Center	16,447	-11%	112	125
South Park Community Center	14,101	-16%	51	56
Delridge Community Center	17,693	-22%	82	92
Ballard Community Center	16,795	-27%	56	59
Rainier Community Center	28,384	-32%	75	82
Medgar Evers Pool	20,740	-1%	249	262
Queen Anne Pool	13,157	-2%	438	460
Helene Madison Pool	17,407	-2%	525	548
Ballard Pool	12,769	-6%	401	421
Green Lake Community Center and Pool	35,143	3%	342	361
Southwest Teen Life Center and Pool	39,333	-1%	205	218
Meadowbrook Community Center/Pool	34,639	-1%	234	247
Rainier Beach Community Center and Pool	53,775	-17%	225	231

## 2016 BUILDING ENERGY PERFORMANCE, by % change:

# 2016 BUILDING EMISSIONS, by carbon total:

PROPERTY	TOTAL CARBON (lbCO2e)	CARBON INDEX (lbCO2e/SF)
Queen Anne Community Center	178,339	6.9
Yesler Community Center	174,724	7.8
Northgate Community Center	170,933	5.6
Bitter Lake Community Center	140,186	6.8
Garfield Community Center	129,837	6.5
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South Park Community Center	46,849	3.3
Laurelhurst Community Center	43,919	4.0
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Southwest Teen Life Center and Pool	615,650	15.7

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