2024

ANNUAL SURVEY OF WHOLESALE CUSTOMERS: SUMMARY OF RESULTS

Rates Data for 2024

Supply & Demand Data for 2023

Seattle Public Utilities

Final November 2024

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1.0 Introduction

Each year, Seattle Public Utilities (SPU) asks its wholesale customers to provide information on their sources of supply (especially if in addition to SPU water), water sales (both retail and wholesale), and water rates. A complete set of this data is critical to SPU's efforts to better forecast wholesale water demand. Wholesale customers often find the current and historical information provided in this report useful in their own analysis and planning. It also allows them to see how they compare to other wholesale customers and SPU in a number of areas related to demand, rates, and rate structures.

This report summarizes much of the data that was collected in the 2024 wholesale customer survey and is the 31st year the report has appeared in this format. ***SPU appreciates the time and effort each wholesale customer has taken in completing and returning the survey.*** Comparative information is presented on water supply, water sales, rate structures, rates, and bills. Copies of current and past reports (back to 2005) can be downloaded from SPU's website.

SPU's wholesale customers include four cities, thirteen water districts, and the Cascade Water Alliance (a municipal corporation comprised of five cities and two water & sewer districts) and are listed below and are shown in Figure 1. The City of North Bend also receives water from SPU; however, it is not included in the survey because that water is untreated water used for streamflow augmentation.

SPU Wholesale Customers

Cities	Water Districts	Cascade Water Alliance
· Bothell	·Cedar River Water & Sewer District	·City of Bellevue
· Duvall	·Coal Creek Utility District	·City of Issaquah
· Mercer Island	·Highline Water District	·City of Kirkland
· Renton	·Northshore Utility District	·City of Redmond
	·North City Water District	·City of Tukwila
	·Olympic View Water & Sewer District	·Sammamish Plateau W & S District
	·Soos Creek Water & Sewer District	·Skyway Water & Sewer District
	·Woodinville Water District	
	·Water District No. 20[1]	
	·Water District No. 49	
	·Water District No. 90	
	·Water District No. 119	
	·Water District No. 125	

SPU and its wholesale customers serve the majority of the population in King County. Figure 2 shows the percent of the population served by various water utilities. **Key takeaways are**:

- SPU serves 35% of the population directly
- The wholesale customers serve 41% of the population
- Collectively, SPU and the wholesale customer serve 76% of the population
- Olympic View Water & Sewer District is the only wholesale customer in Snohomish County, and it serves approximately 14,000 people.

[1] Effective February 2019, Water District 45 was assumed by Water District 20 and no longer exists; data for Water District 45 prior to the assumption date has been included in data for Water District 20.

Figure 1 Water Utilities in King County

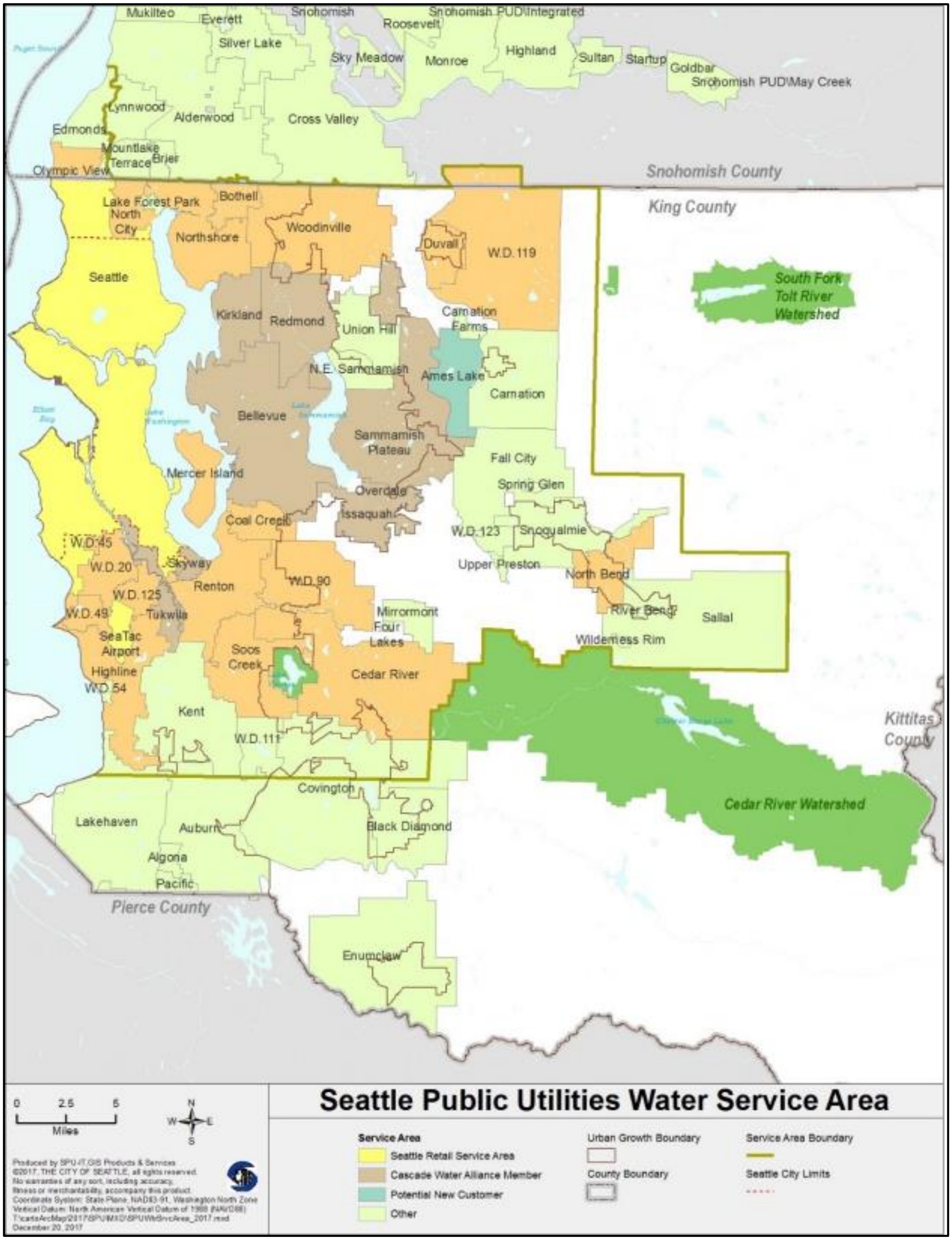
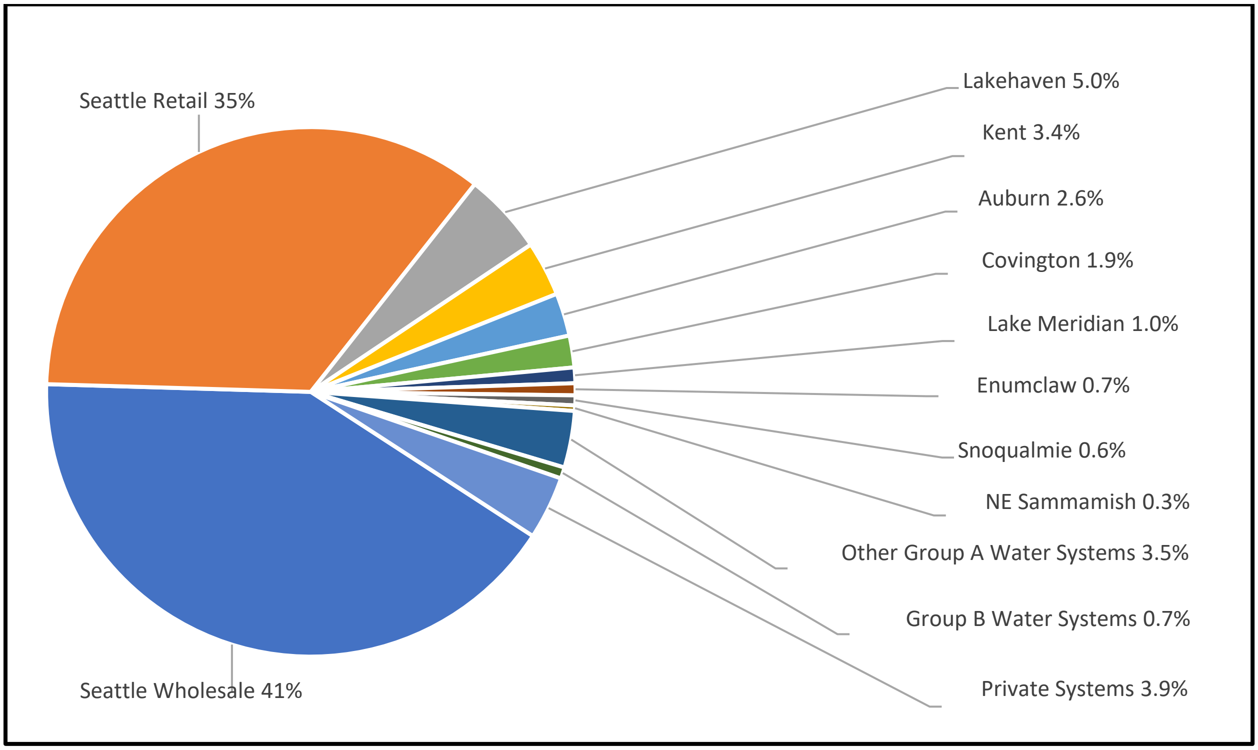


Figure 2 Percent Population Served by Water Utilities in King County (2023)



Based on WA Department of Health data; https://fortress.wa.gov/doh/eh/portal/odw/si/DownloadsReports.aspx

2.0 Water Rates & Bills

2.1 Rate Structure Basics & Taxes

While a variety of rate levels and structures are evident, the individual rate structures do not change frequently. All wholesale customers levy a commodity charge and a fixed monthly base service charge (BSC) or meter charge which, in four cases, also includes a minimum level of consumption of 1 to 2.5 hundred cubic feet (ccf) per month. There are three basic commodity rate structures and one hybrid: uniform rates, seasonal rates, and inclined block rates, plus a combination of seasonal rates with inclined blocks. Fixed monthly charges on a ¾" meter, the usual size for residential meters, average $26.03 per month with a range of $16.70 per month to $50.50 per month. The range of fixed monthly charges on 2" meters, typical of commercial accounts, is higher: $34.26 per month to $304.13 per month.

All water utilities pay a state utility tax of 5.029% applied to total revenue from providing retail water service. Almost half the wholesale customers plus SPU are assessed additional taxes and fees by their local municipal government(s). The average local tax rate for all subject wholesale customers is 8.3% of total retail revenue. SPU has the highest total tax rate with 20.6% of its retail revenue going to state and city taxes. Note that some wholesale customers do not include taxes and fees in their published water rates and instead itemize them separately on their customers' bills. In order to make rates and bills comparable between utilities, those taxes and fees have been added back into the rates included in this report and into the bill calculations.

2.2 Residential Rate Structures & Rates

Residential rates in effect during 2024 for each wholesale customer and SPU are summarized in Table 1.

For more than 10 years, neither SPU nor any of its *current* wholesale customers have had a uniform rate structure, i.e., a single rate per ccf for all volumes and times of the year. Residential rate structures fall into four major categories:

- Seasonal rates - a single winter rate and single higher summer rate (1 utility)
- Simple inclining block rates – two to five consumption blocks with increasing rates at higher volumes, with no seasonality (16 utilities)
- Seasonal inclining block rates – separate inclining block rates for winter and summer seasons (6 utilities)
- Hybrid seasonal and inclining block rates – single winter rates with inclining block rates during the summer season only (2 utilities)

There is considerable variation in the number and size of the blocks and in the rates themselves. Amongst the 16 utilities with simple inclining block rates, the smallest tier is 2 ccf (North City and Issaquah) and the largest is 12 ccf (Kirkland); and first tier ccf rates range from $1.92 (Sammamish Plateau) to $6.11 (Mercer Island). Two utilities that employ seasonal inclining block rates, Mercer Island and Soos Creek, do not increase rates for all blocks during the summer season.

The diversity of residential rate structures results in very different price signals to customers during the peak (summer) season. Residential customers of wholesale utilities face marginal summer rates ranging from $4.18 to $28.00 per ccf. The average summer end-block rate (including SPU) is $9.32 per ccf. Eight wholesale customers (Bellevue, Bothell, Duvall, Issaquah, Mercer Island, Sammamish Plateau, Skyway, and Woodinville) plus SPU have end-block rates exceeding $10 per ccf. Issaquah has the highest summer end-block rate: $28.00 per ccf for consumption exceeding 25 ccf per month.

2.3 Commercial Rate Structures & Rates

Commercial rates in effect during 2024 for each wholesale customer and SPU are summarized in Table 2

In general, commercial rate structures are simpler than residential rates. Five wholesale customers (WD 20, WD 119, Cedar River, Duvall and Highline) apply the same rates and rate structures to both their commercial and residential customers. Tukwila maintains the same seasonal structure but has different rates for commercial and residential customers. Olympic View keeps the same rates but changes the block sizes. Soos Creek maintains the same block size but has different rates between customer classes. The remaining fifteen plus SPU change rates *and* structure, usually shifting from inclining block and hybrid structures to uniform or seasonal rates, but occasionally just reducing the number of blocks. The highest rate is $12.94 per ccf and the average summer end block rate (including SPU and uniform and seasonal rates) is $6.85 per ccf.

2.4 Residential Bills

Figure 3 through Figure 5, and Table 3 and Table 4, compare monthly residential bills across wholesale customers. Three consumption levels, defined below, are used throughout:

Monthly Consumption Levels Used in Calculating Bills

Level of Household Consumption	Winter	Summer	Average Annual
Low	3.5 ccf/mo	5 ccf/mo	4 ccf/mo
Medium	6 ccf/mo	9 ccf/mo	7 ccf/mo
High	12 ccf/mo	21 ccf/mo	15 ccf/mo

Note that as of the 2016 survey, these consumption levels have been lowered from what had been used in all previous survey reports. Medium consumption had been defined as 8 ccf/mo in the winter and 12/ccf/mo or 9.33 ccf/mo on an average annual basis. This reflected typical residential consumption in the mid-1990s for wholesale customers. However, average consumption has declined significantly since then and appears to have leveled off at about 7 ccf/mo (see Figure 6). The new low, medium, and high consumption levels used for bill comparisons are more representative of current consumption patterns.

Figure 3, Figure 4, and Figure 5 graphically display estimated monthly residential bills by wholesale customer at low, medium, and high levels of consumption at 2024 rates. The figures also rank wholesale customers (including SPU) by the size of their bills revealing two interesting facts: (1) there are large differences in household water bills among wholesale customers; and (2) wholesale customer rankings shift widely dependent on consumption levels. These two phenomena are explained in greater detail in the following paragraphs.

Large differences in household water bills. Monthly bills from utilities with the highest rates are more than double those from utilities with the lowest rates. Average monthly bills range from $25.58 to $65.07 at the low level of consumption and from $73.08 to $179.40 at the high level of consumption.

A utility's average residential water bill is a function of both its rates *and* its average residential consumption. A problem with most comparisons of water bills across utilities (including the comparisons in Figure 3 through Figure 5) is that the comparisons use a single level of consumption to calculate the bills. But if the chosen level of consumption is typical for one utility, it may not be for another. Consider two utilities having exactly the same rates. One could have higher average bills than the other because its average consumption is higher. To correctly compare average bills across utilities, each utility's bill should be calculated at its average level of consumption. This has been done in Figure 6. Average monthly residential consumption in 2023 ranged from 5.0 ccf per month in SPU to 8.4 ccf per month in Sammamish Plateau. In Figure 6, Redmond has the lowest average residential bill while Mercer Island has the highest.

Beyond consumption volumes, there are many possible explanations for the wide variation in residential rates and bills. These include utilities having:

- different financial policies,
- different levels of taxes and fees,
- different levels of investment in new and replacement infrastructure,
- different proportions of rate revenue, non-rate revenue, and debt,
- different proportions of residential and commercial customers,
- different cost allocations between customer classes,
- different customer densities,
- and different rates of customer and service area growth.

Wholesale customer rankings vs. level of consumption. The other phenomenon revealed by the graphs is how much wholesale customer rankings can change at different levels of consumption, i.e., the wholesale customer with the highest bill at one level of consumption may be far from the highest at other levels of consumption. For example, Issaquah has the second highest bill at high consumption but drops to ninth and fourteenth highest at medium and low consumption, respectively. Sammamish Plateau is a good example of the opposite pattern, moving up from the fifth *lowest* bill at high consumption to sixth *highest* bill at low consumption. Finally, others, such as Kirkland, are in the middle for all levels of consumption. (Table 4 summarizes the different rankings from Figure 3 through Figure 5.)

There are two factors that explain the shifts in relative rankings of wholesale customer bills at different levels of consumption. One is different rate structures. For example, a steeply inclined block structure tends to favor low volume users while a flatter rate structure favors high volume users. The second factor is the relative magnitudes of the fixed (meter charges) and variable (volume) components of the rates. Higher meter charges relative to volume charges result in higher bills for low volume users and proportionally lower bills for high volume users. The combined impact of these factors can be seen in Table 4. In general, wholesale customers with relatively high meter charges and relatively low volume charges move down in the rankings (their bills get smaller compared to other wholesale customers) as consumption increases. Wholesale customers with lower meter charges and higher or steeply inclining volume charges tend to move in the opposite direction, placing higher in the rankings as consumption increases. In many cases, the "meter charge effect" offsets the "rate structure effect" so that the wholesale customer maintains its ranking across all consumption levels.

Table 3 displays monthly bills at the medium level of consumption (graphed in Figure 4) and the difference between winter and summer bills by wholesale customer. Note that the summer/winter differential is not the differential in *rates* but in *bills*. Most wholesale customers have a differential of less than 50% even though bills are calculated with 50% more consumption in summer than in winter. This means that the *average* rate charged *per ccf* by these wholesale customers is actually *less* in summer than in winter. This seemingly contradictory result is due to the impact of the fixed meter charge being spread over a greater number of ccf in the summer. This effect diminishes as the level of consumption rises and the meter charge represents a smaller and smaller proportion of the total bill. Issaquah and Soos Creek have differentials of more than 50%, a sign that the *average* rate charged per ccf in the summer is greater than in the winter. This is because they tend to have relatively low monthly meter charges with very steeply inclined block structures and/or seasonal rates with a significant increment between peak and off-peak rates.

Table 1 Comparison of Residential Rate Structures & Rates (2024)

#	Utility	BSC for ¾" Mtr	Season	$0 (CCF included with BSC)	1st Block	2nd Block	3rd Block	4th Block	5th Block	Block Thresholds*** in CCF per Month
1	W.D. 20*	$27.19	-		$3.12	$4.01	$5.45			5/15
2	W.D. 49	$23.10	-		$4.44	$5.48	$7.53			5/8
3	W.D. 90	$35.45	Off-Peak Peak	$0	$4.35 $5.60	$5.00 $6.25	$5.65 $6.90	$6.30 $7.55		7.5/12.5/17.5
4	W.D. 119**	$50.50	Off-Peak Peak		$2.90 $4.34	$3.65 $5.48	$4.79 $7.17	$5.81 $8.70		3.5/7/14
5	W.D. 125	$17.26	-		$4.55	$5.37				6
6	Bellevue[T]	$33.68	-		$5.28	$6.71	$8.80	$12.57		5.5/8.5/22.5
7	Bothell[T]	$21.68	-		$4.23	$6.26	$8.07	$10.26	$11.73	5/10/15/25
8	Cedar River	$20.34	-		$3.01	$5.39	$6.27	$9.45		5/15/25
9	Coal Creek	$21.96	-		$3.62	$4.70	$6.01	$8.62		5/15/50
10	Duvall	$34.26	-	$0	$5.10	$6.56	$8.03	$9.48	$10.97	4/6/8/10
11	Highline[T]	$18.18	Off-Peak Peak		$4.48 $4.48	 $5.31				5
12	Issaquah[T]	$20.97	-		$2.71	$6.43	$11.96	$19.49	$28.00	2/7/15/25
13	Kirkland[T]	$26.72	-	$0	$6.41	$8.42				12
14	Mercer Island	$25.72	Off-Peak Peak		$6.11	$10.34	$12.41 $12.52	$16.69 $17.01		5/10/15
15	North City[T]	$36.23	-		$3.03	$4.76	$6.50	$8.23		2/5/12
16	Northshore[T]	$17.83	-		$3.81	$4.92	$6.02			5/10
17	Olympic View[T]	$28.13	Off-Peak Peak		$2.91 $3.27	$4.27 $5.11				20
18	Redmond	$16.70	-		$2.05	$4.09	$6.14	$8.19		4/10/20
19	Renton	$18.68	-		$2.69	$3.62	$4.57			5/10
20	Sammamish Plateau	$39.54	-		$1.92	$2.85	$4.60	$9.13	$12.96	6/12/19/30
21	Skyway	$24.05	-		$5.34	$6.77	$8.52	$10.87		4/6/12
22	Soos Creek	$19.25	Off-Peak Peak		$2.55	$5.00 $6.00	$6.30 $7.56	$6.87 $8.24		5/10/15
23	Tukwila	$21.50	Off-Peak Peak		$3.83 $4.18					-
24	Woodinville	$32.35	Off-Peak Peak	$0	$4.93 $6.15	$8.64 $10.09				12.5
25	Seattle	$19.60	Off-Peak Peak		$5.76 $5.92	 $7.32	 $11.80			5/18

Blocks: $0 CCF included with Base Service Charge (BSC) at no additional charge; 1st Block; 2nd Block; 3rd Block; 4th Block; 5th Block

* Rates shown are for customers in City of Burien.

** All utilities with seasonal rates use a 4 month peak season except Water District 119 (6 month).

*** Block thresholds are the number of ccf per month at which the next rate block is attained. For example, W.D. 20 charges $3.12 per ccf for the first 5 ccf consumed, $4.01 per ccf for the next 10 ccf per month, and $5.45 for all consumption above 15 ccf per nth.

[T] Taxes and fees not included in the published rates of these utilities (Bellevue, Bothell, Issaquah, Kirkland, North City, Northshore, and Olympic View) have been added to the rates shown in this table.

Table 2 Comparison of Commercial Rate Structures & Rates (2024)

#	Utility	BSC for 2" Mtr	Season	$0 (CCF included with BSC)	1st Block	2nd Block	3rd Block	4th Block	5th Block	Block Thresholds
1	W.D. 20	$271.92	-		$3.12	$4.01	$5.45			5/15
2	W.D. 49	$304.13	-		$5.13					-
3	W.D. 90	$116.35	Off-Peak		$5.65					-
			Peak		$6.90					
4	W.D. 119*	$85.00	Off-Peak		$2.90	$3.65	$4.79	$5.81		3.5/7/14
			Peak		$4.34	$5.48	$7.17	$8.70		
5	W.D. 125	$60.77	Off-Peak		$4.69					0
			Peak		$5.16					
6	Bellevue[T]	$154.96	Off-Peak		$6.68					0
			Peak		$9.12					
7	Bothell[T]	$170.73	Off-Peak		$4.79					0
			Peak		$8.18					
8	Cedar River	$79.61	-	$0	$3.10	$5.39	$6.27			5/15
9	Coal Creek	$116.81	Off-Peak		$4.17					0
			Peak		$5.44					
10	Duvall	$34.26	-	$0	$5.10	$6.56	$8.03	$9.48	$10.97	4/6/8/10
11	Highline[T]	$159.49	Off-Peak		$4.48					-
			Peak		$4.48	$5.31				5
12	Issaquah[T]	$187.05	-		$5.44	$8.40				32
13	Kirkland[T]	$88.03	-		$5.84					-
14	Mercer Island	$205.76	Off-Peak		$5.21					-
			Peak		$12.94					
15	North City[S,T]	$158.61	-		$5.28					-
16	Northshore[T]	$130.79	-		$4.08	$4.36	$4.64			40/80
17	Olympic View[T]	$94.90	Off-Peak		$2.91	$4.27				160
			Peak		$3.27	$5.11				
18	Redmond	$108.20	Off-Peak		$2.87					0
			Peak		$4.91					
19	Renton	$111.98	-		$3.69					-
20	Sammamish Plateau	$164.24	-		$2.83					0
21	Skyway	$274.39	-		$7.70					-
22	Soos Creek	$76.46	Off-Peak		$2.55	$4.59	$6.30	$6.87		5/10/15
			Peak			$5.51	$7.56	$8.24		
23	Tukwila	$135.00	Off-Peak		$6.95					0
			Peak		$7.38					
24	Woodinville	$261.25	-		$5.51	$6.03				Prior Winter Average
25	Seattle	$38.55	Off-Peak		$5.90					-
			Peak		$7.50					

Block Thresholds in CCF per Month: 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | … | 25 | … | 32 | … | 40 | … | 80 | … | 160…

Blocks: $0 CCF included with Base Service Charge (BSC) at no additional charge; 1st Block; 2nd Block; 3rd Block; 4th Block; 5th Block

* Rates shown are for customers in City of Burien

** All utilities with seasonal rates use a 4 month peak season except Water District 119 (6 month).

*** Block thresholds are the number of ccf per month at which the next rate block is attained. For example, W.D. 20 charges $3.12 per ccf for the first 5 ccf consumed, $4.01 per ccf for the next 10 ccf per month, and $5.45 per ccf for all consumption in excess of 15 ccf per month.

[T] Taxes and fees not included in the published rates of these utilities (Bellevue, Bothell, Issaquah, Kirkland, North City, Northshore, and Olympic View) have been added to the rates shown in the table.

Figure 3 Average Monthly Residential Bills at Low Consumption (2024 Rates)
(3.5 ccf/mo winter & 5 ccf/mo summer)

	Utility	Average Monthly Bill
1	W.D. 119	$65.07
2	Bellevue*	$54.80
3	Woodinville	$52.16
4	North City	$51.81
5	Mercer Island	$50.16
6	Sammamish Plateau*	$47.22
7	Skyway*	$45.89
8	Duvall	$44.95
9	Seattle	$42.91
10	W.D. 49	$40.86
11	Olympic View	$40.37
12	W.D. 20	$39.67
13	Kirkland*	$39.54
14	Issaquah*	$39.24
15	Bothell	$38.60
16	Tukwila*	$37.40
17	Coal Creek	$36.44
18	Highline	$36.11
19	W.D. 125	$35.46
20	W.D. 90	$35.45
21	Northshore	$33.07
22	Cedar River	$32.38
23	Soos Creek	$29.45
24	Renton	$29.44
25	Redmond*	$25.58
	Wholesale Average	**$40.51**

* Member of Cascade Water Alliance

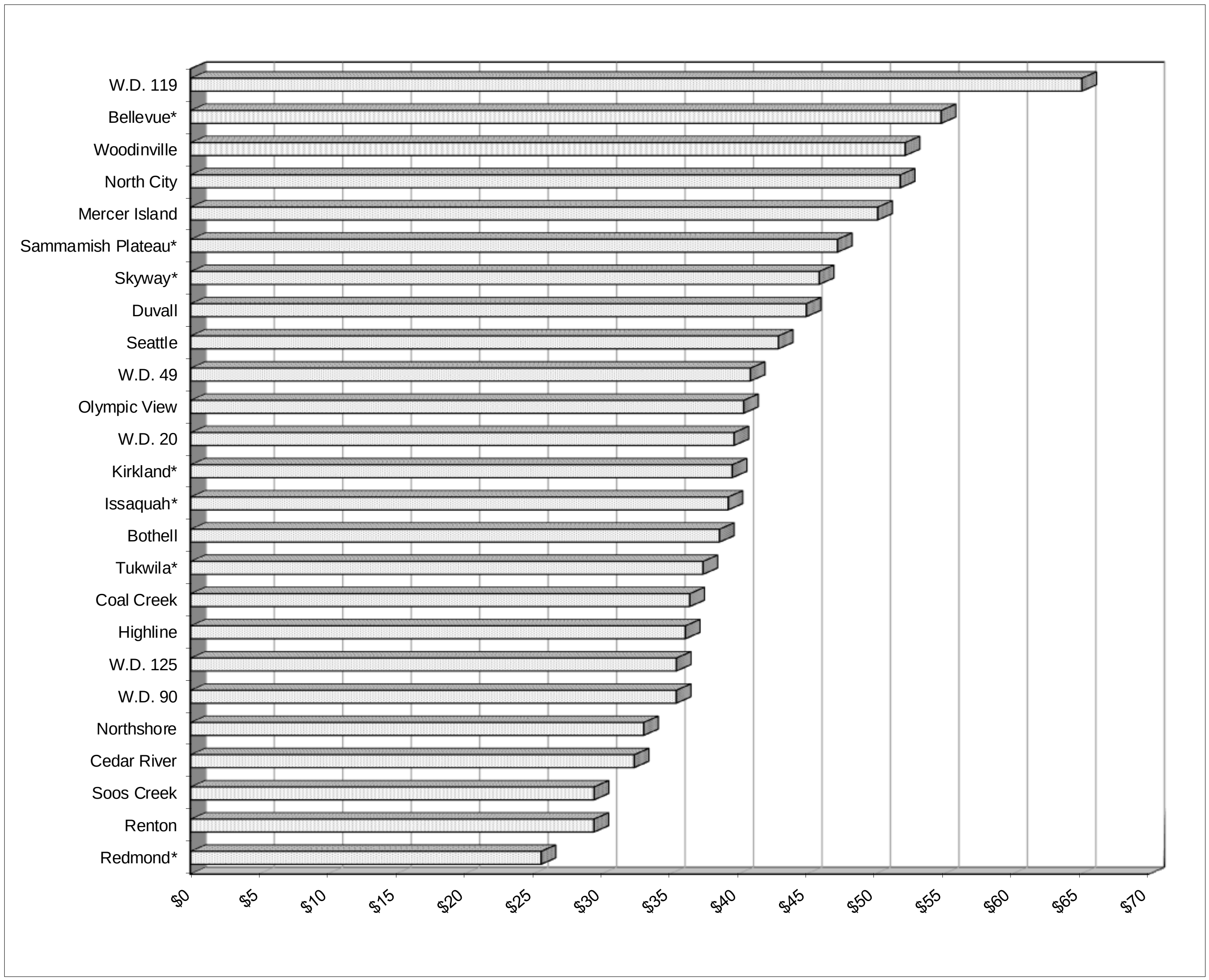


Figure 4 Average Monthly Residential Bills at Medium Consumption (2024 Rates)
(6 ccf/mo winter & 9 ccf/mo summer)

	Utility	Average Monthly Bill
1	W.D. 119	$79.59
2	Mercer Island	$76.95
3	Bellevue*	$73.13
4	Woodinville	$71.98
5	North City	$69.56
6	Skyway*	$67.47
7	Duvall	$66.09
8	Seattle	$62.27
9	Issaquah*	$62.21
10	Kirkland*	$58.75
11	W.D. 49	$56.94
12	Bothell	$55.35
13	Sammamish Plateau*	$53.91
14	W.D. 20	$50.81
15	Highline	$50.67
16	W.D. 125	$49.93
17	Olympic View	$49.58
18	Coal Creek	$49.46
19	Tukwila*	$49.36
20	Northshore	$46.72
21	Cedar River	$46.17
22	W.D. 90	$46.14
23	Soos Creek	$43.33
24	Renton	$39.37
25	Redmond*	$37.17
	Wholesale Average	**$55.87**

* Member of Cascade Water Alliance

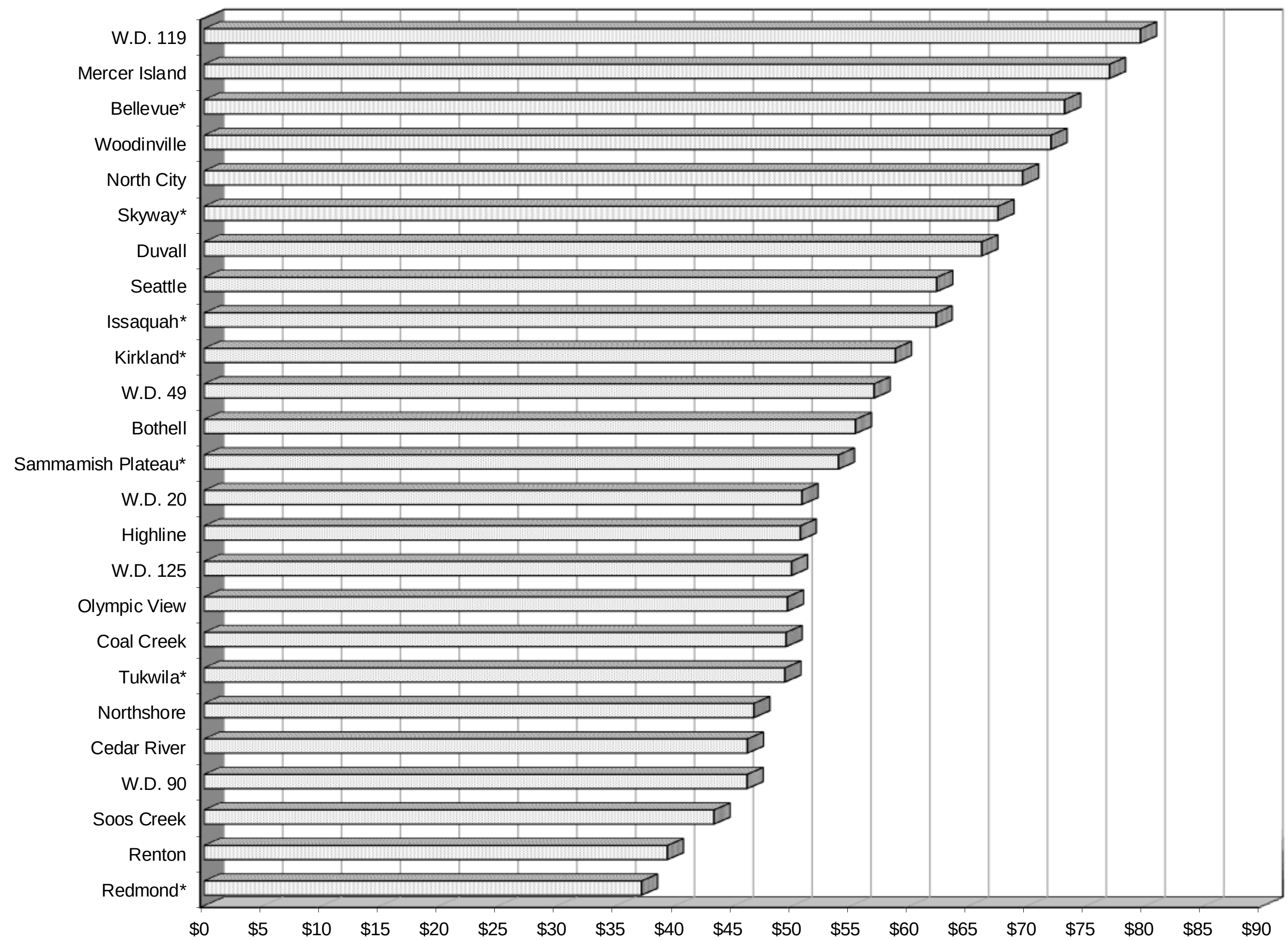


Figure 5 Average Monthly Residential Bills at High Consumption (2024 Rates)
(12 ccf/mo winter & 21 ccf/mo summer)

	Utility	Average Monthly Bill
1	Mercer Island	$179.40
2	Issaquah*	$169.24
3	Duvall	$147.45
4	Skyway*	$142.68
5	Bellevue*	$140.05
6	Woodinville	$133.05
7	W.D. 119	$130.24
8	North City	$126.73
9	Seattle	$119.07
10	Bothell	$118.86
11	Kirkland*	$116.06
12	W.D. 49	$114.45
13	Soos Creek	$96.15
14	W.D. 90	$93.09
15	W.D. 125	$92.89
16	Northshore	$91.58
17	Cedar River	$91.05
18	Highline	$89.85
19	Coal Creek	$89.68
20	W.D. 20	$85.77
21	Sammamish Plateau*	$84.98
22	Tukwila*	$81.40
23	Redmond*	$80.82
24	Olympic View	$74.91
25	Renton	$73.08
	Wholesale Average	**$109.68**

* Member of Cascade Water Alliance

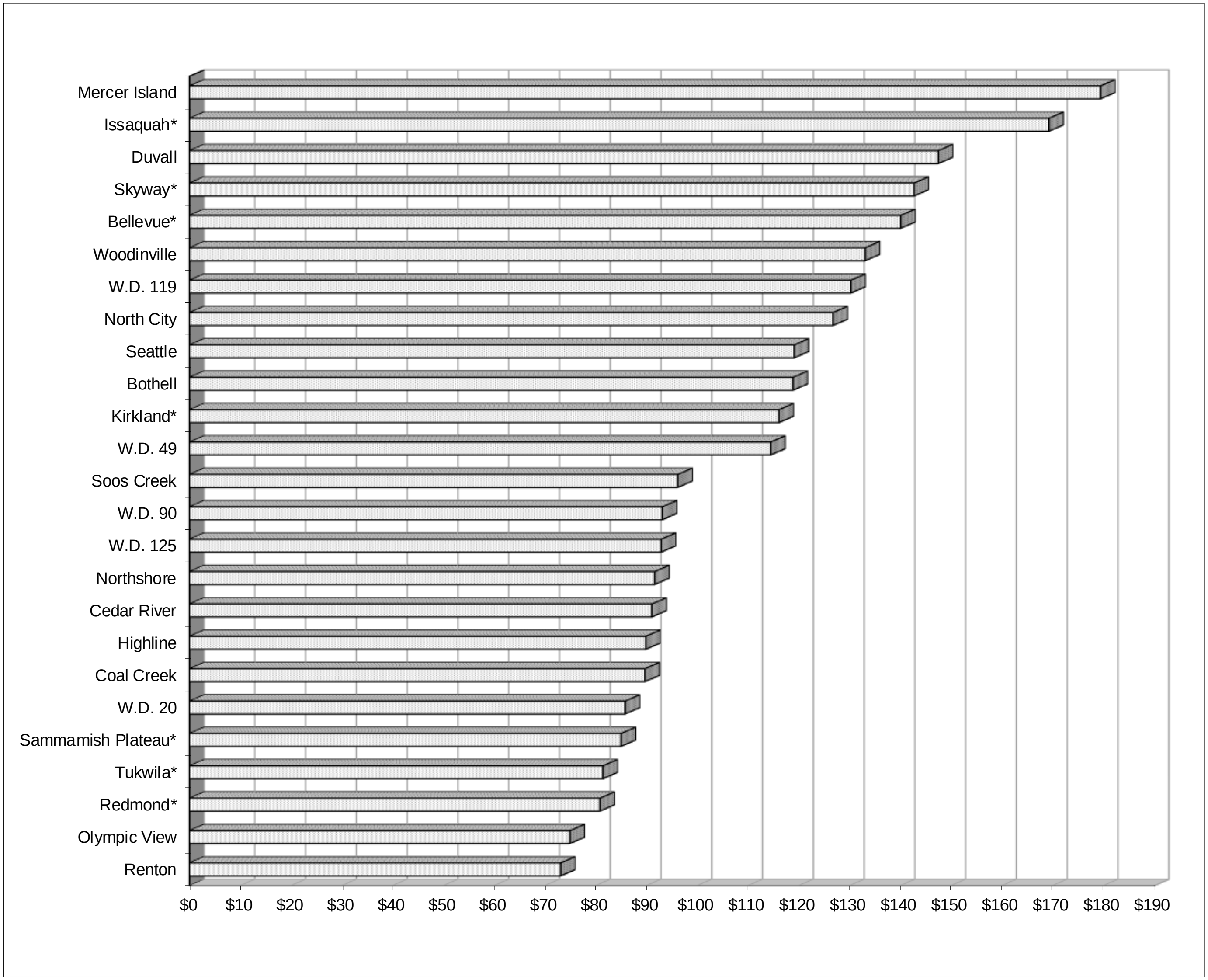


Figure 6 Average Monthly Residential Bills at Each Utility's Average Consumption
(2023 Consumption, 2024 Rates)

	Utility	Average Monthly CCF	Average Monthly Bill
1	Mercer Island	7.7	$85.52
2	Woodinville	8.2	$81.47
3	W.D. 119	6.6	$77.26
4	Bellevue*	7.2	$74.90
5	North City	5.4	$59.43
6	Sammamish Plateau*	8.4	$58.56
7	Duvall	6.0	$58.34
8	Kirkland*	6.8	$57.42
9	Skyway*	5.1	$52.90
10	Issaquah*	5.8	$52.00
11	Coal Creek	7.4	$51.35
12	W.D. 49	5.9	$50.89
13	W.D. 125	7.2	$50.82
14	Olympic View	7.2	$50.19
15	Highline	6.8	$50.07
16	Seattle	5.0	$49.66
17	Bothell	5.9	$48.68
18	W.D. 90	7.3	$48.31
19	Cedar River	7.3	$47.96
20	W.D. 20	5.9	$46.58
21	Tukwila*	6.1	$45.88
22	Northshore	6.0	$42.13
23	Soos Creek	6.4	$39.92
24	Renton	6.5	$37.48
25	Redmond*	6.4	$34.67
	Wholesale Average	**6.58**	**$54.10**

* Member of Cascade Water Alliance

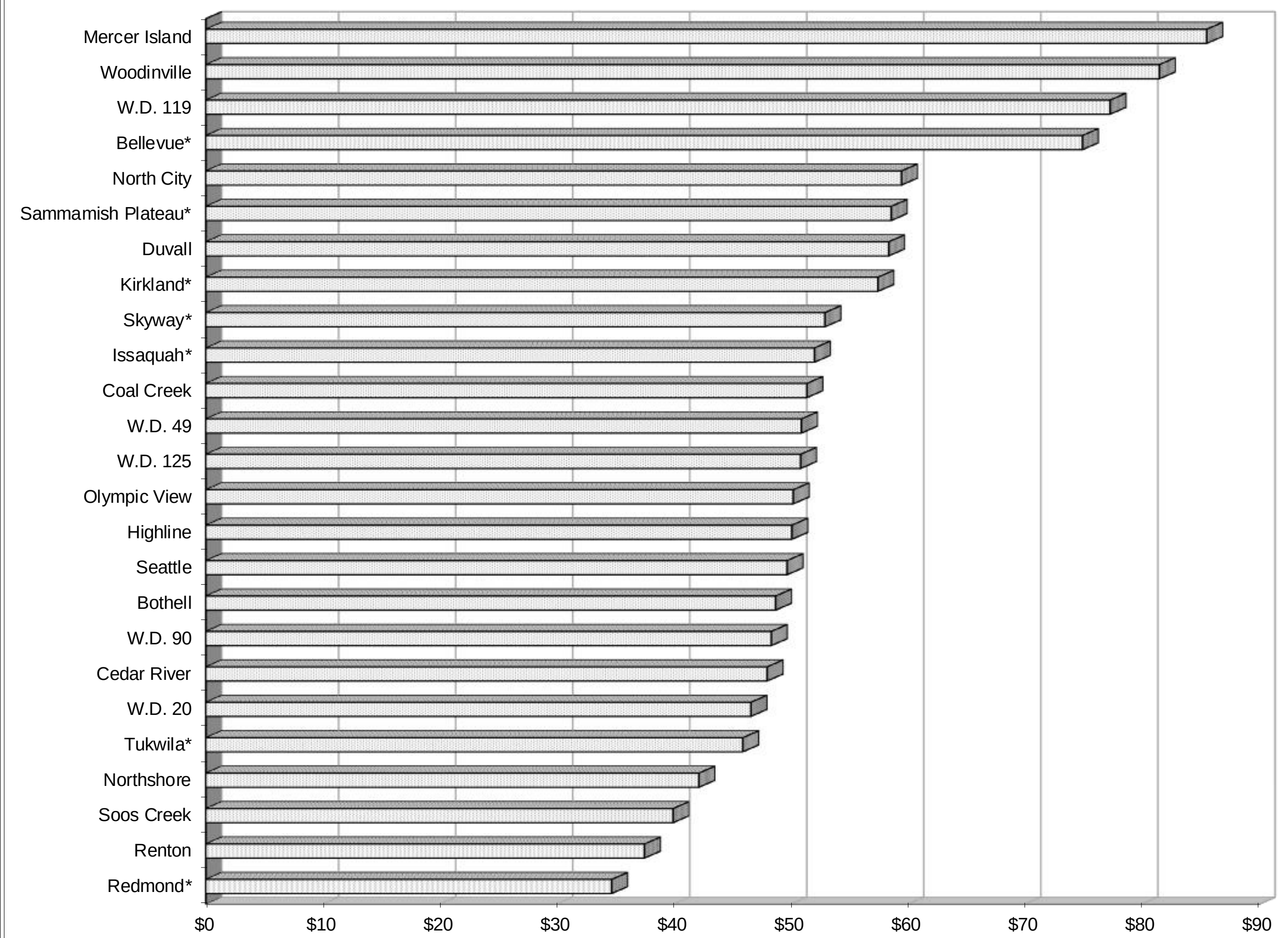


Table 3 Residential Bills: Average Annual, Winter, Summer (2024 Rates)
(Medium Consumption – 6ccf/mo winter & 9 ccf/mo summer)

Rank	Utility	Monthly Residential Bills			Summer/Winter
		Avg. Annual	Winter	Summer	Differential**
1	W.D. 119	$79.59	$69.78	$99.21	42.2%
2	Mercer Island	$76.95	$66.61	$97.63	46.6%
3	Bellevue*	$73.13	$66.08	$87.25	32.0%
4	Woodinville	$71.98	$62.15	$91.63	47.4%
5	North City	$69.56	$63.06	$82.56	30.9%
6	Skyway*	$67.47	$58.95	$84.51	43.4%
7	Duvall	$66.09	$57.58	$83.12	44.4%
8	Seattle	$62.27	$54.16	$78.48	44.9%
9	Issaquah*	$62.21	$52.09	$82.44	58.3%
10	Kirkland*	$58.75	$52.35	$71.57	36.7%
11	W.D. 49	$56.94	$50.78	$69.27	36.4%
12	Bothell	$55.35	$49.09	$67.87	38.3%
13	Sammamish Plateau*	$53.91	$51.06	$59.61	16.7%
14	W.D. 20	$50.81	$46.80	$58.83	25.7%
15	Highline	$50.67	$45.08	$61.84	37.2%
16	W.D. 125	$49.93	$44.56	$60.67	36.2%
17	Olympic View	$49.58	$45.59	$57.56	26.3%
18	Coal Creek	$49.46	$44.76	$58.86	31.5%
19	Tukwila*	$49.36	$44.48	$59.12	32.9%
20	Northshore	$46.72	$41.80	$56.56	35.3%
21	Cedar River	$46.17	$40.78	$56.95	39.7%
22	W.D. 90	$46.14	$39.80	$58.83	47.8%
23	Soos Creek	$43.33	$37.00	$56.00	51.4%
24	Renton	$39.37	$35.75	$46.61	30.4%
25	Redmond*	$37.17	$33.08	$45.35	37.1%
WHOLESALE AVERAGE		**$55.87**	**$49.63**	**$68.36**	**37.7%**

* Member of Cascade Water Alliance

**Note that the summer/winter differential is not the differential in rates but in bills. Almost all utilities have a differential of less than 50% even though bills are calculated with 50% more consumption in summer than in winter. This means that the average rate charged per ccf by these utilities is actually less in the summer than in the winter. This seemingly contradictory result is due to the impact of the meter charge which is spread over a greater number of ccf in the summer.

Table 4 Ranking of Bills at Different Levels of Consumption (2024 rates)

Ranking at Low Consumption		Ranking at Medium Consumption		Ranking at High Consumption	
1	W.D. 119	1	W.D. 119	1	Mercer Island
2	Bellevue*	2	Mercer Island	2	Issaquah*
3	Woodinville	3	Bellevue*	3	Duvall
4	North City	4	Woodinville	4	Skyway*
5	Mercer Island	5	North City	5	Bellevue*
6	Sammamish Plateau*	6	Skyway*	6	Woodinville
7	Skyway*	7	Duvall	7	W.D. 119
8	Duvall	8	Seattle	8	North City
9	Seattle	9	Issaquah*	9	Seattle
10	W.D. 49	10	Kirkland*	10	Bothell
11	Olympic View	11	W.D. 49	11	Kirkland*
12	W.D. 20	12	Bothell	12	W.D. 49
13	Kirkland*	13	Sammamish Plateau*	13	Soos Creek
14	Issaquah*	14	W.D. 20	14	W.D. 90
15	Bothell	15	Highline	15	W.D. 125
16	Tukwila*	16	W.D. 125	16	Northshore
17	Coal Creek	17	Olympic View	17	Cedar River
18	Highline	18	Coal Creek	18	Highline
19	W.D. 125	19	Tukwila*	19	Coal Creek
20	W.D. 90	20	Northshore	20	W.D. 20
21	Northshore	21	Cedar River	21	Sammamish Plateau*
22	Cedar River	22	W.D. 90	22	Tukwila*
23	Soos Creek	23	Soos Creek	23	Redmond*
24	Renton	24	Renton	24	Olympic View
25	Redmond*	25	Redmond*	25	Renton

Definition of Consumption Levels:**

	Winter	Summer	Average
Low	3.5 ccf/mo	5 ccf/mo	4 ccf/mo
Medium	6 ccf/mo	9 ccf/mo	7 ccf/mo
High	12 ccf/mo	21 ccf/mo	15 ccf/mo

* Member of Cascade Water Alliance

** Note that consumption levels have been revised downwards to reflect the long term decline in average consumption per single family household from 9.3 ccf/mo in the mid-1990s to about 7.0 ccf/mo currently.

3.0 Water Supply & Demand

3.1 Supply & Demand Overview

Various components of the overall supply and demand for 2023 are shown in Figure 7.

Key takeaways are:

- The total demand of both SPU and wholesale customers was 150.5 mgd (which was up approximately 2% from 2022).
- Of that 150.5 mgd, 125.6 mgd (83%) came from the SPU supply system and 24.9 mgd (17%) was obtained from “other sources”.
- Of the 24.9 mgd obtained from “other sources”, 17.4 mgd was from wholesale customers’ own supply (as shown in Figure 8), and the rest was water wholesale customers purchased from other water utilities.
- Of that 150.5 mgd, 60.3 mgd (40%) was used in the SPU system and 90.2 mgd (60%) was used in the wholesale customers’ systems.

Figure 7 Components of Supply & Demand (2023)

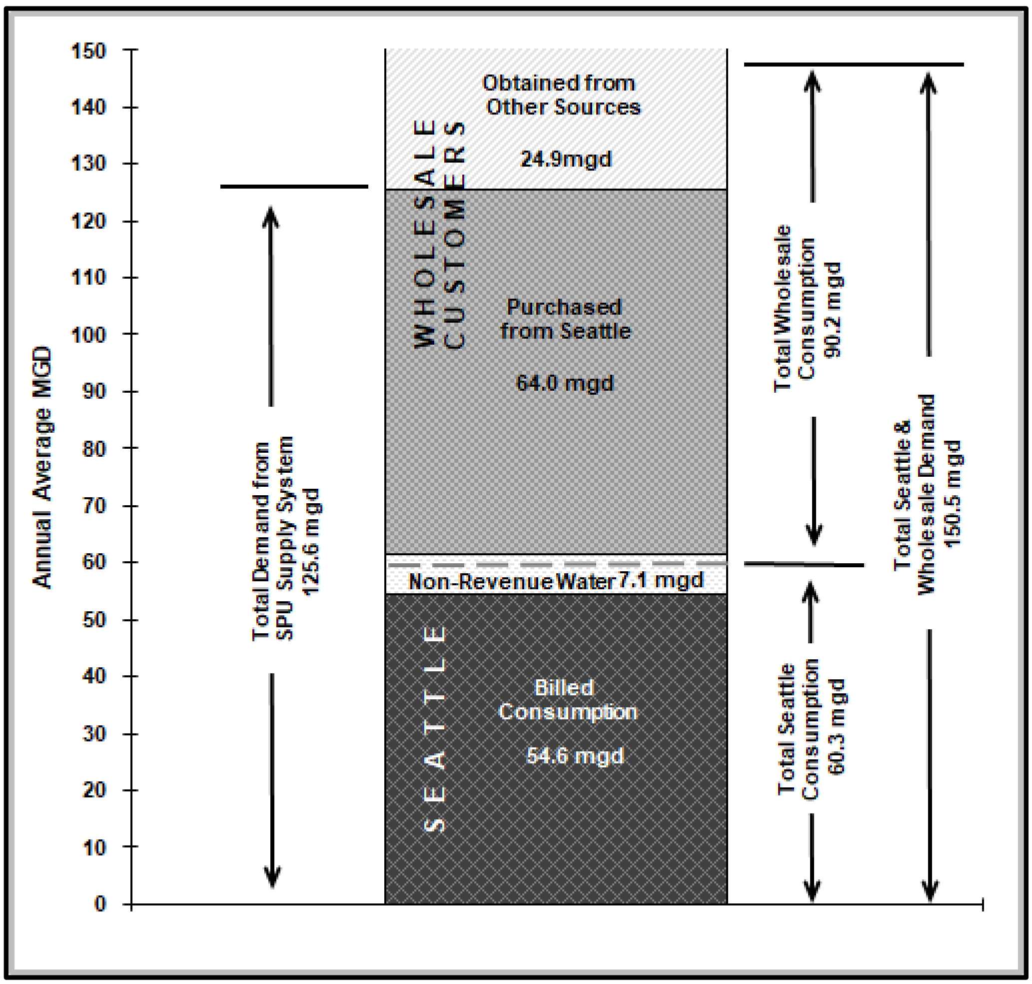
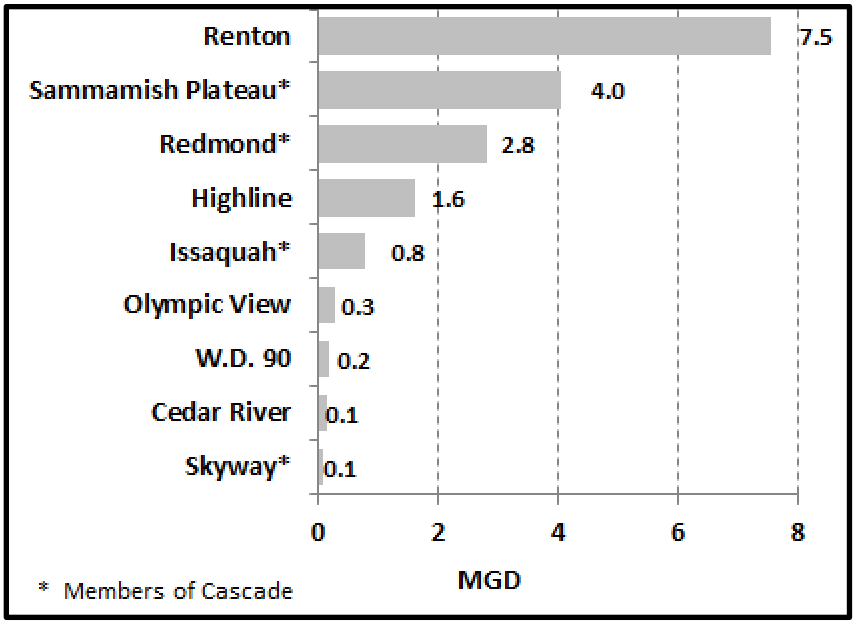


Figure 8 Water Obtained from Wholesale Customers' Own Supply (2023)



3.2 Population & Demand Over Time

Population and water demand for the Seattle regional water system since 1975 are shown in Figure 9. Population has risen steadily since 1975. During that time, total water demand can be characterized in five major phases:

- During the late 1970s and early 1980s, demand grew roughly with population
- During the late 1980s, demand leveled off at approximately 170 mgd
- In 1992 demand dropped off sharply due to a drought, and then during the rest of the 1990s, held relatively constant at approximately 150 mgd, well below pre-drought levels
- During the 2000s, demand continued to decrease into the 140 and 130 mgd levels
- In 2010 demand bottomed out at 118 mgd and has since generally hovered in the low to mid 120 mgd levels

The decrease in total water demand, despite increasing population, is due to the combined effects of plumbing codes and appliance efficiencies, the regional water conservation program, rate structures that encourage conservation, rising water rates, and improved system operations.

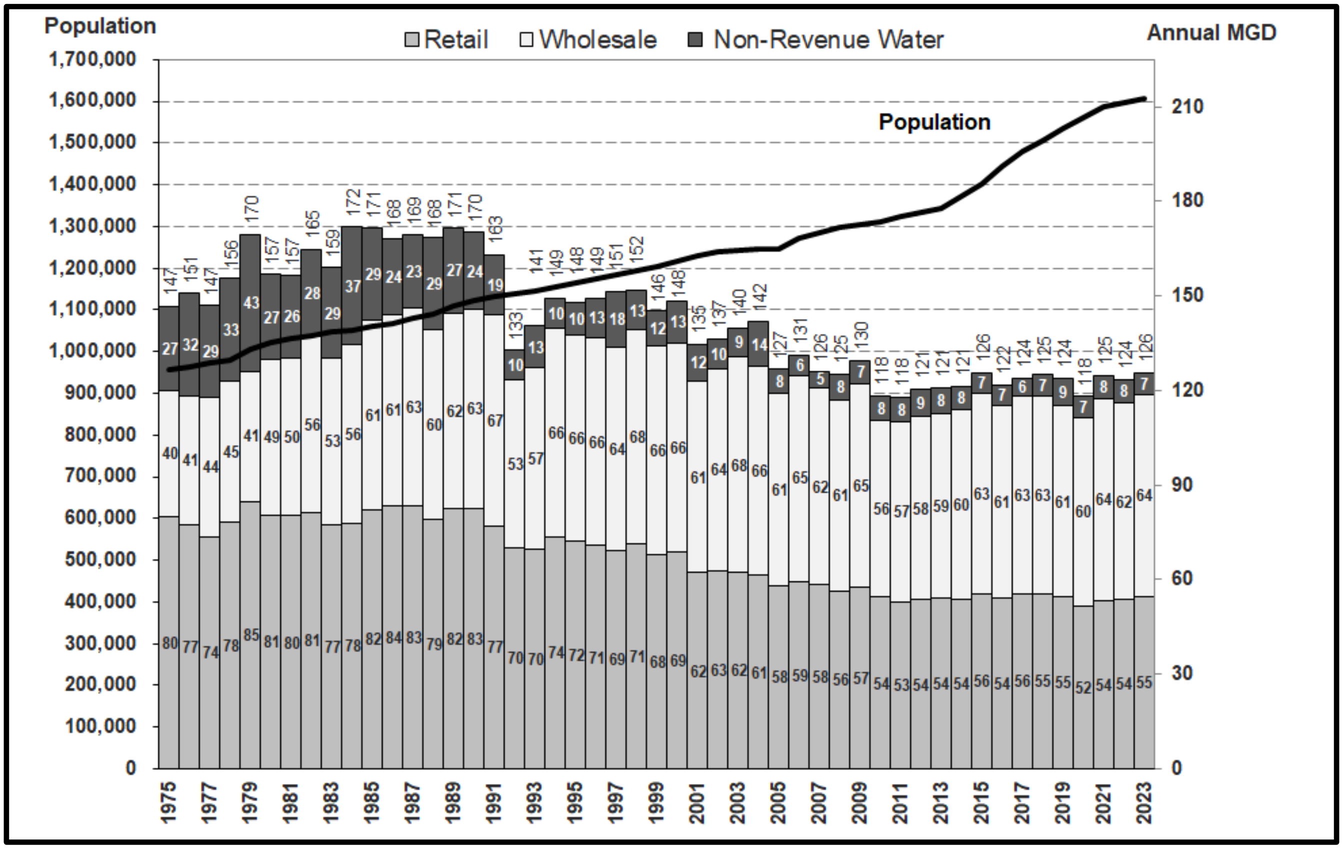
The current flat demand trend is confirmed by focusing on winter base demand, which eliminates summer variability. While base demand dropped 40 mgd over the last 2½ decades, it appears to have bottomed out at approximately 100 mgd where it has been for the past several years.

Other key takeaways from Figure 9 are:

- Total water demand has declined 26% since 1990, while population has increased 44%.
- Per capita demand is approximately 50% less than it was in 1990.
- Wholesale demand grew from 40 mgd in 1975 to 67 mgd in 1991. Following the 1992 drought, it leveled off (averaging 66 mgd) for the next decade and a half before dropping to around 60 mgd since then.
- SPU retail demand was essentially flat between 1975 and 1991 (averaging 80 mgd) but trended steadily downward before leveling off at about 55 mgd after 2010.
- Non-revenue water decreased by more than 50% due to actions taken by SPU just before and during the 1992 drought. Those actions included reducing in-city reservoir overflows, eliminating regular

flushing of Green Lake, relining leaky reservoirs, changing reservoir washing practices, and rehabilitating and replacing other reservoirs. SPU's now-completed program to cover all its in-city reservoirs further reduced non-revenue water.

Figure 9 Population and Components of Water Demand (1975-2023)



* Population has been adjusted downwards to reflect that some wholesale customers have other sources of supply in addition to what they purchase from SPU.

3.3 Direct Purchases from SPU

Water purchases from SPU by wholesale customers are shown visually for 2023 in Figure 10 and the most recent 15 years are documented in Table 5. **Key takeaways for 2023 are:**

- Purchases vary widely from approximately 38,000 ccf to 9,408,000 ccf.
- Bellevue purchases the largest volume of water.
- Renton purchases the smallest volume of water.

Note that direct purchases from SPU may be different than a wholesale customer's full supply for their customers. Some wholesale customers have their own supply or purchase water from another utility. Additionally, some water purchased by Cascade members is wheeled to other Cascade members who do not have direct connections to the SPU system, such as Issaquah and Sammamish Plateau. For example, some of the water "purchased" by Bellevue ends up in Issaquah and Sammamish Plateau.

3.4 Retail Sales

Retail water sales by wholesale customers are shown visually for 2023 in Figure 11 and the most recent 15 years are documented in Table 6. **Key takeaways for 2023 are:**

- Retail sales vary widely from approximately 102,000 ccf to 6,627,000 ccf.

- Bellevue retails the largest volume of water.
- WD 119 retails the smallest volume of water.

The percent change in retail sales for SPU and each of the wholesale customers since 1995 (both in total and on an average annual basis) is shown in Figure 12. **Key takeaways are:**

- 7 utilities have experienced positive growth in retail sales since 1995. Most of those utilities are in expanding and faster growing areas.
    - The largest increases have been in Duvall, Redmond, Cedar River, and WD 90 where retail sales have increased by 26% to 74% since 1995 (0.9% to 2.6% annual average).
- 16 utilities have experienced negative growth in retail sales since 1995. For these utilities, the combined effect of utility conservation programs, fixture and appliance codes, and rising water rates has more than offset the impact of growth in the customer base.
    - The largest decreases have been in Skyway, North City, SPU and WD 49 where retail sales have decreased by 23% to 29% since 1995 (0.8% to 1.3% annual average).
- Note that the apparent even larger decline for Coal Creek (37%) is due to the annexation of much of its service territory by Bellevue in 2003.

3.5 Non-Revenue Water

Non-revenue water is the difference between water that is produced and/or purchased and water that is sold to retail or wholesale customers. There are many causes of non-revenue water. Some are beneficial such as firefighting, water main flushing, and reservoir cleaning. However, others are undesirable such as pipeline leaks, inadvertent reservoir overflows, and slow customer meters. For a newer water system efficiently operated, non-revenue water as a percent of production and/or purchases might be expected to be near 5%. Non-revenue water above 10% should prompt analysis of the cause(s), and non-revenue water in excess of 15% is definitely a call to action.[2]

Non-revenue water as a percent of production and/or purchases by wholesale customer shown visually for 2023 (and includes values for the two previous years for reference) in Figure 13 and the most recent 15 years is documented in Table 7. **Key takeaways are:**

- For 2023, the percent non-revenue water varied from 3.6% to 19.3%. (Note: one wholesale customer shows negative non-revenue water, however that is due to a data error.)
- For 2023, the average percent non-revenue water was 6.5%.
- For the last 15 years, the average percent non-revenue water was 7.2%.

Calculating non-revenue water is complicated by two issues: billing lags and metering inaccuracies. Due to differences in the length of billing lags, the measure of annual production and purchases generally doesn't span the exact same period as the measure of retail and wholesale sales. These may be offset by as much as two months. Fortunately, these months are in the middle of winter when demand tends to be relatively constant from month to month. Slow wholesale meters or missing meter readings pose a more serious problem since they would reduce the difference between the amount of water entering a wholesale customer's system and the amount of water sold by that wholesale customer. Extremely low levels of non-revenue water (under 3%) indicate there might be a metering problem. Negative non-revenue water is a sure sign of a metering problem.

[2] The state Water Use Efficiency Rule requires water utilities to report their Distribution System Leakage (DSL) to the Department of Health annually, and to take action if the 3-year moving average exceeds 10%. Note that non-revenue water is different than DSL. All water produced or purchased but not sold is considered non-revenue water. DSL starts with non-revenue water but subtracts out all authorized uses of water that can be measured or estimated. These include uses such as firefighting, water main flushing, and reservoir cleaning.

Non-revenue water for SPU is not included because it is not directly comparable to wholesale non-revenue water. For wholesale customers, non-revenue water is related to their distribution systems. SPU's non-revenue is related to both its distribution system and leaks on the transmission system. Comparing non-revenue water for SPU and the wholesale customers would be misleading unless the distribution system component of SPU non-revenue water could be isolated, which is not possible.

3.6 Water Use Per Single Family Household and Per Account

Water use per single family household since 1994 is provided in Table 8 and is shown visually in Figure 14. **Key takeaways are:**

- There is an overall downward trend for single family household use for both wholesale customers and SPU.
- For wholesale customers, water use per single family household in 2023 is approximately 30% lower than in 1994.
- For SPU, water use per single family household in 2023 is approximately 35% lower than in 1994.

Water use per single family household for 2023, on both an annual average and peak season basis, is shown in Figure 15. **Key takeaways are:**

- Average annual use ranges from 124 gpd to 207 gpd, with a wholesale weighted average of 170 gpd.
- Peak season use ranges from 145 gpd to 322 gpd, with a wholesale weighted average of 245 gpd.
- SPU has the lowest average annual use.
- Skyway has the lowest peak season use.
- Sammamish Plateau has both the highest average annual and peak season use.

The variance in water use per single family household between utilities is due to more than just different attitudes towards water conservation. Utilities on the higher end of the list tend to have some or all of the following characteristics associated with higher water use: larger lot sizes, higher average persons per household, and higher household incomes. Utilities on the lower end of the list tend to have the opposite characteristics: smaller lot sizes, fewer persons per household, and lower average household incomes.

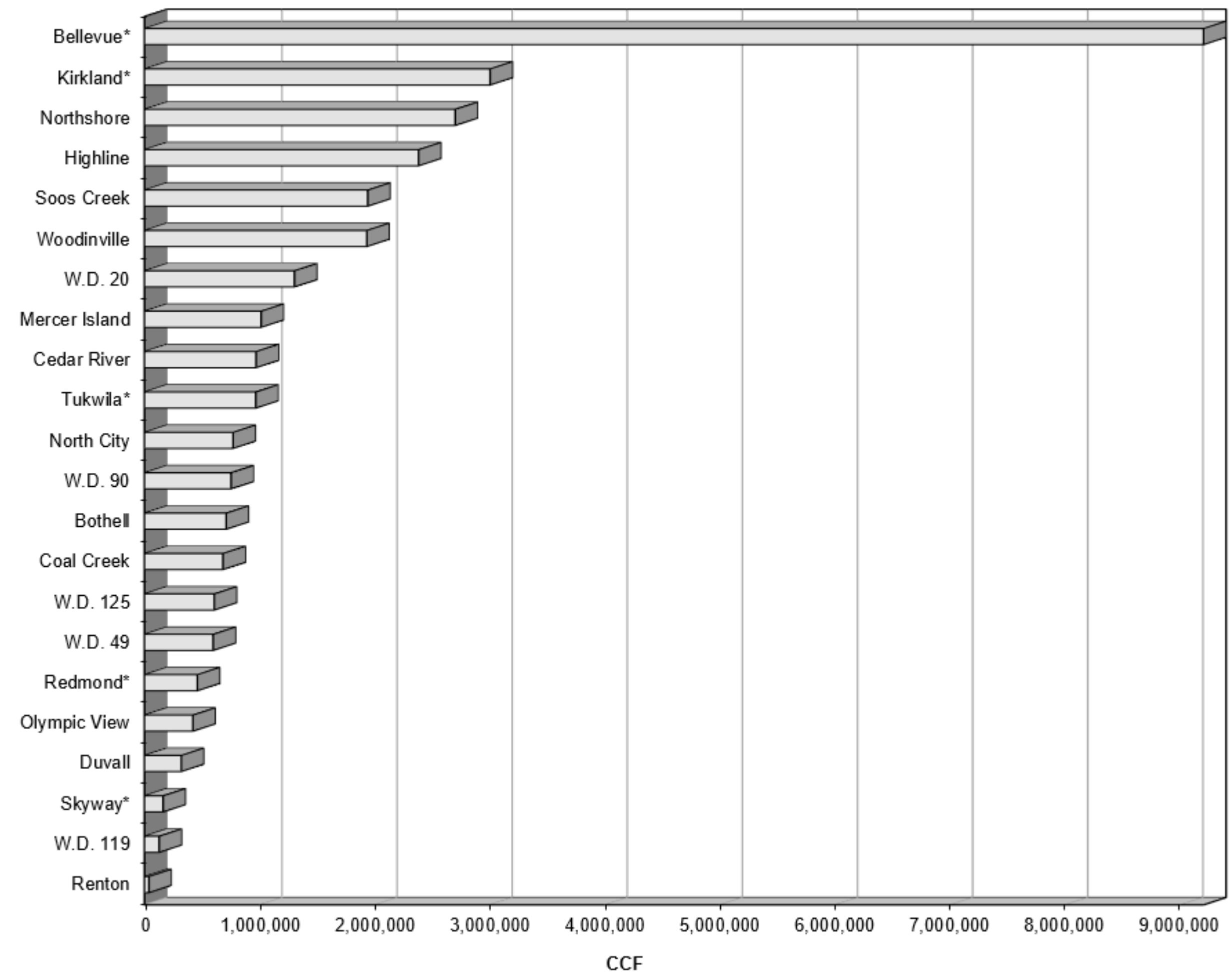
Water use per account for 2023 on an annual average basis is shown in Figure 16. **Key takeaways are:**

- Average annual use varies widely from 158 gpd to 771 gpd, with a wholesale weighted average of 302 gpd.
- Skyway has the lowest average annual use per account.
- Tukwila has the highest average annual use per account.

Similar to water use per single family household, the variance in water use per account is not an indication of the relative efficiency of water use among the different utilities. Rather, higher levels of water use per account are associated with higher proportions of non-residential and multifamily customers. Utilities at the higher end of the list have higher proportions of non-residential and multifamily demand (50% or more of the total – Tukwila is 89%). Utilities at the lower end of the list have higher proportions of single family demand, many with primarily single-family customers.

Figure 10 Wholesale Customers Ranked by Direct Purchases from SPU (2023)

	Wholesale Customer	Direct Purchases from SPU (ccf)
1	Bellevue*	9,408,085
2	Kirkland*	3,002,102
3	Northshore	2,698,646
4	Highline	2,380,578
5	Soos Creek	1,938,427
6	Woodinville	1,930,759
7	W.D. 20	1,301,977
8	Mercer Island	1,012,097
9	Cedar River	968,855
10	Tukwila*	965,582
11	North City	768,678
12	W.D. 90	751,307
13	Bothell	708,739
14	Coal Creek	681,305
15	W.D. 125	605,536
16	W.D. 49	595,855
17	Redmond*	458,486
18	Olympic View	419,577
19	Duvall	318,788
20	Skyway*	160,337
21	W.D. 119	126,549
22	Renton	37,757
Total		31,240,022



* Member of Cascade Water Alliance

"Direct purchases from SPU" may be different than a utility's full supply for their customers if they have their own supply, purchase water from another utility, or receive/send wheeled water from/to another utility.

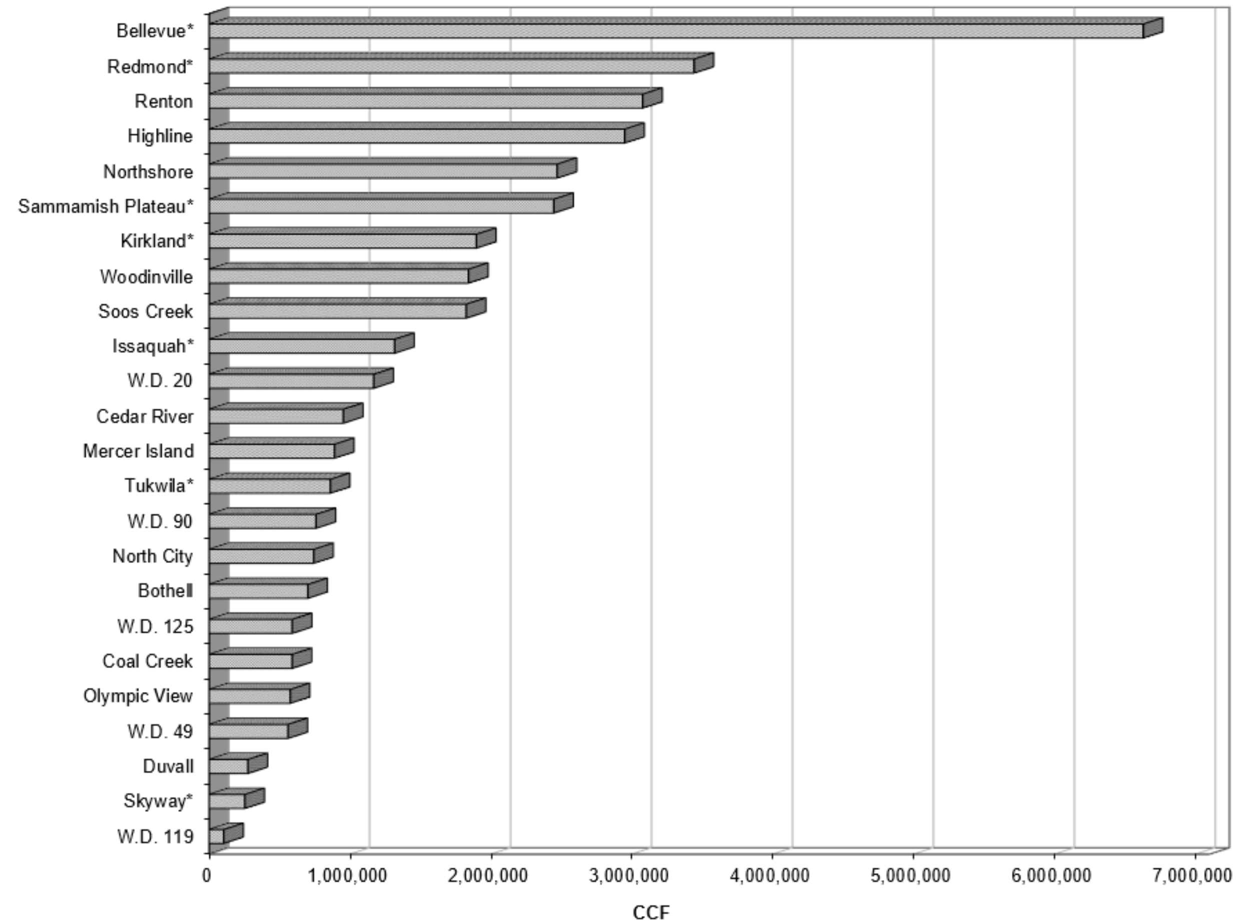
Table 5 Direct Purchases from SPU in CCF (15 Years 2009-2023)

Wholesale Customer	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1 Bellevue*	8,573,043	7,714,349	7,912,285	8,440,512	8,671,870	8,468,924	9,056,491	8,872,628	9,226,813	8,905,462	8,565,565	8,369,054	9,148,180	8,951,383	9,408,085
2 Bothell	732,256	640,359	637,415	656,581	670,069	751,608	724,782	708,236	734,017	711,256	721,410	662,496	711,655	685,796	708,739
3 Cedar River	924,524	800,755	758,691	701,387	809,005	827,277	910,094	853,281	898,592	903,816	874,495	931,745	994,480	911,258	968,855
4 Coal Creek	597,952	485,859	493,533	525,773	521,259	555,475	602,575	595,446	600,015	609,914	575,463	591,002	676,027	642,081	681,305
5 Duvall	253,521	224,298	233,390	232,947	235,508	243,416	260,014	249,931	260,769	261,715	265,875	276,095	287,954	309,145	318,788
6 Highline	2,351,174	2,143,580	2,126,929	2,105,391	1,900,457	2,159,022	2,401,204	2,331,523	2,284,771	2,757,935	2,385,145	2,215,235	2,276,533	2,294,678	2,380,578
7 Kirkland*	3,009,442	2,670,036	2,660,037	2,658,078	2,664,624	2,834,762	3,008,403	2,849,305	2,953,527	2,969,746	2,838,223	2,855,995	3,054,041	2,949,309	3,002,102
8 Mercer Island	1,032,966	855,678	924,062	992,386	1,003,892	1,041,934	1,080,492	1,060,012	1,049,915	1,061,191	973,875	969,154	1,059,931	1,034,238	1,012,097
9 North City	860,299	771,973	650,376	669,971	838,799	848,588	831,093	807,225	797,314	768,266	737,191	777,175	782,394	754,139	768,678
10 Northshore	2,574,352	2,394,673	2,463,963	2,451,174	2,486,656	2,541,588	2,623,056	2,526,863	2,552,095	2,573,525	2,542,597	2,542,292	2,727,882	2,583,527	2,698,646
11 Olympic View	496,479	361,712	348,497	374,499	385,411	402,010	427,550	428,769	428,901	496,246	508,637	412,017	389,833	393,490	419,577
12 Redmond*	1,242,852	499,676	705,173	652,641	473,834	474,702	553,274	389,216	564,176	533,616	537,443	450,133	591,328	724,690	458,486
13 Renton	42,490	59,904	88,749	51,086	43,815	47,775	54,951	47,067	56,131	57,192	39,003	15,552	15,997	25,931	37,757
14 Skyway*	185,047	165,814	174,797	146,535	157,344	167,003	172,648	163,683	162,762	163,586	173,768	167,963	172,863	161,464	160,337
15 Soos Creek	2,119,629	1,873,183	2,008,295	1,945,924	1,922,452	1,949,246	2,002,945	1,963,028	2,013,964	1,993,197	1,935,341	2,052,854	1,971,709	1,973,102	1,938,427
16 Tukwila*	986,705	920,469	942,999	943,018	952,619	967,875	1,001,737	961,845	929,710	828,712	888,727	797,464	911,824	867,434	965,582
17 Woodinville	2,184,773	1,781,785	1,759,518	1,740,966	1,915,528	1,922,760	1,987,587	1,830,139	1,903,717	1,863,406	1,789,421	1,770,749	1,949,280	1,866,773	1,930,759
18 W.D. 20	1,386,645	1,237,668	1,233,990	1,215,151	1,245,419	1,264,750	1,240,865	1,172,367	1,177,081	1,177,316	1,199,881	1,190,359	1,239,774	1,311,207	1,301,977
19 W.D. 45	95,912	100,229	106,783	107,679	111,838	112,930	113,495	110,107	112,601	113,911	Assumed by WD 20	Assumed by WD 20	Assumed by WD 20	Assumed by WD 20	Assumed by WD 20
20 W.D. 49	589,113	556,683	638,260	610,235	562,840	606,746	625,497	631,025	602,751	623,686	593,724	599,654	623,663	575,638	595,855
21 W.D. 90	521,397	433,468	493,819	536,673	540,180	594,651	621,453	592,318	628,548	679,943	743,654	850,643	863,734	713,559	751,307
22 W.D. 119	132,998	115,579	110,073	111,287	108,192	150,749	122,240	111,629	129,592	121,757	115,562	113,186	121,484	118,349	126,549
23 W.D. 125	587,539	514,478	495,650	495,315	481,332	458,505	495,718	533,392	553,383	560,243	578,921	598,987	616,193	593,498	605,536
Total	31,481,128	27,322,218	27,967,343	28,365,209	28,702,943	29,392,493	30,918,362	29,789,035	30,621,145	30,735,637	29,583,921	29,644,385	31,186,759	30,440,689	31,240,022

* Members of Cascade Water Alliance. Water shown as "purchased" by Cascade members reflects consumption measured through their meters with SPU. However, individual Cascade members are not billed directly by SPU. "Direct purchases from SPU" may be different than a utility's full supply for their customers due to factors such as utilities that have their own supply or wheel water to another utility.

Figure 11 Wholesale Customers Ranked by Retail Sales (2023)

	Wholesale Customer	Retail Sales (ccf)
1	Bellevue*	6,627,143
2	Redmond*	3,439,965
3	Renton	3,075,651
4	Highline	2,947,663
5	Northshore	2,468,085
6	Sammamish Plateau*	2,444,414
7	Kirkland*	1,895,892
8	Woodinville	1,839,385
9	Soos Creek	1,822,981
10	Issaquah*	1,315,004
11	W.D. 20	1,167,292
12	Cedar River	950,984
13	Mercer Island	888,243
14	Tukwila*	858,675
15	W.D. 90	757,309
16	North City	741,204
17	Bothell	699,411
18	W.D. 125	588,233
19	Coal Creek	587,959
20	Olympic View	574,188
21	W.D. 49	558,409
22	Duvall	274,194
23	Skyway*	252,444
24	W.D. 119	102,470
Total		36,877,198



* Member of Cascade Water Alliance
"Retail water sales" may include water that was not a "direct purchase from SPU" if they have their own supply, purchase water from another utility, or receive water wheeled from another utility.

Table 6 Retail Sales in CCF (15 Years 2009-2023)

Water Utility	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1 Bellevue*	6,908,439	6,276,954	**No Data**	6,652,102	6,622,564	6,776,081	7,068,290	6,853,901	6,828,709	6,779,446	6,401,318	6,495,177	6,657,589	6,501,592	6,627,143
2 Bothell	726,962	681,145	627,483	645,746	663,539	715,943	738,030	756,659	749,566	711,283	714,905	659,140	713,568	673,522	699,411
3 Cedar River	941,306	816,633	791,574	845,321	837,278	856,402	920,373	867,483	911,155	906,155	842,859	900,746	970,033	913,039	950,984
4 Coal Creek	554,686	439,423	443,453	479,094	472,781	491,909	560,980	502,896	542,719	547,773	514,115	539,527	640,068	574,173	587,959
5 Duvall	239,872	200,987	215,895	216,172	213,225	229,374	228,157	231,285	240,887	225,971	242,548	241,024	264,681	285,678	274,194
6 Highline	2,920,652	2,661,812	2,644,611	2,659,258	2,703,065	2,779,089	2,847,534	2,850,950	2,868,973	2,933,283	2,847,942	2,814,537	2,849,038	2,881,436	2,947,663
7 Issaquah*	892,875	809,031	821,652	881,251	872,886	984,285	973,085	937,721	1,111,339	1,100,421	1,092,068	1,243,948	1,323,576	1,379,439	1,315,004
8 Kirkland*	1,801,406	1,574,869	**No Data**	1,566,695	1,698,294	1,773,444	1,804,311	1,746,056	2,177,462	2,017,755	1,719,358	1,680,283	1,825,163	1,754,929	1,895,892
9 Mercer Island	1,000,468	866,165	891,529	897,230	900,575	966,483	959,114	930,888	956,501	955,383	878,100	879,804	888,229	870,298	888,243
10 North City	843,675	746,571	709,027	731,780	746,917	754,150	750,242	754,789	756,651	741,914	722,107	731,522	754,259	731,804	741,204
11 Northshore	2,512,510	2,334,511	2,266,068	2,362,615	2,427,789	2,452,293	2,505,023	2,384,959	2,430,100	2,433,274	2,404,209	2,396,887	2,516,290	2,433,148	2,468,085
12 Olympic View	683,135	585,617	575,861	558,421	586,950	603,319	618,309	597,300	608,778	606,324	584,802	558,167	579,899	564,891	574,188
13 Redmond*	3,165,854	2,969,511	2,832,871	2,996,495	3,005,475	3,105,651	2,967,794	3,288,969	3,581,110	3,467,236	3,146,423	3,002,295	3,259,437	3,146,633	3,439,965
14 Renton	3,035,983	2,789,845	2,830,862	2,955,165	2,867,155	2,859,392	3,007,726	2,940,561	3,048,079	3,102,042	2,911,372	2,820,931	2,970,753	2,931,736	3,075,651
15 Sammamish Plateau*	2,310,814	1,976,398	1,984,468	2,070,994	2,053,303	2,150,767	2,386,234	2,260,752	2,451,686	2,404,829	2,225,557	2,369,521	2,537,030	2,428,557	2,444,414
16 Skyway	277,182	257,760	257,921	252,642	252,760	268,745	273,221	257,206	263,956	260,042	254,741	260,818	263,437	256,433	252,444
17 Soos Creek	1,903,844	1,693,450	1,737,069	1,867,566	1,861,518	1,896,792	1,903,748	1,899,834	1,927,781	1,938,356	1,879,929	1,956,437	1,933,380	1,915,782	1,822,981
18 Tukwila*	888,759	843,254	836,866	869,865	884,564	914,889	932,015	876,305	932,099	899,332	826,463	726,562	799,239	809,675	858,675
19 Woodinville	1,987,478	1,679,587	1,696,919	1,724,180	1,739,578	1,848,832	1,897,607	1,717,238	1,811,486	1,768,412	1,685,040	1,679,802	1,842,168	1,804,301	1,839,385
20 W.D. 20	1,115,278	1,034,602	1,005,816	1,013,874	994,177	1,035,187	1,029,163	1,028,520	1,002,558	1,049,658	1,114,723	1,123,800	1,171,756	1,130,754	1,167,292
21 W.D. 45	90,799	97,857	100,065	105,855	104,627	107,942	111,737	104,755	105,375	104,153	Assumed by WD 20	Assumed by WD 20	Assumed by WD 20	Assumed by WD 20	Assumed by WD 20
22 W.D. 49	586,525	549,063	548,355	548,241	537,628	558,191	572,646	567,597	566,205	577,452	553,946	535,675	610,708	529,152	558,409
23 W.D. 90	720,856	634,419	638,859	667,072	694,406	706,094	764,579	709,933	762,857	757,774	733,208	771,023	820,189	744,583	757,309
24 W.D. 119	116,871	102,606	No Data	113,957	112,750	No Data	127,510	No Data	No Data	99,809	95,928	No Data	110,386	100,106	102,470
25 W.D. 125	654,841	574,180	559,617	570,319	555,828	573,455	582,314	571,481	570,541	572,130	552,137	559,713	587,475	568,628	588,233
TOTAL[1]	36,881,070	33,196,250	Missing Data	34,251,910	34,409,632	Missing Data	36,529,742	Missing Data	Missing Data	36,960,206	34,943,799	Missing Data	36,888,351	35,930,289	36,877,198
26 Seattle	28,015,569	26,561,023	25,824,242	26,279,721	26,429,190	26,190,327	27,150,842	26,539,995	27,155,436	27,049,608	26,589,304	25,243,889	26,098,340	26,150,211	26,623,117

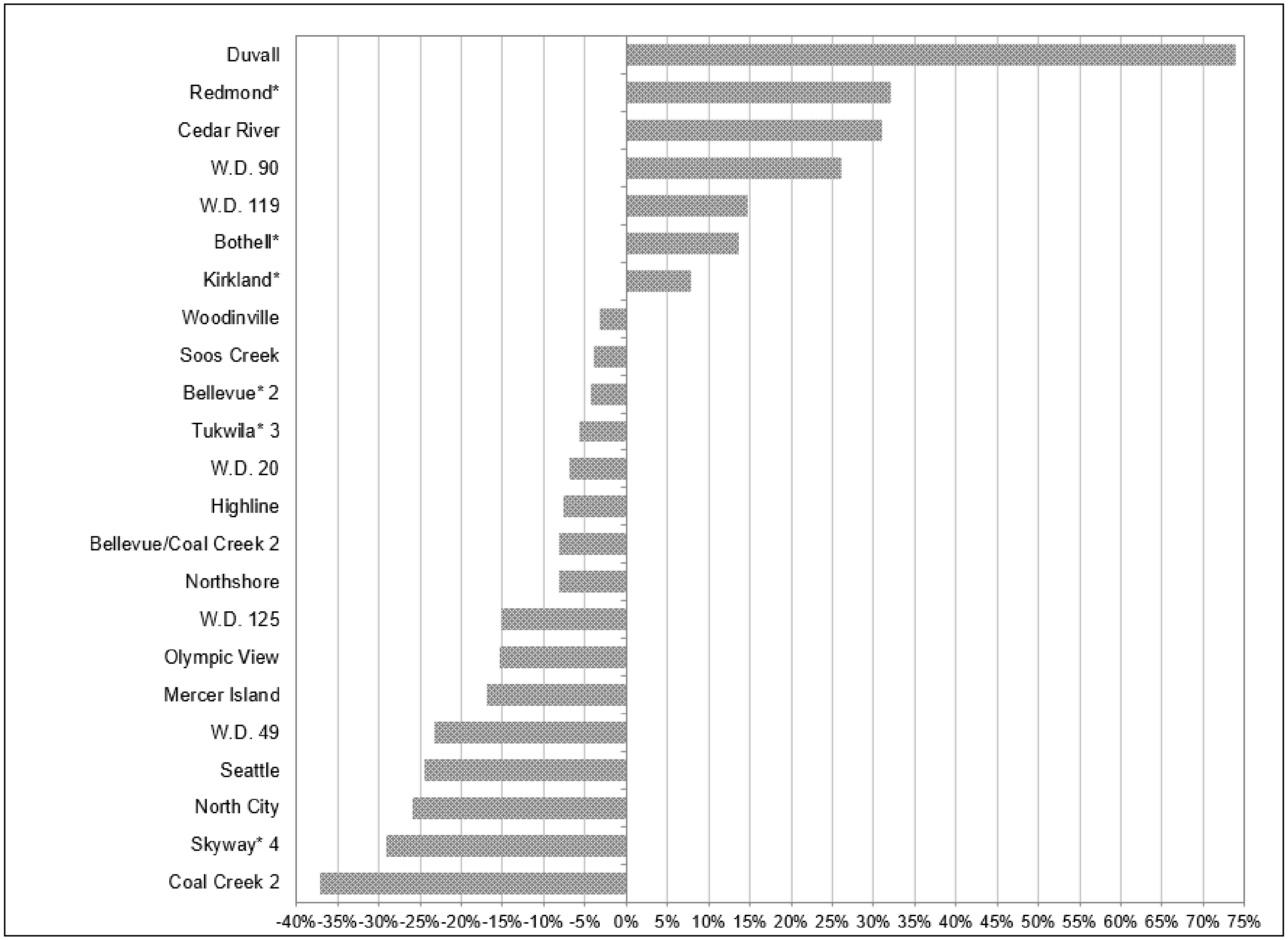
"Retail water sales" may include water that was not a "direct purchase from SPU" in the case of utilities that have their own supply or receive water wheeled from another utility.

Consumption data is missing for Bothell in 2004 and Northshore in 2005. Redmond did not provide data for 2004, 2005, 2006, and 2007. Bellevue and Tukwila did not provide data for 2006. Historical data is not available for Renton prior to 2007 nor available for Issaquah and Sammamish Plateau prior to 2008. Bellevue, Kirkland and WD 119 did not provide data for 2011, and WD 119 did not provide data for 2014, 2016, 2017 and 2020.

* Member of Cascade Water Alliance.

Figure 12 Percent Change in Retail Sales by Utility (1995-2023)

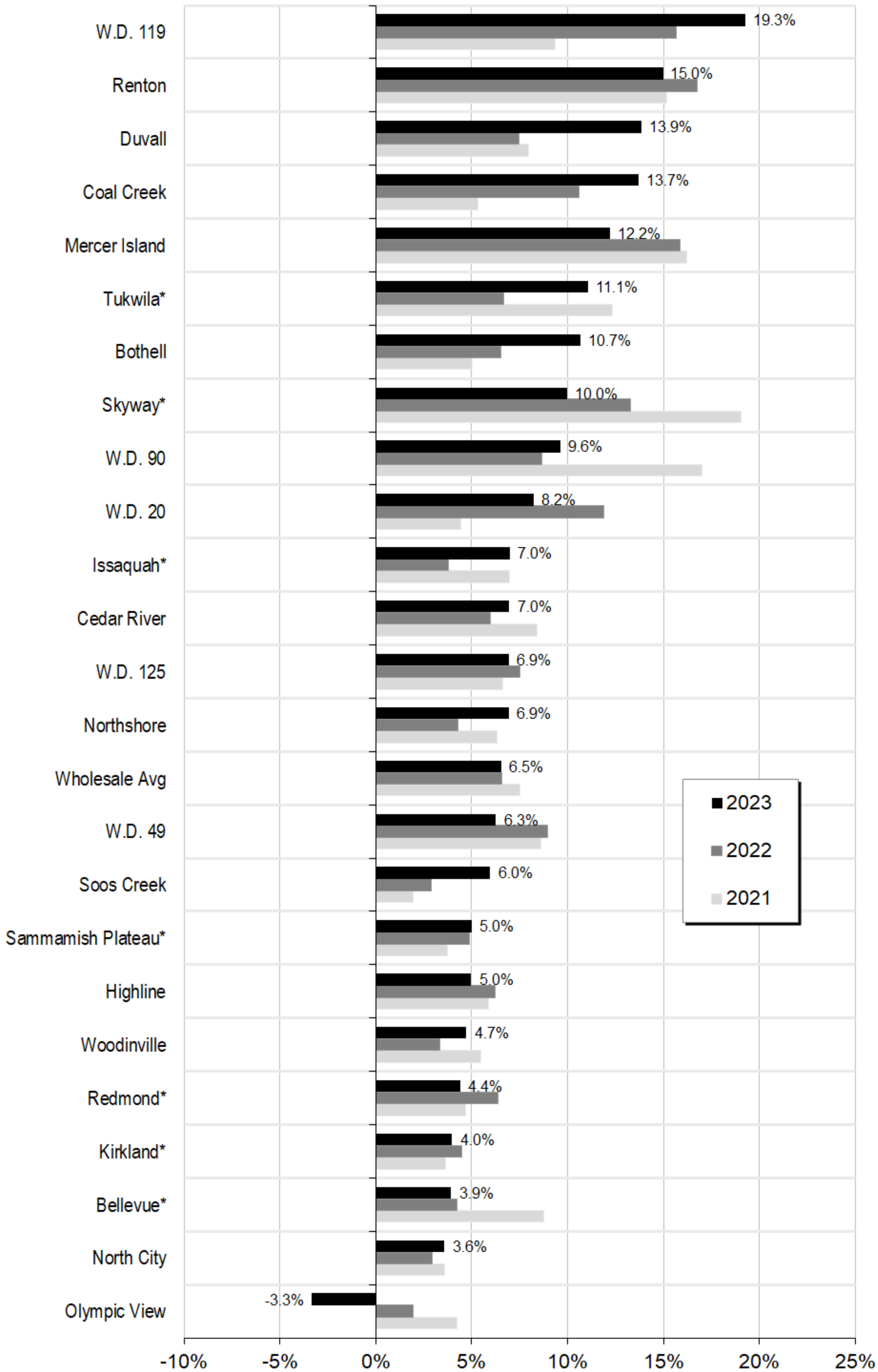
	Water Utilty [1]	Percent Change 1995-2023	Percent Change Average Annual
1	Coal Creek [2]	-37.2%	-1.3%
2	Skyway* [4]	-29.1%	-1.3%
3	North City	-25.9%	-0.9%
4	Seattle	-24.4%	-0.9%
5	W.D. 49	-23.2%	-0.8%
6	Mercer Island	-16.9%	-0.6%
7	Olympic View	-15.4%	-0.5%
8	W.D. 125	-15.2%	-0.5%
9	Northshore	-8.2%	-0.3%
10	Bellevue/Coal Creek [2]	-8.1%	-0.3%
11	Highline	-7.6%	-0.3%
12	W.D. 20	-6.9%	-0.2%
13	Tukwila* [3]	-5.7%	-0.2%
14	Bellevue* [2]	-4.2%	-0.2%
15	Soos Creek	-3.9%	-0.1%
16	Woodinville	-3.2%	-0.1%
17	Kirkland*	7.8%	0.3%
18	Bothell*	13.6%	0.5%
19	W.D. 119	14.8%	0.5%
20	W.D. 90	26.1%	0.9%
21	Cedar River	31.1%	1.1%
22	Redmond*	32.1%	1.1%
23	Duvall	74.0%	2.6%



* Member of Cascade Water Alliance.

1. Renton not included since data not available prior to 2007. Issaquah and Sammamish Plateau not included since data not available prior to 2008.
2. Growth rates for Bellevue and Coal Creek reflect the impact of the annexation of a large portion of Coal Creek by Bellevue in 2003. Much of the decline in Coal Creek's consumption is due to their transfering more than half their customers to Bellevue. The change in demand for the combined Bellevue/Coal Creek service area is also shown.
3. Growth rate for Tukwila is measured from 1996, the year after a large area, including Boeing, was transferred from Seattle's retail service area to Tukwila.
4. Growth rate for Skyway is measured from 2000, due to a significant change (increase) in their sales in 2000.

Figure 13 Non-Revenue Water as Percent of Production/Purchases (2023)



* Members of Cascade Water Alliance

Table 7 Non-Revenue Water as Percent of Production/Purchases (15 Years 2009-2023)

	Wholesale Customer	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	15 Yr Avg
1	Bellevue*	10.3%	10.9%	NA	3.5%	17.4%	2.6%	4.4%	3.9%	7.5%	5.0%	6.8%	3.5%	8.8%	4.2%	3.9%	6.6%
2	Bothell	4.7%	0.1%	6.6%	5.8%	5.0%	8.0%	2.2%	-2.9%	2.8%	5.2%	5.6%	5.7%	5.0%	6.5%	10.7%	4.7%
3	Cedar River	3.0%	3.9%	2.1%	-11.0%	3.9%	3.7%	4.5%	5.1%	5.0%	6.7%	7.1%	7.8%	8.4%	6.0%	7.0%	4.2%
4	Coal Creek	7.2%	9.6%	10.1%	8.9%	9.3%	11.4%	6.9%	15.5%	9.5%	10.2%	10.7%	8.7%	5.3%	10.6%	13.7%	9.8%
5	Duvall	5.2%	10.2%	7.3%	7.0%	9.3%	5.6%	12.1%	7.3%	7.3%	6.8%	8.6%	12.5%	8.0%	7.5%	13.9%	8.6%
6	Highline	8.2%	8.8%	8.1%	8.8%	6.4%	10.1%	12.0%	10.6%	9.9%	6.3%	8.4%	9.8%	5.9%	6.2%	5.0%	8.3%
7	Issaquah*	10.9%	11.8%	12.7%	9.9%	15.1%	6.6%	17.5%	19.6%	11.3%	19.3%	18.8%	9.1%	7.0%	3.8%	7.0%	12.0%
8	Kirkland*	7.0%	5.9%	NA	8.6%	10.3%	3.2%	4.0%	5.6%	-9.6%	-4.1%	5.0%	6.3%	3.7%	4.5%	4.0%	3.9%
9	Mercer Island	3.1%	-1.2%	3.5%	9.6%	10.3%	7.2%	11.2%	12.2%	8.9%	10.0%	9.8%	9.2%	16.2%	15.9%	12.2%	9.2%
10	North City	1.9%	3.3%	-13.2%	-9.2%	11.0%	11.1%	9.7%	6.5%	5.1%	3.5%	2.0%	5.9%	3.6%	3.0%	3.6%	3.2%
11	Northshore	1.2%	0.9%	6.7%	2.4%	1.2%	2.5%	3.3%	4.4%	3.3%	3.9%	4.0%	4.3%	6.3%	4.3%	6.9%	3.7%
12	Olympic View	4.4%	6.1%	8.3%	8.5%	6.4%	7.5%	3.8%	4.8%	4.2%	3.7%	5.9%	7.5%	4.3%	1.9%	-3.3%	4.9%
13	Redmond*	19.1%	26.1%	-2.5%	5.0%	5.2%	8.3%	19.0%	2.9%	0.2%	0.9%	7.6%	9.0%	4.7%	6.4%	4.4%	7.8%
14	Renton	16.9%	14.7%	13.0%	6.2%	9.4%	12.4%	13.3%	12.4%	11.3%	10.5%	11.6%	13.0%	15.2%	16.8%	15.0%	12.8%
15	Sammamish Plateau*	3.2%	7.8%	-1.9%	6.9%	9.5%	8.9%	7.3%	6.6%	5.3%	4.6%	7.5%	3.3%	3.7%	4.9%	5.0%	5.5%
16	Skyway*	4.4%	2.0%	8.1%	3.8%	6.7%	6.4%	8.5%	9.9%	9.7%	12.4%	23.6%	17.2%	19.1%	13.3%	10.0%	10.3%
17	Soos Creek	10.2%	9.6%	13.5%	4.0%	3.2%	2.7%	5.0%	3.2%	4.3%	2.8%	2.9%	4.7%	1.9%	2.9%	6.0%	6.4%
18	Tukwila*	9.9%	8.4%	11.3%	7.8%	7.1%	5.5%	7.0%	8.9%	-0.3%	-8.5%	7.0%	8.9%	12.3%	6.7%	11.1%	6.9%
19	W.D. 119	12.4%	11.5%	NA	7.4%	10.0%	NA	9.5%	NA	NA	18.3%	17.3%	NA	9.4%	15.7%	19.3%	13.1%
20	W.D. 125	8.5%	8.8%	7.6%	7.9%	8.6%	3.5%	7.9%	9.0%	9.3%	9.2%	8.7%	8.0%	6.6%	7.5%	6.9%	7.9%
21	W.D. 20	10.2%	7.1%	9.6%	6.4%	10.0%	7.4%	6.0%	4.2%	8.4%	4.9%	4.9%	4.8%	4.4%	11.9%	8.2%	7.2%
22	W.D. 49	0.4%	1.4%	14.1%	10.2%	4.5%	8.0%	8.4%	10.1%	6.1%	7.4%	9.1%	10.7%	8.6%	9.0%	6.3%	7.6%
23	W.D. 90	7.9%	8.6%	6.8%	12.7%	7.2%	12.1%	11.4%	15.5%	11.7%	11.9%	20.0%	23.2%	17.0%	8.6%	9.6%	12.3%
24	Woodinville	9.0%	5.7%	3.6%	1.0%	9.2%	3.8%	4.5%	6.2%	4.8%	5.1%	5.8%	5.1%	5.5%	3.3%	4.7%	5.2%
25	Wholesale Avg	9.0%	9.9%	7.9%	5.3%	9.6%	6.3%	8.2%	6.8%	5.4%	5.1%	7.8%	7.2%	7.5%	6.6%	6.5%	7.2%

* Member of Cascade Water Alliance. Data not availble for all years.

WD 119 did not submit data for 2011, 2014, 2016, 2017, and 2020.

Table 8 Water Use per Single Family Household in CCF per Month (1994-2023)

Water Utility	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
1 Bellevue*	10.4	10.0	9.8	9.4	10.0	9.6	9.7	8.9	9.1	9.7	10.4	8.5	NA	8.5	7.5	8.6
2 Bothell	8.5	7.9	8.1	7.9	8.4	7.6	8.0	7.5	7.6	8.0	NA	5.7	5.7	9.1	7.2	7.3
3 Cedar River	9.9	9.7	9.7	9.1	9.6	8.9	9.5	8.0	8.6	9.1	8.6	7.8	8.5	7.9	7.4	8.3
4 Coal Creek	10.1	9.5	9.4	9.2	9.9	9.1	9.1	8.0	8.6	9.3	9.4	8.2	8.9	7.9	7.7	8.5
5 Duvall	NA	8.6	8.3	8.9	9.7	8.1	8.8	7.1	7.2	8.4	7.6	6.8	7.4	6.4	6.9	7.6
6 Highline	9.2	9.0	8.6	9.0	8.8	8.3	8.5	7.6	8.1	8.2	7.9	7.5	7.6	7.3	7.0	7.5
7 Issaquah*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.7	6.1
8 Kirkland*	8.8	8.6	8.5	8.5	8.6	8.2	9.3	7.5	8.0	8.9	7.8	10.4	7.8	7.8	7.3	7.8
9 Mercer Island	NA	10.7	9.9	9.8	11.0	10.0	10.5	9.2	10.0	10.6	10.5	9.9	9.8	8.9	8.5	9.0
10 North City	8.3	7.9	7.8	7.5	7.9	NA	7.7	6.7	7.0	7.4	7.0	6.5	6.5	6.3	6.8	6.7
11 Northshore	9.6	9.2	9.0	8.6	9.8	8.7	8.5	8.1	8.4	8.9	8.4	NA	8.4	7.6	6.9	7.4
12 Olympic View	9.9	9.8	9.5	8.9	9.5	9.0	9.3	8.1	9.0	9.7	9.2	8.3	9.0	8.4	8.0	8.7
13 Redmond*	9.4	9.0	9.1	8.7	9.1	8.6	8.3	7.7	7.7	8.2	NA	NA	NA	NA	6.5	6.6
14 Renton	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.8	7.0
15 Sammamish Plateau*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.7	9.7
16 Skyway*	7.5	7.2	7.3	7.0	7.2	6.8	7.8	6.3	7.0	7.1	6.7	6.0	6.3	6.0	5.9	5.9
17 Soos Creek	8.7	8.4	8.4	7.7	8.2	7.8	7.8	7.0	7.5	8.5	8.1	6.8	6.9	7.2	7.0	7.2
18 Tukwila*	7.5	6.4	7.7	7.4	7.4	7.2	7.0	6.7	6.9	7.2	6.2	5.8	NA	6.6	6.2	6.7
19 Woodinville	12.0	11.1	11.3	10.5	11.7	10.7	11.1	10.8	10.4	11.6	10.4	9.1	10.2	8.9	8.6	9.5
20 W.D. 20	8.3	8.2	8.0	7.7	8.5	8.1	7.9	7.0	7.1	7.7	7.4	6.9	7.2	6.8	6.7	6.8
21 W.D. 49	9.1	9.6	8.7	8.5	8.4	8.2	7.9	7.2	7.7	8.1	7.7	7.2	8.0	7.1	6.8	7.3
22 W.D. 90	NA	NA	NA	NA	NA	8.4	9.5	8.5	8.8	8.7	8.5	7.5	8.2	7.7	7.4	8.0
23 W.D. 119	NA	NA	NA	NA	NA	8.1	8.2	7.7	8.1	9.1	8.2	7.5	9.0	7.6	7.6	8.1
24 W.D. 125	8.4	8.3	8.3	8.2	8.3	8.1	8.3	8.5	9.4	8.5	8.1	7.8	8.0	8.0	7.5	7.9
25 Wholesale Avg (Weighted)	9.7	9.4	9.2	8.9	9.5	8.9	9.1	8.1	8.4	9.0	8.7	7.9	8.0	7.8	7.3	7.9
26 Seattle	7.9	7.6	7.4	7.1	7.1	7.1	7.3	6.5	6.7	6.6	6.4	6.0	6.2	5.9	5.7	5.9

* Members of Cascade Water Alliance. No history is available for Issaquah, and Sammamish Plateau prior to 2008.
No history is available for Renton prior to 2008. More recently, Bellevue and Kirkland did not provide data for 2011 and WD 119 did not provide data for 2011, 2014, 2016, 2017, and 2020.

Water Utility	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1 Bellevue*	7.6	NA	7.7	7.6	7.8	8.1	7.8	7.9	7.8	7.4	7.1	7.7	7.2	7.2
2 Bothell	7.2	6.1	6.3	6.4	7.2	6.4	6.1	6.6	6.2	6.1	6.3	6.6	5.9	5.9
3 Cedar River	7.1	6.8	7.2	7.1	7.1	7.6	7.1	7.5	7.3	6.7	7.3	7.7	7.1	7.3
4 Coal Creek	7.1	7.0	7.2	7.3	7.3	7.7	7.3	7.3	7.5	7.0	7.3	8.0	7.2	7.4
5 Duvall	6.6	6.7	6.1	6.1	6.5	6.6	6.6	6.8	6.8	5.9	6.2	6.3	6.4	6.0
6 Highline	6.6	6.5	6.5	6.4	6.5	6.7	6.6	6.7	6.8	6.6	7.0	7.1	6.7	6.8
7 Issaquah*	5.5	5.4	5.7	5.2	5.7	5.9	5.5	6.1	5.9	5.6	6.1	6.0	5.7	5.8
8 Kirkland*	6.8	NA	6.9	7.0	7.5	7.3	7.1	9.3	7.6	6.7	6.8	7.7	7.0	6.8
9 Mercer Island	7.8	8.0	8.0	7.9	8.4	8.5	8.0	8.2	8.2	7.4	7.4	8.0	7.7	7.7
10 North City	5.8	5.7	5.7	5.8	5.7	5.9	5.6	5.7	5.6	5.3	5.5	5.7	5.4	5.4
11 Northshore	6.8	6.5	6.8	6.7	6.2	6.8	6.4	6.6	6.5	6.2	6.6	6.8	6.2	6.0
12 Olympic View	7.5	7.5	7.3	7.6	7.7	7.7	7.4	7.5	7.4	7.1	7.1	7.6	7.1	7.2
13 Redmond*	6.4	6.1	6.3	6.2	6.3	5.2	6.3	6.8	6.4	6.2	6.4	6.7	6.3	6.4
14 Renton	6.4	6.6	6.4	6.5	6.3	6.6	6.2	6.4	6.4	6.2	6.6	6.6	6.3	6.5
15 Sammamish Plateau*	8.2	8.1	8.3	8.1	8.4	9.2	8.5	8.9	8.6	7.6	8.5	9.0	8.5	8.4
16 Skyway*	5.4	5.3	5.2	5.1	5.2	5.3	5.0	5.2	5.1	5.0	5.3	5.2	5.0	5.1
17 Soos Creek	6.5	6.6	7.1	7.1	7.0	6.7	7.0	7.1	7.3	6.6	7.1	7.0	6.9	6.4
18 Tukwila*	6.1	5.8	5.9	6.0	6.1	6.1	5.8	6.2	5.9	6.1	6.6	6.5	5.9	6.1
19 Woodinville	7.9	7.9	8.1	8.2	8.9	8.7	7.8	8.3	8.0	7.5	7.8	8.4	8.1	8.2
20 W.D. 20	6.3	6.0	6.1	6.0	6.2	6.1	6.1	6.1	6.1	5.8	6.2	6.3	5.8	5.9
21 W.D. 49	6.6	6.5	6.5	6.2	6.3	6.4	6.3	6.2	6.2	5.9	6.2	6.5	5.8	5.9
22 W.D. 90	6.8	6.9	7.0	7.1	7.1	7.5	7.0	7.4	7.3	7.0	7.5	7.9	7.2	7.3
23 W.D. 119	7.1	NA	7.9	7.8	NA	8.8	NA	NA	6.6	6.3	NA	7.2	6.4	6.6
24 W.D. 125	7.1	7.0	7.0	6.9	7.1	7.4	7.1	7.2	7.2	6.9	7.3	7.3	7.0	7.2
25 Wholesale Avg (Weighted)	6.9	7.0	7.0	7.0	7.1	7.2	7.0	7.3	7.0	6.7	7.0	7.4	6.9	6.9
26 Seattle	5.4	5.2	5.3	5.3	5.3	5.3	5.1	5.3	5.1	5.0	5.3	5.4	5.1	5.0

Figure 14 Water Use per Single Family Household (1994-2023)

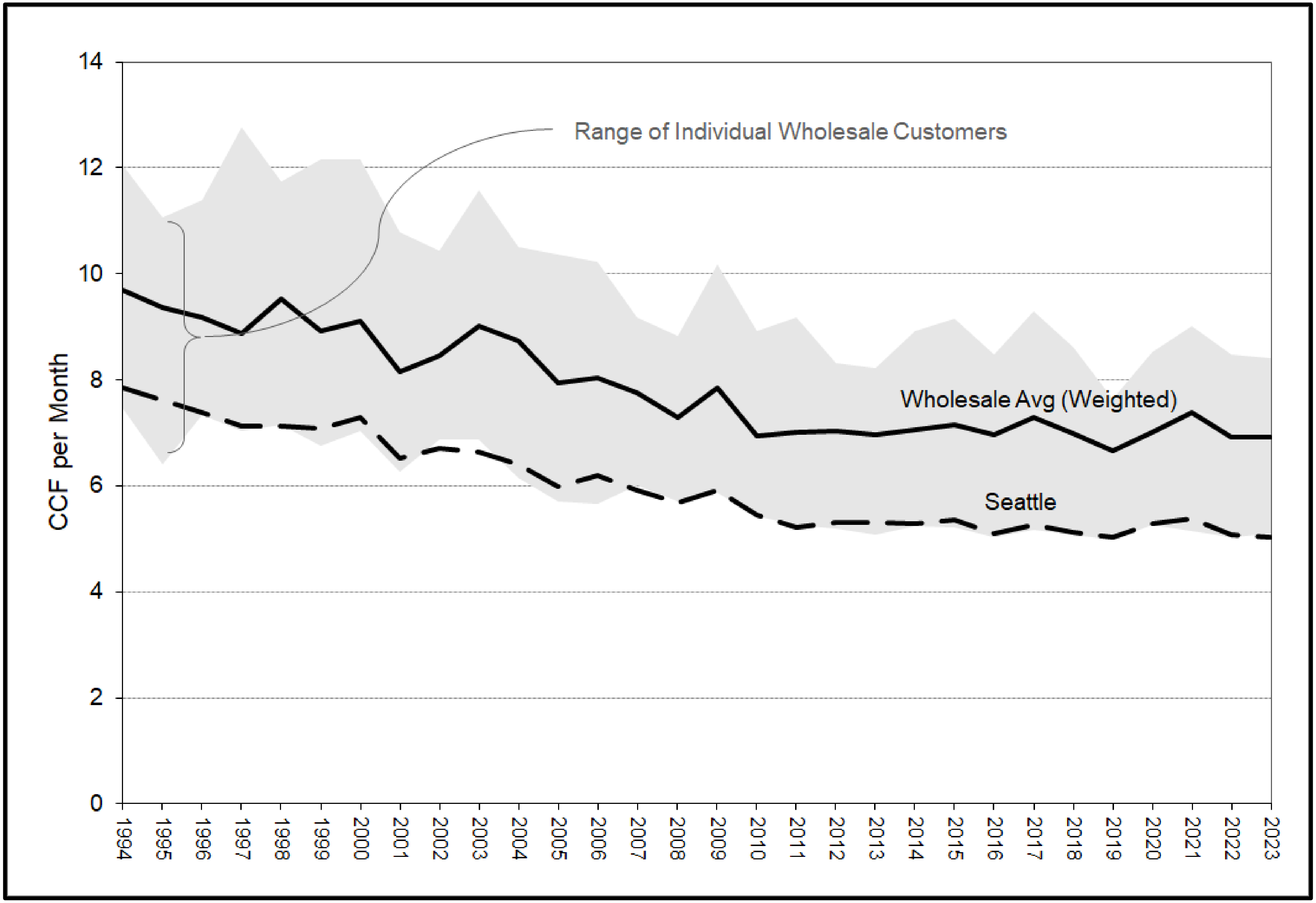
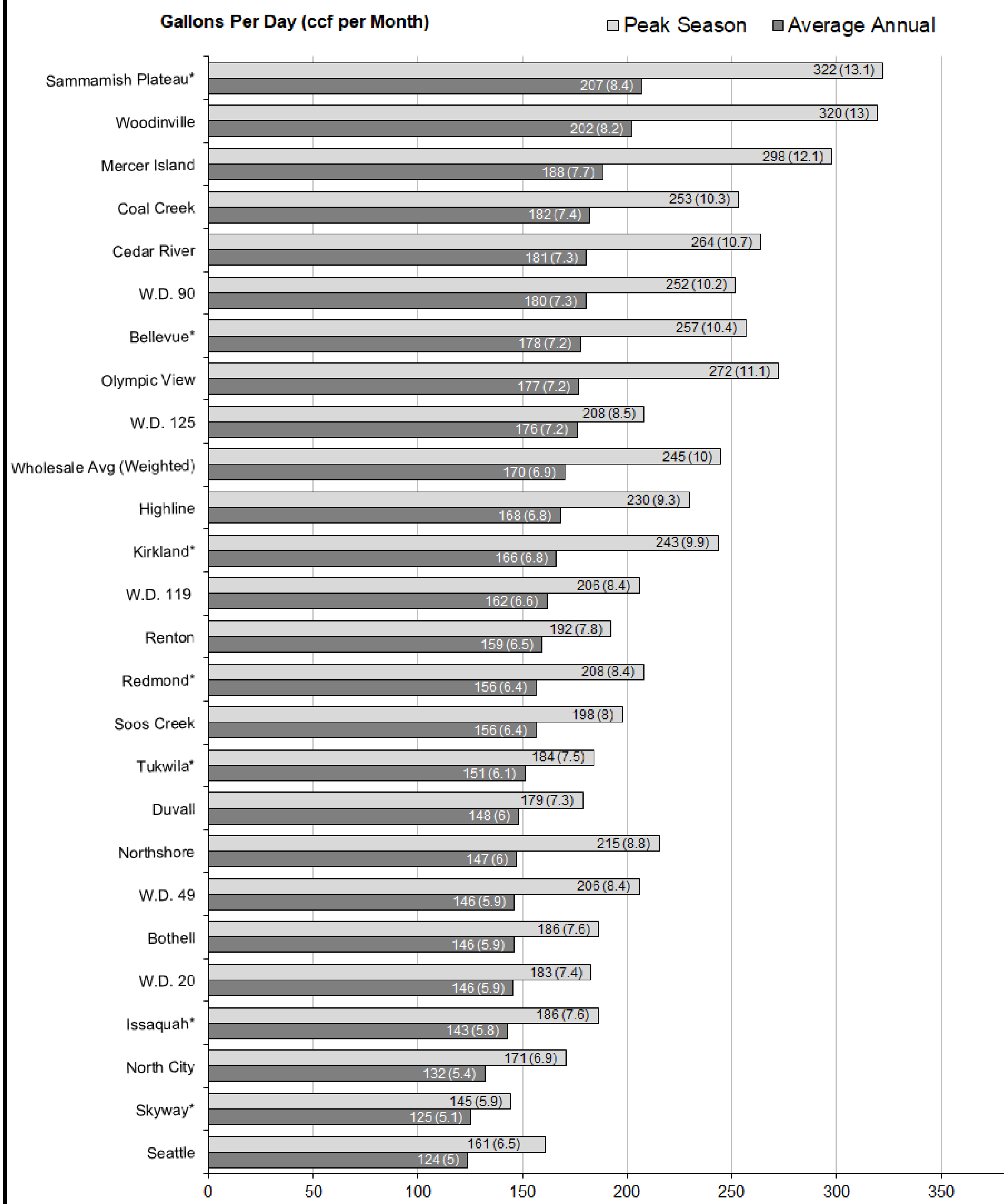


Figure 15 Water Use per Single Family Household (2023)



* Members of Cascade Water Alliance

Figure 16 Water Use per Account (2023)