2012

ANNUAL SURVEY OF WHOLESALE CUSTOMERS:

SUMMARY OF RESULTS

Seattle Public Utilities

December 2012

RESULTS OF THE 2012 SEATTLE SURVEY OF WHOLESALE CUSTOMERS

Each year, Seattle Public Utilities (SPU) asks its wholesale customers to provide information on their current water demand (both retail and wholesale), sources of supply (in addition to SPU), and their water rates. A complete set of this data by wholesale customer and by year is of critical importance in Seattle Public Utilities' efforts to better forecast wholesale 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 Seattle in a number of areas.

This report summarizes much of the data that was collected in the 2012 wholesale customer survey and is the 19th year the report has appeared in this format. ***Seattle Public Utilities appreciates the time and effort each wholesale customer has taken in completing and returning the survey.*** Comparative information is presented on water rates, bills and consumption patterns. Questions about this report or requests for data from the surveys should be directed to Bruce Flory at (206) 684-5859. Copies of current and past reports (back to 2005) can be downloaded from the Wholesale Customers page of SPU's website.

Overview

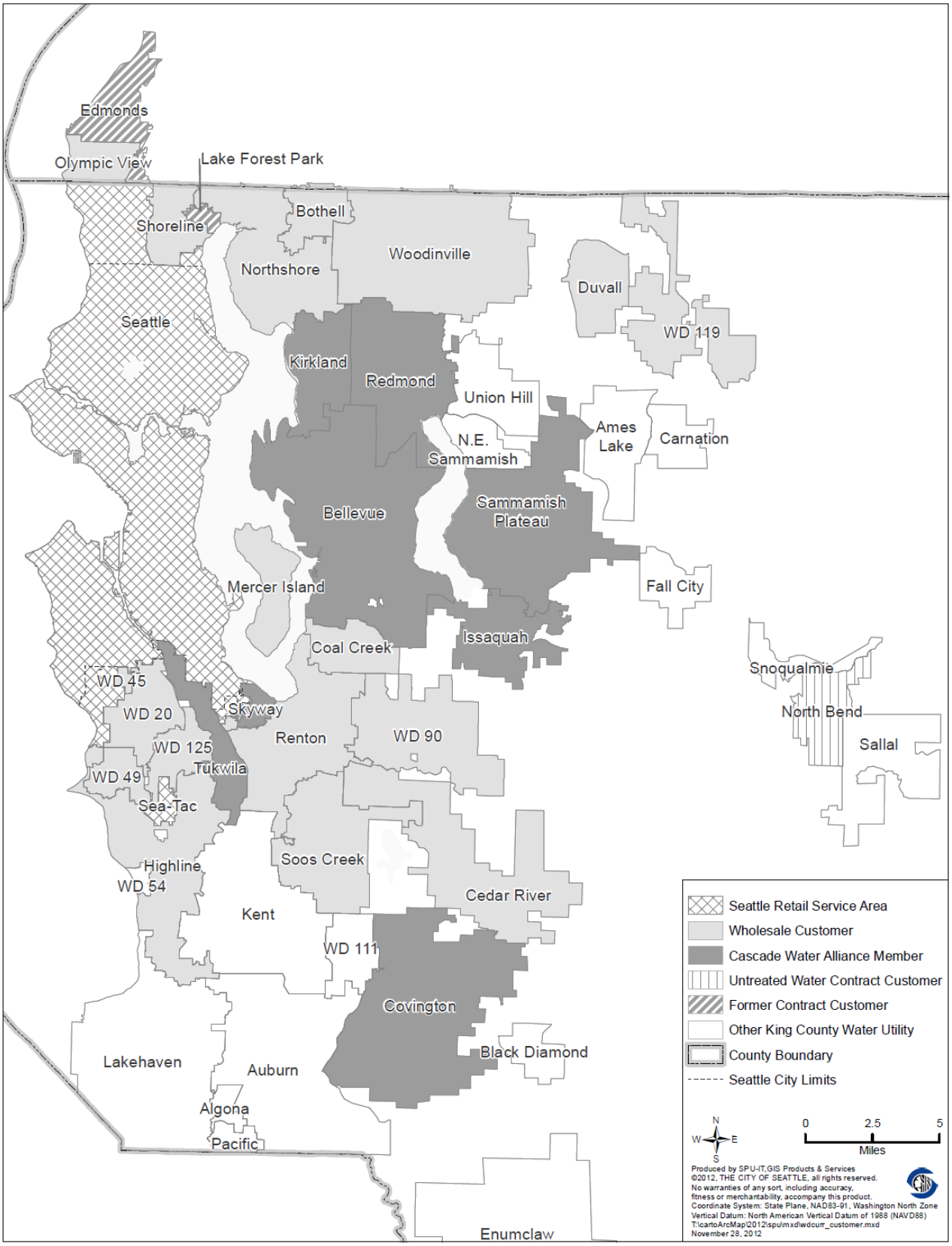
About half the water produced and treated by Seattle Public Utilities is sold directly to customers in Seattle's retail service area. The rest is sold wholesale to the Cascade Water Alliance and 18 neighboring cities and water districts. These wholesale customers are listed below.

Wholesale Customers of Seattle Public Utilities

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
	·Olympic View Water & Sewer District	·City of Tukwila
	·Shoreline Water District	·Covington Water District
	·Soos Creek Water & Sewer District	·Sammamish Plateau W & S District
	·Woodinville Water District	·Skyway Water & Sewer District
	·Water District No. 20	
	·Water District No. 45	
	·Water District No. 49	
	·Water District No. 90	
	·Water District No. 119	
	·Water District No. 125	

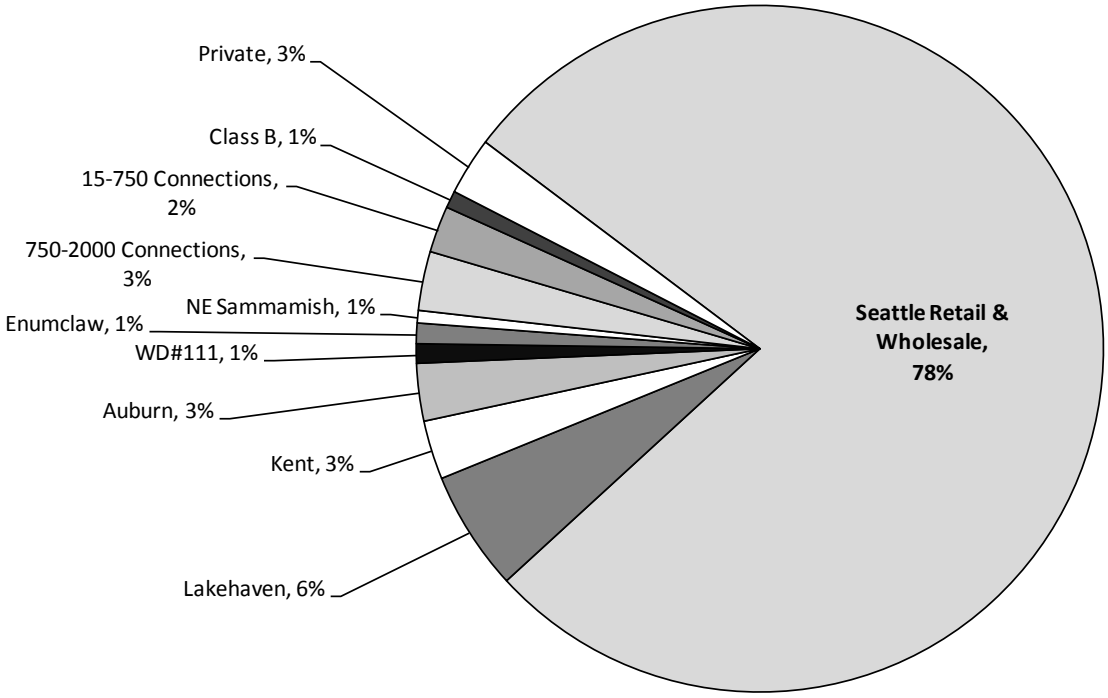
Note that the city of North Bend is not included in the survey though it has recently contracted with Seattle Public Utilities to receive untreated mitigation water from the Cedar River watershed. In addition, the City of Edmonds and the Lake Forest Park Water District are no longer wholesale customers of Seattle Public Utilities as of 2012. However, their preference is to continue to participate in the survey and have their data summarized in this report.

Water Utilities in King County



While there are almost 1,500 public water systems in King County and an estimated fourteen thousand private systems, the 45 largest water utilities serve 95% of the county's population. Seattle and its wholesale customers alone provide water to about 78% of the population of King County as well as 43,000 people in the southwest corner of Snohomish County.

Percent of Population Served by Water Providers in King County



Supply: Seattle Public Utilities has two surface water sources and a small ground water source: the Cedar River system, the South Fork Tolt Reservoir, and the Seattle Well Field (used primarily for summer peaking). On average, the Cedar River system provides about 70 percent of total supply, the South Fork Tolt system delivers 29 percent, and the Seattle Well Field delivers 1 percent. Total annual average firm yield from the current system is estimated at 172 million gallons per day (mgd).

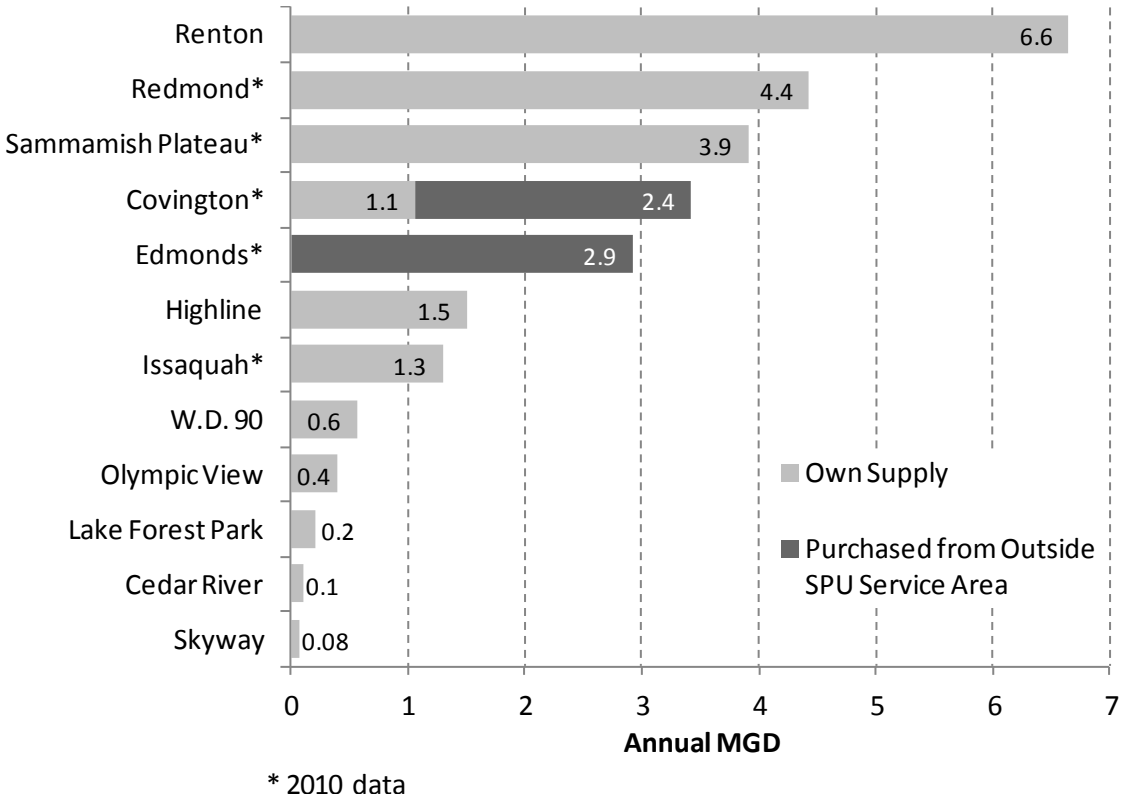
A number of Seattle's wholesale customers have their own sources of supply, which reduces their demand from the SPU supply system. These utilities and the approximate annual capacity of their sources are listed below:

- **Covington** – Wells, 13.1 mgd[1]
- **Highline** – Wells, 1.9 mgd
- **Issaquah –** Wells, 2.5 mgd[1]
- **Olympic View** – Surface Water, 0.5 mgd
- **Redmond** – Wells, 2.7 mgd
- **Renton** – Wells, 13.2 mgd.
- **Sammamish Plateau –** Wells, 6.7 mgd[1]
- **Skyway** – Well, 0.2 mgd
- **Water District 90** – 0.6 mgd

[1] As reported in the Water Supply Forum's 2009 Regional Water Supply Outlook, Appendix T.

For the most part, Seattle's wholesale customers do not fully utilize their own sources of supply, using about half on average. As shown in the table below, wholesale customers obtained about 20 mgd from their own sources of supply in total and purchased an additional 5 mgd from suppliers outside the SPU service area.

Water Obtained From Own or Outside Sources of Supply: 2011



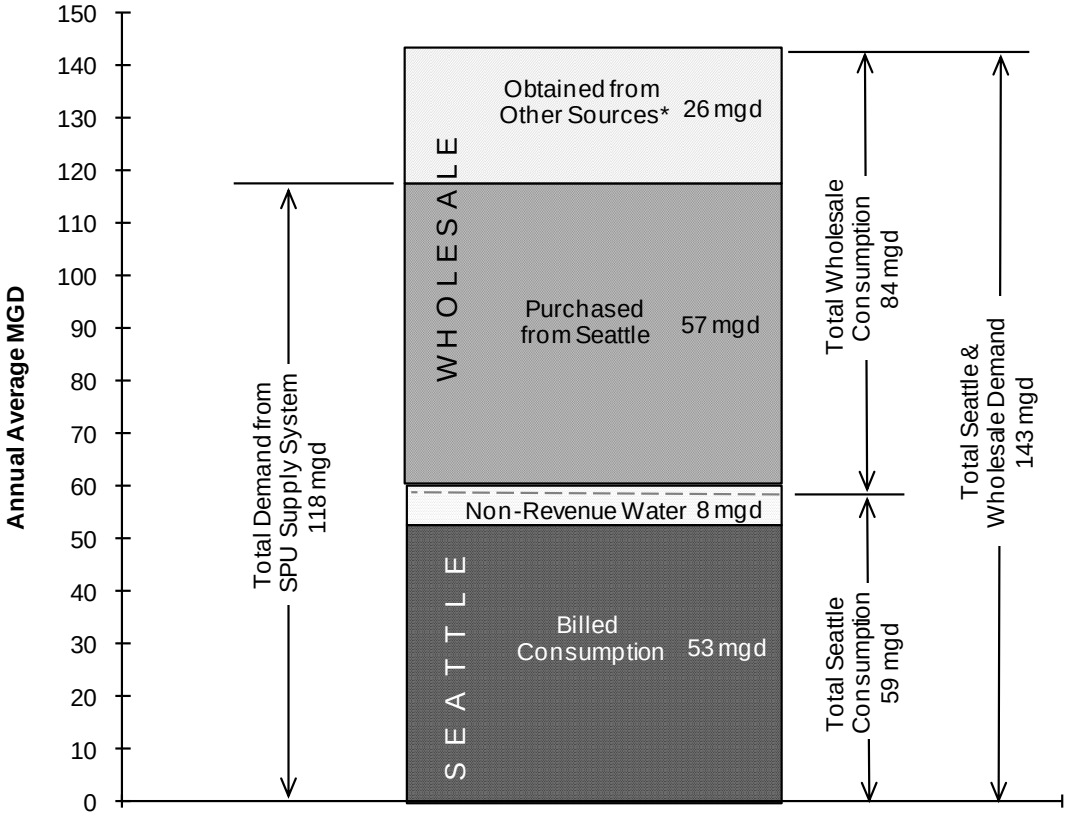
Note that some of the data in the above graph is from 2010 rather than 2011. This is because several wholesale customers did not submit consumption data for 2011. Completed surveys were not received from Water District 119, Edmonds, and all the members of the Cascade Water Alliance except Skyway. In what follows, graphs and charts that display measures of consumption will indicate "NA" or "No Data" for wholesale customers who did not return their 2012 surveys.

Demand: Seattle and wholesale water demand totaled 143 mgd in 2011, down slightly from 144 mgd in 2010. Of that, 118 mgd came from the SPU supply system and 26 mgd was obtained from wholesale customers' own sources of supply or outside purchases. Various components of Seattle and wholesale demand are shown in the chart, below[2]. Seattle demand was 59 mgd including 7 mgd of non-revenue water. Total wholesale demand of 84 mgd consisted of 58 mgd from Seattle (57 mgd purchased and 1 mgd transmission losses) and 26 mgd obtained from other

[2] Components may not add to total due to rounding.

sources. Included in wholesale demand, but not shown separately on the chart, is about 9 mgd of distribution system non-revenue water.

Components of Seattle and Wholesale Water Demand in MGD: 2011*



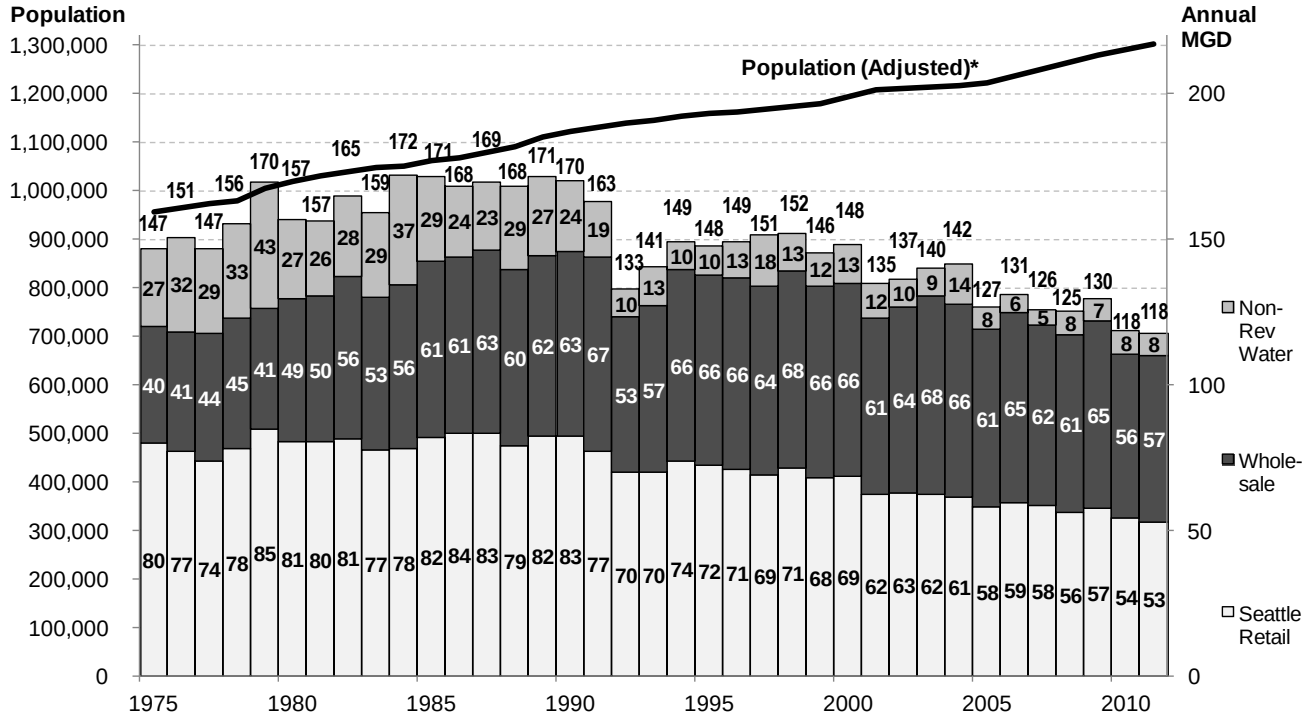
* Note that data the total for water "Obtained from Other Sources" uses 2010 data for those wholesale customers who did not complete the 2012 survey.

How Seattle system water consumption has changed over time can be seen in the graph below. While population has risen steadily since 1975, total water demand leveled off during the 1980s at about 170 mgd before dropping off sharply due to the 1992 drought. During the rest of the 1990s, the combined effects of higher water rates, the 1993 plumbing code, conservation, and improved system operations kept total consumption at or just under 150 mgd – well below pre-drought levels. Slow economic growth and two recessions since 2000, increasingly efficient appliances and fixtures, and the impact of the 1% Conservation Program (begun in 2000) and the Saving Water Partnership further extended the downward trend so that in recent years, water demand from the SPU supply system has dropped below 120 mgd. In percentage terms, total Seattle system water consumption has declined 31% since 1990 while population has increased 16%. As a result, total consumption *per capita* is 40% less than it was in 1990.

Wholesale demand from the Seattle water system grew by two thirds from 40 mgd in 1975 to 67 mgd in 1991. Following the 1992 drought though, wholesale demand leveled off

(averaging 66 mgd) for the next decade and a half before declining again in the last several years. Seattle retail demand was essentially flat between 1975 and 1991 (averaging 80 mgd) but has trended downward ever since. Finally, non-revenue water was cut by more than half due to actions taken by Seattle just before and during the 1992 drought.[3] Seattle's recent program to cover all its in-city reservoirs plus better monitoring of overflows from the remaining open reservoirs has further reduced non-revenue water.

Population* and Components of Annual Water Demand in MGD
Seattle Regional System: 1975-2011



* Covington, Edmonds, Issaquah, Lake Forest Park, Renton, and Sammamish Plateau are not included in the estimate of population because they purchase none or negligible amounts of their water from SPU.

Water Rates

Residential and commercial rates in effect during 2012 for each wholesale customer and Seattle are summarized in Tables 1.1 and 1.2. Quite a variety of rate levels and structures are evident. All wholesale customers levy a commodity charge and a fixed monthly charge or meter charge (which, in a few cases, also includes a minimum level of consumption per month). There are three basic commodity rate structures and one hybrid: uniform rates, seasonal rates, inclined block rates, and seasonal rates with blocks. Fixed monthly charges on a ¾" meter, the usual size for residential meters, average $17.58 per month with a range of $10.57 per month to $37.50 per month. The range of fixed monthly charges on 2" meters, typical of commercial accounts, is even greater: $17.50 per month to $251.76 per month.

[3] These 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.

Note that several wholesale customers do not include the state utility tax and other taxes or fees that might be assessed on water sales in their published rates. In order to make rates and bills comparable between utilities, those taxes and fees have been added back into the rates as shown in Tables 1.1 and 1.2 and into the bill calculations.

Residential Rates: Of all the utilities surveyed, only the two former wholesale customers (Edmonds and Lake Forest Park) have a uniform rate structure, i.e., a single rate per ccf for all volumes and times of the year. These rates appear in the table as inclined block structure rates with just one block. Only one wholesale customer (Tukwila) has straight seasonal rates: a single rate in the winter and a single higher rate in the 4 month summer season. Seventeen wholesale customers have simple inclined block rates with from two to five blocks. The size of the blocks is indicated in the "Break Points" column of the tables. For example, Water District 49 has three blocks: the first from 0 to 5 ccf per month, the second from 6 to 8 ccf per month and the last for 9 or more ccf per month. There is considerable variation in the number and size of the blocks and in the rates themselves. Finally, seven wholesale customers and Seattle use various combinations of seasonal and block rates. Olympic View, and Water Districts 119 and 125 have a block structure that shifts to higher rates in the summer. So does Soos Creek, except there is no higher summer rate in the first block. Similarly, Covington and Mercer Island have multiple blocks but no higher summer rates in the first two blocks. Seattle and Highline have single winter rates with blocks only in the summer.

The diversity of residential rate structures results in very different price signals to customers during the peak season. Residential customers of wholesale utilities face marginal summer rates ranging from $2.25 to $17.50 per ccf. The average summer end-block rate (including Seattle) is $6.12 per ccf. Eleven wholesale customer plus Seattle now have end-block rates exceeding $6.00 per ccf. Issaquah has the highest summer end-block rate: $17.50 per ccf for consumption in excess of 18 ccf per month.

Commercial Rates: More than a third of all wholesale customers (10) apply the same rates and rate structures to both their commercial and residential customers. Two wholesale customers change the rates charged but maintain the same structure. The remaining sixteen plus Seattle change the rates *and* the structure, usually shifting from inclined block and hybrid structures to uniform or seasonal rates, but occasionally just reducing the number of blocks. The highest rate is $7.60 per ccf and the average summer end block rate (including Seattle and uniform and seasonal rates) is $4.50 per ccf.

Customer Bills: Figures 1.1 through 1.4 and Tables 1.3 and 1.4 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	4 ccf/mo	6 ccf/mo	4.67 ccf/mo
Medium	8 ccf/mo	12 ccf/mo	9.33 ccf/mo
High	16 ccf/mo	24 ccf/mo	18.67 ccf/mo

Figures 1.1, 1.2 and 1.3 graphically display monthly residential bills by wholesale customer at low, medium, and high levels of consumption. The figures also rank wholesale customers (including Seattle) by the size of their bills revealing two interesting facts. One is that there are big differences in what households pay for water among different utilities. Monthly bills from utilities with the highest rates are as much as two and a half times as large as those from utilities with the lowest rates. Average monthly bills range from $21.12 to $49.43 at the low level of consumption and $52.93 to $140.94 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 Figures 1.1 through 1.3) 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 1.4. Average monthly residential consumption ranges from 5.2 ccf per month in Seattle to 9.2 ccf per month in Lake Forest Park. In Figure 1.4, Redmond has the lowest average residential bill and Bothell has the second lowest. Lake Forest Park tops the list having both the highest average consumption and among the highest rates.

There are many possible explanations for the wide variation in residential rates and bills. These include utilities having:

- different financial policies,
- 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.

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 lowest bill at one level of consumption may be far from the lowest at other levels of consumption. For example, Water District 20 and Sammamish Plateau are in the middle of the pack at low consumption but are among the *lowest* bills at high consumption. Issaquah is a good example of the opposite pattern, moving up 20 positions in the bill rankings between low and high consumption levels. Finally others, such as Seattle, maintain their relative ranking at all levels of consumption. (Table 1.4 summarizes the different rankings from Figures 1.1 through 1.3.)

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, an inclined block structure tends to favor low volume users while a flat rate structure favors high volume users. Perhaps even more important is the relative magnitudes of the fixed and variable 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 1.4. 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 1.3 displays monthly bills at the medium level of consumption (graphed in Figure 1.2) 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*. Many 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 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. This effect diminishes as the level of consumption rises and the meter charge represents a smaller and smaller proportion of the total bill. Covington, Tukwila, Issaquah, Soos Creek, Seattle, Duvall and Mercer Island have differentials of more than 50%, a sign that the *average* rate charged per ccf in the summer is greater than in the winter.

Consumption Patterns

Annual Consumption: Figures 2.1 and 2.2 display annual water purchases from SPU and annual retail water sales by wholesale customer for 2011. **As explained above, Edmonds, Water District 119, and all Cascade Water Alliance members except Skyway did not return their 2012 surveys so no data is available for them on 2011 consumption, non-revenue water, and consumption per household or account**.

Note that annual purchases from SPU are often very different than wholesale customers' retail demands. Purchases from SPU are less than the actual demand of wholesale customers who have their own sources of supply or who buy from others. And while most Cascade members still obtain water directly from SPU's transmission system, they no longer purchase it directly from SPU. Instead, the Cascade Water Alliance pays SPU for what is owed and then bills its members. Some water purchased by Cascade is wheeled to members who may not have direct connections to the Seattle system such as Issaquah and Sammamish Plateau (for example, some of the water shown in Figure 2.1 as "purchased" by Bellevue ends up in Redmond or Issaquah).

Tables 2.1 and 2.2 provide a historical perspective by displaying 14 years of data on annual retail consumption by wholesale customer and wholesale purchases from Seattle. Historical consumption data for years prior to 2008 have not been obtained from Covington, Issaquah, and Sammamish Plateau.

Consumption Trends: A new graph in this year's report is Figure 2.3 that shows the growth, or in most cases, the decline in total retail water consumption for Seattle and each of the

wholesale customers over the 15 year period 1995 to 2010. Only six utilities, all in expanding and fast growing areas, (Water District 90, Bothell, Cedar River, Redmond, Water District 119, and Duvall) have experienced positive water demand growth since 1995. All the rest are using less water than they did 15 years ago. On average, wholesale customers have seen their water consumption decline by 10.7% over the period or 0.8% annually. The largest decreases have been in Seattle and Shoreline where water demand has dropped by 25% or 1.9% a year. This indicates that for Seattle and most of its wholesale customers, the combined effect of conservation programs, fixture and appliance codes, and rising water rates has more than offset the impact of growth in the customer base.

Non-Revenue Water: Figure 2.4 ranks wholesale customers by percent of non-revenue water in 2011, i.e., the percent of their total water purchases and production that is not sold. Percent non-revenue water for 2008, 2009 and 2010 is also shown. Table 2.3 shows annual distribution system percent non-revenue water by wholesale customer for the years 1998 through 2011 and the average for each wholesale customer for as many years as data is available – usually back to 1994. Percent non-revenue water is calculated as follows:

$$(PS + PO + OS - RS - WS) \div (PS + PO + OS)$$

where

PS = Water Purchased from Seattle
PO = Water Purchased from Others
OS = Water obtained from Own Supply
RS = Water Sold Retail
WS = Water Sold Wholesale

There are many causes of non-revenue water. Some are necessary and/or beneficial such as water main flushing, reservoir cleaning and water taken from hydrants for fire fighting, street cleaning and some construction projects. Others, however, are undesirable and represent wasted water or lost revenues. These include leaks from pipelines and reservoirs, inadvertent reservoir overflows, theft and slow customer meters. For a newer water system efficiently operated, the percentage of non-revenue water might be expected to creep down towards 5%. Non-revenue water in the 10% range should prompt some analysis of what might be the cause, and non-revenue water in excess of 15% is definitely a call to action.[4]

The average level of non-revenue water for reporting wholesale customers was 7.9% in 2011[5]. Since 1994, average wholesale distribution system non-revenue water has varied from 5.3% to 9.9% averaging 7.5% over the whole period.

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[4] The new state Water 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 that 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 do not generate revenue but can be measured or estimated. These include water used for reservoir cleaning and overflowing, main and hydrant flushing, firefighting, and other hydrant use such as construction and street sweeping. If measured, transmission losses can also be deducted in calculating DSL. A utility's estimate of DSL will be less than its non-revenue water to the extent that these non-revenue-generating but authorized uses are taken into account.

[5] Seattle non-revenue water averaged 5.8% for 2005 through 2011. Percent of non-revenue water for Seattle is not included in Figure 2.3 because it is not directly comparable to wholesale non-revenue water. For wholesale customers, non-revenue water is a distribution system concept. Water lost in transmission from Seattle's sources to wholesale meters is not part of

Measurement problems contribute to at least some of the year-to-year variation in non-revenue water evident in Table 2.3 and Figure 2.3. Billing lags and supply meter inaccuracies are two problems that make the precise measurement of non-revenue water difficult. Because of differences in the length of billing lags, the measure of annual wholesale water sales generally doesn't span the exact same period as the measure of annual purchases and production. These two measures of water consumption, the difference of which provides our estimate of non-revenue water, may be offset by as much as two months. Fortunately, these months are in the middle of winter when consumption tends to be relatively constant from month to month. The problem would be much worse if the end of the year coincided with the peak season.

Slow wholesale meters have represented a much more serious problem in measuring non-revenue water by reducing the apparent 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%) suggest that there is probably some kind of metering problem. Negative non-revenue water, i.e., when metering data implies that more water has been sold than was produced and/or purchased, is a sure sign that one or more meters measuring incoming water is slow. Such is the case for Shoreline, the only wholesale customer with negative non-revenue water last year at -13.2%.

Per Household and Per Account Consumption: Figures 2.5 and 2.6 rank wholesale customers and Seattle on the basis of 2011 *single family* consumption *per household* and *total* consumption *per account*. The first measure is often used by wholesale customers in their analysis of current and projected water demand and in their calculation of Equivalent Residential Units (ERUs). Of those reporting, the wholesale customer with the highest single family consumption per household is Lake Forest Park at 226 gallons per day (gpd) followed by Mercer Island at 196 gpd. The weighted wholesale average for 2011 was 165 gpd (6.7 ccf per month). Seattle reported the lowest consumption per household with 128 gpd. The variance in per household use between wholesale customers is due to more than just different attitudes towards water conservation. Wholesale customers at the top of the list (Lake Forest Park, Mercer Island, Woodinville) tend to have some or all of the following characteristics associated with higher water use: larger lot sizes, higher household incomes, and higher average persons per household. Utilities (including Seattle) with consumption per household at the low end of the scale tend to have just the opposite characteristics: denser development with smaller lots, lower household incomes, and fewer persons per household.

In addition to annual average consumption per single family household, the Figure 2.5 also shows peak (4 month) season consumption per household.

There is much greater variation in total consumption per account across wholesale customers as can be seen in Figure 2.6. The weighted wholesale average for those reporting is 258 gpd. Total consumption per account in Seattle is slightly higher than the wholesale average at 288

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the calculation. However, Seattle non-revenue water consists of both distribution and transmission losses to Seattle plus wholesale transmission losses. Comparing Seattle and wholesale non-revenue water would be misleading unless the distribution system component of Seattle non-revenue water could be isolated. Unfortunately, that is not possible with currently available data.

gpd. This is *not* an indication of the relative efficiency of water use among the different utilities. Rather, higher levels of total consumption per account are closely associated with higher proportions of non-residential and multifamily customers. Wholesale customers at the bottom of the list serve predominantly single family customers. Utilities at the top of the list with the highest consumption per account – Renton, Water District 125, and Bothell – also have the highest proportions of non-residential and multifamily consumption, (60% or more of the total). Total consumption per account and percent of consumption that is *not* single family are highly correlated all the way down the line.

Finally, Table 2.4 provides some history on single family consumption per household by wholesale customer for the period 1995-2011. The overall downward trend in average consumption per household for both wholesale customers and Seattle is apparent in Figure 2.7. The average decline since 1994 has been about 30%. The range, from low to high, of wholesale consumption per household over time is also depicted in the graph. Like Figure 2.3, this graphically illustrates the impact on water demand of conservation programs, water efficiency codes for new fixtures and appliances, and rising water and sewer rates.

TABLES AND FIGURES

Water Rates and Bills

Table 1.1 A Comparison of 2012 Residential Rates

Table 1.2 A Comparison of 2012 Commercial Rates

Figure 1.1 Average Monthly Residential Bills at Low Consumption

Figure 1.2 Average Monthly Residential Bills at Medium Consumption

Figure 1.3 Average Monthly Residential Bills at High Consumption

Figure 1.4 Average Monthly Residential Bills at Each Utility's Average Consumption

Table 1.3 Average Annual, Winter and Summer Bills Ranked from Highest to Lowest

Table 1.4 Ranking of Bills at Different Levels of Consumption

Water Consumption Patterns

Figure 2.1 Wholesale Customers Ranked by 2011 Annual Purchases From SPU

Table 2.1 Annual Water Purchases from SPU: 1998-2011

Figure 2.2 Wholesale Customers Ranked by 2011 Annual Retail Billed Sales

Table 2.2 Annual Retail Water Sales: 1998-2011

Figure 2.3 Percent Growth/Decline in Retail Demand by Utility: 1995-2010

Figure 2.4 2011 Non-Revenue Water as a Percent of Total Water Use

Table 2.3 1997-2011 Percent Non-Revenue Water

Figure 2.5 2011 Single Family Consumption per Household

Figure 2.6 2011 Total Billed Consumption per Account

Table 2.4 Single Family Residential Water Use per Household by Wholesale Customer: 1995-2011

Figure 2.7 Single Family Residential Water Use per Household: 1994-2011

Table 1.1

A Comparison of 2012 Residential Rates

Purveyor:	3/4" mtr ch per month	Includes Minimum	Seasonal Winter	Seasonal Summer*	Inclined Block 1st	2nd	3rd	4th	5th	Break Points**
W.D. 20	$19.75	0	-	-	$2.10	$2.65	-	-	-	10
W.D. 45	$17.50	0	-	-	$2.50	$3.50	$4.50	-	-	5/12.5
W.D. 49	$16.00	0	-	-	$3.05	$3.75	$5.25	-	-	5/8
W.D. 90	$22.50	2.5	-	-	$2.55	$3.00	$3.60	-	-	7.5/12.5
W.D. 119***	$37.50	0	Block	Block	$2.30/$2.90***	$2.90/$3.80***	$3.80/$4.75***	$4.62/$5.50***	-	7/14/21
W.D. 125***	$12.50	0	Block	Block	$3.17/$3.28***	$3.57/$3.68***	$3.92/$4.03***	-	-	5/10
Bellevue[T]	$16.34	0	-	-	$3.27	$4.50	$5.77	$8.60	-	10/15/50
Bothell [T]	$11.58	0	-	-	$2.28	$3.34	$4.31	$5.49	$6.26	5/10/15/25
Cedar River	$18.99	1.5	-	-	$2.39	$4.20	$4.54	$7.38	-	5/15/25
Coal Creek	$18.91	0	-	-	$3.01	$3.92	$5.01	$7.18	-	5/15/50
Covington***	$16.83	0	Block	Block	$2.61	$3.92	$5.09/$6.67***	$5.89/$8.49***	$6.90/$9.88***	4/7/10/17
Duvall	$23.33	2	-	-	$3.48	$4.47	$5.46	$6.46	$7.47	4/6/8/10
Edmonds[T]	$10.85	0	-	-	$2.25	-	-	-	-	-
Highline***	$13.24	0	$3.43	Block	$3.43	$4.06	-	-	-	5
Issaquah[T]	$13.08	0	-	-	$1.69	$4.02	$7.47	$12.17	$17.50	2/7/15/25
Kirkland[T]	$19.00	2	-	-	$4.56	$5.98	-	-	-	12
Lake Forest Park[T]	$29.42	0	-	-	$3.33	-	-	-	-	-
Mercer Island***[T]	$10.57	0	Block	Block	$2.50	$4.24	$5.10/$5.28***	$6.85/$7.28***	-	5/10/15
Northshore	$15.00	0	-	-	$2.50	$3.25	$4.00	$5.00	-	6/7.5/11.5
Olympic View***[T]	$14.69	0	Block	Block	$2.09/$2.23***	$3.06/$3.49***	-	-	-	20
Redmond	$12.85	0	-	-	$1.55	$3.10	$4.65	$6.20	-	4/10/20
Renton	$15.96	0		-	$2.30	$3.09	$3.90	-	-	5/10
Sammamish Plateau	$23.02	0	-	-	$1.59	$1.93	$3.12	$5.19	-	6/12/25
Shoreline [S T]	$21.70	0	-	-	$2.79	$4.26	$5.75	-	-	5/12
Skyway	$14.85	0	-	-	$3.29	$4.17	$5.27	$6.66	-	4/6/12
Soos Creek***	$13.00	0	Block	Block	$1.65	$3.35/$4.00***	$4.20/$5.05***	$4.75/$5.70***	-	5/10/15
Tukwila	$12.00	0	$2.79	$3.89	-	-	-	-	-	-
Woodinville	$14.50	0	-	-	$3.33	$4.85	$6.32	$7.39	-	5/10/20
Seattle***	$13.25	0	$4.04	Block	$4.34	$5.15	$11.80	-	-	5/18

* All utilities with seasonal rates use a 4 month peak season.

** Break Points are the number of ccf per month at which the next rate block is attained. For example, W.D. 45 charges $2.50 per ccf for the first 5 ccf consumed, $3.50 per ccf for the next 7.5 ccf per month, and $4.50 per ccf for all consumption in excess of 12.5 ccf per month.

*** WD 119, WD125, Covington, Highline, Mercer Island, Olympic View, Soos Creek, and Seattle have both seasonal and block rates. For example, WD 119's 2nd block rate of $2.90/ccf increases to $3.80 during the peak season. Only Tukwila has simple seasonal rates with no blocks.

[S] Base Service Charge for Shoreline is based on square footage of buildings, not meter size.

[T] Taxes and fees not included in the published rates of these utilities (Bellevue, Bothell, Edmonds, Issaquah, Kirkland, Lake Forest Park, Mercer Island, Olympic View, and Shoreline) have been added to the rates shown in this table.

Table 1.2

A Comparison of 2012 Commercial Rates

Purveyor:	3/4" mtr ch per month	Includes Minimum	Seasonal Winter	Seasonal Summer*	Inclined Block 1st	2nd	3rd	4th	5th	Break Points**
W.D. 20	$98.75	0	-	-	$2.10	$2.65	-	-	-	10
W.D. 45	$17.50	0	-	-	$2.50	$3.50	$4.50	-	-	5/12.5
W.D. 49[T]	$211.50	0	-	-	$3.55	-	-	-	-	-
W.D. 90	$58.13	2.5	-	-	$3.60	-	-	-	-	-
W.D. 119***	$65.50	0	Block	Block	$2.30/$2.90***	$2.90/$3.80***	$3.80/$4.75***	$4.62/$5.50***	-	7/14/21
W.D. 125	$42.00	0	$3.17	$3.68	-	-	-	-	-	-
Bellevue[T]	$75.21	0	$3.32	$4.66	-	-	-	-	-	-
Bothell [T]	$97.44	0	$2.73	$4.67	-	-	-	-	-	-
Cedar River	$64.01	1.5	-	-	$2.39	$4.20	$4.54	$7.38	-	5/15/25
Coal Creek	$100.58	0	$3.47	$4.54	-	-	-	-	-	-
Covington	$251.76	0	$2.91	$5.15	-	-	-	-	-	-
Duvall	$23.33	2	-	-	$3.48	$4.47	$5.46	$6.46	$7.47	4/6/8/10
Edmonds	$75.31	0	-	-	$2.25	-	-	-	-	-
Highline	$116.07	0	$3.43	Block	$3.43	$4.06	-	-	-	5
Issaquah[T]	$116.67	0	-	-	$3.41	$5.26	-	-	-	32
Kirkland[T]	$74.33	0	-	-	$5.12	-	-	-	-	-
Lake Forest Park	$212.62	0	-	-	$3.33	-	-	-	-	-
Mercer Island[T]	$84.53	0	$2.30	$5.75	-	-	-	-	-	-
Northshore	$100.00	0	-	-	$3.55	$3.70	$3.85	$4.05	-	32/40/61.5
Olympic View***[T]	$53.43	0	Block	Block	$2.09/$2.23***	$3.06/$3.49***	-	-	-	160
Redmond	$78.65	0	$2.05	$3.52	-	-	-	-	-	-
Renton	$95.71	0	-	-	$3.16	-	-	-	-	-
Sammamish Plateau	$146.27	0	$1.28	$1.87	-	-	-	-	-	-
Shoreline [S T]	$220.72	0	-	-	$3.68	$0.00	-	-	-	0
Skyway	$169.45	0	-	-	$4.22	$5.01	-	-	-	48
Soos Creek***	$51.75	0	Block	Block	$1.65	$3.35/$4.00***	$4.20/$5.05***	$4.75/$5.70***	-	5/10/15
Tukwila	$100.00	0	$3.62	$4.98	-	-	-	-	-	-
Woodinville	$117.04	0	-	-	$3.97	$4.35	-	-	-	Prior winter avg
Seattle	$23.35	0	$4.04	$5.15	-	-	-	-	-	-

* All utilities with seasonal rates use a 4 month peak season.

** Break Points are the number of ccf per month at which the next rate block is attained. For example, W.D. 45 charges $2.50 per ccf for the first 5 ccf consumed, $3.50 per ccf for the next 7.5 ccf per month, and $4.50 per ccf for all consumption in excess of 12.5 ccf per month.

*** WD 119, Olympic View, and Soos Creek have both seasonal and block rates. For example, WD 119's 2nd block rate of $2.90/ccf increases to $3.80 during the peak season.

[S] Base Service Charge for Shoreline is based on square footage of buildings, not meter size.

[T] Taxes and fees not included in the published rates of these utilities (Bellevue, Bothell, Edmonds, Issaquah, Kirkland, Lake Forest Park, Mercer Island, Olympic View, and Shoreline) have been added to the rates shown in this table.

Figure 1.1

Average Monthly Residential Bills at 2012 Rates and LOW Consumption

(4 ccf/mo Winter and 6 ccf/mo Summer Consumption)

Purveyor	Average Monthly Bills
W.D. 119	$49.43
Lake Forest Park	$44.97
Shoreline	$35.20
Duvall	$33.27
Coal Creek	$33.26
Seattle	$32.97
Covington	$32.93
Bellevue	$31.60
Kirkland	$31.16
Skyway	$30.79
Woodinville	$30.55
W.D. 49	$30.47
Sammamish Plateau	$30.44
W.D. 20	$29.55
W.D. 45	$29.50
Highline	$29.46
W.D. 90	$28.03
W.D. 125	$27.65
Tukwila	$27.22
Issaquah	$27.18
Cedar River	$27.16
Renton	$26.96
Northshore	$26.67
Olympic View	$24.72
Mercer Island	$22.82
Bothell	$22.57
Soos Creek	$21.48
Edmonds	$21.37
Redmond	$21.12

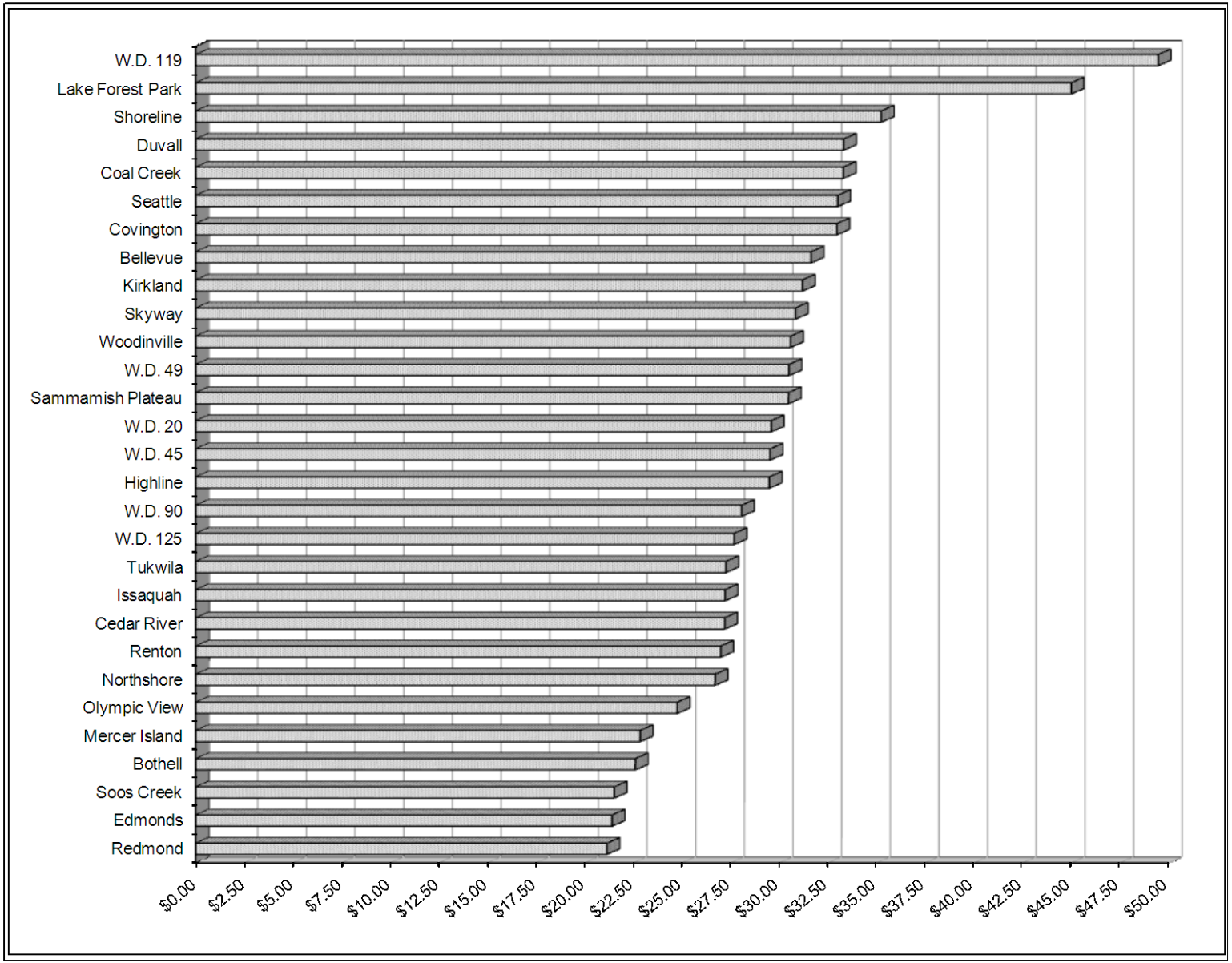


Figure 1.2

Average Monthly Residential Bills at 2012 Rates and MEDIUM Consumption

(8 ccf/mo Winter and 12 ccf/mo Summer Consumption)

Purveyor	Average Monthly Bills
W.D. 119	$63.27
Lake Forest Park	$60.51
Duvall	$59.44
Covington	$55.96
Shoreline	$54.11
Seattle	$54.05
Issaquah	$53.99
Skyway	$53.92
Woodinville	$53.15
Kirkland	$52.43
Coal Creek	$50.94
W.D. 49	$49.50
Bellevue	$47.68
Highline	$46.72
Cedar River	$45.56
W.D. 45	$45.17
W.D. 125	$44.49
Tukwila	$42.44
Northshore	$42.38
Mercer Island	$42.15
Renton	$41.39
W.D. 90	$40.75
W.D. 20	$39.72
Sammamish Plateau	$38.99
Bothell	$38.10
Soos Creek	$37.98
Redmond	$36.62
Olympic View	$34.76
Edmonds	$31.89

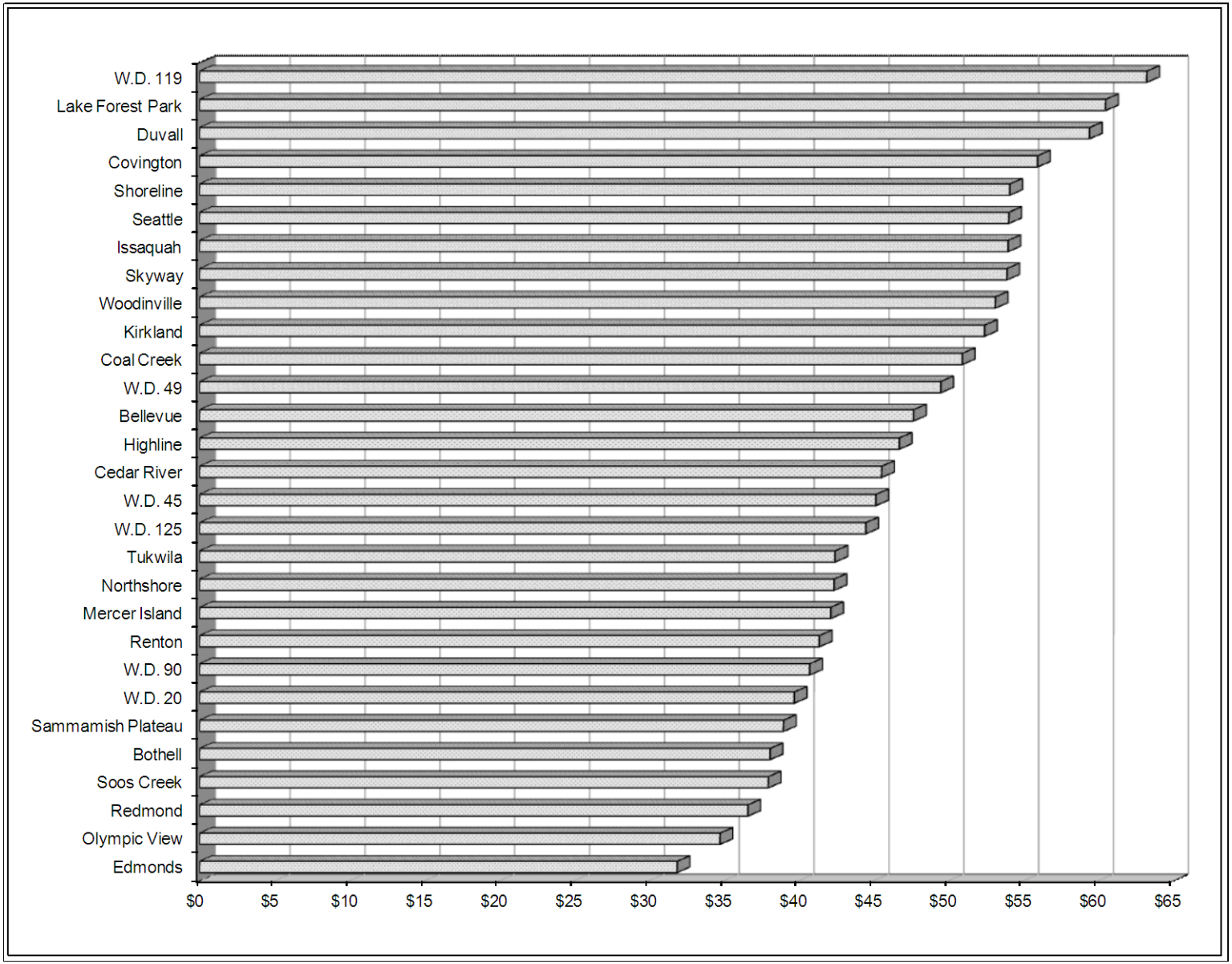


Figure 1.3

Average Monthly Residential Bills at 2012 Rates and HIGH Consumption

(16 ccf/mo Winter and 24 ccf/mo Summer Consumption)

Purveyor	Average Monthly Bills
Issaquah	$140.94
Duvall	$127.81
Covington	$119.06
Skyway	$112.37
Woodinville	$111.60
Seattle	$109.49
Kirkland	$104.42
Shoreline	$103.77
W.D. 119	$99.05
W.D. 49	$98.50
Mercer Island	$96.47
Bellevue	$92.70
Lake Forest Park	$91.60
Coal Creek	$91.53
Northshore	$86.71
Cedar River	$86.00
W.D. 45	$84.00
Soos Creek	$81.77
Bothell	$81.36
Highline	$81.26
W.D. 125	$81.05
Redmond	$80.02
Renton	$76.71
Tukwila	$72.88
W.D. 90	$72.45
Sammamish Plateau	$64.94
W.D. 20	$63.72
Olympic View	$56.50
Edmonds	$52.93

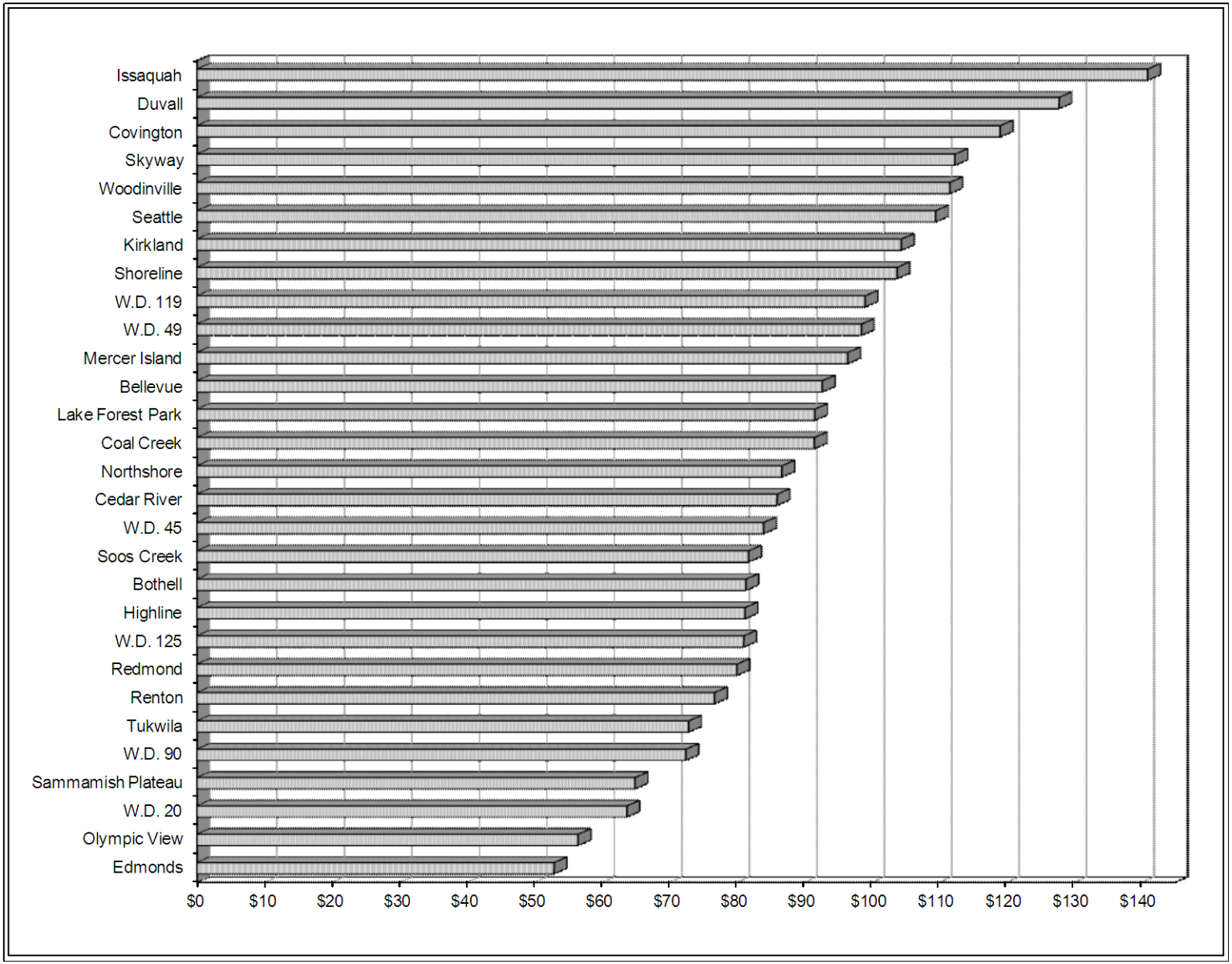
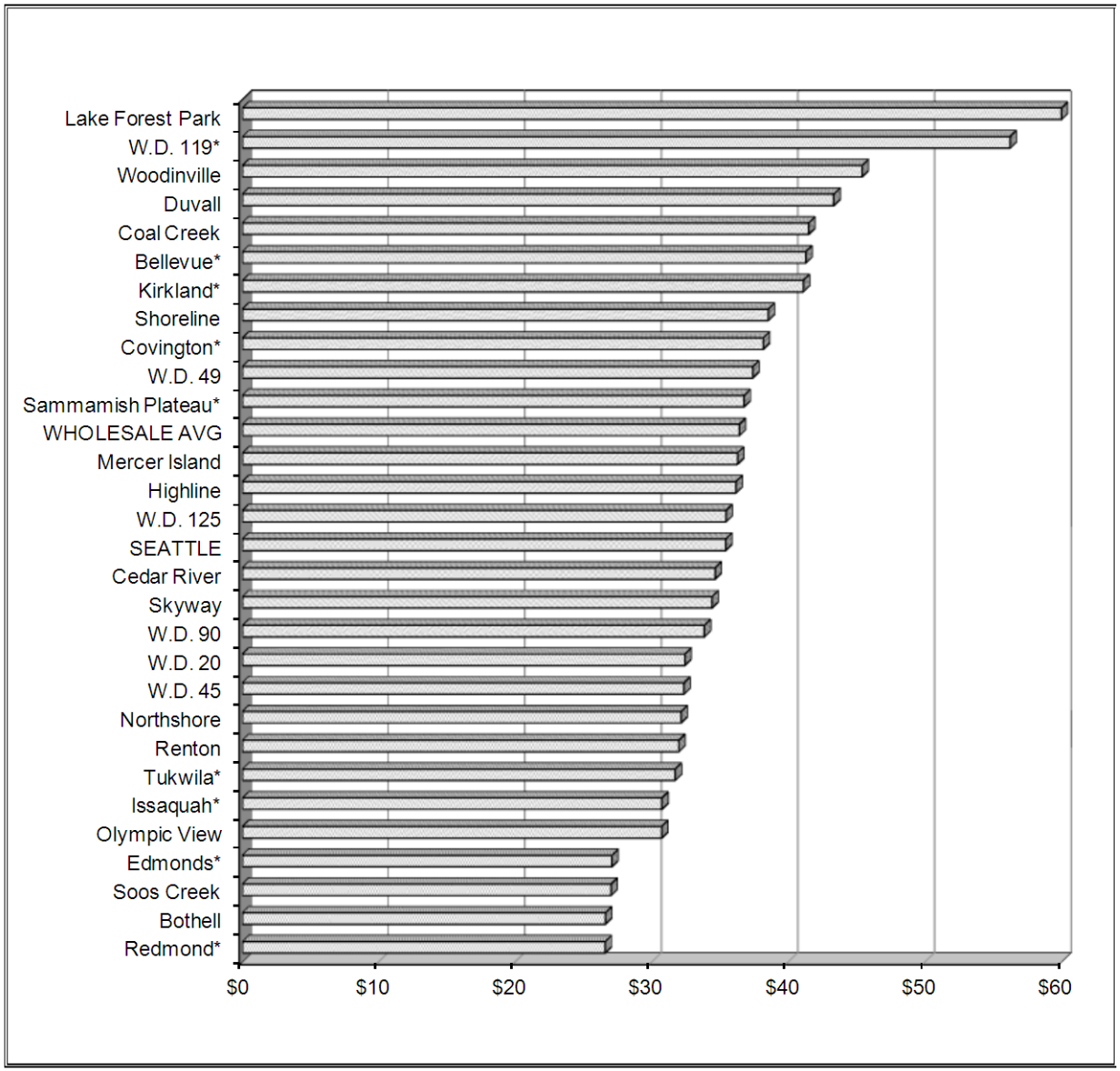


Figure 1.4

Average Monthly Residential Water Bills at Each Utility's Average Consumption

	Average CCF*	Monthly Bill
Lake Forest Park	9.2	$59.96
W.D. 119*	7.1	$56.19
Woodinville	7.9	$45.37
Duvall	6.7	$43.29
Coal Creek	7.0	$41.45
Bellevue*	7.6	$41.24
Kirkland*	6.8	$41.06
Shoreline	5.7	$38.50
Covington*	6.6	$38.14
W.D. 49	6.5	$37.36
Sammamish Plateau*	8.2	$36.73
WHOLESALE AVG	6.7	$36.39
Mercer Island	8.0	$36.25
Highline	6.5	$36.14
W.D. 125	7.0	$35.41
SEATTLE	5.2	$35.37
Cedar River	6.8	$34.60
Skyway	5.3	$34.38
W.D. 90	6.9	$33.82
W.D. 20	6.0	$32.39
W.D. 45	5.7	$32.31
Northshore	6.5	$32.11
Renton	6.6	$31.95
Tukwila*	6.1	$31.68
Issaquah*	5.5	$30.71
Olympic View	7.5	$30.70
Edmonds*	7.3	$27.05
Soos Creek	6.6	$26.99
Bothell	6.1	$26.57
Redmond*	6.4	$26.56



* 2010 rather than 2011 data on average consumption per household is used to calculate bills for utilities that did not complete the 2012 survey.

Table 1.3

AVERAGE ANNUAL, WINTER, AND SUMMER RESIDENTIAL BILLS

with 2012 Rates & Medium Consumption: 8 ccf/mo Winter, 12 ccf/mo Summer

Ranked from Highest to Lowest

Rank	Purveyor	Monthly Residential Bills			Summer/Winter Differential*
		Avg. Annual	Winter	Summer	
1	W.D. 119	$63.27	$56.50	$76.80	35.9%
2	Lake Forest Park	$60.51	$56.07	$69.39	23.8%
3	Duvall	$59.44	$50.15	$78.01	55.6%
4	Covington	$55.96	$44.12	$79.66	80.6%
5	Shoreline	$54.11	$48.43	$65.47	35.2%
6	Seattle	$54.05	$45.57	$71.00	55.8%
7	Issaquah	$53.99	$44.03	$73.91	67.9%
8	Skyway	$53.92	$46.89	$67.97	45.0%
9	Woodinville	$53.15	$45.70	$68.04	48.9%
10	Kirkland	$52.43	$46.35	$64.58	39.3%
11	Coal Creek	$50.94	$45.72	$61.40	34.3%
12	W.D. 49	$49.50	$42.50	$63.50	49.4%
13	Bellevue	$47.68	$42.50	$58.04	36.6%
14	Highline	$46.72	$40.68	$58.81	44.6%
15	Cedar River	$45.56	$39.96	$56.76	42.0%
16	W.D. 45	$45.17	$40.50	$54.50	34.6%
17	W.D. 125	$44.49	$39.06	$55.36	41.7%
18	Tukwila	$42.44	$34.32	$58.68	71.0%
19	Northshore	$42.38	$36.88	$53.38	44.7%
20	Mercer Island	$42.15	$35.80	$54.85	53.2%
21	Renton	$41.39	$36.73	$50.71	38.1%
22	W.D. 90	$40.75	$36.75	$48.75	32.7%
23	W.D. 20	$39.72	$36.55	$46.05	26.0%
24	Sammamish Plateau	$38.99	$36.42	$44.14	21.2%
25	Bothell	$38.10	$33.00	$48.30	46.4%
26	Soos Creek	$37.98	$31.30	$51.35	64.1%
27	Redmond	$36.62	$31.45	$46.95	49.3%
28	Olympic View	$34.76	$31.41	$41.45	32.0%
29	Edmonds	$31.89	$28.89	$37.90	31.2%
WHOLESALE AVERAGE		**$46.57**	**$40.72**	**$58.28**	**43.1%**

* Note that the summer/winter differential is not the differential in rates but in bills. Most purveyors 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 purveyors 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 1.4

Ranking of Purveyor Bills from High to Low at Different Levels of Consumption

Ranking at Low Consumption		Ranking at Medium Consumption		Ranking at High Consumption	
1	W.D. 119	1	W.D. 119	1	Issaquah
2	Lake Forest Park	2	Lake Forest Park	2	Duvall
3	Shoreline	3	Duvall	3	Covington
4	Duvall	4	Covington	4	Skyway
5	Coal Creek	5	Shoreline	5	Woodinville
6	Seattle	6	Seattle	6	Seattle
7	Covington	7	Issaquah	7	Kirkland
8	Bellevue	8	Skyway	8	Shoreline
9	Kirkland	9	Woodinville	9	W.D. 119
10	Skyway	10	Kirkland	10	W.D. 49
11	Woodinville	11	Coal Creek	11	Mercer Island
12	W.D. 49	12	W.D. 49	12	Bellevue
13	Sammamish Plateau	13	Bellevue	13	Lake Forest Park
14	W.D. 20	14	Highline	14	Coal Creek
15	W.D. 45	15	Cedar River	15	Northshore
16	Highline	16	W.D. 45	16	Cedar River
17	W.D. 90	17	W.D. 125	17	W.D. 45
18	W.D. 125	18	Tukwila	18	Soos Creek
19	Tukwila	19	Northshore	19	Bothell
20	Issaquah	20	Mercer Island	20	Highline
21	Cedar River	21	Renton	21	W.D. 125
22	Renton	22	W.D. 90	22	Redmond
23	Northshore	23	W.D. 20	23	Renton
24	Olympic View	24	Sammamish Plateau	24	Tukwila
25	Mercer Island	25	Bothell	25	W.D. 90
26	Bothell	26	Soos Creek	26	Sammamish Plateau
27	Soos Creek	27	Redmond	27	W.D. 20
28	Edmonds	28	Olympic View	28	Olympic View
29	Redmond	29	Edmonds	29	Edmonds

Definition of Consumption Levels:

	Winter	Summer	Average
Low	4 ccf/mo	6 ccf/mo	4.67 ccf/mo
Medium	8 ccf/mo	12 ccf/mo	9.33 ccf/mo
High	16 ccf/mo	24 ccf/mo	18.67 ccf/mo

Figure 2.1

WHOLESALE CUSTOMERS RANKED BY 2011 ANNUAL DIRECT PURCHASES FROM SPU

Wholesale Customer	Purchases
Bellevue*	7,912,285
Kirkland*	2,660,037
Northshore	2,463,963
Highline	2,126,929
Soos Creek	2,008,295
Woodinville	1,759,518
W.D. 20	1,233,990
Tukwila*	942,999
Mercer Island	924,062
Cedar River	758,691
Redmond*	705,173
Shoreline	650,376
W.D. 49	638,260
Bothell	637,415
W.D. 125	495,650
W.D. 90	493,819
Coal Creek	493,533
Olympic View	348,497
Duvall	233,390
Skyway*	174,797
W.D. 119	110,073
W.D. 45	106,783
Renton	88,749
Edmonds	3,119
Lake Forest Park	59
Sammamish Plateau*	0
Issaquah*	0
Covington*	0
TOTAL	**27,970,462**

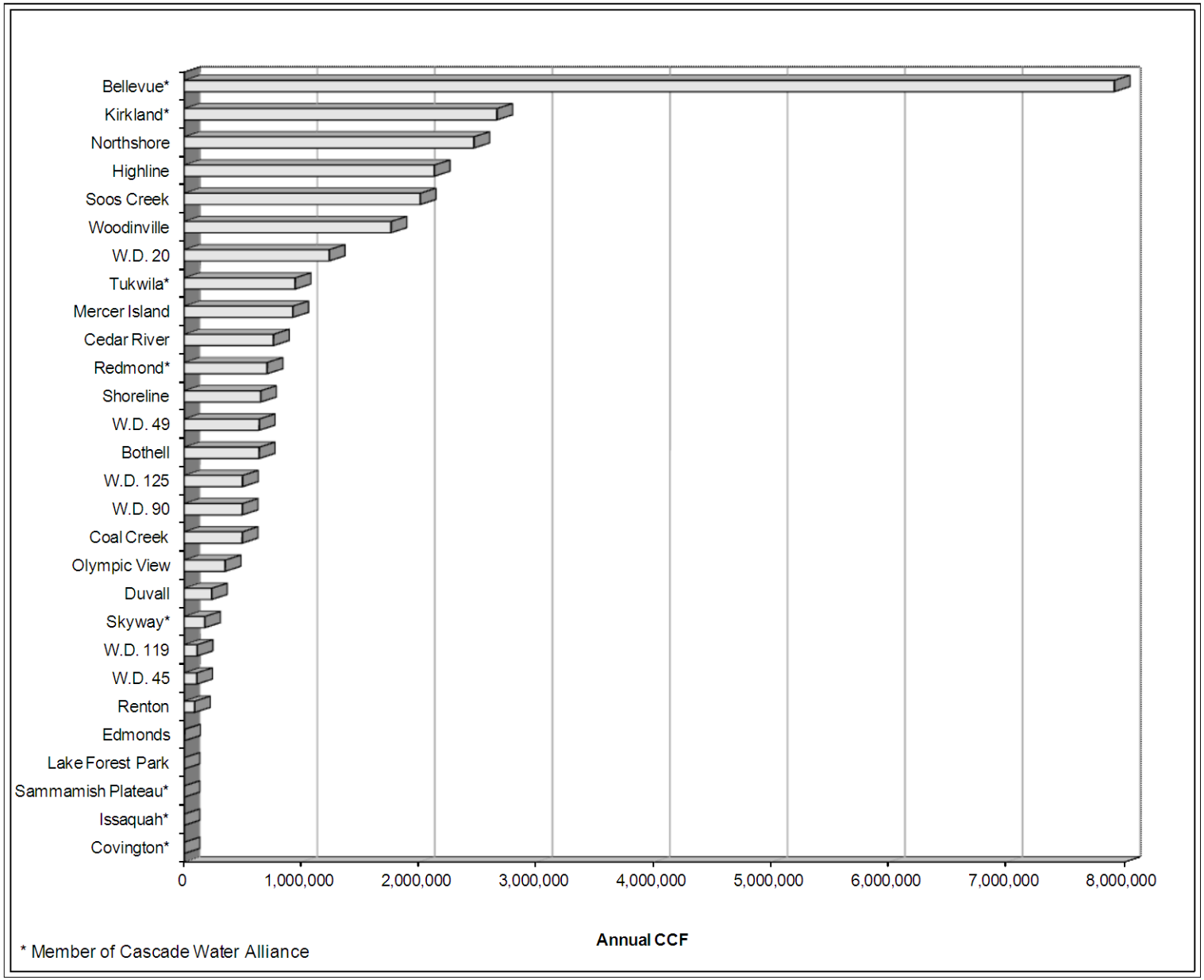


Table 2.1
Annual Direct Water Purchases from SPU by Wholesale Customer: 1998-2011

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bellevue*	8,254,911	8,053,791	8,012,735	7,221,979	7,559,140	8,124,609	8,525,078	7,864,907	8,474,731	8,336,308	8,314,028	8,573,043	7,714,349	7,912,285
Bothell	731,200	638,894	761,656	720,652	751,322	783,847	790,903	710,804	791,591	745,144	725,123	732,256	640,359	637,415
Bryn Mawr	56,648	59,525						Merged with Skyway						
Cedar River	925,231	841,243	891,413	835,740	912,348	980,516	989,535	985,386	1,071,615	947,745	872,814	924,524	800,755	758,691
Coal Creek	1,101,548	1,110,773	1,124,051	942,044	1,121,178	1,237,310	607,964	525,361	598,753	526,420	516,395	597,952	485,859	493,533
Duvall	194,781	193,759	211,270	168,746	202,939	257,645	244,321	236,868	242,851	230,852	222,695	253,521	224,298	233,390
Edmonds	467,746	386,147	21,675	7	16	4	1,068	62	0	55	31	82	364	3,119
Highline	2,982,876	3,058,440	3,020,265	2,856,390	2,918,609	3,233,149	2,964,590	2,559,715	2,565,923	2,517,632	2,473,927	2,351,174	2,143,580	2,126,929
Kirkland*	2,920,755	2,955,265	3,138,937	2,861,685	2,989,315	3,238,310	3,044,835	2,833,027	3,150,078	2,954,510	2,980,975	3,009,442	2,670,036	2,660,037
Lake Forest Park	12	34	22	186	168	16	0	2	6	2	9	20	10	59
Mercer Island	1,175,902	1,141,068	1,198,242	1,033,318	1,091,347	1,165,501	1,219,866	1,072,336	1,139,931	1,087,304	1,039,660	1,032,966	855,678	924,062
Northshore	2,872,274	2,716,809	2,833,106	2,547,889	2,833,696	2,983,637	2,838,343	2,556,349	2,698,337	2,555,901	2,441,109	2,574,352	2,394,673	2,463,963
Olympic View	648,842	462,821	439,561	360,013	382,872	475,345	462,990	414,859	549,538	406,617	406,802	496,479	361,712	348,497
Redmond*	198,550	169,630	230,796	259,585	385,288	364,646	461,140	471,211	668,574	452,805	504,742	1,242,852	499,676	705,173
Renton	8,623	125,765	111,747	101,894	69,078	62,364	64,549	51,841	48,314	51,959	38,125	42,490	59,904	88,749
Shoreline	1,047,211	1,001,449	1,053,182	888,156	908,984	968,906	936,967	866,334	917,711	871,042	850,414	860,299	771,973	650,376
Skyway*	180,418	173,355	203,520	316,097	318,079	326,364	235,574	226,417	212,135	201,841	177,990	185,047	165,814	174,797
Soos Creek	2,076,737	1,860,482	2,045,482	1,993,363	2,173,499	2,296,099	2,336,428	2,126,144	2,205,083	2,126,508	1,981,264	2,119,629	1,873,183	2,008,295
Tukwila*	1,143,486	1,198,360	1,096,157	1,095,812	1,119,261	1,092,216	1,136,059	1,069,148	1,068,642	1,060,170	993,747	986,705	920,469	942,999
Woodinville	2,189,506	2,077,944	2,197,389	2,040,624	2,070,493	2,371,019	2,243,238	1,873,605	2,032,328	1,996,289	1,956,618	2,184,773	1,781,785	1,759,518
W.D. 20	1,574,917	1,559,582	1,366,147	1,346,239	1,285,424	1,427,155	1,346,869	1,325,298	1,416,165	1,339,902	1,358,086	1,386,645	1,237,668	1,233,990
W.D. 45	150,932	142,361	156,010	105,556	137,852	133,350	127,217	116,943	105,832	95,913	94,013	95,912	100,229	106,783
W.D. 49	689,310	685,368	673,859	616,296	625,111	611,986	640,512	587,490	599,956	636,898	585,791	589,113	556,683	638,260
W.D. 85	35,211	45,286	74,155	34,458	45,048				Merged with WD 20					
W.D. 90	718,975	708,119	735,758	683,434	538,035	496,043	503,774	452,581	539,675	542,270	550,935	521,397	433,468	493,819
W.D. 119	98,828	101,798	117,447	132,490	128,518	139,875	133,744	126,416	131,697	121,176	117,871	132,998	115,579	110,073
W.D. 125	698,405	688,626	778,596	560,097	580,052	560,331	646,969	603,604	623,262	597,401	549,107	587,539	514,478	495,650
Total	**33,143,835**	**32,156,694**	**32,493,178**	**29,722,750**	**31,147,672**	**33,330,243**	**32,502,533**	**29,656,708**	**31,852,728**	**30,402,664**	**29,752,271**	**31,481,210**	**27,322,582**	**27,970,462**

* Members of Cascade Water Alliance. Water shown as "purchased" by individual Cascade members reflects consumption measured through their meters with SPU. However, individual Cascade members are not billed directly by SPU.

Figure 2.2
WHOLESALE CUSTOMERS RANKED BY 2011 ANNUAL RETAIL BILLED SALES

Wholesale Customer	Retail Sales
Renton	2,830,862
Highline	2,644,611
Northshore	2,266,068
Soos Creek	1,737,069
Woodinville	1,696,919
W.D. 20	1,005,816
Mercer Island	891,529
Cedar River	791,574
Shoreline	709,027
W.D. 90	638,859
Bothell	627,483
Olympic View	575,861
W.D. 125	559,617
W.D. 49	548,355
Coal Creek	443,453
Skyway*	257,921
Duvall	215,895
W.D. 45	100,065
Lake Forest Park	97,582
Bellevue*	NA
Covington*	NA
Edmonds	NA
Issaquah*	NA
Kirkland*	NA
Redmond*	NA
Sammamish Plateau*	NA
Tukwila*	NA
W.D. 119	NA
Total	**NA**

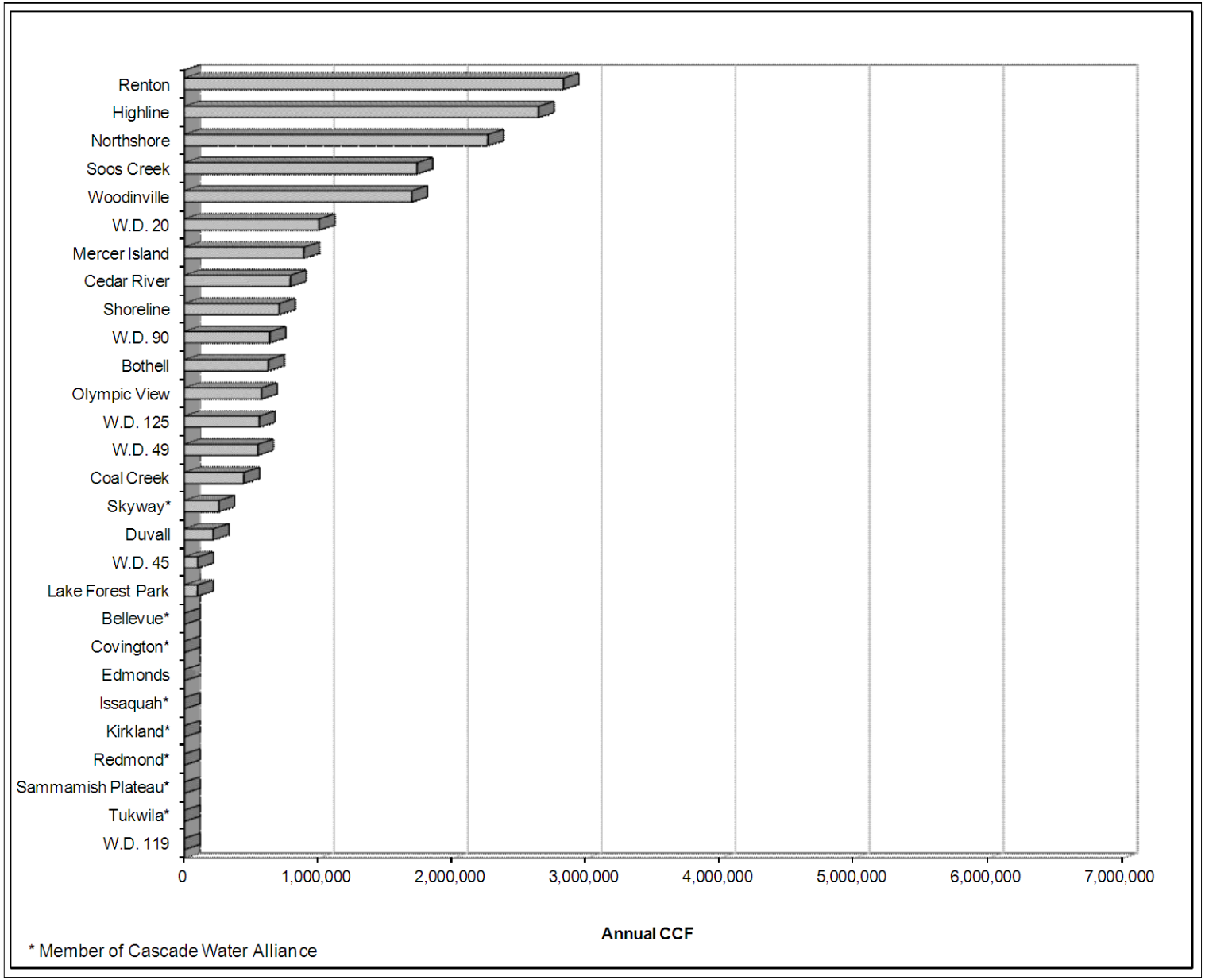


Table 2.2

Annual Retail Water Sales by Wholesale Customer: 1998-2011

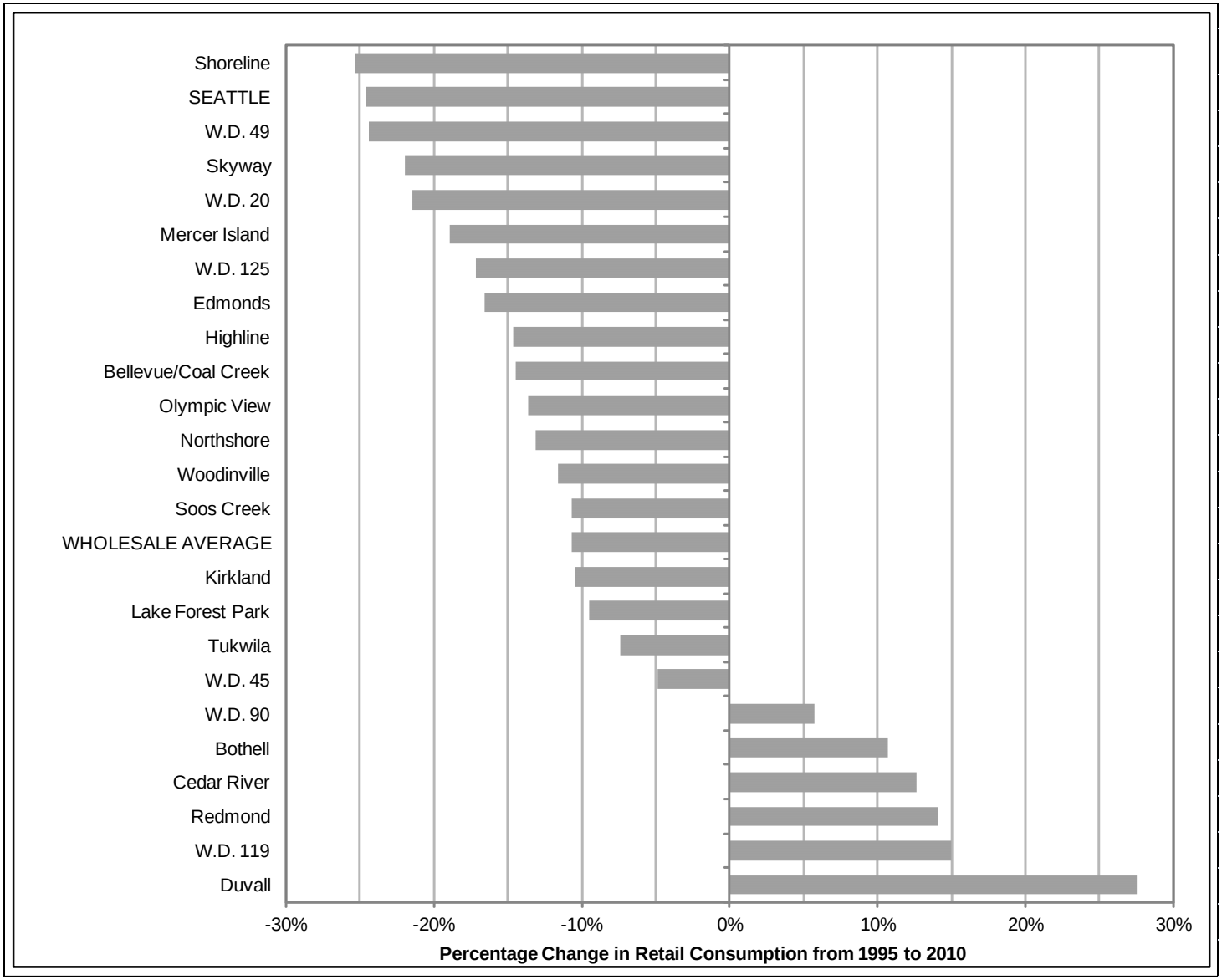
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bellevue*	6,809,415	6,723,028	6,791,413	6,332,424	6,519,723	7,055,800	7,078,453	6,783,981	**No Data**	6,851,810	6,612,399	6,908,439	6,276,954	**No Data**
Bothell*	724,060	659,376	739,669	684,621	714,466	760,131	**No Data**	577,806	656,619	693,484	711,427	726,962	681,145	627,483
Bryn Mawr	190,430	185,172						Merged with Skyway						
Cedar River	838,602	791,379	854,728	784,795	858,905	949,620	925,955	855,114	964,037	904,362	855,210	941,306	816,633	791,574
Coal Creek	1,075,618	1,056,803	1,070,525	1,013,672	1,084,280	1,219,567	543,762	488,466	563,705	491,502	473,088	554,686	439,423	443,453
Covington*	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	1,690,206	1,750,144	1,563,121	**No Data**
Duvall	197,891	178,958	191,604	187,714	197,080	231,577	218,230	205,341	223,653	220,032	216,704	239,872	200,987	215,895
Edmonds*	1,508,951	1,390,499	1,456,809	1,334,776	1,421,775	1,512,175	1,465,301	1,406,291	1,504,473	1,395,963	1,314,223	1,411,793	1,251,919	**No Data**
Highline	3,250,553	3,190,115	3,229,719	3,020,857	3,090,006	3,302,253	3,149,274	3,029,761	3,066,659	2,976,073	2,840,910	2,920,652	2,661,812	2,644,611
Issaquah*	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	806,842	892,875	809,031	**No Data**
Kirkland*	1,872,837	1,837,946	1,936,149	1,645,395	1,790,609	1,906,772	1,739,111	1,833,509	1,843,186	1,729,375	1,657,408	1,801,406	1,574,869	**No Data**
Lake Forest Park	132,282	140,077	140,077	102,375	107,268	116,970	105,794	101,256	106,343	96,000	92,421	106,697	94,119	97,582
Mercer Island	1,129,403	1,064,830	1,104,852	954,551	1,089,710	1,149,546	1,155,137	984,570	996,235	978,013	931,806	1,000,468	866,165	891,529
Northshore*	2,754,149	2,674,545	2,665,229	2,831,579	2,630,028	2,808,235	2,676,062	**No Data**	2,630,374	2,501,954	2,394,514	2,512,510	2,334,511	2,266,068
Olympic View	694,953	673,260	671,687	607,893	648,736	703,425	699,541	627,376	659,836	612,943	600,568	683,135	585,617	575,861
Redmond*	3,011,322	2,975,707	2,979,125	2,783,755	2,940,175	3,254,994	**No Data**	**No Data**	**No Data**	**No Data**	3,085,835	3,165,854	2,969,511	**No Data**
Renton*	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	3,083,313	2,900,725	3,035,983	2,789,845	2,830,862
Sammamish Plateau*	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	**No Data**	2,113,475	2,310,814	1,976,398	**No Data**
Shoreline	940,873	925,532*	956,858	871,251	862,972	914,477	886,232	815,594	849,559	813,161	856,562	843,675	746,571	709,027
Skyway	149,880	153,043	356,220	309,537	325,930	329,497	309,832	280,643	**292,983**	285,914	275,432	277,182	257,760	257,921
Soos Creek	2,009,017	1,947,093	1,995,096	1,822,072	1,941,211	2,191,349	2,023,063	1,870,978	2,003,456	1,972,069	1,832,233	1,903,844	1,693,450	1,737,069
Tukwila*	1,024,494	1,040,590	1,030,948	925,230	903,189	938,989	1,000,684	1,043,575	**No Data**	918,957	883,576	888,759	843,254	**No Data**
Woodinville	2,145,836	1,999,930	2,104,568	1,887,481	2,003,091	2,232,174	2,077,734	1,867,062	2,044,244	1,884,117	1,789,966	1,987,478	1,679,587	1,696,919
W.D. 20	1,334,597	1,310,712	1,238,771	1,137,766	1,137,678	1,216,998	1,200,605	1,144,053	1,196,913	1,141,240	1,099,170	1,115,278	1,034,602	1,005,816
W.D. 45	154,728	131,770	145,677	130,769	138,113	132,207	121,307	108,416	99,325	90,092	89,336	90,799	97,857	100,065
W.D. 49	660,912	668,462	653,378	613,239	614,343	645,016	610,845	616,020	620,546	602,572	576,403	586,525	549,063	548,355
W.D. 85	63,761	68,419*	69,231*	52,480	54,985					Merged with WD 20				
W.D. 90	559,987	570,985	602,704	555,734	599,564	656,449	665,985	602,173	694,640	664,617	652,558	720,856	634,419	638,859
W.D. 119*	100,814	102,391	106,602	103,963	108,359	124,407	113,288	105,277	126,326	109,394	109,449	116,871	102,606	**No Data**
W.D. 125	734,486	682,754	729,943	641,283	718,981	678,557	652,703	611,276	636,882	637,662	616,905	654,841	574,180	559,617
Seattle	**34,741,440**	**32,994,553**	**33,581,789**	**30,325,199**	**30,829,010**	**30,422,909**	**29,994,131**	**28,340,298**	**29,114,620**	**28,490,213**	**27,538,310**	**28,015,569**	**26,561,023**	**25,824,242**

* 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 2007 nor availableto for Covington, Issaquah and Sammamish Plateau prior to 2008. Bellevue, Covington, Edmonds, Issaquah, Kirkland, Redmond, Sammamish Plateau, Tukwila, and WD 119 did not provide data for 2011.

Figure 2.3

PERCENT GROWTH (OR DECLINE) IN RETAIL DEMAND BY UTILITY FROM 1995 TO 2010

Utilty	Percent Change	
	1995-2010	Average Annual
Shoreline	-25.4%	-1.9%
Seattle	**-24.6%**	**-1.9%**
W.D. 49	-24.5%	-1.9%
Skyway	-22.0%	-1.6%
W.D. 20	-21.5%	-1.6%
Mercer Island	-19.0%	-1.4%
W.D. 125	-17.2%	-1.2%
Edmonds	-16.6%	-1.2%
Highline	-14.7%	-1.1%
Bellevue/Coal Creek*	-14.5%	-1.0%
Olympic View	-13.7%	-1.0%
Northshore	-13.1%	-0.9%
Woodinville	-11.6%	-0.8%
Soos Creek	-10.7%	-0.8%
Wholesale Average	**-10.7%**	**-0.8%**
Kirkland	-10.4%	-0.7%
Lake Forest Park	-9.5%	-0.7%
Tukwila**	-7.4%	-0.5%
W.D. 45	-4.9%	-0.3%
W.D. 90	5.7%	0.4%
Bothell	10.7%	0.7%
Cedar River	12.6%	0.8%
Redmond	14.1%	0.9%
W.D. 119	15.0%	0.9%
Duvall	27.5%	1.6%



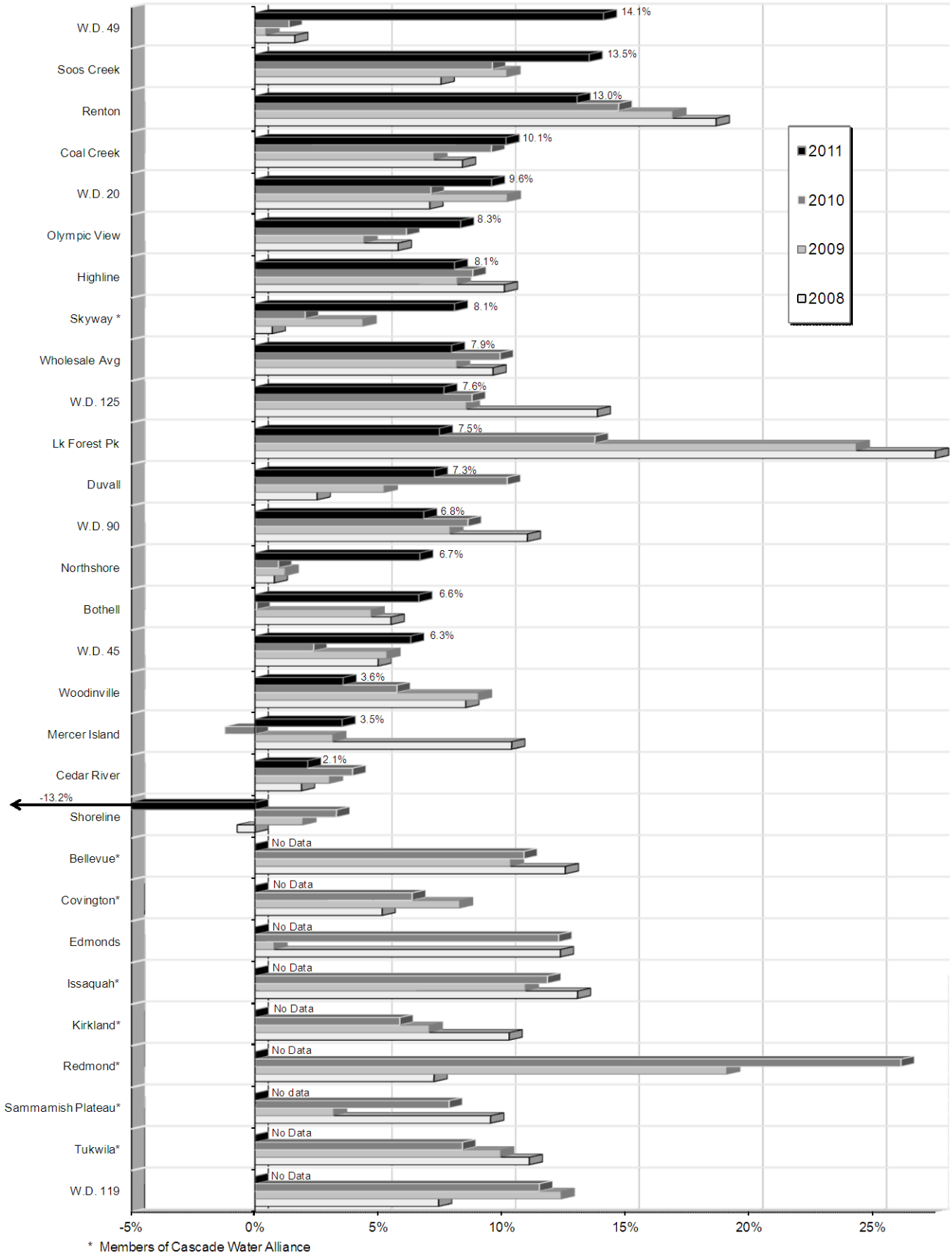
* Growth rates for Bellevue and Coal Creek are combined because of the annexation of a large portion of Coal Creek by Bellevue in 2003.

** Growth rate for Tukwila is measured from 1996, the year after a large area, including Boeing, was tranfered from Seattle's retail service area to Tukwila.

Figure 2.4

2011 Wholesale Customer Non-Revenue Water as a Percentage of Total Water Use

(2008, 2009, & 2010 Non-Revenue Shown in Gray)



* Members of Cascade Water Alliance

Table 2.3
Wholesale Customer Distribution System Non-Revenue Water: 1997-2011

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	1994-2011 Average
Bellevue*	9.3%	10.4%	8.5%	7.8%	4.6%	6.0%	5.0%	8.6%	4.3%	NA	9.2%	12.5%	10.3%	10.9%	**NA******	7.9%
Bothell	5.7%	5.4%	7.9%	7.6%	7.4%	7.1%	6.6%	NA	18.7%	18.8%	4.6%	5.5%	4.7%	0.1%	6.6%	7.5%
Bryn Mawr**	6.6%	4.8%	10.4%	Merged with Skyway												6.7%
Cedar River	8.4%	4.4%	7.0%	5.3%	7.0%	6.3%	4.1%	7.3%	14.1%	10.0%	4.6%	1.9%	3.0%	3.9%	2.1%	6.2%
Coal Creek	4.0%	2.4%	4.9%	4.8%	-7.6%	3.3%	1.4%	10.6%	7.0%	5.9%	6.6%	8.4%	7.2%	9.6%	10.1%	5.0%
Covington*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.1%	8.3%	6.4%	**NA******	6.6%
Duvall	5.3%	-1.6%	7.6%	9.3%	-11.2%	2.9%	10.1%	10.5%	13.1%	7.7%	4.5%	2.5%	5.2%	10.2%	7.3%	6.0%
Edmonds	8.6%	12.6%	10.1%	17.3%	16.4%	18.1%	15.1%	16.5%	9.5%	5.7%	8.2%	12.3%	0.8%	12.3%	**NA******	12.2%
Highline	8.6%	3.9%	5.8%	6.6%	4.3%	5.0%	5.7%	10.7%	7.8%	3.2%	7.2%	10.1%	8.2%	8.8%	8.1%	8.2%
Issaquah*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	13.0%	10.9%	11.8%	**NA******	11.9%
Kirkland*	1.2%	-3.7%	2.7%	-1.3%	7.4%	2.5%	5.0%	9.1%	0.7%	0.9%	4.5%	10.3%	7.0%	5.9%	**NA******	4.2%
Lk Forest Pk	4.0%	-19.7%	11.0%	NA	14.4%	13.9%	15.4%	21.0%	6.0%	14.3%	19.4%	39.8%	24.3%	13.7%	7.5%	12.0%
Mercer Island	6.3%	4.0%	6.7%	7.8%	7.6%	0.1%	1.4%	5.3%	8.2%	7.4%	10.1%	10.4%	3.1%	-1.2%	3.5%	5.3%
Northshore	4.2%	4.1%	0.0%	4.4%	-12.0%	6.4%	4.8%	5.0%	NA	2.5%	1.9%	0.8%	1.2%	0.9%	6.7%	2.7%
Olympic View	12.5%	13.4%	7.3%	7.3%	2.0%	-1.4%	-6.2%	2.6%	7.8%	8.5%	7.0%	5.8%	4.4%	6.1%	8.3%	5.5%
Redmond*	-1.7%	-3.7%	1.7%	3.5%	2.6%	6.5%	3.4%	NA	NA	NA	NA	7.2%	19.1%	26.1%	**NA******	4.6%
Renton	NA	NA	NA	NA	13.5%	13.2%	12.1%	13.1%	14.3%	17.0%	20.2%	18.6%	16.9%	14.7%	13.0%	15.2%
Samm Plateau*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.5%	3.2%	7.8%	**NA******	6.8%
Shoreline	NA	NA	NA	NA	NA	NA	NA	NA	5.9%	7.4%	6.6%	-0.7%	1.9%	3.3%	-13.2%	1.6%
Skyway*	6.9%	11.7%	7.3%	3.4%	7.7%	2.7%	4.3%	13.9%	20.0%	7.6%	5.1%	0.7%	4.4%	2.0%	8.1%	7.3%
Soos Creek	10.2%	3.3%	-4.7%	2.5%	8.7%	10.7%	4.6%	13.4%	12.0%	9.1%	7.3%	7.5%	10.2%	9.6%	13.5%	8.3%
Tukwila*	23.2%	10.9%	13.5%	6.6%	16.7%	20.0%	14.8%	11.9%	2.4%	NA	13.3%	11.1%	9.9%	8.4%	**NA******	14.1%
Woodinville	-2.4%	2.0%	5.4%	4.2%	7.5%	3.3%	5.9%	7.4%	0.3%	-0.6%	5.6%	8.5%	9.0%	5.7%	3.6%	3.1%
W.D. 20***	4.3%	5.6%	8.3%	7.1%	6.2%	0.6%	7.6%	3.1%	5.5%	7.6%	5.4%	7.1%	10.2%	7.1%	9.6%	6.3%
W.D. 45	-4.7%	-2.5%	7.4%	6.6%	-23.9%	-0.2%	0.9%	4.6%	7.3%	6.1%	6.1%	5.0%	5.3%	2.4%	6.3%	2.5%
W.D. 49	1.3%	5.3%	3.4%	3.3%	0.6%	1.7%	-5.4%	4.6%	-4.9%	-3.4%	5.4%	1.6%	0.4%	1.4%	14.1%	2.3%
W.D. 85***	7.5%	4.2%	NA	13.7%	10.8%	41.0%	Merged with WD 20									11.8%
W.D. 90	14.8%	22.1%	19.4%	18.1%	18.7%	9.3%	9.2%	11.3%	11.4%	7.7%	7.0%	11.0%	7.9%	8.6%	6.8%	13.7%
W.D. 119	3.1%	-1.7%	-0.3%	9.5%	21.7%	16.0%	11.4%	15.5%	17.0%	4.4%	10.0%	7.4%	12.4%	11.5%	**NA******	8.2%
W.D. 125	14.2%	8.1%	7.7%	9.4%	14.3%	6.5%	15.4%	13.5%	14.4%	12.7%	12.7%	13.8%	8.5%	8.8%	7.6%	12.0%
Wholesale Avg	6.7%	5.3%	5.8%	6.2%	6.1%	6.8%	6.1%	9.4%	7.3%	7.0%	8.6%	9.7%	9.0%	9.9%	7.9%	7.5%

* Members of Cascade Water Alliance. No history available for Convington, Issaquah, and Sammamish Plateau prior to 2008.

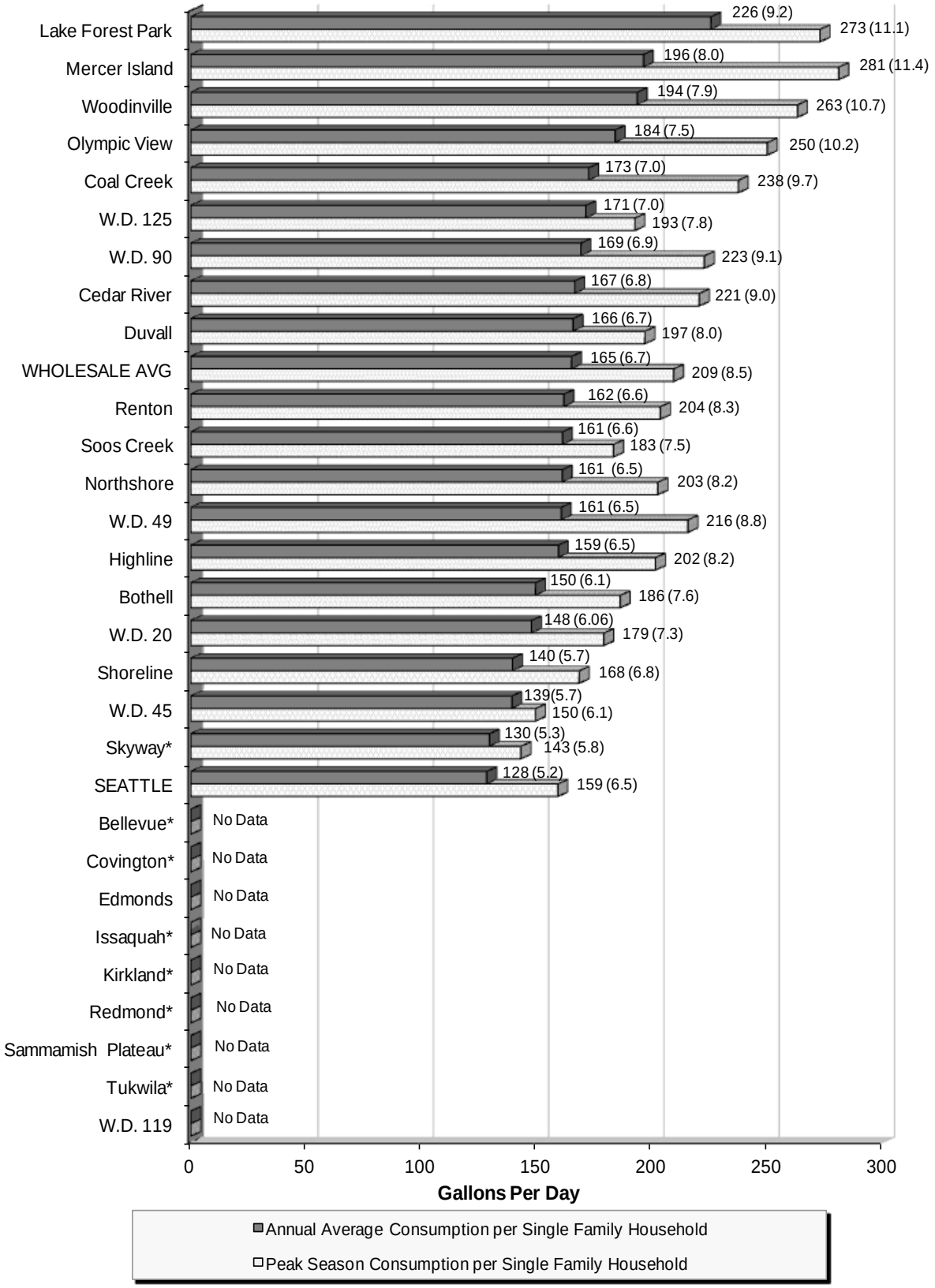
** Formerly Bryn Mawr-Lakeridge Water & Sewer District. Skyway Water & Sewer District merged with Bryn Mawr-Lakeridge as of June 1, 1999 and the name was changed back to Skyway in 2002.

*** Water District 85 merged with Water District 20 in 2003.

**** Bellevue, Covington, Edmonds, Issaquah, Kirkland, Redmond, Sammamish Plateau, Tukwila, and WD 119 did not provide data for 2011

Figure 2.5

2011 Single Family Consumption per Household
in Gallons per Day (CCF per Month)

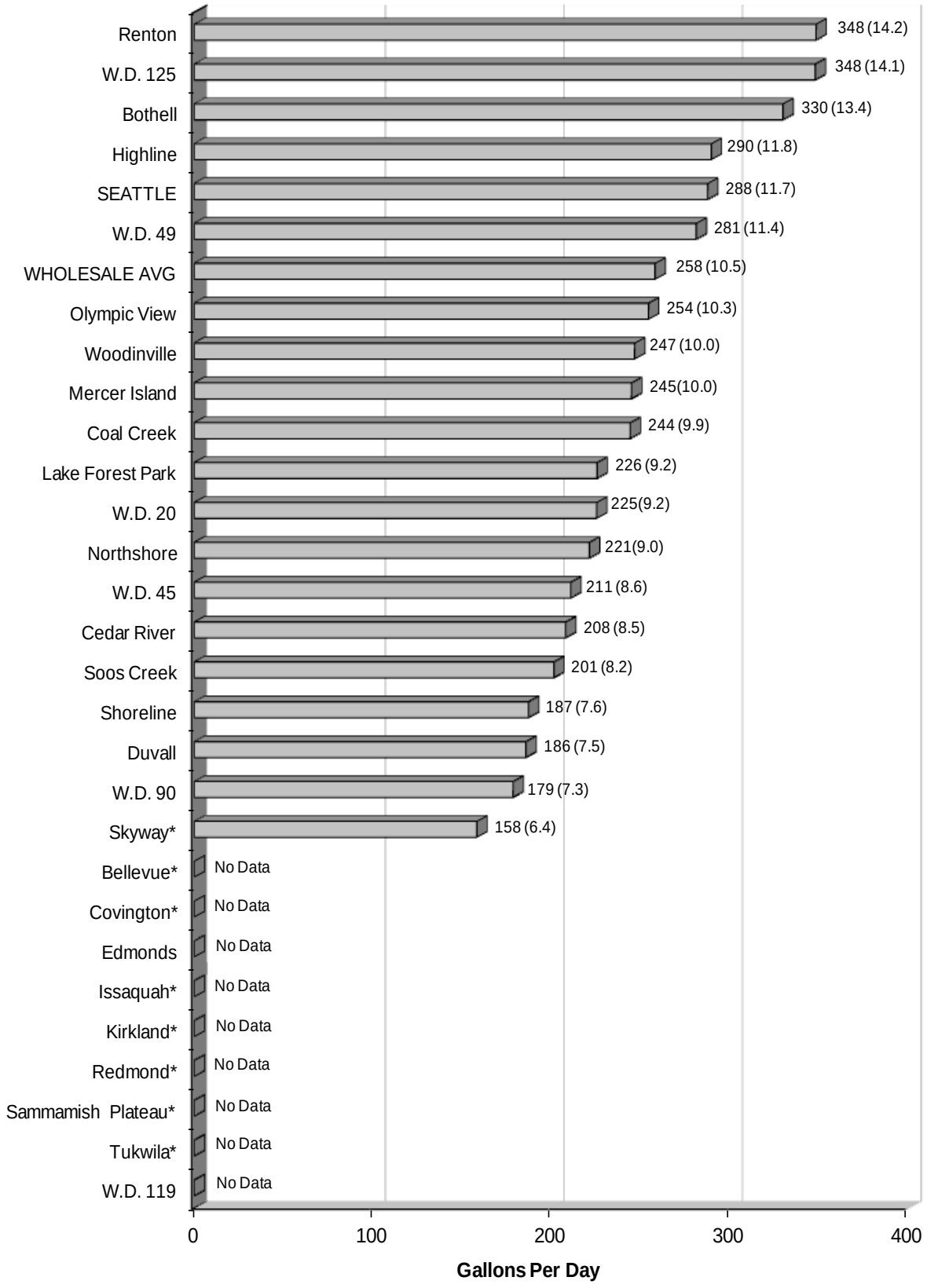


* Members of Cascade Water Alliance

Figure 2.6

2011 Total Consumption per Account

in Gallons per Day (CCF per Month)



* Members of Cascade Water Alliance

Table 2.4

Single Family Residential Consumption per Household by Wholesale Customer: 1995-2011

(in CCF per Household per Month)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bellevue*	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	7.6	**NA**
Bothell	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	7.2	6.1
Bryn Mawr	**NA**	**NA**	**NA**	**NA**	7.5	**Merged with Skyway**											
Cedar River	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	7.1	6.8
Coal Creek	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	7.1	7.0
Covington*	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	7.0	7.2	6.6	**NA**
Duvall	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	6.6	6.7
Edmonds	9.7	8.6	8.1	9.5	8.6	10.2	8.5	8.8	9.5	9.0	8.1	8.4	8.1	7.5	8.5	7.3	**NA**
Highline	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	6.6	6.5
Issaquah*	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	5.7	6.1	5.5	**NA**
Kirkland*	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	6.8	**NA**
Lake Forest Park	**NA**	11.4	12.8	10.7	12.2	12.2	9.9	10.4	11.3	10.3	9.8	10.2	9.2	8.8	10.2	8.9	9.2
Mercer Island	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	7.8	8.0
Northshore	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	6.8	6.5
Olympic View	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	7.5	7.5
Redmond*	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	6.4	**NA**
Renton	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	6.8	7.0	6.4	6.6
Sammamish Plateau*	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	8.7	9.7	8.2	**NA**
Shoreline	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	5.8	5.7
Skyway*	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	5.4	5.3
Soos Creek	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	6.5	6.6
Tukwila*	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	6.1	**NA**
Woodinville	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	7.9	7.9
W.D. 20	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	6.3	6.0
W.D. 45	8.9	**NA**	**NA**	**NA**	6.8	7.5	6.8	7.6	6.9	6.4	6.2	6.4	6.3	6.0	6.2	5.9	5.7
W.D. 49	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	6.6	6.5
W.D. 85	**NA**	**NA**	**NA**	**NA**	9.9	9.7	6.9	7.2	**Merged with WD 20**								
W.D. 90	**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	6.8	6.9
W.D. 119	**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	7.1	**NA**
W.D. 125	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	7.1	7.0
Wholesale Average	**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**	**6.9**	**6.7**
Seattle	**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**	**5.4**	**5.2**

* Members of Cascade Water Alliance. No history is available for Covington, Issaquah, and Sammamish Plateau prior to 2008.
Bellevue, Covington, Edmonds, Issaquah, Kirkland, Redmond, Sammamish Plateau, Tukwila, and WD 119 did not provide data for 2011.

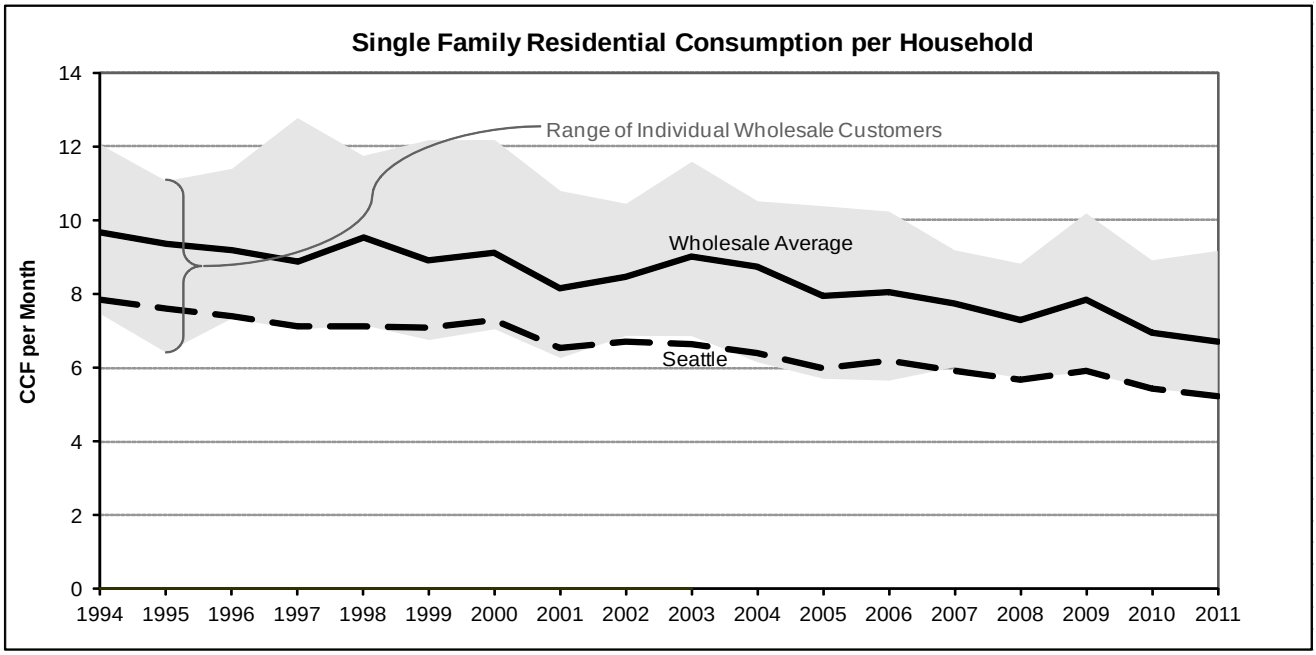



Figure 2.7