

2005

**ANNUAL SURVEY OF WHOLESALE CUSTOMERS:
SUMMARY OF RESULTS**



Seattle
 Public
Utilities

August 2006

RESULTS OF THE 2005 SEATTLE SURVEY OF WHOLESALE CUSTOMERS

Each year, Seattle Public Utilities (SPU) asks its wholesale customers to provide information on their current and forecast water demand (both retail and wholesale), sources of supply (in addition to SPU), and their water and sewer 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 2005 wholesale customer survey and is the twelfth 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 the survey data should be directed to Bruce Flory at (206) 684-5859.

Overview

About half the water produced by Seattle Public Utilities is sold directly to consumers in Seattle's direct service area. The rest is sold wholesale to 25 neighboring cities and water districts. These wholesale customers are listed below.

Wholesale Customers of Seattle Public Utilities

<u>Cities</u>	<u>Water Districts</u>
· City of Bellevue ¹	· Cedar River Water & Sewer District
· City of Bothell	· Coal Creek Utility District
· City of Duvall	· Highline Water District
· City of Edmonds	· Lake Forest Park Water District
· City of Kirkland ¹	· Northshore Utility District
· City of Mercer Island	· Olympic View Water & Sewer District
· City of Redmond ¹	· Shoreline Water District
· City of Renton	· Skyway Water & Sewer District ^{1,2}
· City of Tukwila ¹	· Soos Creek Water & Sewer District
	· Woodinville Water District
	· Water District No. 20 ³
	· Water District No. 45
	· Water District No. 49
	· Water District No. 90
	· Water District No. 119
	· Water District No. 125

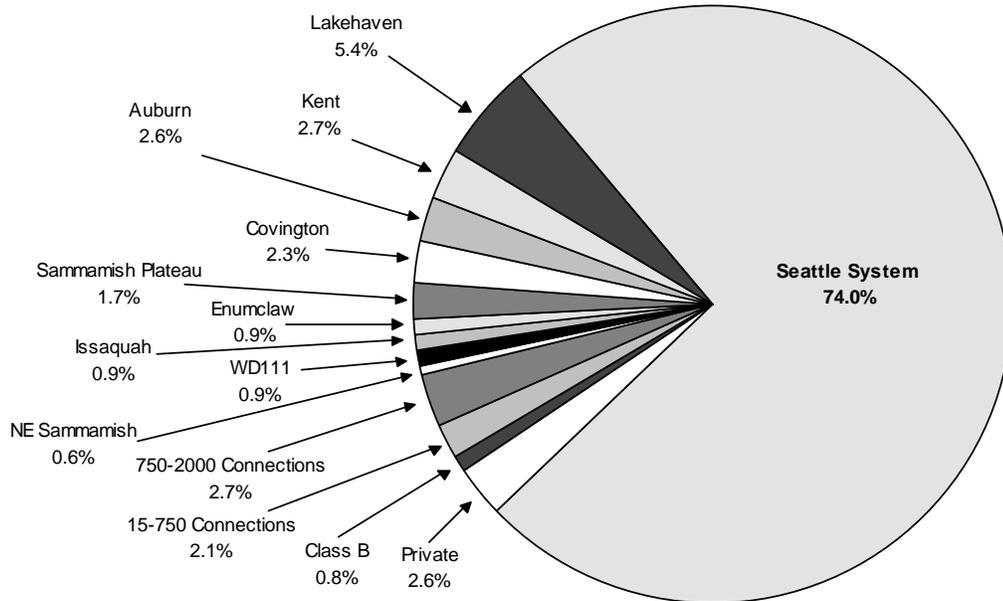
¹ Bellevue, Kirkland, Redmond, Skyway, and Tukwila are members of the Cascade Water Alliance which signed a block supply contract with SPU effective January 1, 2004.

² Skyway and Bryn Mawr-Lakeridge merged in 1999. The name of the merged utility was changed to Skyway in 2002.

³ Water District 85 was merged with Water District 20 in 2003.

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 74% 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



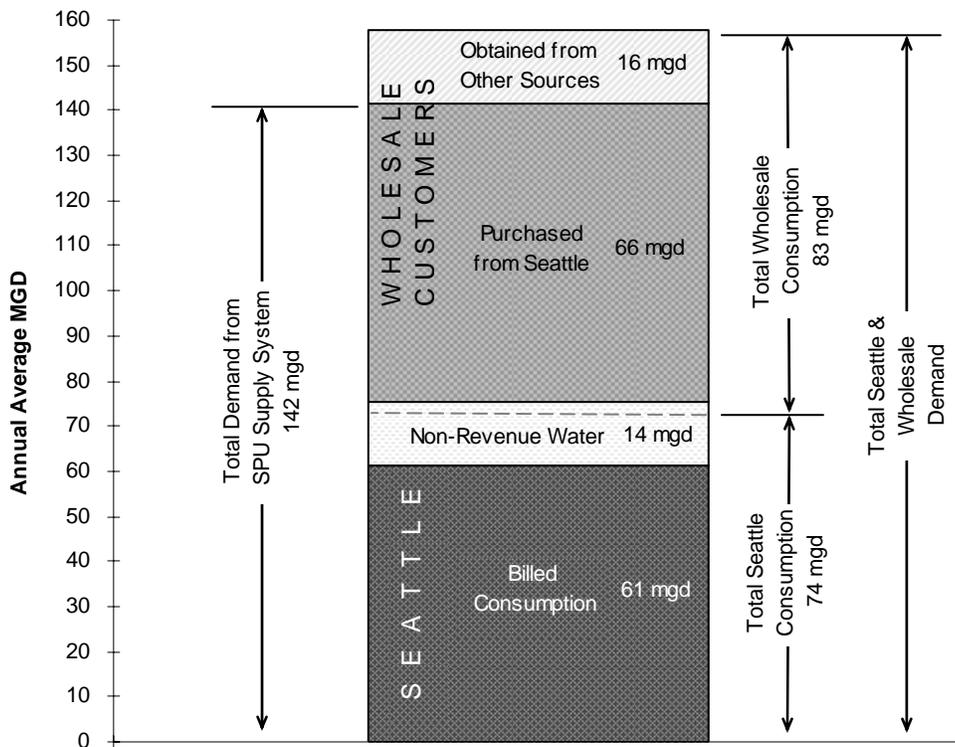
Supply: Seattle Public Utilities has two surface water sources and a small ground water source: the Cedar River system, the South Fork Tolt Reservoir, and the Seattle Well Field (used primarily for summer peaking). On average, the Cedar River system provides about 70 percent of total supply, the South Fork Tolt system delivers 29 percent, and the Seattle Well Field delivers 1 percent. With the addition of the Tolt Treatment Facility in 2001, total annual average firm yield from the current system is estimated at 171 mgd.

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

- **Edmonds** – Purchased all of its water from Alderwood in 2004.
- **Highline** - Wells, 1.9 mgd
- **Lake Forest Park** - Well, 0.4 mgd
- **Olympic View** - Surface Water, 0.5 mgd
- **Redmond** - Wells, 2.7 mgd
- **Renton** - Wells, 13.2 mgd.
- **Skyway** - Well, 0.2 mgd
- **Water District 90** - 0.6 mgd

Demand: Seattle and wholesale water demand totaled 158 mgd in 2004, up from 155 mgd in 2003, but much less than the 164 mgd in 2000. Of that, 142 mgd came from the SPU supply system and 16 mgd was obtained from wholesale customers' own sources of supply. Various components of Seattle and wholesale demand are shown in the chart, below⁴. Seattle demand was 74 mgd including 13 mgd of non-revenue water. Total wholesale demand of 83 mgd consisted of 67 mgd from Seattle (66 mgd purchased and 1 mgd transmission losses) and 16 mgd obtained from other sources. Included in wholesale demand, but not shown separately on the chart, is about 5 mgd of distribution system non-revenue water.

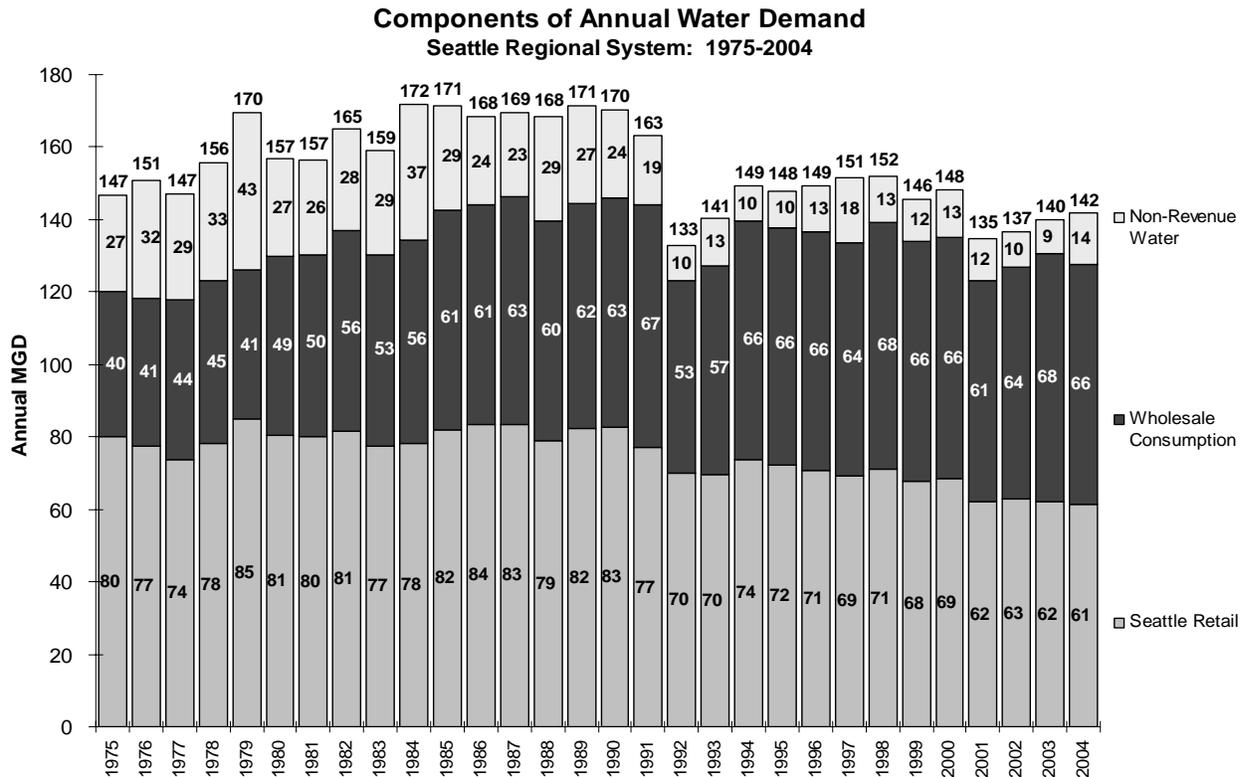
Components of Seattle and Wholesale Water Demand: 2004



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. Since then, the combined effects of higher water rates, the 1993 plumbing code, conservation, and improved system operations have kept total consumption at or just under 150 mgd – well below pre-drought levels. The economic slowdown in the early part of this decade, voluntary curtailment in 2001, and the impact of the 1% Conservation Program (begun in 2000) has further reduced water demand by another 10 mgd to approximately 140 mgd.

⁴ Components may not add to total due to rounding.

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 rest of the decade. Seattle retail demand was essentially flat between 1975 and 1991 (averaging 80 mgd) but has trended downward ever since. Finally, non-revenue water was reduced by more than half by actions taken by Seattle just before and during the 1992 drought.⁵



Water Rates

Residential and commercial rates in effect during 2005 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 \$11.88 per month with a range of \$5.84 per month to \$25.24 per month. The range of fixed monthly charges on 2” meters, typical of commercial accounts, is even greater: \$13.50 per month to \$209.74 per month. Sixteen wholesale customers – just under two thirds – increased their rates between mid-2004 and mid-2005.

⁵ 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.

Residential Rates: Of the 25 wholesale customers, only three (Edmonds, Lake Forest Park, and Water District 49) have a uniform rate structure, i.e., a single rate per ccf for all volumes and times of the year. The average uniform rate is \$2.00 per ccf. (These rates appear in the table as inclined block structure rates with just one block.) Another four wholesale customers (Highline, Tukwila, and Water Districts 20 and 125) have straight seasonal rates: a single rate in the winter and a single higher rate in the (typically 4 month) summer season. The average winter rate is \$2.07/ccf and the average summer rate is \$2.80/ccf. Fourteen 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 45 has three blocks: the first from 0 to 5 ccf per month, the second from 6 to 25 ccf per month and the last for 26 or more ccf per month. There is considerable variation in the number and size of the blocks and in the rates themselves. Finally, four wholesale customers and Seattle use various combinations of seasonal and block rates. Olympic View and Water District 119 have a block structure that shifts to higher rates in the summer. So do Soos Creek and Mercer Island except there is no higher summer rate in the first block for Soos Creek or in the first two blocks for Mercer Island. Seattle has a single winter rate 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 rates ranging from \$1.14 to \$6.18 per ccf. For the eighteen wholesale customers with block rate structures, the average summer end-block rate is \$4.54 per ccf. After adding a new residential block in July 2001, Seattle now has the highest summer end-block rate by far. For consumption in excess of 18 ccf per month, residential customers in Seattle pay \$8.55 per ccf in the summer.

Commercial Rates: Just over half of all wholesale customers (13) now apply the same rates and rates structures to both their commercial and residential customers. Two wholesale customers change the rates charged but maintain the same structure. Ten more plus Seattle change the rates *and* the structure, shifting from inclined block and hybrid structures to uniform or seasonal rates. The highest rate is \$6.18 per ccf and the average summer end block rate (including uniform and seasonal rates) is \$3.35 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 is quite a difference in what households pay for water among different utilities. Monthly bills from utilities with the highest rates are as much as three times as large as those from utilities with the lowest rates. Average monthly bills range from \$11.61 to \$35.51 at the low level of consumption and \$40.18 to \$105.79 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. The 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 6.4 ccf per month in Seattle to 10.5 ccf per month in Mercer Island. In Figure 1.4, Tukwila has the lowest average residential bill and Redmond has the second lowest. Lake Forest Park and Duvall have both the highest rates and the highest average bills. Lake Forest Park tops the list because its average consumption is also among the highest. Duvall's average bill isn't quite as high as its rates alone would imply because its average consumption is relatively low (below the wholesale average). With the lowest rates and the highest average consumption, Mercer Island's average residential bill is right in the middle. And while Seattle's rates are slightly above-average compared to wholesale customers, Seattle has the lowest level of average consumption. This combination produces the fifth lowest average bill.

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 has the sixth highest bill at low consumption but the third *lowest* bill at high consumption. With its new third block, Seattle has become a good example of the opposite pattern, along with Woodinville, Mercer Island, Bothell and Northshore, all of whom move up 10 to 14 positions in the rankings as you move from low to high consumption. Finally others, such as Bellevue, Duvall, and Edmonds 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. Tukwila, Highline, Mercer Island, Seattle, Soos Creek, Water District 20, Duvall, and Northshore 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 Consumption⁶: Figures 2.1 and 2.2 display annual water purchases from SPU and annual retail water sales by wholesale customer for 2004. Note that annual purchases from SPU are often, but not always, a good indicator of the actual magnitude of wholesale customers' retail demands. Purchases from SPU understate the actual demand of wholesale customers who have their own sources of supply or who buy from others. This is the case for the two wholesale customers at the bottom of the chart, Lake Forest Park, and Edmonds, as well as Renton and Redmond a little farther up, who buy very little water directly from SPU. Other wholesale customers such as Bellevue and Kirkland sell some of what they buy from SPU to other wholesale customers. Their retail demand can be quite a bit less than their purchases from SPU.

Tables 2.1 and 2.2, and Figure 2.3 provide a historical perspective by displaying 12 years of annual retail consumption data by wholesale customer as well as 15 years of data on wholesale purchases from Seattle.

New Water⁷: Figure 2.4 shows if, and by how much, wholesale customers exceed their old water allowances. In recent years, about half of wholesale customers have exceeded their old

⁶ Note that Redmond did not participate in this year's survey and Bothell was unable to provide retail consumption data because of difficulties with its new billing system. Therefore, the most current retail consumption data available for these two utilities is from 2003.

⁷ The concepts of old water allowances, new water, and growth charges were established in the original 1982 wholesale contracts with the intent that "growth would pay for growth." Each wholesale customer was assigned an old water allowance based on its actual water use during the years 1979-1981. The amount by which a customer's annual consumption exceeded its old water allowance was deemed "new water" and was subject to a "growth charge". Revenue from the growth charge was used to finance "new expansion facilities" made necessary by growth.

water allowances and half not. However, the proportion of wholesale customers purchasing new water shrunk to only a third in 2004, not because less water is being used, but because five customers are no longer subject to the growth charge. The concepts of old water allowances, new water, and growth charges no longer apply to Bellevue, Kirkland, Redmond, Skyway, and Tukwila since the new CWA contract with SPU went into effect in 2004. Of the twenty remaining wholesale customers, nine exceeded their old water allowance and purchased varying amounts of new water, ranging from 15% (Water District 125) to 80% (Duvall and Water District 119) of their total purchases from Seattle. Wholesale customers with the most new water as a percent of their *total* consumption are Duvall (80%), Water District 119 (80%), Bothell (61%), Cedar River (58%), and Woodinville (58%). In absolute terms, Woodinville is now the largest consumer of new water. (This distinction formerly belonged to Bellevue.)

Tables 2.3 and 2.4 and Figure 2.5 provide 15 years of historical data on wholesale old and new water purchases from Seattle.

Non-Revenue Water: Figure 2.6 ranks all wholesale customers by percent of non-revenue water in 2004, i.e., the percent of their total water purchases and production that is not sold. Percent non-revenue water for 2001, 2002 and 2003 is also shown. Table 2.5 shows annual distribution system percent non-revenue water by wholesale customer for the years 1994 through 2004 and the average for each wholesale customer over that period. 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% to 15% 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.

The average level of non-revenue water for all wholesale customers in 2004 was 9.4%*. This was significantly higher than non-revenue water in past years which, since 1994, had varied

* Seattle non-revenue water averaged 7.8% for 2000 through 2003. Percent of non-revenue water for Seattle is not included in Figure 2.6 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 the calculation. However, Seattle non-revenue water consists of both distribution and transmission losses to

from 5.3% to 7.7% averaging 6.5%. For most wholesale customers, 2004 non-revenue water exceeded both 2003 levels and their averages for the prior ten years.

Measurement problems contribute to at least some of the year-to-year variation in non-revenue water evident in Table 2.5 and Figure 2.6. Billing lags and inaccurate supply meters 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. Until now, there's always been at least one, and as many as six, wholesale customers showing negative non-revenue water. 2004 marks the first year with no negative non-revenue water.

Per Household and Per Account Consumption: The two graphs in Figure 2.7 rank wholesale customers and Seattle on the basis of 2004 *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). The wholesale customer with the highest single family consumption per household was Mercer Island at 259 gallons per day (gpd) followed by Woodinville at 256 gpd. The weighted wholesale average for 2004 was 215 gpd (8.7 ccf per month). Tukwila reported the lowest consumption per household with 151 gpd. The variance in per household use between wholesale customers is due to much more than just different attitudes towards water conservation. Wholesale customers at the top of the list (Mercer Island, Woodinville, Lake Forest Park) 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 first graph also shows peak (4 month) season consumption per household.

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.

There is much greater variation in total consumption per account across wholesale customers as can be seen in the second graph in Figure 2.7. Tukwila, with the lowest single family consumption per household, has by far the highest total consumption per account of 888 gpd. This is over four and half times Skyway's per account consumption of 193 gpd. The weighted wholesale average is 345 gpd. Total consumption per account in Seattle is slightly lower than the wholesale average at 340 gpd. This is *not* an indication of the relative efficiency of water use among Seattle and the wholesale customers. 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 while Tukwila's customers are primarily commercial, industrial and multifamily. About 90% of the water sold by Tukwila goes to other than single family residences. Redmond has the second highest level of consumption per account and also the second highest proportion of non-residential and multifamily consumption (68%). Total consumption per account and percent of consumption that is *not* single family are highly correlated all the way down the line.

Finally, Table 2.6 provides some history on single family consumption per household by wholesale customer for the period 1994-2004. The overall downward trend in average consumption per household for both wholesale customers and Seattle is apparent in Figure 2.8. The range, from low to high, of wholesale consumption per household over time is also depicted in the graph.

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Table 1.1
A Comparison of 2005 Residential Rates

Purveyor:	3/4" mtr ch per month	Includes Minimum	Seasonal		Inclined Block					
			Winter	Summer*	1st	2nd	3rd	4th	5th	Break Points**
W.D. 20	\$15.25	0	\$1.25	\$2.06	-	-	-	-	-	-
W.D. 45	\$13.50	0	-	-	\$1.75	\$2.75	\$3.75	-	-	5/25
W.D. 49	\$8.80	0	-	-	\$2.10	-	-	-	-	-
W.D. 90	\$17.25	2.5	-	-	\$2.20	\$2.60	\$3.10	-	-	8/13
W.D. 119***	\$22.25	0	Block	Block	\$1.55/\$1.94***	\$2.30/\$2.86***	\$3.10/\$3.88***	\$3.91/\$4.89***	-	7/14/21
W.D. 125	\$9.50	0	\$1.95	\$2.35	-	-	-	-	-	-
Bellevue	\$11.45	0	-	-	\$2.28	\$3.15	\$4.05	\$6.02	-	10/15/50
Bothell	\$9.72	0	-	-	\$1.97	\$2.87	\$3.72	\$4.74	\$5.41	5/10/15/25
Cedar River	\$10.00	0	-	-	\$1.94	\$3.08	\$3.69	\$5.98	-	5 /15/25
Coal Creek	\$13.30	0	-	-	\$2.12	\$2.76	\$3.52	\$5.05	-	5/15/50
Duvall	\$19.35	2	-	-	\$2.87	\$3.70	\$4.52	\$5.35	\$6.18	4/6/8/10
Edmonds	\$8.26	0	-	-	\$1.71	-	-	-	-	-
Lake Forest Park	\$25.24	0	-	-	\$2.20	-	-	-	-	-
Highline	\$7.00	0	\$2.91	\$3.80	-	-	-	-	-	-
Kirkland	\$10.27	2	-	-	\$2.88	\$3.78	-	-	-	12
Mercer Island***	\$5.84	0	Block	Block	\$1.14	\$1.81	\$2.99/\$3.14***	\$4.10/\$4.80***	-	4/8/12
Northshore	\$11.00	0	-	-	\$1.80	\$2.75	\$3.70	\$4.65	-	6.5/8.5/12.5
Olympic View***	\$10.76	0	Block	Block	\$1.53/\$1.64***	\$2.24/\$2.56***	-	-	-	20
Redmond	\$8.72	0	-	-	\$1.23	\$2.39	\$3.54	\$4.69	-	5/11/20
Renton	\$11.03	0	-	-	\$1.85	\$1.98	-	-	-	10
Shoreline	\$17.46	0	-	-	\$1.66	\$1.80	\$2.20	\$3.14	\$4.20	2/4/9/20
Skyway	\$10.10	0	-	-	\$2.50	\$3.70	\$4.20	\$4.67	-	10/15/20
Soos Creek***	\$8.50	0	Block	Block	\$1.15	\$2.25/\$2.70***	\$2.70/\$3.24***	\$3.10/\$3.72***	-	5/10/15
Tukwila	\$6.00	0	\$2.15	\$2.98	-	-	-	-	-	-
Woodinville	\$10.01	0	-	-	\$2.26	\$3.34	\$4.31	\$5.38	-	6/12/25
Seattle***	\$6.90	0	\$2.53	Block	\$2.88	\$3.35	\$8.55	-	-	5/18

* All utilities with seasonal rates use a 4 month peak season except Soos Creek which has a 3 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 \$1.75 per ccf for the first 5 ccf consumed, \$2.75 per ccf for the next 20 ccf per month, and \$3.75 per ccf for all consumption in excess of 25 ccf per month.

*** WD 119, Mercer Island, Olympic View, Soos Creek, and Seattle have both seasonal and block rates. For example, WD 119's 2nd block rate of \$2.30/ccf increases to \$2.86 during the peak season.

Table 1.2
A Comparison of 2005 Commercial Rates

Purveyor:	2" mtr ch per month	Includes Minimum	Seasonal		Inclined Block						
			Winter	Summer*	1st	2nd	3rd	4th	5th	Break Points**	
W.D. 20	\$72.70	0	\$1.25	\$2.06	-	-	-	-	-	-	-
W.D. 45	\$13.50	0	-	-	\$1.75	\$2.75	\$3.75	-	-	-	5/25
W.D. 49	\$112.80	0	-	-	\$2.10	-	-	-	-	-	-
W.D. 90	\$50.00	2.5	-	-	\$3.10	-	-	-	-	-	-
W.D. 119***	\$35.21	0	Block	Block	\$1.55/\$1.94***	\$2.30/\$2.86***	\$3.10/\$3.88***	\$3.91/\$4.89***	-	-	7/14/21
W.D. 125	\$31.50	0	\$1.95	\$2.35	-	-	-	-	-	-	-
Bellevue	\$52.68	0	\$2.33	\$3.26	-	-	-	-	-	-	-
Bothell	\$94.78	0	\$2.29	\$3.92	-	-	-	-	-	-	-
Cedar River	\$44.57	0	-	-	\$1.94	\$3.08	\$3.69	\$5.98	-	-	5 /15/25
Coal Creek	\$70.75	0	\$2.44	\$3.19	-	-	-	-	-	-	-
Duvall	\$19.35	2	-	-	\$2.87	\$3.70	\$4.52	\$5.35	\$6.18	-	4/6/8/10
Edmonds	\$57.36	0	-	-	\$1.71	-	-	-	-	-	-
Lake Forest Park	\$209.74	0	-	-	\$2.20	-	-	-	-	-	-
Highline	\$66.00	0	\$2.91	\$3.80	-	-	-	-	-	-	-
Kirkland	\$45.10	0	-	-	\$3.34	-	-	-	-	-	-
Mercer Island	\$42.87	0	\$1.21	\$3.31	-	-	-	-	-	-	-
Northshore	\$67.50	0	-	-	\$2.55	\$2.85	\$3.15	\$3.45	-	-	34.5/45/66.5
Olympic View***	\$39.13	0	Block	Block	\$1.53/\$1.64***	\$2.24/\$2.56***	-	-	-	-	160
Redmond	\$46.75	0	\$1.62	\$2.49	-	-	-	-	-	-	-
Renton	\$30.94	0	-	-	\$1.85	-	-	-	-	-	-
Shoreline	\$65.32	0	-	-	\$2.28	\$4.20	-	-	-	-	100
Skyway	\$98.41	0	-	-	\$2.48	\$3.33	-	-	-	-	\$20.00
Soos Creek***	\$42.67	0	Block	Block	\$1.15	\$2.25/\$2.70***	\$2.70/\$3.24***	\$3.10/\$3.72***	-	-	5/10/15
Tukwila	\$50.00	0	\$2.78	\$3.83	-	-	-	-	-	-	-
Woodinville	\$80.73	0	-	-	\$2.74	\$3.01	-	-	-	-	prior winter avg
Seattle	\$22.00	0	\$2.00	\$3.35	-	-	-	-	-	-	-

* All utilities with seasonal rates use a 4 month peak season except Soos Creek which has a 3 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 \$1.75 per ccf for the first 5 ccf consumed, \$2.75 per ccf for the next 20 ccf per month, and \$3.75 per ccf for all consumption in excess of 25 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 \$2.30/ccf increases to \$2.86 during the peak season.

Figure 1.1

Average Monthly Residential Bills at 2005 Rates and LOW Consumption (4 ccf/mo Winter and 6 ccf/mo Summer Consumption)

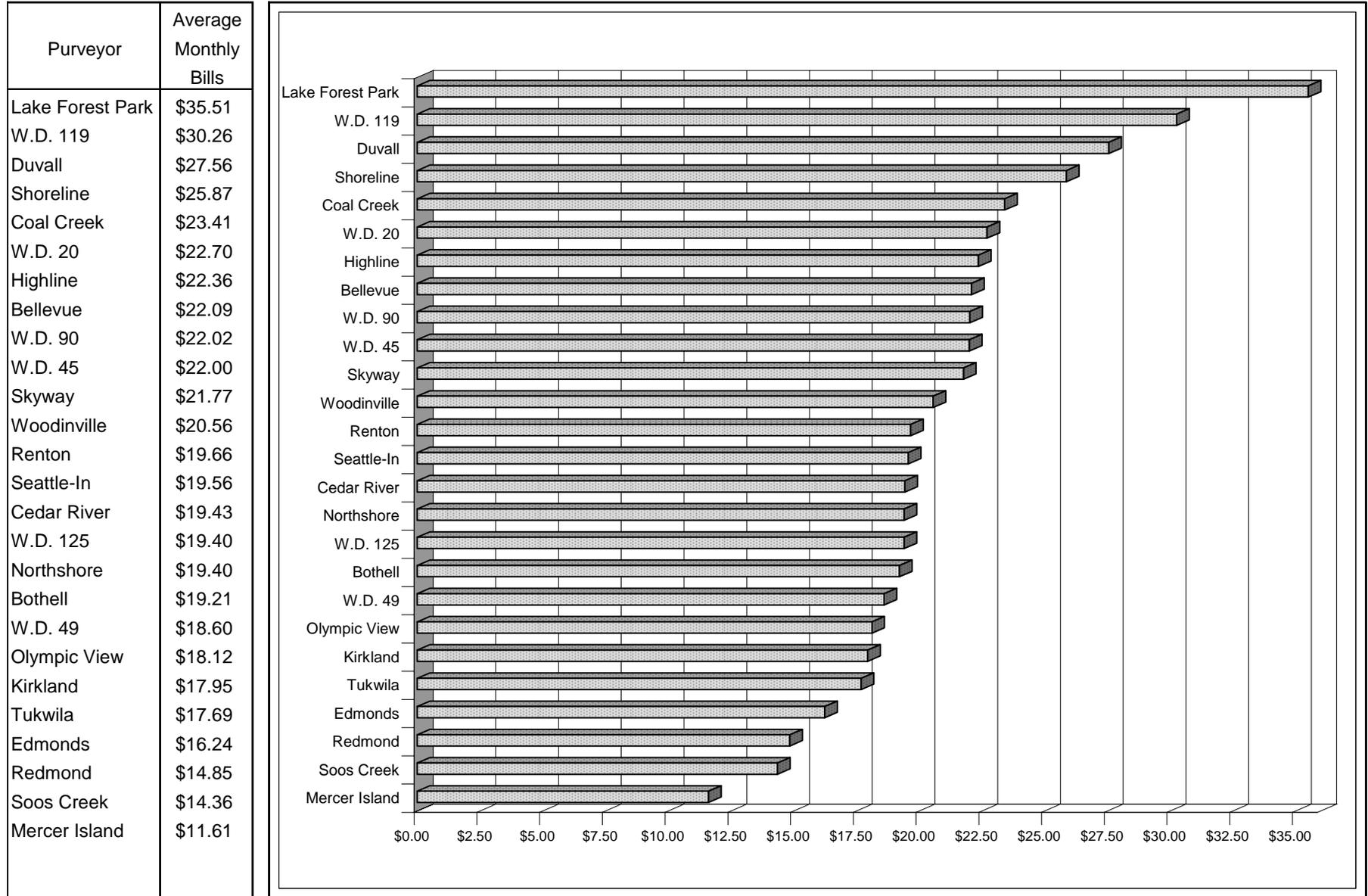


Figure 1.2

**Average Monthly Residential Bills at 2005 Rates and MEDIUM Consumption
(8 ccf/mo Winter and 12 ccf/mo Summer Consumption)**

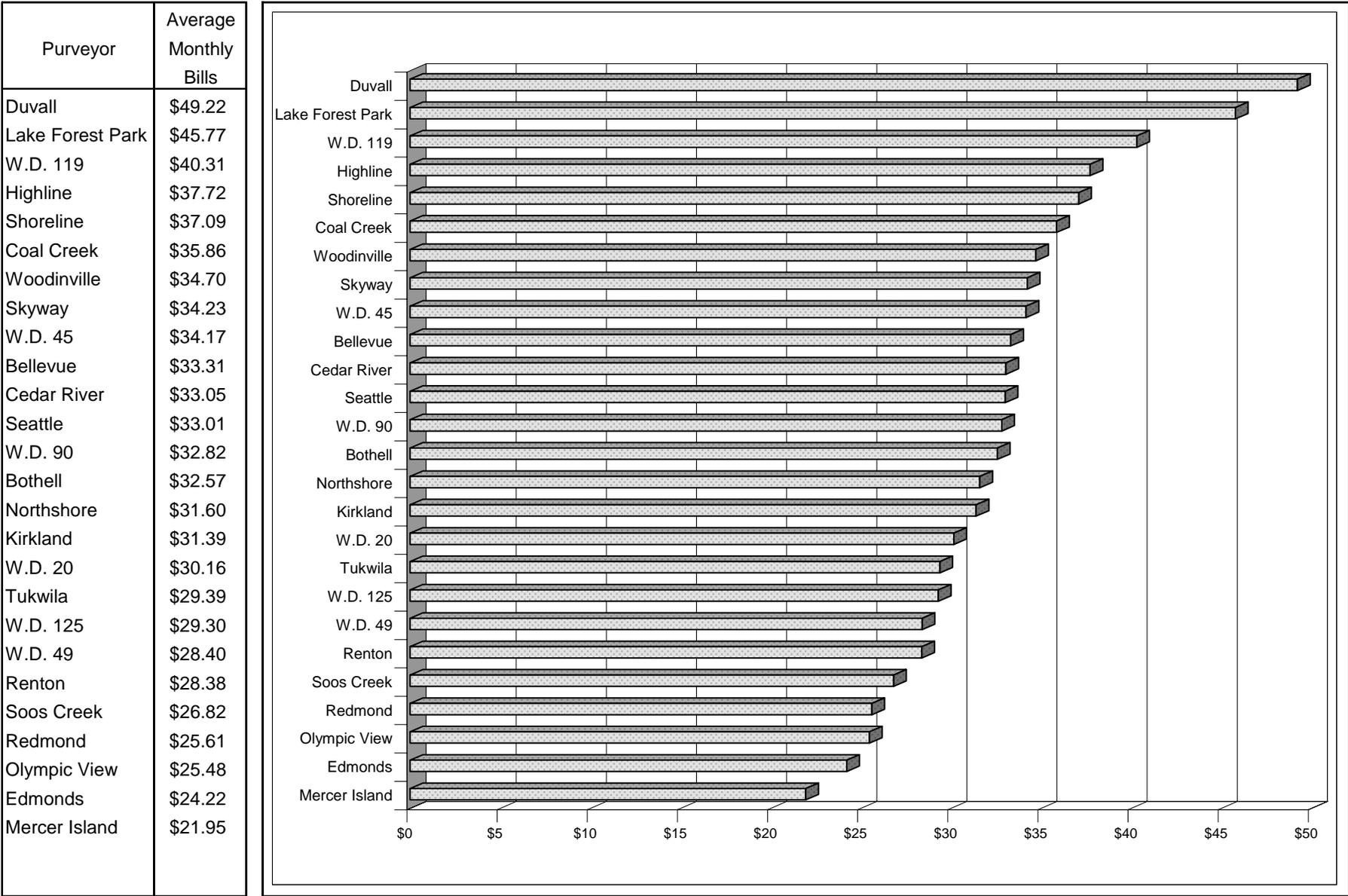


Figure 1.3

**Average Monthly Residential Bills at 2005 Rates and HIGH Consumption
(16 ccf/mo Winter and 24 ccf/mo Summer Consumption)**

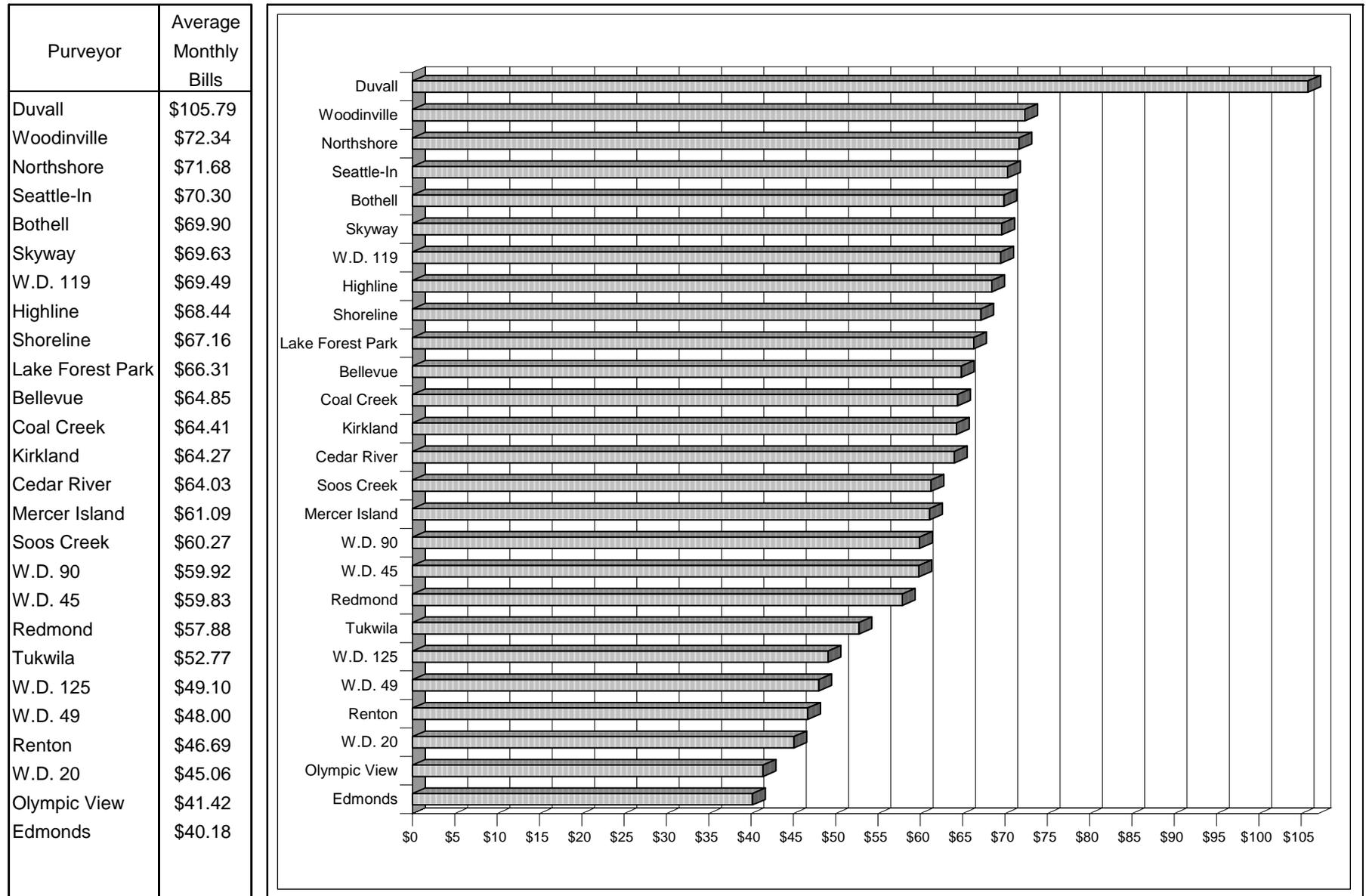


Figure 1.4

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

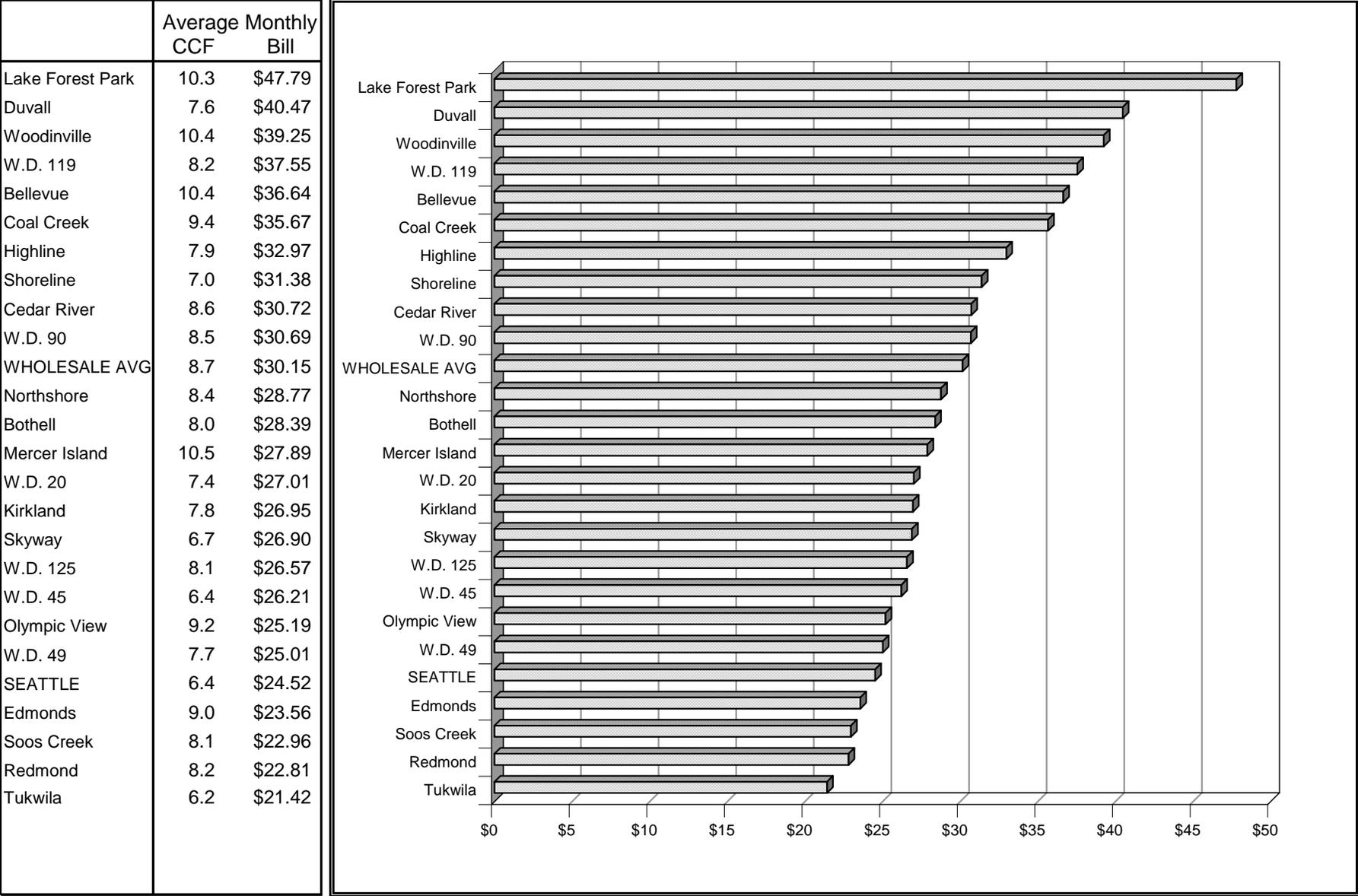


Table 1.3

AVERAGE ANNUAL, WINTER, AND SUMMER RESIDENTIAL BILLS
with 2005 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	Duvall	\$49.22	\$41.53	\$64.59	55.5%
2	Lake Forest Park	\$45.77	\$42.84	\$51.64	20.5%
3	W.D. 119	\$40.31	\$35.40	\$50.13	41.6%
4	Highline	\$37.72	\$30.28	\$52.60	73.7%
5	Shoreline	\$37.09	\$33.22	\$44.83	35.0%
6	Coal Creek	\$35.86	\$32.18	\$43.22	34.3%
7	Woodinville	\$34.70	\$30.25	\$43.61	44.2%
8	Skyway	\$34.23	\$30.10	\$42.50	41.2%
9	W.D. 45	\$34.17	\$30.50	\$41.50	36.1%
10	Bellevue	\$33.31	\$29.69	\$40.55	36.6%
11	Cedar River	\$33.05	\$28.94	\$41.26	42.6%
12	Seattle	\$33.01	\$27.14	\$44.75	64.9%
13	W.D. 90	\$32.82	\$29.35	\$39.75	35.4%
14	Bothell	\$32.57	\$28.18	\$41.36	46.8%
15	Northshore	\$31.60	\$26.83	\$41.15	53.4%
16	Kirkland	\$31.39	\$27.55	\$39.07	41.8%
17	W.D. 20	\$30.16	\$25.25	\$39.97	58.3%
18	Tukwila	\$29.39	\$23.20	\$41.76	80.0%
19	W.D. 125	\$29.30	\$25.10	\$37.70	50.2%
20	W.D. 49	\$28.40	\$25.60	\$34.00	32.8%
21	Renton	\$28.38	\$25.83	\$33.49	29.7%
22	Soos Creek	\$26.82	\$23.21	\$37.65	62.2%
23	Redmond	\$25.61	\$22.04	\$32.75	48.6%
24	Olympic View	\$25.48	\$23.00	\$30.44	32.4%
25	Edmonds	\$24.22	\$21.94	\$28.78	31.2%
26	Mercer Island	\$21.95	\$17.64	\$30.56	73.2%
WHOLESALE AVERAGE					
		\$32.55	\$28.30	\$41.19	45.6%

* 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 Lake Forest Park	1 Duvall	1 Duvall
2 W.D. 119	2 Lake Forest Park	2 Woodinville
3 Duvall	3 W.D. 119	3 Northshore
4 Shoreline	4 Highline	4 Seattle
5 Coal Creek	5 Shoreline	5 Bothell
6 W.D. 20	6 Coal Creek	6 Skyway
7 Highline	7 Woodinville	7 W.D. 119
8 Bellevue	8 Skyway	8 Highline
9 W.D. 90	9 W.D. 45	9 Shoreline
10 W.D. 45	10 Bellevue	10 Lake Forest Park
11 Skyway	11 Cedar River	11 Bellevue
12 Woodinville	12 Seattle	12 Coal Creek
13 Renton	13 W.D. 90	13 Kirkland
14 Seattle	14 Bothell	14 Cedar River
15 Cedar River	15 Northshore	15 Mercer Island
16 W.D. 125	16 Kirkland	16 Soos Creek
17 Northshore	17 W.D. 20	17 W.D. 90
18 Bothell	18 Tukwila	18 W.D. 45
19 W.D. 49	19 W.D. 125	19 Redmond
20 Olympic View	20 W.D. 49	20 Tukwila
21 Kirkland	21 Renton	21 W.D. 125
22 Tukwila	22 Soos Creek	22 W.D. 49
23 Edmonds	23 Redmond	23 Renton
24 Redmond	24 Olympic View	24 W.D. 20
25 Soos Creek	25 Edmonds	25 Olympic View
26 Mercer Island	26 Mercer Island	26 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 2004 ANNUAL PURCHASES FROM SPU

Purveyor	Purchases
Bellevue	8,525,078
Kirkland	3,044,835
Highline	2,964,590
Northshore	2,838,343
Soos Creek	2,336,428
Woodinville	2,243,238
W.D. 20	1,346,869
Mercer Island	1,219,866
Tukwila	1,136,059
Cedar River	989,535
Shoreline	936,967
Bothell	790,903
W.D. 125	646,969
W.D. 49	640,512
Coal Creek	607,964
W.D. 90	503,774
Olympic View	462,990
Redmond	461,140
Duvall	244,321
Skyway	235,574
W.D. 119	133,744
W.D. 45	127,217
Renton	64,549
Edmonds	1,068
Lake Forest Park	0
TOTAL	32,502,533

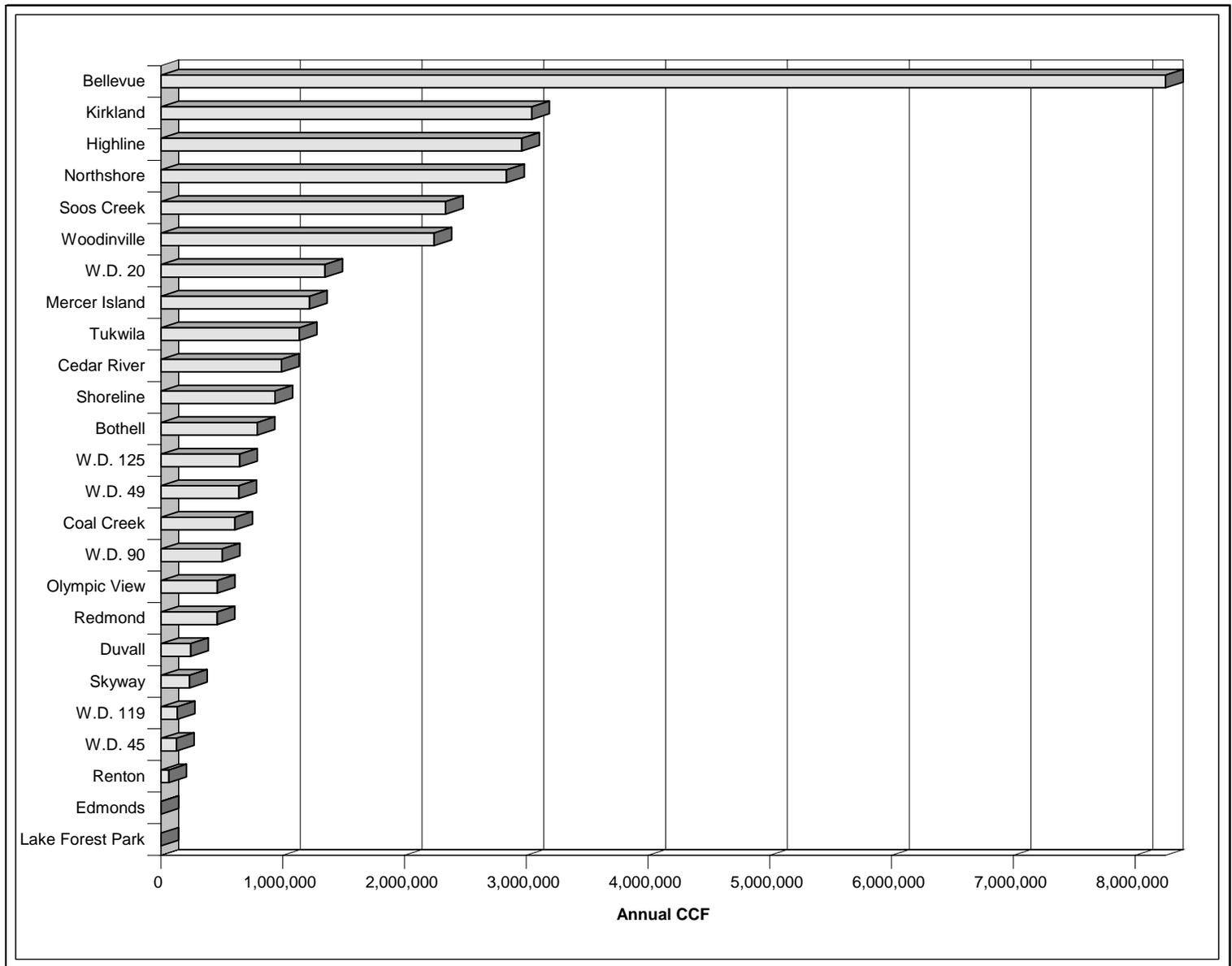
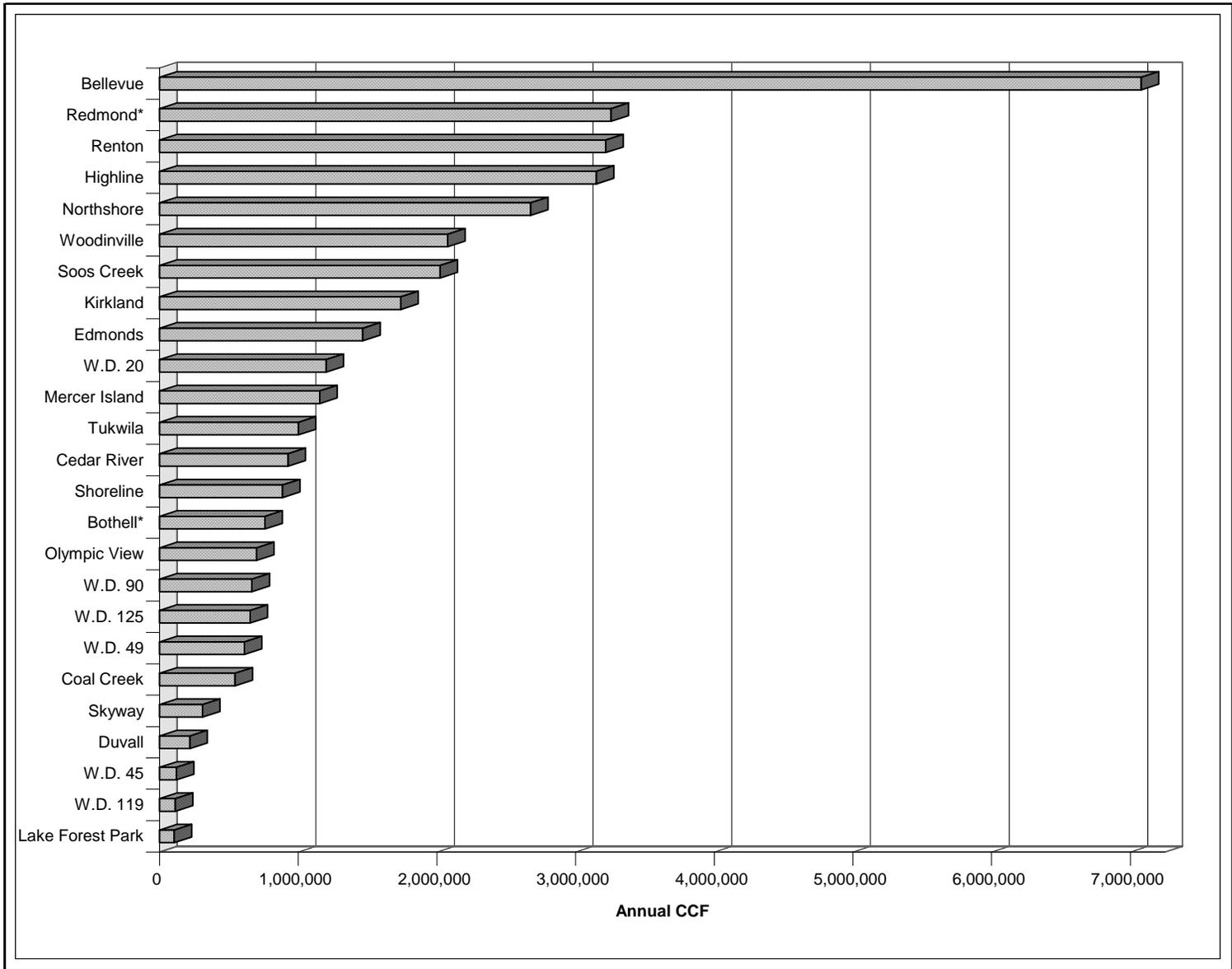


Table 2.1
Annual Water Purchases from SPU by Wholesale Customer: 1990-2004

Purveyor	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bellevue	7,617,197	7,638,641	6,360,259	6,822,822	7,976,658	7,565,651	7,741,347	7,723,447	8,254,911	8,053,791	8,012,735	7,221,979	7,559,140	8,124,609	8,525,078
Bothell	499,899	587,196	449,484	556,791	667,498	725,746	575,987	647,008	731,200	638,894	761,656	720,652	751,322	783,847	790,903
Bryn Mawr	43,604	56,854	45,164	32,613	37,872	45,330	45,527	54,377	56,648	59,525	Merged with Skyway				
Cedar River	623,025	666,248	566,104	603,090	750,800	779,246	831,807	820,126	925,231	841,243	891,413	835,740	912,348	980,516	989,535
Coal Creek	917,561	894,511	750,339	829,124	955,727	950,677	1,033,659	966,592	1,101,548	1,110,773	1,124,051	942,044	1,121,178	1,237,310	607,964
Duvall	114,743	128,148	96,652	124,510	173,669	165,968	168,628	173,831	194,781	193,759	211,270	168,746	202,939	257,645	244,321
Edmonds	598,711	603,702	191,561	323,409	363,220	482,584	492,976	457,778	467,746	386,147	21,675	7	16	4	1,068
Highline	2,712,670	3,307,937	3,010,639	3,496,835	3,460,968	3,405,697	3,280,274	3,090,166	2,982,876	3,058,440	3,020,265	2,856,390	2,918,609	3,233,149	2,964,590
Kirkland	3,042,948	3,217,591	2,638,543	2,714,284	3,329,440	3,195,319	2,994,880	2,802,576	2,920,755	2,955,265	3,138,937	2,861,685	2,989,315	3,238,310	3,044,835
Lake Forest Park	4,831	4,370	2,067	46	103	25	5	526	12	34	22	186	168	16	0
Mercer Island	1,161,879	1,211,098	925,746	1,043,369	1,202,145	1,165,843	1,115,339	1,089,467	1,175,902	1,141,068	1,198,242	1,033,318	1,091,347	1,165,501	1,219,866
Northshore	2,770,699	2,887,098	2,328,110	2,197,336	2,831,155	2,927,079	2,857,930	2,728,851	2,872,274	2,716,809	2,833,106	2,547,889	2,833,696	2,983,637	2,838,343
Olympic View	671,695	707,997	357,572	504,361	615,810	519,619	444,107	600,267	648,842	462,821	439,561	360,013	382,872	475,345	462,990
Redmond	0	92,992	4	3	0	90,669	117,846	141,407	198,550	169,630	230,796	259,585	385,288	364,646	461,140
Renton	29,180	21,990	2,003	396	73	94	244	1,177	8,623	125,765	111,747	101,894	69,078	62,364	64,549
Shoreline	1,132,267	1,161,302	923,115	964,357	1,119,290	1,065,840	1,043,676	1,044,327	1,047,211	1,001,449	1,053,182	888,156	908,984	968,906	936,967
Skyway	186,212	185,999	158,355	172,647	183,149	164,235	163,172	162,979	180,418	173,355	203,520	316,097	318,079	326,364	235,574
Soos Creek	2,012,314	2,174,701	1,704,398	1,865,929	2,134,666	2,069,831	2,146,459	2,067,796	2,076,737	1,860,482	2,045,482	1,993,363	2,173,499	2,296,099	2,336,428
Tukwila	923,639	981,465	713,020	759,306	862,309	880,582	1,183,810	1,241,880	1,143,486	1,198,360	1,096,157	1,095,812	1,119,261	1,092,216	1,136,059
Woodinville	1,880,122	1,993,019	1,447,548	1,482,316	1,909,654	1,843,899	1,955,053	1,859,299	2,189,506	2,077,944	2,197,389	2,040,624	2,070,493	2,371,019	2,243,238
W.D. 20	1,545,524	1,620,100	1,298,359	1,352,498	1,494,279	1,496,058	1,485,935	1,440,893	1,574,917	1,559,582	1,366,147	1,346,239	1,285,424	1,427,155	1,346,869
W.D. 45	119,608	128,553	111,831	114,626	106,501	105,040	139,241	141,892	150,932	142,361	156,010	105,556	137,852	133,350	127,217
W.D. 49	729,779	752,055	581,401	645,697	700,404	727,103	762,238	689,425	689,310	685,368	673,859	616,296	625,111	611,986	640,512
W.D. 85	33,021	32,861	27,600	28,038	42,820	34,591	38,259	37,387	35,211	45,286	74,155	34,458	45,048	Merged with WD 20	
W.D. 90	761,412	779,377	656,679	679,669	755,466	762,344	740,993	694,136	718,975	708,119	735,758	683,434	538,035	496,043	503,774
W.D. 119	80,844	84,428	65,916	61,758	89,238	91,726	90,961	99,109	98,828	101,798	117,447	132,490	128,518	139,875	133,744
W.D. 125	655,363	705,542	542,275	590,909	656,989	751,273	763,424	730,878	698,405	688,626	778,596	560,097	580,052	560,331	646,969
Total	30,868,747	32,625,775	25,954,744	27,966,739	32,419,903	32,012,069	32,213,777	31,507,597	33,143,835	32,156,694	32,493,178	29,722,750	31,147,672	33,330,243	32,502,533

Figure 2.2
WHOLESALE CUSTOMERS RANKED BY 2004 ANNUAL RETAIL BILLED SALES

Purveyor	Retail Sales
Bellevue	7,078,453
Redmond*	3,254,994
Renton	3,217,480
Highline	3,149,274
Northshore	2,676,062
Woodinville	2,077,734
Soos Creek	2,023,063
Kirkland	1,739,111
Edmonds	1,465,301
W.D. 20	1,200,605
Mercer Island	1,155,137
Tukwila	1,000,684
Cedar River	925,955
Shoreline	886,232
Bothell*	760,131
Olympic View	699,541
W.D. 90	665,985
W.D. 125	652,703
W.D. 49	610,845
Coal Creek	543,762
Skyway	309,832
Duvall	218,230
W.D. 45	121,307
W.D. 119	113,288
Lake Forest Park	105,794
Total	36,651,503



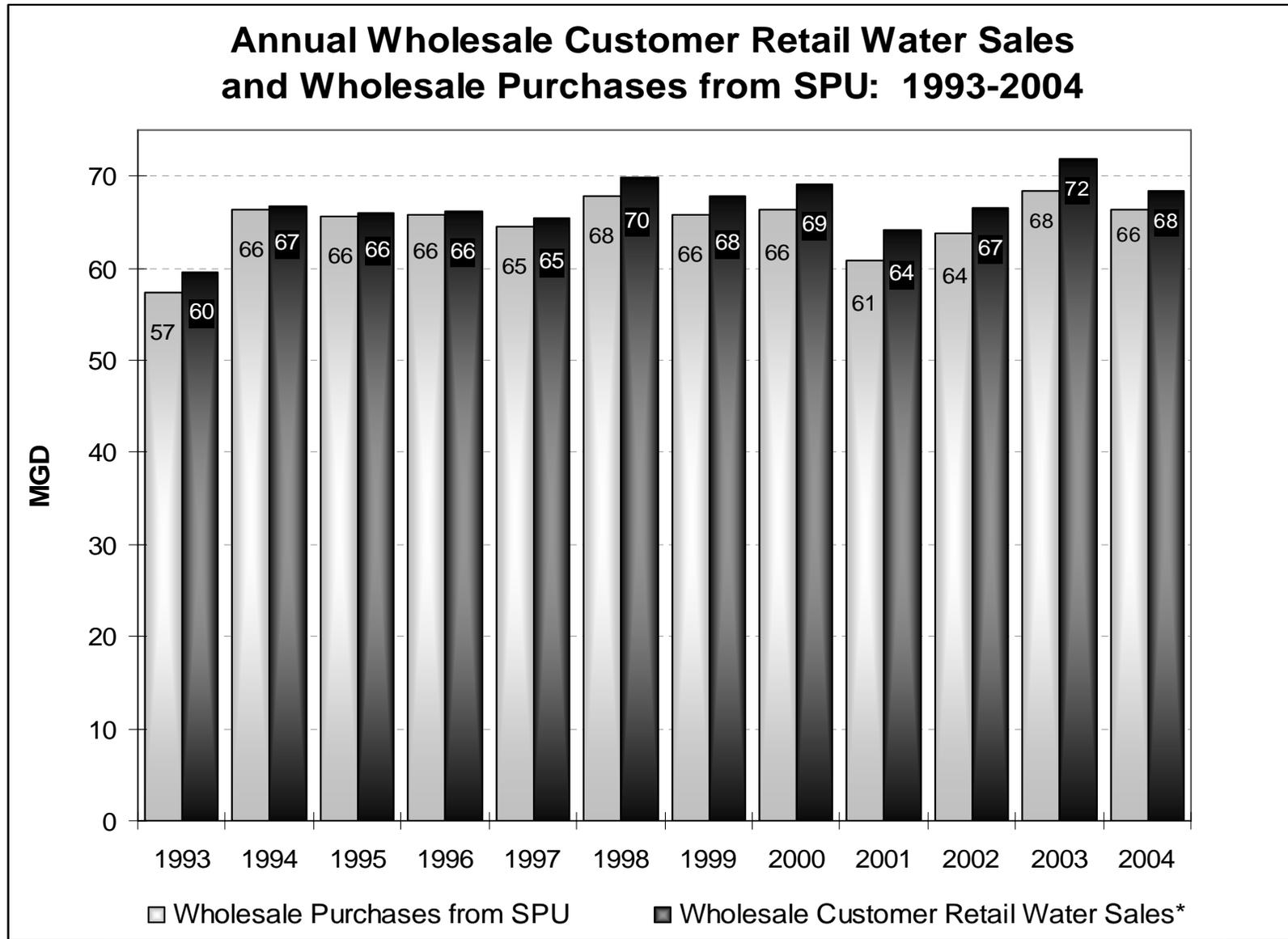
* Note that Redmond did not participate in this year's survey and Bothell was unable to provide retail consumption data because of difficulties with its new billing system. Therefore, the most current retail consumption data available for these two utilities is from 2003.

Table 2.2
Annual Retail Water Sales by Wholesale Customer: 1993-2004

Purveyor	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004*
Bellevue	5,990,344	6,831,423	6,917,700	6,569,687	6,430,842	6,809,415	6,723,028	6,791,413	6,332,424	6,519,723	7,055,800	7,078,453
Bothell*	531,418	613,357	615,555	634,087	642,172	724,060	659,376	739,669	684,621	714,466	760,131	760,131
Bryn Mawr	170,110	181,830	184,439	186,626	184,553	190,430	185,172	Merged with Skyway				
Cedar River	574,941	700,900	725,404	765,703	750,953	838,602	791,379	854,728	784,795	858,905	949,620	925,955
Coal Creek	823,505	949,769	935,974	940,637	927,646	1,075,618	1,056,803	1,070,525	1,013,672	1,084,280	1,219,567	543,762
Duvall	134,072	152,923	157,615	153,524	164,201	197,891	178,958	191,604	187,714	197,080	231,577	218,230
Edmonds	1,579,471	1,530,836	1,500,991	1,441,370	1,467,343	1,508,951	1,390,499	1,456,809	1,334,776	1,421,775	1,512,175	1,465,301
Highline	2,878,820	3,172,396	3,119,713	3,186,456	3,153,323	3,250,553	3,190,115	3,229,719	3,020,857	3,090,006	3,302,253	3,149,274
Kirkland	1,769,978	1,769,978	1,758,480	1,765,124	1,731,510	1,872,837	1,837,946	1,936,149	1,645,395	1,790,609	1,906,772	1,739,111
Lake Forest Park	107,781	132,282	104,000	136,852	137,960	132,282	140,077	140,077	102,375	107,268	116,970	105,794
Mercer Island	1,015,911	1,137,390	1,069,147	1,037,486	1,019,781	1,129,403	1,064,830	1,104,852	954,551	1,089,710	1,149,546	1,155,137
Northshore	2,401,934	2,779,279	2,687,786	2,669,776	2,585,391	2,754,149	2,674,545	2,665,229	2,831,579	2,630,028	2,808,235	2,676,062
Olympic View	587,546	716,211	678,424	659,387	638,465	694,953	673,260	671,687	607,893	648,736	703,425	699,541
Redmond*	2,417,336	2,706,393	2,603,278	2,748,404	2,746,029	3,011,322	2,975,707	2,979,125	2,783,755	2,940,175	3,254,994	3,254,994
Shoreline	823,832	939,194	1,000,101	984,836	966,178	940,873	925,532 *	956,858	871,251	862,972	914,477	886,232
Skyway	146,466	154,426	145,953	145,894	142,329	149,880	153,043	356,220	309,537	325,930	329,497	309,832
Soos Creek	1,616,111	1,877,871	1,896,870	1,901,225	1,857,564	2,009,017	1,947,093	1,995,096	1,822,072	1,941,211	2,191,349	2,023,063
Tukwila	651,462	690,615	696,646	910,897	953,471	1,024,494	1,040,590	1,030,948	925,230	903,189	938,989	1,000,684
Woodinville	1,602,478	2,003,864	1,900,675	1,987,758	1,904,444	2,145,836	1,999,930	2,104,568	1,887,481	2,003,091	2,232,174	2,077,734
W.D. 20	1,164,453	1,268,799	1,253,936	1,263,083	1,255,113	1,334,597	1,310,712	1,238,771	1,137,766	1,137,678	1,216,998	1,200,605
W.D. 45	119,683	89,216	102,951	139,017	148,574	154,728	131,770	145,677	130,769	138,113	132,207	121,307
W.D. 49	668,748	722,961	726,946	685,230	689,433	660,912	668,462	653,378	613,239	614,343	645,016	610,845
W.D. 85	52,800	61,650	64,506	65,403	61,331	63,761	68,419 *	69,231	52,480	54,985	Merged with WD 20	
W.D. 90	537,730	597,339	600,360	589,946	591,370	559,987	570,985	602,704	555,734	599,564	656,449	665,985
W.D. 119	79,640	89,517	89,254	93,572	96,432	100,814	102,391	106,602	103,963	108,359	124,407	113,288
W.D. 125	628,723	681,602	693,299	686,828	693,765	734,486	682,754	729,943	641,283	718,981	678,557	652,703
TOTAL*	29,075,293	32,552,021	32,230,004	32,348,808	31,940,173	34,069,851	33,143,376	33,821,582	31,335,212	32,501,177	35,031,184	33,434,023
Seattle	33,450,460	35,925,417	35,216,783	34,532,115	33,771,744	34,741,440	32,994,553	33,581,789	30,325,199	30,829,010	30,422,909	29,994,131

* 2004 data not available for Bothell and Redmond. 2003 data used for 2004 for purposes of calculating total 2004 retail water sales.

Figure 2.3



* Purveyor Retail Water Consumption does not include Renton

Figure 2.4

WHOLESALE CUSTOMERS RANKED IN ORDER OF 2004 NEW WATER PURCHASES

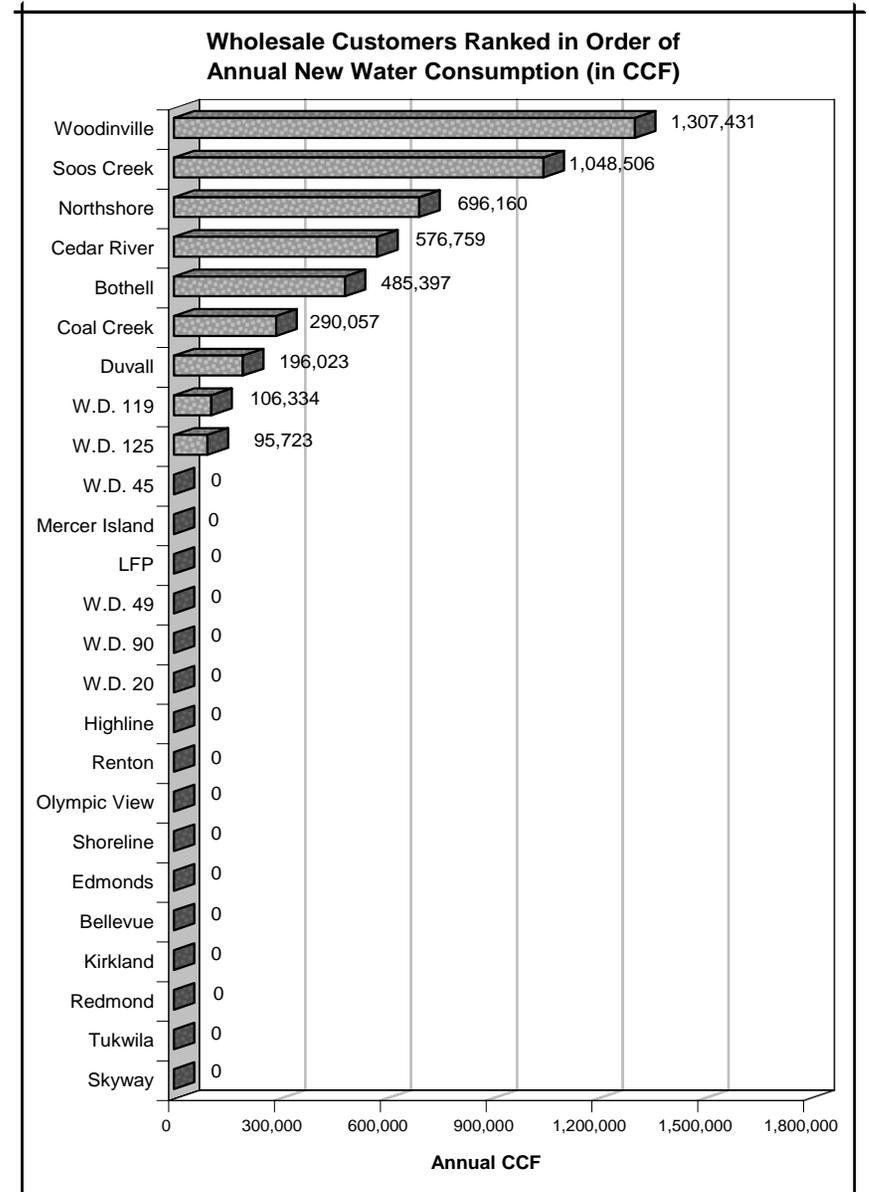
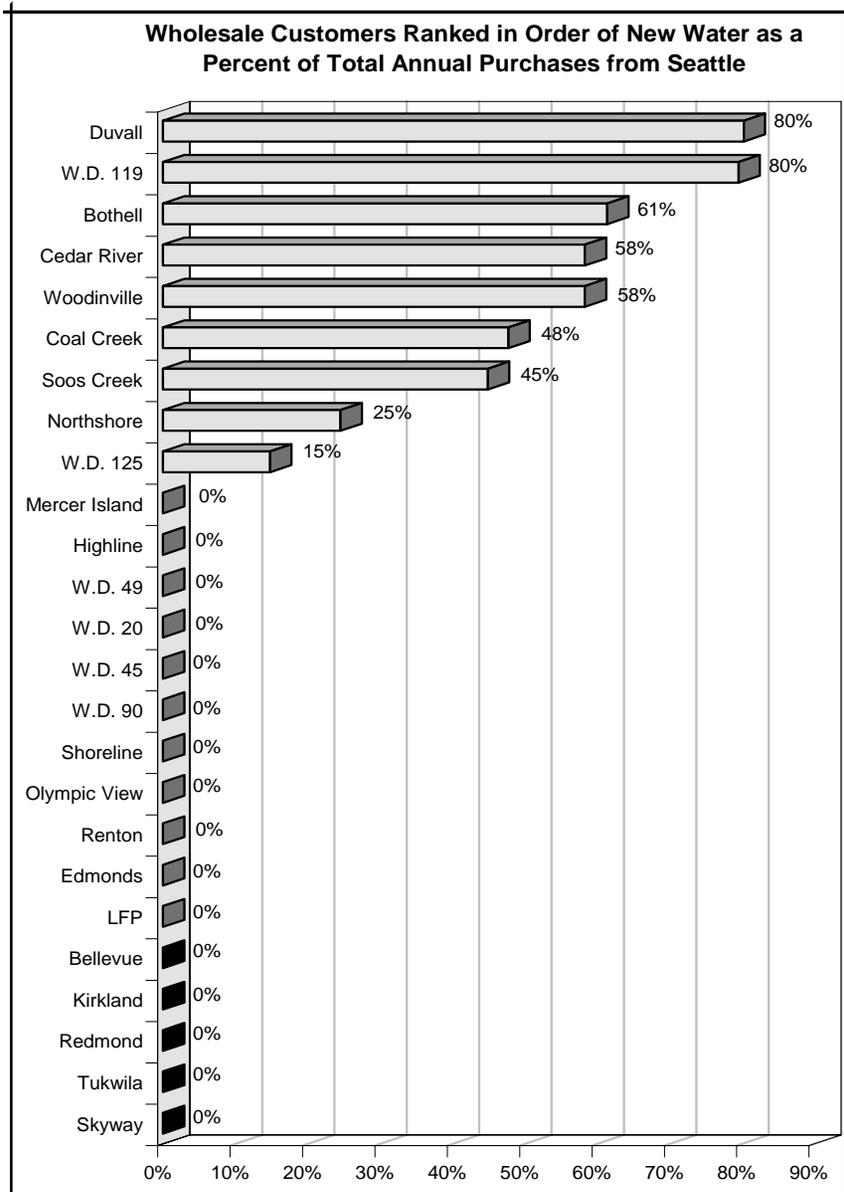


Table 2.3
New Water Purchases by Wholesale Customer: 1990-2004
(CCF per Year)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004*
Bellevue*	1,352,068	1,373,512	95,130	557,693	1,711,529	1,304,772	1,461,117	1,458,318	1,989,782	1,788,662	1,747,606	956,850	1,294,011	1,859,480	0
Bothell	194,393	281,690	143,978	251,285	361,992	417,240	259,503	341,502	425,694	333,388	456,150	415,146	445,816	478,341	485,397
Bryn Mawr	0	0	0	0	0	0	0	0	0	0	Merged with Skyway				
Cedar River	210,249	253,472	153,328	190,314	338,024	371,066	419,031	407,350	512,455	428,467	478,637	422,964	499,572	567,740	576,759
Coal Creek	281,747	258,697	114,525	193,310	319,913	310,641	397,845	330,778	465,734	474,959	488,237	306,230	485,364	601,496	290,057
Duvall	66,445	79,850	48,354	76,212	125,371	117,670	118,923	125,533	146,483	145,461	162,972	120,448	154,641	209,347	196,023
Edmonds	105,120	110,111	0	0	0	0	0	0	0	0	0	0	0	0	0
Highline	0	261,912	0	450,810	414,943	301,711	219,906	44,141	0	12,415	0	0	0	187,124	0
Kirkland*	666,482	841,125	262,077	337,818	952,974	818,603	618,414	426,110	544,289	582,942	762,471	485,219	612,849	861,844	0
Lake Forest Park	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mercer Island	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Northshore	628,516	744,915	185,927	55,153	431,833	501,742	720,361	586,668	730,091	574,626	690,603	405,706	687,823	841,454	696,160
Olympic View	71,625	107,927	0	0	15,740	0	0	197	48,772	0	0	0	0	0	0
Redmond*	0	92,992	4	3	0	90,669	117,846	141,407	198,550	169,630	230,796	259,585	385,288	364,646	0
Renton	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shoreline	26,347	55,382	0	0	13,370	0	0	0	0	0	0	0	0	0	0
Skyway*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soos Creek	724,392	886,779	416,476	578,007	846,744	778,717	858,537	779,874	788,815	572,560	757,560	707,286	885,577	1,008,177	1,048,506
Tukwila*	282,824	340,650	72,205	118,491	221,494	239,767	0	0	0	0	0	0	0	0	0
Woodinville	944,315	1,057,212	511,741	546,509	973,847	909,322	1,015,359	923,492	1,253,699	1,142,137	1,261,582	1,104,817	1,134,686	1,435,212	1,307,431
W.D. 20	173,435	248,011	0	0	122,190	111,486	103,797	58,385	192,409	177,074	30	0	0	14,755	0
W.D. 45	0	0	0	0	0	0	4,799	7,450	16,490	7,919	21,568	0	3,410	0	0
W.D. 49	68,131	90,407	0	0	38,756	49,557	100,590	27,777	27,662	23,720	12,211	0	0	0	0
W.D. 85	0	0	0	0	0	0	0	0	0	5,633	18,111	0	5,395	Merged with WD 20	
W.D. 90	202,451	220,416	97,718	120,708	196,505	202,883	182,032	135,175	160,014	149,158	176,797	124,473	0	0	0
W.D. 119	53,434	57,018	38,506	34,348	61,828	64,316	63,551	71,699	71,418	74,388	90,037	105,080	101,108	112,465	106,334
W.D. 125	104,117	154,296	0	39,663	105,743	198,811	212,178	179,632	147,159	137,380	181,367	8,851	28,806	9,085	95,723
TOTAL	6,156,091	7,516,374	2,139,969	3,550,324	7,252,796	6,788,973	6,873,789	6,045,488	7,719,516	6,800,519	7,536,735	5,422,655	6,724,346	8,551,166	4,802,390

* Under the CWA contract effective January 1, 2004, Bellevue, Kirkland, Redmond, Skyway and Tukwila are no longer assessed a growth charge. They no longer have old water allowances and "new water" is no longer calculated for them.

Table 2.4
New Water as Percent of Total Purchases by Wholesale Customer: 1990-2004

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004*
Bellevue*	17.8%	18.0%	1.5%	8.2%	21.5%	17.2%	18.9%	18.9%	24.1%	22.2%	21.8%	13.2%	17.1%	22.9%	0.0%
Bothell	38.9%	48.0%	32.0%	45.1%	54.2%	57.7%	45.9%	52.8%	58.2%	52.2%	59.9%	57.6%	59.3%	61.0%	61.4%
Bryn Mawr	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Merged with Skyway				
Cedar River	33.7%	38.0%	27.1%	31.6%	45.0%	47.3%	50.4%	49.7%	55.4%	50.9%	53.7%	50.6%	54.8%	57.9%	58.3%
Coal Creek	30.7%	28.9%	15.3%	23.3%	33.5%	32.8%	38.5%	34.2%	42.3%	42.8%	43.4%	32.5%	43.3%	48.6%	47.7%
Duvall	57.9%	62.3%	50.0%	61.2%	72.2%	70.9%	71.1%	72.2%	75.2%	75.1%	77.1%	71.4%	76.2%	81.3%	80.2%
Edmonds	17.6%	18.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Highline	0.0%	7.9%	0.0%	12.9%	12.0%	9.0%	6.7%	1.4%	0.0%	0.4%	0.0%	0.0%	0.0%	5.8%	0.0%
Kirkland*	21.9%	26.1%	9.9%	12.4%	28.6%	25.6%	20.6%	15.2%	18.6%	19.7%	24.3%	17.0%	20.5%	26.6%	0.0%
Lake Forest Park	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Mercer Island	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Northshore	22.7%	25.8%	8.0%	2.5%	16.8%	19.0%	25.2%	21.5%	25.4%	21.2%	24.4%	15.9%	24.3%	28.2%	24.5%
Olympic View	10.7%	15.2%	0.0%	0.0%	2.6%	0.0%	0.0%	0.0%	7.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Redmond*	0.0%	100.0%	100.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	0.0%
Renton	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Shoreline	2.3%	4.8%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skyway*	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Soos Creek	36.0%	40.8%	24.4%	31.0%	39.7%	37.7%	40.0%	37.7%	38.0%	30.8%	37.0%	35.4%	40.7%	43.9%	44.9%
Tukwila*	30.6%	34.7%	10.1%	15.6%	25.7%	27.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Woodinville	50.2%	53.0%	35.4%	36.9%	51.0%	49.3%	52.0%	49.7%	57.3%	55.0%	57.4%	54.1%	54.8%	60.5%	58.3%
W.D. 20	11.2%	15.3%	0.0%	0.0%	8.2%	7.5%	7.0%	4.1%	12.2%	11.4%	0.0%	0.0%	0.0%	1.0%	0.0%
W.D. 45	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.4%	5.3%	10.9%	5.6%	13.8%	0.0%	2.5%	0.0%	0.0%
W.D. 49	9.3%	12.0%	0.0%	0.0%	5.5%	7.0%	13.2%	4.0%	4.0%	3.5%	1.8%	0.0%	0.0%	0.0%	0.0%
W.D. 85	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.4%	24.4%	0.0%	12.0%	Merged with WD 20	
W.D. 90	26.6%	28.3%	14.9%	17.8%	26.0%	26.6%	24.6%	19.5%	22.3%	21.1%	24.0%	18.2%	0.0%	0.0%	0.0%
W.D. 119	66.1%	67.5%	58.4%	55.6%	69.3%	70.1%	69.9%	72.3%	72.3%	73.1%	76.7%	79.3%	78.7%	80.4%	79.5%
W.D. 125	15.9%	21.9%	0.0%	6.7%	16.1%	26.5%	27.8%	24.6%	21.1%	19.9%	23.3%	1.6%	5.0%	1.6%	14.8%
TOTAL	19.9%	23.0%	8.2%	12.7%	22.6%	21.5%	21.4%	19.2%	23.3%	21.1%	23.2%	18.2%	21.6%	25.6%	14.8%

* Under the CWA contract effective January 1, 2004, Bellevue, Kirkland, Redmond, Skyway and Tukwila are no longer assessed a growth charge. They no longer have old water allowances and "new water" is no longer calculated for them.

Figure 2.5

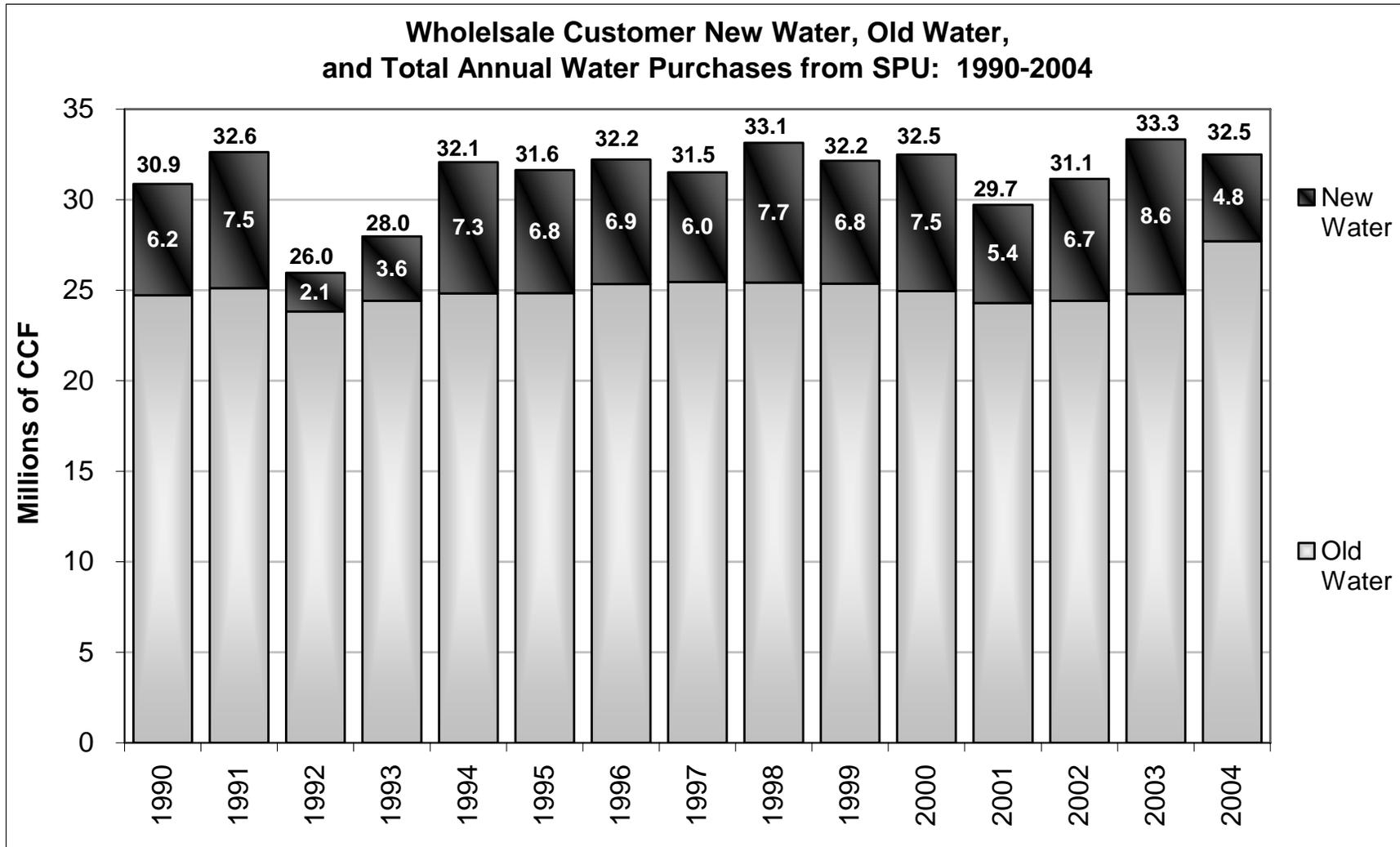
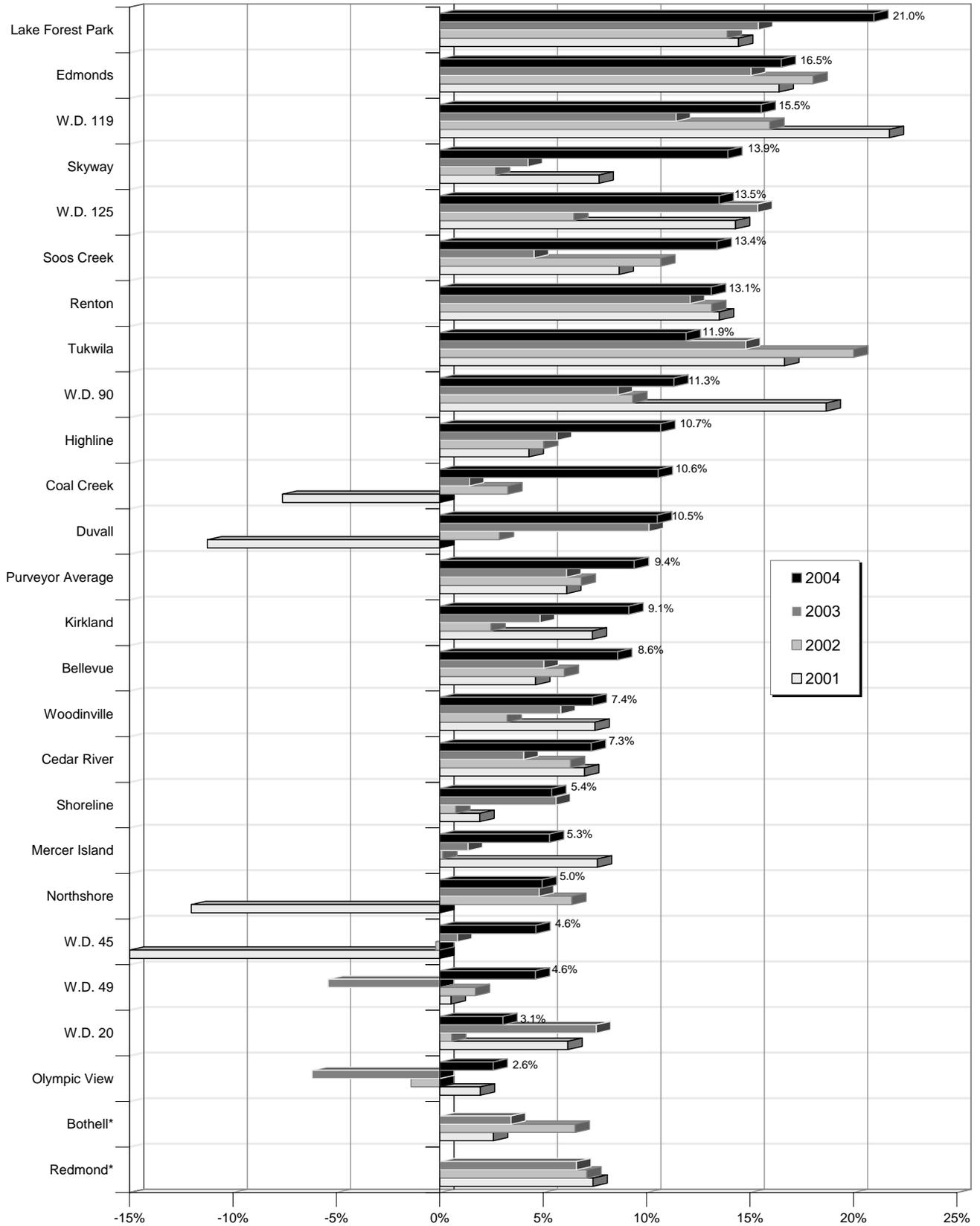


Figure 2.6

2004 Wholesale Customer Non-Revenue Water as a Percentage of Total Water Use
 (2001, 2002 & 2003 Non-Revenue Shown in Gray)



* 2004 non-revenue data not available for Bothell and Redmond

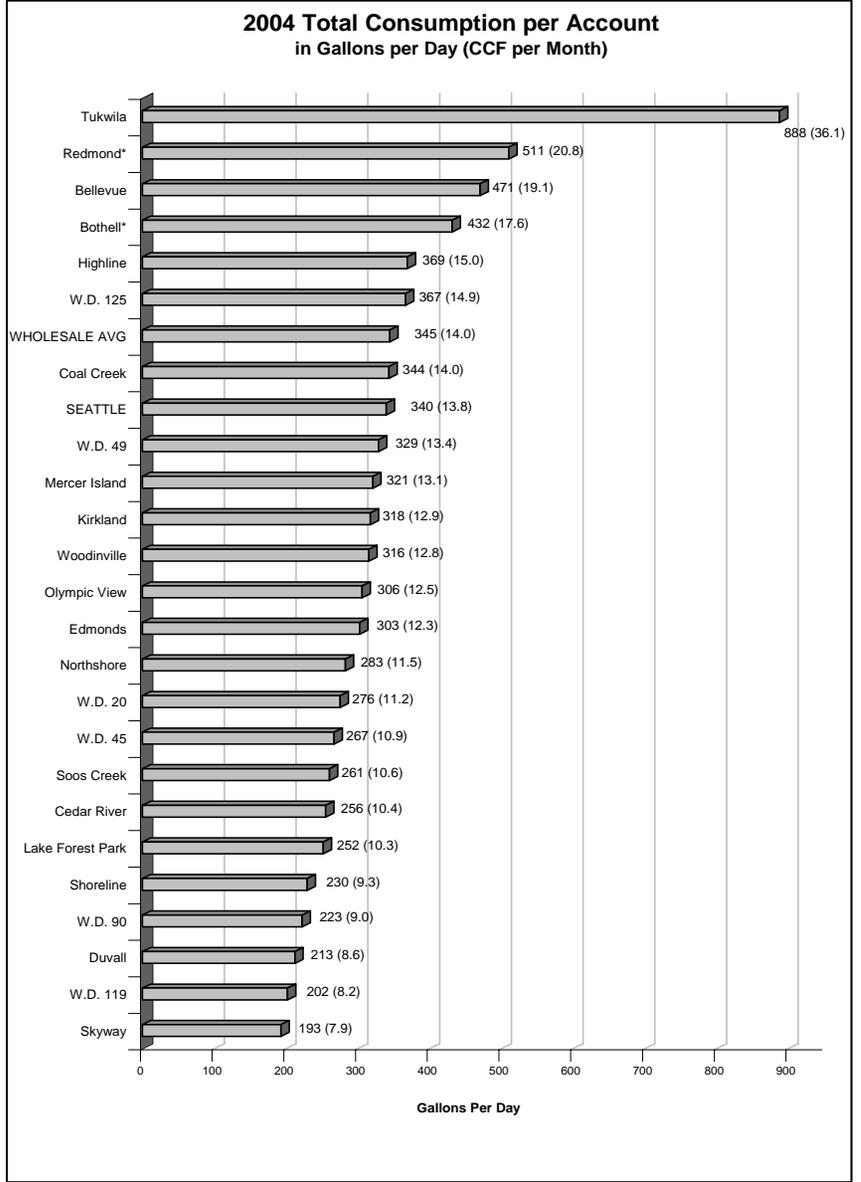
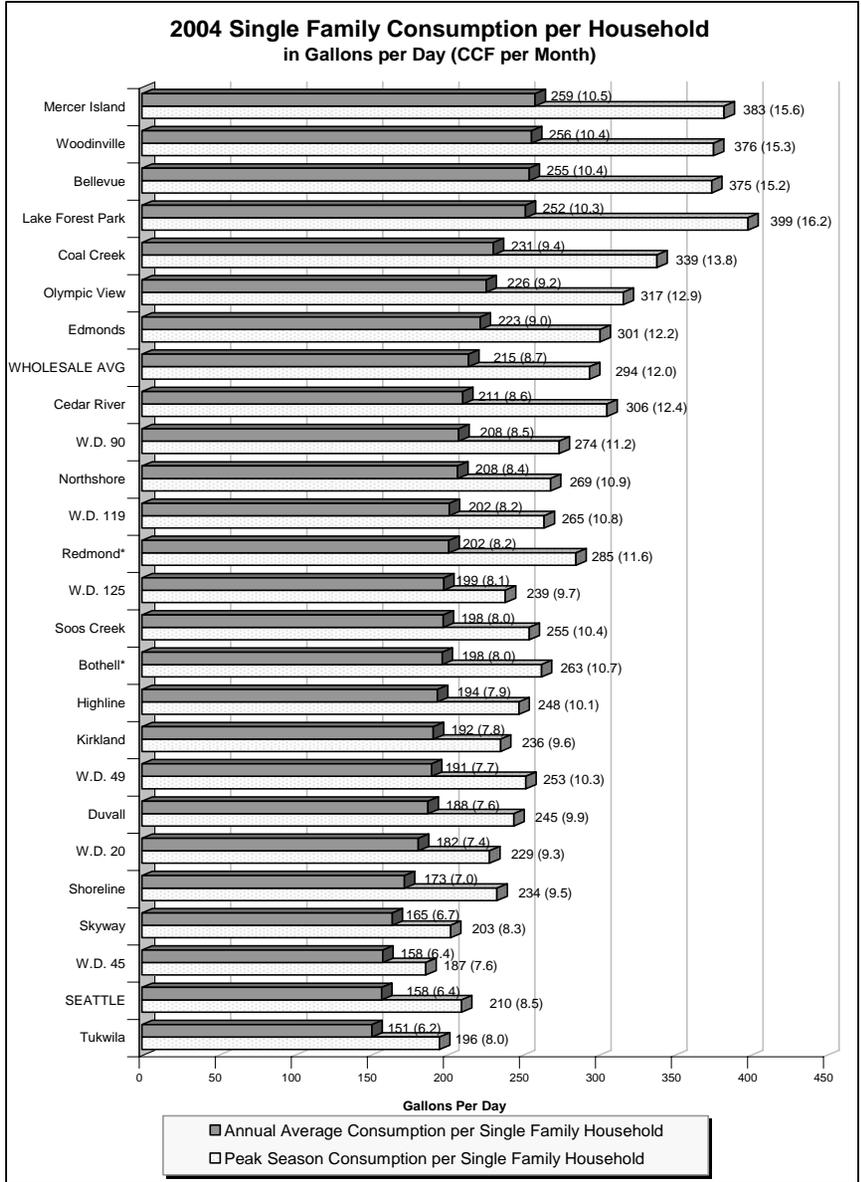
Table 2.5
Wholesale Customer Distribution System Non-Revenue Water: 1994-2004

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Average
Bellevue	7.6%	2.2%	8.3%	9.3%	10.4%	8.5%	7.8%	4.6%	6.0%	5.0%	8.6%	7.0%
Bothell	10.3%	17.7%	-7.9%	5.7%	5.4%	7.9%	7.6%	7.4%	7.1%	6.6%	NA	6.8%
Bryn Mawr*	5.2%	6.5%	6.4%	6.6%	4.8%	10.4%	Merged with Skyway					6.7%
Cedar River	6.6%	6.9%	8.0%	8.4%	4.4%	7.0%	5.3%	7.0%	6.3%	4.1%	7.3%	6.4%
Coal Creek	0.6%	1.5%	9.0%	4.0%	2.4%	4.9%	4.8%	-7.6%	3.3%	1.4%	10.6%	2.4%
Duvall	11.9%	5.0%	8.2%	5.3%	-1.6%	7.6%	9.3%	-11.2%	2.9%	10.1%	10.5%	4.8%
Edmonds	15.2%	14.0%	14.1%	8.6%	12.6%	10.1%	17.3%	16.4%	18.1%	15.1%	16.5%	14.1%
Highline	14.4%	16.3%	12.4%	8.6%	3.9%	5.8%	6.6%	4.3%	5.0%	5.7%	10.7%	8.3%
Kirkland	10.1%	6.2%	3.4%	1.2%	-3.7%	2.7%	-1.3%	7.4%	2.5%	5.0%	9.1%	3.4%
Lake Forest Park	NA	-5.0%	NA	4.0%	-19.7%	11.0%	NA	14.4%	13.9%	15.4%	21.0%	4.9%
Mercer Island	2.7%	5.6%	7.0%	6.3%	4.0%	6.7%	7.8%	7.6%	0.1%	1.4%	5.3%	4.9%
Northshore	1.2%	7.5%	5.7%	4.2%	4.1%	0.0%	4.4%	-12.0%	6.4%	4.8%	5.0%	2.6%
Olympic View	7.1%	6.7%	-0.6%	12.5%	13.4%	7.3%	7.3%	2.0%	-1.4%	-6.2%	2.6%	4.8%
Redmond	-9.3%	6.3%	-2.6%	-1.7%	-3.7%	1.7%	3.5%	2.6%	6.5%	3.4%	NA	0.7%
Renton	NA	NA	NA	NA	NA	NA	NA	13.5%	13.2%	12.1%	13.1%	12.9%
Shoreline	9.3%	6.2%	13.2%	7.2%	4.4%	NA	9.1%	1.9%	0.8%	5.6%	5.4%	6.4%
Skyway*	11.4%	7.3%	6.6%	6.9%	11.7%	7.3%	3.4%	7.7%	2.7%	4.3%	13.9%	6.9%
Soos Creek	12.0%	8.4%	11.2%	10.2%	3.3%	-4.7%	2.5%	8.7%	10.7%	4.6%	13.4%	6.7%
Tukwila	19.9%	20.9%	22.5%	23.2%	10.9%	13.5%	6.6%	16.7%	20.0%	14.8%	11.9%	16.9%
Woodinville	-4.9%	-3.1%	-1.9%	-2.4%	2.0%	5.4%	4.2%	7.5%	3.3%	5.9%	7.4%	1.6%
W.D. 20**	5.4%	7.7%	6.0%	4.3%	5.6%	8.3%	7.1%	6.2%	0.6%	7.6%	3.1%	5.9%
W.D. 45	16.2%	2.0%	0.2%	-4.7%	-2.5%	7.4%	6.6%	-23.9%	-0.2%	0.9%	4.6%	0.2%
W.D. 49	-1.2%	2.0%	11.8%	1.3%	5.3%	3.4%	3.3%	0.6%	1.7%	-5.4%	4.6%	2.3%
W.D. 85**	-2.3%	8.4%	10.7%	7.5%	4.2%	NA	13.7%	10.8%	41.0%	Merged with WD 20		11.8%
W.D. 90	20.9%	21.2%	20.4%	14.8%	22.1%	19.4%	18.1%	18.7%	9.3%	9.2%	11.3%	17.4%
W.D. 119	0.1%	3.1%	-2.5%	3.1%	-1.7%	-0.3%	9.5%	21.7%	16.0%	11.4%	15.5%	6.0%
W.D. 125	8.6%	20.4%	18.6%	14.2%	8.1%	7.7%	9.4%	14.3%	6.5%	15.4%	13.5%	12.3%
Purveyor Average	7.0%	7.6%	7.7%	6.7%	5.3%	5.8%	6.2%	6.1%	6.8%	6.1%	9.4%	6.5%

* 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.

Figure 2.7
2004 Measures of Consumption per Unit



* Note that Redmond did not participate in this year's survey and Bothell was unable to provide retail consumption data because of difficulties with its new billing system. Therefore, the most current retail consumption data available for these two utilities is from 2003.

Table 2.6

**Single Family Residential Consumption per Household by Wholesale Customer: 1994-2004
(in CCF per Household per Month)**

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Bellevue	10.4	10.0	9.8	9.4	10.0	9.6	9.7	8.9	9.1	9.7	10.4
Bothell	8.5	7.9	8.1	7.9	8.4	7.6	8.0	7.5	7.6	8.0	8.0
Bryn Mawr	NA	NA	NA	NA	NA	7.5	Merged with Skyway				
Cedar River	9.9	9.7	9.7	9.1	9.6	8.9	9.5	8.0	8.6	9.1	8.6
Coal Creek	10.1	9.5	9.4	9.2	9.9	9.1	9.1	8.0	8.6	9.3	9.4
Duvall	NA	8.6	8.3	8.9	9.7	8.1	8.8	7.1	7.2	8.4	7.6
Edmonds	9.9	9.7	8.6	8.1	9.5	8.6	10.2	8.5	8.8	9.5	9.0
Highline	9.2	9.0	8.6	9.0	8.8	8.3	8.5	7.6	8.1	8.2	7.9
Kirkland	8.8	8.6	8.5	8.5	8.6	8.2	9.3	7.5	8.0	8.9	7.8
Lake Forest Park	NA	NA	11.4	12.8	10.7	12.2	12.2	9.9	10.4	11.3	10.3
Mercer Island	NA	10.7	9.9	9.8	11.0	10.0	10.5	9.2	10.0	10.6	10.5
Northshore	9.6	9.2	9.0	8.6	9.8	8.7	8.5	8.1	8.4	8.9	8.4
Olympic View	9.9	9.8	9.5	8.9	9.5	9.0	9.3	8.1	9.0	9.7	9.2
Redmond	9.4	9.0	9.1	8.7	9.1	8.6	8.3	7.7	7.7	8.2	8.2
Shoreline	8.3	7.9	7.8	7.5	7.9	NA	7.7	6.7	7.0	7.4	7.0
Skyway	7.5	7.2	7.3	7.0	7.2	6.8	7.8	6.3	7.0	7.1	6.7
Soos Creek	8.7	8.4	8.4	7.7	8.2	7.8	7.8	7.0	7.5	8.5	8.1
Tukwila	7.5	6.4	7.7	7.4	7.4	7.2	7.0	7	7	7	6.2
Woodinville	12.0	11.1	11.3	10.5	11.7	10.7	11.1	10.8	10.4	11.6	10.4
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
W.D. 45	NA	8.9	NA	NA	NA	6.8	7.5	6.8	7.6	6.9	6.4
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
W.D. 85	NA	NA	NA	NA	NA	9.9	9.7	6.9	7.2	Merged with WD 20	
W.D. 90	NA	NA	NA	NA	NA	8.4	9.5	8.5	8.8	8.7	8.5
W.D. 119	NA	NA	NA	NA	NA	8.1	8.2	7.7	8.1	9.1	8.2
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
WHOLESALE AVERAGE	9.7	9.4	9.2	8.9	9.5	8.9	9.1	8.1	8.4	9.0	8.7
SEATTLE	7.9	7.6	7.4	7.1	7.1	7.1	7.3	6.5	6.7	6.6	6.4

Figure 2.8

