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DATE: May 15, 2018  
TO: Cascade Member Agencies  
FROM: Ed Cebron, Chief Economist/Treasurer  
Paula Anderson, Program and Policy Assistant  
SUBJECT: DRAFT Documentation of 2019 Member Charges

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Based on preliminary budget and rate forecast results, a draft **rate increase of 7.0%** is estimated for 2019. This increase is largely due to increases in SPU wholesale charges. Also included is a new funding initiative targeting system resiliency for Cascade and its members, tentatively set at a permanent 0.5% rate increase to fund related improvements. For 2019, an estimated 2017 true-up payment of \$750,000 is currently assumed, to be updated in late May based on a preliminary estimate from SPU and finalized in August following completion of the 2017 audit. The Cascade rate increase also reflects the rate decision in 2018 to use reserves to cover the 2018 wholesale cost increase. As a result, the 2019 budget begins in a shortfall position which can no longer be covered from reserves while maintaining Cascade's financial strength. The current forecast also estimates a 2020 increase of 3.0%, with a general return to inflation-like increases once the existing imbalance is corrected.

Due to the relatively high 2019 increase, several alternatives are also being considered for the biennial budget. While this memorandum documents the calculation of 2019 member charges assuming a 7.0% general increase, the Board will be presented with several rate alternatives. These include:

- 1) Continue existing rate practices, adopting a 7.0% increase for 2019 and estimating a 3.0% increase for 2020. This strategy and the resulting member charges are documented in this memorandum.
- 2) Implement a single two-year increase of 9.0%. While there would be no increase in 2020, individual member charges would still vary from estimates based on actual 2018 water demands. An attached Table 10A in Appendix A illustrates the potential charges for both years under this strategy.
- 3) Adopt member charges for 2019 and 2020 reflecting increases of 7.0% and 3.0%, respectively. This would provide known charges to members for both years, with no anticipated revisions for 2020. Once the actual basis for 2020 charges is known, the net difference between adopted and actual charges would be recovered in 2021 through a true-up adjustment. This true-up would have no net impact on Cascade revenues. An attached Table 11 in Appendix A illustrates the potential scale of annual adjustments based on the difference between actual 2018 charges and those estimated in the fall of 2016.
- 4) Adopt a single 9.0% increase in 2019 with no change in member charges for 2020. Again, a true-up adjustment would apply in 2021 to correct for deviations from actual shares which occur in 2020.

This document outlines the 2019 charges that would be applicable in options 1) and 3) above. Appendix A provides the 2019 and 2020 charges for each of the 4 options defined above.

A general system increase of 7.0% (or any other amount) does not translate to equal percentage increases for all members, since member charges are based on each agency's total customer base and actual water usage, which vary in both absolute and relative terms from year to year. The following information outlines the development of individual member charges for 2019. It relies on information provided by SPU and by member agencies related to water demand, water supply and customer base.

**Purpose:** This draft memorandum summarizes preliminary member charges for 2019, along with a forecast of potential charges for 2020. It is intended to provide preliminary guidance for member budgeting purposes, and to provide member staff an opportunity to review and validate the use of data which they provided. The final charges will be submitted to the Board for adoption in the fall of 2018. Upon

completion of this process, an updated version of the Cascade Member Rate Model will be developed and distributed consistent with the information in the final version of this memorandum.

**Cascade Revenue Structure**

Cascade collects revenue from members through four separate charges. These include:

- **Administrative Dues** are based on budgeted administrative costs for 2019 and actual CERU counts as of January 1<sup>st</sup>, 2018 (December 31, 2017) as reported by members. The dues are expressed in terms of a charge per CERU. Members pay Administrative Dues based on the number of CERUs that they serve. The contractual limit on administrative dues is 9% of total revenue requirements. For 2019, the charge falls below this limit at 8.75%.
- **Conservation Charges** are also based on actual CERU counts as of January 1<sup>st</sup>, 2018 as reported by members. The 2019 Conservation Charge reflects the budgeted conservation program.
- **Demand Share Charges** are based on a rolling three-year demand history. Based on Board action, minimum demand shares are assigned for two agencies, Sammamish Plateau and Issaquah, and are applied in lieu of actual history if they exceed the related calculated value. For 2019, both agencies exceed the adopted minimum based on their usage history. Demand Share Charges account for the majority (roughly 85% to 90%) of Cascade’s rate revenue and are solely based on actual historical data.
- **Regional Capital Facilities Charges (RCFCs)** are charged based on reported growth in customer base. RCFCs are relatively volatile and are not relied on for Cascade operations. Instead, they are deposited into a separate RCFC fund, from which transfers are made to support debt service and to fund capital projects. As a result of adopted fiscal policy, RCFCs related to 420 CERUs of growth will be held available for debt service in 2019; funds from all additional growth (budgeted at 980 CERUs) will be transferred to construction. This summary does not project RCFCs or establish payment obligations in advance of actual growth. While Cascade budgets and plans based on expected connections, members are not obligated to pay RCFCs except as growth actually occurs.

**Cascade Equivalent Residential Units (CERUs)**

Discussed in the Cascade JMUSA and the RCFC Methodology, the CERU is one of the key metrics that Cascade uses to allocate costs to its Members. Per Table 1 of the RCFC Methodology, CERU counts are based on an inventory of water meters and flow equivalency factors established by the American Water Works Association. **Table 1** summarizes the calculation of CERUs based on water meter counts as of 12/31/15:

**Table 1: CERU Calculations for 2019 Charges**

| Water Meter Size              | Number of CERUs | Water Meter Counts as of 12/31/17* |          |          |          |          |              |         | Total     |
|-------------------------------|-----------------|------------------------------------|----------|----------|----------|----------|--------------|---------|-----------|
|                               |                 | Bellevue                           | Issaquah | Kirkland | Redmond  | SP Water | Skyway<br>WD | Tukwila |           |
| 3/4" [incl. 5/8x3/4"]         | 1.0             | 32,610                             | 6,716    | 10,742   | 15,436   | 16,707   | 3,224        | 1,413   | 86,848    |
| 1"                            | 2.5             | 3,625                              | 869      | 949      | 830      | 508      | 101          | 278     | 7,160     |
| 1.5"                          | 5.0             | 2,037                              | 440      | 546      | 1,283    | 772      | 38           | 339     | 5,455     |
| 2"                            | 8.0             | 881                                | 308      | 318      | 638      | 138      | 9            | 178     | 2,470     |
| 3"                            | 16.0            | 170                                | 35       | 48       | 74       | 25       | 7            | 37      | 396       |
| 4"                            | 25.0            | 89                                 | 12       | 13       | 71       | 6        | 0            | 27      | 218       |
| 6"                            | 50.0            | 32                                 | 3        | 0        | 10       | 0        | 0            | 18      | 63        |
| 8"                            | 80.0            | 6                                  | 0        | 0        | 4        | 0        | 0            | 8       | 18        |
| 10"                           | 115.0           | 1                                  | 0        | 0        | 0        | 0        | 0            | 3       | 4         |
| <b>Total Number of Meters</b> |                 | 39,451                             | 8,383    | 12,616   | 18,346   | 18,156   | 3,379        | 2,301   | 102,632   |
| <b>Total Number of CERUs</b>  |                 | 66,045.5                           | 14,562.5 | 19,481.5 | 32,809.0 | 23,491.0 | 3,850.5      | 8,379.0 | 168,619.0 |

\* - Exclude fire lines/meters and deduct meters; single-family residential combination domestic/fire meters are counted and shown one size lower than reported.

Several notes regarding the water meter and CERU counts shown in **Table 1**:

- Section 2.2 of the RCFC Methodology explicitly states that fire sprinkler and exempt/deduct meters are not counted as CERUs because they do not increase system demand. When reported as such by members, dedicated fire meters are excluded from the CERU calculation.
- Section 2.3 requires Members to report total connected CERUs to Cascade on a quarterly basis for the purpose of collecting RCFCs, an administrative practice has transitioned to monthly reporting of net additions or deletions of meters. Meters that are not actually connected to the water system are not counted as CERUs for administrative dues or conservation charges, even if RCFCs have been paid. Meters that are connected are counted as CERUs whether or not the account is active at the time of inventory.
- Several Members report combined domestic/fire meters for single family residences. These meters are generally 1-inch or 1.5 inch meters that were oversized from 3/4-inch meters to provide fire flow capacity. When members report combined residential domestic/fire meters, they are defined by CERU methodology to be based on an equivalent domestic meter requirement excluding fire sprinkler load. Absent specific documentation from the member, they have been included in **Table 1** based on the assumption that each such meter is oversized one incremental size to support fire flow. Note that members are requested to report both actual and equivalent sizes. RCFCs are imposed based on the equivalent factor.

**Administrative Dues**

Administrative Dues are imposed on Members to recover the various administrative costs that Cascade incurs in its day-to-day operations – examples of relevant expenses include salaries and benefits of administrative personnel, office space rental, and public process. Members pay Administrative Dues annually according to the number of reported Cascade Equivalent Residential Units (CERUs) for the prior completed fiscal year at time of budgeting. Thus, for 2019 rates, the year-end 2017 CERU counts are used, as adjusted. In the event of new members or service area additions, the actual counts would be further adjusted to reflect those transactions.

The Administrative Dues rate is generally derived for a given year by dividing that year’s projected administrative expenses by the total number of CERUs for Cascade members (see Table 1). Cascade policy constrains the amount that Cascade can collect in Administrative Dues – annual collections are limited to nine percent (9.0%) of the Member Charge revenue requirement. **Table 2** shows the derivation of the 2019 Administrative Dues rates:

**Table 2: Derivation of 2019 Administrative Dues**

| <b>Administrative Dues Rate Calculation</b> | <b>Existing 2018</b> | <b>2019</b>         |
|---|----------------------|---------------------|
| Projected Administrative Expenses:          |                      |                     |
| Wages                                       | \$ 1,290,467         | \$ 1,367,332        |
| Professional services                       | \$ 604,300           | \$ 586,000          |
| Goods & services                            | \$ 581,000           | \$ 781,700          |
| Legal Services                              | \$ 637,500           | \$ 680,000          |
| Equipment                                   | \$ 41,000            | \$ 40,000           |
| Travel                                      | \$ 15,000            | \$ 15,000           |
| Miscellaneous                               | \$ 9,000             | \$ 10,000           |
| Contingency                                 | \$ 200,000           | \$ 150,000          |
| <b>Total</b>                                | <b>\$ 3,378,267</b>  | <b>\$ 3,630,032</b> |
| Administrative Dues Revenue Cap             | \$ 3,489,802         | \$ 3,734,088        |
| Applicable CERU Count                       | 167,992              | 168,619             |
| <i>Administrative Cost per CERU</i>         | <i>\$ 20.11</i>      | <i>\$ 21.53</i>     |
| <b>Administrative Dues Rate per CERU</b>    | <b>\$ 20.11</b>      | <b>\$ 21.53</b>     |

**Table 3** shows the projected 2019 Administrative Dues payment for each Member:

**Table 3: Projected 2019 Administrative Dues Payments by Member**

| <u>Administrative Dues</u> | Existing 2018       | 2019                |
|----------------------------|---------------------|---------------------|
| Bellevue                   | \$ 1,355,360        | \$ 1,417,976        |
| Issaquah                   | \$ 289,247          | \$ 317,370          |
| Kirkland                   | \$ 384,389          | \$ 417,907          |
| Redmond                    | \$ 649,009          | \$ 701,540          |
| Sammamish Plateau Water    | \$ 459,730          | \$ 512,707          |
| Skyway WSD                 | \$ 76,496           | \$ 82,976           |
| Tukwila                    | \$ 164,036          | \$ 179,557          |
| <b>Total</b>               | <b>\$ 3,378,267</b> | <b>\$ 3,630,033</b> |

**Conservation Charges**

Conservation Charges were introduced in 2005 as a means of recovering the costs of Cascade's conservation program. Like Administrative Dues, Conservation Charges are imposed on Members on a CERU basis. **Table 4** shows the derivation of the Conservation Charge for 2019:

**Table 4: Derivation of 2019 Conservation Charges**

| <u>Conservation Charge Rate Calculation</u> | Existing 2018     | 2019              |
|---|-------------------|-------------------|
| Projected Conservation Expenses:            |                   |                   |
| Wages                                       | \$ 191,664        | \$ 200,537        |
| Goods & services                            | \$ 150,000        | \$ 256,000        |
| Rebates                                     | \$ 240,000        | \$ 125,000        |
| Professional Services                       | \$ 215,000        | \$ 235,000        |
| Legal Services                              | \$ 5,000          | \$ 5,000          |
| <b>Total</b>                                | <b>\$ 801,664</b> | <b>\$ 821,537</b> |
| Applicable CERU Count                       | 167,992           | 168,619           |
| <b>Conservation Charge per CERU</b>         | <b>\$ 4.77</b>    | <b>\$ 4.87</b>    |

**Table 5** shows the projected 2019 payments for each Member:

**Table 5: Projected 2019 Conservation Charge Payments by Member**

| <u>Conservation Charges</u> | Existing 2018     | 2019              |
|-----------------------------|-------------------|-------------------|
| Bellevue                    | \$ 321,628        | \$ 320,912        |
| Issaquah                    | \$ 68,638         | \$ 71,826         |
| Kirkland                    | \$ 91,216         | \$ 94,579         |
| Redmond                     | \$ 154,010        | \$ 158,770        |
| Sammamish Plateau Water     | \$ 109,094        | \$ 116,034        |
| Skyway WSD                  | \$ 18,152         | \$ 18,779         |
| Tukwila                     | \$ 38,926         | \$ 40,637         |
| <b>Total</b>                | <b>\$ 801,664</b> | <b>\$ 821,537</b> |

**Demand Share Charges**

The Demand Share Charge recovers costs that are not otherwise recovered through the other Member Charges or other sources of revenue, and is computed by dividing the Demand Share cost basis by the number of Demand Shares. A member's Demand Share in a

given year is based on a three-year rolling average – the 2019 calculations are based on data from 2015 – 2017 as the three most recently completed years. Each member’s Demand Share is initially established as the greater of:

- Average daily demand (in mgd) from Cascade during the peak season (June 1 – September 30)
- Average daily demand (in mgd) from Cascade for the entire calendar year

Two agencies have minimum demand shares assigned based on Board action: Sammamish Plateau at 1.0 mgd and Issaquah at 0.75 mgd. For those agencies, the greater of the minimum or calculated demand share is applied.

**Table 6** provides a summary of wholesale water demands for the three years 2015-2017. It summarizes total annual, peak season, and peak month demands. The peak month demands are purely informational, and are not used to determine Cascade charges. In developing this summary, transfers among members are recognized as adjustments. Also, metered deliveries from Seattle are typically based on meter reads occurring near the 20<sup>th</sup> of each month. Peak season usage for June through September is pro-rated based on days contained in each month to estimate actual usage within the four month period. For example, a bill based on a June 20 meter read that follows a May 20 meter read would be allocated 11/31 to May and 20/31 to June. This is primarily relevant for the June 1 and September 30 endpoints of the peak summer season used to determine demand shares. Other member reports of production and transfers are assumed to be reported on a calendar month basis and are not adjusted, unless otherwise documented by the member. Peak month usage is informational only, and is simply the highest reported month of system demand.

The reported volumes for delivery of water to the Rose Hill area serving Kirkland, Redmond and Bellevue are originally reported from Seattle to Cascade as Kirkland volume, and then allocated among users based on member-provided allocation. In that allocation, reported volumes were adjusted by the members to conform to Seattle meter reads.

In May 2016, Redmond used estimated meter reads as the basis for billing retail accounts. These meter reads are also used to reconcile Redmond, Kirkland and Bellevue shares of wholesale water. On inspection, the estimated reads were not consistent with historical patterns and resulted in lower May volumes and higher June volumes than normal. Cascade undertook a review of annual usage patterns and pertinent weather (average high temperature, precipitation) and determined that 2008, 2014 and 2015 had similar weather patterns. Using 2015 as the most recent data, Redmond adjusted the May and June volumes to conform to historical ratios. Cascade has reviewed this allocation and agrees that it provides a reasonable basis for correcting the metered data, especially given that 2015 showed an above average share of usage in June, as did 2016 for other available data. Redmond has since submitted its 2016 demand data using this adjustment, and Cascade is relying on this data.

Bellevue has provided annual data for the transition service area that was transferred to Issaquah as of January 1, 2017. Given that the 2018 demand share charge should reflect the served customer base during 2018, the historical usage for 2015 and 2016 for this area has been used to adjust Bellevue volume downward and Issaquah demand upward in determining 2018 demand shares. These adjustments are incorporated into the summary in Table 6. Ultimately, the adjustments through 2016 will be outside the 3 year usage period and be removed from the calculation of demand shares. Beginning in 2017, water delivered from Bellevue to Issaquah for this service area is being reported as Issaquah usage and included under transfers from Bellevue to Issaquah.

**Table 6: Three Year History of Member Wholesale Demands 2015-2017**

| Annual Water Demand       | CCF               |                   |                   | MGD         |             |             |
|---------------------------|-------------------|-------------------|-------------------|-------------|-------------|-------------|
|                           | 2015              | 2016              | 2017              | 2015        | 2016        | 2017        |
| 1 Bellevue                | 7,032,533         | 7,094,055         | 7,445,935         | 14.41       | 14.50       | 15.26       |
| 3 Issaquah                | 569,653           | 632,178           | 661,569           | 1.17        | 1.29        | 1.36        |
| 4 Kirkland                | 1,923,991         | 1,859,004         | 1,902,626         | 3.94        | 3.80        | 3.72        |
| 5 Redmond                 | 2,263,447         | 1,978,592         | 2,253,760         | 4.64        | 4.04        | 4.03        |
| 6 Sammamish Plateau Water | 497,571           | 493,467           | 500,343           | 1.02        | 1.01        | 1.03        |
| 7 Skyway WSD              | 173,472           | 162,226           | 164,069           | 0.36        | 0.33        | 0.34        |
| 8 Tukwila                 | 1,001,539         | 963,250           | 928,329           | 2.05        | 1.97        | 1.90        |
| <b>Total</b>              | <b>13,462,207</b> | <b>13,182,772</b> | <b>13,856,631</b> | <b>27.6</b> | <b>26.9</b> | <b>28.4</b> |

  

| Peak Season Water Demand  | CCF              |                  |                  | MGD         |             |             |
|---------------------------|------------------|------------------|------------------|-------------|-------------|-------------|
|                           | 2015             | 2016             | 2017             | 2015        | 2016        | 2017        |
| 1 Bellevue                | 3,218,142        | 3,019,434        | 3,449,520        | 19.73       | 18.51       | 21.15       |
| 3 Issaquah                | 285,525          | 282,729          | 315,908          | 1.75        | 1.73        | 1.94        |
| 4 Kirkland                | 901,549          | 826,189          | 894,133          | 5.53        | 5.07        | 5.15        |
| 5 Redmond                 | 1,182,785        | 922,507          | 1,198,286        | 7.25        | 5.66        | 5.91        |
| 6 Sammamish Plateau Water | 197,839          | 162,373          | 197,632          | 1.21        | 1.00        | 1.21        |
| 7 Skyway WSD              | 68,808           | 60,498           | 68,215           | 0.42        | 0.37        | 0.42        |
| 8 Tukwila                 | 446,352          | 413,931          | 413,456          | 2.74        | 2.54        | 2.53        |
| <b>Total</b>              | <b>6,301,001</b> | <b>5,687,661</b> | <b>6,537,150</b> | <b>38.6</b> | <b>34.9</b> | <b>40.1</b> |

  

| Peak Month Water Demand   | CCF              |                  |                  | MGD         |             |             |
|---------------------------|------------------|------------------|------------------|-------------|-------------|-------------|
|                           | 2015             | 2016             | 2017             | 2015        | 2016        | 2017        |
| 1 Bellevue                | 948,450          | 812,088          | 975,881          | 22.89       | 19.59       | 23.55       |
| 3 Issaquah                | 84,089           | 80,630           | 91,990           | 2.03        | 1.95        | 2.22        |
| 4 Kirkland                | 268,300          | 232,509          | 255,935          | 6.47        | 5.61        | 6.18        |
| 5 Redmond                 | 398,489          | 250,386          | 360,879          | 9.62        | 6.04        | 8.71        |
| 6 Sammamish Plateau Water | 78,338           | 38,791           | 46,964           | 1.89        | 0.94        | 1.13        |
| 7 Skyway WSD              | 19,461           | 15,463           | 18,383           | 0.47        | 0.37        | 0.44        |
| 8 Tukwila                 | 130,108          | 111,515          | 114,898          | 3.14        | 2.69        | 2.77        |
| <b>Total</b>              | <b>1,927,234</b> | <b>1,541,382</b> | <b>1,864,930</b> | <b>46.5</b> | <b>37.2</b> | <b>45.0</b> |

Table 7 summarizes the 2019 Demand Share calculations (more detailed calculations are attached as an appendix):

**Table 7: 2019 Demand Share Calculations**

| Member                  | 2018 Actual    |               | 2019           |               |
|-------------------------|----------------|---------------|----------------|---------------|
|                         | Demand Share   | % of Total    | Demand Share   | % of Total    |
| Bellevue                | 19.2118        | 52.5%         | 19.7977        | 52.3%         |
| Issaquah                | 1.6415         | 4.5%          | 1.8070         | 4.8%          |
| Kirkland                | 5.2479         | 14.3%         | 5.3584         | 14.2%         |
| Redmond                 | 6.4401         | 17.6%         | 6.7516         | 17.8%         |
| Sammamish Plateau Water | 1.0337         | 2.8%          | 1.1401         | 3.0%          |
| Skyway WSD              | 0.3999         | 1.1%          | 0.4037         | 1.1%          |
| Tukwila                 | 2.6289         | 7.2%          | 2.6032         | 6.9%          |
| <b>Total</b>            | <b>36.6038</b> | <b>100.0%</b> | <b>37.8615</b> | <b>100.0%</b> |

Note: Bellevue and Issaquah reflect 2017 service area transfer incorporating 0.2990 in 2018 demand shares

Table 8 shows the Demand Share Charge calculation for 2019:

**Table 8: Derivation of 2019 Demand Share Charge**

| <u>Demand Share Charge Calculation</u>                 | Existing 2018    | 2019             |
|--|------------------|------------------|
| Total Prior-Year Member Charge Revenue Excluding RCFCs | \$37,646,188     | \$38,775,574     |
| Planned Member Charge Revenue Adjustment               | 3.00%            | <b>7.00%</b>     |
| Projected Member Charge Revenue                        | \$38,775,574     | \$41,489,865     |
| Less: Projected Administrative Dues                    | \$ (3,378,267)   | \$ (3,630,033)   |
| Less: Projected Conservation Charges                   | \$ (801,664)     | \$ (821,537)     |
| Demand Share Cost Basis                                | \$34,595,643     | \$37,038,295     |
| Projected Demand Share Basis                           | 36.6038          | 37.8615          |
| <b>Demand Share Charge</b>                             | <b>\$945,138</b> | <b>\$978,258</b> |
| <b>Corresponding Charge Per Demand Share %</b>         | <b>\$345,956</b> | <b>\$370,383</b> |

Table 9 shows the 2019 Demand Share Charge payments for each Member.

**Table 9: 2019 Demand Share Charges By Member**

| <u>Demand Share Charges</u> | Existing 2018        | 2019                 |
|-----------------------------|----------------------|----------------------|
|                             | Total Payment        | Total Payment        |
| Bellevue                    | \$ 18,157,825        | \$ 19,367,223        |
| Issaquah                    | \$ 1,551,469         | \$ 1,767,688         |
| Kirkland                    | \$ 4,959,980         | \$ 5,241,855         |
| Redmond                     | \$ 6,086,748         | \$ 6,604,780         |
| Sammamish Plateau Water     | \$ 976,988           | \$ 1,115,289         |
| Skyway WSD                  | \$ 377,939           | \$ 394,900           |
| Tukwila                     | \$ 2,484,694         | \$ 2,546,560         |
| <b>Total</b>                | <b>\$ 34,595,643</b> | <b>\$ 37,038,295</b> |

**Total Member Charges**

Table 10 summarizes the Total 2019 Member Charges for each Member.

**Table 10: Summary of 2019 Proposed and 2020 Estimated Member Charges**

| <b>2018 Member Charges</b>    | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         |
|-------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|
| Bellevue                      | \$ 1,323,216               | \$ 314,000                  | \$ 18,157,825               | \$ 19,795,041        |
| Issaquah                      | \$ 291,758                 | \$ 69,234                   | \$ 1,551,469                | \$ 1,912,461         |
| Kirkland                      | \$ 390,310                 | \$ 92,621                   | \$ 4,959,980                | \$ 5,442,911         |
| Redmond                       | \$ 657,325                 | \$ 155,984                  | \$ 6,086,748                | \$ 6,900,057         |
| Sammamish Plateau Water       | \$ 470,640                 | \$ 111,683                  | \$ 976,988                  | \$ 1,559,311         |
| Skyway Water & Sewer District | \$ 77,144                  | \$ 18,306                   | \$ 377,939                  | \$ 473,389           |
| Tukwila                       | \$ 167,873                 | \$ 39,836                   | \$ 2,484,694                | \$ 2,692,403         |
| <b>Total</b>                  | <b>\$ 3,378,266</b>        | <b>\$ 801,664</b>           | <b>\$ 34,595,643</b>        | <b>\$ 38,775,573</b> |

| <b>2019 Proposed Member Charges</b> | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         | <b>Increase Over 2016 Charges</b> |
|-------------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------------|
| Bellevue                            | \$ 1,417,976               | \$ 320,912                  | \$ 19,367,223               | \$ 21,106,111        | 6.62%                             |
| Issaquah                            | \$ 317,370                 | \$ 71,826                   | \$ 1,767,688                | \$ 2,156,884         | 12.78%                            |
| Kirkland                            | \$ 417,907                 | \$ 94,579                   | \$ 5,241,855                | \$ 5,754,341         | 5.72%                             |
| Redmond                             | \$ 701,540                 | \$ 158,770                  | \$ 6,604,780                | \$ 7,465,090         | 8.19%                             |
| Sammamish Plateau Water             | \$ 512,707                 | \$ 116,034                  | \$ 1,115,289                | \$ 1,744,030         | 11.85%                            |
| Skyway Water & Sewer District       | \$ 82,976                  | \$ 18,779                   | \$ 394,900                  | \$ 496,655           | 4.91%                             |
| Tukwila                             | \$ 179,557                 | \$ 40,637                   | \$ 2,546,560                | \$ 2,766,754         | 2.76%                             |
| <b>Total</b>                        | <b>\$ 3,630,033</b>        | <b>\$ 821,537</b>           | <b>\$ 37,038,295</b>        | <b>\$ 41,489,865</b> | <b>7.00%</b>                      |

| <b>2020 ESTIMATED Member Charges</b> | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         | <b>Increase Over 2019 Charges</b> |
|--------------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------------|
| Bellevue                             | \$ 1,453,719               | \$ 323,087                  | \$ 20,069,316               | \$ 21,846,122        | 3.51%                             |
| Issaquah                             | \$ 329,499                 | \$ 73,231                   | \$ 1,890,056                | \$ 2,292,786         | 6.30%                             |
| Kirkland                             | \$ 429,267                 | \$ 95,404                   | \$ 5,376,743                | \$ 5,901,414         | 2.56%                             |
| Redmond                              | \$ 721,659                 | \$ 160,388                  | \$ 6,685,068                | \$ 7,567,115         | 1.37%                             |
| Sammamish Plateau Water              | \$ 530,796                 | \$ 117,969                  | \$ 1,156,180                | \$ 1,804,945         | 3.49%                             |
| Skyway Water & Sewer District        | \$ 84,693                  | \$ 18,823                   | \$ 405,129                  | \$ 508,645           | 2.41%                             |
| Tukwila                              | \$ 183,363                 | \$ 40,752                   | \$ 2,589,419                | \$ 2,813,534         | 1.69%                             |
| <b>Total</b>                         | <b>\$ 3,732,996</b>        | <b>\$ 829,654</b>           | <b>\$ 38,171,911</b>        | <b>\$ 42,734,561</b> | <b>3.00%</b>                      |

For 2019, higher Issaquah and Sammamish Plateau CERU and water demand growth in 2017 have caused an above average increase. Other rate increases are moderately consistent with the general 7.0% increase incorporated in the charges, and reflect typical fluctuations or impacts among members. For Skyway and Tukwila, flat volumes have reduced their relative share of impact given the general increase in 2017 Cascade demands.

For 2020, higher Issaquah demands relative to 2015 continue to generate above average increases. All others are generally consistent with the general 3.0% increase. The 2020 charges are estimated pending determination of actual 2018 demands. As noted at the outset of this memorandum, Cascade has the option to “lock in” the 2020 charges and introduce a true-up mechanism, applicable in 2021, for any deviations between estimates and actuals.

Appendix A provides member charges for an alternative rate scenario which imposes a single two-year increase. Also provided is a sample reconciliation, based on estimates and actuals for 2018, to illustrate the scale of adjustments needed for true-up if a second year of charges is fixed in advance. This option is available for either rate increase scenario.

In addition, Appendix B summarizes the annual demands and demand share calculations for each member. The tables show Cascade deliveries and transfers among members as used to determine the member demand shares.



## APPENDIX A

**Cascade Water Alliance**  
**Member Charge Memo - 2019 Charges**

**Table 10A**

**ALTERNATE SCENARIO - TWO-YEAR INCREASE**

| <b>2018 Member Charges</b>    | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         |  |
|-------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|--|
| Bellevue                      | \$ 1,323,216               | \$ 314,000                  | \$ 18,157,825               | \$ 19,795,041        |  |
| Issaquah                      | \$ 291,758                 | \$ 69,234                   | \$ 1,551,469                | \$ 1,912,461         |  |
| Kirkland                      | \$ 390,310                 | \$ 92,621                   | \$ 4,959,980                | \$ 5,442,911         |  |
| Redmond                       | \$ 657,325                 | \$ 155,984                  | \$ 6,086,748                | \$ 6,900,057         |  |
| Sammamish Plateau Water       | \$ 470,640                 | \$ 111,683                  | \$ 976,988                  | \$ 1,559,311         |  |
| Skyway Water & Sewer District | \$ 77,144                  | \$ 18,306                   | \$ 377,939                  | \$ 473,389           |  |
| Tukwila                       | \$ 167,873                 | \$ 39,836                   | \$ 2,484,694                | \$ 2,692,403         |  |
| <b>Total</b>                  | <b>\$ 3,378,266</b>        | <b>\$ 801,664</b>           | <b>\$ 34,595,643</b>        | <b>\$ 38,775,573</b> |  |

  

| <b>2019 Member Charges</b>    | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         | <b>Increase Over 2016 Charges</b> |
|-------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------------|
| Bellevue                      | \$ 1,417,976               | \$ 320,912                  | \$ 19,772,736               | \$ 21,511,624        | 8.67%                             |
| Issaquah                      | \$ 317,370                 | \$ 71,826                   | \$ 1,804,700                | \$ 2,193,896         | 14.72%                            |
| Kirkland                      | \$ 417,907                 | \$ 94,579                   | \$ 5,351,609                | \$ 5,864,095         | 7.74%                             |
| Redmond                       | \$ 701,540                 | \$ 158,770                  | \$ 6,743,072                | \$ 7,603,382         | 10.19%                            |
| Sammamish Plateau Water       | \$ 512,707                 | \$ 116,034                  | \$ 1,138,641                | \$ 1,767,382         | 13.34%                            |
| Skyway Water & Sewer District | \$ 82,976                  | \$ 18,779                   | \$ 403,168                  | \$ 504,923           | 6.66%                             |
| Tukwila                       | \$ 179,557                 | \$ 40,637                   | \$ 2,599,880                | \$ 2,820,074         | 4.74%                             |
| <b>Total</b>                  | <b>\$ 3,630,032</b>        | <b>\$ 821,537</b>           | <b>\$ 37,813,806</b>        | <b>\$ 42,265,375</b> | <b>9.00%</b>                      |

  

| <b>2020 Member Charges</b>    | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         | <b>Increase Over 2019 Charges</b> |
|-------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------|-----------------------------------|
| Bellevue                      | \$ 1,453,719               | \$ 323,087                  | \$ 19,822,637               | \$ 21,599,443        | 0.41%                             |
| Issaquah                      | \$ 329,499                 | \$ 73,231                   | \$ 1,866,825                | \$ 2,269,555         | 3.45%                             |
| Kirkland                      | \$ 429,267                 | \$ 95,404                   | \$ 5,310,656                | \$ 5,835,327         | -0.49%                            |
| Redmond                       | \$ 721,659                 | \$ 160,388                  | \$ 6,602,899                | \$ 7,484,946         | -1.56%                            |
| Sammamish Plateau Water       | \$ 530,796                 | \$ 117,969                  | \$ 1,141,969                | \$ 1,790,734         | 1.32%                             |
| Skyway Water & Sewer District | \$ 84,693                  | \$ 18,823                   | \$ 400,149                  | \$ 503,665           | -0.25%                            |
| Tukwila                       | \$ 183,363                 | \$ 40,752                   | \$ 2,557,592                | \$ 2,781,707         | -1.36%                            |
| <b>Total</b>                  | <b>\$ 3,732,996</b>        | <b>\$ 829,654</b>           | <b>\$ 37,702,727</b>        | <b>\$ 42,265,377</b> | <b>0.00%</b>                      |

|   |                            |                             |                             |                      |                                       |
|---|----------------------------|-----------------------------|-----------------------------|----------------------|---------------------------------------|
| <b>Cascade Water Alliance</b>                                   |                            |                             |                             |                      |                                       |
| <b>Member Charge Memo - 2019 Charges</b>                        |                            |                             |                             |                      |                                       |
| <b>Table 11</b>   |                            |                             |                             |                      |                                       |
| <b>SAMPLE TRUE-UP</b>   |                            |                             |                             |                      |                                       |
| <b>BASE SCENARIO - 7.0% INCREASE</b>                            |                            |                             |                             |                      |                                       |
| <b>PROJECTED 2018 CHARGES VS. ACTUAL CHARGES</b>                |                            |                             |                             |                      |                                       |
| <b>2018 ACTUAL Member Charges</b>                               |                            |                             |                             |                      |                                       |
|   | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         |                                       |
| Bellevue  | \$ 1,323,216               | \$ 314,000                  | \$ 18,157,825               | \$ 19,795,041        |                                       |
| Issaquah  | \$ 291,758                 | \$ 69,234                   | \$ 1,551,469                | \$ 1,912,461         |                                       |
| Kirkland  | \$ 390,310                 | \$ 92,621                   | \$ 4,959,980                | \$ 5,442,911         |                                       |
| Redmond   | \$ 657,325                 | \$ 155,984                  | \$ 6,086,748                | \$ 6,900,057         |                                       |
| Sammamish Plateau Water   | \$ 470,640                 | \$ 111,683                  | \$ 976,988                  | \$ 1,559,311         |                                       |
| Skyway Water & Sewer District                                   | \$ 77,144                  | \$ 18,306                   | \$ 377,939                  | \$ 473,389           |                                       |
| Tukwila   | \$ 167,873                 | \$ 39,836                   | \$ 2,484,694                | \$ 2,692,403         |                                       |
| <b>Total</b>  | <b>\$ 3,378,266</b>        | <b>\$ 801,664</b>           | <b>\$ 34,595,643</b>        | <b>\$ 38,775,573</b> |                                       |
| <b>2018 ESTIMATED Member Charges - Fall 2016</b>                |                            |                             |                             |                      |                                       |
|   | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         |                                       |
| Bellevue  | \$ 1,349,720               | \$ 320,289                  | \$ 18,079,730               | \$ 19,749,739        |                                       |
| Issaquah  | \$ 291,004                 | \$ 69,055                   | \$ 1,518,572                | \$ 1,878,631         |                                       |
| Kirkland  | \$ 386,198                 | \$ 91,645                   | \$ 4,930,763                | \$ 5,408,606         |                                       |
| Redmond   | \$ 649,796                 | \$ 154,197                  | \$ 6,271,939                | \$ 7,075,932         |                                       |
| Sammamish Plateau Water   | \$ 462,736                 | \$ 109,807                  | \$ 959,998                  | \$ 1,532,541         |                                       |
| Skyway Water & Sewer District                                   | \$ 76,747                  | \$ 18,212                   | \$ 380,061                  | \$ 475,020           |                                       |
| Tukwila   | \$ 162,065                 | \$ 38,458                   | \$ 2,454,582                | \$ 2,655,105         |                                       |
| <b>Total</b>  | <b>\$ 3,378,266</b>        | <b>\$ 801,663</b>           | <b>\$ 34,595,645</b>        | <b>\$ 38,775,574</b> |                                       |
| <b>Net Impact/True-Up Needed</b>                                |                            |                             |                             |                      |                                       |
|   | <b>Administrative Dues</b> | <b>Conservation Charges</b> | <b>Demand Share Charges</b> | <b>Total</b>         | <b>True-Up As % of Annual Charges</b> |
| Bellevue  | \$ 26,504                  | \$ 6,289                    | \$ (78,095)                 | \$ (45,302)          | -0.25%                                |
| Issaquah  | \$ (754)                   | \$ (179)                    | \$ (32,897)                 | \$ (33,830)          | -2.18%                                |
| Kirkland  | \$ (4,112)                 | \$ (976)                    | \$ (29,217)                 | \$ (34,305)          | -0.69%                                |
| Redmond   | \$ (7,529)                 | \$ (1,787)                  | \$ 185,191                  | \$ 175,875           | 2.89%                                 |
| Sammamish Plateau Water   | \$ (7,904)                 | \$ (1,876)                  | \$ (16,990)                 | \$ (26,770)          | -2.74%                                |
| Skyway Water & Sewer District                                   | \$ (397)                   | \$ (94)                     | \$ 2,122                    | \$ 1,631             | 0.43%                                 |
| Tukwila   | \$ (5,808)                 | \$ (1,378)                  | \$ (30,112)                 | \$ (37,298)          | -1.50%                                |
| <b>Total</b>  | <b>\$ -</b>                | <b>\$ (1)</b>               | <b>\$ 2</b>                 | <b>\$ 1</b>          | <b>0.00%</b>                          |
| <i>Note - slight differences in totals are due to rounding.</i> |                            |                             |                             |                      |                                       |

## APPENDIX B

# Details of Bellevue Demand Share Calculations

## Bellevue Consumption Records:

| 2015          | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade  | 568,245        | 530,129        | 588,480        | 601,019        | 823,174        | 1,043,652      | 1,209,591      | 1,012,276      | 756,777        | 613,916        | 559,908        | 423,020        | <b>8,730,188</b> |
| From Kirkland | 841            | 792            | 878            | 1,076          | 1,379          | 3,312          | 4,508          | 3,010          | 1,586          | 902            | 749            | 1,203          | <b>20,236</b>    |
| To Redmond    | (37,558)       | (34,851)       | (40,104)       | (38,992)       | (62,028)       | (97,779)       | (121,576)      | (100,921)      | (58,853)       | (44,507)       | (37,151)       | (34,266)       | <b>(708,586)</b> |
| To SP Water   | (40,833)       | (34,995)       | (36,160)       | (39,352)       | (42,119)       | (42,194)       | (59,984)       | (40,658)       | (9,080)        | (14,934)       | (43,967)       | (35,376)       | <b>(439,652)</b> |
| To Issaquah   | (27,253)       | (21,804)       | (24,893)       | (26,718)       | (35,969)       | (57,901)       | (67,874)       | (66,150)       | (38,904)       | (30,755)       | (27,453)       | (32,112)       | <b>(457,786)</b> |
| <b>Total</b>  | <b>463,442</b> | <b>439,271</b> | <b>488,201</b> | <b>497,033</b> | <b>684,437</b> | <b>849,090</b> | <b>964,665</b> | <b>807,557</b> | <b>651,526</b> | <b>524,622</b> | <b>452,086</b> | <b>322,469</b> | <b>7,144,400</b> |

| Summer           | Winter           |
|------------------|------------------|
| 4,022,296        | 4,707,892        |
| 12,416           | 7,820            |
| (379,129)        | (329,457)        |
| (151,916)        | (287,736)        |
| (230,829)        | (226,957)        |
| <b>3,272,838</b> | <b>3,871,562</b> |

| 2016          | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade  | 560,784        | 535,200        | 624,480        | 671,020        | 829,632        | 872,488        | 981,558        | 1,022,535      | 897,564        | 697,437        | 591,705        | 580,744        | <b>8,865,147</b> |
| From Kirkland | 849            | 693            | 820            | 1,226          | 2,153          | 2,596          | 2,175          | 3,014          | 2,222          | 1,597          | 1,229          | 847            | <b>19,421</b>    |
| To Redmond    | (33,678)       | (32,643)       | (37,647)       | (41,267)       | (60,565)       | (76,886)       | (81,102)       | (94,794)       | (68,786)       | (53,463)       | (45,050)       | (41,652)       | <b>(667,532)</b> |
| To SP Water   | (48,766)       | (39,060)       | (41,459)       | (41,680)       | (38,726)       | (42,273)       | (36,816)       | (38,037)       | (43,295)       | (44,140)       | (45,346)       | (31,205)       | <b>(490,803)</b> |
| To Issaquah   | (35,321)       | (30,695)       | (35,887)       | (38,061)       | (47,674)       | (55,495)       | (60,683)       | (68,369)       | (53,395)       | (35,575)       | (36,912)       | (31,351)       | <b>(529,418)</b> |
| <b>Total</b>  | <b>443,868</b> | <b>433,495</b> | <b>510,307</b> | <b>551,238</b> | <b>684,820</b> | <b>700,430</b> | <b>805,133</b> | <b>824,349</b> | <b>734,309</b> | <b>565,856</b> | <b>465,626</b> | <b>477,383</b> | <b>7,196,815</b> |

| Summer           | Winter           |
|------------------|------------------|
| 3,774,146        | 5,091,002        |
| 10,007           | 9,414            |
| (321,568)        | (345,964)        |
| (160,421)        | (330,382)        |
| (237,942)        | (291,476)        |
| <b>3,064,221</b> | <b>4,132,593</b> |

| 2017          | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade  | 600,400        | 541,543        | 630,695        | 628,894        | 720,205        | 941,623        | 1,192,870      | 1,213,368      | 939,148        | 672,563        | 583,672        | 580,002        | <b>9,244,984</b> |
| From Kirkland | 388            | 342            | 372            | 498            | 537            | 1,049          | 1,305          | 1,108          | 1,007          | 529            | 400            | 357            | <b>7,892</b>     |
| To Redmond    | (40,981)       | (36,646)       | (46,840)       | (36,729)       | (50,783)       | (73,195)       | (99,460)       | (103,101)      | (66,293)       | (41,426)       | (32,917)       | (31,891)       | <b>(660,262)</b> |
| To SP Water   | (37,426)       | (33,801)       | (32,385)       | (44,193)       | (42,247)       | (43,263)       | (75,198)       | (43,504)       | (22,036)       | (31,254)       | (43,493)       | (36,309)       | <b>(485,110)</b> |
| To Issaquah   | (45,140)       | (35,500)       | (41,797)       | (38,281)       | (49,307)       | (60,563)       | (87,205)       | (91,990)       | (76,151)       | (50,016)       | (43,901)       | (41,721)       | <b>(661,569)</b> |
| <b>Total</b>  | <b>477,241</b> | <b>435,938</b> | <b>510,046</b> | <b>510,189</b> | <b>578,405</b> | <b>765,651</b> | <b>932,312</b> | <b>975,881</b> | <b>775,675</b> | <b>550,397</b> | <b>463,761</b> | <b>470,438</b> | <b>7,445,935</b> |

| Summer           | Winter           |
|------------------|------------------|
| 4,287,010        | 4,957,974        |
| 4,469            | 3,423            |
| (342,049)        | (318,213)        |
| (184,001)        | (301,108)        |
| (315,908)        | (345,661)        |
| <b>3,449,520</b> | <b>3,996,415</b> |

| 2019 Demand Share                           |                |
|---|----------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |                |
| Annual                                      | 14.8829        |
| Summer                                      | 20.0010        |
| <b>Maximum Wholesale Capacity Required</b>  | <b>20.0010</b> |
| Service Area Transfer to Issaquah           | -0.2033        |
| <b>Demand Share:</b>                        | <b>19.7977</b> |

peak season demands for 2015-2016; 2017 demands are net of transferred service area

# Details of Issaquah Demand Share Calculations

## Issaquah Consumption Records:

| 2015             | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade BIP | 24,091        | 18,930        | 21,832        | 23,155        | 31,016        | 49,960        | 58,877        | 58,075        | 34,412        | 27,299        | 24,385        | 29,144        | 401,176        |
| From Bellevue    | 3,162         | 2,874         | 3,061         | 3,563         | 4,953         | 7,941         | 8,997         | 8,075         | 4,492         | 3,456         | 3,068         | 2,968         | 56,610         |
| <b>Total</b>     | <b>27,253</b> | <b>21,804</b> | <b>24,893</b> | <b>26,718</b> | <b>35,969</b> | <b>57,901</b> | <b>67,874</b> | <b>66,150</b> | <b>38,904</b> | <b>30,755</b> | <b>27,453</b> | <b>32,112</b> | <b>457,786</b> |

| Summer         | Winter         |
|----------------|----------------|
| 201,324        | 199,852        |
| 29,505         | 27,105         |
| <b>230,829</b> | <b>226,957</b> |

| 2016             | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade BIP | 31,150        | 29,064        | 32,019        | 35,735        | 41,444        | 50,455        | 52,861        | 62,179        | 47,045        | 33,115        | 32,500        | 29,158        | 476,725        |
| From Bellevue    | 4,171         | 1,631         | 3,868         | 2,326         | 6,230         | 5,040         | 7,822         | 6,190         | 6,350         | 2,460         | 4,412         | 2,193         | 52,693         |
| <b>Total</b>     | <b>35,321</b> | <b>30,695</b> | <b>35,887</b> | <b>38,061</b> | <b>47,674</b> | <b>55,495</b> | <b>60,683</b> | <b>68,369</b> | <b>53,395</b> | <b>35,575</b> | <b>36,912</b> | <b>31,351</b> | <b>529,418</b> |

| Summer         | Winter         |
|----------------|----------------|
| 212,540        | 264,185        |
| 25,402         | 27,291         |
| <b>237,942</b> | <b>291,476</b> |

| 2017             | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade BIP | 34,893        | 28,422        | 31,537        | 30,361        | 37,888        | 49,612        | 65,441        | 73,020        | 57,807        | 36,872        | 32,447        | 32,473        | 510,773        |
| From Bellevue    | 10,247        | 7,078         | 10,260        | 7,920         | 11,419        | 10,951        | 21,764        | 18,970        | 18,344        | 13,144        | 11,454        | 9,248         | 150,796        |
| <b>Total</b>     | <b>45,140</b> | <b>35,500</b> | <b>41,797</b> | <b>38,281</b> | <b>49,307</b> | <b>60,563</b> | <b>87,205</b> | <b>91,990</b> | <b>76,151</b> | <b>50,016</b> | <b>43,901</b> | <b>41,721</b> | <b>661,569</b> |

| Summer         | Winter         |
|----------------|----------------|
| 245,880        | 264,893        |
| 70,028         | 80,768         |
| <b>315,908</b> | <b>345,661</b> |

| 2019 Demand Share                           |               |
|---|---------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |               |
| Annual                                      | 1.1263        |
| Summer                                      | 1.6037        |
| Maximum Wholesale Capacity Required         | 1.6037        |
| Service Area Transfer from Bellevue         | 0.2033        |
| Minimum Demand Share                        | 0.7500        |
| <b>Demand Share</b>                         | <b>1.8070</b> |

*peak season demands for 2015-2016; 2017 demands are net of transferred service area*

# Details of Kirkland Demand Share Calculations

## Kirkland Consumption Records:

| 2015         | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total              |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|
| From Cascade | 188,518        | 172,504        | 187,821        | 191,473        | 264,258        | 353,980        | 432,870        | 368,345        | 265,997        | 210,890        | 184,731        | 185,609        | <b>3,006,995</b>   |
| To Redmond   | (70,080)       | (60,057)       | (61,028)       | (68,111)       | (93,858)       | (118,178)      | (160,062)      | (133,677)      | (95,309)       | (73,907)       | (63,036)       | (65,465)       | <b>(1,062,768)</b> |
| To Bellevue  | (841)          | (792)          | (878)          | (1,076)        | (1,379)        | (3,312)        | (4,508)        | (3,010)        | (1,586)        | (902)          | (749)          | (1,203)        | <b>(20,236)</b>    |
| <b>Total</b> | <b>117,597</b> | <b>111,655</b> | <b>125,915</b> | <b>122,286</b> | <b>169,021</b> | <b>232,490</b> | <b>268,300</b> | <b>231,658</b> | <b>169,102</b> | <b>136,081</b> | <b>120,946</b> | <b>118,941</b> | <b>1,923,991</b>   |

| Summer         | Winter           |
|----------------|------------------|
| 1,421,191      | 1,585,804        |
| (507,226)      | (555,542)        |
| (12,416)       | (7,820)          |
| <b>901,549</b> | <b>1,022,442</b> |

| 2016         | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade | 182,260        | 166,060        | 194,569        | 192,383        | 276,666        | 297,640        | 338,875        | 326,783        | 273,244        | 204,893        | 179,287        | 170,623        | <b>2,803,282</b> |
| To Redmond   | (66,062)       | (53,711)       | (68,138)       | (64,747)       | (94,972)       | (102,840)      | (120,684)      | (91,259)       | (85,563)       | (61,216)       | (55,651)       | (60,015)       | <b>(924,857)</b> |
| To Bellevue  | (849)          | (693)          | (820)          | (1,226)        | (2,153)        | (2,596)        | (2,175)        | (3,014)        | (2,222)        | (1,597)        | (1,229)        | (847)          | <b>(19,421)</b>  |
| <b>Total</b> | <b>115,348</b> | <b>111,656</b> | <b>125,611</b> | <b>126,409</b> | <b>179,542</b> | <b>192,204</b> | <b>216,017</b> | <b>232,509</b> | <b>185,459</b> | <b>142,080</b> | <b>122,407</b> | <b>109,761</b> | <b>1,859,004</b> |

| Summer         | Winter           |
|----------------|------------------|
| 1,236,541      | 1,566,741        |
| (400,346)      | (524,512)        |
| (10,007)       | (9,414)          |
| <b>826,189</b> | <b>1,032,815</b> |

| 2017         | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total              |
|--------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|
| From Cascade | 189,889        | 166,324        | 180,868        | 189,414        | 235,116        | 309,672        | 384,064        | 393,899        | 312,632        | 222,145        | 190,704        | 188,368        | <b>2,963,096</b>   |
| To Redmond   | (62,397)       | (55,126)       | (45,820)       | (75,492)       | (77,150)       | (111,851)      | (137,161)      | (136,856)      | (115,798)      | (76,262)       | (72,517)       | (86,148)       | <b>(1,052,578)</b> |
| To Bellevue  | (388)          | (342)          | (372)          | (498)          | (537)          | (1,049)        | (1,305)        | (1,108)        | (1,007)        | (529)          | (400)          | (357)          | <b>(7,892)</b>     |
| <b>Total</b> | <b>127,104</b> | <b>110,856</b> | <b>134,676</b> | <b>113,424</b> | <b>157,429</b> | <b>196,772</b> | <b>245,598</b> | <b>255,935</b> | <b>195,827</b> | <b>145,354</b> | <b>117,787</b> | <b>101,863</b> | <b>1,902,626</b>   |

| Summer         | Winter           |
|----------------|------------------|
| 1,400,268      | 1,562,828        |
| (501,666)      | (550,912)        |
| (4,469)        | (3,423)          |
| <b>894,133</b> | <b>1,008,493</b> |

| 2019 Demand Share                           |               |
|---|---------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |               |
| Annual                                      | 3.8839        |
| Summer                                      | 5.3584        |
| Maximum Wholesale Capacity Required         | 5.3584        |
| <b>Demand Share</b>                         | <b>5.3584</b> |

# Details of Redmond Demand Share Calculations

## Redmond Consumption Records:

| 2015          | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade  | 30,263         | 21,452         | 22,629         | 21,429         | 42,501         | 90,125         | 135,205        | 79,503         | 37,521         | 25,756         | 21,189         | 22,440         | 550,012          |
| From Bellevue | 37,558         | 34,851         | 40,104         | 38,992         | 62,028         | 97,779         | 121,576        | 100,921        | 58,853         | 44,507         | 37,151         | 34,266         | 708,586          |
| From Kirkland | 70,080         | 60,057         | 61,028         | 68,111         | 93,858         | 118,178        | 160,062        | 133,677        | 95,309         | 73,907         | 63,036         | 65,465         | 1,062,768        |
| To SP Water   | (5,150)        | (4,826)        | (919)          | (28)           | (291)          | (12,569)       | (18,354)       | (14,479)       | (521)          | (28)           | (70)           | (684)          | (57,919)         |
| <b>Total</b>  | <b>132,751</b> | <b>111,535</b> | <b>122,842</b> | <b>128,504</b> | <b>198,096</b> | <b>293,512</b> | <b>398,489</b> | <b>299,622</b> | <b>191,161</b> | <b>144,142</b> | <b>121,306</b> | <b>121,486</b> | <b>2,263,447</b> |

| Summer           | Winter           |
|------------------|------------------|
| 342,353          | 207,658          |
| 379,129          | 329,457          |
| 507,226          | 555,542          |
| (45,923)         | (11,995)         |
| <b>1,182,785</b> | <b>1,080,662</b> |

| 2016          | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade  | 20,528         | 17,928         | 21,323         | 24,485         | 33,793         | 40,650         | 52,565         | 65,087         | 44,245         | 24,210         | 21,391         | 22,663         | 388,867          |
| From Bellevue | 33,678         | 32,643         | 37,647         | 41,267         | 60,565         | 76,886         | 81,102         | 94,794         | 68,786         | 53,463         | 45,050         | 41,652         | 667,532          |
| From Kirkland | 66,062         | 53,711         | 68,138         | 64,747         | 94,972         | 102,840        | 120,684        | 91,259         | 85,563         | 61,216         | 55,651         | 60,015         | 924,857          |
| To SP Water   | (27)           | -              | 6              | (36)           | (513)          | (891)          | (252)          | (754)          | (55)           | (32)           | (59)           | (51)           | (2,664)          |
| <b>Total</b>  | <b>120,241</b> | <b>104,282</b> | <b>127,114</b> | <b>130,462</b> | <b>188,816</b> | <b>219,484</b> | <b>254,099</b> | <b>250,386</b> | <b>198,539</b> | <b>138,857</b> | <b>122,033</b> | <b>124,279</b> | <b>1,978,592</b> |

| Summer         | Winter           |
|----------------|------------------|
| 202,546        | 186,321          |
| 321,568        | 345,964          |
| 400,346        | 524,512          |
| (1,952)        | (712)            |
| <b>922,507</b> | <b>1,056,085</b> |

| 2017          | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Total            |
|---------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
| From Cascade  | 22,351         | 24,078         | 22,610         | 20,681         | 29,128         | 63,474         | 116,544        | 124,382        | 63,803         | 25,778         | 21,411         | 21,913         | 556,153          |
| From Bellevue | 40,981         | 36,646         | 46,840         | 36,729         | 50,783         | 73,195         | 99,460         | 103,101        | 66,293         | 41,426         | 32,917         | 31,891         | 660,262          |
| From Kirkland | 62,397         | 55,126         | 45,820         | 75,492         | 77,150         | 111,851        | 137,161        | 136,856        | 115,798        | 76,262         | 72,517         | 86,148         | 1,052,578        |
| To SP Water   | (110)          | (259)          | (578)          | (46)           | (122)          | (1,144)        | (7,090)        | (3,460)        | (1,937)        | (36)           | (170)          | (281)          | (15,233)         |
| <b>Total</b>  | <b>125,619</b> | <b>115,591</b> | <b>114,692</b> | <b>132,856</b> | <b>156,939</b> | <b>247,376</b> | <b>346,075</b> | <b>360,879</b> | <b>243,957</b> | <b>143,430</b> | <b>126,675</b> | <b>139,671</b> | <b>2,253,760</b> |

| Summer           | Winter           |
|------------------|------------------|
| 368,202          | 187,951          |
| 342,049          | 318,213          |
| 501,666          | 550,912          |
| (13,631)         | (1,602)          |
| <b>1,198,286</b> | <b>1,055,474</b> |

| 2019 Demand Share                           |               |
|---|---------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |               |
| Annual                                      | 4.4373        |
| Summer                                      | 6.7516        |
| Maximum Wholesale Capacity Required         | 6.7516        |
| <b>Demand Share</b>                         | <b>6.7516</b> |



# Details of Sammamish Plateau Water Demand Share Calculations

## Sammamish Plateau Water Consumption Records:

| 2015             | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep          | Oct           | Nov           | Dec           | Total          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|----------------|
| From Cascade BIP | 40,833        | 34,995        | 36,160        | 39,352        | 42,119        | 42,194        | 59,984        | 40,658        | 9,080        | 14,934        | 43,967        | 35,376        | 439,652        |
| From Redmond     | 5,150         | 4,826         | 919           | 28            | 291           | 12,569        | 18,354        | 14,479        | 521          | 28            | 70            | 684           | 57,919         |
| <b>Total</b>     | <b>45,983</b> | <b>39,821</b> | <b>37,079</b> | <b>39,380</b> | <b>42,410</b> | <b>54,763</b> | <b>78,338</b> | <b>55,137</b> | <b>9,601</b> | <b>14,962</b> | <b>44,037</b> | <b>36,060</b> | <b>497,571</b> |

| Summer         | Winter         |
|----------------|----------------|
| 151,916        | 287,736        |
| 45,923         | 11,995         |
| <b>197,839</b> | <b>299,731</b> |

| 2016             | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade BIP | 48,766        | 39,060        | 41,459        | 41,680        | 38,726        | 42,273        | 36,816        | 38,037        | 43,295        | 44,140        | 45,346        | 31,205        | 490,803        |
| From Redmond     | 27            | -             | (6)           | 36            | 513           | 891           | 252           | 754           | 55            | 32            | 59            | 51            | 2,664          |
| <b>Total</b>     | <b>48,793</b> | <b>39,060</b> | <b>41,452</b> | <b>41,716</b> | <b>39,239</b> | <b>43,164</b> | <b>37,067</b> | <b>38,791</b> | <b>43,351</b> | <b>44,172</b> | <b>45,405</b> | <b>31,256</b> | <b>493,467</b> |

| Summer         | Winter         |
|----------------|----------------|
| 160,421        | 330,382        |
| 1,952          | 712            |
| <b>162,373</b> | <b>331,094</b> |

| 2017             | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade BIP | 37,426        | 33,801        | 32,385        | 44,193        | 42,247        | 43,263        | 75,198        | 43,504        | 22,036        | 31,254        | 43,493        | 36,309        | 485,110        |
| From Redmond     | 110           | 259           | 578           | 46            | 122           | 1,144         | 7,090         | 3,460         | 1,937         | 36            | 170           | 281           | 15,233         |
| <b>Total</b>     | <b>37,536</b> | <b>34,060</b> | <b>32,963</b> | <b>44,239</b> | <b>42,369</b> | <b>44,407</b> | <b>82,288</b> | <b>46,964</b> | <b>23,973</b> | <b>31,290</b> | <b>43,663</b> | <b>36,590</b> | <b>500,343</b> |

| Summer         | Winter         |
|----------------|----------------|
| 184,001        | 301,108        |
| 13,631         | 1,602          |
| <b>197,632</b> | <b>302,710</b> |

| 2019 Demand Share                           |               |
|---|---------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |               |
| Annual                                      | 1.0188        |
| Summer                                      | 1.1401        |
| <b>Maximum Wholesale Capacity Required</b>  | <b>1.1401</b> |
| <b>Minimum Demand Share</b>                 | <b>1.0000</b> |
| <b>Demand Share</b>                         | <b>1.1401</b> |



# Details of Skyway WSD Demand Share Calculations

## Skyway WSD Consumption Records:

| 2015         | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade | 13,025        | 11,244        | 13,140        | 13,111        | 14,757        | 17,246        | 19,461        | 16,811        | 15,291        | 13,363        | 12,165        | 13,859        | 173,472        |
| <b>Total</b> | <b>13,025</b> | <b>11,244</b> | <b>13,140</b> | <b>13,111</b> | <b>14,757</b> | <b>17,246</b> | <b>19,461</b> | <b>16,811</b> | <b>15,291</b> | <b>13,363</b> | <b>12,165</b> | <b>13,859</b> | <b>173,472</b> |

| Summer        | Winter         |
|---------------|----------------|
| 68,808        | 104,664        |
| <b>68,808</b> | <b>104,664</b> |

| 2016         | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade | 14,019        | 11,507        | 12,929        | 12,491        | 14,978        | 15,359        | 15,366        | 15,463        | 14,309        | 12,854        | 11,601        | 11,350        | 162,226        |
| <b>Total</b> | <b>14,019</b> | <b>11,507</b> | <b>12,929</b> | <b>12,491</b> | <b>14,978</b> | <b>15,359</b> | <b>15,366</b> | <b>15,463</b> | <b>14,309</b> | <b>12,854</b> | <b>11,601</b> | <b>11,350</b> | <b>162,226</b> |

| Summer        | Winter         |
|---------------|----------------|
| 60,498        | 101,728        |
| <b>60,498</b> | <b>101,728</b> |

| 2017         | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Total          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade | 10,874        | 11,944        | 13,238        | 11,930        | 12,907        | 15,775        | 18,481        | 18,383        | 15,576        | 12,576        | 11,180        | 11,204        | 164,069        |
| <b>Total</b> | <b>10,874</b> | <b>11,944</b> | <b>13,238</b> | <b>11,930</b> | <b>12,907</b> | <b>15,775</b> | <b>18,481</b> | <b>18,383</b> | <b>15,576</b> | <b>12,576</b> | <b>11,180</b> | <b>11,204</b> | <b>164,069</b> |

| Summer        | Winter        |
|---------------|---------------|
| 68,215        | 95,854        |
| <b>68,215</b> | <b>95,854</b> |

| 2019 Demand Share                           |               |
|---|---------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |               |
| Annual                                      | 0.3414        |
| Summer                                      | 0.4037        |
| Maximum Wholesale Capacity Required         | 0.4037        |
| <b>Demand Share</b>                         | <b>0.4037</b> |



# Details of Tukwila Demand Share Calculations

## Tukwila Consumption Records:

| 2015         | Jan           | Feb           | Mar           | Apr           | May           | Jun            | Jul            | Aug            | Sep           | Oct           | Nov           | Dec           | Total            |
|--------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|------------------|
| From Cascade | 63,671        | 59,424        | 68,066        | 70,302        | 89,231        | 108,875        | 130,108        | 117,724        | 89,645        | 75,954        | 64,412        | 64,127        | 1,001,539        |
| <b>Total</b> | <b>63,671</b> | <b>59,424</b> | <b>68,066</b> | <b>70,302</b> | <b>89,231</b> | <b>108,875</b> | <b>130,108</b> | <b>117,724</b> | <b>89,645</b> | <b>75,954</b> | <b>64,412</b> | <b>64,127</b> | <b>1,001,539</b> |

| Summer         | Winter         |
|----------------|----------------|
| 446,352        | 555,187        |
| <b>446,352</b> | <b>555,187</b> |

| 2016         | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul            | Aug            | Sep           | Oct           | Nov           | Dec           | Total          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade | 61,651        | 57,972        | 67,317        | 71,474        | 88,369        | 97,099        | 108,357        | 111,515        | 96,960        | 76,532        | 62,472        | 63,533        | 963,250        |
| <b>Total</b> | <b>61,651</b> | <b>57,972</b> | <b>67,317</b> | <b>71,474</b> | <b>88,369</b> | <b>97,099</b> | <b>108,357</b> | <b>111,515</b> | <b>96,960</b> | <b>76,532</b> | <b>62,472</b> | <b>63,533</b> | <b>963,250</b> |

| Summer         | Winter         |
|----------------|----------------|
| 413,931        | 549,319        |
| <b>413,931</b> | <b>549,319</b> |

| 2017         | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul            | Aug            | Sep           | Oct           | Nov           | Dec           | Total          |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|
| From Cascade | 66,288        | 59,401        | 64,677        | 63,978        | 77,138        | 93,997        | 111,832        | 114,898        | 92,728        | 64,124        | 55,505        | 63,762        | 928,329        |
| <b>Total</b> | <b>66,288</b> | <b>59,401</b> | <b>64,677</b> | <b>63,978</b> | <b>77,138</b> | <b>93,997</b> | <b>111,832</b> | <b>114,898</b> | <b>92,728</b> | <b>64,124</b> | <b>55,505</b> | <b>63,762</b> | <b>928,329</b> |

| Summer         | Winter         |
|----------------|----------------|
| 413,456        | 514,874        |
| <b>413,456</b> | <b>514,874</b> |

| 2019 Demand Share                           |               |
|---|---------------|
| 2015 - 2017 Average Wholesale Demand (mgd): |               |
| Annual                                      | 1.9763        |
| Summer                                      | 2.6032        |
| Maximum Wholesale Capacity Required         | 2.6032        |
| <b>Demand Share</b>                         | <b>2.6032</b> |