

Appendix T

Existing Supplies by Region, County and Utility

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T.1 Introduction

Appendix T is comprised of two parts. Part one presents tabulation (Table T-1) of average and peak day supplies reported by utilities with 500 or more connections in the central Puget Sound Region. Utilities without active water supply sources are identified in the table under the column Other Supply as "Purchased Water." Table T-1 also summarizes the primary constraint(s) to each utility's existing annual and instantaneous capacities, which was determined from the utility's submitted survey, water system plan, or direct communication with a representative of that utility.

Part two of Appendix T presents existing safe groundwater and surface water yields for the counties and select subregions (Table T-2) and compares the total of these existing safe yield water supplies to forecasted water demands under various climate and demographic growth scenarios (Tables T-3 through T-5).

Table T-1 Existing Supplies by Utility

Utility Name	Average Day Supply (mgd)			Peak Day Supply (mgd)			Other Supply
	Water Rights (annual - Qa)	Available Supply	Constrained by	Water Rights (instantaneous - Qi)	Available Supply	Constrained by	
<i>Snohomish County</i>							
Alderwood Water District							Purchased Water
Arlington, City	1.5	1.5	Water Rights	3.3	3.3	Water Rights	
Cross Valley Water District	4.1	4.1	Water Rights	6.9	5.6	Well Capacity	
Darrington Water System	0.3	0.3	Water Rights	1.2	1.2	Water Rights	
Edmonds, City of							Purchased Water
(1) Everett, City of	150.1	137.5	Water Rights	275.4	256	Infrastructure	
Gold Bar Nature Trails				----- No Data -----			
Highland Water District							Purchased Water
Lynnwood, City of							Purchased Water
Marysville, City of	6.0	6.0	Water Rights	6.0	5.8	Well Capacity	
Mountlake Terrace, City of							Purchased Water
Monroe Water System							Purchased Water
Mukilteo Water District							Purchased Water
Olympic View Water and Sewer District	1.2	1.2	Water Rights	1.4	1.4	Water Rights	
Roosevelt Water Association							Purchased Water
Seven Lakes Water Association	1.3	1.3	Water Rights	1.8	1.8	Water Rights	
Silver Lake Water District							Purchased Water
Snohomish, City of	2.7	2.7	Water Rights	3.2	3.2	Water Rights	
Snohomish County PUD -- Integrated System	1.7	1.7	Water Rights	4.4	4.4	Water Rights	
Stanwood, City of	3.8	3.8		9.9	9.9		
Sultan Water Department	0.5	0.5	Water Rights	2.2	2.2	Water Rights	

Table T-1 Existing Supplies by Utility (cont.)

Utility Name	Average Day Supply (mgd)			Peak Day Supply (mgd)			Other Supply
	Water Rights (annual - Qa)	Available Supply	Constrained by	Water Rights (instantaneous - Qi)	Available Supply	Constrained by	
<i>King County</i>							
Three Lakes Water Association							Purchased Water
Town of Gold Bar	0.3	0.3	Water Rights	1.1	1.1	Water Rights	
Warm Beach Conference Grounds			----- No Data -----				
<i>King County</i>							
Algona Water Department							Purchased Water
Ames Lake Water Association	0.3	0.3	Water Rights	0.5	0.5	Water Rights	
Auburn, City of	20.8	18.3	Tribal Agreement	27.0	24.5	Tribal Agreement	
Bellevue, City of							Purchased Water
Black Diamond Water Department	0.5	0.5	Water Rights	5.2	5.2	Water Rights	
Bothell Water, City of							Purchased Water
Carnation Water System	0.9	0.9	Water Rights	2.1	1.6	Well Capacity	
Cedar River Water & Sewer District	0.1	0.1	Water Rights	0.5	0.5	Water Rights	
Cherokee Bay Community Club			----- No Data -----				
Coal Creek Utility District							Purchased Water
(2) Covington Water District	13.1	13.1	Infrastructure (storage)	25.6	25.6	Water Rights	Purchased Water ⁵
Duvall, City of							Purchased Water
Enumclaw, City of	4.6	4.6	Water Rights	8.8	8.8	Water Rights	
Fall City Water District	0.5	0.5	Water Rights	1.0	1.0	Water Rights	
Heights Water Association	0.2	0.2	Water Rights	0.3	0.3	Water Rights	
Highline Water District	17.4	3.5	Infrastructure	24.0	24.0	Water Rights	

Table T-1 Existing Supplies by Utility (cont.)

Utility Name	Average Day Supply (mgd)			Peak Day Supply (mgd)			Other Supply
	Water Rights (annual - Qa)	Available Supply	Constrained by	Water Rights (instantaneous - Qi)	Available Supply	Constrained by	
Issaquah, City of	2.5	2.5	Water Rights	5.6	5.6	Water Rights	
(2) Kent, City of	25.3	25.3	Water Rights	33.8	33.8	Water Rights	
King County Water District #19	1.2	1.2	Water Rights	1.3	1.3	Water Rights	
King County Water District #20							Purchased Water
King County Water District #45							Purchased Water
King County Water District #49							Purchased Water
King County Water District #54	1.2	1.2	Water Rights	3.8	3.8	Water Rights	
King County Water District #90	0.6	0.6	Water Rights	0.7	0.7	Water Rights	
King County Water District #111	2.0	2.0	Water Rights	2.8	2.8	Water Rights	
King County Water District #119							Purchased Water
King County Water District #125							Purchased Water
Kirkland, City of							Purchased Water
Lake Forest Park Water District	1.7	1.7	Water Rights	1.7	1.7	Water Rights	
(2) Lakehaven Utility District	31.8	19.8	Well Capacity	59.2	48.5	Well Capacity	
Mercer Island, City of							Purchased Water
Mirrormont Services	0.5	0.5	Water Rights	0.9	0.9	Water Rights	
NE Sammamish Sewer and Water District	1.6	1.6	Water Rights	3.3	3.3	Water Rights	
North Bend, City of	0.3	0.3	Water Rights	3.2	3.2	Water Rights	
(3) Northshore Utility District	6.6			10			Purchased Water
Pacific, City of	1.9	1.9	Water Rights	2.4	2.4	Water Rights	
Redmond, City of	4.7	4.7	Water Rights	5.3	5.3	Water Rights	
Renton, City of	13.2	13.2	Water Rights	20.3	20.1	Well Not In Use	

Table T-1 Existing Supplies by Utility (cont.)

Utility Name	Average Day Supply (mgd)			Peak Day Supply (mgd)			Other Supply
	Water Rights (annual – Qa)	Available Supply	Constrained by	Water Rights (instantaneous - Qi)	Available Supply	Constrained by	
River Bend Homeowners Association				----- <i>No Data</i> -----			
Sallal Water Association	0.6	0.6	Water Rights	2.3	2.3	Water Rights	
Sammamish Plateau Water and Sewer Dist.	6.7	6.7	Water Rights	15.2	15.2	Water Rights	
Seattle Public Utilities	171	(4)	Hydrology, Instream Flow Agreements and Water Rights	N/A	325.0	Transmission & Treatment Capacity	
Shoreline Water District							Purchased Water
Skyway Water and Sewer District	0.9	0.9	Water Rights	0.9	0.9	Water Rights	
Snoqualmie, City of	2.6	2.6	Water Rights	4.8	4.8	Water Rights	
Soos Creek Water and Sewer District							Purchased Water
Tukwila Water Department							Purchased Water
Union Hill Water Association	1.9	1.9	Water Rights	1.9	1.9	Water Rights	
Wilderness Rim Association							Purchased Water
(3) Woodinville Water District	7.2			11			Purchased Water
<i>Pierce County</i>							
Artondale Water System	1.1	1.1	Water Rights	3.2	3.2	Water Rights	
Bonney Lake, City of	4.8	4.8	Water Rights	9.1	7.4	Well Capacity	
Buckley, City of	1.9	1.9	Water Rights	4.8	4.8	Water Rights	
Canterwood Water System	0.5	0.5	Water Rights	1.4	1.4	Water Rights	
Cedar Crest				----- <i>No Data</i> -----			

Table T-1 Existing Supplies by Utility (cont.)

Utility Name	Average Day Supply (mgd)			Peak Day Supply (mgd)			Other Supply
	Water Rights (annual - Qa)	Available Supply	Constrained by	Water Rights (instantaneous - Qa)	Available Supply	Constrained by	
Curran Road Mutual Water Association							Purchased Water
Dupont, City of	3.0	3.0	Water Rights	7.8	7.8	Water Rights	
Eatonville, Town of	1.2	1.2	Water Rights	2.4	2.4	Water Rights	
Fife, City of	0.6	0.6	Water Rights	1.5	1.5	Water Rights	
Fircrest, City of	1.7	1.7	Water Rights	6.8	6.8	Water Rights	
Firgrove Mutual, Inc.	2.0	2.0	Water Rights	9.0	9.0	Water Rights	
Fort Lewis Public Works	N/A	N/A	Water Rights	N/A	N/A	Water Rights	
Fox Island Mutual Water Association	0.5	0.5	Water Rights	2.5	2.5	Water Rights	
Fruitland Mutual Water Co.	2.1	2.1	Water Rights	5.6	5.6	Water Rights	
Gig Harbor, City of	1.0	1.0	Water Rights	3.9	3.9	Water Rights	
Lakewood Water District	18.7	18.7	Water Rights	66.1	46.0	Infrastructure	
McChord Air Force Base	N/A	N/A	Water Rights	8.7	N/A	Water Rights	
McNeil Island Corrections	1.2	1.2	Water Rights	1.0	1.0	Water Rights	
Milton, City of	2.1	2.1	Water Rights	5.9	5.9	Water Rights	
Minterbrook	0.7	0.7	Water Rights	3.2	1.4	Well Capacity	
Mt. View - Edgewood Water Company	1.6	1.6	Water Rights	6.6	6.6	Water Rights	
Orting, City of	1.2	1.2	Water Rights	3.0	2.7	Well Capacity	
Palmer Lake	0.3	0.3	Water Rights	1.0	1.0	Water Rights	
Parkland Light & Water Company	5.2	5.2	Water Rights	25.4	25.4	Water Rights	
Peacock Hill	0.4	0.4	Water Rights	2.0	2.0	Water Rights	
Point Evans	0.7	0.7	Water Rights	2.2	2.2	Water Rights	
Puyallup, City of	10.2	10.2	Water Rights	14.4	14.4	Water Rights	
Seacliff Water System	0.3	0.3	Water Rights	1.2	1.2	Water Rights	

Table T-1 Existing Supplies by Utility (cont.)

Utility Name	Average Day Supply (mgd)			Peak Day Supply (mgd)			Other Supply
	Water Rights (annual - Qa)	Available Supply	Constrained by	Water Rights (instantaneous - Qa)	Available Supply	Constrained by	
Southwood Water System	4.1	4.1	Water Rights	14.2	14.2	Water Rights	
Spanaway Water Company	3.6	3.6	Water Rights	14.4	8.4	Well Capacity	
Steilacoom Water Department	0.6	0.6	Water Rights	2.9	2.9	Water Rights	
Stroh's Water Co., Inc.	0.5	0.5	Water Rights	2.5	2.5	Water Rights	
Summit Water & Supply Co	1.9	1.9	Water Rights	5.5	5.5	Water Rights	
Sumner, City of	3.3	3.3	Water Rights	8.2	8.2	Water Rights	
Riviera Community Club	0.3	0.3	Water Rights	1.8	1.8	Water Rights	
Tacoma Water	123.9	105.6	Water Rights & Interagency Agreements	188.0	188.0	Water Rights, Interagency Agreements, and Infrastructure	
Tapps Island Water System	----- <i>No Data</i> -----						
Valley Water System	0.6	0.6	Water Rights	1.4	1.4	Water Rights	
View Royal Water System	0.2	0.2	Water Rights	0.7	0.7	Water Rights	
Washington State Corrections - Women's	0.1	0.1	Water Rights	0.1	0.1	Water Rights	
Western State Hospital	1.0	1.0	Water Rights	2.0	2.0	Water Rights	

Table T-1 Notes:

Average Day Supply (mgd)

This is the utility's reported existing average day supply in million gallons per day (mgd) converted from the annual water rights of its own sources in acre-feet per year. The available supply under this "average day" supply category is based on the utility's reported constraints to using its full annual water rights (including inchoate water rights) on an average day basis. The constraint, summarized in the "Constrained by" column is based on the most limiting factor constraining the utility's average day supply, which can be water rights, a resource constraint, or infrastructure capacity. Details of the constraint can be found in each utility's Washington State Department of Health (DOH) approved water system plan.

Peak Day Supply (mgd)

This is the utility's reported existing peak supply in mgd as calculated from the reported instantaneous water rights (in gallons per minute, cubic feet per second, or a combination of both). The available peak day supply is based on the utility's reported constraints under this supply category and is based on the most limiting factor constraining the utility's peak day supply, which can be water rights, a resource constraint, or infrastructure capacity. The most constraining factor for peak day supply is summarized in the "Constrained by" column. However, details of the constraint are found in each utility's DOH approved water system plan. Peak available supply also does not include purveyor specific distribution storage, which can greatly increase peak supply capabilities.

All units rounded to the nearest 0.1 mgd

- (1) Everett's available supply incorporates its proposed incremental improvement in treatment capacity.
- (2) Surface water source is reported by purveyor as the Second Supply Project (Green River); annual water right includes 7/36 of Tacoma's Second Diversion Water Right.
- (3) Snohomish River Regional Water Authority has water rights to the lower Snohomish River that are shared by Everett, Woodinville, and Northshore Utility District. However, only Everett is currently utilizing its portion of this water right.
- (4) Maximum Annual Average Yield combining SPU's groundwater and surface water sources is 171 mgd, which is based on 98 percent. reliability (Firm Yield).
- (5) Covington has a contract to purchase water from the City of Auburn.

N/A - Not Available

Table T-2 Existing Safe Yield Water Supplies

Sub-Region and Counties	2010			2020			2030			2040			2050			2060		
	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total	Surface	Ground	Total
SPU Retail & Wholesale	171.0	25.9	196.9	171.0	25.9	196.9	171.0	25.9	196.9	171.0	25.9	196.9	171.0	25.9	196.9	171.0	25.9	196.9
Cascade Water Alliance	47.8	20.3	68.1	47.8	20.3	68.1	32.8	20.3	53.1	21.8	20.3	42.1	16.8	20.3	37.1	16.8	20.3	37.1
TPU Retail & Wholesale	83.3	53.8	137.1	83.3	53.8	137.1	83.3	53.8	137.1	83.3	53.8	137.1	83.3	53.8	137.1	83.3	53.8	137.1
Pierce COOP	6.7	59.5	66.1	6.7	59.5	66.1	6.7	59.5	66.1	6.7	59.5	66.1	6.7	59.5	66.1	6.7	59.5	66.1
Everett Wholesale	143.9	10.1	154.0	143.9	10.1	154.0	143.9	10.1	154.0	143.9	10.1	154.0	143.9	10.1	154.0	143.9	10.1	154.0
King County Total	204.4	111.2	315.6	204.4	111.2	315.6	199.3	111.2	310.5	198.2	111.2	309.4	198.1	111.2	309.3	197.9	111.2	309.1
Pierce County Total	75.2	96.3	171.5	75.2	96.3	171.5	80.2	96.3	176.5	81.2	96.3	177.5	81.2	96.3	177.5	81.2	96.3	177.5
Snohomish County Total	144.0	16.9	160.9	144.0	16.9	160.9	144.1	16.9	161.0	144.2	16.9	161.1	144.3	16.9	161.2	144.4	16.9	161.4
Regional Total	423.6	224.4	648.0	423.6	224.4	648.0	423.6	224.4	648.0	423.6	224.4	648.0	423.6	224.4	648.0	423.6	224.4	648.0

Notes:

1. Cascade Water Alliance includes ramped down contract purchases from Seattle Public Utilities and Tacoma Public Utilities.

Table T-3 Comparison of Existing Supplies to Forecasted Water Demands (Under normal weather and expected demographic growth)

Sub-Region and Counties	2010			2020			2030			2040			2050			2060		
	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.
SPU Retail & Wholesale	196.9	137.9	59.0	196.9	142.4	54.5	196.9	149.9	47.0	196.9	160.7	36.2	196.9	175.3	21.6	196.9	192.3	4.6
Cascade Water Alliance	68.1	40.5	27.6	68.1	43.8	24.3	53.1	47.2	5.9	42.1	51.4	-9.3	37.1	57.0	-19.9	37.1	63.6	-26.5
TPU Retail & Wholesale	137.1	73.7	63.4	137.1	77.7	59.4	137.1	82.9	54.2	137.1	91.8	45.3	137.1	102.8	34.3	137.1	115.7	21.4
Pierce COOP	66.1	35.7	30.5	66.1	38.9	27.2	66.1	42.6	23.5	66.1	48.5	17.7	66.1	55.9	10.2	66.1	64.8	1.3
Everett Wholesale	154.0	82.3	71.7	154.0	88.3	65.7	154.0	94.4	59.6	154.0	103.9	50.1	154.0	115.9	38.0	154.0	130.2	23.8
King County Total	315.6	186.0	129.6	315.6	194.5	121.1	310.5	206.4	104.2	309.4	223.5	86.0	309.3	246.3	63.0	309.1	273.5	35.7
Pierce County Total	171.5	113.8	57.6	171.5	120.6	50.9	176.5	129.3	47.1	177.5	144.0	33.5	177.5	162.7	14.8	177.5	185.3	-7.8
Snohomish County Total	160.9	92.0	68.9	160.9	99.5	61.4	161.0	107.0	54.0	161.1	118.4	42.7	161.2	132.8	28.4	161.4	150.1	11.3
Regional Total	648.0	391.8	256.1	648.0	414.6	233.4	648.0	442.7	205.2	648.0	485.8	162.2	648.0	541.8	106.2	648.0	608.8	39.1

Notes:

1. Cascade Water Alliance includes ramped down contract purchases from Seattle Public Utilities and Tacoma Public Utilities.

2. It should be noted that any reported supply shortage for county or regional totals may be greater due to the fact that excess water supply in one region may not be able to be delivered to another region experiencing a shortfall.

Table T-4 Comparison of Existing Supplies to Forecasted Water Demands (Under hot/dry weather and expected demographic growth)

Sub-Region and Counties	2010			2020			2030			2040			2050			2060		
	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.
SPU Retail & Wholesale	196.9	145.6	51.3	196.9	150.6	46.3	196.9	158.6	38.3	196.9	170.2	26.7	196.9	185.7	11.2	196.9	203.6	-6.7
Cascade Water Alliance	68.1	42.8	25.3	68.1	46.3	21.8	53.1	50.0	3.1	42.1	54.4	-12.3	37.1	60.4	-23.3	37.1	67.3	-30.3
TPU Retail & Wholesale	137.1	77.8	59.3	137.1	82.1	55.0	137.1	87.7	49.4	137.1	97.0	40.1	137.1	108.7	28.4	137.1	122.3	14.8
Pierce COOP	66.1	37.7	28.5	66.1	41.1	25.0	66.1	45.1	21.1	66.1	51.3	14.8	66.1	59.2	7.0	66.1	68.6	-2.4
Everett Wholesale	154.0	86.4	67.6	154.0	92.8	61.2	154.0	99.2	54.8	154.0	109.3	44.7	154.0	121.9	32.1	154.0	136.9	17.1
King County Total	315.5	196.4	119.1	315.5	205.6	109.9	310.5	218.4	92.1	309.3	236.7	72.7	309.2	260.9	48.3	309.1	289.5	19.6
Pierce County Total	171.5	120.2	51.3	171.5	127.4	44.0	176.5	136.7	39.7	177.5	152.3	25.2	177.5	172.1	5.4	177.5	196.0	-18.6
Snohomish County Total	161.0	96.6	64.3	161.0	104.5	56.5	161.1	112.5	48.6	161.2	124.4	36.7	161.3	139.6	21.7	161.5	157.8	3.6
Regional Total	648.0	413.2	234.7	648.0	437.6	210.4	648.0	467.6	180.3	648.0	513.4	134.6	648.0	572.6	75.4	648.0	643.3	4.7

Notes:

1. Cascade Water Alliance includes ramped down contract purchases from Seattle Public Utilities and Tacoma Public Utilities.
2. It should be noted that any reported supply shortage for county or regional totals may be greater due to the fact that excess water supply in one region may not be able to be delivered to another region experiencing a shortfall.

Table T-5 Comparison of Existing Supplies to Forecasted Water Demands (Under average weather and higher-than-expected demographic growth)

Sub-Region and Counties	2010			2020			2030			2040			2050			2060		
	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.	Supply	Demand	Diff.
SPU Retail & Wholesale	196.9	142.2	54.7	196.9	153.1	43.8	196.9	167.6	29.3	196.9	185.6	11.3	196.9	209.3	-12.4	196.9	236.7	-39.8
Cascade Water Alliance	68.1	40.4	27.7	68.1	47.2	20.9	53.1	52.9	0.2	42.1	59.5	-17.4	37.1	68.3	-31.2	37.1	78.6	-41.5
TPU Retail & Wholesale	137.1	74.8	62.3	137.1	82.5	54.6	137.1	91.2	45.9	137.1	104.0	33.1	137.1	120.3	16.8	137.1	139.6	-2.5
Pierce COOP	66.1	35.2	30.9	66.1	42.0	24.2	66.1	47.9	18.2	66.1	56.4	9.8	66.1	67.2	-1.1	66.1	80.4	-14.2
Everett Wholesale	154.0	82.3	71.7	154.0	93.0	61.0	154.0	102.7	51.3	154.0	116.3	37.7	154.0	133.8	20.2	154.0	154.9	-0.9
King County Total	315.5	190.0	125.6	315.5	209.2	106.3	310.4	231.0	79.4	309.2	258.4	50.8	309.0	294.6	14.4	308.7	337.1	-28.4
Pierce County Total	171.5	114.9	56.5	171.5	128.7	42.7	176.5	143.3	33.1	177.5	164.7	12.8	177.5	192.3	-14.8	177.5	225.8	-48.3
Snohomish County Total	161.0	91.9	69.1	161.0	105.1	56.0	161.2	116.9	44.2	161.3	133.1	28.2	161.5	154.1	7.4	161.8	179.5	-17.8
Regional Total	648.0	396.8	251.1	648.0	443.0	205.0	648.0	491.2	156.7	648.0	556.2	91.8	648.0	640.9	7.0	648.0	742.4	-94.4

Notes:

1. Cascade Water Alliance includes ramped down contract purchases from Seattle Public Utilities and Tacoma Public Utilities.
2. It should be noted that any reported supply shortage for county or regional totals may be greater due to the fact that excess water supply in one region may not be able to be delivered to another region experiencing a shortfall.