

Single Domestic, Group Domestic and Municipal Use -- Projections for a WRIA 45 Water Reservation

Notes	Sub-Watershed	Type of User	No. New Connections or ERUs (2002 - 2025)	New ADD (cfs) (2002-2025)
3	Chiwaukum	Connections with Exempt Wells	2	0.001
2	Chiwaukum	Full-Time	2	0.001
1	Chiwaukum	Part-Time	8	0.001
		Sub-Watershed Sub-Total (cfs)		0.003
10	Chiwawa	<i>Chiwawa Communities Association</i>	84	0.023
3	Chiwawa	Connections with Exempt Wells	23	0.014
2	Chiwawa	Full-Time	81	0.047
1	Chiwawa	Part-Time	1	0.000
		Sub-Watershed Sub-Total (cfs)		0.084
3	Chumstick	Connections with Exempt Wells	184	0.108
2	Chumstick	Full-Time	38	0.022
1	Chumstick	Part-Time	0	0.000
		Sub-Watershed Sub-Total (cfs)		0.131
9	Icicle	<i>City of Leavenworth (Leavenworth Water System Plan, Varela, assumes 2.5 people per residence)</i>	2,686	1.832
3	Icicle	Connections with Exempt Wells	109	0.064
2	Icicle	Full-Time	13	0.007
1	Icicle	Part-Time	1	0.000
		Sub-Watershed Sub-Total (cfs)		1.903
3	Lake Wenatchee	Withdrawals	91	0.053
2	Lake Wenatchee	Full-Time	35	0.021
1	Lake Wenatchee	Part-Time	70	0.010
		Sub-Watershed Sub-Total (cfs)		0.084
3	Little Wenatchee	Connections with Exempt Wells	0	0.000
		Sub-Watershed Sub-Total (cfs)		0.000
	Lower Wenatchee	<i>Chelan County PUD NO. 1 - Dryden</i>	17	0.007
4	Lower Wenatchee	<i>City of Cashmere (36%)</i>	181	0.128
3	Lower Wenatchee	Connections with Exempt Wells	499	0.293
2	Lower Wenatchee	Full-Time	130	0.076
1	Lower Wenatchee	Part-Time	46	0.007
6	Lower Wenatchee	<i>Peshastin Domestic Water Association/Full-Time</i>	15	0.009
6	Lower Wenatchee	<i>Peshastin Domestic Water Association/Part-Time</i>	5	0.001
6	Lower Wenatchee	<i>Peshastin Water District/Full-Time</i>	340	0.200
		Sub-Watershed Sub-Total (cfs)		0.721
4	Mission	<i>City of Cashmere (64%)</i>	322	0.228
3	Mission	Connections with Exempt Wells	159	0.093
2	Mission	Full-Time	38	0.023
1	Mission	Part-Time	1	0.000
		Sub-Watershed Sub-Total (cfs)		0.344
3	Nason	Connections with Exempt Wells	40	0.024
2	Nason	Full-Time	44	0.026
1	Nason	Part-Time	52	0.008
		Sub-Watershed Sub-Total (cfs)		0.057
3	Peshastin	Connections with Exempt Wells	70	0.041
2	Peshastin	Full-Time	13	0.008
1	Peshastin	Part-Time	23	0.003
6	Peshastin	<i>Valley Hi Community Club, Inc./Full-Time</i>	28	0.016
6	Peshastin	<i>Valley Hi Community Club, Inc./Part-Time</i>	6	0.001
		Sub-Watershed Sub-Total (cfs)		0.070
	Upper Wenatchee	Connections with Exempt Wells	89	0.052
2	Upper Wenatchee	Full-Time	11	0.007
1	Upper Wenatchee	Part-Time	17	0.002
6	Upper Wenatchee	<i>Ponderosa Community Club, Inc./Full-Time</i>	34	0.020
6	Upper Wenatchee	<i>Ponderosa Community Club, Inc./Part-Time</i>	124	0.018
		Sub-Watershed Sub-Total (cfs)		0.099
3	White	Connections with Exempt Wells	17	0.010
2	White	Full-Time	7	0.004
1	White	Part-Time	3	0.000
		Sub-Watershed Sub-Total (cfs)		0.015
	Total		5758	3.51

Total exempt well ADD = 0.755

WATER USE ASSUMPTIONS:

This table builds on data presented in the Phase 2 - Level 1 Technical Assessment (MWG, 2003)
 ADD = Average Day Demand; MDD = Maximum Day Demand; mgd = million gallons per day; AF/yr = acre-feet per year; DOH - Department of Health; ERU = Equivalent Residential Unit or User

(assumptions continued on next page)

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(1) Part Time Connections obtained from DOH Database request (Nicodemus, personal communication, 2005). Includes Group A and B purveyors and water use classifications of single family part-time, part-time residential units, and recreational services (e.g. camp sites, RV parks). ADD calculated as the number of connections times 95 gpd/connections (i.e. 380/4, assuming use occurs only half of the year and at half the rate of average residential water production). MDD calculated as ADD times 2.5 (average peaking factor for WRIA 45).

(2) Full-Time connections obtained from DOH Database request (Nicodemus, personal communication, 2005) includes Group A and B purveyor and water use classifications of single family full-time, full-time residential units, multi-family residential buildings, and other non-residential services (institutional, industrial, commercial, or agricultural). ADD calculated as number of connections times 380 gpd/connection (average water production factor for WRIA 45 as presented in the Technical Assessment). MDD calculated as ADD times 2.5 (average peaking factor for WRIA 45 as presented in the Technical Assessment).

(3) Exempt Well Connections are calculated as the Total Number of Residential Parcels minus the total group A and group B residential connections (full and part-time) from the DOH database (Nicodemus, personal communication, 2005). Parcel data obtained from Chelan County Assessors database (June 6, 2005). Assume that one residential parcel is equivalent to one household unless otherwise noted. Parcel types included: All other residential, Household 2-4 units (assume 3 units), Mobile home parks/courts, Multi-units 5 or more (assume 5 units), Single family units, Vacation and cabin, and Residential Hotels - Condominiums. Only parcels with an improvement value of \$5,000 or greater are considered. Primary and Secondary land use types are identified in the Assessor's database. Errors in the assessor's database are possible (Chelan County Planning, personal communication, 2005). The following assumptions are implicit in this calculation: data obtained from the Department of Health classifying Group A and Group B water systems do not include any systems served by exempt wells;

Assumes all exempt well connections are full time (conservative). ADD calculated as number of connections times 380 gpd/connection (average water production factor for WRIA 45 as presented in the Technical Assessment). MDD calculated as ADD times 2.5 (average peaking factor for WRIA 45 as presented in the Technical Assessment).

(4) Data obtained from Cashmere Comprehensive Water System Plan (3/2004), 2025 data is based on 2021 projections in WSP and an applied linear growth rate in water use between 2021 and 2025. Future use projections assume the "no conservation" scenario. The City of Cashmere is divided over two sub-watersheds, the Lower Wenatchee and the Mission, therefore the water use is divided across these two sub-watersheds with approximately 36% of the use in the Lower Wenatchee and 64% of the use in the Mission.

(5) ASSUMED WATER USE OF 380 GPD PER HOUSEHOLD (OR ERU) FOR FULL TIME USE IS NOT A REQUIREMENT BUT AN ASSUMPTION FOR USE TO ENABLE CALCULATION OF RESIDENTIAL WATER USE FOR THE WATERSHED PLAN. 380 GPD IS TOTAL USE (CONSUMPTIVE AND NONCONSUMPTIVE) AND IS THE AVERAGE WATER PRODUCTION FACTOR REPORTED FOR WRIA 45 (MWG, 2003).

(6) Connections (part-time and full time) data obtained from DOH (Nicodemus, personal communication, 2005) from an in-house database. ADD calculated as number of connections times 380/gpd/connection, MDD calculated as ADD times 2.5.

(7) Average day demand converted to AF/yr by multiplying by 1,121.

(8) Assumes that the growth rate for all water use types are the same.

(9) Data obtained from City of Leavenworth Water System Plan Final Draft, November, 2002 (Varela and Associates, 2002). Plan reported a 3.4% population growth rate. This rate was used to project 2020 population estimates in the WSP from 2020 to 2025. Current "Total Number of Connections" represents estimate from the year 2000 (not 2002). City of Leavenworth water source obtained from Icicle Sub-watershed however the majority of the population resides in the Chumstick Sub-watershed.

(10) Connections data obtained from DOH (Nicodemus, personal communication, 2005) from an in-house database. ADD obtained from Technical Assessment. MDD calculated as ADD times 2.5.