

Table 2-1 Annotated

Groundwater Resources/Water Rights

MAJOR BASINS	Estimated Perennial Yield (AF/yr)	Permits/Certificates (AF/yr)	Estimated 2001 Pumpage (AF/yr)	Notes References
Truckee Meadows	27,000	41,500	26,735	1
Spanish Springs	800	6,404	2,222	2
Pleasant Valley	4,700	6,602	1,249	3
North Valleys				
Golden Valley	[*] 175	0	590	4
East Lemmon Valley	[*] 490	1,569	2,250	5
West Lemmon Valley	1,100	1,986	1,478	6
Cold Springs	500	1,130	650	7
Long Valley	no data	2,336	257	7
Warm Springs	3,000	6,785	4,900	8
Washoe Valley	9,300	10,474	4,900	9
Truckee Canyon				
Verdi/Mogul	2,000	3,137	850	10
Tracy Segment (Wadsworth)	5,000	5,000	Unknown	11
Sun Valley	25	14	Minor	12
Antelope Valley	150	15	Unknown	13
Bedell Flat	300	105	Unknown	14

- Notes:
- [*] Includes an estimated septic tank effluent component.
 - [1] This estimate was taken from the RWSQS as reported in Report 27 (RWSQS) and the RWRP. Water rights listed reflect the State Engineer's pumping cap on SPPCo's permits and does not include geothermal permits and certificates. The estimate for current pumping is derived from State Engineer records, TMWA records, and Washoe County records for 2001.
 - [2] The 800 AF/yr is natural recharge from precipitation. An additional 1,400 AF was identified as secondary recharge from Orr Ditch and irrigation practices as reported in *Hydrogeology and Simulated Effects of Urban Development on Water Resources of Spanish Springs Valley, Washoe County, West-Central Nevada* by Wyn Ross, 1997, USGS Water Resources Investigations Report 96-4297. Please note that as Orr Ditch water is converted to municipal supply, secondary recharge will diminish. The estimate for current pumping is derived from State Engineer records, TMWA records, and Washoe County records for 2001.
 - [3] This estimate is taken from *Water-Resources Appraisal of the Galena Creek Basin, Washoe County, Nevada*, Terry Katzer et al., 1984, USGS Open File Report 84-433. This report was prepared in cooperation with the Nevada Division of Water Resources. The estimate was made from a water balance and from computer modeling. The appropriations do not include the geothermal rights. The estimated pumpage for Pleasant Valley is based on domestic well counts, Washoe County pumpage (2002), and irrigation pumpage.
 - [4] Lemmon Valley has been subdivided into two hydrogeologic sub-basins: Silver Lake and East Lemmon Valley. Golden Valley is also a sub-basin of East Lemmon Valley. Several computer modeling studies have been conducted for these areas. Although Report 42 (RWSQS) is commonly used for water resource appraisals, the computer modeling efforts render a more definitive estimate and, therefore, are being used at this time. The Washoe County Department of Water Resources will be conducting more detailed modeling investigations of this valley with a report due in 2003. Estimates for the groundwater resources for Golden Valley were taken from *Water Harvest from Peavine Mountain with Artificial Recharge in Golden Valley, Nevada: Hydrologic Feasibility and Effects* by G.F. Cochran et al., October 1986, Desert Research Institute, Water Resources Center Publication #41103. The resources were estimated from computer modeling. Current usage is based upon domestic well counts from Washoe County Assessor Records.
 - [5] Estimates of groundwater resources for East Lemmon Valley were taken from *Simulating the Effects of Artificial Recharge in Lemmon Valley, Washoe County, Nevada* by Randall Van Hoozer, May 1994, a published master's thesis at the University of Nevada, Reno; supported and funded by Washoe County Department of Public Works, Utility Division. The estimates were obtained from computer modeling. Current usage is based upon domestic well counts from Washoe County Assessor Records and Washoe County pumpage records for 2002.

- [6] Estimates of groundwater resources for the Silver Lake portion of Lemmon Valley were taken from *Recharge Estimate and Model of the Lemmon Valley Hydrographic Basin, North of Reno, Nevada* by Donald Mahin, July 1988, an unpublished report by the Washoe County Department of Comprehensive Planning. The resources were estimated from computer modeling. Estimated current pumpage is taken from the State Engineer records and estimated domestic well counts.
- [7] This estimate is derived from the Division of Water Resources and Water Planning *Hydrographic Basin Summaries, 1992*. The Washoe County Department of Comprehensive Planning is undertaking a water resource investigation of Cold Springs and Long Valley that will include computer modeling. A report of this investigation should be complete in 2004. The estimated pumpage for Cold Springs is based on the State Engineer records (1994) and an estimated domestic well count.
- [8] Estimates of groundwater resources for Warm Springs Valley were taken from *Hydrogeology and Simulated Effects of Development in Warm Springs Valley, Washoe County, Nevada* by Wyn Ross, November 1997, Washoe County Department of Water Resources. The estimated pumpage is based on domestic well counts and irrigation pumpage.
- [9] The estimate for groundwater resources for Washoe Valley was taken from *Steady-State and Transient Ground-Water Modeling of Washoe Valley, Washoe County, Nevada*, M. C. Widmer, December 1996, Washoe County Department of Water Resources. Current pumpage estimates for East Washoe Valley are based on present and available lots served by domestic wells and irrigation pumpage.
- [10] The groundwater resources of the Truckee Canyon, that area directly west of Reno to the state line (Verdi/Mogul), have never been accurately estimated. Report 57 (RWSQS) and the RWRP state a potential resource of 20,000 to 24,000 af. However, this is a combination of ground and surface water that is predominately surface water runoff that makes its way to the Truckee River. The Division of Water Resources and Water Planning has estimated 2,000 AF of groundwater resource as per its *Hydrographic Basin Summaries, 1992*. The Washoe County Department of Water Resources has begun a water resource investigation of this area in 2001 with a completion date of 2006. Current pumpage is based on estimated domestic well counts, currently pumped water rights.
- [11] This estimate is taken from the Regional Water Supply and Quality Study. At this time, no attempt was made to estimate current pumping.
- [12] This estimate is derived from the Division of Water Resources and Water Planning *Hydrographic Basin Summaries, 1992*.
- [13] This estimate is derived from the Division of Water Resources and Water Planning *Hydrographic Basin Summaries, 1992*.
- [14] This estimate is derived from the Division of Water Resources and Water Planning *Hydrographic Basin Summaries, 1992*.

Source: Regional Water Planning Commission.

**Table 2-2 Annotated
Surface Water Resources**

	Average Annual Flow (AF/yr)	Permits/Certificates (AF/yr)	Notes References
Truckee River	561,800	[**] 82,164	15
Dog Creek	4,000	1,816	16
Hunter Creek	6,520	9,967	17
Evans Creek	[*] 1,640	1,340	18
Thomas Creek	[*] 3,185	1,645	19
Whites Creek	[*] 5,140	4,142	20
Galena Creek	[*] 9,265	5,914	21
Steamboat Creek	15,550	11,924	22
Washoe Valley Creeks	[*] 31,000	36,436	23

- Notes:
- [*] Short period of record.
 - [**] Does not include TCID diversions, Tribal rights, or other rights outside the study area.
 - [15] The estimated yield is taken from the Farad gage operated by the USGS and represents the average from 91 years of record. The water rights indicated have a place of use in the Truckee Meadows and the Truckee Canyon and represent decreed rights. Some of the decreed rights are "fragmented" in the sense that these agricultural water rights were never stripped off urbanized areas, are attached to very small acreage, and have clouded title. These fractionated rights are addressed in the report "Analysis of Decreed Truckee River Water Rights and Projections of Future Demands", Stantech Consulting Inc., 2001.
 - [16] This estimate was made from USGS (1956-1961) and SPPCo (1983-1988) records.
 - [17] This estimate for Hunter Creek is taken from "Statistical Generation and Analysis of Streamflow Data for Galena, Whites, Thomas and Hunter Creeks, Truckee Meadows, Washoe County, Nevada", Widmer, 2000.
 - [18] This estimate for Evans Creek was taken from the Kennedy/Jenks/Chilton Draft Report South Truckee Meadows Water Treatment Plant Study, March 1991, for Washoe County and Westpac Utilities.
 - [19] This estimate for Thomas Creek is taken from "Statistical Generation and Analysis of Streamflow Data for Galena, Whites, Thomas and Hunter Creeks, Truckee Meadows, Washoe County, Nevada", Widmer, 2000.
 - [20] The estimate for Whites Creek is taken from "Statistical Generation and Analysis of Streamflow Data for Galena, Whites, Thomas and Hunter Creeks, Truckee Meadows, Washoe County, Nevada", Widmer, 2000.
 - [21] This estimate for Galena Creek is taken from "Statistical Generation and Analysis of Streamflow Data for Galena, Whites, Thomas and Hunter Creeks, Truckee Meadows, Washoe County, Nevada", Widmer, 2000.
 - [22] The yield estimate was averaged from 39 years of record at the USGS gaging station at Steamboat.
 - [23] A very poor record exists for stream flow measurements in Washoe Valley. Most of these streams are currently being gauged by Washoe County Dept. Water Resources for the Regional Water Planning Commission.

Source: Regional Water Planning Commission.