

PCWA Surface Water Supplies – 2001 Update for Western Placer County

The following notes and observations are based on the above-referenced discussion paper dated 3/13/01. It provides an overview of PCWA's surface water supplies in relation to current and projected demands, as well as the measures proposed to reduce those demands. The estimates of future demands contained in this report have since been increased as described at the end of our notes on PCWA's [urban water management plan](#) (PDF, 46 KB.)

The purpose of the Study is to compare the Agency's surface water supply entitlements (from its surface water supply contracts with PG&E and the U.S. Bureau of Reclamation, and from its Middle Fork Project surface water rights) to the future land use and associated surface water demands of the various current General Plans of the Cities, Towns, and unincorporated areas served by the Agency in Western Placer County. "The Agency continues to look for options to put additional surface water to use in Zone 5, even if only on an interim or wet year basis." (P 4 Executive Summary) The Study finds that "given the paper's assumptions, the Agency has adequate surface water supply entitlements to meet the projected increases in treated and raw water demands, assuming the Agency is not precluded from construction all of the infrastructure necessary..." (P 4 Conclusion)

The 1968 PCWA – PG&E Water Supply Contract as amended in 1996 provides for a maximum annual supply of 100,400 AF of water at specified prices, to be delivered through designated points at a total combined delivery rate not in excess of 244.8 cubic feet/second. (A separate agreement with PG&E provides for additional purchase by PCWA of up to 25,000 AF/year.) The PG&E (above) Power Purchase Contract limits the amount of American River diversions for both the 120,000 AF Middle Fork Project and the 117,000 AF of "theoretical" CVP supplies (below) as follows: 155,000 AF/year from 2002-06, and 237,000 AF/year from 2007-11.

The Middle Fork Project (MFP, including Hell Hole and French Meadows Reservoirs, five power plants, five diversion dams, and twenty-one miles of tunnels) provides 120,000 AF of American River water, with 65,000 AF remaining as uncontracted supply. During the months of July through October, the only water which PCWA can take from the American River is water which it releases from its storage reservoirs and rediverts between the City of Auburn and Folsom Reservoir. The FERC license for the MFP includes Article 36, which specifies the maintenance of minimum pools in the project reservoirs, and Article 37, which specifies minimum fish flow releases. A 1963 contract with the federal Bureau of Reclamation also restricts PCWA's ability to store MFP water in dry years: "the Agency shall release water from its Middle Fork American River Project such that the total quantity stored by the said project shall be no more at the end of such year than it was at the beginning."

CVP Supplies. The original maximum contract supply of 117,00 AF/year assumed completion of an Auburn Dam. Negotiations with the Bureau seek a maximum of 35,000

AF/year with payment only for water taken. Diversion is by means of pumps at the Auburn Dam site.

	PG&E Supply	Remaining MFP Supply	CVP Supply	Total
2002–06	100,400 af	65,000af	35,000af	200,400af
2007-11	100,400af	65,000af	35,000af	200,400af

PCWA is presently using all of its PG&E supply in Zones 1 and 5. This leaves 100,000 AF/year available for increased agriculture and M&I use in Western Placer County outside San Juan and Roseville. Restrictions (Auburn pumps, Folsom diversion, and Sacramento River diversion) limit the presently available supply to 35,000 AF/year.

The Study lists five options for dealing with increased demand.

- Continue as is on first come, first served basis
- Allocate supply to the various land use jurisdictions
- Assume hard limits – the Agency can respond to General Plan changes indicating a lack of water
- Re-evaluate raw water use and conveyance
- Increase overall supply via DSM or storage

The Agency currently uses about 28,000 AF/year for Zone 1 treated water, and 79,000 AF/year for raw water in Zones 1 and 5. The primary PG&E conveyance facility through Zone 1 is the Bear River-Wise-South Canal with a capacity of 450cfs. Both NID and PCWA take deliveries at numerous points on the canal. Canals are regulated for stable water levels given varying use levels and times, erring on the side of caution. This results “...in water being spilled from the ends of canal from time to time.”

There is a strong correlation between parcel size and annual water use. Auburn shows a similar relationship but a much lower usage rate due to older homes with more native (and mature?) types of landscaping. Raw water deliveries in Zones 1 and 5 have increased an average of 500 AF/year for the past 20 years due, in large part, to new golf course irrigation. The Study assumes a future increase of 100 AF/year due to golf course build out.

Agriculture in western Placer County uses 70,000 AF/year, mostly groundwater. PCWA diverts 16,500 AF/year from Auburn Ravine for agriculture occurring along the Ravine. Zone 5 was created to replace ground water with surface water, but PCWA cannot increase agriculture deliveries without impacting treated water.

During 2000, the Agency received funding from the Bureau of Reclamation to study water losses in the canal system and, in 2001, requested additional funding from other sources. The Agency is also embarking on a program that would use telemetry and automation to monitor and help operate the raw water delivery system.

PCWA is not a party to the American River Water Forum BMPs. BMP #5 Large landscape/Irrigation accounts (voluntary incentives to achieve at least 12% annual participation, including billing adjustments targeted to irrigation system repair or improvement, grants for design improvements and ET based tiered rate structure) and BMP # 11 Establish conservation pricing for metered accounts with charges based on the quantity used, should be adopted.

Appendix F reports the results of a water conservation study which DWR did for western Placer County.

In Zone 1 DWR found that “treated water was about 33% of Zone 1 raw water. The portion is growing.” Peak water use is at about 3200 AF/month. “The peaks reflect growing summer irrigation consumption.” With treated water, an unaccounted-for-water at 16% “deserves attention.” BMP #3: unaccounted-for-water should be no more than 10% of water use. Figure 6 shows a total of 66,093 AF/year of raw water (vs 15,530 AF/year for treated) with 17 raw water surplus customers receiving 6,867 AF/year for crop irrigation.

DWR recommendations: Real Time Canal Flow Monitoring System. “Installing flow measurement stations on raw water canals and telemetering the information to a central location would allow faster response to spill situations and record actual flows leaving the raw water distribution system.” DWR assumes it would save a minimum of 2% of water.

When PCWA begins to tap the CVP supply it will come under the CVPIA Critical BMPs for Agriculture Contractors.

- 1) Measure Water Deliveries to customer within 6% accuracy.
- 2) Water Conservation Coordinator
- 3) Provide services for agriculture water users
- 4) Use Pricing Structure BMP #11 (conservation pricing)
- 5) Evaluate policies of water suppliers
- 6) Improve pump efficiencies

Exemptible BMPs for agriculture contractors include:

- 1) Facilitate alternative land use
- 2) Use recycled water where available
- 3) Facilitate financing for on-farm irrigation systems
- 4) Incentive pricing
- 5) Line or pipe ditches or canals and construct regulatory reservoirs
- 6) Increase flexibility of water ordering
- 7) Operate spill and tailwater recovery systems
- 8) Optimize conjunctive use of surface and ground water
- 9) Automate canal structures
- 10) Water use pump testing