

Crestline-Lake Arrowhead Water Agency

San Bernardino County, California

Fact Sheet

Crestline-Lake Arrowhead Water Agency (CLAWA) is a public agency created in 1962 by a special act of the California State Legislature to provide supplemental water to a portion of the San Bernardino Mountains. CLAWA's boundary contains more than 50,000 acres, including approximately 25,000 acres of United States Forest Service (USFS) land. The Agency's Board of Directors is elected, one from each of 5 Directorial Divisions within CLAWA's boundary. The Agency's revenues are from water sales, connection fees, standby (water availability) charges and taxes. It has always been CLAWA's policy not to compete with other water purveyors for retail water service within the Agency.

Prior to drilling the San Bernardino Tunnel on the East Branch of the State Water Project, the Department of Water Resources (DWR) paid the interest on the early (1967) sale of CLAWA's bonds, facilitating the early construction of portions of the Agency's permanent transmission system facilities. This early construction allowed for replacement of local water lost due to State tunnel drilling in the Crestline area, and provided early use of Agency pipelines and a storage reservoir in the Running Springs area to store local water before imported water from the State Water Project (SWP) was ever available to CLAWA.

An initial feasibility report confirmed that local well water supplies were deficient within the San Bernardino Mountain area. The need for supplemental water as documented in the initial feasibility report led to the legislation creating CLAWA, confirmed at an election within the Agency's boundary in 1962. A subsequent election in 1965 authorized the sale of \$7,500,000 in General Obligation Bonds for construction of a supplemental water transmission system. Given the mountainous terrain within the Agency, elevations vary from 3300' to over 7300' above sea level, requiring special high-pressure water pumping units to boost the water at 4 main booster stations up to as much as 1800' vertically each lift. Both natural gas engine-driven pumps and electric motor-driven pumps have been installed or are proposed, by phased construction, at each main booster station, for system reliability and to maximize readiness in the event of fire, earthquake or other emergency. Transmission pipelines through and adjacent to USFS lands contain fire hydrants at locations where pressures allow and vehicle access is available. This provides a unique level of protection against wildland fire. In 1969, CLAWA constructed a high-pressure test facility for the development of special pressure-reduction equipment and high-pressure valves rated up to 800 pounds per square inch (psi) for use in the Agency's water transmission system. The Agency's initial transmission system construction was completed

by 1971, at which time supplemental water deliveries of SWP water commenced upon DWR's completion and filling of Silverwood Lake.

As a State Contractor, CLAWA sells imported water wholesale to approximately 25 retail water purveyors for domestic use and fire protection purposes. This water supply benefits the permanent population within CLAWA's boundary, along with the many additional people who visit within CLAWA seasonally or during weekends. CLAWA's maximum entitlement for SWP water is 5,800 acre feet per year, and the Agency has recently delivered more than 2,200 acre feet per year. The present (2004 - 2005) rate for wholesale water is \$1,150 per acre foot, and about one-third of this rate is used to pay pumping costs.

Project related construction activities included preliminary engineering, surveying, right-of-way document preparation, preparation of construction plans and specifications, and construction staking for the Agency's entire water system from Silverwood Lake to Green Valley. CLAWA obtained all rights-of-way, performed construction inspection, and now operates and maintains the water system facilities. The Agency's water facilities (utility plant in-service) presently (June 2004) have a book value of almost \$40,000,000, including subsequent additions to the transmission system and construction of the Agency's Improvement District (ID) distribution water systems supplying water to more than 1,000 retail services. ID A water facilities were funded in 1972 by a one-time cash contribution per lot; the 6 ID B water systems serving 8 areas were funded in 1978 by a federal grant from the Farmers Home Administration (now named USDA Rural Development), State DWR Safe Drinking Water Bonds and a tax rate; ID C water facilities were funded in 1983 by State DWR Safe Drinking Water Bonds and a special tax; and ID D water facilities were funded in 1988 by a loan from CLAWA's General Fund, which is being repaid by a capacity charge collected at the time of connection plus a monthly capacity charge added to the water rate within ID D.

The Agency's sole source of supply is surface water from Silverwood Lake, which is on the East Branch of the State Water Project. Maximum system design capacity of CLAWA's transmission system is 15 cubic feet per second (6,750 gallons per minute).

The quality of the Agency's potable water supply in 2003 was superior, and satisfied every standard established by the State Department of Health Services and the Environmental Protection Agency. In January of 2003 the Agency placed four granular activated carbon (GAC) vessels in service at its treatment plant site to reduce the level of trihalomethanes (THMs) in the drinking water supply and to improve the taste of the treated water. That proved to be an outstanding success, reducing THMs to levels far below the levels permitted by the Health Department. In June of that same year, the Agency installed a second set of four additional GAC vessels at the

treatment plant site to accommodate increased flows resulting from the increased demand experienced during the summer. In March of 2004, the Agency installed the third set of four additional GAC vessels, for a total of 12 GAC vessels at the treatment plant site to handle current maximum plant design capacity. The GAC treatment is expected to provide a permanent solution to the THM problem.

In 1978, CLAWA made application to appropriate local water from Houston Creek which is tributary to Silverwood Lake, and in 1991 the State Water Resources Control Board issued two (2) diversion permits which allow appropriations of up to 1,302 acre feet per year.

Actual

diversion quantities vary depending upon annual amounts of precipitation and are limited to the amount of return flow to the Mojave watershed each year. As an example, reports for water years 1992-93 and 1996-97 filed with the State Water Resources Control Board list 617 and 608 acre-feet of water, respectively, appropriated pursuant to these permits. This local water appropriated by CLAWA is in addition to its SWP entitlement water.

Three million gallons of Agency water were used to stop the 1981 Panorama Fire, thereby protecting Rimforest and other mountain communities and forest areas within CLAWA. During Fall of 2003, more than nineteen million gallons of Agency water were used in fighting the massive Old Fire, which helped to limit fire damage to the mountain communities and forest areas within CLAWA.

Under current regulations of the South Coast Air Quality Management District, CLAWA is not assured that permits will be issued for construction/operation of additional natural gas engine-driven pumping units which CLAWA believes are necessary to maximize protection to life and property. CLAWA continues efforts to obtain permits to install and utilize these natural gas engine-driven pumping units. By phased construction beginning even before 2001, CLAWA has installed stationary natural gas engine-driven electric generator units at all six booster stations, the main office site, and at the water treatment plant, which provide electricity to critical water facilities during power failure events.

The Agency's existing water transmission facilities presently include a 14' diameter x 105' high intake tower in Silverwood Lake containing three raw water pumping units totaling 175 horsepower, a 5 million gallon per day water treatment plant with a 4,500 gallon per minute solids contact reactor clarifier; five 720 gallon per minute multi-media pressure filters with surface-wash feature; two Clearwell reservoirs totaling 3.8 million gallons; granular activated carbon (GAC) system facilities; with appurtenant chemical feed, dual on-site salt-generated mixed oxidant chlorination, clarifier alum sludge dewatering facility, and backwash water reclamation facilities; approximately 30 miles of 10" - 24" diameter transmission pipeline, Class 100-800 psi, with valves, fire hydrants, pressure reduction equipment and

other appurtenances; 6 booster stations containing 21 pumping units totaling 3,735 horsepower (1,075 horsepower natural gas engine-driven pumps, and 2,660 horsepower electric motor-driven pumps); 6 transmission storage reservoirs from 0.2 - 5.0 million gallons of capacity; 1 regulating (surge control) reservoir, 36' diameter x 90' high; 2 housed on-site salt-generated mixed oxidant re-chlorination stations; a SCADA telemetering system; 8 standby generator installations from 115 – 1,250 kilowatts; and 5 high-pressure fire hydrant installations which include special pressure-reducing equipment.

During 2004 – 2005, in accordance with the Agency's annual Standby Charge Engineer's Report, Group II Proposed Projects (high priority), CLAWA is adding a new electric motor-driven pump at two of its six transmission booster stations, for purposes of further increasing system reliability and fire protection.

In 1999, DWR completed construction of a new tunnel intake structure in Silverwood Lake, and CLAWA participated with provisions for installing up to 3 raw water pumps. Accordingly, CLAWA immediately installed two 100 horsepower pumps in DWR's new lake-outlet structure. This enables CLAWA to pump water from the second intake facility, even in the event of a lower lake level, which is a vital feature especially during emergency conditions.

During 2003 – 2004, the Agency has been working on an environmental impact report for the annexation of United States Forest Service land on which the Snow Valley Ski Resort is located. The proposal includes Snow Valley's agreement to receive "interruptible" water service which would be curtailed by the Agency whenever that water is needed to satisfy demands elsewhere within the Agency. Water would be delivered for snow making purposes during winter months, when the demands of other Agency customers typically are low. The arrangement would provide additional imported water to an area of need when that water is available, without threatening the supply used to satisfy the needs of other Agency customers. The annexation would have to be approved by the Local Agency Formation Commission of San Bernardino County before it would become effective.

The San Bernardino Mountains have suffered from inadequate precipitation in recent years, causing water shortages in areas located outside of the Agency which do not have access to imported water. The community of Lake Arrowhead is one such area. When the Agency was originally formed, decades ago, its boundaries included Lake Arrowhead and the surrounding community. At the last minute, however, the major property owner in Lake Arrowhead elected to exclude the Lake Arrowhead community from the Agency's boundaries, confident that local water supplies in Lake Arrowhead would be sufficient to satisfy the consumptive needs of that community. But the level of Lake Arrowhead has dropped dramatically, prompting the investigation of alternative water supplies. Among the

alternatives under consideration is a proposal to utilize currently available capacity in the Agency's treatment plant and transmission system to treat and transport non-Agency water from Silverwood Lake to the retail system of the Lake Arrowhead Community Services District (LACSD). Every gallon of water delivered from Silverwood Lake to the LACSD system would be a gallon which the LACSD would not have to take from Lake Arrowhead to satisfy consumptive demand within its service area. The proposal would not involve the use of Agency water, and thus would not threaten the supply currently available to existing customers of the Agency. The proposal would only require the use of system capacity not utilized to satisfy the demands of Agency customers during the year, and thus would not affect service to Agency customers. The LACSD would pay a charge calculated to recover a pro-rata share of the Agency's capital facilities. As of mid-2004, the Agency and the LACSD appear close to reaching agreement on an arrangement that will benefit both parties.

CLAWA recently received approval from DWR for the enlargement of the Agency's water treatment plant site by Silverwood Lake, to provide space for construction of plant improvements required to meet new water treatment regulations from the Federal Environmental Protection Agency and the State of California Department of Health Services.

CLAWA recently authorized the preparation of a seismic risk analysis at key sites containing Agency facilities. The data from the study will be used to determine the need of retrofitting certain structures to current seismic design standards.

Future projects presently planned include about \$44,000,000 of phased improvements including projects required by regulatory agencies, scheduled major maintenance work and additions to system for increased capacity for future growth.

Albert A. Webb Associates of Riverside, California has been the consulting engineering firm for CLAWA ever since the Agency was formed. CLAWA's legal counsel is Best Best and Krieger of Riverside, California; and Rodgers, Anderson, Malody and Scott of San Bernardino, California are the Agency's certified public accountants. CLAWA is a member of the American Water Works Association, the Association of California Water Agencies, the State Water Contractors Association, and the State Water Project Contractors Authority. These affiliations assist the Agency in continuing to keep abreast of matters vital to the water industry and California's State Water Project in particular.