

DATE: April 25, 2001 for May 2nd Agenda  
TO: Commissioners  
FROM: Executive Officer  
SUBJECT: Water Agency Supply and Demand Information  
Potential Changes to LAFCO Policies Relating to Water Service

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In response to comments from water agency managers, this report has been revised.

The Commission has asked for a staff report in order to begin development of revised water policies. The Commission, in accordance with state law, has four typical applications to consider and act upon concerning water agencies:

- 1) Sphere of Influence Amendment
- 2) Annexation
- 3) District Formation
- 4) Extraterritorial Service Authorization (providing service outside a water agency's boundaries).

Santa Cruz LAFCO has adopted some policies that help guide decisions on agency proposals. Sphere of Influence Policy Guideline III. 9 states in general terms:

"When more than one agency could serve an area, the agencies' service capabilities, costs for providing services, and the desires of the affected community will be key factors in determining the sphere of influence. "

In reviewing boundary change proposals, the Commission utilizes its standards:

"1.2.2 For proposals concerning water and sewer district annexations, need shall be established by lack of services to existing urban land uses, or a building permit application or allocation for a single-family dwelling, or, for a larger project, by (a) a tentative or final land use entitlement (tentative subdivision map, use permit, etc.) conditioned on obtaining water or sewer service and (b) a growth rate and pattern that the subject area will be developed within 5 years. "

"1.5.1 It is the general policy of the Commission to disapprove annexations to water and sewer agencies (including cities that provide either service) while there is a connection moratorium or other similar service limitation involving the subject water or sewer service. The Commission will consider exceptions to this general policy on a case-by-case basis. The Commission may approve an annexation that meets one or more of the following criteria. "

- 1) To replace a private water source that has failed, such as a well that has gone dry. New service connections shall not be sized to accommodate more intensive development.
- 2) To replace a septic system that has failed. New service connections shall not be sized to accommodate more intensive development.

- 3) To implement a transfer of service between two existing agencies in a manner that is consistent with the adopted spheres of influence of those agencies.
- 4) To change a boundary, in a manner consistent with an adopted sphere of influence, so that an agency boundary does not divide a property that could only be conveyed under a single deed.

For applications for extraterritorial service from a water agency, the Commission has made a series of generally favorable ad hoc decisions, but has also indicated an interest in trying to develop some policies in order to promote more logical and consistent decisions.

Much of the interest in water issues involves the difficulties water agencies are having to assure long term supplies without harming the surface or groundwater resources of the County. Based upon information provided by the general managers of the water agencies subject to LAFCO's boundary review, I have summarized supply, demand, and current issues for each agency. This information should be a helpful reminder of the breadth of issues that the water agencies, land use agencies, resource agencies, and water users are dealing with.

## PAJARO VALLEY

Seawater intrusion in the Pajaro Valley was first identified by a State Water Board Bulletin in 1953. The Pajaro Valley Water Management Agency was formed in 1984 in order to develop a long-term plan to balance water demands with water supplies in the Pajaro Basin of southern Santa Cruz and the adjacent portions of Monterey and San Benito Counties. Almost all of the Pajaro Valley's water supply comes from groundwater. Water demand averages 70,000 acre feet per year with agriculture utilizing 58,000 acre feet and other uses (City of Watsonville, private residential, Aromas Water District, Pajaro/Sunny Mesa Community Services District, etc.) taking 12,000 acre feet. Based upon groundwater modeling studies, the district believes that the long-term sustainable yield of the basin is 25,000 to 50,000 acre feet per year. The lower number is based upon current pumping practices, and the higher number would be achievable if pumping patterns were optimized (less pumping along the coast). In terms of future changes, the agency expects agricultural use to stay relatively constant and non-agricultural use to continue to increase. An analysis of buildout potential is underway; this will be used as a basis for estimating future demand.

With a current demand of 70,000 acre feet per year and an optimized supply of 50,000 acre feet per year, the basin is 20,000 acre feet per year short of the needed water supply. At the current sub-optimal pumping pattern, long-term sustainable yield of 25,000 acre feet per year, the supply shortage is significantly greater than 20,000 acre feet.

In 1993, the district completed a basin management plan which evaluated local supply, conservation, and importation options. The plan was not implemented however, as local Measures D and K were passed in 1998. These two measures rolled back well pumping fees charged by the district, urged a focus on local projects and conservation, and sought to limit water importation. Since then, the district has moved forward with local projects and conservation, and it is now preparing a revised basin management plan.

In 1999, the district completed a local projects feasibility study, mandated by Measure K, and certified a local projects environmental impact report. The following year, it published a long-term water conservation plan and began construction of its first water supply project at Harkins Slough. This project will be operational on a limited scale in 2001. The average long-term project yield is estimated at 1,100 acre feet per year.

The district is scheduled to publish a revised basin management plan and draft environmental impact report in summer 2001. These documents will define two main alternatives: One that relies exclusively on, local projects and conservation and one that also incorporates imported water. Yield, water quality, environmental impacts, and cost will be evaluated in the basin management plan analysis as the basis for selecting one of the two alternatives for implementation.

In addition to a comprehensive water conservation program, the two alternatives currently under consideration include several common structural elements. These include a coastal distribution system (to replace coastal well pumping with the project water supply), wastewater recycling at the Watsonville treatment plant, and development of several inland supplemental wells for water

quality blending and peak use needs. Since these elements are common to the two alternatives, the district is moving them forward independently of the long-term planning process. To this end, the district has initiated a coastal distribution system design project, with an early-out component to construct, by spring 2002, supplemental wells to enhance Harkins Slough project operations. The district and the City of Watsonville are also cooperating currently on a waste water recycling feasibility study, with funding support from the U.S. Bureau of Reclamation.

(Sources: April 23, 2001 letter of Charles McNeish, PVWMA)

## CITY OF WATSONVILLE

The City of Watsonville supplies water within its city limits and to many of the suburban areas of the Pajaro Valley from Pajaro Dunes to Corralitos. Approximately 80% of the city's water is obtained from wells within the boundaries of the Pajaro Valley Water Management Agency with the remainder surface water from Corralitos and Brown's Valley Creeks. The city cooperates with the agency. In 1996, the city water system served 8,502 connections within the city limits and 4,027 connections outside the city limits. The estimated population of the service area is 47,000. In 1997, the city produced 7257 acre feet.

(Sources: Public Water System Statistics, 1997; May 26, 1998 fax from Gayland Swain.)

## CENTRAL WATER DISTRICT

Located in the Day Valley and Pleasant Valley areas of Aptos, the Central Water District in 2001 had 783 connections with an estimated service population of 2750. Its supply comes entirely from groundwater (both the Purisima and the Aromas Red Sands). In 1999-00 the district delivered 560 acre feet. The district wells are not showing any significant changes in static water levels. The district has no problem with seawater intrusion. The maximum development at buildout is calculated to be 944 connections; the district could meet this level of demand with its current facilities.

(Source: Clarke Wales; Central Water District; May, 18, 2001)

## SOQUEL CREEK WATER DISTRICT

The Soquel Creek Water District (SCWD) serves approximately 13,700 connections (not including fire services) in the communities of La Selva Beach, Aptos, Soquel, and Capitola. The SCWD's sole source of supply is groundwater from two aquifers. The Purisima formation underlies Soquel, Capitola, and a portion of Aptos. The Aromas Red Sands underlies Rio Del Mar, Seascape, and La Selva Beach.

SCWD water production has remained essentially flat since 1996. It continues to pump approximately 3,600 acre-feet per year from the Purisima formation and approximately 1,800 acre-feet per year from the Aromas Red Sands. Private and other non-district wells also pump a significant amount of water from the Soquel-Aptos Groundwater Basin. The best available estimate is that SCWD wells account for approximately 60% of the total pumping from the Purisima Formation. Accurate pumping figures are not available since few, if any, private wells are metered. The impact of SCWD pumping on the Aromas Red Sands is rather insignificant given the agricultural irrigation demand on that aquifer as it extends down through the Pajaro Valley.

With the current configuration of pumping, the perennial yield of the Purisima Formation in the Soquel-Aptos area has been exceeded by an estimated 600 acre-feet per year. This situation is evidenced by undesirable depressed coastal groundwater levels in the central part of the SCWD. Management of pumping in the Purisima Formation by the SCWD and a continuous period of average to above-average precipitation has resulted in some recovery of coastal groundwater levels, and they have now been seasonally above sea level in each year since the early 1990's. However, the current conditions remain in conflict with the management goal of the SCWD to protect its sole source of water supply against the possibility of seawater intrusion by maintaining coastal water levels above sea level as much as possible. While coastal monitoring wells in the Purisima Formation have not yet shown any evidence of saltwater intrusion, the SCWD is proactively working on stabilizing and restoring the aquifer to healthy conditions through redistribution of pumping, conservation, and development of a supplemental source of supply.

Beneath the fresh groundwater of the Aromas Red Sands Aquifer in the area of Seascape and La Selva Beach, there is a wedge-shaped body of saltwater. This saltwater wedge is believed to be a naturally occurring condition. Beginning in the early 1990's there was a progressive degradation of groundwater quality (increasing concentrations of total dissolved solids and chloride) at two of the coastal monitoring wells designed specifically to monitor this saltwater wedge. These conditions, which never impacted any of the SCWD's water supply wells, occurred despite generally decreased SCWD pumpage from the Aromas Red Sands Aquifer and despite relatively high groundwater levels. The apparent cause for the change in the coastal groundwater quality at the SCWD's monitoring locations is depressed groundwater levels in the Pajaro Valley, which relies on the same aquifer. In the last few years, there has been general stability in the position and quality of the fresh/brackish groundwater interface in the Aromas Red Sands. This stability appears to be attributable to above-average precipitation in the late 1990's and a decrease in induced subsurface flow toward the Pajaro Valley. However, until there is a better understanding of the susceptibility of the saltwater wedge to inland progression, the SCWD does not intend to

increase coastal pumping within its portion of the Aromas Red Sands Aquifer, therefore the estimates for safe yield have not changed since the 1999 LAFCO Report.

The SCWD continues to estimate the need for an additional 2000 acre-feet per year at projected buildout based on the current County and Capitola General Plans. To meet this projected need, the SCWD has explored numerous options and has narrowed down the list to three alternatives that may be feasible. The only local solution that appears to be feasible is an off-stream winter diversion project on Soquel Creek. On a regional level, the SCWD has indicated its interest in exploring a regional project with Pajaro Valley Water Management Agency and the City of Watsonville as part of the Basin Management Plan 2000. If PVWMA elects to pursue the Gardiner Plan instead, there does not appear to be any opportunity for a cooperative project between our agencies because of the limited yield of that plan. In April 2001, the SCWD and the City of Santa Cruz took significant action by agreeing to conduct a Joint Feasibility Study of a regional water supply project between our two agencies. Two options will be explored: a regional desalination facility and a regional recycled water project. The District has begun the environmental impact report process without identifying a preferred project. All alternatives will be evaluated through this process and a decision by the Board of Directors on the preferred supplemental water supply project to pursue is anticipated in approximately one year.

In the meantime, the SCWD continues to implement its conservation plan. New and expanded programs continue to be implemented and the Urban Water Management Plan was updated. The SCWD also continues to actively manage the groundwater basin through re-distribution of pumping and groundwater monitoring. Since 1999, two additional opportunities to redistribute Purisima pumping away from the central portion of the district have been identified and are being pursued. The first is a proposed new well to the west of the SCWD on Soquel Drive at the northeast intersection of 41st Avenue. The SCWD has purchase option with the County Redevelopment Agency for this parcel, which is part of the O'Neill Ranch. The CEQA process is underway on this proposed well. The SCWD is also investigating possibly redistributing Purisima pumping to the east in the vicinity of Aptos Jr. High School and the Polo Grounds County Park. No decisions have yet been made about a well in this area.

The purpose for developing new wells while still pursuing a supplemental source of supply is three-fold. First, some of the SCWD's existing wells are nearing the end of their useful life and are no longer reliable. Second, redistributing pumping can enable some recovery of coastal groundwater levels during the time it will take to develop a supplemental supply. Third, MTBE contamination is of concern within SCWD's service area because many wells are located in urban areas where underground fuel tanks exist. If any wells are contaminated, and none have been so far, they would be taken out of service. This could make it difficult to meet existing demand.

The SCWD completed a Rate Study and adjusted its rates and connection fees effective January 2001. Connection fees were increased by approximately 50%, reflecting the proportionate cost to buy-in to the system. The SCWD continues to permit connections given that groundwater conditions and demands have stabilized and recognizing that better groundwater management can be achieved through service from the District than by a proliferation of private wells pumping from the same basin.

(Sources: April 28, 1998 letter and May 19, 1998 fax from Laura D. Brown, General Manager, Soquel Creek Water District)

## CITY OF SANTA CRUZ

Utilizing surface and groundwater sources, the City of Santa Cruz provides water to 54,000 people within the city limits and 33,000 people outside the city limits in Live Oak, Capitola, Pasatiempo, Branciforte, and the North Coast. There are over 23,000 connections. In 2000, the city produced 12,275 acre feet. The city system is largely supplied by surface water; and, therefore, has surplus water in rainy years and is seriously impacted during periods of drought. In a two-year critically dry period like 1976-77, the safe yield of the system is 9200 acre-feet per year. The city projects demand in its service area to increase from 13,561 acre-feet per year in 1997, to 15,826 acre-feet per year in 2020, to 16848 acre-feet per year at buildout. The city is investigating additional water supply alternatives in order to met future needs.

(Sources: Toby Goddard, City of Santa Cruz, Water Department, April 24, 2001).

## SCOTTS VALLEY WATER DISTRICT

The Scotts Valley Water District uses groundwater to supply its 3339 connections (1997) in Scotts Valley. From the Santa Margarita and Lompico Formations the district produced 2085 acre feet in the 1997 water year. Total pumpage from all users was estimated at 4068 acre feet (1996). Due to a high growth rate and higher per capita use, the district is approaching the amount of water that it is able to deliver. While the district's hydrologist estimated in 1987 that 4200 acre feet per year was the perennial yield of the basin, the hydrologist now qualifies this number by saying that "perennial yield" does not signify a fixed quantity of extractable water. The district is finding it difficult to keep up with increasing demand. The district is cooperating with its neighbors in sharing information about the Santa Margarita Groundwater Basin, It is drilling a new well; developing an additional one million gallons of storage; and, in cooperation with the City of Scotts Valley, building the county's first recycled water treatment plant and distribution system. The district estimates a short term (1998-2000) increase in demand from new development to be 454 acre feet per year. It also estimates that the tertiary treatment plant will reduce pumping from the aquifer of 200 acre feet per year in 1999 and 350 acre feet per year in 2000.

One board member estimates that the district faces a 993 acre foot shortage in 1998. The district has stopped issuing will-serve letters to new projects. Projects can proceed to the planning process, but the connections will not be made available until supply improvements are completed (sometime in 1999) and the district is convinced that the basin is in balance.

In April 1998, the water district board denied extraterritorial water service to an existing house (LAFCO No. 851, Vine Hill-Fusari) due to the short term constraints in finding that it has surplus water currently available.

The Board of Directors has placed a moratorium on new commitments to serve while it gets the county's first recycled water plant on line and it re-evaluates the ability of its aquifers to sustain additional pumping. Recent written reports prepared for the District are: "Reevaluation of the Water Balance. Todd Engineers. December 1998" and "Urban Water Management Plan and Water Shortage Contingency Plan. January 1999"

(Sources: Scotts Valley Groundwater Management Plan, 1995-96 Annual Report; Recycled Water Distribution System Draft EIR, 1998; April 15, 1998 Scotts Valley Banner; 1997 Annual Report; and May 18 letter of Jon Sansing).

## SAN LORENZO VALLEY WATER DISTRICT

The San Lorenzo Valley Water District uses ground and surface water to serve its customers in its two service units. The northern unit is Boulder Creek, Ben Lomond, and Zayante. The Southern unit is the Pasatiempo Pines area of Scotts Valley. Of the two units, the southern unit is the one experiencing long term supply problems. The aquifer is the Pasatiempo subunit of the Lompico Formation. The known pumping by public and private users of the aquifer is estimated at 765 acre feet per year. Well levels are dropping and the aquifer is considered to be heavily overdrafted. The district is cooperating with other water users to consider recharge as well as alternative supplies.

The district is limiting, but not completely prohibiting, additional connections to its southern unit. The district is investigating options for utilizing its share of Loch Lomond water.

(Source: 1995 Pasatiempo subunit--Lompico Sandstone Aquifer, Preliminary Quantitative Assessment)

## LOMPICO WATER DISTRICT

The Lompico Water District uses groundwater (110 acre feet per year) and surface water (20 acre feet per year) to serve its 497 residential connections. Buildout is estimated at 519 connections.

(Source: North Santa Cruz County Water Master Plan, 1985)

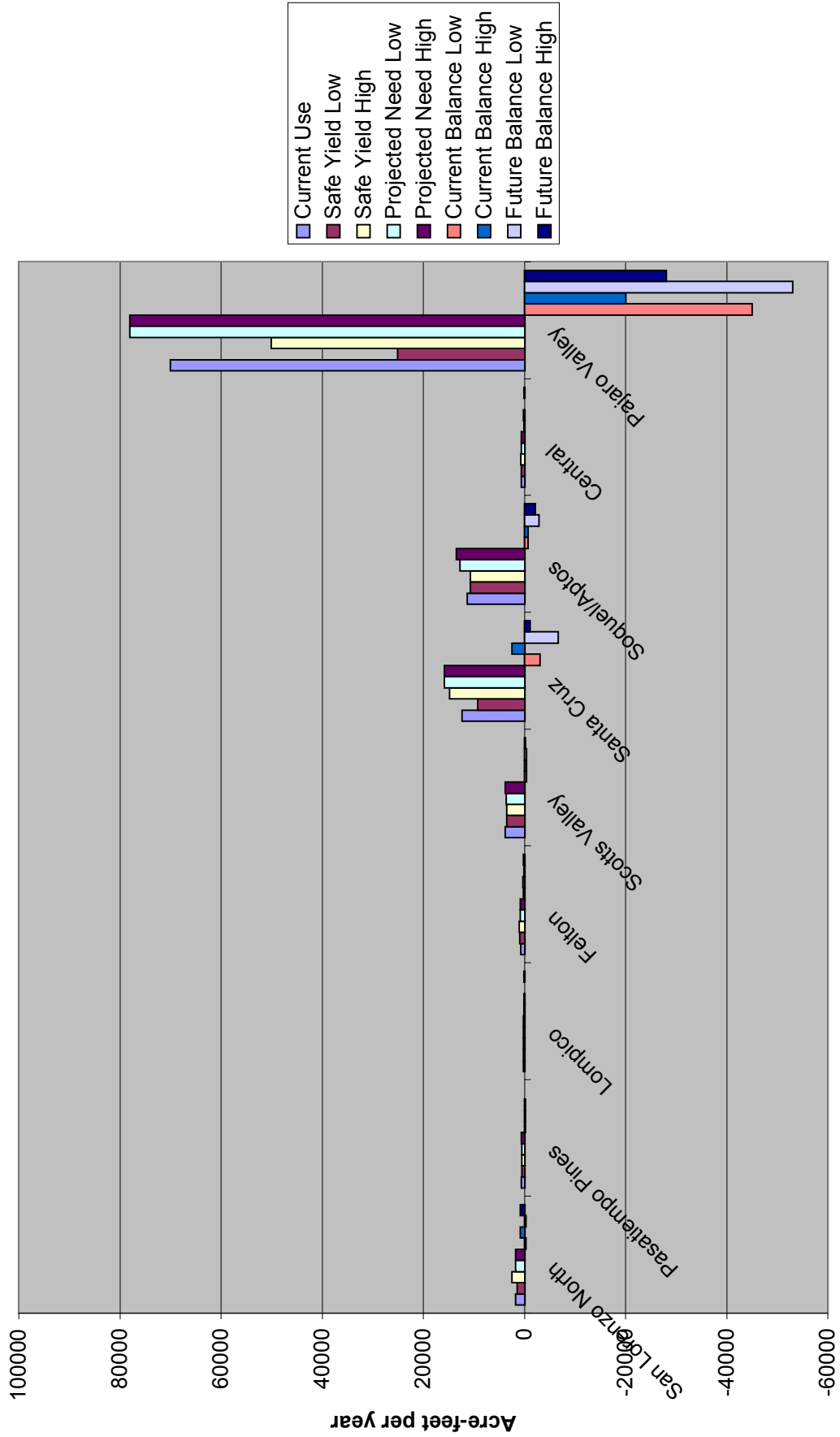
## COUNTY OF SANTA CRUZ

The county staff has prepared a report titled "An Evaluation of Water Resources Monitoring and Management Efforts in Santa Cruz County" (cover letter is attached). This was presented to the Board of Supervisors in April 1998 with a further report for follow up action scheduled to be considered by the Board in June.

In 1999, the county is adding three positions to increase its participation in resolving water problems. It is working with the water agencies to define countywide goals and objectives such as sharing supplies, maintaining stream baseflows, stabilizing or reducing rates of saltwater intrusion, and preventing any degradation of waters by pollution.

(Source: An Evaluation of Water Resources Monitoring and Management Efforts in Santa Cruz County, 1998)

# Water Use



Area

WATER USE IN SANTA CRUZ COUNTY

Area	Current Use		Safe Yield		Projected Need		Projected Need		Current Balance		Future Balance		Future Balance	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
San Lorenzo North	1661	1400	2400	1660	1690	-261	739	-290	740					
Pasatiempo Pines	600	430	430	500	600	-170	-170	-170	-70					
Lompico	130	150	150	136	150	20	20	0	14					
Felton	700	900	1000	800	800	200	300	100	200					
Scotts Valley	3769	3441	3441	3571	3763	-328	-328	-322	-130					
Santa Cruz	12280	9200	14730	15810	15810	-3080	2450	-6610	-1080					
Soquel/Aptos	11300	10600	10600	12700	13400	-700	-700	-2800	-2100					
Central	560	600	700	600	600	40	140	0	100					
Pajaro Valley	70000	25000	50000	78000	78000	-45000	-20000	-53000	-28000					
City of Watsonville (Water Use Included in Pajaro Valley Data)	7633	21280	21280					21280						
<b>Total</b>	<b>101000</b>	<b>51721</b>	<b>83451</b>	<b>113777</b>	<b>114813</b>	<b>-49279</b>	<b>-17549</b>	<b>-63092</b>	<b>-30326</b>					
<b>PV as % of Total</b>	<b>69</b>	<b>48</b>	<b>60</b>	<b>69</b>	<b>68</b>	<b>91</b>	<b>114</b>	<b>84</b>	<b>92</b>					

Source: Santa Cruz LAFCO, 2001

All data is in acre feet per year.