

Water supply: policies and planning programs

James L. Welsh

California has changed considerably since 1957, when the California Water Plan was first formulated as a guide for the orderly and coordinated control, protection, conservation, and utilization of the state's water resources.

At that time, it was estimated that the state had an average annual surface water supply of about 76 million acre-feet and consumptively used about 22 million acre-feet. By 1972, the annual consumptive use reached 27 million acre-feet. In addition, about 3.4 million acre-feet are required for salinity repulsion in the Sacramento-San Joaquin Delta and nearly 18 million are used to preserve natural stream flows, principally in the north coastal area. Also, the U.S. Supreme Court reduced California's claimed share of the Colorado River supply by nearly 1 million acre-feet. Thus, water available for potential development has been reduced from 54 million acre-feet in 1950 to about 27 million now. Practically, probably half of this potential is unavailable for development, because the runoff occurs in remote areas, small coastal watersheds, interior desert areas, or as uncontrollable flood runoff.

California's water needs continue to grow, but limited water supplies, social changes, mounting water development costs, environmental concerns, and energy shortages dictate that we conserve and protect our resources.

The Department of Water Resources (DWR) has undertaken a fresh look at the California Water Plan and current water issues. The results will be documented in DWR Bulletin No. 4, "The Water Management Element of the California Water Plan," to be published this summer. The purpose is twofold:

1. To review and update California's water management policies in keeping with today's social and environmental goals and to assess water development plans in terms of current conditions, and

2. To resolve critical water issues and define actions necessary to meet essential water needs through the year 2000.

Conservation and more efficient use are being emphasized. Water conservation simply means applying less water to accomplish the same purpose.

More efficient use includes coordinated operation of surface and ground water storage, water exchanges, redefinition of existing project yields through reassessment of dry year criteria, operational coordination of major water projects, recycling and reuse of water, and wastewater reclamation.

DWR Bulletin No. 198 "Water Conservation in California" was issued in May 1976 as part of the current study. It describes opportunities for and methods of achieving conservation. Urban water savings and an overall assessment of potential agricultural water conservation are covered in the report, which formed the basis for a water conservation policy. The policy was developed with extensive public participation and has been adopted by the DWR.

The 1976 drought provided the first major test of the new water management procedures. Most of the irrigated lands did not suffer serious shortages in 1976, and most of the people had the water they needed. The major water projects functioned as planned.

1977 is also a major drought year, with significant deficiencies in water supplies for both urban and agricultural uses. The drastic water conservation measures and other broad actions that are required to meet critical water needs will serve as valuable lessons in water management planning.

The state is working out water allocation and management plans through about the year 2000 with 10 geographical areas where specific water issues are critical (see table).

The State Water Resources Control Board has adopted basin water quality

Areas Where Specific Water Issues Are Critical	
Area	Key issues
Trinity River	Reconstitute fishery habitat and Trinity River streamflows and maintain export yield of the federal Central Valley project to the maximum extent possible.
Russian River	Develop or modify state positions on and recommend allocations of water from specific federal water projects (Warm Springs Dam, Folsom-South Canal, New Melones Dam, the proposed Mid-Valley Canal, etc.) including full consideration of feasible water reclamation and conservation measures.
Southwestern Sacramento Valley	
Southeastern Sacramento Valley	
Eastside San Joaquin Valley	
Westside San Joaquin Valley	Develop a viable solution to the drainage problems in the area.
South Bay-Central Coast	Implement the reclamation and conservation provisions of the state's agreement on the federal San Felipe Project.
San Luis Obispo and Santa Barbara Counties	Determine if Coastal Aqueduct supply of State Water Project is needed and, if so, when it is needed.
South Coast	
Owens Valley-Mono County	Reassess presently available and contracted-for water supplies, considering conservation, more efficient use of surface and ground water, wastewater reclamation, and water exchanges.

control plans for 16 hydrologic basins of California. The plans demonstrate that the relationship between quality and quantity becomes increasingly significant as more water is diverted from the streams and as water is used more intensively.

In accordance with the provisions of the Porter-Cologne Water Quality Control Act, the basin plans now constitute the water quality control element of the California Water Plan. In 1978 the DWR and the State Water Resources

Control Board will issue a joint report to the legislature updating the California Water Plan. This will be the first time that the two major elements of the plan—water management and water quality control—are combined in a single document.

The Department of Water Resources believes it is essential that California's needs for water supplies, water-related recreation, fish and wildlife enhancement, hydroelectric power, prevention of damage and loss of life from floods and dam

failures, and water-related environmental enhancement be effectively and economically fulfilled. The manner in which these needs are met must be consistent with public desires and attitudes concerning economic, environmental, and social considerations.

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Local planning for future water supplies: Santa Barbara County case study

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Planning for water supply and for land use in agricultural areas has taken on new significance with enhanced public environmental awareness, new anti-pollution legislation, high costs of construction and energy, and increased economic opportunities for specialized agricultural commodities.

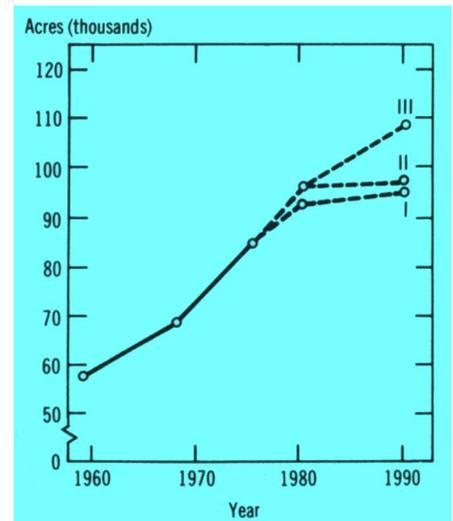
Conducting such interdisciplinary planning programs in the full light of public involvement calls for new planning and educational techniques. The Santa Barbara County board of supervisors faced such a problem in making two crucial de-

isions: (1) revising the county's general land use plan and (2) negotiating with the California Department of Water Resources and others on future water supplies.

Since the two planning projects were interrelated and concurrent, it seemed logical to combine the tasks of collecting data and preparing reports. Such an integrated approach was particularly important to agriculture, because irrigated agriculture's future depends on both appropriate land use planning and an adequate water supply.

Santa Barbara County has numerous small coastal valleys with limited surface and underground water supplies. Irrigated cropland is scarce, totalling 85,000 acres or only 5 percent of the total land in the county. Much of this prime land is close to the expanding urban centers. The need to preserve agricultural land and to protect the underground water supplies is recognized by both urban and rural residents.

At the time this program was begun, however, little factual information was available on which to base intelligent



Above: Total irrigated cropland with projections for alternative water-supply policies. Santa Barbara County. I. As is—continue to use present sources, including moratoriums and overdraining. II. Local development—small dams, recharging, reclaimed water, conjunctive use, cloud seeding. III. Imported State Project water.

Left: Santa Barbara County's numerous small coastal valleys have limited surface and underground water supplies, and irrigated cropland comprises only 5 percent of the total land in the county.