Technology can beat California's drought

by Pamela Lowry

As the effects of the long drought in the western states of the United States have become more sharply defined, technological progress is once again being looked to as a solution for California's problems. A sudden burst of proposals is demonstrating that not all Californians have forgotten their proud history of technological innovation.

In contrast, last month's driving rainstorms were greeted by the anti-technology faction with despair. Those who see the "solution" to the drought as depriving farmers of water rights and selling water to the highest bidders are afraid that an increased water supply, however slight, endangers their plans. Commenting on the generally welcomed rainstorms, Rep. George Miller moaned, "From the point of view of water policy and planning, it's a disaster. It allows people to avoid the difficult questions."

There are indeed difficult questions, but they involve how to increase the water supply rather than deciding who should go thirsty. The penalty for not modernizing water infrastructure over the past 20 years was demonstrated in the March 27 announcement by the California Agricultural Statistics Service that idled California farm land will total 600,000 acres in 1991. An equally desperate situation exists in California's forests. During 1989-90, the drought killed trees equaling 8.4 billion board feet of lumber, enough to build 500,000 new homes. The remaining trees, many now drier than the boards in lumberyards, are succumbing to disease and insect infestation. In a large swath of the western states, reaching from California and Arizona all the way to western Minnesota, the fire danger is critical. And states will have little help from the military this summer in fighting fires, because most of the personnel and equipment normally called upon are still in the Persian Gulf.

Take NAWAPA off the shelf

In the face of these looming disasters, Californians are turning to technologies which have long been available, and to studying others which are as yet untried. A group called Citizens for Water and Power in North America, Inc. is proposing to revive the North American Water and Power Alliance (NAWAPA) plan developed by Parsons Engineering in the 1960s. Led by Robert Finch, a former lieutenant governor of California, the group proposes to dam three rivers in Alaska and Canada's Yukon Territory and direct the water through a chain of reservoirs, dams, and trenches into a 500-mile-long reservoir created from a gorge in the Canadian Rockies. The project would take approximately 30 years to build, and would deliver water to 23 U.S. states as well as parts of Canada and Mexico.

Planners say the project would deliver 160 million acre-feet of water per year, and would yield 70,000 megawatts of hydroelectric power. Of this power, 30,000 megawatts, or about 10% of current American consumption, would go to the United States. The power component of the project is significant, because one of California's major problems in providing desalinated seawater is that it does not have the power capacity to process the water at a reasonable price.

Nevertheless, efforts toward providing desalinated water for California are going forward. In addition to the already-authorized plant in Santa Barbara, the four water and power utilities of southern California have joined forces to authorize a $600,000 six-month study of building a large desalination plant in Tijuana, Mexico. The plant would provide 100 million gallons of drinking water per day, enough for the daily needs of 228,000 U.S. and Mexican households. The facility would also include its own 500 megawatt electrical plant, which would sell electricity to help reduce water costs, while excess heat from the production of the electricity could be used to distill the seawater.

The under-ocean pipeline

California Rep. Edward Roybal has introduced a bill in Congress calling for the President to authorize a feasibility study of an Alaska-California under-ocean pipeline carrying fresh water. The results of the study are to be reported to Congress no later than Sept. 30, 1991. The idea originated with Alaska's Gov. Walter Hickel, who proposed two parallel lightweight pipelines to be laid on the continental shelf. These would carry fresh water from the mouths of Alaskan rivers to water-starved states of the West and Southwest.

Roybal's legislation proposes an Alaska-California interstate compact, which could be joined by other states, that establishes a public water pipeline authority to plan, finance, build, and operate the North American Water Transfer Engineering Facility. An important provision of the bill emphasizes that the authority would utilize the expertise of federal government laboratories and technology transfer programs, as exemplified by work done by the National Aeronautics and Space Administration. The project is planned "to eliminate permanently, the chronic water shortage crises that have plagued the American Southwest throughout history."

The technological feasibility of the project has not yet been demonstrated, but the language of the bill shows that bold, long-range plans are once again on the agenda in California.