

Water projects can solve the crisis

by Marcia Merry and Dave Kilber

Many projects are already on the drawing boards that could solve California's water crisis. The problem is, they were abandoned during the 1970s.

In 1960, California voters approved a water plan sponsored by then-state legislator Caspar Weinberger. Called the State Water Project, the system was designed to deliver 4.2 million acre-feet. Today, 30 years later, uncompleted water projects limit deliveries to half that amount. No capability has been added since 1976, with the completion of the California Aqueduct.

There is a combination of large-scale and lesser projects that would prevent a recurrence of the water crisis in California. The priority project for the continent as a whole should be the North American Water and Power Alliance (NAWAPA) plan, which calls for taking the water now flowing northward to the Arctic from the MacKenzie River system in the Yukon, and diverting it southward along a Rocky Mountain trench, whose flow could be channeled into the Prairie provinces and states, into the dry Southwest and California, and all the way into the state of Sonora and other points in Mexico.

The engineering designs for this project were fully worked out by the Pasadena-based Ralph M. Parsons Co., 30 years ago. Until the New Age environmentalism struck Congress, there was interest and support among Washington lawmakers for the NAWAPA plan.

The map shows the extent of the NAWAPA plan as envisaged by Parsons. It would bring millions of acre-feet of water in the drylands of North America, and recharge many of the diminishing underground systems. The design calls for a giant grid of interconnecting rivers, canals, and reservoirs, that would provide new transportation routes as well as water for agriculture, industry and residence. In the far north, in Alaska, British Columbia, and the Yukon, a series of dams would hold water from flowing northward, and provide power to pump up 400 million acre-feet of water in the Rocky Mountain Trench—a 500-mile long reservoir that is a huge natural holding tank. Water would then flow south, and branch off to the east and west along the way.

This would usher in a golden age of development. There could be 49.6 million *new* irrigated acres—a 96% increase over the 1975 irrigated acreage.

Some areas that would benefit:

- The West and High Plains states. Note the two-branched perimeter canal encircling the Rocky Mountains. The western branch would channel water into the Mt. Whit-

ney area in California, in a reservoir in the Panamint Valley, and from there flow to many points of delivery.

- The eastern perimeter canal would send water into west Texas, and the Plains States Canal would run from Pierre, South Dakota to Houston, Texas. These eastern Rockies channels would help to reverse the depletion of the Ogallala Aquifer, the primary water supply for 11 million acres of farmland.

- Mexico. The 40 million acre-feet of water delivered to Mexico would allow that country to irrigate more than eight times as much new land as the Aswan Dam allows Egypt.

California state projects

But even as NAWAPA is built, there are smaller projects that can make a difference.

To capture and store more water, there are plans for the Auburn Dam, the Kern Water Bank, and Los Banos Grande reservoirs. To channel more water to areas of concentrated use, there is the proposal to add a coastal branch of the California Aqueduct to reach San Luis Obispo and Santa Barbara counties.

More water would be available to the state if the federal "lock up" were broken that now prevents water leaving the Klamath, Eel, Trinity, and Smith River systems in northern California, from linking into the Sacramento River system. These rivers carry off a very significant flow of water right into the Pacific Ocean—totally useless. They were locked up in the 1970s, laying the basis for the water shortages in the 1990s. New reservoirs could be built to accommodate this, but there is a federal stay on making use of the water.

Similarly, the flow of the Tuolumne River system, which could otherwise supply the Central Valley irrigation district, was locked up in the 1980s.

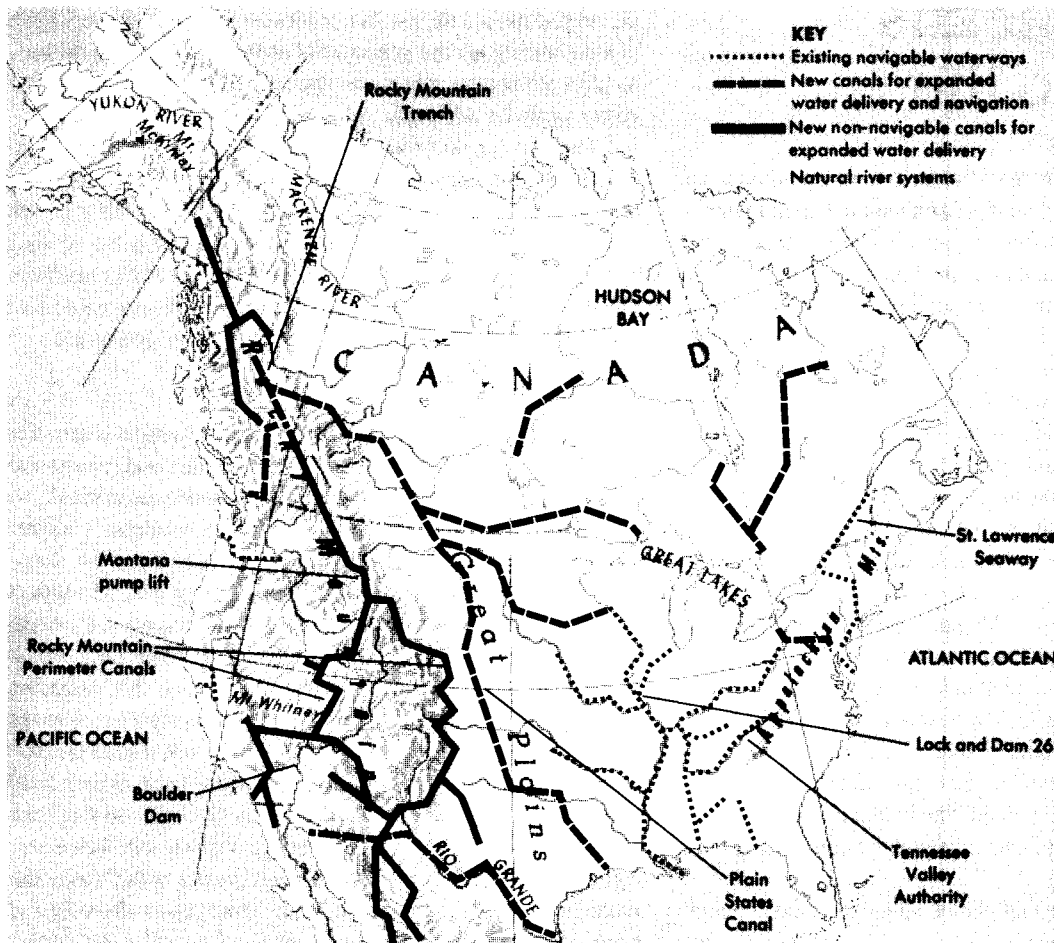
Interstate projects

The Columbia River to the north, which flows southward through eastern Washington State, and then west along the Washington/Oregon border, is a possible source of water, without making other areas go short. Various plans to transport some of the Columbia flow south have been designed since the 1960s.

One proposal raised in 1967 would utilize a 400-mile aqueduct, which would be constructed from a point on the Columbia, thence to Shasta Lake in California. At this point, the waters would flow into an existing aqueduct system. The water would have to be diverted at a point beneath the Bonneville Dam, the last hydroelectric plant on the river.

Another proposal, called the "Dunn Plan," after William Dunn, the designer who proposed the project in the early 1960s, calls for a main aqueduct, over a thousand miles long, to run through eastern Oregon, Nevada, and down to Lake Mead in Nevada. The system would begin by pumping water at Pasco, Washington, where the Snake River runs into the

FIGURE 1
NAWAPA river diversion plan



The map shows the key elements of the North American Water and Power Alliance, which was the brainchild of Donald M. Baker, an engineer with the Los Angeles Department of Water and Power. NAWAPA would make available 130 million acre-feet a year of fresh water for agriculture in 23 states. Water now flowing northward into the Arctic Ocean from the MacKenzie and Yukon River systems, would be channeled southward, along a great Rocky Mountain trench, and then through a grid of canals, reservoirs, and rivers.

Columbia, back up the Snake River, about 287 miles upstream to near Lake Brownlee. Fully 15 million acre-feet of water could be provided in the first stage of the Dunn plan.

Offshoots of the main aqueduct system would provide water to Oregon, Idaho, and southern California. This in turn, would aid all the arid western states because more water could be freed up from the Colorado River system for use by Utah, Arizona, and Mexico.

The mighty Columbia River dumps 90 billion gallons of fresh water a day into the Pacific Ocean. At a minimum, "California/Columbia" might take off only 3 billion gallons of that flow. The Columbia River output at its mouth is twice the volume of all the California rivers combined.

Hydrologists and engineers regard the idea of diverting Columbia system waters south as technically feasible, but the governors of the seven Western states must consent to any federal study of diverting water from one river basin to another. Court cases have also placed the Colorado River

off-limits to diversion projects.

The Columbia diversion proposal has a history of acrimony. In the late 1960s, Congress passed a water resources bill that carried a tacked-on amendment forbidding a federal study of the Columbia water diversion project. A new round of controversy is now occurring. In May, the Los Angeles County supervisors voted 3-0 to support a call to the Bush administration to order the Army Corps of Engineers to design and build an aqueduct from the Columbia, utilizing the Snake River concept. The motion was made by County Supervisor Kenneth Hahn. Although scoffed at by political friends and foes in California, who thought that the proposal was hopeless, Hahn's renewal of public attention to the Columbia was enough to rile opposition again.

A river of green bile has flowed from Washington and Oregon. Sen. Brock Adams (D-Wash.) said to Californians, "Let them drink Perrier." Washington Gov. Booth Gardner said, "Solve your own problems; manage your own growth."