On June 17, 1951, Reclamation enters its 50th year of service for conservation in the West. On that date in 1902 President Theodore Rosevelt signed the Reclamation Act, giving the Bureau of Reclamation its mission in the West.

The Reclamation Act set aside money derived from sale of public lands in the west for the purpose of constructing and maintaining irrigation works for reclaiming arid and semi-arid lands. It also stipulated that water from these works should not be supplied to more than 160 acres of any single land ownership, thus aiding in the establishment of family-sized farms in the old homestead tradition.

In 1939 Congress passed the Reclamation Projects Act, which provides for construction of multiple purpose projects by the Bureau of Reclamation.

The first Reclamation project was on the Salt River in Arizona, which was begun in 1903. Since then the Bureau of Reclamation has provided the West with:

$$
\begin{aligned}
& 95 \text { dams with combined storage capacity } \\
& \text { of } 82,780,000 \text { acre-feet. } \\
& 35 \text { power plants with more than } 3,000,000 \\
& \text { kilowatts capacity. } \\
& 16,000 \text { miles of irrigation canals. } \\
& 3,000 \text { miles of electric transmission lines. } \\
& 5,000,000 \text { acres of land with full or } \\
& \text { supplementary irrigation. } \\
& \text { Water and power adequate for } 9,000,000 \\
& \text { persons. }
\end{aligned}
$$

Throughout seventeen Western states Reclamation projects annually produce a total of $\$ 500,000,000$ worth of crops, and some $\$ 33,000,000$ in power revenues.

And, in addition, $\$ 2,000,000,000$ in federal taxes were paid during the period from 1916 to 1949 as a result of income derived directly or indirectly from Reclamation projects. Many economic and social benefits for which no dollar value can be assigned, such as protection from floods, improved navigation, adequate municipal water supplies, alleviation of economic dislocations caused by drouth, more stable rural communities, recreation, and fish and wildlife conservation.

Reclamation in the West is in its infancy. It still can develop: 16,000,000 acres of irrigable land not yet watered; 11,500,000 acres needing supplementary irrigation; 50,000,000 kilowatts of unused Western generating capacity.

## ADVANCE BACKGROUND INFORMATION

A major milestone in civilized man's elemental urge to control and utilize the fresh waters of the earth will be observed in California from next August 1 to 10, inclusive, with the first full, integrated operation of the initial features of the vast Central Valley Project.

This great federal reclamation project, first envisioned when the state still was largely a wilderness, stores precious water at the northern tip of the state!s central valley basin, and transports it to parched farm lands at the southern end, nearly 500 miles away.

The celebration will get underway Wednesday, August 1 when water is spilled from Shasta Dam into the Sacramento River and begins its ten-day journey through the heart of California's fabulous agricultural empire. The water will travel down tha thirsty Central Valley at about $2 \frac{1}{2}$ miles an hour, and from bustling Redding in the north to Bakersfield in the south its long-awaited arrival will be marked by jubilation and celebrations.

To each of the comminities along the river channels and project canals, as well as to the state and the nation in general, the arrival of Central Valley Project water has especial significance. Every one of them depends directly or indirectly on agriculture and related farm industries as its main source of income. In the southern two-thirds of the basin rainfall is so sparse that there is a demand for CVP irrigation water as early as February. Thus, the arrival of live-giving water from the more richly endowed watershed to the north is far more than an occasion for mere speeches and ceremonies.

Situated astride the water's route down the valleys are more than a score of cities and towns, most of which anticipate either putting on some type of CVP observance or participating in the celebration of some nearby city or town. These include:

Shasta Dam<br>Redding<br>Red Bluff<br>Sacramento<br>Walnut Grove<br>Martinez<br>Tracy<br>Stockton<br>Los Banos<br>Mendota<br>Friant Dam<br>Fresno<br>Madera<br>Orange Cove<br>Lindsay

Delano
Bakersfield
Orland
Willows
Colusa
Marysville
Folsom
San Francisco
Visalia
Porterville
Sanger
Antioch
Richmond
Pittsburg
Walnut Creek

## HISTORY OF CVP

For more than 75 years men of vision have foreseen that California's ultimate growth and wealth depended on an irrigated farm economy, and that the vast extent of dry lands and the disparity of rainfall and water distribution ultimately would require a corrective program of great scope and cost.

One of the first men to advocate a concrete suggestion for the solution of the area's water problem was Colonel Robert B. Marshall, chief geographer for the U. S. Geological Survey. In 1891, when he first toured the great inland basin, Colonel Marshall envisioned a great system of dams, canals, and other works. His plan was made public in 1919, and placed before the California legislature in 1921. There followed the "State Vater Plan" of 1931, forerunner of the Central Valley Project. After the people of California approved the plan, federal assistance was sought. In September 1935; President Roosevelt allocated funds for the project under the Emergency Relief Act. Construction began October 19, 1937 under the direction of Walker $R$. Young, later chief engineer for the Bureau of Reclamation.

Individual units of CVP have been in partial operation since 1940, but to date the project's initial features have not been operated as an integrated system.

PURPOSES OF CVP
The prime objective of the central Valley Project is an equalization of the basin's water resources between the surplus area of the north and the water-defi; cient southern two-thirds of the valley, providing for irrigation of more than one million acres of fertile farm lands.

Corollary objectives, all of them by-products of water storage and conservation, include:

Release of water from Shasta Reservoir to improve navigation on the Sacramento River

Stopping and storing peak flood flows on the Sacramento, American and San Joaquin Rivers

Generation of hydroelectric power at Shasta, Keswick, and Folsom dams.

Supply of water to municipalities and industries.
A steady flow of water into the low-lying Delta to repulse the salt water of San Francisco Bay.

Fish and wildife conservation.
Recreation opportunities on and near the newly created lakes of the project.

The main problem to be solved by CVP was this: two thirds of the basin's water supply originates in the Sacramento River watershed, while only one third of the irrigable land lies in that valley. Conversely, two thirds of the basin's irrigable land lies in the San Joaquin Valley, while only one third of the water supply originates in that area.

Here's how it will work. Surplus waters of the northern valley are conserved behind Shasta Dam on the upper Sacramento River, as well as Folsom Dam, currently under construction, on the American River, and released as needed to meet downstreaf
requirements and to provide a steady flow into the Delta for export south. In the process peak winter floods are controlled, low summer flows are increased, hydroelectric power is generated at Shasta, Keswick and Folsom, river navigation is improved on the Sacramento, and salt water threatening to intrude from the sea is flushed out of the Delta channels. Then, surplus Sacramento River waters conveyed across the Delta in the Cross Channel are picked up at the Tracy Fumping Plant and lifted 200 feet in elevation into the Delta-Mendota Canal, to flow another 120 miles south to Mendota Pool on the San Joaquin River west of Fresno. At this point the imported northern supply takes over the job formerly done by the San Joaquin River. By this exchange, San Joaquin waters can be retained behind Friant Dam and diverted still further south -- lafgely into the 153-mile Friant-Kern Canal for irrigation use in the critically water-deficient areas along the east side of the San Joaquin Valley as far down as Bakersfield.

As part of this mass movement of water from north to south, other project water supplies are used as needed along the Sacramento River; in Contra Costa County, from the 48 -mile Contra Costa Canal which diverts out of the Delta; along the lower west side of the San Joaquin Valley, from the Delta-Mendota Canal; and in Madera County, from the 37 -mile Madera Canal which diverts at Friant Dam.

Power developed by the project is used to drive the necessary pumping lift motors, and for use in cities and farms of California, and through sale of this energy, largely to repay CVP's construction costs along with revenue from irrigation and municipal water.

The Central Valley Project, although huge in scope, is but one of the vast developments built under the Reclamation program, which seeks the fullest possible development of western water resources. Through this program new economic opportunities, with better and more secure living, are being made available to the rapidly growing population of the Western United States.

CVP is a gigantic and complex irrigation project, but it does not represent the ultimate in man's search for water, which began with astonishingly efficient works in the Tigris and Euphrates Valley long before the birth of Christ. The developments, and others in the Nile Valley, Carthage, and later in Rome, were but the forerunners of Western America's solution to this perennial problem.

San Francisco reached out to the Yosemite Valley, 167 miles away to insure its water supply. In the $1920^{\prime}$ s Los Angeles built its famed aqueduct to the Owens Valley, some 215 miles distant. Later this supply was supplemented by an aqueduct reaching across desert and mountains from Parker Dam on the Colorado River, a distance of 242 miles. Western Australia piped precious water 300 miles across the desert to supply isolated towns.

Greatest of them all, CVP transports life-giving irrigation water from Shasta Reservoir, at the foot of the Cascade Mountains in northern California, to Bakersfield, at the extreme southern tip of the San Joaquin Valley, a distance of 500 miles -- the longest mass movement of water ever attempted by man. And even this represents only the beginning of the basin's water development

FEATURES OF CVP
(Sheet of statistics attached)
Shasta Dam and Reservoir $\rightarrow$ This key feature of CVP is the second highest and second largest (in mass) concrete dam in the world. A behemoth of concrete, it lies astride the Sacramento River, ten miles north of Redding, at an altitude of more than 1,000 feet.

Shasta Power Plant -- This largest hydroelectric plant in California is situated at the toe on Shasta Dam on the west bank of the Sacramento. It utilizes force of falling water from Shasta Reservoir to develop a capacity of 379,000 kilowatts, or 515,000 horsepower. This energy is transported over 230,000 volt transmission Iines to the CVP load center at Tracy switchyard, a distance of 213 miles.

Keswick Dam and Reservoir -- Keswick Dam, also on the Sacramento River, nine miles downstream from Shasta, re-regulates the fluctuating flow of the river below Shasta. Its power plant develops 75,000 kilowatts which feed into the CVP system.

Delta Cross Channel -- This feature comprises floodgates and a mile-iong excavation to divert water from the Sacramento River at Walnut Grove, into the maze of old channels of the delta to the Tracy Pumping Plant. It is the point of connection between Sacramento River water, and the various channels and canals carrying it into the San Joaquin Valley.

Tracy Pumping Plant -- Here six huge pumps, each driven by a 22,500 horsepower motor, lift water from the Delta 200 feet into the Delta-Mendota Canal, on the rim of the Central Valley basin's western foothills. Tracy switchyard also serves as the terminus for the 230,000 volt transmission lines from Shasta and Keswick Power plants.

Delta-Mendota Canal -- In this ll7-mile canal, 4,600 cubic feet of water per second will be carried south from Tracy Pumping Plant, and dumped into the San Joaquin River at Mendota Pool. This water in turn will replenish the San Joaquin River flow which has been diverted from the stream at Friant Dam, 40 miles upstream from Mendota.

Friant Dam -- Friant Dam is a storage and diversion structure on the San Joaquin River, from which water is released during the irrigation season into the canals.

Madera Canal -- This canal, with a 1,000 second-foot capacity, carries Millerton Lake water (Friant Dam reservoir) north 37 miles to irrigate lands in Madera County .

Friant-Kern Canal -- Friant-Kern is the main canal of the CVP system, carrying Millerton Lake water from the San Joaquin River (for which Sacramento River water has been exchanged at Mendota Pool) south 153 miles along the east rim of the San

Joaquin Valley, to the Kern River near Bakersfield. In this and in all of the other CVP canals there are turn-out structures to provide water for irrigation districts along the route.

Contra Costa Canal -- This is an offshoot of CVP, carrying agricultural, municipal and industrial water 48 miles from the delta near Oakley, to cities and farms on the south shore of Suisun Bay. It was the first CVP unit completed.

COST AND REPAYMENT

The initial features of CVP, which will be completed and in operation this July, will cost an estimated $\$ 400,000,000$, or which 87 per cent will be repaid through sale of water and power developed by the project over a sixty year period. Sale of power is expected to bear 45 per cent of the repayment total, and sale of water, 42 percent. The remaining 13 per cent is charged to non-reimbursable items such as flood control.

FUTURE OF CVP
There are presently authorized two additions to the Central Valley Project, one of which -- the American River development -- is under construction. The other is the Sacramento River Canals system, which will provide irrigation for 200,000 acres now dry farmed in the upper Sacramento Valley.

There is now before Congress a comprehensive plan for full development of the Central Valley Basin's water and power resources, which will make available every drop of water which can be beneficially used. The plan calls for 32 dams, along with power plants and a system of canals, to meet all of California's water needs far in the future.

14. The Delta-Mendota Canal, a huge sweep of concrete 117-miles long, soon will be carrying life-giving water from the Tracy Fumping Plant onto the San Joaquin Valley farm lands. This unit of the Central Valley Project will carry $2,000,000$ gallons of water per minute, 24 hours a day during the irrigation season.

DWF 417 CV


$$
\text { CV } 201
$$


12. California's 500 mile long Central Valley basin is an agricultural area of great richness and diversity, as this picture of vineyards surrounded by English walnut trees indicates. Water is the key to continued high production in this fabulous valley.
ce $62 \% \mathrm{cv}$

6. Extraordinary measures are necessary to transport water in river quantities from one end of the Central Valley Project to the other. This huge concrete siphon carries two million gallons of water per minute underneath a stream aiong the route of the Delta-Mendota Canal.

7. Water for farms, homes and industry is provided by the Contra Costa Canal of the Central Valley Project, which meanders through a $48-\mathrm{mile}$ course of pleasant valleys and rolling hills along the south shore of Suisun Bay.

CG $78 \% \mathrm{fV}$

