

Mid-Pacific Region, Santa Maria Project

Construction

The Santa Maria Project, authorized in 1954, is located in California about 150 miles northwest of Los Angeles. A joint water conservation and flood control project, it consists of the Twitchell Dam where construction began in July 1956 and was completed in October 1958. The Reservoir was constructed by the Bureau of Reclamation, and a system of river levees was constructed by the Corps of Engineers.

Twitchell Dam

Twitchell Dam is located on the Cuyama River about 6 miles upstream from its junction with the Sisquoc River. The dam regulates flows along the lower reaches of the river and impounds surplus flows for release in the dry months to help recharge the ground-water basin underlying the Santa Maria Valley, thus minimizing discharge of water to the sea at Guadalupe. The dam is an earthen fill structure having a height of 241 feet with 216 feet above streambed, and a crest length of 1,804 feet. The dam contains approximately 5,833,000 yards of material.

The multi-purpose Twitchell Reservoir has a total capacity of 224,300 acre-feet. The reservoir stores flood-waters of the Cuyama River for release as needed to recharge the ground-water basins, preventing saltwater intrusion. All water used within the area is obtained by pumping from the ground-water reservoirs. Twitchell Reservoir impounds winter floodwaters for later release down the river channel at a predetermined rate to permit maximum percolation into the ground-water basins; from these ground-water basins

individual landholders pump water according to their needs. The objective of the project as authorized is to release regulated water from storage as quickly as it can be percolated into the Santa Maria Valley ground-water basin. With this type of operation, Twitchell Reservoir is empty much of the time. For this reason, recreation and fishing facilities are not included in the project.



Twitchell Dam and Reservoir

Water Supply

The Cuyama River, with its principal tributaries Alamo Creek and Huana River, is the main source of water for the project. Its drainage basin, comprising approximately 290,000 hectare above Twitchell Dam, lies along the southern boundary of San Luis Obispo County and the northern edge of Santa Barbara County. The Sisquoc River, which joins the Cuyama river below Twitchell Reservoir at Fugler Point to form the Santa Maria River, drains an area of approximately 124,300 ha (480 mi²) and is a



large contributor of uncontrolled flows to the project area.

In late summer, the streams have little or no flow; in winter the runoff occurs almost immediately after precipitation, owing to the absence of snowpack. Since records began in 1962, the average annual discharge into Twitchell Dam was 51,200 acre-feet. The maximum runoff of 267,600 acre-feet occurred in 1969; the minimum runoff of no flow occurred in 1977. Precipitation in the Santa Maria Basin consists entirely of rainfall and averages approximately 12.3 inches at Santa Maria and for the whole basin approximately 17.5 inches. Approximately 95 percent of the rainfall comes in a 7-month period, October through April. The average unit farm water requirement for the valley lands is 2.13 acre-ft/acre per year. From the mesa land, the average unit farm water requirement is 2.01 acre-ft/acre per year.

Flood Control

To protect the city of Santa Maria and the agricultural lands of the Santa Maria Valley, the Corps of Engineers constructed, as part of the project, a series of levees and channel improvements. These extend for 22 miles along the Santa Maria River, providing a design capacity of from 150,000 to 160,000 feet and for 2 miles along Bradley Canyon, a design capacity of 9,000 feet.

Irrigable Acres

There are 49,100 acres of irrigable land in the project area of which 35,200 acres are in the Santa Maria Water Conservation District. The remainder of the irrigable land lies around the edge of the valley floors and on the highlands of the area. At the present time 30,500 acres are irrigated. The best soils of the project area occur on the flood plains of the Santa Maria and Sisquoc Rivers. The soils were built up by deposits of material carried from the surrounding mountains by the rivers and are suitable for production of any type of crop climatically adapted to the area. These soils

have favorable water-holding capacities, good physical properties, good drainage, and are free of soluble salts. The terrace area bordering the flood plains are older wind-deposited materials, which under cultivation are subject to some wind erosion.

Principal Products

The principal products of the project area are truck crops, including strawberries, lettuce, broccoli, cauliflower, carrots, and beans; field crops such as sugar beets, alfalfa, potatoes, vegetables and flower seeds; and irrigated pasture. In addition, large areas are dry farmed and grazed.

