

San Diego County.

By John T. Flynn.

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Cuyamaca Water Company
San Diego Cal.

Gentlemen;

In compliance with your request for a general report upon the "Flood and Water Problems" of San Diego County-and more particularly with reference to the domestic water supply of San Diego and surrounding cities. I beg to submit the following:

Southern California- by reason of its peculiar topography- has water problems differing from those of any other portion of the arid-or semi-arid sections of America. With snow capped mountains 15,000 feet in height, and valleys ~~2000~~ 260 feet below sea level-all within a radius of 200 miles-Southern California is topographically in a class by itself.

Through the 60,000 square miles of the nine counties lying south of the Tehachapi mountains-the melting snows of the Sierra Nevada, as well as the Rocky Mountains-1,800 miles distant-thread their way to the sea, between Los Angeles, and the Gulf of California-a few miles south of San Diego, on a direct coast line less than 250 miles in length.

This peculiar physical condition naturally implies a rapid run-off during the rain season, with the attendant loss of both soil and water.

For this reason, rules of conservation and distribution of water, such as are applicable to great level stretches like that of the valley of the Nile-or even the great valleys of Idaho, Montana, Arizona, New Mexico, Oregon, Washington, Colorado, Nevada, and even northern California, cannot be employed arbitrarily in the treatment of the water problems of Southern California.

With its scores of mountains, and hundreds of small valleys-where water often flows four ways from a common center- and soil and climatic conditions materially different from that of any other arid or semi-arid section of the United States, the problem of control- outside of that of the regulation, or control of the Colorado River- is local, rather than general.

The question is not one of a dearth of water, but rather one of

dealing with a surplus now going to waste-in a country where water
at the proper time is worth more than it is any other section of the
United States, not by reason of its general scarcity, but by reason
the great productive capacity of the soil when properly saturated.

Each of the nine counties-comprising the great empire of Southern
California, require special treatment, owing to the fact that each
county is in reality a group of cities or villages. instead of great
farms-as is the case in most irrigated sections. The famous
California bungalow-with its fruit, flower and vegetable garden is
in evidence everywhere south of the Tehachapi from the foothills
to the sea.

As the result of this widely scattered ownership-together with the
peculiar physical feature of lofty mountains, depressed valleys,
like that of the great Imperial-the recent bed of the Ocean- the
problem of meeting the domestic and irrigation needs of the present
to say nothing of those made necessary by the millions yet to come
is one that cannot be solved by any cash register system of cal-
-culation, or deduction. Nothing short of a comprehensive plan of
water control-embracing every known or available source of supply-
coupled with a scientific system of distribution-domestic as well
irrigation- will solve the flood and water problems of Southern
California.

The flood losses of this section during the year of 1916, will not
fall short of \$10,000,000, to say nothing of the loss of life. That
sum- if properly expended, would not only have prevented the loss of
life and soil, but furnished a scientific means of conserving a very
large volume of the water which wrought that destruction. Nature-
through the law of gravitation- has made it easier to control flood
than fire. But Nature's work ends with the creation of the elements, the
the work of control, is the work of man. We have made liberal and
scientific provision for the prevention, as well as the control of
fire-domestic as well as forest, but we still allow precious water
to flow riotously to ~~the~~ the sea-carrying with it death and
devastation. For some mysterious reason, the simplest-and yet the
most important problems of life- are generally the last to be
considered-and hence the enormous loss of life and property by
flood.

The City of San Diego has two well defined sources of water supply -either of which if properly developed-would meet the domestic requirements for many years to come-while the two combined into a general metropolitan system,would meet the needs of a million people.

One system is the Morena water-shed of 35 square miles at the crest of the Coast Range mountains-some sixty miles distant- through which the waters of the ~~San Antonio~~ Morena valley, the Cottonwood, and the Pine Creek valleys, are diverted through a 13 mile conduit across a Hog-back into the Dulzura creek- thence through an open creek bed through the privately owned Jamul Ranch for a distance of eight miles, and into the Lower Otay reservoir some ~~thirty~~ thirty odd miles from the Morena dam, the initial place of impoundment.

The Morena dam has an impounding capacity of 15,000,000 gallons while the Upper Otay reservoir has an impounding capacity of 1,100,000 gallons-. The Lower Otay-which was carried away by flood last winter-had a reputed impounding capacity of 13,000,000.

000 gallons. The Morena dam had an elevation of 310 feet above sea level, the Lower Otay, 40, and the Upper Otay an elevation of 520 feet.

As the Morena system-now owned by the city-was laid out, the waters of the Upper Otay-with its own drainage ~~area~~ or watershed-flowed into the ~~Lower~~ Lower Otay for subsequent conveyance by pipe line some twenty miles to the Chollas Heights Reservoir with a capacity 90,000,000 gallons, or about ten days supply for domestic uses.

With the destruction of the Lower Otay dam- the waters of the Morena were completely shut off, while the waters of the Upper Otay formerly going into the Lower Otay by an open flow- had no direct pipe connection with the distributing system-thus necessitating the purchase of five millions gallons per day from the privately owned Cuyamaca system-which suffered no damage by flood.

This supply-coupled with about five millions gallons per day obtained from wells in the San Diego river bed, met the domestic requirements of the city. The cost of water purchased from the private company was ten cents per Thousand gallons, while the actual cost ~~was~~ of water furnished by the city-before the destruction of the Otay dam,

was about 20 cents per thousand gallons.

With the contemplated-and in some respects necessary-outlay for the reconstruction of the Lower Otay dam,the Barrett Dam,and the probable purchase of privately owned intervening lands-at a total additional cost of ~~fix~~ \$ 1,500,000, and possibly \$, 2,000,000, the actual cost of the city water will reach 25 cents per thousand gallons, without in any way increasing the present supply,

The Morena system was purchased at a cost of \$4,000,000, upon which \$1,000,000 additional has since been expended in pipe lines etc, the distributing system costing about \$2,000,000 having already been owned by the City. The original owners of the Morena System sold water to the city at the rate of eight cents per thousand gallons -and presumably at a profit- while the present cost is close to 20 cents.

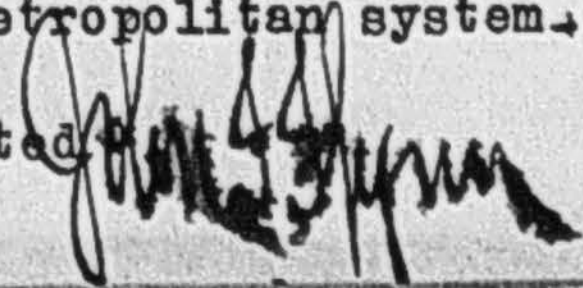
With the destruction of the Lower Otay, through which all the water of the Morena, Dulzura Creek and other streams were impounded,-and which now flow to the sea steps became necessary to divert that water into the Upper Otay, but it was discovered that the elevation was too great for a gravity flow, and hence the necessity of a pipe line some six miles in length to intercept the flow of Dulzura creek at a cost of several thousand dollars-and the work of months in construction.

Meantime it is proposed to drain the stored water of the Upper Otay -which is the citys only available supply, while the work of pipe construction is going on-thus leaving the city without any accessible reserve in the event of a break in either the Morena dam, or the proposed pipe line after completion. That is the business equivalent of a bank-that would loan out its cash reserve-upon the theory that depositors would not call for their money-while that reserve was out. That is a most dangerous as well as unbusiness like step to take-and especially at a time when the city can buy water from a private company for about half the cost of its ~~own~~ own supply. That water in the Upper Otay, is the citys most valuable possession, and ought not to be touched until a certain means of replenishment is at hand.

In my opinion there will be no solution of the water or flood problems of San Diego County, until all of its water supplies-chief of which is the Volcan System-are merged into one great Metropolitan system.

Respectfully submitted

May 15 - 1916



Ed Fletcher Papers

1870-1955

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**Business Records - Reports - Flynn, John T. - "The
Flood and Water Problems of San Diego County"**



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