

REPORT TO SAN DIEGO
COUNTY DEVELOPMENT FEDERATION
ON WATER SUPPLY

January 21, 1941

DIXON, et al

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To
The President, Directors and Members
of the San Diego County Development Federation.

Gentlemen:

At a meeting of the Federation held in La Mesa on March 19, 1940, at which meeting there was a general discussion of County wide water problems, the Federation determined that it would be for the best interests of the County to have a comprehensive report submitted to the Federation covering the water situation in general and making such recommendations and suggestions as might be beneficial or constructive as to the proper course to be followed in making such water developments as would be of benefit to the County as a whole. This suggestion was confirmed by letter from the President of the Development Federation dated May 8, 1940, which requested that the following information be furnished:

1. If all local water was developed in San Diego County, what would be the net safe yield?
2. What are the present requirements for the domestic and agricultural water needs of San Diego County?
3. Based on present rate of population and agricultural growth, how long will it be before all the water possible of development in San Diego County will be required?
4. What will be the water requirements necessary to meet the ultimate needs of San Diego County?
5. What do you estimate the cost of developing all possible San Diego County water?
6. What will be the cost of developing San Diego County water in 25,000,000 gallon quantities; 50,000,000 gallon quantities; 100,000,000 gallon quantities?
7. What will be the cost of acquiring Colorado River water in same quantities?

The following were appointed to serve on the Committee:

Mr. Fred D. Pyle, City of San Diego,

Mr. George Cromwell, San Diego County Water Company,

Mr. J. B. Dixon, Escondido Mutual Water Company,

Mr. S. D. Fraser, Carlsbad Mutual Water Company,

Mr. L. A. Williamson, California Water & Telephone
Company,

Mr. C. Harritt, La Mesa, Lemon Grove & Spring Valley
Irrigation District.

Later Mr. C. S. Palmeter of the City of Escondido and Mr. Robert Weese of the City of Oceanside served as ex officio members of the Committee.

In addition to the above there were representatives of various other agencies and interested parties who attended one or more of the Committee's meetings and entered into the discussions.

The statistical data used in this report has been derived from reports by Governmental agencies, records of the various organizations supplying water in San Diego County, and particularly the Ready-Hill-Buwalda report and Bulletins 48 and 48a of the State of California.

In compliance with the request of the Federation, as heretofore set out, it was suggested that this Committee be organized as a fact finding Committee to accumulate and assemble such data as might be of value to the Federation in determining the program to be initiated for the development of additional water supplies for San Diego County.

Early in the discussions it became apparent that there were two problems involved: First, the metropolitan district where the use was predominantly of a municipal or domestic character; and,

Second, the area north of the metropolitan district where the use was largely an agricultural one.

1. METROPOLITAN DISTRICT. The metropolitan district is the area defined in the Ready-Hill-Buwalda report as being that area "between the Mexican border on the south and the San Dieguito River on the north, comprising all suitable lands below Elevation 1,000 feet, plus the area north and west of the San Dieguito River served or to be served from Hodges reservoir". As stated in this report: "This area includes all lands possible of unified development and largely dependent upon a common water supply, and comprises some 630 square miles surrounding the City on the south, east and north, within which are located the cities of Coronado, National City, Chula Vista, La Mesa and El Cajon", which area, based upon the 1940 census, had a population as follows:

	<u>1940</u>	<u>1930</u>	<u>Per cent of Increase</u>
Coronado	6,908	5,425	27.34
National City	10,204	7,301	39.76
Chula Vista	5,126	3,869	32.48
La Mesa	3,912	2,513	55.67
El Cajon	1,475	1,050	40.47
San Diego	202,038	147,995	36.50
Farms	Estimated - 23,000		

and which at this date contains an estimated population of 270,000. This area also contains 120,000 acres of irrigable lands with but 20,000 acres now under irrigation and the total available developed and potential supply of water from local sources, including such water as may be pumped from underground basins, totals 87.4 million gallons daily, of which amount there is presently developed a supply

capable of yielding 49.7 million gallons daily, which is slightly less than two-thirds of the total ultimate amount which may be developed with a use in excess of the safe yield of the present development.

Should all the local supplies be developed, it would permit an increase in population of approximately 130,000 with a normal increase in agricultural development to a maximum of 27,000 acres.

2. AREA LYING NORTH OF THE METROPOLITAN DISTRICT AND SOUTH OF THE SANTA MARGARITA RANCH. The use of water in this area is largely of an agricultural character and derives its supply from the San Luis Rey River and Escondido Creek. The following agencies distribute water within this area:

Indian Irrigation Service for the Indian Reservations in this area, the Cities of Escondido and Oceanside, the Fallbrook Utility District, the Vista Irrigation District, the Escondido Mutual Water Company, the Carlsbad Mutual Water Company, the San Diego County Water Company and various private pumping plants within the area.

During the decade between 1930 and 1940 this area has experienced a steady growth, the increase in population in the two incorporated cities being as follows:

	<u>1940</u>	<u>1930</u>	<u>Per cent of Increase</u>
Escondido	4,552	3,421	33.06
Oceanside	4,642	3,508	32.32,

with a corresponding increase in the population of the agricultural areas.

The problem in this section is one of supplying water at

a cost and in a quantity that will permit a continuation of the steady growth both in the cities and agricultural areas.

It is also apparent that this particular area has a larger developed and potential supply of local water in proportion to its area and population than has the metropolitan area.

The potential water supply of this area from the San Luis Rey River and Escondido Creek drainages is estimated to be as follows:

San Luis Rey River above Henshaw Dam	20,000 Ac. Ft.
San Luis Rey River between Bonsall and Lake Henshaw (Citation State of California Bulletin 48A, Page 28)	14,180 Ac. Ft.
Mission basin below Bonsall and Escondido Creek drainage (Citation records of Carlsbad Mutual Water Company and Escondido Mutual Water Company)	7,000 Ac. Ft.
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Total net safe yield -	41,180 Ac. Ft.

From the above data, which is conservative and reliable, it appears that this area has a total supply which will permit the agricultural development of about 33,000 acres or will furnish a domestic supply of water for a population of about 290,000. The present population is estimated at 25,000 and the agricultural areas now developed and using water are approximately 20,000 acres. It is logical, therefore, to conclude that the local sources of supply for the northern part of the County should be developed for use in that area prior to seeking additional supplies from other sources.

LOCAL WATER SUPPLY OF THE AREA LYING SOUTHERLY OF THE SANTA MARGARITA RANCH. While the average annual runoff in this portion of San Diego County is approximately 276,000 acre feet per

year, or sufficient to sustain either an agricultural or a municipal development of approximately 230,000 acres, this runoff varies from year to year from about 5% of normal, or 15,000 acre feet, to as high as of in excess of two million acre feet per annum. To illustrate this condition, in the season of 1883-84 the runoff on the San Diego River at Old Mission Dam was in excess of 480,000 acre feet, whereas during the season of 1899-1900 the runoff was about 1,000 acre feet. Likewise, the total runoff of the Sweetwater River during the season 1883-84 was 285,000 acre feet, while for the seven years from 1897 to 1904 its supply was approximately 1,100 acre feet for the period. The most extremely dry cycle of record extended from 1895 to 1904. This condition is applicable to all of the streams in the County. These extreme flood years occurred at about ten year intervals going back to as far as 1810, although there is some fragmentary evidence tending to indicate that there was a heavy flood year in 1780, with little or no information as to what occurred between that time and 1810. To control and conserve these peak supplies for use during intervening periods requires storage capacities, speaking in a general way, of about seven times the average runoff, indicating that storage must be provided approximating two million acre feet on the various streams in San Diego County, the existing storage capacity at this time being 564,516 acre feet. Obviously water so stored is subject to substantial losses through evaporation, transpiration and other causes. Therefore, it appears that about 146,000 acre feet is the maximum net safe yield which may be developed from local sources within the areas under consideration, of which amount over one-half has now been developed, the net safe yield of developed water in this area being about 80,000 acre feet annually, or approximately

70 million gallons daily. It should be emphasized that these figures of runoff and developed quantities include a number of minor streams which, probably, owing to the high cost and low yield, will be developed only as a last emergency supply for domestic use.

While the Federation requested that some suggestions be made as to the time which would elapse before the available local supply would be required, in view of the rapidly changing conditions it is impossible to even approximate this period. The Army, Navy and Aircraft activities centered in and around San Diego have so accelerated the growth, particularly of the metropolitan area, and the consequent demands for water, that any estimate along these lines would have little or no value, other than the general observation that the present trend indicates that the metropolitan area will, by the first of 1944, have reached a growth which will require the development of all the supplies locally available to this section.

It has been estimated that the cost of development of the major sources of supply for the metropolitan district and for a major development on the San Luis Rey River will be about \$22,000,000, which figure does not include the cost of transmission or distribution of the water so developed. This would provide an additional supply of 45.7 million gallons daily.

The cost of bringing in water from the Colorado River through the All American Canal, not including the transmission and distribution of such water has been determined as follows:

<u>Pumping Capacity</u>	<u>Capital Cost</u>	<u>Annual Cost</u>	<u>Annual Cost per 1,000 gals.</u>
12.5 mgd	\$5,177,200	\$651,682	14.28¢
25 mgd	7,769,100	989,165	10.84¢
50 mgd	11,112,000	1,661,088	9.10¢
75 mgd	13,630,100	2,271,775	8.30¢
100 mgd	15,968,900	2,865,854	7.85¢

SUMMARY. Owing to lack of time, your committee did not make a study of the supply available from the Santa Margarita River and its tributaries and the minor sources of supply available to the extreme north portion of the County.

Your committee advises you that the resources of the various distributing agencies, particularly in the metropolitan area, are being taxed to the utmost in order to provide other utilities and facilities for their increased populations, which abnormal increase has been brought about by the National Defense program; that they are wholly unable to proceed in the orderly and normal development of their water resources; that in portions of the area under consideration the danger of a shortage in the supply of water, even for domestic purposes, is rapidly becoming acute; that in the event of a long continued drought such as has been experienced in this area in the past, they will be unable to supply sufficient water to maintain their present normal development; and that the logical method of protecting the existing activities in the metropolitan district is to develop their major local supplies and to bring in Colorado River water, as set forth in the Ready-Hill-Buwalda report. The minor local supplies available for development can be made from time to time as the necessity arises.

It is believed that the existing distributing agencies will find themselves able to transmit and distribute the water thus developed without Governmental assistance.

It is also the belief of your committee that abundant regulating storage is available within the metropolitan area for Colorado River water.

Inasmuch as it appears that there is sufficient developed and undeveloped water in the northern portion of the County to permit a continuation of its growth and development for a very considerable period of time and that the use in that area is predominantly an agricultural one, while the problem in the metropolitan area is largely one of supplying domestic water, it does not appear to be wise or necessary at this time to organize any County wide metropolitan, utility or other form of district or organization unless it should become advisable to provide an Agency or Authority with which Governmental bodies might deal.

Due to the vital importance of avoiding a possible shortage of water due to a long drought, which would be disastrous to the Government's National defense activities, to the rapidly expanding industrial plants connected therewith, to the City of San Diego, the San Diego metropolitan area and to the County of San Diego as a whole, your committee urges that the Federation take such further steps as may be necessary to insure that a complete study be made at the earliest practicable time by Governmental agencies to determine the plan of action in the event a shortage in the water supply is indicated.

Respectfully submitted,

J. B. DIXON (Signed)
GEORGE CROMWELL (Signed)
S. D. FRASER (Signed)

FRED D. PYLE (Signed)
L. A. WILLIAMSON (Signed)
C. HARRITT (Signed)

Ed Fletcher Papers

1870-1955

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