

SAN DIEGO
COUNTY WATER AUTHORITY



THIRTY-THIRD ANNUAL REPORT
1979

SAN DIEGO COUNTY WATER AUTHORITY
Organized June 9, 1944

THIRTY-THIRD ANNUAL REPORT

OF AUTHORITY OPERATIONS
FOR FISCAL YEAR ENDING JUNE 30, 1979

Linden R. Burzell
General Manager and Chief Engineer

SAN DIEGO, CALIFORNIA
1979

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SAN DIEGO COUNTY WATER AUTHORITY
Member Agencies, Date of Entry and
Representative on Board of Directors on June 30, 1979

CITIES

Del Mar.....	Nov. 23, 1962
Thomas C. Shepard.....	
Escondido.....	Oct. 9, 1950
Robert M. Dodd.....	
National City.....	June 9, 1944
Tom Crownover.....	
Oceanside.....	June 9, 1944
David Rorick, Jr.....	
San Diego.....	June 9, 1944
Dr. Charles F. Cooper, Janet Erickson, R. E. Graham, Lawrence, Hirsch, Roy W. Lessard, Francesca M. Krauel, Michael D. Madigan, Joseph Parker, John P. Starkey.....	

WATER DISTRICTS

Helix.....	June 9, 1944
Nat L. Eggert, Harry Griffen, C. G. Watters, Jr.....	
San Dieguito.....	Dec. 13, 1948
Laena Dashiell.....	

IRRIGATION DISTRICTS

Santa Fe.....	Dec. 13, 1948
R. E. Badger (Deceased).....	
South Bay.....	Nov. 3, 1952
Lloyd L. Lee, John N. Williams.....	
<i>(Includes City of Chula Vista, an independent member agency, from June 9, 1944 to November 3, 1952)</i>	

MUNICIPAL WATER DISTRICTS

Bueno Colorado.....	June 11, 1954
Hans H. Doe.....	
Carlsbad.....	June 16, 1954
Fred W. Maerckle.....	
De Luz Heights.....	June 28, 1967
George F. Yackey.....	
Olivenhain.....	July 25, 1960
Howard G. Golem.....	
Otay.....	Oct. 26, 1956
Glenn M. Reiter.....	
Poway.....	April 21, 1954
James C. Stanton.....	
Rainbow.....	April 10, 1954
Robert W. Coates.....	
Ramona.....	August 27, 1957
Ray "G" Stock.....	
Rincon del Diablo.....	June 14, 1954
Sherwood D. Anderson.....	
Padre Dam.....	June 7, 1956
Harold S. Rakowski.....	
<i>(Includes Lakeside I.D., an independent member agency, from June 9, 1944 to June 7, 1956)</i>	
Valley Center.....	May 9, 1955
John F. Hennigar.....	
Yuima.....	Dec. 16, 1963
F. D. Fitzsimmons.....	

PUBLIC UTILITY DISTRICT

Fallbrook.....	June 9, 1944
Paul K. Algert.....	

FEDERAL AGENCY

Pendleton Military Reservation.....	Dec. 16, 1977
Paul L. V. Campo.....	

OFFICERS OF BOARD OF DIRECTORS



Chairman
JOHN M. CRANSTON
San Diego
10-64 to 5-79



Vice Chairman
PAUL K. ALGERT
Fallbrook Public Utility District
7-74 to 6-79



Secretary
ROY W. LESSARD
San Diego
5-73 to 6-79

EXECUTIVE OFFICERS



LINDEN R. BURZELL
General Manager and Chief Engineer



PAUL D. ENGSTRAND
General Counsel

ADMINISTRATIVE STAFF



B. L. OGDEN
Assistant Chief Engineer



HENRY LOZANO
Director of Finance and Treasurer



I. E. NICHOLS
Superintendent



JANET RAVIART
Executive Secretary

BOARD OF DIRECTORS

1978-79

For Officers, See Page 4



S. D. ANDERSON
Rincon Del Diablo Municipal Water District
8-78 to 6-79



R. E. BADGER
Santa Fe Irrigation District
9-57 to 5-79



LOIS A. BROZEY
San Diego
8-74 to 6-79



PAUL L. V. CAMPO
Pendleton Military Reservation
1-78 to 6-79



ROBERT W. COATES
Rainbow Municipal Water District
2-79 to 6-79



DR. CHARLES F. COOPER
San Diego
4-73 to 6-79



TOM CROWNOVER
National City
6-76 to 6-79



CHARLES A. CRYTSE
Rincon del Diablo Municipal Water District
6-54 to 8-78



LAENA DASHIELL
San Dieguito Water District
1-78 to 6-79



ROBERT M. DODD
Escondido
1-70 to 6-79



HANS H. DOE
Bueno Colorado Municipal Water District
6-54 to 6-79



NAT L. EGGERT
Helix Water District
10-77 to 6-79



JANET ERICKSON
San Diego
2-74 to 6-79



F. D. FITZSIMMONS
Yuima Municipal Water District
8-71 to 6-79



HOWARD G. GOLEM
Olivenhain Municipal Water District
1-62 to 6-79



R. E. GRAHAM
San Diego
7-63 to 6-79

**BOARD OF DIRECTORS
1978-79
(Continued)**



HARRY GRIFFEN
*Helix
Water District
7-56 to 6-79*



JOHN F. HENNIGAR
*Valley Center
Municipal Water District
10-76 to 6-79*



LAWRENCE HIRSCH
*San Diego
5-73 to 6-79*



ALLAN O. KELLY
*Carlsbad Municipal
Water District
11-63 to 11-78*



FRANCESCA M. KRAUEL
*San Diego
8-78 to 6-79*



LLOYD L. LEE
*South Bay
Irrigation District
4-61 to 6-79*



MICHAEL D. MADIGAN
*San Diego
5-79 to 6-79*



FRED W. MAERKLE
*Carlsbad Municipal
Water District
11-78 to 6-79*



ARTHUR H. MARSTON, JR.
*San Diego
12-74 to 1-79*



JOSEPH PARKER
*San Diego
3-77 to 6-79*



HAROLD S. RAKOWSKI
*Padre Dam
Municipal Water District
11-76 to 6-79*



GLENN M. REITER
*Otay Municipal
Water District
9-71 to 6-79*



DAVID RORICK, JR.
*Oceanside
8-63 to 6-79*



PAT N. SCOTT
*Rainbow Municipal
Water District
9-74 to 2-79*



THOMAS C. SHEPARD
*Del Mar
5-78 to 6-79*



DAVID R. SHEPARDSON
*Poway Municipal
Water District
4-54 to 8-78*

**BOARD OF DIRECTORS
1978-79
(Continued)**



JAMES C. STANTON
*Poway Municipal
Water District
8-78 to 6-79*



JOHN P. STARKEY
*San Diego
10-75 to 6-79*



RAY "G" STOCK
*Ramona Municipal
Water District
12-78 to 6-79*



C. G. WATTERS, JR.
*Helix
Water District
5-77 to 6-79*



JOHN N. WILLIAMS
*South Bay
11-70 to 6-79*



GEORGE F. YACKEY
*De Luz Heights
Municipal Water District
6-68 to 6-79*

PHOTO
NOT
AVAILABLE

DR. GORDON R. ZICK
*Ramona Municipal
Water District
8-77 to 12-78*

**DIRECTORS REPRESENTING SDCWA ON METROPOLITAN WATER DISTRICT
BOARD OF DIRECTORS**



R. E. BADGER
3-73 to 5-79



JOHN M. CRANSTON
12-74 to 6-79



HANS H. DOE
7-59 to 6-79



HARRY GRIFFEN
1-63 to 6-79



LLOYD L. LEE
10-73 to 6-79

COMMITTEES OF THE BOARD

June 30, 1979

ADMINISTRATIVE CODE

Harold S. Rakowski, Chairman
Laena Dashiell, Vice Chairman
Charles F. Cooper
Tom Crownover
Fred W. Maerke
Joseph Parker
Thomas C. Shepard
James C. Stanton

ENVIRONMENTAL POLICY

David Rorick, Jr., Chairman
Clarence G. Watters, Jr., Vice Chairman
Paul Campo
Charles F. Cooper
Janet Erickson
Joseph Parker
Harold S. Rakowski

FINANCE AND INSURANCE

Nat L. Eggert, Vice Chairman
Paul K. Algert
Paul Campo
Robert W. Coates
Howard G. Golem
Harry Griffen
Francesca M. Krauel
Lloyd L. Lee
Roy W. Lessard
Harold S. Rakowski
David Rorick, Jr.
John P. Starkey
Ray "G" Stock
John N. Williams

LANDS AND RIGHTS OF WAY

Lawrence Hirsch, Chairman
John F. Hennigar, Vice Chairman
Paul K. Algert
Sherwood D. Anderson
Tom Crownover
Laena Dashiell
Robert M. Dodd
F. D. Fitzsimmons
Michael D. Madigan
Fred W. Maerke
Thomas C. Shepard
James C. Stanton
Ray "G" Stock

PUBLIC INFORMATION

Janet Erickson, Chairman
F. D. Fitzsimmons, Vice Chairman
Robert W. Coates
Laena Dashiell
Hans H. Doe
Nat L. Eggert
Ralph E. Graham
John F. Hennigar
Roy W. Lessard
Michael D. Madigan
Glenn M. Reiter

ENGINEERING AND OPERATIONS

Robert M. Dodd, Chairman
Ralph E. Graham, Vice Chairman
Sherwood D. Anderson
Paul Campo
Robert W. Coates
Hans H. Doe
Howard G. Golem
Lawrence Hirsch
Michael D. Madigan
Fred W. Maerke
Glenn M. Reiter
Thomas C. Shepard
James C. Stanton
Clarence G. Watters, Jr.

LEGAL AND CLAIMS

John P. Starkey, Chairman
Joseph Parker, Vice Chairman
Sherwood D. Anderson
Charles F. Cooper
Janet Erickson
John F. Hennigar
Francesca M. Krauel
George F. Yackey

LONG RANGE PLANNING

Harry Griffen, Chairman
Lloyd L. Lee, Vice Chairman
Paul K. Algert
Hans H. Doe
John F. Hennigar
Lawrence Hirsch
Roy W. Lessard
Glenn M. Reiter

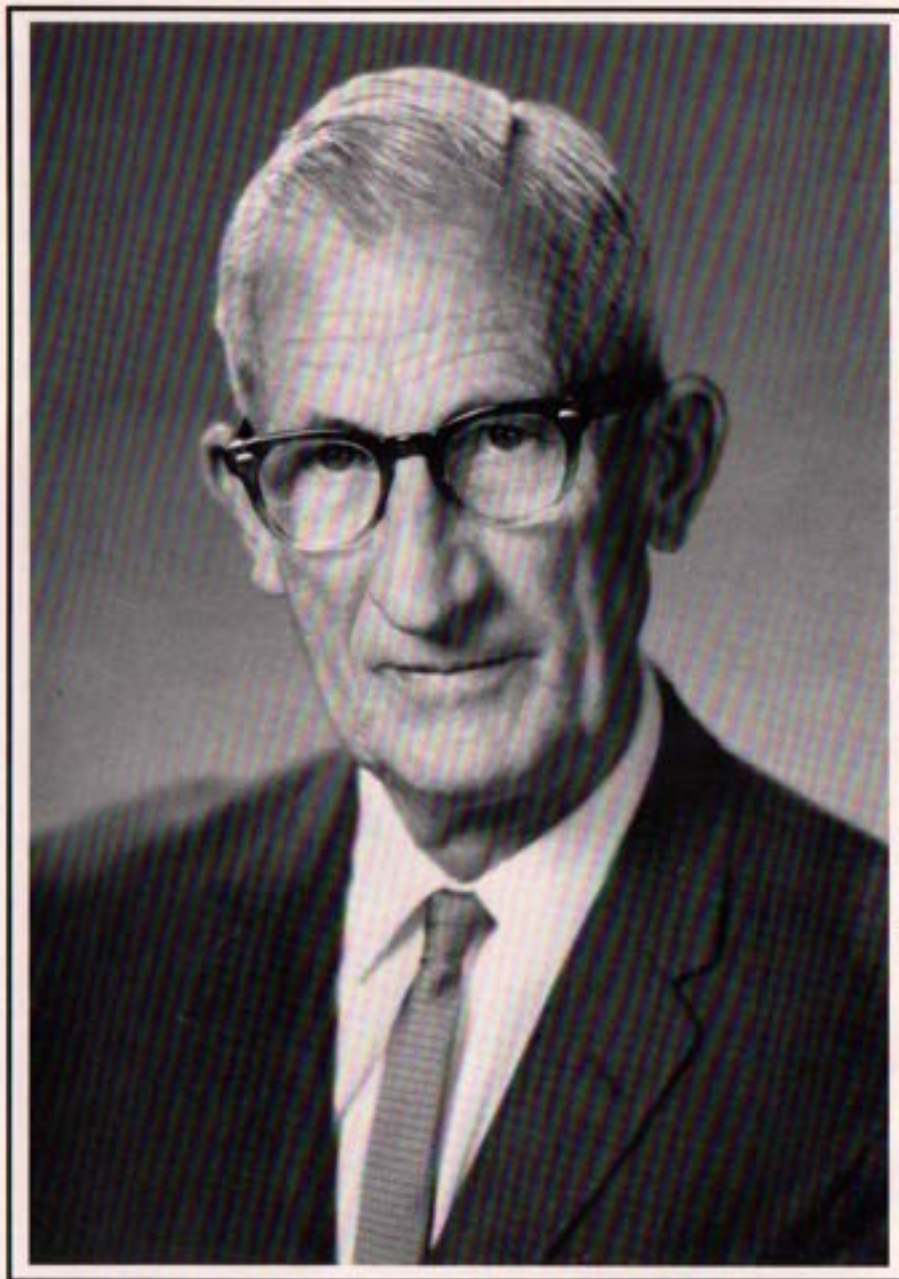
ORGANIZATION AND PERSONNEL

David Rorick, Jr., Chairman
Harry Griffen, Vice Chairman
Tom Crownover
Howard G. Golem
Francesca M. Krauel
Lloyd L. Lee
John P. Starkey
John N. Williams
George F. Yackey

WATER PROBLEMS AND POLICY

Lloyd L. Lee, Chairman
John N. Williams, Vice Chairman
Paul K. Algert
Robert M. Dodd
Hans H. Doe
Nat L. Eggert
F. D. Fitzsimmons
Ralph E. Graham
Harry Griffen
Lawrence Hirsch
Roy W. Lessard
Glenn M. Reiter
Clarence G. Watters, Jr.
George F. Yackey

In Memoriam



RAYMOND E. BADGER
1898 - 1979
Director
1957 - 1979



San Diego County Water Authority
2750 Fourth Avenue, San Diego, California 92103 (714) 297-3218

John M. Granlon, Chairman
Paul K. Alpert, Vice Chairman
Roy W. Lessard, Secretary
Linda R. Buzel, General Manager
and Chief Engineer
Paul D. Engstrand, General Counsel

July 18, 1979

Board of Directors
San Diego County Water Authority

The Thirty-Third Annual Report of the Water Authority, covering activities during the fiscal year ending June 30, 1979, has been prepared and is transmitted herewith.

The winter of 1978-79 was the second consecutive wet winter in Southern California. The local water supply in storage at June 30, 1979 was approximately 425,000 acre feet, a net increase of over 50,000 acre feet during the year. The frequent rainfall periods reduced the demand for irrigation and domestic water substantially during part of the year. However, overall water demand increased some 7.7% over 1978. The large quantities of local runoff in storage are expected to cause a reduction in the demand for imported water for the next two years.

During the California legislative session in the spring of 1979, a considerable effort was made to pass legislation that would authorize construction of the Peripheral Canal. This facility is considered to be the best of several projects which would permit the State of California to develop needed additional water in sufficient quantities to fulfill its contractual commitments for 2+ million acre feet annually to Metropolitan Water District. In late June, Senator Ayala allowed his legislative bill, SB 200, to go over to the January 1980 session due to lack of support in the Senate Finance Committee. Metropolitan, the Water Authority and water agencies statewide intend to continue their efforts until a satisfactory solution is reached.

The Metropolitan staff completed its study of the need for Pipeline 5 in Reports 929, 933 and 934 during the fiscal year. These reports have all been approved by both Metropolitan and the Water Authority, and work is commencing on the pipeline design. Report 934 was prepared in the form of an Environmental Impact Report to satisfy the requirements of the California Environmental Quality Act. After two hearings and much public input, all questions were answered and the EIR finalized by the lead agency, Metropolitan, on July 10, 1979. It is anticipated that San Diego's portion of Pipeline 5 will be financed by short term financing or a revenue bond issue to be submitted to the voters in 1980.

The Water Authority's financial position remains strong, and the staff is prepared to meet the challenges of designing and constructing Pipeline 5 and meeting the water demands of the Authority in the 1980's.

Very truly yours,
L. R. Buzel
L. R. Buzel
General Manager and Chief Engineer

LRS:jmr

MEMBER AGENCIES

CITIES •Del Mar •National City •Academy •Oceanside •San Diego	IRRIGATION DISTRICTS •Santa Fe •South Bay WATER DISTRICTS •Imperial •San Diego	PUBLIC UTILITY DISTRICT •Fallbrook MILITARY RESERVATION •Camp Pendleton	MUNICIPAL WATER DISTRICTS •Buena Vista •Imperial •Carmel •Riverside •De Luz Heights •San Marcos •Downstream •Mission del Diablo •Escondido •Palmdale •Fresno •Yuba
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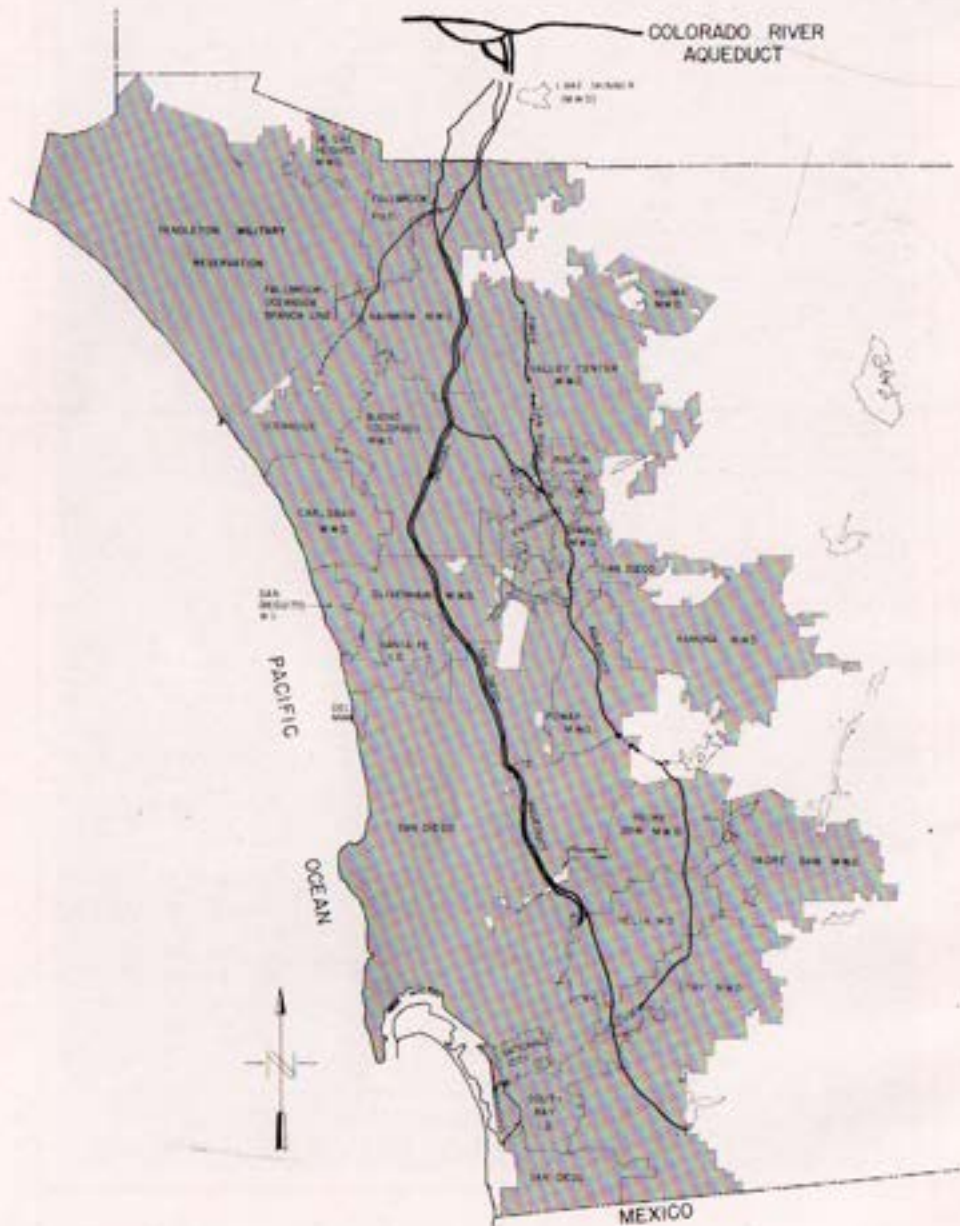


Figure A. Authority Area Within San Diego County.

FISCAL YEAR 1978-1979

The need to create an organization to acquire and administer rights to distribute water in San Diego County was first made evident as far back as 1933. Officials of the City and County of San Diego petitioned the California State Legislature to adopt an enabling act to create such an organization. This act, "The County Water Authority Act" was approved by the Governor on May 17, 1943.

Pursuant to this act, nine public agencies petitioned the County of San Diego to call an election to create the San Diego County Water Authority. The result of the election was overwhelming in favor of creating such an organization. The Authority was created on June 9, 1944.

Since its inception, the Authority has been importing from The Metropolitan Water District of Southern California (MWD) over 90% of the water used in San Diego County. This imported water is distributed through 23 member agencies of the Authority. These member agencies are autonomous and their city councils or board of directors set local policies and pricing structures.

During the 1978-79 fiscal year, The Metropolitan Water District of Southern California delivered a blend of Colorado River water and State Project water. Water from both sources is blended in Lake Skinner and subsequently sold by the Authority to its member agencies. The blend of water as of June 1979 was 40% State Project water and 60% Colorado River water.

The Board of Directors approved the Environmental Impact Report (EIR) for the construction of Pipeline 5 at its May 1979 meeting. The pipeline is scheduled to be in operation by 1983.

The Authority and its member agencies continued a vigorous program of water conservation in recognition of future recurrence of droughts and water shortages. The subject is covered in detail in the "Public Information" section of this Annual Report.

Concern for future water supplies and accompanying environmental and social problems in San Diego County deserve continuing study by the Authority, and as a consequence, the Board of Directors has created the Long Range Planning Committee as a standing committee to assume all long range planning.

During this fiscal year a county-wide mutual assistance program was developed by the Authority and its member agencies with the Authority assuming the role of coordinating agency.

Also, within the last six months The Metropolitan Water District of Southern California created a committee dedicated to the promotion and eventual construction of the Peripheral Canal which will provide 1.2 million acre feet of additional water for California. The Authority, by resolution, and by actions of its individual members and officers is supporting that effort.

BOARD OF DIRECTORS

General

Each of the 23 member agencies is represented on the San Diego County Water Authority Board of Directors by one or more persons. A member agency is entitled to one additional representative for each full five percent of total Authority assessed valuation contained within its boundaries. These representatives are appointed by the chief executive officers of the respective agencies with approval by the agencies'

governing bodies. During the year, only three agencies were represented by more than one representative: The City of San Diego by ten; Helix by three; and South Bay Irrigation District by two. Directors serve without pay from the Authority.

To facilitate matters, most business coming before the Board is first considered by one or more of its committees. Each committee then reports to the full Board which makes the necessary decisions. There are ten standing committees: Engineering and Operations, Finance and Insurance, Organization and Personnel, Water Problems and Policy, Lands and Rights of Way, Legal and Claims, Administrative Code, Public Information, Environmental Policy, and Long Range Planning.

Officers of the Board of Directors are elected in July of even-numbered years. In July 1978, John M. Cranston was elected Chairman; Paul K. Algert, Vice Chairman; and Roy W. Lessard, Secretary.

During the July 1978 meeting, Allan O. Kelly was reseated as representative for Carlsbad Municipal Water District for a term expiring June 17, 1984. A three-year service emblem was presented to Director Starkey; a 15-year emblem to Director Kelly; and a 25-year emblem to Director Crytser. Director Shelton was presented with a framed resolution honoring him for his many years of service on the Authority Board.

During the August 1978 meeting, Director Sherwood D. Anderson was seated as representative of Rincon del Diablo Municipal Water District replacing Director Crytser for a term expiring June 21, 1984. Also at the August 1978 meeting Director Francesca M. Krauel was seated as one of the representatives of the City of San Diego to serve Director Kerrigan's unexpired term to March 7, 1980. Director James C. Stanton was seated at the August meeting as the representative of Poway Municipal Water District replacing Director Shepardson for a term expiring on April 22, 1984. Chairman Cranston presented a 10-year service emblem to Director Yackey and a 15-year service emblem to Director Graham at the August meeting.

The Board adopted a resolution at its August 1978 meeting honoring Harold F. Pellegrin upon his retirement as Executive Secretary of the Colorado River Board of California.

The Board of Directors at its September 1978 meeting adopted resolutions honoring Directors Crytser and Shepardson upon their retirement from the Board of Directors.

During the October 1978 meeting, Howard G. Golem was reseated as representative of Olivenhain Municipal Water District for a term expiring August 4, 1984.

At the October 1979 meeting, the Board adopted a resolution appointing Director Cranston as representative to the Executive Committee of the Colorado River Association.

At the November 1978 meeting, Director Fred W. Maerle was seated as the representative from Carlsbad Municipal Water District replacing Director Kelly for a term expiring June 17, 1984.

The Board adopted a resolution at its November 1979 meeting honoring Director Allan O. Kelly upon his retirement from the Board of Directors.

The Board of Directors at its November 1978 meeting adopted a resolution honoring Director Arthur H. Marston for his service on the Board of Directors.

Mrs. Laena Dashiell was reseated as a representative of San Dieguito Water District during the December 1978 meeting of the Board for a term expiring December 21, 1984.

Ray "G" Stock was seated as a representative of Ramona Municipal Water District at the December 1978 Board meeting for a term expiring October 2, 1981. Mr. Stock replaces Gordon R. Zick.

During the December 1978 Board meeting, Director Raymond E. Badger was reseated as representative of Santa Fe Irrigation District for a term expiring December 13, 1984.

At the February 1979 meeting, Director Robert W. Coates was seated as the representative of Rainbow Municipal Water District replacing Director Scott for a term expiring April 19, 1984.

During the May 1979 Board meeting, Director Michael D. Madigan was seated as one of the City of San Diego's representatives replacing Director Cranston for a term expiring January 30, 1985.

The Board of Directors adopted a resolution at its May 1979 meeting honoring Raymond E. Badger (posthumously) for his outstanding services rendered to the San Diego County Water Authority.

During the June 1979 Board meeting, Directors Charles F. Cooper and John P. Starkey were reseated as representatives of the City of San Diego for terms expiring March 5, 1985.

Guest Speakers

November 1978 - Commissioner Joseph F. Friedkin, International Boundary and Water Commission, brought the Board up to date on the Commission's activities with a slide presentation.

January 1979 - Benedict R. Radecki, Acting Regional Supervisor of Power for the United States Bureau of Reclamation at Boulder City, Nevada, spoke on "Reclamation Power Resources."

February 1979 - Donald C. Brooks, Director of Planning at The Metropolitan Water District of Southern California, discussed MWD Report No. 935, "Planning Concepts Used in Determining Water Supply Available from the State Water Project."

March 1979 - Earle C. Blais, Chairman of the Board of Directors of The Metropolitan Water District of Southern California, reported on MWD's activities in support of early construction of the Peripheral Canal and other matters of current interest.

May 1979 - Paul D. Engstrand, General Counsel for the San Diego County Water Authority, made a presentation on the Brown Act.

June 1979 - Le Val Lund and Dennis Williams from the Los Angeles Department of Water and Power spoke on the effects of proposed legislation involving Mono Lake and Mono Basin.

Policy

At its August 10, 1978 meeting, the Board adopted a resolution setting the debt service tax levy for 1978-79 fiscal year at 6¢ per \$100 of assessed valuation on property within the Water Authority service area.

A resolution establishing vote representatives of member agencies, as determined by assessed valuation for fiscal year 1978-79 was adopted by the Board at its August 29, 1978 adjourned meeting.

Also, at the August 29, 1978 adjourned meeting, upon motion by Director Lee and seconded by Director Fitzsimmons, the Board rescinded Resolution No. 78-51 adopted at the August 10, 1978 meeting, and adopted a resolution entitled "Resolution of the Board of Directors of San Diego County Water Authority Rescinding Resolution No. 78-51 and Fixing the Tax Rate for Fiscal Year 1978-79."

Article 8, Section 8.4 of the Administrative Code covering merit increases within salary ranges was amended at the September 14, 1979 Board meeting.

The Board at its November 9, 1978 meeting consented to the annexation of the Rancho Jamul Estates area to the San Diego County Water Authority.

At the November 9, 1978 meeting, the Board adopted a resolution, moved by Director Dodd, seconded by Director Lee, and carried, authorizing an agreement with the City of San Diego for storage in San Vicente Reservoir.

Also, at the November 1978 meeting, the Board took the position that new Hoover Dam power rates be based upon actual costs incurred as opposed to estimated costs of alternative sources of power.

The Board of Directors at the January 11, 1979 meeting amended Article 11 of the Administrative Code to establish the treated water commodity charge for the fiscal year beginning July 1, 1979. This motion eliminates the capacity charge for treated water.

The Board at the February 8, 1979 meeting authorized the execution of a joint powers agreement with the Association of California Water Agencies Joint Powers Insurance Authority.

At the March 8, 1979 meeting, the Board adopted a resolution, supporting the Peripheral Canal program of The Metropolitan Water District of Southern California.

The Board on April 12, 1979 designated the Long Range Planning Committee as a standing committee.

At the April 12, 1979 meeting, the Board amended the Administrative Code to increase the surcharge rate for water to \$5.00 per acre foot effective July 1, 1979.

Also, at the April 12, 1979 meeting, the Board set fixed terms of office for its representatives on the Board of Directors of the Metropolitan Water District.

On June 14, 1979, the Board established an interagency mutual aid procedure.

At its June 14, 1979 meeting, the Board granted separate member agency status to San Marcos Water District.

Administration

The executive officers of the Water Authority are Linden R. Burzell, General Manager and Chief Engineer, and Paul D. Engstrand, General Counsel. The administrative staff consists of Assistant Chief Engineer Buckley L. Ogden; Director of Finance Henry G. Lozano; Superintendent Irwin E. Nichols; Government and Community Affairs Officer Pete Rios; and Executive Secretary Janet M. Raviart.

Administrative offices of the Authority are at 2750 Fourth Avenue, San Diego. Field headquarters are located at the Fred A. Heilbron Operations Center, Fifth and Quince Streets, Escondido.

At the end of the fiscal year, the Authority had 40 employees, four of whom were working under a grant from the Comprehensive Employment and Training Act.

WATER AUTHORITY COMPOSITION**Area**

The Authority encompasses 898,607 acres (1404.07 square miles), a net increase of 801 acres during the fiscal year. The Rancho Jamul Estates Annexation to Otay Municipal Water District which added 904 acres, and three annexations to the City of San Diego added 148.39 acres, but the Bonfils Detachment from Ramona Municipal Water District subtracted 251 acres.

Area changes, addition of member agencies, and percentage of area of each member agency are contained in Table 3. The City of San Diego is the largest area with 204,819 acres; the smallest area is the City of Del Mar consisting of 1,082 acres.

Each calendar year the Authority is required by State law to file a Statement of Change of Boundary. This statement was filed with Metropolitan Water District, the San Diego County Assessor, and the State Board of Equalization on December 29, 1978.

The statement for calendar year 1978 contained one annexation to the City of San Diego that added area to the Authority; one detachment from Ramona Municipal Water District, the Authority, and MWD that reduced the service area; together with 32 changes in member agency boundaries which did not change the Authority boundary.

The Statement of Change of Boundary is used by the County Assessor to determine the total assessed valuation within each member agency and the Authority for tax purposes.

Population

The population of San Diego County on June 30, 1979 was estimated to be 1,767,450 people of which 99 percent live within the Authority service area. The average annual growth rate within the Authority service area for the period from 1946 to 1979 was 9.06 percent. The population within the Authority service area was estimated to be 1,758,737 persons on June 30, 1979, an increase of 93,537 or



5.6 percent from the June 30, 1978 estimate of 1,665,200. Population statistics are contained in Tables 2 and 3.

The City of San Diego, the largest member agency of the Authority in area also leads the member agencies in population with 833,000 persons, approximately 47 percent of the Authority total. De Luz Heights Municipal Water District has the lowest population, 200 persons, and the lowest density with 0.02 persons per acre. The highest average population density within an identifiable political entity is 9.38 persons per acre in the City of La Mesa which lies within the Helix Water District boundaries.

The average population density of the Authority increased during the fiscal year from 1.85 to 1.96 persons per acre or 1,252 persons per square mile. This increase is a result of annexations and population increases.

Assessed Valuation

The assessed valuation of taxable property within the Authority, both secured and unsecured, and the Authority's budget requirements provide the basis for the annual determination of the Authority tax rate by the Board of Directors. The number of Directors and the number of votes to which each member agency is entitled are determined by the total assessed valuation within the member agency. The valuations are determined by the San Diego County Assessor who also collects these taxes for the Authority.

Total assessed valuation of taxable property within the Authority for 1978-79 according to the County Auditor's certification was \$7,533,884,334, an increase of \$427,726,631 or 6.0 percent from the 1977-78 certified valuation of \$7,106,157,703.

The average assessed valuation of property within the Authority service

area decreased from \$9,306 per acre in 1977-78 to \$8,391 per acre in 1978-79, a 9.8 percent decrease. This decrease was a result of limitation on assessed valuation brought about by Proposition 13.

The assessed valuation for each member agency, the Authority, and the San Diego County are contained in Table 5.

WATER SUPPLY AND CONSUMPTION

Source

The Metropolitan Water District of Southern California (MWD) is the sole source of water to the Authority which has a preferential right to approximately 10.9 percent of MWD's total supply. Water purchases earn no preferential rights. Although the preferential right provision of the MWD Act has never been enforced as a basis for curtailment of water deliveries, the dependence on imported water by the Authority member agencies, whose use is approximately 27.6 percent of MWD supply, makes the preferential right provision significant to the Authority and its member agencies.

MWD Facilities

Metropolitan Water District supplies a blend of Colorado River water and State Project water. Water from the Colorado River is diverted at Lake Havasu and is carried through the Colorado River Aqueduct to its terminus at Lake Mathews in Riverside County. Supplies for San Diego County are diverted from the aqueduct near the west portal of the San Jacinto Tunnel into the First San Diego Aqueduct (Pipelines 1 and 2). A few miles west, the San Diego Canal receives water from the Casa Loma Canal. Pipelines 1 and 2 enter and traverse San Diego County without going through any other major facilities.

The State Project water is delivered to MWD at Lake Perris, terminus of the 444-mile California Aqueduct. From there it flows through Lakeview Pipeline to the San Diego Canal. Here it blends with Colorado River water as both supplies flow south in the San Diego Canal and into Lake Skinner. A portion of the water from Lake Skinner flows directly into Pipeline 3 while another portion is processed through the Skinner Filtration Plant before entering Pipeline 4. By the end of June, the blend in Lake Skinner was 60 percent Colorado River water and 40 percent State Project water.

Lake Skinner is the major storage facility for the San Diego Aqueducts with a maximum capacity of 44,000 acre feet of storage. The facilities are located in Riverside County south of Winchester. The maximum water surface elevation for storage is 1,479 feet above sea level. The Skinner Treatment Plant, located at the reservoir, has a treatment capacity of 240 million gallons per day (mgd).

Authority Facilities

The Authority takes delivery of water from MWD in the four pipelines of the two San Diego Aqueducts near Rainbow approximately six miles south of the Riverside-San Diego County line.

San Vicente Reservoir, which is owned and operated by the City of San Diego, is the terminus of the First Aqueduct. The Fallbrook-Oceanside Branch originates from the First Aqueduct at Rainbow. The Authority operates and maintains approximately 12.5 miles of this branch from Rainbow to Morro Reservoir. The La Mesa-

Sweetwater Branch extends from the First Aqueduct at Slaughterhouse Canyon through Lakeside and El Cajon to Sweetwater Reservoir. The two pipelines of the First San Diego Aqueduct share common tunnels and inverted siphons and are operated as a single unit.

The two pipelines of the Second Aqueduct, although in common right of way for most of their length, do not share any facilities south of Lake Skinner and are operated separately. The treated water pipeline terminates in Lower Otay Reservoir. The untreated water pipeline ends at the City of San Diego's Alvarado Treatment Plant near Lake Murray.

To maximize the flexibility of the system, several crossover connections have been constructed during recent years. One such facility is the pipeline from the Second Aqueduct at Twin Oaks Valley to the First Aqueduct just north of Escondido.

This connection permits the refilling of the First Aqueduct with untreated water after agencies to the north have used a portion of its capacity.

Just upstream of the Twin Oaks Valley diversion is an interconnection which permits the transfer of Pipeline 3 flows into Pipeline 4 and vice versa. Member agencies have also increased the flexibility of their operations by increasing the number of aqueduct pipelines to which they are connected.

Pipeline 4 Extension provides the capability to deliver untreated water to the Alvarado Treatment Plant while Pipeline 3 delivers treated water to Padre Dam Municipal Water District, Helix Water District, Sweetwater Authority, Otay Municipal Water District, and the City of San Diego.

Flows in the First Aqueduct are chlorinated at a station in Rainbow Pass just north of the Riverside-San Diego County line. Treated water is chlorinated during the treatment process at the Skinner Plant, and water in Pipeline 3 is chlorinated at the Rainbow Chlorination Station.

Design capacity of the First San Diego Aqueduct, pipelines 1 and 2 combined, is 196 cubic feet per second (cfs). Pipeline 3 has a 250 cfs design capacity, and Pipeline 4 has a 380 cfs design capacity. (One cubic foot equals 7.48 gallons. One cfs flowing for 24 hours will produce nearly two acre feet. An acre foot contains approximately 326,000 gallons.)

No storage facilities are owned or operated by the Authority. However, it does have the contractual right to store up to 40,000 acre feet (af) in San Vicente Reservoir, the terminus of the First Aqueduct. An agreement with the City of San Diego, which owns the reservoir, provides for payment to the City of \$2.20 per af for the maximum amount of water in storage each year.

In addition, the Authority pays the City \$1.00 per af for pumping water from storage into the City's system. The agreement also provides that the first water which may be lost over the spillway is that stored by the Authority.

During the fiscal year, no water was placed in San Vicente Reservoir by the Authority for the accounts of member agencies. During the year 2,532.9 af were withdrawn and 67.2 af were lost by evaporation for a total reduction of 2,600.1 af, the amount in storage on June 30, 1978, resulting in no storage on June 30, 1979. San Vicente storage statistics are shown in Table 4.

Another Authority-City of San Diego agreement permits storage up to 2,500 af in Lower Otay Reservoir, terminus of Pipeline 3. Storage here is for operational purposes only. Water is transferred to the City when it requests delivery at this location. No storage is provided for member agencies. The City is paid \$1.00 per af for the maximum storage in any twelve-month period, subject to a minimum annual fee of \$1,000. The Authority also pays pumping charges which vary from \$1.50 to \$2.25 per af depending on water elevation.

Lake Jennings, owned by Helix Water District, can be used for storage of a maximum of 2,000 af under terms of an agreement with the District. This water must be purchased by Helix during the following fiscal year, and all losses are absorbed by the District.

A contract with Sweetwater Authority (successor to California-American Water Company) provides for storage in Sweetwater Reservoir, the quantity to be determined by that agency. Under this contract, Authority storage is charged its proportionate share of evaporation. As of June 30, 1979, the Authority had no water stored in Sweetwater Reservoir.

These agreements are designed to release seasonal peaking on the San Diego Aqueduct.

Supervision and control of the San Diego Aqueducts' system is conducted from the Fred A. Heilbron Operations Center, Escondido, where delivery requests from member agencies are received. Aqueduct flows and deliveries are controlled and monitored through a telemeter system designed and built by Authority personnel. Communication with operating and maintenance field staff and with MWD's East Valley Operations Section at Lake Skinner is by two-way radio.

Deliveries and Rates

The San Diego County Water Authority aqueducts delivered 288,719 af during the fiscal year. Untreated water accounted for 186,789 af, and the balance 101,930 af, was water treated at the Robert A. Skinner Treatment Plant in Riverside County. This total flow of 288,719 af was 50,934 af less than the previous fiscal year, a 15 percent reduction. The reduction can be attributed to the water conservation efforts of the Authority and its member agencies and the very wet winter.

The lowest flow rate averaged 135 cfs in February 1979. The highest average delivery of 684 cfs occurred during August 1978. The average for the entire year was 398.8 cfs.

Water deliveries to member agencies and others during the fiscal year are shown in Table 8. Purchases by member agencies totalled 289,261.6 af, and 1,932 af were delivered to Tijuana at the international border.

On September 25, 1978 with temperatures having been 105° and above at inland county points, the demand in the treated water line was about 17 cfs above the capacity of the Pipeline 3. For several days the Rainbow Municipal Water District and the Fallbrook Public Utility District with permission from the California State Department of Public Health, took water from the raw water (unfiltered) Aqueduct.

The Miramar plant of the City of San Diego was shut down 88 days for plant expansion construction from February 3 to April 26, 1979. During this period the city took 75 cfs of treated water from the aqueduct through the deactivated Miramar Plant.

Due to low demand because of agencies construction, maintenance activities and plentiful local water, the Second Aqueduct, (raw water line) was shut down twice, once for 30 days.

During February, 1979, flow demand on the Aqueduct reached a 19 year low of 63 cfs. Many local reservoirs were at or near spill.

On May 15th the combination Aqueduct flows reached a peak for the year of 751 cfs. This flow was topped only by the flows of June and July of 1976 when the flow was 805 cfs. Up to 50 cfs of the 1976 flow went into storage for future use while none of the May 1979 flow was stored.

During extremely hot weather early in June, 1979, all pipelines were used to the maximum possible flow. Pipelines 1, 2 and 3 were limited by pipeline capacity and the Pipeline 4 was limited by treatment plant capacity.

After Pipelines 3 and 4 were switched, the raw water flow was limited by the capacity of the smaller Pipeline 3. The Skinner Treatment Plant produced a new high of 303 cfs (rated capacity is 232 cfs) by using temporary emergency operating procedures.

Even with maximum effort by MWD the maximum flow available from all MWD sources was 744 cfs. To meet the demands of the treated water line it became necessary to turn the pump station on for the first time. The pump ran for two days delivering 29 cubic feet per second through one pump.

The Skinner Treatment Plant expansion nearing completion will increase the treated water capacity by 60%.

Storage in the Authority's account in San Vicente Reservoir at the beginning of the fiscal year was 2,600.1 af. During the year, no additional water was placed in storage.

Storage in other member agencies' reservoirs at the end of the fiscal year was 424,839 af which is approximately 59 percent of total capacity compared with 374,148 af of the previous year. This increase amounts to 50,691 af or 14 percent of the previous year.

Annual water sales to individual agencies for the eight-year period 1971-72 through 1978-79, total water sales from 1947 to 1971, and total water sales from 1947 to 1979, are shown on Table 7. The sales during fiscal 1978-79 are 84 percent of the previous fiscal year, a reduction of 55,311 af.

The operations and maintenance of the Authority is financed by a surcharge on water delivered to its member agencies plus other miscellaneous revenues. The surcharge rate during the fiscal year was \$2.50 per acre foot from July 1, 1978 to January 1, 1979 and \$3.00 per acre foot from January 1, 1979 to July 1, 1979.

Capital costs have been financed by sales of general obligation bonds and from tax revenues. The bond service cost is paid from tax revenues with the balance of tax revenues used for current capital improvements.

The tax revenue from assessed valuation of property within the Authority for fiscal year 1978-79 was set at 6 cents per \$100 of assessed valuation for retirement of bonded indebtedness and capital improvements.

The Metropolitan Water District generally announces water rates two years in advance. Since 1975, water rates have been increased yearly because of higher cost

of energy for pumping, and an increase in the proportion of the bond service cost being financed through water sales in accordance with the City of Los Angeles-MWD agreement which settled the lawsuit between these two parties.

The MWD rate for untreated water for municipal and industrial use was \$74.00 per af for the first six months of fiscal year 1978-79 and \$79 per af for the second six months of the fiscal year, to which was added the Authority surcharges of \$2.50 and \$3.00 per acre foot respectively. Treatment charges by MWD at the Skinner Treatment Plant were \$21.00 per af for the same period. A number of contracts between the Authority and some of its member agencies which have treatment plants provide for service by these plants. This treated water is then sold to agencies which do not have facilities available. Due to the great difference between treatment costs, the Authority charges are based on the average cost of the service and are charged through both a capacity and a commodity rate.

These rates are set annually by the Authority Board of Directors in January for the following fiscal year. The capacity rate charge for fiscal year 1978-79 was \$4,550 for each acre foot used on the day of maximum use. This charge is payable monthly as one-twelfth of the total charge. This charge is added to the monthly statement. The commodity charge for this period was \$15.10 per acre foot.

At its January meeting, the Authority Board of Directors abandoned the present capacity/commodity rate concept. A single commodity charge of \$35.00 per acre foot will become effective after July 1, 1979. In addition, the surcharge rate was set at \$5.00 per acre foot starting in July 1, 1979.

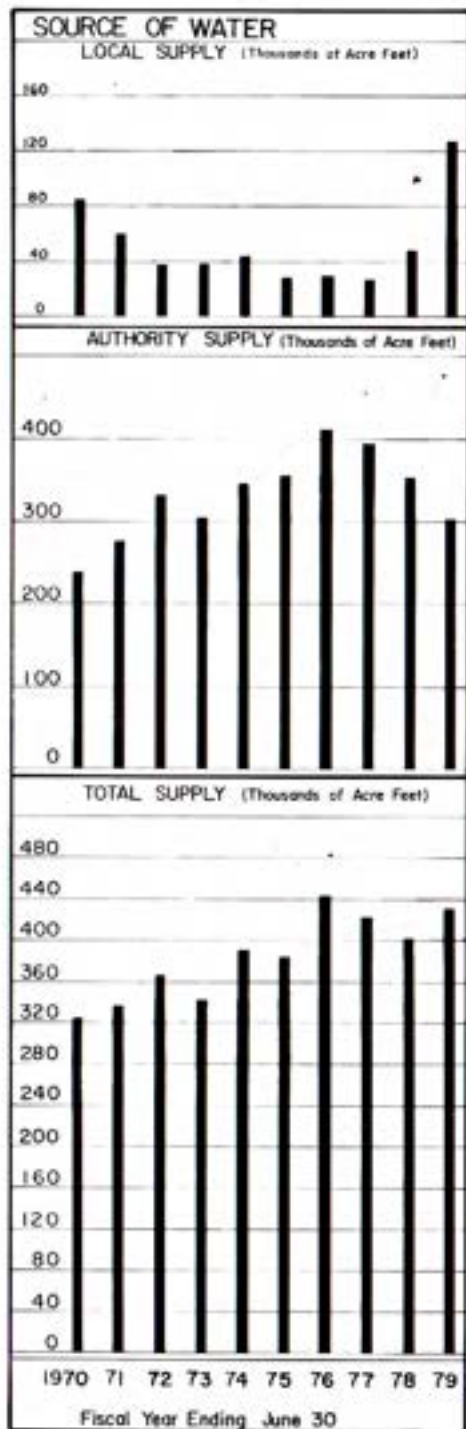
The following is a complete summary of past and future MWD and Authority rates:

SUMMARY OF WATER RATES
(Dollar Per Acre Foot)

From	To	MWD	Authority	Total	Agricultural Rebate	Resulting Agricultural Rate
7/1/58	1/1/61	15.00	2.00	17.00	3.00	14.00
1/1/61	1/1/62	17.00	2.00	19.00	4.25	14.75
1/1/62	1/1/63	19.00	2.00	21.00	5.50	15.50
1/1/63	1/1/64	21.00	2.00	23.00	6.75	16.25
1/1/64	7/1/64	24.00	2.00	26.00	9.00	17.00
7/1/64	9/1/64	25.00	2.00	27.00	9.75	17.25
9/1/64	7/1/65	25.00	1.25	26.25	9.75	16.50
7/1/65	7/1/66	28.00	1.25	29.25	12.00	17.25
7/1/66	7/1/67	31.00	1.25	32.25	14.00	18.25
7/1/67	7/1/68	34.00	1.25	35.25	16.00	19.25
7/1/68	7/1/69	37.00	1.25	38.25	18.00	20.25
7/1/69	7/1/70	40.00	1.25	41.25	20.00	21.25
7/1/70	7/1/71	44.00	1.25	45.25	23.00	22.25
7/1/71	7/1/72	48.00	1.25	49.25	26.00	23.25
7/1/72	8/13/73	52.00	1.25	53.25	28.50	24.75
8/13/73	7/1/75	56.00	1.25	57.25	31.00	26.25
7/1/75	7/1/76	58.00	1.25	59.25	33.00	26.25
7/1/76	7/1/77	62.00	2.00	64.00	33.00	31.00
7/1/77	7/1/78	67.00	2.00	69.00	33.00	36.00
7/1/78	1/1/79	74.00	2.50	76.50	34.00	42.50
1/1/79	7/1/79	79.00	3.00	82.00	34.00	48.00
7/1/79	7/1/80	79.00	5.00	84.00	34.00	50.00

NOTE: The above summary of water rates shows prices for untreated Colorado River and State Project water; treatment cost of \$13.00/af for the period 7/1/76 to 7/1/77, \$17.00/af for the period 7/1/77 to 7/1/78, \$21.00/af for the period 7/1/78 to 7/1/79 and \$25.00/af for the period 7/1/79 to 7/1/80 must be added to the above rates.

As shown in the above summary, MWD gives encouragement to agriculture through lower prices. To obtain the rebate, the Authority certifies to MWD the quantities of water used for agriculture. Rebates granted the Authority are paid in full to the member agencies. The agencies, in turn, credit the agricultural users.



Water Production of Member Agencies

The phrase "Water Production" describes the quantity of water an agency obtains from all sources to meet its consumers' needs. It includes losses between the source and the consumer. These losses may result from pipeline breaks, evaporation from reservoirs, and operating shortages. Sources include impounding reservoirs, wells, and the Authority system.

Total water production for each of the 23 member agencies of the Authority is shown in Table 4. During 1978-79, the total water production was 433,008.9 af, an increase from 400,821 af in 1977-78 of 32,187 af or 7.4 percent. The highest monthly production occurred during July 1978 when 55,607.5 af of water were used. This is considerably higher than the previous high during June 1978 when 51,423 af were used. The lowest monthly production occurred during February 1979 when 18,438 af of water were used. The Authority supplied 76.7 percent of the water production during the maximum month of June and 69.9 percent of the production for the fiscal year.

The winter of 1978-79 produced 15.55 inches of rainfall at Lindbergh Field, 159 percent of normal; 42.03 inches at Lake Cuyamaca, 111 percent of normal; and 25.95 inches at Lake Henshaw, 157 percent of normal.

Runoff from this heavy rainfall increased storage in reservoirs from 374,148 af on June 30, 1978 to 424,839 af on June 30, 1979, an increase of 14%.

The City of San Diego maintains the most extensive system of impounding reservoirs in the Authority service area. This system produced 63,317 af during the fiscal year, of which agencies outside the Authority received 6,866 af. Helix Water District produced 17,008 af from Lake Cuyamaca and

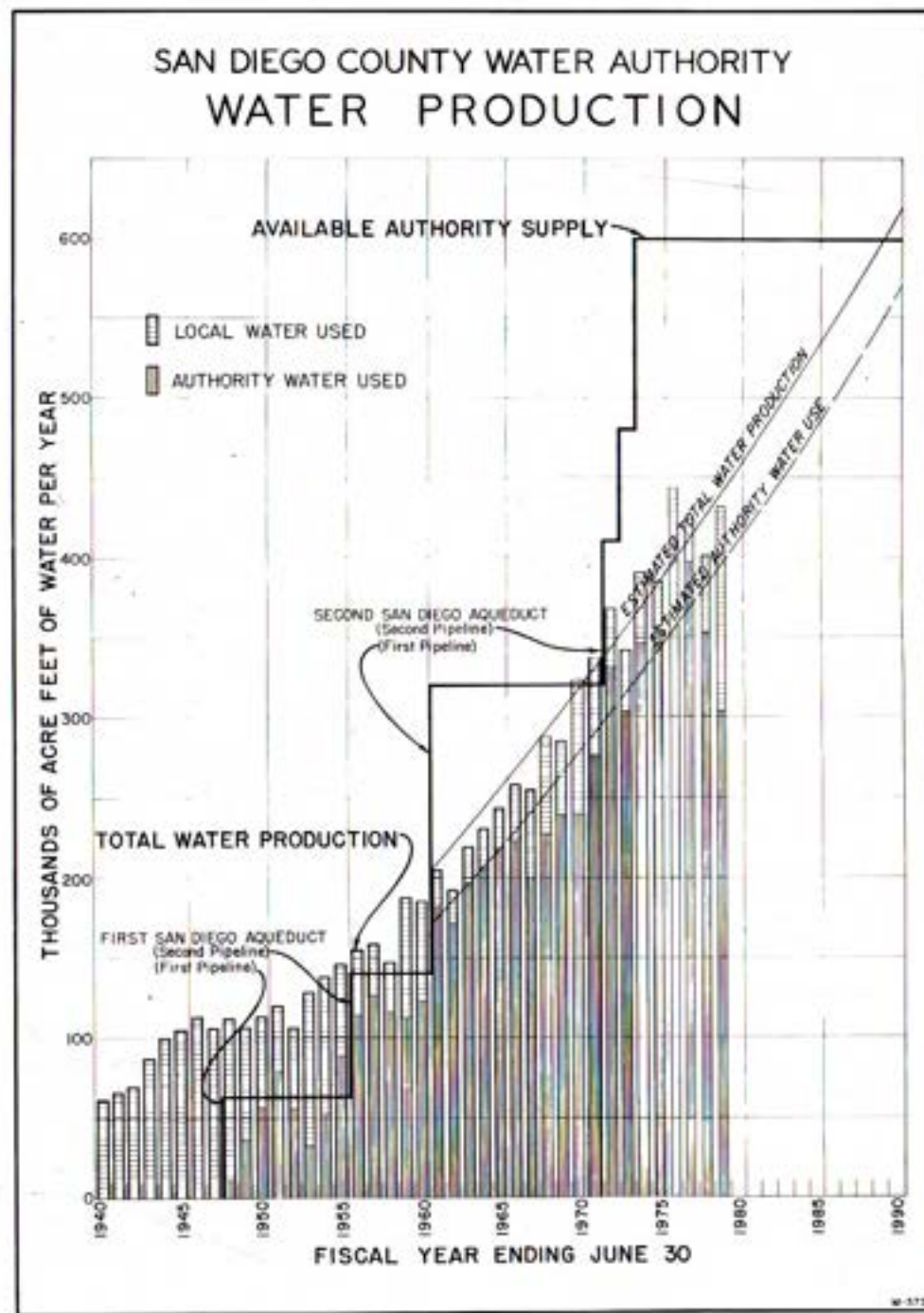


Figure B. Water Production of Authority Member Agencies

its wells in the El Monte Basin. The Vista Irrigation District, part of Bueno Colorado Municipal Water District, produced 9,893 af from Lake Henshaw and the Warner Ranch wells. The City of Escondido produced 13,440 af from the Henshaw-Wolford system, and 1,159 af were produced within the Yuima Municipal Water District from the Pauma Valley wells. Sweetwater Authority produced 17,625 af for use in National City and South Bay Irrigation District.

Local water production of other member agencies is shown in Table 4.

The Authority has 23 member agencies, nine of which are 100 percent dependent on the Authority for water. The fourteen remaining agencies vary from 99 to 34 percent dependence on Authority water.

Water production per unit area is highest in the urbanized portions of the County. However, the per capita use of water is generally less in areas of greater population density such as the Helix Water District, National City, and the City of San Diego. Water production per unit area in the less densely populated areas, such as Rainbow Municipal Water District, Valley Center Municipal Water District, and Olivenhain Municipal Water District, is approximately the same but per capita use is considerably higher.

Average daily per capita consumption of municipal and industrial water for fiscal year 1978-79 was 171 gallons, up from 165 gallons per day during the previous year and down from 174 gallons per capita per day two years ago.

Approximately 45 percent of the area within the Authority is estimated to be served. This figure is up one percent from the previous fiscal year.

The combined water production of Authority member agencies is shown in Figure B. Shading indicates the proportion obtained from local sources compared with that supplied by the Authority. The trend toward increased dependence on imported water and changes in the quantity of local water used each year are shown graphically.

Projections for future water production indicate that present transmission facilities are adequate to meet volume demands until approximately 1983. Operational requirements associated with delivery of treated, as well as untreated water, will dictate construction of Pipeline 5 before that date.

Water Quality

The general quality of water entering the Authority system continues to improve. Seasonal high algae still occurs which has caused variable turbidity. Turbidity at Miramar Treatment Plant ranged from a low of 0.3 Jackson Turbidity Units to a high of 9.6 units reported in December 1978.

Algae growth in Authority pipelines is controlled through a program of continuous chlorination. The rate of chlorine applied during the year was 1.00 to 1.25 parts per million (ppm) to flows in Pipelines 1 and 2 at the Rainbow Chlorination Station. This program has effectively controlled the residual algae from the Colorado River Aqueduct.

During the fiscal year, all treated water delivered to the Authority was treated at the Robert A. Skinner Treatment Plant. This treatment includes chlorination as well as filtration.

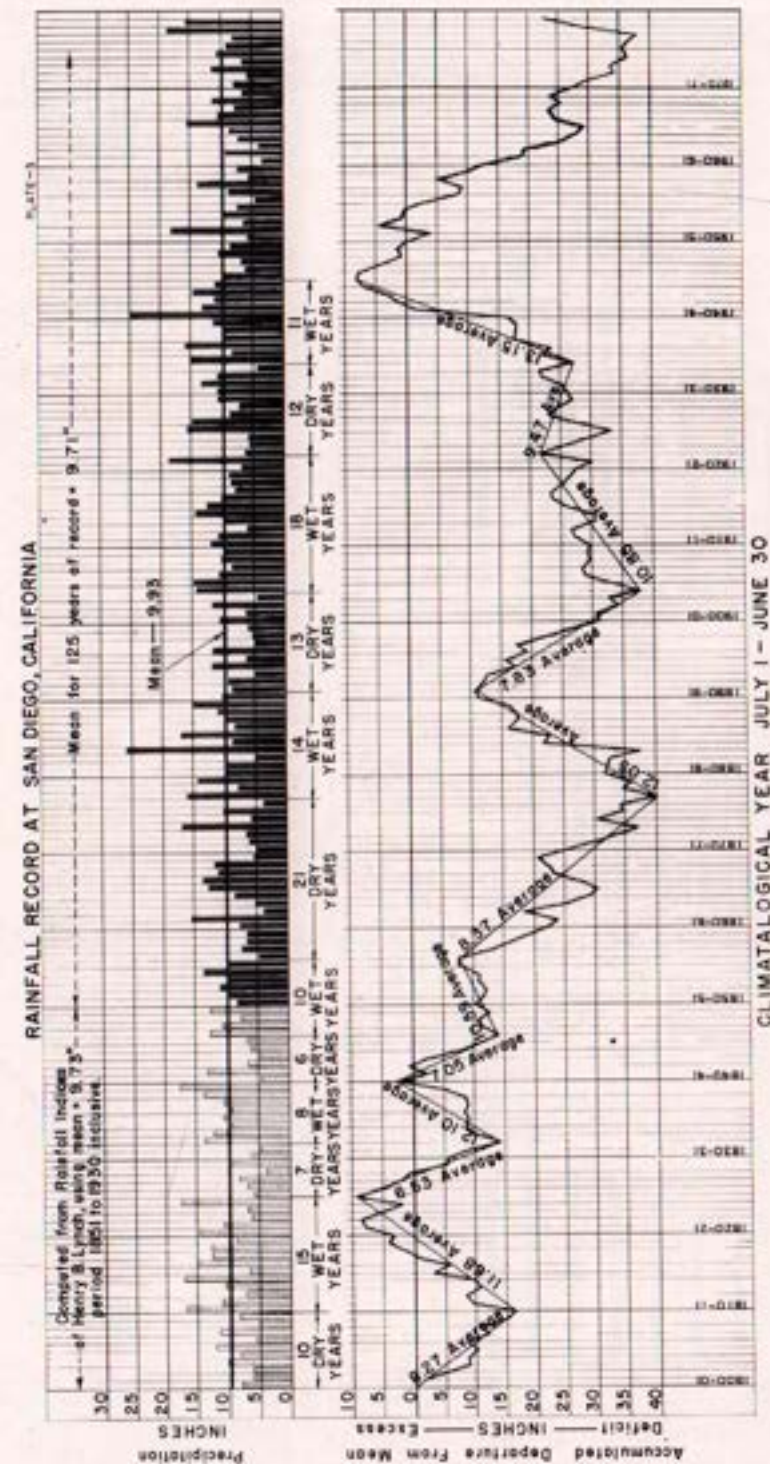
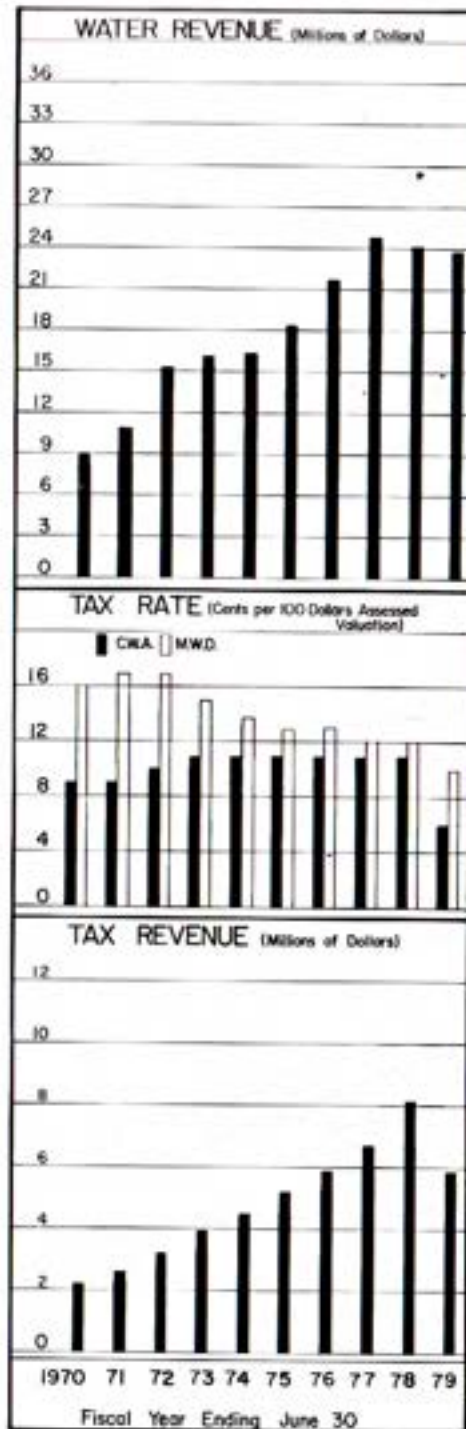


Figure C. Rainfall Record at San Diego, California



The continuous chlorination of untreated water from Lake Skinner is performed at a temporary station near Lake Skinner which is operated and maintained by Metropolitan Water District.

On May 6, 1978, State Project water was introduced into the system from Perris Reservoir, and by the end of the current 1978-79 fiscal year, about 40 percent of the content of Lake Skinner was State Project water. Considerable improvement in total dissolved solids was evident.

Chemical constituents of the dissolved solids in the Colorado River water are shown in Table 11. The analyses are based on samples taken from West Portal of San Jacinto Tunnel and tested by MWD. Total hardness ranged from a high of 338 mg/l to a low of 316 mg/l. Water temperature varied from a low of 11°C in January 1979 to a high of 24.6°C reported in June 1979.

The chemical constituents of the dissolved solids of blended water at Lake Skinner are shown in Table 12. Total hardness ranged from a high of 281 mg/l to a low of 235 mg/l. Water temperature ranged from a low of 10.2°C recorded in February 1979 to a high of 25.4°C reported in July 1978.

Agricultural Water Use

Agricultural water use by member agencies of the Authority during 1978-79 was 95,568 af, 2,987 more than the previous year's use of 92,581 af. The percentage of agricultural water to the total water production was 22.1 percent, down from 23.1 percent in 1977-78.

The percentage of agricultural water use from the Authority is considerably higher, 89.6 percent, than the percentage of total water production of 69.9 percent because agencies with high percentage of agricultural water

in many cases have no local water production. Several agencies, such as the Helix Water District and the City of San Diego, have very low percentage of agricultural use and high percentage of local water production. A complete summary of agricultural water use is contained in Table 4.

Water Treatment

The Robert A. Skinner Treatment Plant began operations in September 1976. Initial capacity of the facility was 150 million gallons per day (mgd). Maximum design capacity was reached several times. A 90 mgd expansion of the plant was completed and in operation by May 1979. This expansion will provide sufficient treated water to satisfy the demands of all agencies requiring treated water for several years.

Member agencies of the Authority who own and operate treatment plants within the County are the City of San Diego, the City of Escondido (joint ownership with Vista Irrigation District), San Dieguito Water District-Santa Fe Irrigation District (joint ownership), Helix Water District, Poway Municipal Water District, and Sweetwater Authority (agents for National City and South Bay Irrigation District).

For those agencies not having access to the treated water pipeline, the Authority has negotiated contracts for treated water from other agencies within the County which operate treatment plants. These contracts are with the City of San Diego, Helix Water District, and Poway Municipal Water District. The cost of all treated water delivered to member agencies is the same regardless of the treatment service.

Several agencies on the First Aqueduct still use Colorado River water with dual chlorination as the only treatment provided. The Authority provides the first chlorine application in its pipelines, and the agencies are responsible for the second chlorination after delivery.

Allocation of Water to Member Agencies

The County Water Authority Act (Sec. 5.11) provides a preferential entitlement for the purchase of water by each of the Authority member agencies. This preferential right is established by the proportion of all payments by each agency to the Authority to meet capital costs, primarily the annexation fees, and taxes.

Voluntary agreement between the member agencies has made it unnecessary to invoke these provisions when shortages have developed. When water and capacity are available, agencies are permitted to purchase without restriction. In addition, the California Water Code (Sections 350 through 358) contains procedures which may be followed should water shortages occur.

The Authority's Administrative Code (Sections 12.4 and 12.5) contains provisions for normal and abnormal water allocations in situations not deemed to be so serious that either of the above-mentioned provisions need be invoked.

Future Supplies

It is the responsibility and the policy of the Authority to provide all the supplemental water required by its member agencies to meet the needs of their consumers. It is recognized that this policy must be tempered by an obligation to encourage prudent conservation practices. It is also recognized that there are certain acts of nature against which there is no defense available within reasonable economic bounds.

However, the availability of imported water is so basic to the economy of San Diego County that the most diligent efforts to protect current supplies and develop future sources are justified.

Growth rates within the Authority service area have indicated a continued population increase for the foreseeable future. The long lead time required for development of new water resources demands that constant attention be given to meeting future needs.

As has been previously noted, the Authority obtains all of the water it distributes from The Metropolitan Water District of Southern California which has two sources of supply: the Colorado River and the State Water Project.

Construction of the Peripheral Canal and other features to complete the State Water Project should assure adequate supplies until well after the turn of the century under present contracts and allocations. By that time, it is estimated that MWD's population will have increased from the present 11 million to 20 million and the Authority from 1.6 million to 3 million.

The MWD Board has adopted a policy to provide additional water and/or facilities as needed to meet demands of its member agencies. To fulfill that policy, MWD contracted with the State of California in 1960 for 1.5 million acre feet annually from the State Water Project. When faced with the loss of approximately half of its annual Colorado River supply of 1,212,000 af because of the U. S. Supreme Court's decision in *Arizona v. California*, MWD amended its contract with the State to provide an additional 500,000 af per year. Annexations and other changes have increased that MWD-State contract to 2,011,500 af per year.

The California Aqueduct, a key water supply feature of the State Project, was completed in 1973. When the system is operational, MWD can take deliveries from it at several points. Supplies destined for San Diego County are delivered to MWD at Lake Perris, terminus of the 444-mile aqueduct. Water then flows through Lakeview Pipeline which parallels the Colorado River Aqueduct. Northern California water is mixed with that from the Colorado at the existing canal turnout for the Second San Diego Aqueduct. It then flows south into Lake Skinner.

If present projections are correct, additional water resources must be developed by the year 2010. The Authority, MWD, the State of California, various federal agencies, and many private organizations are presently making preliminary investigation of possible supplemental water sources. The potentials of the undeveloped rivers of Northern California, the Columbia River, rivers in Canada and Alaska, waste water reclamation, weather modification, geothermal water development, seawater conversion, and other possibilities are being given careful consideration.

Figure B. shows the increase in water requirements within the Authority since 1940.

OPERATION AND MAINTENANCE

General

All operation and maintenance is directed by the Superintendent from the Fred A. Heilbron Operations Center, 610 West Fifth Avenue, Escondido. This centrally

located facility is equipped with a telemeter panel, automatic and manual control of remote valves, and two-way radio to operate the Aqueduct system around the clock. Base radio stations are at Escondido, the Authority office in San Diego and the Metropolitan Water District's Robert A. Skinner Treatment plant in Riverside County. A repeater station on Palomar Mountain relays communications to 25 mobile radios. A second emergency radio frequency can be used by the Escondido base and the mobile units for direct unit to unit communication if the Palomar relay is inoperable.

A crew of twenty-two personnel normally takes care of all operation and maintenance duties. These duties include operation and changes in flow of the Aqueduct system, disinfection and water quality checks, inventory control and maintenance of vehicles, construction equipment, valves, meters, telemeters, and chlorinators, maintenance of about 130 miles of rights of way and 100 miles of roads, office and shop facilities and 58 building housing meter and control equipment. Other duties include construction and modification of service connection control buildings, and weekly patrolling and checking of the Aqueduct pipelines and facilities for signs of vandalism, erosion, leaks or private development which may endanger the integrity or restrict maintenance of the Aqueducts.

Operations

The Operations Center is staffed from 7:30 a.m. to 4:30 p.m., 365 days per year, for normal operations. When necessary, System Operators are assigned office night shifts. The Operations Center and telemeter panel are checked several times each evening. After hour phone calls are transferred to the duty operator's home phone. To insure after-hours telephone contact, the duty operator is assigned a pager. In addition to the duty operator, certain other key personnel have mobile radio units available. While most flow changes are made during regular working hours, quick responses can be made at any hour to local districts emergencies. Because of limited reservoir storage capacity, some Aqueduct service connection flows must be changed several times per day. When the district being served has adequate storage capacity in another service area, at the districts' request and expense, equipment is installed which uses Aqueduct connections to automatically transfer water between these service areas as the water demand changes.

Meter charts are changed each week, and an ongoing program provides an average of over three calibration checks per meter each year. On-line monitoring equipment continuously checks the water quality parameters of chlorine residual, turbidity and total dissolved solids. These monitor units were installed at the Yuima and Bueno control stations on the First Aqueduct. By arrangement with the California State Department of Public Health, the Water Authority serves as agent of the North County First Aqueduct water districts by measuring turbidity to meet Safe Drinking Water Act monitoring requirements.

Flow on the San Diego Aqueduct was shared with Rancho California and Santa Rosa Ranchos, which are part of Eastern Municipal and Western Municipal water districts in Riverside County. These districts took a peak of 29 cfs or 10.5% of the total treated water available. Close cooperation between these districts, MWD and the Water Authority at Operation level has eliminated operational conflicts in the sharing of the aqueducts.

Maintenance

The Authority maintenance facilities, also based at the Fred A. Heilbron Operations Center, include automotive and equipment repair shop, plus meter, valve,

carpenter and electronics shops and a soil lab. A new 11,250 square foot warehouse, built in the previous fiscal year, serves as a facility for storage of material, tools and equipment, with an office for purchasing, shipping, receiving and inventory control.

Maintenance equipment includes two road graders, two bulldozers, two skip-loaders, backhoe, hydro-crane, dump trucks, equipment trailers, equipment hauling tractor-trailer combination, large portable pumps, compressors, welders, pickups with utility bodies, and vans. Several of the pickups are equipped for field servicing and repair of valves or construction equipment. The two vans are well equipped mobile electronic and meter shops. One 1-ton and five ½-ton trucks were replaced this year.

During the year 11 control buildings were painted as well as the pump station piping and miscellaneous other structures.

For the second consecutive year, heavy rains made roads impassable, hampering normal operation and maintenance activities. Erosion and flooding caused several structures to be covered with as much as 11 feet of silt. These structures were excavated and raised to prevent recurrence of this situation.

The meter control stations serving the Otay Municipal Water District near the crossing of Wintergarden and Highway 67 in Lakeside, the Olivenhain Municipal Water District west of Rancho Bernardo above the San Dieguito River, the Valley Center Municipal Water District at Lilac Ranch, and the City of San Diego at Shepherd Canyon in Camp Elliott and on Baltimore Drive in La Mesa were flooded. Some were flooded several times when normal drainage channels or conduits plugged or were inadequate for the runoff. Metering, telemetering and control equipment was heavily damaged. Sand bags were used to protect these and other structures from further damage. Concrete block walls and raised entry ways were built for protection to replace the temporary sand bag barriers. Failure of overworked sump pumps caused flooding of many other structures. Vulnerable equipment was raised to avoid damage and in some cases, a second sump pump was installed for added protection.

The pipelines were exposed in thirteen locations from the heavy runoff.

Road damage was such that few sections could be travelled through without doubling back. At times, four wheel drive vehicles, all wheel drive hydro-crane, motor graders and many other vehicles were stuck while traveling the patrol roads.

Often additional erosion damage was caused when local property owners diverted water from normal channels for protection of other property or development. Unusual wet spots and flowing water brought many erroneous leak reports which were checked out.

By the end of the fiscal year, most erosion had been corrected and the roads rebuilt.

Settling of a 12-inch Olivenhain pipeline caused a separation and erosion completely exposed the top and side of Pipeline 3.

Vandalism continued to be a problem, but mostly on a minor scale. Doors, gates and entry lids were forced open or destroyed. Locks, lids and doors were shot, structure lids were removed, windows broken and construction equipment was moved. No serious damage was done after forced entries. Graffiti on buildings was covered with new paint.

Numerous algae complaints were received on all but the treated water line. Diatoms were reported in large numbers on the First Aqueduct. No serious taste and odor problems were reported, with most complaints concerned with algae-plugged filters.

Fires which threatened the Rainbow Pass chlorination station on three occasions forced evacuation of 11 tons of chlorine to Rancho California one time and trucks standing by for an emergency move the other two times. These operations were assisted by Rancho California and Metropolitan Water Districts.

The large 6,000 hp 77,000 GPM pump, salvaged from the Office of Saline Water's Chula Vista desalination plant, was moved from storage at the City of Escondido's maintenance yard to the Water Authority's Operation Center storage area.

Construction by Authority Forces

Work continued on the Miramar Pump Station. A control room was built, the pumps, motors and overhead crane were set. The P1 and P2 pumps were wired and made ready for use. Even though some electrical work was still incomplete because of parts delivery, the plant was started on June 11 and run for two days. Leaks developed at two joints in the pump station influent pipe. These leaks were repaired.

The interior of the new warehouse was completed with a residence garage, storeroom, office and restroom being partitioned off. A storage loft was built over the garage and storeroom. The entire building was wired. About 100 feet of pallet racks were installed for heavy storage. New valve and carpenter shops were built in the warehouse. The yard area between the warehouse and shop was repaved.

While refilling the treated water Aqueduct after a shutdown of four days, a rupture in Pipeline 3 occurred on February 23 at 9:30 a.m. at approximate station 4778+95 in Spring Valley. The failure consisted of a seven foot long by one and one-half foot high section of pipe split open longitudinally at approximately 45 degrees above the horizontal centerline on the easterly side of the pipe. One residence was severely flooded and there was severe erosion of the embankment on the west side of the residence.

The failure caused a loss of about 6 A.F. of water. Investigation showed 50 to 80 wraps of prestressing wire badly corroded at the failure, some of which were completely separated. The section of pipeline was removed and replaced with a section of steel pipe obtained from Los Angeles Department of Water and Power. The pipeline was placed back in service on February 25, 1979 with water deliveries to the Otay Municipal Water District starting at approximately 11:30 p.m. From time of incident, the shutdown, drain down, excavation, repair, refilling and return of service took 62 hours.

Testing of the pipeline subsequent to the failure continues under the direction of Dr. Gordon N. Scott, a nationally recognized corrosion authority, who is assisted by Waters Consultants, local corrosion engineers. Present indications are that the failure was due to local soil conditions and possible pipe damage during installation.

A second section of steel pipe has been purchased from Los Angeles Department of Water and Power as a precaution against future emergencies. This pipe is stored near the site of the failure at the Sweetwater Authority's Sweetwater Treatment Plant compound.

Construction of several new service connections continued, with the Ramona No. 2 service connection being completed. This connection is adjacent to the No. 1 connection and meters treated water from the Poway Municipal water system to Ramona. The Ramona No. 2 service features a 24-inch sonic flow meter, the first such meter used by the Authority to meter water directly to a member agency. The San Dieguito-Santa Fe No. 2 service connection was completed, doubling the meter capacity to the districts' joint treatment plant. This connection entailed modification of the valve structure and piping, and used the existing meter station to house meter, telemeter and control equipment.

The combination Bueno No. 7, Carlsbad No. 2, Olivenhain No. 1 connection was built, but has not yet been put in service. This connection uses a single 64 cubic foot per second meter to take water from the Authority which is later divided between the three districts.

New service connection structures on the Pipeline 4, later to be the treated water pipeline, were built at Valley Center No. 4 and Rainbow No. 6 Service Connection.

The air valve structure in the divider strip of Spring Street extension in La Mesa was a serious traffic hazard which had been struck many times by vehicles. The structure and piping were modified, lowering the top to slightly above the median strip grade, thus reducing the hazard.

Shutdowns

In January the Colorado River Aqueduct was shutdown for maintenance causing the First Aqueduct to be shut down for about 4 days. The shutdown went smoothly with minimum inconvenience to the member agencies. During the shutdown the Red Mountain tunnel was inspected and faulty valves on the Fallbrook-Oceanside Branch Line were replaced.

The First Aqueduct was shut down south of the Crossover and drained between the Fire Hill and San Vicente Tunnels to permit the La Mesa-Sweetwater Extension of the First Aqueduct to be drained for line and control valve maintenance.

Pipeline 4 from MWD (raw water) was shutdown for 34 days in February, March and April because of no demand. Both Miramar and San Dieguito-Santa Fe treatment plants were off the line for maintenance or construction at this time and took treated water from the Aqueduct. During this shutdown a portion of the line was drained so that a second tap could be made which would double the flow available to the San Dieguito-Santa Fe treatment plant. While this pipeline was empty a visual inspection was made several hundred feet each direction which indicated the pipeline to be in excellent condition.

Also during the Pipeline 4 shutdown, new line valves were set for Valley Center No. 4 and Rainbow No. 6 future treated water services. By doing this work during this shutdown period, considerable time was saved when Pipelines 3 and 4 were later shutdown to transfer treated water to Pipeline 4 and untreated water to Pipeline 3.

The treated water Aqueduct was shutdown Monday morning, February 19th for work during the expansion of MWD's Skinner Treatment Plant. During this scheduled five day shutdown, some agencies ran short of water because of insufficient public notice. The City of Oceanside was granted permission by the California State Department of Public Health to take delivery of unfiltered water from the Aqueduct for three days.

A long planned shutdown of the Second Aqueduct to transfer treated water to Pipeline 4 and raw water to Pipeline 3 was started just after midnight the morning of May 21st. This transfer of treated water to the larger Pipeline 4 takes advantage of the greater capacity available from the expanded Robert A. Skinner Treatment Plant. During this shutdown, while MWD rearranged piping at the treatment plant, Authority forces changed 72-inch flanges rerouting the water in the pipelines past the exchange structures and transferred the treated water connections at Rainbow No. 3, Rainbow No. 6, Fallbrook No. 4, and Valley Center No. 4 and Pipeline 3 to Pipeline 4.

To serve south county agencies not affected by activities during this shutdown, water from other agencies was transferred through the Aqueduct. 15cfs was put through the inoperative pump station from the City of San Diego's Miramar Treatment Plant for delivery back to the City at San Diego No. 11 service connection at Shephard Canyon. 20cfs was also taken from Helix by reverse flow through their No. 3 meter for delivery to agencies south on the treated water Aqueduct.

All Authority work requiring dry pipelines was completed in one day, and the pipes were refilled with water crossed over from the First Aqueduct. This made some water available to north county agencies. Since preparations for this major shutdown were so effective, none of these agencies had any great need for the water. Most of the water was allowed to go south to aid the City of San Diego and other agencies beyond.

MWD completed their work about 20 hours ahead of schedule and both pipelines were filled and back in service by 10:00 p.m. May 25th.

Miscellaneous

A public auction of surplus equipment was held with a gross of about \$37,000 being received.

The Water Authority went through the entire year without any time lost due to a disabling accident and now has a string of 110,410 man hours since the last such accident.

DESIGN AND CONSTRUCTION

The principle contract project under construction during this fiscal year was the Tri Agencies Water Transmission Pipeline. This pipeline will serve the Vista Irrigation District, the City of Oceanside and the Carlsbad Municipal Water District. These agencies share financially in the project with the Authority as they pay all construction costs for the portions of the pipeline that serve them exclusively as well as all of the projects' rights-of-way, design and contract administration costs. The Authority pays all of the contract construction costs of the shared portion of the pipeline.

The project included 38,432 lineal feet of pipeline and five new service connections. The Contractor is Metro-Young Construction Company of San Diego and the final contract amount was \$3,356,739.27 which is distributed between the participants as follows:

San Diego County Water Authority.	\$2,136,652.34
Vista Irrigation District.	\$ 160,565.72
City of Oceanside	\$ 100,087.88
Carlsbad Municipal Water District.	\$ 959,433.33



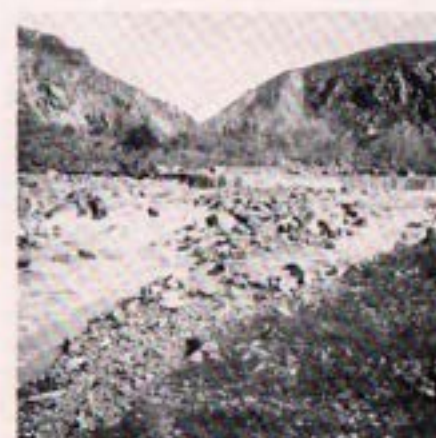
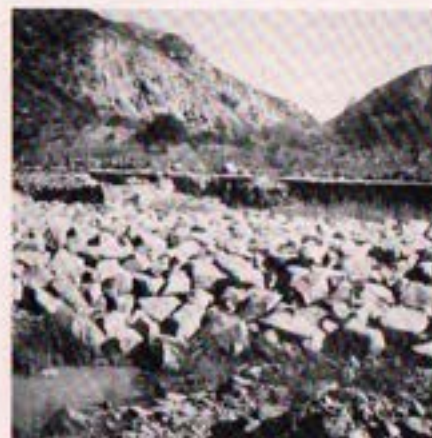
Tri-Agencies Water Transmission Pipeline Construction

Upper Left: In street near San Marcos. Upper Right: Through Oak Grove near Vista. Lower Left: Oceanside and Carlsbad delivery structure. Lower Right: Carlsbad section west of delivery structure looking towards Carlsbad and Oceanside.

The installation of electrical and telemetering services to the remote service connections and metering stations located in the Shepherd Canyon area of the City of San Diego and along the Tri-Agencies Pipeline has been difficult. Service to the City of San Diego's Service Connection No. 11 east of the Tierrasanta Development required about 4,500 lineal feet of underground power and telemetry cables and a transformer at each end of the power line. The Authority had been unable to complete the service until early this summer because of a nine-month delay in the completion and the energizing of one unit of the subdivision.

Electrical service to the most westerly metering stations on the Tri-Agencies Pipeline required the installation of 5,000 lineal feet of underground power cable and transformers to transmit power at 480 volts to minimize line loss. All of this electrical work is being accomplished by Robeck Electrical Maintenance and the work is scheduled for completion in July, 1979.

The heavy rainfall during the winter of 1977-78 badly eroded the cover over the Authority's pipelines in Mission Gorge and the south fork of Keys Canyon. In November, Silberberger Engineers, Inc. placed cushion material and large rock to restore the cover at both locations.



Protective dike constructed over Pipeline 4 at San Diego River crossing (left) suffered erosion during January-February 1979. Dike was reconstructed in June 1979.



Protective dike constructed downstream of Pipelines 1 and 2 in South Fork, Keys Canyon to control erosion over Aqueducts.

The 1978-79 winter of above normal rainfall again caused heavy runoff in these same watercourses and eroded cover material from an area adjacent to the recently placed rock. In late June and early July, 1979 Silberberger placed additional rock at these locations, thereby remedying the condition.

These storm related damage repairs qualify for grants by the Federal Disaster Assistance Administration.

Preliminary work was started which would lead to the completion of San Diego Pipeline 5 prior to 1985. The preparation of the Environmental Impact Report for the complete Pipeline 5 project was undertaken by the Metropolitan Water District which was designated as the Lead Agency, with the Water Authority a Responsible Agency under the guidelines implementing the California Environmental Quality Act. The Notices of Determination will be filed by the Metropolitan Water District and by the Authority in July 1979.

On April 20, 1979 the Authority's segment of the proposed pipeline alignment was flown and photographed by San Lo Aerial Surveys to produce 100-scale photographs and topographic maps. The photographs and some of the topography were delivered in late June 1979. The route parallels Pipelines 3 and 4 through rugged and highly developed agricultural land.

Engineering for realignment of the Fallbrook-Oceanside Branch of the First Aqueducts at Interstate Highway 15, together with transmission lines for Rainbow Municipal Water District and Fallbrook Public Utility District at the same location, was begun in August and was about 75% complete at the end of the fiscal year. Several service connections, including Valley Center No. 4 and Rainbow No. 6 were re-designed for delivery of treated water from Pipeline 4.

A pipeline from the Poway Municipal Water District treatment plant to the Ramona No. 2 Service Connection, and the service connection, were completed during the fiscal year. Design and construction of the pipeline was completed by contract; the service connection was designed and constructed by the Authority. Both facilities were financed by the Authority under its obligation to furnish treated water service to Ramona Municipal Water District in the amount of 12 mgd.

PUBLIC INFORMATION

Community Relations

Water conservation continues to be the major theme throughout 1979. The San Diego County Water Authority's effort was motivated by concern about the increase in use of water, the growing water shortage predicted by 1985, and the rapidly increasing cost of energy and construction.

Users could serve themselves best by reversing the trend toward even higher consumption of water by applying existing water conservation practices and learning new techniques more appropriate to the semi-arid area in which they live.

On this note, the Authority's public information programs were expanded. A drought tolerant garden was exhibited in the floral section of the Southern California Exposition in Del Mar, California. The exhibit was designed as a home and garden. Water conservation techniques were exhibited in the home. The garden was arranged with drought tolerant plants combined with the latest drip irrigation systems which reduce water consumption yet maintain the aesthetic quality of the garden. The exhibit was strategically located; according to Fair officials, it was exposed to over 80% of the 683,000 persons who attended the Fair and attracted considerable attention. A cadre of 47 volunteers constructed and staffed the display. Materials and supplies were donated by local merchants.

Transit advertising was used very effectively to reach large numbers of people. Forty-three public transportation buses carried our water conservation message to 13 million viewers per month from the North County to the Mexican border. Additionally, 300 inside bus cards for the convenience of 3.2 million monthly commuters were exhibited throughout the bus system. The average cost per viewer was approximately 15 cents per one thousand viewers. The bus medium proved to be an extremely effective way of communicating the message to the public.

Public service announcements and the local media played a major role in our water education program. The area newspapers devoted over 204 column inches of print to the Water Authority. The Authority's name appeared over 90 times in other water related articles. Some members of the Board and staff personnel were interviewed on radio and television several times throughout the year. In terms of value, these releases and interviews exceeded \$18,000 in publicity.

The San Diego Stadium scoreboard displayed water messages at 33 different sports and entertainment events at least once during each event at no cost to the Authority.

13,000 junior and senior high school students were given instructions in water matters including water conservation. The presentations combined the use of printed materials, a multi-media show, motion pictures, lectures, classroom discussions, and evaluation procedures to educate children and young adults of the importance and ramifications of water supply. The presentations adapt themselves to relate water to such fields of study as government, history, geography, the environment, biology, chemistry, physics, and economics.

The speakers bureau was very effective. Authority staff and some board members appeared before 2,400 members of business, professional, educational, and service organizations. Presentations included films, lectures, and seminars.

A brochure, "Water For You" on the history of the San Diego County Water Authority was prepared for distribution in September 1978. It was well received. A total of 25,000 copies have been distributed.

Government Relations

As a public agency providing services to other public agencies, the Board of Directors of the San Diego County Water Authority recognized the need for improved communications and provided for a much more active program of intergovernmental relations.

During legislative sessions, legislation effecting the water industry is monitored. Communication with local, state, and federal legislators is maintained. The Authority staff attends meetings and participates in seminars and conferences of mutual interest. Technical assistance and coordination is provided to other governmental agencies in the preparation of legislation affecting residents of San Diego County.

In general, the goal set by the Board of Directors to provide information on water matters to residents of San Diego County has been visible and has attained far-reaching results.

LEGAL DEPARTMENT

Principal responsibility for legal advice and representation comes from the General Counsel. However, members of his firm provide assistance from time to time. Mr. Wallace R. Peck generally assist in all areas and Messrs. Larry M. Marshall and Ronald L. Endeman handle some litigation.

Litigation - Claims

The claim by Florian Brzezinski, filed on May 1, 1978 and rejected on July 13, 1978, resulted in litigation commenced by the filing of a complaint on November 8, 1978 (*Florian Brzezinski, et al. v. City of San Diego, San Diego County Water Authority, et al.*, San Diego Superior Court Action No. 425214). The case is a class action seeking \$10 million for damage alleged to be caused to owners of property downstream from San Vicente Reservoir by reason of spillage from the reservoir in March of 1978. As of June 30, 1979, demurrers filed against the complaint were still awaiting additional hearings.

Three additional claims have been filed with the Authority. The first of these was filed by the Chula Vista Mobil Home Park and the Industrial Indemnity Company on or about May 7, 1979. The claim alleges damages resulting from the spill or release of water from Sweetwater Reservoir on January 31, 1979. The claimant alleges that the amount of damages have not been determined but they will not exceed \$50,000. The claim was rejected by the Authority.

On or about May 31, 1979, a claim was filed on behalf of Robert and Julie Stanley, seeking damages resulting from a break that occurred in a pipeline of the Authority. The amount of damage is unknown but the claimant estimates it to be \$100,000. On the same date, a similar claim was filed by Albert and Vickie Gomez. Both claims were rejected by the Authority.

There was no other litigation pending against the Authority as of June 30, 1979.

Other Legal Matters

On December 5, 1978 Senator Nejedly introduced Senate Bill No. 47 which provided comprehensive provisions for the management of ground water resources of the state. The bill was generally opposed by the water industry and did not get out of committee.

On January 15, 1979 Senator Ayala introduced Senate Bill No. 200. It was amended three times and was strongly supported by most agricultural interests in the San Joaquin Valley and Southern California including the Authority. It passed the Senate Agriculture and Water Resources Committee by a six to five vote but failed in the Senate Finance Committee. The bill provided for the design, construction, operation, and maintenance of specified water development facilities by the state. Such facilities included, among others, the facilities specified or authorized as additional facilities in the state Central Valley Project, and specified facilities in the Sacramento-San Joaquin Delta including facilities for transfer of water across the delta, flood and salinity control, and related functions. It also designated as additional facilities of the Central Valley Project a specified peripheral canal to be built in stages, relocation of the intake to the Contra Costa Canal, a Los Vaqueros Unit, south delta water quality improvement facilities, Suisun Marsh protection facilities, facilities for utilizing ground water storage space in specified locations, the

Glenn Reservoir-River Diversion Unit, the Colusa Reservoir-River Diversion Unit, subject to specified conditions, waste water reclamation programs, water conservation programs, the Mid-Valley Canal, the Western Delta Overland Water Facilities, and facilities to provide for the transportation of water to San Joaquin, San Francisco, San Mateo, Alameda, and Contra Costa Counties as specified. The bill is still pending in the Finance Committee of the state Senate and it is expected that reconsideration will be given by that committee in January of 1980.

Assemblyman Kapiloff (San Diego, 78th District), Chairman of the Assembly Committee on Water, Parks and Wildlife, introduced Assembly Bill No. 442 on February 1, 1979. The bill was amended four times but as of June 30, 1979 no vote had been taken in committee on the bill. In its latest form it is about 100 pages in length and is an attempt to deal with all pending water problems in the state, including matters addressed by the Governor's Commission to Review Water Rights Law. Assemblyman Kapiloff's committee held eight hearings in February through April throughout California for the purpose of taking testimony towards "developing a new water plan for California." Other major water bills dealing with the increasingly crucial water problems of the state were also introduced.

The pending legislation is being followed closely because of the extreme importance to the Authority that some state action be taken in the near future in order to increase the water supply available to the State Water Project so that the state can fulfill its contractual commitments to The Metropolitan Water District of Southern California and other state contractors.

TREASURER'S REPORT

The Treasurer is responsible for all funds not immediately required for the conduct of business by the Authority. Under Board policy, the Treasurer invests funds in interest-bearing bank time deposits in direct obligations of the Federal Government, in Federal agency obligations, in the State Local Agency Investment Fund or savings account.

The Administrative Code requires the Treasurer to report a summary of his financial transactions monthly and for each fiscal year-end. For fiscal 1978-79, the report is as follows:

For the fiscal year ending June 30, 1979 total Water Authority income was \$30,673,484 Total disbursements during the year were \$25,473,617. At the fiscal year end, the Treasurer had control of funds and investments totaling \$10,677,173.

Income was as follows:	1978	1979
Water sales	\$24,093,865	\$23,766,121
Taxes	- 8,123,221	6,012,133
Interest on investments	565,537	861,083
Tijuana water service	122,230	39,125
Miscellaneous	29,884	(4,978)
Total income	\$32,934,737	\$30,673,484

Disbursements were as follows:	1978	1979
Water purchases	\$22,882,489	\$21,964,845
Operation and maintenance	1,062,525	1,220,125
Interest expense	2,384,713	2,288,647
Total disbursements	\$26,329,727	\$25,473,617

As of June 30, 1978, the Treasurer's cash accountability was as follows:

Demand deposits	\$ 28,578	\$ 44,173
Time deposits	8,770,000	10,633,000
Savings account	---	---
Total deposits	\$8,798,578	\$10,677,173

METROPOLITAN WATER DISTRICT MEMBERSHIP

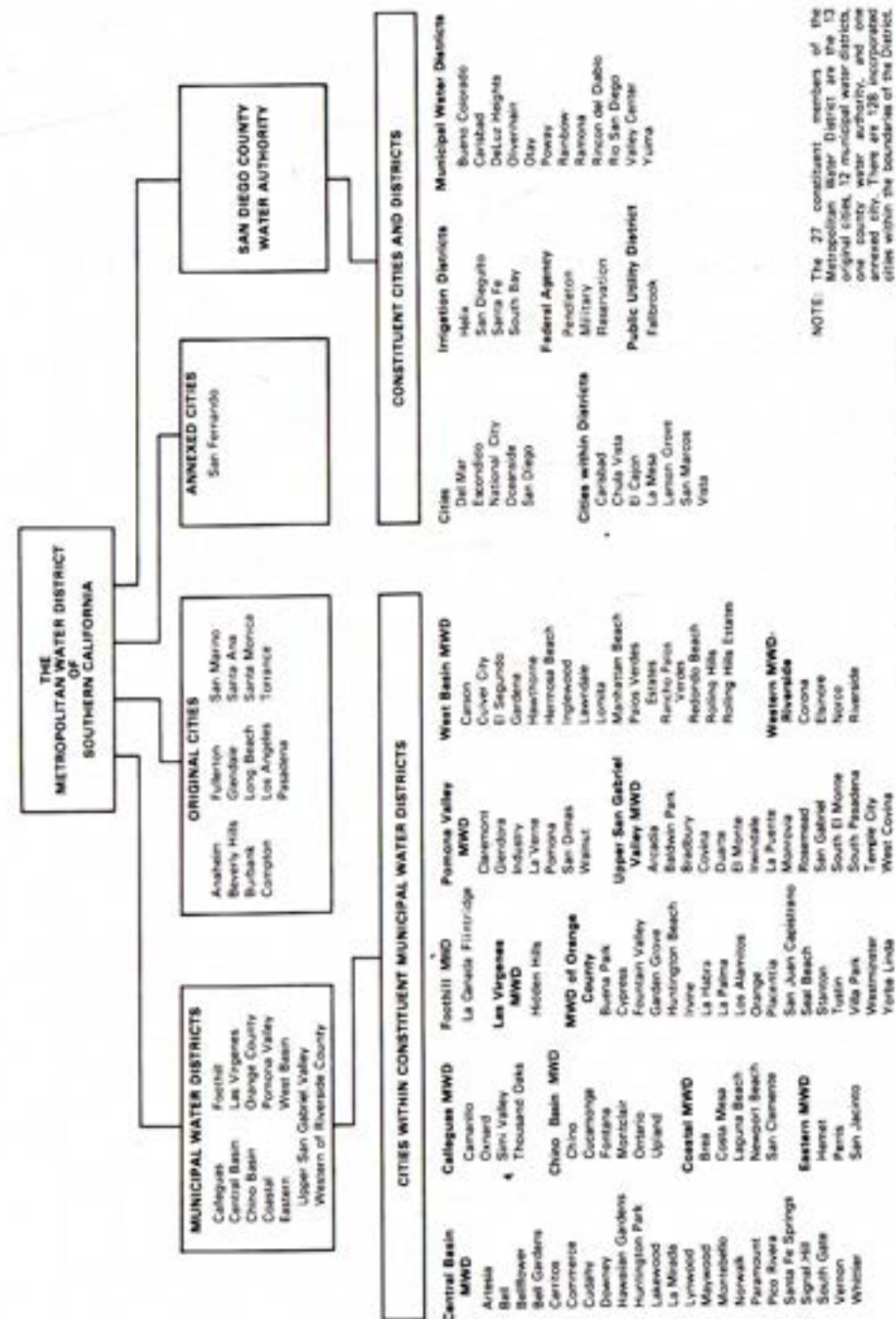
Because of the close relationship between The Metropolitan Water District of Southern California (MWD) and the San Diego County Water Authority, readers of this report may find a description of MWD's organization and operations to be of interest.

The Authority joined MWD on December 17, 1946, the most recent of the 27 member agencies of that District, and works very closely with it.

The Metropolitan Water District Act was approved by the State Legislature in 1927. Early the following year MWD was organized. The original act provided for membership by cities. An amendment passed later by the Legislature permitted annexation of larger water districts. MWD membership now includes the 13 original cities, one city added in 1971, 12 municipal water districts, and the San Diego County Water Authority.

The MWD Act and the County Water Authority Act are similar. Under each act, policy is established by a board of directors which represents the member agencies. Each director is appointed by the chief executive officer of the agency he represents with approval from its legislative body. Under present MWD rules, each member agency is entitled to a minimum of one director. An additional representative may be appointed for each three percent of the total MWD assessed valuation which lies within the member agency's boundaries. The district member agencies are listed in Figure D.

The Authority began and ended the fiscal year with five representatives on the Metropolitan Board of Directors. All were members of the Authority Board. Director Hans H. Doe has served on the MWD Board for 20 years and is a member of the Water Problems and Organization and Personnel Committees and of the Special Committee on Energy.



COMPOSITION OF THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

June 30, 1979

Figure D

Harry Griffen has served on the MWD Board for 16 years and is Vice Chairman of the Board. He is a member of the Executive and Finance and Insurance Committees; Chairman of its Audit Subcommittee; a member of the Water Problems Committee and of the Special Committee on Charges and Payments Under the State Contract; a member of the Subcommittee on Water Resources; Chairman of the Subcommittee on Resolution 5821; Ex officio member of the Subcommittee on Water Pricing Policy of the Water Problems Committee; and Ex officio member of the Special Committee on the Peripheral Canal.

Lloyd L. Lee is a six year member of the MWD Board and is a member of the Finance and Insurance, Land, Organization and Personnel Committees; and Vice Chairman of the Special Nominating Committee.

Director Raymond E. Badger represented the Authority on the Metropolitan Board for five years until his death on May 14, 1979. He served as a member of the Engineering and Operations and the Legal and Claims Committees.

John M. Cranston, who has been an MWD Director for five years, is a member of the Engineering and Operations Committee and the Chairman of the Legal and Claims Committee.

As of June 30, 1979, the Authority representatives had a total of 686 votes out of 4,802 or 14.28 percent of the total voting strength of MWD. The delegation of each member agency is entitled to cast one vote for each \$10 million or major fraction thereof of assessed valuation within the agency's boundaries. Each representative of an agency with a multi-member delegation is entitled to vote a fraction of the total votes proportionate to the number of the agency's representatives present.

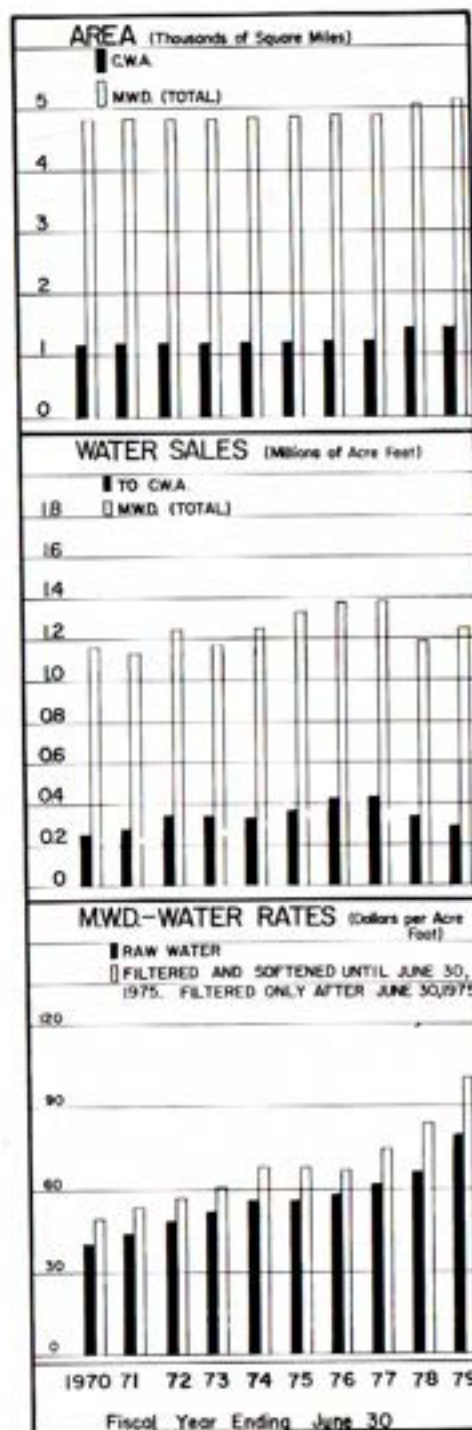
The Metropolitan Water District's aqueduct and distribution system and its service area are shown in Figure E. Also shown is the Authority's system (shown in greater detail in Figure A). Approximately 11 million people live within the portions of Ventura, Los Angeles, Orange, San Bernadino, Riverside, and San Diego Counties served by MWD. There are 128 incorporated cities and many large unincorporated communities and areas within the District, MWD's service area contains 3,268,337 acres (5,105.52 square miles), an increase of 804 acres during the fiscal year. Of this, 897,607 acres (1,404.07 square miles) or 27.5 percent, lie within the Authority's boundaries.

Total assessed value of taxable property lying within the boundaries of Metropolitan Water District was \$53,573,470,118. Assessed value is determined by the assessors of the counties served for use in levying 1978-79 taxes. These valuations were an increase of \$2,304,673,818 or 4.5 percent above the previous year's valuation of \$51,268,796,300. An amount of \$427,626,631 or 1.85 percent of this increase occurred within Authority boundaries. Assessed valuation within the Authority is 14.1 percent of the MWD total.

Water Sales

MWD delivered 1,235,750 acre feet of water during fiscal year 1978-79. Delivery to the Authority of 285,835 acre feet represented 23.13 percent of MWD's total deliveries.

MWD had four filtration plants in operation at the start of the fiscal year. The Skinner Filtration Plant serves a portion of the treated water requirements of the Authority. The capacity of the present plant is 240 mgd.



Three other plants, none of which can serve the Authority, are operated by MWD: F. F. Weymouth Memorial Softening and Filtration Plant at La Verne, Robert B. Diemer Filtration Plant at Yorba Linda, and Joseph Jensen Filtration Plant at Granada Hills. Each of these plants has a 400 mgd rated capacity. The Jensen Plant can be supplied water only from the West Branch of the California Aqueduct.

Tax Rate

During fiscal year 1978-79, MWD reduced its tax rate to 10 cents per \$100 of assessed valuation. When the Authority annexed to MWD in 1946, the tax rate was 50 cents per \$100 assessed valuation. The tax rate for each year from that time is shown in Table 12. The total MWD tax levy during the report year, including regular and special taxes, was approximately \$64,288,165 of which \$8,942,745, or 14 percent, was levied against property within the Authority. Special taxes are levied when an area annexing to the District decides to amortize its annexation fees over a 30-year period. As of the fiscal year's end, Authority member agencies had assumed annexation fee liability totaling \$32,460,507. Of this amount, \$18,988,398 had been paid by the end of the fiscal year.

COLORADO RIVER BOARD MEMBERSHIP

The Colorado River Board of California is an agency of the State devoted to the protection of California rights to Colorado River water. Originally composed of representatives of the six agencies which depend on Colorado River supplies selected by each agency, the Board was reorganized in April 1977 on the initiative of Governor Edmund G. Brown, Jr. Under the new arrangement, the six agencies continue to be entitled

COLORADO RIVER AQUEDUCT SYSTEM
AND AREAS SERVED BY
METROPOLITAN WATER DISTRICT AND SAN DIEGO COUNTY WATER AUTHORITY

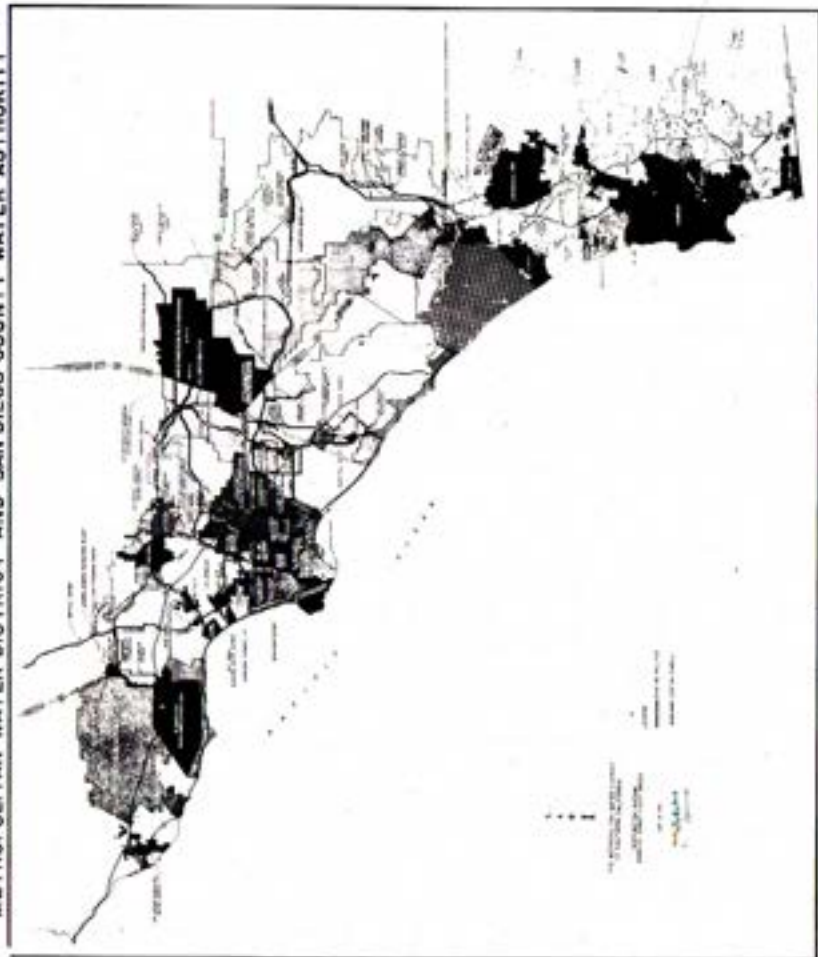


Figure E. Water Systems of Metropolitan Water District and San Diego County Water Authority.

to representation but the representative for each agency is selected by the Governor from a slate of at least three nominees designated by that agency. Two State officers, the Resources Secretary, and the Director of Water Resources, are ex-officio members. In addition, the Governor may appoint three public members.

The six agencies are: San Diego County Water Authority; Metropolitan Water District; City of Los Angeles Department of Water and Power; Coachella Valley County Water District; Palo Verde Irrigation District; and Imperial Irrigation District. Following the reorganization, Imperial Irrigation District withdrew its support of the Colorado River Board. Chairman John M. Cranston represents the Authority on the Board.

Once fully financed by the State, the Board now receives only one-third of its support from that source. With Imperial Irrigation District's withdrawal, operations are financed by five agencies as follows: 54.8 percent by MWD; 25.2 percent by Los Angeles DWP; 12.4 percent by Coachella Valley; 3.7 percent by Authority; and 3.9 percent by Palo Verde ID.

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Table 1
STATISTICAL SUMMARY

	1977-78	1978-79	Percent Change
GROWTH OF AREA			
Number of Agencies	23	23	-0-
Total Area - Acres	897,806	898,607	+0.09
Population	1,665,200	1,758,737	+5.6
Assessed Valuation	7,106,157,703	7,533,884,334	+6.0
OPERATIONS			
Water Imported by Authority-ac. ft.	339,653	288,719	-15.0
Water Production of Agencies-ac. ft.	400,821	433,009	+8.0
Local Water Used-ac. ft.	47,556	130,282	+174.0
Authority Water Used-ac. ft.	353,265	302,727	-14.3
Miles of Pipe Line	210	210	0
Miles of Patrol Roads Maintained	100	100	0
Number of Service Connections	69	71	+2.9
FINANCIAL			
Revenues:			
Water Revenue	24,093,865	23,766,121	-1.4
Other Revenue	595,421	856,105	+43.8
Taxes	8,123,221	6,012,133	-26.0
Tijuana Water Service	122,230	39,125	-68.0
Expenditures:			
Operation and Maintenance	1,062,525	1,220,125	+14.8
Purchase of Water	22,882,489	21,964,845	-4.0
Payments on Outstanding Debt	2,384,713	2,119,030	-11.1
Total Investment in Plant:			
Total Fixed Assets	222,268,727	232,704,082	+4.7
Long-Term Debt	71,295,940	69,006,704	-3.2

Table 2
POPULATION GROWTH-COUNTY AND AUTHORITY AREA
1910 to 1979

(Includes Resident Military Personnel)

Year (as of April 1)	COUNTY		AUTHORITY		Percent of County Population in Authority
	Total Population (1)	Annual Growth	Total Population	Annual Growth	
1910	61,665				
1920	112,248	5,058			
1930	209,659	9,741			
1940	289,348	7,969			
1946	(3) 502,804	26,746	(3) 440,659	2,807	88
1950	556,808	42,478	(2) 451,886	50,083	81
1955	(4) 769,200	52,762	(2) 702,300	50,820	91
1960	1,033,010	32,198	(2) 956,400	38,720	93
1965	(4) 1,194,000	23,360	(5) 1,150,000	21,000	96
1970	(4) 1,310,800	49,850	(5) 1,255,000	54,500	96
1975	(4) (6) 1,560,038	30,662	(5) 1,527,520	31,840	98
1976	(7) 1,590,700	66,100	(5) 1,559,360	65,190	98
1977	(7) 1,656,800	57,200	(5) 1,624,550	40,650	98
1978	(7) 1,714,000	53,450	(5) 1,665,200	93,537	97
1979	(7) 1,767,450		(5) 1,758,737		99

- (1) County population from U.S. Census Bureau Reports.
- (2) Authority population based on U.S. Census Bureau Reports.
- (3) Based on Special Census, U.S. Census Bureau, exclusive of emergency military personnel due to World War II.
- (4) Estimated by the San Diego Chamber of Commerce.
- (5) Estimated by Authority member agencies.
- (6) Population by Special Census.
- (7) Population Estimates by Integrated Planning Office, San Diego County.

Table 3
AREA - AUTHORITY MEMBER AGENCIES

Member Agencies	Area Within Authority			Percent of Total Authority Area 6/30/79
	As of 6/30/78 (acres)	Changes During Year (acres)	As of 6/30/79 (acres)	
Buena Colorado M.W.D. (2)	48,622	0	48,622	5.41
In City of San Marcos	(12,800)	(0)	(12,800)	(1.42)
In City of Vista	(10,946)	(0)	(10,946)	(1.22)
Carlsbad M.W.D. (3)	20,362	0	20,362	2.27
In City of Carlsbad	(18,363)	(+448)	(18,811)	(2.10)
Del Mar, City of	1,082	0	1,082	0.12
De Luz Heights M.W.D.	11,830	0	11,830	1.32
Escondido, City of (12)	13,265	+68	13,333	1.48
Fallbrook Public Utility District	15,774	+330	16,104	1.80
Helix Water District (4)	31,526	+47	31,573	3.51
In City of El Cajon	(8,856)	(0)	(8,856)	(0.99)
In City of La Mesa	(5,792)	(0)	(5,792)	(0.64)
In City of Lemon Grove	(2,400)	(0)	(2,400)	(0.26)
National City, City of	5,429	0	5,429	0.60
Oceanside, City of	25,383	0	25,383	2.82
Olivenhain M.W.D. (5)	27,367	0	27,367	3.05
Otay M.W.D. (6)	63,911	+903	64,814	7.21
Padre Dam M.W.D. (8)	54,180	-46	54,134	6.02
Pendleton Military Res	134,625	0	134,625	14.98
Poway M.W.D.	22,809	0	22,809	2.54
Rainbow M.W.D. (10)	47,084	-330	46,754	5.20
Ramona M.W.D.	47,190	-251	46,939	5.22
Rincon del Diablo M.W.D. (7)	16,438	-68 (1)	16,370	1.82
San Diego, City of	204,671	+148	204,819	22.79
San Dieguito Water District	5,637	0	5,637	0.63
Santa Fe Irrigation District	10,200	0	10,200	1.14
South Bay Irrigation District (9)	15,547	0	15,547	1.73
In City of Chula Vista	(12,732)	(+26)	(12,758)	(1.42)
Valley Center M.W.D. (11)	62,061	0	62,061	6.91
Yuima M.W.D.	12,813	0	12,813	1.43
Total Authority Area	897,806	+801	898,607	100.0
San Diego County				2,725,100

- (1) Includes area annexed by an adjacent city member agency but still in district, being an overlapping area and considered here as being part of the city.
- (2) Does not include 2,806 acres overlapping in City of Oceanside and 289 acres overlapping in City of Escondido.
- (3) Does not include 34 acres overlapping in City of Oceanside.
- (4) Does not include 3 acres overlapping in City of San Diego.
- (5) Does not include 5 acres overlapping in City of San Diego.
- (6) Does not include 726 acres overlapping in City of San Diego.
- (7) Does not include 10,290 acres overlapping in City of Escondido and 39 acres overlapping in City of San Diego.
- (8) Does not include 12 acres overlapping in City of San Diego.
- (9) Does not include 297 acres overlapping in City of San Diego and 655 acres overlapping in City of National City.
- (10) Does not include 701 acres overlapping in City of Oceanside.
- (11) Does not include 61 acres overlapping in City of Escondido.
- (12) Includes 61 acres overlapping in Valley Center M.W.D.

Table 3
(continued)
POPULATION - AUTHORITY MEMBER AGENCIES AND COUNTY
(Includes Resident Military Personnel)

Population - U.S. Census			1979 Estimate (14)	Average Annual Increase 1970-79 Percent	Density of Population 1979	
1960 (13)	1970 (13)	Decade Increase 1960-70 Percent			Per Acre	Per Sq. Mile
31,500	39,000	24	70,392	8.9	1.45	927
---	(3,900)	--	(21,455)	(50.0)	(1.68)	(1,073)
---	(24,600)	--	(48,937)	(11.0)	(4.47)	(2,861)
10,000	15,500	55	31,000	11.1	1.52	974
(9,400)	(14,850)	58	(32,100)	(12.9)	(1.71)	(1,092)
---	3,900	--	5,200	3.7	4.81	3,076
---	150	--	200	3.7	0.02	11
18,500	36,000	95	60,000	7.4	4.50	2,880
10,000	12,000	20	18,132	5.7	1.13	721
122,100	163,000	33	200,640	2.6	6.35	4,067
(37,300)	(50,900)	36	(71,851)	(4.6)	(8.11)	(5,192)
(29,900)	(38,800)	30	(54,319)	(4.4)	(9.38)	(6,002)
---	---	--	(20,550)	--	(8.56)	(5,480)
32,300	39,000	21	46,500	2.1	8.56	5,482
24,700	40,700	65	72,400	8.6	2.85	1,825
200	2,000	900	22,000	111.1	0.80	514
5,400	19,400	259	47,500	16.1	0.73	469
25,500	46,000	80	86,420	9.8	1.60	1,022
---	---	--	35,500	--	0.26	166
4,800	14,000	192	35,700	17.2	1.57	1,002
2,800	4,200	50	7,000	7.4	0.15	96
5,600	6,800	21	15,550	14.2	0.33	211
14,000	18,900	35	12,501	-3.8	0.76	489
557,200	675,800	21	833,000	2.6	4.07	2,603
15,000	21,800	45	30,310	4.3	5.38	3,441
7,700	8,600	12	14,485	7.6	1.42	909
64,300	80,000	24	97,600	2.4	6.28	4,018
(42,400)	(64,500)	52	(81,400)	(2.9)	(6.38)	(4,083)
3,600	7,000	94	14,927	12.6	0.24	154
---	1,250	--	1,830	5.2	0.14	91
955,200	1,255,000	31	1,758,737	4.5	1.96	1,252
1,033,010	1,310,800	27	1,767,450	3.9	0.65	415

- (13) Population in agencies other than cities was furnished by agencies.
- (14) Estimate by agencies.

WATER PRODUCTION

(Comp

Member Agencies	SOURCE OF WATER (4)				Total Water Production Ac. Ft.	Gross Area (2) Acres	Estimated Area Served by Water System Acres	Period into Groorage Serving Water Year P.C. Ft.	SAN VICENTE RESERVOIR OPERATIONS			Total Quantity in Storage 6/30/79 Ac. Ft.
	Local Supply		Authority Supply						STORED WATER WITHDRAWN DURING FISCAL YEAR			
	Amount Ac. Ft.	Percent	Amount Ac. Ft.	Percent					By Delivery Ac. Ft.	By Evaporation Ac. Ft.	By Spill Ac. Ft.	
Bueno Colorado M.W.D.	9,892.9	46.9	11,219.6	53.1	21,112.5	48,622	36,957	0	174.8	4.5	0	0
Carlsbad M.W.D.	0	0	11,135.2	100.0	11,135.2	20,362	17,000	0	116.4	3.0	0	0
Del Mar, City of	0	0	1,095.5	100.0	1,095.5	1,082	1,082	0	0	0	0	0
De Luz Heights M.W.D.	170.1	17.2	819.9	82.8	990.0	11,830	1,950	0	10.1	0.3	0	0
Escondido, City of	13,439.7	65.6	7,060.6	34.4	20,500.3	13,333	10,708	0	0	0	0	0
Fallbrook P.U.D.	0	0	11,666.8	100.0	11,666.8	16,104	9,979	0	324.8	8.3	0	0
Helix W.D.	17,007.2	46.9	19,249.1	53.1	36,256.3	31,573	29,692	0	0	0	0	0
National City, City of	4,735.9	82.9	978.5	17.1	5,714.4	5,429	4,000	0	0	0	0	0
Oceanside, City of	5.9	—	18,304.2	100.0	18,310.1	25,383	15,575	0	87.3	2.3	0	0
Olivenhain M.W.D.	0	0	4,714.1	100.0	4,714.1	27,367	4,285	0	77.6	2.0	0	0
Otay M.W.D.	0	0	11,269.5	100.0	11,269.5	64,814	29,298	0	194.2	4.9	0	0
Padre Dam M.W.D.	0	0	12,812.1	100.0	12,812.1	54,134	32,327	0	97.1	2.5	0	0
Pendleton Military Res. (3)	N.R.	—	0	—	N.R.	134,625	N.A.	0	0	0	0	0
Poway M.W.D.	846.9	12.2	6,101.0	87.8	6,947.9	22,809	7,035	0	0	0	0	0
Rainbow M.W.D.	0	0	24,709.3	100.0	24,709.3	46,754	14,000	0	357.3	9.1	0	0
Ramona M.W.D.	147.6	2.4	6,121.5	97.6	6,269.1	46,939	10,107	0	68.0	1.7	0	0
Rincon del Diablo M.W.D.	0	0	4,483.0	100.0	4,483.0	16,370	14,115	0	48.5	1.2	0	0
San Diego, City of (1)	63,317.0	36.9	108,482.7	63.1	171,799.7	204,819	108,555	0	0	0	0	0
San Dieguito W.D.	3,130.5	43.7	4,039.8	56.3	7,170.3	5,637	5,120	0	54.4	1.4	0	0
Santa Fe I.D.	3,061.7	39.6	4,673.6	60.4	7,735.3	10,200	9,304	0	42.7	1.1	0	0
South Bay I.D.	13,188.8	82.9	2,725.0	17.7	15,913.8	15,547	10,300	0	0	0	0	0
Valley Center M.W.D.	179.0	0.6	29,237.5	99.4	29,416.5	62,061	30,965	0	322.7	8.3	0	0
Yuima M.W.D.	1,158.6	38.8	1,828.6	61.2	2,987.2	12,813	4,123	0	557.0	16.6	0	0
Total and Average	130,281.8	30.1	302,727.1	69.9	433,008.9	898,607	406,477	0	2,532.9	67.2	0	0

(1) Includes production by City of San Diego for areas outside City (not in Authority).
 (2) Does not include overlapping area as shown in Table 1.
 (3) Delivery of water by coastal M.W.D. not reported to Authority.
 (4) Figures include losses from transmission and distribution system but not from reservoirs.
 N.A. — Not Applicable; N.R. — Not Reported

TABLES

TABLE 4
 WATER PRODUCTION, AGRICULTURAL USE AND AUTHORITY STORAGE
 FISCAL YEAR 1978-79
 (Compilation of data furnished by member agencies)

Gross Area (2) Acres	Estimated Area Served by Water System Acres	Percent of Gross Area Served by Water System Percent	Water Production Per Acre Served Ac. Ft./Acre/Yr.	Estimated Population	Water Production Per Capita Ac. Ft./Cap./Yr.	WATER USED FOR AGRICULTURAL PURPOSES						SAN VICENTE RESERVOIR OPERATIONS					
						From Local Supply		From Authority		Total Ac. Ft.	Percent of Agricultural Water to Total Production	Total Quantity in Storage 6/30/78 Ac. Ft.	Placed into Storage During Fiscal Year Ac. Ft.	STORED WATER WITHDRAWN DURING FISCAL YEAR			Total Quantity in Storage 6/30/79 Ac. Ft.
						Ac. Ft.	Percent	Ac. Ft.	Percent					By Delivery Ac. Ft.	By Evaporation Ac. Ft.	By Spill Ac. Ft.	
48,622	36,957	76	0.57	70,392	0.30	2,728.4	46.5	3,145.3	53.5	5,873.7	27.8	179.3	0	174.8	4.5	0	0
20,362	17,000	84	0.66	31,000	0.36	0	0	3,732.3	100.0	3,732.3	33.5	119.4	0	116.4	3.0	0	0
1,082	1,082	100	1.01	5,200	0.21	0	0	0	0	0	0	0	0	0	0	0	0
11,830	1,950	17	0.51	200	4.95	164.5	17.2	789.7	82.8	954.2	96.4	10.4	0	10.1	0.3	0	0
13,333	10,708	80	1.91	60,000	0.34	3,862.9	61.1	2,463.2	38.9	6,326.1	30.9	0	0	0	0	0	0
16,104	9,979	62	1.17	18,132	0.64	0	0	7,685.5	100.0	7,685.5	65.9	333.1	0	324.8	8.3	0	0
31,573	29,692	94	1.22	200,640	0.18	358.2	40.4	528.4	59.6	886.6	2.4	0	0	0	0	0	0
5,429	4,000	74	1.43	46,500	0.12	0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0
25,383	15,575	61	1.18	72,400	0.25	17.8	0.5	3,468.8	99.5	3,486.6	19.0	89.6	0	87.3	2.3	0	0
27,367	4,285	16	1.10	22,000	0.21	0	0	1,862.6	100.0	1,862.6	39.5	79.6	0	77.6	2.0	0	0
64,814	29,298	45	0.38	47,500	0.24	0	0	3,686.6	100.0	3,686.6	32.7	199.1	0	194.2	4.9	0	0
54,134	32,327	60	0.40	86,420	0.15	0	0	278.9	100.0	278.9	2.2	99.6	0	97.1	2.5	0	0
134,625	N.A.	N.A.	N.A.	35,500	N.A.	N.A.	—	N.A.	—	N.A.	—	0	0	0	0	0	0
22,809	7,035	31	0.99	35,700	0.19	15.5	1.2	1,231.6	98.8	1,247.1	17.9	0	0	0	0	0	0
46,754	14,000	30	1.76	7,000	3.53	0	0	22,005.8	100.0	22,005.8	89.1	366.4	0	357.3	9.1	0	0
46,939	10,107	22	0.62	15,500	0.40	77.9	2.1	3,706.3	97.9	3,784.2	60.4	69.7	0	68.0	1.7	0	0
16,370	14,115	86	0.32	12,501	0.36	0	0	1,306.3	100.0	1,306.3	29.1	49.7	0	48.5	1.2	0	0
204,819	108,555	53	1.58	833,000	0.21	—	—	—	—	—	0	0	0	0	0	0	0
5,637	5,120	91	1.40	30,310	0.24	765.9	40.0	1,148.5	60.0	1,914.4	26.7	55.8	0	54.4	1.4	0	0
10,200	9,304	91	0.83	14,485	0.53	504.2	30.4	1,155.7	69.6	1,659.9	21.5	43.8	0	42.7	1.1	0	0
15,547	10,300	66	1.55	97,600	0.16	187.1	74.8	62.9	25.2	250.0	1.6	0	0	0	0	0	0
62,061	30,965	50	0.95	14,927	1.97	161.3	0.6	25,541.2	99.4	25,702.5	87.4	331.0	0	322.7	8.3	0	0
12,813	4,123	32	0.72	1,830	1.63	1,135.3	38.8	1,789.7	61.2	2,925.0	97.9	573.6	0	557.0	16.6	0	0
898,607	406,477	45	1.07	1,758,737	0.25	9,979.0	10.4	85,589.3	89.6	95,568.3	22.1	2,600.1	0	2,532.9	67.2	0	0

TABLE 5
 ASSESSED VALUATION, TAX COLLECTIONS
 AND ALLOCATION OF RIGHT TO PURCHASE AUTHORITY WATER
 FISCAL YEAR 1978-1979

Member Agencies	ASSESSED VALUATION—SECURED AND UNSECURED				Area 6/30/79 Acres	1979-80 Valuation Per Acre	Tax Assessments to Date	Adj. to Tax Assessments	Uncollected 6/30/79	Tax Collections	Interest & Penalties	Receipts in Lieu of Taxes	Misc. Tax Sales	Net Total Collections	Amount Paid for Service Connections to 6/30/79
	1977-78 Total	1978-79 Total	1977-78 to 1978-79 Percent Change	1979-80 Total											
Bueno Colorado M.W.D.	\$ 315,671,686	\$ 329,719,755	+ 4.5	\$ 430,396,117	48,622	\$ 8,852	\$ 2,556,907	\$ 1,257	\$ 13,672	\$ 2,544,493	\$ 9,950	\$ 10,802	\$ 121	\$ 2,565,368	\$ 56,654
Carlsbad M.W.D.	196,966,159	234,369,026	+ 19.0	286,468,344	20,362	14,069	1,732,566	(2,038)	4,238	1,726,279	6,445	33,275	10	1,766,011	7,931
Del Mar, City of	40,631,663	36,096,717	- 11.2	41,901,408	1,082	38,726	450,536	2,412	8,014	444,934	1,634	530	1	447,100	—
De Luz Heights M.W.D.	4,862,955	4,468,917	- 8.1	5,770,377	11,830	488	39,182	(1,809)	753	36,620	283	1,000	—	37,904	—
Escondido, City of	176,092,574	190,985,782	+ 8.5	229,388,869	13,333	17,205	1,621,396	3,682	7,280	1,617,798	5,397	28	28	1,623,253	9,253
Fallbrook P.U.D.	78,038,259	73,296,469	- 6.1	90,274,673	16,104	5,606	649,484	72	3,825	645,731	2,533	3,420	42	651,728	67,773
Helix W.D.	758,410,114	774,463,776	+ 2.1	903,474,655	31,573	28,615	7,584,497	6,802	28,271	7,563,028	19,693	4,930	693	7,588,345	28,905
National City, City of	118,531,599	120,134,362	+ 1.4	134,373,197	5,429	24,751	1,400,101	4,809	7,100	1,397,810	2,920	6,828	85	1,407,645	—
Oceanside, City of	215,124,206	223,994,442	+ 4.1	280,972,771	25,383	11,069	1,986,786	630	12,861	1,974,555	6,596	2,601	95	1,983,847	106,369
Olivenhain M.W.D.	101,557,352	115,401,477	+ 13.6	158,755,570	27,367	5,801	584,682	(2,562)	7,180	574,939	4,438	1,250	—	580,628	66,608
Otay M.W.D.	167,102,386	184,242,913	+ 10.3	243,212,860	64,814	3,752	1,247,385	(2,949)	12,689	1,231,746	5,129	4,455	45	1,241,376	99,019
Padre Dam M.W.D.	230,001,382	228,694,170	- 0.6	299,514,340	54,134	5,533	1,842,909	(2,951)	13,377	1,826,579	10,440	878	131	1,838,030	45,244
Pendleton Military Res.		134,932,000	—	196,885,803	134,625	1,462	129,917	(2,911)	30,470	96,535	—	—	—	96,535	—
Poway M.W.D.	121,131,335	137,348,541	+ 13.4	165,877,260	22,809	7,272	835,770	(2,589)	12,950	820,230	6,522	15	8	826,776	103,875
Rainbow M.W.D.	83,956,944	78,271,990	- 6.8	97,091,564	46,754	2,077	666,655	(2,409)	8,429	655,816	8,464	23,697	—	687,961	152,685
Ramona M.W.D.	67,532,978	73,544,507	+ 8.9	96,789,029	46,939	2,062	521,948	16,560	(61,632)	600,140	3,679	5,400	58	609,279	3,378
Rincon del Diablo M.W.D.	107,702,579	125,615,765	+ 16.6	155,783,332	16,370	9,516	975,108	(224)	6,305	968,578	3,995	58,800	1	1,031,375	14,527
San Diego, City of	3,569,154,663	3,697,807,759	+ 3.6	4,378,193,605	204,819	21,376	39,356,070	(29,374)	14,146	15,388,900	28,783	24,075,982	2,424	39,496,090	181,864
San Dieguito W.D.	138,002,209	123,399,767	- 10.6	150,692,285	5,637	26,733	1,043,765	(89)	8,596	1,035,079	2,666	5,426	127	1,043,295	5,758
Santa Fe I.D.	149,167,968	143,315,344	- 3.9	179,239,043	10,200	17,572	1,124,486	242	9,711	1,115,016	3,815	2,892	1,093	1,122,818	8,129
South Bay I.D.	375,865,201	402,629,994	+ 7.1	469,905,961	15,547	30,225	4,242,395	(18,071)	12,554	4,211,769	7,919	15,296	142	4,235,128	594
Valley Center M.W.D.	76,705,727	87,790,921	+ 14.5	111,492,749	62,061	1,797	621,543	8,030	3,364	626,209	5,998	1,011	26	633,245	128,973
Yuima M.W.D.	13,947,764	13,359,940	- 4.2	16,219,228	12,813	1,266	170,107	(1,545)	1,877	166,683	469	1,500	—	168,653	28,424
Total Authority	\$7,106,157,703	\$7,533,884,334	+ 6.0	\$9,122,673,040	898,607	\$10,152	\$71,384,194	\$(25,006)	\$166,038	\$47,269,467	\$147,768	\$24,259,998	\$5,130	\$71,682,390	\$1,115,963
San Diego County (1)	\$7,502,581,620	\$7,858,170,302	+ 4.7		1,250,000										

(1) Excluding 1,475,100 acres of tax exempt lands in San Diego County.

(2) Design capacity of aqueducts as of June 30, 1979.

TABLE 5
 ASSESSED VALUATION, TAX COLLECTIONS
 AND ALLOCATION OF RIGHT TO PURCHASE AUTHORITY WATER
 FISCAL YEAR 1978-1979

dj. to Tax assessments	Uncollected 6/30/79	Tax Collections	Interest & Penalties	Receipts in Lieu of Taxes	Misc. Tax Sales	Net Total Collections	Amount Paid for Service Connections to 6/30/79	Total Amount Paid by Each Member Agency to 6/30/79	Amount Remaining to be Paid Under Terms of Annexation	Total Contributions Paid and Contracted for	ALLOCATION OF RIGHT TO PURCHASE AUTHORITY WATER	
											Percentage of Auth. Supply	Equivalent Flow c.f.s.
\$ 1,257	\$ 13,672	\$ 2,544,493	\$ 9,950	\$ 10,802	\$ 121	\$ 2,565,368	\$ 56,654	\$ 2,622,022		\$ 2,622,022	3.59	29.7
(2,038)	4,238	1,726,279	6,445	33,275	10	1,766,011	7,931	1,773,942		1,773,942	2.43	20.1
2,412	8,014	444,934	1,634	530	1	447,100	—	447,100		447,100	0.61	5.1
(1,809)	753	36,620	283	1,000	—	37,904	—	37,904	\$ 335	38,239	0.05	0.4
3,682	7,280	1,617,798	5,397	28	28	1,623,253	9,253	1,632,506		1,632,506	2.24	18.5
72	3,825	645,731	2,533	3,420	42	651,728	67,773	719,501		719,501	0.99	8.1
6,802	28,271	7,563,028	19,693	4,930	693	7,588,345	28,905	7,617,250		7,617,250	10.44	86.2
4,809	7,100	1,397,810	2,920	6,828	85	1,407,645	—	1,407,645		1,407,645	1.93	15.9
630	12,861	1,974,555	6,596	2,601	95	1,983,847	106,369	2,090,216		2,090,216	2.86	23.7
(2,562)	7,180	574,939	4,438	1,250	—	580,628	66,608	647,236		647,236	0.89	7.3
(2,949)	12,689	1,231,746	5,129	4,455	45	1,241,376	99,019	1,340,395		1,340,395	1.84	15.2
(2,951)	13,377	1,826,579	10,440	878	131	1,838,030	45,244	1,883,274	470	1,883,744	2.58	21.3
(2,911)	30,470	96,535	—	—	—	96,535	—	96,535	190,458	286,993	0.39	3.3
(2,589)	12,950	820,230	6,522	15	8	826,776	103,875	930,651		930,651	1.27	10.5
(2,409)	8,429	655,816	8,464	23,697	—	687,961	152,685	840,646		840,646	1.15	9.5
16,560	(61,632)	600,140	3,679	5,400	58	609,279	3,378	612,657	4,740	617,397	0.85	7.0
(224)	6,305	968,578	3,995	58,800	1	1,031,375	14,527	1,045,902		1,045,902	1.43	11.8
(29,374)	14,146	15,388,900	28,783	24,075,982	2,424	39,496,090	181,864	39,677,954		39,677,954	54.36	449.0
(89)	8,596	1,035,079	2,666	5,426	127	1,043,295	5,758	1,049,053		1,049,053	1.44	11.9
242	9,711	1,115,016	3,815	2,892	1,093	1,122,818	8,129	1,130,947		1,130,947	1.55	12.8
(18,071)	12,554	4,211,769	7,919	15,296	142	4,235,128	594	4,235,722		4,235,722	5.80	47.9
8,030	3,364	626,209	5,998	1,011	26	633,245	128,973	762,218		762,218	1.04	8.6
(1,545)	1,877	166,683	469	1,500	—	168,653	28,424	197,077	102	197,179	0.27	2.2
\$(25,006)	\$166,038	\$47,269,467	\$147,768	\$24,259,998	\$5,130	\$71,682,390	\$1,115,963	\$72,798,353	\$196,105	\$72,994,458	100.00	826.0 (2)

Table 6
WATER PRODUCTION WITHIN AUTHORITY AGENCIES - FISCAL YEARS 1969-70 to 1978-79
(All Figures in Acre Feet)

Member Agencies	From Local and Authority Supplies										
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	
Buena Colorado M.W.D.	15,513	15,511	17,376	15,839	18,396	17,477	20,452	19,463	18,825	21,113	
Carlsbad M.W.D.	7,960	8,700	9,373	8,907	10,029	10,022	10,965	10,752	10,010	11,135	
Del Mar, City of	868	855	944	850	942	893	1,162	918	921	1,096	
De Luz Heights M.W.D.	0	0	0	9*	99	178	362	503	612	990	
Escondido, City of	6,459	8,911	20,299	16,911	18,749	18,181	21,828	19,740	19,001	20,500	
Fairbrook Public Utility District	11,398	11,221	10,987	10,790	12,198	11,524	13,429	12,999	11,128	11,667	
Helix Water District	31,802	31,684	33,583	32,141	35,466	33,807	37,234	34,465	32,882	36,256	
National City and South Bay I.D.	17,718	18,812	21,236	18,614	20,095	20,065	22,038	21,339	20,021	21,628	
Oceanside, City of	10,134	11,510	13,000	12,575	14,539	14,817	17,358	16,565	15,854	18,310	
Olivenhain M.W.D.	1,923	1,650	2,278	2,265	2,857	2,697	4,079	3,739	4,358	4,714	
Otay M.W.D.	9,037	9,760	10,666	9,643	12,043	10,970	12,927	11,787	11,846	11,270	
Padre Dam M.W.D.	6,956	7,765	9,015	8,681	10,523	10,785	12,011	11,623	11,799	12,812	
Pendleton Military Res.											
Poway M.W.D.	4,375	4,648	5,066	5,428	7,053	7,335	7,983	7,177	6,553	6,948	
Rainbow M.W.D.	18,347	18,010	21,987	18,542	21,565	20,678	25,472	25,824	22,529	24,709	
Ranoma M.W.D.	1,789	1,932	2,519	2,765	3,723	4,086	5,482	5,653	5,531	6,269	
Rincones del Diablo M.W.D.	14,642	13,899	3,076	2,396	3,345	3,328	4,080	3,914	3,926	4,483	
San Diego, City of:											
Inland City	122,630	130,290	141,815	138,472	153,672	153,724	167,392	162,003	155,226	164,934	
Outside City (not in Authority)	6,147	6,056	6,548	6,216	6,308	6,304	7,887	7,367	6,023	6,866	
San Diego Water District	4,397	4,696	5,238	5,088	5,677	5,811	7,167	7,058	6,452	7,170	
Santa Fe Irrigation District	5,958	6,351	7,175	6,204	7,931	7,171	8,991	7,517	7,254	7,735	
Valley Center M.W.D.	14,409	15,146	18,931	16,512	20,663	20,353	29,198	28,895	26,738	29,417	
Yuma M.W.D.	9,927	8,626	4,643	3,471	4,629	4,251	4,263	3,729	3,335	2,987	
Total	322,589	336,043	367,945	342,319	390,502	384,457	442,210	423,030	400,821	433,009	

*Use of imported water began this year. All other agencies' use began prior to 1967-68. See previous reports.

Table 7

WATER SALES - 1947 to 1979
(All figures rounded to nearest whole acre foot)

Member agencies	1947-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	TOTAL
Buena Colorado M.W.D.	121,086	13,000	9,854	11,737	15,500	16,511	15,793	14,697	11,242	229,420
Carlsbad M.W.D.	86,593	9,350	8,924	10,060	9,999	10,989	10,761	10,011	11,162	167,849
Del Mar, City of	4,042	944	850	942	894	1,162	918	921	1,095	11,768
De Luz Heights M.W.D.	0	0	0	99	178	362	533	552	820	2,553
Escondido, City of	52,178	15,065	12,937	12,934	10,928	17,017	17,670	11,825	6,837	157,411
Fairbrook Public Utility District	179,212	13,065	10,852	12,163	13,374	12,894	11,298	11,298	11,604	275,974
Helix Water District	397,863	31,782	30,151	27,972	32,320	29,809	37,232	28,350	19,198	634,677
National City & South Bay I.D.	341,516	20,399	11,373	16,536	18,376	19,190	17,183	13,357	4,174	362,424
Oceanside, City of	101,297	12,972	12,542	14,511	14,787	17,337	16,552	15,851	17,941	223,790
Olivenhain M.W.D.	9,859	2,248	2,857	2,857	2,697	4,191	3,852	4,358	5,154	37,473
Otay M.W.D.	71,634	10,666	9,643	12,043	10,970	12,927	11,787	11,846	11,270	162,786
Padre Dam M.W.D.	58,323	8,782	8,552	10,371	10,785	12,280	11,617	11,799	12,812	145,321
Pendleton Military Res.										
Poway M.W.D.	42,381	6,493	6,257	8,060	7,859	8,187	7,649	6,304	6,942	100,132
Rainbow M.W.D.	160,850	21,987	18,186	21,858	20,697	25,364	26,039	22,529	24,770	342,280
Ranoma M.W.D.	11,308	2,420	2,039	3,755	4,155	5,455	5,124	5,124	4,681	46,881
Rincones del Diablo M.W.D.	99,597	2,396	3,345	3,327	4,080	3,914	3,926	4,483	4,483	129,694
San Diego, City of	1,837,002	145,343	165,212	154,699	155,139	173,863	179,387	190,150	94,280	3,005,075
San Diego Water District	36,605	4,911	4,215	4,817	5,438	6,641	7,078	6,067	4,056	79,828
Santa Fe Irrigation District	34,029	6,740	5,139	6,716	6,798	8,325	7,531	7,162	4,634	87,074
Valley Center M.W.D.	85,895	20,624	16,551	20,345	23,039	29,468	29,183	26,429	28,837	280,371
Yuma M.W.D.	12,573	2,370	2,025	2,936	2,645	2,558	1,953	1,967	1,829	30,856
Total Sales to Agencies	3,643,853	353,607	340,564	328,776	368,033	419,089	425,181	344,573	289,262	6,512,938
Total Sales to Others	1,613	233	6,776	8,982	8,253	8,186	9,058	8,200	1,990	53,291
Total to Authority Storage	+167,999	+19,218	+13,500	+15,683	+30,109	+35,392	+26,819	+21,411	+2,000	+332,181
Total from Authority Storage	-128,645	-15,732	-16,781	-15,561	-17,910	-37,015	-26,123	-34,531	-4,533	-296,831
Total to Metropolitan Storage	+117,029	+3,900	0	0	0	0	0	0	0	+120,929
Total from Metropolitan Storage	-103,604	-11,496	-1,808	0	0	0	0	0	0	-116,908
Total Flow in Authority System	3,698,095	349,730	342,251	337,880	388,485	425,851	434,935	339,653	288,719	6,605,599
Average Rate of Flow (c.f.s.)										
To Agencies and Others	159.2	487.4	479.8	466.5	519.7	588.6	599.8	487.3	402.3	
To Authority Storage	+7.3	+26.5	+18.6	+21.7	+41.6	+49.0	+37.0	+29.6	+2.8	
From Authority Storage	-5.6	-21.7	-23.2	-21.5	-24.7	-51.0	-36.1	-47.7	-6.3	
To Metropolitan Storage	+5.1	+5.4	0	0	0	0	0	0	0	
From Metropolitan Storage	-4.5	-15.8	-2.5	0	0	0	0	0	0	
Flow in Authority System	161.5	481.8	472.7	466.7	536.6	586.6	600.7	469.2	393.8	

(1) The operation of the First Aqueduct was formally initiated on November 24, 1947. For sales in intervening years, see previous reports.

*Corrected Figure

SAN DIEGO COUNTY WATER AUTHORITY

TABLE 8
SALES OF IMPORTED WATER — FISCAL YEAR 1978-79
(All Figures in Acre Feet except as noted)

Member Agencies	July	August	Sept.	Oct.	Nov.	Dec.	Total 6 Months
Bueno Colorado M.W.D.	1,536.6	1,417.0	1,707.0	1,273.8	437.7	871.9	7,244.0
San Marcos C.W.D.	907.1	920.7	689.0	695.5	384.8	260.7	3,857.8
Vista I.D.	629.5	496.3	1,018.0	578.3	52.9	611.2	3,386.2
Carlsbad M.W.D.	1,250.7	1,353.2	1,240.5	1,216.9	832.2	623.0	6,516.5
Del Mar, City of	128.1	122.4	116.3	43.3	73.1	108.3	591.5
De Luz Heights M. D.	105.1	110.4	105.6	98.0	35.7	34.0	488.8
Escondido, City of	1,396.6	1,425.4	148.6	554.4	91.4	677.7	4,294.1
Fallbrook P.U.D.	1,734.6	1,778.1	1,299.4	1,544.5	564.0	427.2	7,347.8
Helix W.D.	3,442.8	2,996.7	2,558.0	2,335.0	1,538.5	776.6	13,647.6
National City & South Bay I.D.	1,064.1	773.4	615.8	631.7	61.2	8.3	3,154.5
Oceanside, City of	2,148.0	2,239.5	1,883.9	1,929.3	1,127.6	954.2	10,282.5
Olivenhain M.W.D.	795.6	769.7	569.6	531.5	269.8	197.7	3,133.9
Otay M.W.D.	1,632.8	1,624.1	1,380.1	1,267.6	640.4	504.0	7,049.0
Padre Dam M.W.D.	1,707.2	1,581.6	1,258.5	1,233.3	762.9	678.3	7,221.8
Pendleton Mil. Res.	0	0	0	0	0	0	0
Poway M.W.D.	620.9	1,189.3	718.3	966.8	568.7	306.1	4,370.1
Rainbow M.W.D.	3,683.9	3,797.9	2,912.4	3,542.6	1,186.4	927.0	16,050.2
Ramona M.W.D.	1,128.1	886.1	677.3	732.4	318.5	222.5	3,964.9
Rincon del Diablo M.W.D.	662.8	667.5	502.3	511.1	204.1	166.1	2,713.9
San Diego, City of	8,729.7	12,181.9	9,798.7	7,446.9	6,175.5	4,755.3	49,088.0
San Dieguito W.D.	655.0	615.1	485.6	450.1	297.3	244.6	2,747.7
Santa Fe I.D.	951.1	846.6	591.5	534.8	374.0	171.5	3,469.5
Valley Center M.W.D.	5,155.4	5,025.8	3,191.9	4,119.6	1,323.4	514.8	19,330.9
Yuima M.W.D.	410.8	357.2	197.9	304.9	79.8	12.6	1,363.2
Total Sales to Agencies	38,939.9	41,758.9	31,959.2	31,268.5	16,962.2	13,181.7	174,070.4
Total Sales to Others	376.0	501.6	294.6	315.2	154.5	117.4	1,759.3
Total Sales to Agencies & *Others	39,315.9	42,260.5	32,253.8	31,583.7	17,116.7	13,299.1	175,829.7
Total to Authority Storage	0	0	0	0	0	0	0
Total from Authority Storage	-200.0	-200.0	-2,373.8	-504.9	-254.2	-200.0	-3,732.9
Total Flow in Authority System	39,115.9	42,060.5	29,880.0	31,078.8	16,862.5	13,099.1	172,096.8
Total Evaporation Losses (Authority Storage in S.V.R. & Lower Otay Reservoirs)	25.2	22.7	17.1	2.1	0.1	0	67.2
Total Evaporation Loss in Sweetwater Reservoir	58.3	52.1	42.2	33.0	17.7	15.8	219.1
Total Spillage from Sweetwater Reservoir	0	0	0	0	0	0	0
Rate of Flow (c.f.s.) To agencies and Others	639.4	687.3	542.0	513.6	287.7	216.3	481.8
To Authority Storage	0	0	0	0	0	0	0
From Authority Storage	-3.3	-3.3	-39.9	-8.2	-4.3	-3.3	-10.2
Flow in Authority System	636.1	684.0	502.1	505.4	283.4	213.0	471.6

*To Authority's Contractor for Construction and to Otay for Delivery to Tijuana, Mexico.

TABLES

Table 8
(Continued)

	Jan.	Feb.	March	April	May	June	Total 6 Months	Yearly Total	Yearly Average cfs
	+649.8	304.1	301.7	446.6	936.7	1,359.6	3,998.5	11,242.5	15.5
	212.7	291.9	285.8	433.5	720.7	782.4	2,727.0	6,584.8	9.1
	437.1	12.2	15.9	13.1	216.0	577.2	1,271.5	4,657.7	6.4
	488.9	409.5	582.7	784.1	1,127.5	1,253.1	4,645.8	11,162.3	15.4
	65.4	57.2	57.2	78.7	128.6	116.9	504.0	1,095.5	1.5
	20.8	17.7	15.0	71.6	88.8	117.2	331.1	819.9	1.1
	497.4	348.7	-7.6	4.8	1,020.5	679.1	2,542.9	6,837.0	9.4
	230.5	200.4	291.6	655.2	1,337.3	1,541.0	4,256.0	11,603.8	16.0
	392.5	209.3	821.5	1,304.4	976.0	1,846.3	5,550.0	19,197.6	26.5
	8.3	17.3	8.4	107.1	359.1	519.2	1,019.4	4,173.9	5.8
	837.1	746.5	852.2	1,213.8	1,897.2	2,111.7	7,658.5	17,941.0	24.8
	177.5	156.8	195.8	332.7	523.6	633.7	2,020.1	5,154.0	7.1
	414.9	391.6	474.7	711.4	1,012.0	1,215.9	4,220.5	11,269.5	15.6
	595.7	569.4	657.4	897.9	1,274.8	1,595.1	5,590.3	12,812.1	17.7
	0	0	0	0	0	0	0	0	0
	146.9	191.5	205.7	543.1	741.4	743.4	2,572.0	6,942.1	9.6
	218.2	224.5	376.0	1,589.8	2,771.5	3,540.1	8,720.1	24,770.3	34.2
	127.5	97.3	185.0	312.0	578.1	856.7	2,156.6	6,121.5	8.5
	110.6	126.2	138.9	295.0	490.1	608.3	1,769.1	4,483.0	6.2
	5,516.8	3,029.6	5,931.5	7,556.8	10,980.4	12,176.9	45,192.0	94,280.0	130.2
	238.0	214.4	13.0	209.5	261.6	371.6	1,308.1	4,055.8	5.6
	117.0	113.1	9.1	213.1	314.6	397.5	1,164.4	4,633.9	6.4
	326.8	143.8	475.8	1,367.3	3,021.3	4,171.4	9,506.4	28,837.3	39.8
	1.5	8.2	3.5	67.9	122.4	261.9	465.4	1,828.6	2.5
	11,182.1	7,577.1	11,589.1	18,762.8	29,963.5	36,116.6	115,191.2	289,261.6	399.4
	121.5	109.2	0	0	0	0	230.7	1,990.0	2.7
	11,303.6	7,686.3	11,589.1	18,762.8	29,963.5	36,116.6	115,421.9	291,251.6	—
	0	0	0	0	+1,000.0	+1,000.0	+2,000.0	+2,000.0	—
	-200.0	-200.0	-200.0	-200.0	0	0	-800.0	-4,532.9	—
	11,103.6	7,486.3	11,389.1	18,562.8	30,963.5	37,116.6	116,621.9	288,718.7	—
	0	0	0	0	0	0	0	67.2	—
	12.4	16.4	11.9	70	0	0	40.7	259.8	—
	0	0	2,425.8	0	0	0	0	2,425.8	—
	183.8	138.4	188.5	315.3	487.3	607.0	321.5	402.3	—
	0	0	0	0	+16.3	+16.8	+5.6	+2.8	—
	-3.3	-3.6	-3.3	-3.4	0	0	-2.2	-6.3	—
	180.5	134.8	185.2	311.9	503.6	623.8	324.9	398.8	—

SAN DIEGO COUNTY WATER AUTHORITY

Table 9
ASSESSED VALUATIONS AND TAX RATES
Fiscal Years 1945-46 to 1978-79

Fiscal Year	Secured Property	Public Utilities	Unsecured Property		Tax Rate per \$100	
			Unsecured Property	Total	Secured	Unsecured
1945-46	\$ 212,082,975	28,753,700	29,960,130	270,296,805	0.04	
1946-47	208,715,150 (1)	29,433,450	30,665,910	268,814,510	0.04	0.04
1947-48	233,579,990	32,740,680	40,977,850	307,298,520 (2)	0.14	0.04
1948-49	254,227,570	37,482,020	47,177,390	338,886,980	0.14	0.14
1949-50	290,351,875	42,429,140	45,743,200	378,524,215	0.10	0.14
1950-51	306,104,930	43,595,730	44,717,740	394,418,400	0.10	0.10
1951-52	344,620,030	48,452,940	50,904,035	441,977,005	0.10	0.10
1952-53	382,948,860	53,208,220	63,996,330	500,153,410	0.12	0.10
1953-54	490,709,350	63,092,050	69,147,150	622,948,550	0.10	0.12
1954-55	546,272,880	69,243,550	79,629,790	695,146,220	0.10	0.10
1955-56	627,062,960	87,485,390	79,936,450	794,484,800	0.09	0.10
1956-57	680,824,400	101,224,260	97,950,800	879,999,460	0.09	0.09
1957-58	761,088,330	111,151,890	128,785,440	1,001,025,660	0.09	0.09
1958-59	865,283,080	128,479,790	128,124,720	1,121,887,590	0.10	0.09
1959-60	979,491,050	145,317,290	134,846,730	1,259,655,070	0.11	0.10
1960-61	1,116,723,830	165,666,720	159,954,740	1,442,345,290	0.11	0.11
1961-62	1,220,810,650	191,276,650	155,149,890	1,567,237,190	0.11	0.11
1962-63	1,272,506,330	201,245,170	154,989,440	1,628,741,140	0.11	0.11
1963-64	1,340,197,170	209,793,780	159,714,930	1,709,705,880	0.11	0.11
1964-65	1,423,175,590	213,352,470	151,686,520	1,788,414,580	0.11	0.11
1965-66	1,511,967,750	212,605,040	155,417,220	1,879,990,010	0.11	0.11
1966-67	1,567,290,460	212,223,550	147,740,790	1,927,254,740	0.11	0.11
1967-68	1,735,309,870	209,136,160	178,641,120	2,122,987,150	0.10	0.11
1968-69	1,876,936,060	208,018,700	197,139,600	2,282,094,360	0.09	0.10
1969-70	2,063,618,582	210,839,100	217,951,409	2,512,409,091	0.09	0.09
1970-71	2,148,151,943	216,378,300	276,932,717	2,841,462,960	0.09	0.09
1971-72	2,755,734,087	213,191,301	306,608,099	3,275,533,487	0.10	0.09
1972-73	3,061,010,163	225,224,650	347,857,938	3,634,092,751	0.11	0.10
1973-74	3,481,734,238	239,346,070	393,300,174	4,114,380,482	0.11	0.11
1974-75	4,075,823,685	249,562,970	450,374,627	4,775,761,282	0.11	0.11
1975-76	4,629,303,071	283,156,810	503,493,823	5,415,953,704	0.11	0.11
1976-77	5,230,851,497	311,553,680	545,425,038	6,087,830,215	0.11	0.11
1977-78	6,121,864,014	376,899,840	607,393,849	7,106,157,703	0.11	0.11
1978-79	6,272,490,377	554,099,470	707,294,537	7,533,884,334	0.06	0.11

(1) City of Coronado secured assessed valuations not included in this or subsequent tax levies by the Authority, having withdrawn from the Authority prior to 1946-47.

(2) City of Coronado not included in this or subsequent total valuation.

(3) Gross Tax Levy. Includes State Grant for Business Inventory and Homeowners Exemption.

TABLES

Table 9
Continued
TAX LEVIES AND TAX COLLECTIONS BY FISCAL YEAR
(Includes in Lieu of Taxes)
Fiscal Years 1945-46 to 1978-79

Tax Levy (3)	Collection of Current Year's Taxes During Fiscal Year	Percentage of Levy Collected During Fiscal Year	Adjustments to Prior Year's Levies	Collection of Prior Years' Taxes During Fiscal Year	Total Tax Collections	Accumulated Delinquent Taxes	Ratio of Accumulated Delinquent Taxes to Tax Levy
107,808	105,753	98.09	-	1,090	106,844	2,439	2.26
389,591	381,563	97.94	-	1,882	383,445	8,585	2.20
474,520	459,504	96.84	-	5,916	465,420	17,685	3.73
401,112	392,732	97.91	329	13,342	406,074	13,052	3.25
397,970	390,274	98.07	373	8,217	398,492	12,904	3.24
450,405	441,242	97.97	918	7,699	448,941	15,346	3.40
594,603	585,417	98.46	(1,140)	12,567	597,985	10,824	1.82
652,335	640,239	98.15	4,213	9,942	650,181	17,191	2.62
709,678	695,200	97.96	1,295	12,638	707,838	20,326	2.86
803,375	788,734	97.41	(2,099)	12,140	800,874	20,726	2.59
874,774	861,461	98.48	576	13,056	874,517	21,560	2.46
965,006	946,445	98.08	958	12,890	959,335	28,189	2.92
1,178,885	1,157,265	98.17	-	13,347	1,170,613	36,462	3.09
1,436,270	1,408,277	98.05	(5,274)	16,647	1,424,925	42,533	2.97
1,624,733	1,586,169	97.63	(8,750)	21,501	1,607,671	50,874	3.15
1,763,785	1,718,575	97.44	(2,766)	31,477	1,750,053	62,330	3.54
1,816,449	1,775,932	97.77	(3,688)	38,134	1,814,066	61,023	3.37
1,910,019	1,862,973	97.54	(268)	36,825	1,899,799	70,975	3.72
2,000,067	1,948,853	97.44	(6,588)	42,596	1,991,450	73,003	3.66
2,101,023	2,033,032	96.76	2,503	44,784	2,077,816	98,714	4.69
2,154,994	2,090,637	97.01	(7,164)	54,335	2,144,970	101,573	4.73
2,175,276	2,129,996	97.92	(301)	64,473	2,194,470	82,078	3.77
2,110,913	2,103,601	99.65	-	55,253	2,158,854	34,136	1.62
2,182,274	2,149,330	98.49	91,680	24,018	2,204,127	103,963	4.57
2,450,123	2,408,899	98.32	38,500	104,032	2,512,932	79,655	3.25
3,084,869	3,058,713	99.15	27,045	32,926	3,091,639	99,930	3.24
3,790,191	3,743,715	98.77	494	45,314	3,789,029	101,586	2.68
4,004,024	3,941,152	98.43	4,891	43,846	3,984,999	125,502	3.13
4,673,400	4,597,610	98.37	(4,573)	42,611	4,640,222	154,107	3.32
5,336,375	5,223,483	97.88	(17,845)	76,632	5,300,115	172,522	3.23
6,012,954	5,928,085	98.59	34,543	109,718	6,037,803	182,216	3.03
7,111,999	7,083,080	99.59	(6,021)	87,193	7,170,273	117,921	1.66
5,956,033	5,802,438	97.42	-	134,444	5,936,882	137,072	2.30

Table 10
SAN DIEGO COUNTY WATER AUTHORITY
ANNEXATION CHARGES, ASSESSMENTS AND BALANCES

Area	Date of Annexation	Amount of Annexation Charge	Period of Special Assessments		Special Assessments to 6/30/78	Fiscal Year 1978-79		Remaining Balance of Annexation Charges 6/30/79
			First Year	Last Year		Special Assessments	Tax Rate \$/100	
Annexation Charges Outstanding								
De Luz Heights M.W.D.	6-28-67	\$ 7,400 *	1969-70	1978-79	\$ 421	\$ 6,978	01¢	\$ -0-
No. 1 Annex of 1969	10-20-69	4,200	1970-71	1979-80	379	3,826	13¢	335
Oliveshain M.W.D.	11-15-67	3,500	1968-69	1977-78	-	3,500	-	-0-
Padre Dam M.W.D. (Formerly Rio San Diego M.W.D.)	8-03-70	3,100	1971-72	1980-81	280	2,820	02¢	470
No. 4 Annex of 1970	12-22-77	227,578	1978-79	1982-83	37,119	-0-	16¢	190,458
Pendleton Military Reservation	12-11-67	9,100	1968-69	1977-78	-	9,100	-	-0-
Rainbow M.W.D.	11-30-67	6,100	1968-69	1977-78	-	6,100	-	-0-
No. 3 Annex of 1967	5-17-72	18,300	1971-72	1982-83	2,327	11,233	01¢	4,740
Ranoma M.W.D.	12-04-67	1,650	1968-69	1977-78	-	1,650	-	-0-
No. 4 Annex of 1967	12-04-67	2,750	1968-69	1977-78	-	2,750	-	-0-
Valley Center M.W.D.	11-27-67	6,000	1969-70	1978-79	371	5,629	03¢	-0-
No. 2 Annex of 1967	11-03-69	2,800	1970-71	1979-80	363	2,336	40¢	102
Yuma M.W.D.								
No. 1 Annex of 1967								
No. 2 Annex of 1969								
Total		\$292,478			\$55,112	\$ 41,260		\$196,105

Table 11
CHEMICAL CHARACTER OF NATURAL COLORADO RIVER WATER
AT WEST PORTAL OF SAN JACINTO TUNNEL
Year Ending June 30, 1979
Samples Taken at Entrance to San Diego Aqueduct by M.W.D.
and Analyzed by District Laboratory

Month	Total Hardness as mg/l CaCO ₃	Non Carbonate Hardness as mg/l CaCO ₃	Alkalinity as mg/l CaCO ₃			(P.H.) Hydrogen Ion Concentration	Temperature When Sampled	
			Total	Phenolphthalein	Magnesium as mg/l		°F	°C
July	326	199	127	1	30	8.41	NR	NR
August	325	201	124	8	31	8.46	NR	NR
September	NR	NR	NR	NR	NR	NR	NR	NR
October	316	198	118	2	30	8.42	71.6	22
November	325	203	122	2	30.5	8.36	53.6	12
December	330	204	126	3	31	8.39	57.2	14
January	334	203	131	4	31.5	8.40	51.8	11
February	328	200	128	0	30.5	8.26	52.7	11.5
March	331	201	130	2	30.0	8.33	NR	NR
April	335	205	130	3	30.5	8.40	66.2	19
May	338	209	129	3	30.5	8.42	72.5	22.5
June	332	203	129	8	31.0	8.49	76.3	24.6

ANALYSIS YEAR ENDING JUNE 30, 1979

Constituent	Symbol	ANALYSIS		
		Average	Maximum	Minimum
Silica	(SiO ₂)	8.2	9.4	6.7
Iron	(Fe)	NR	-	-
Calcium	(Ca)	81.4	85.0	77.0
Magnesium	(Mg)	30.6	31.5	30.0
Sodium	(Na)	105.4	108.0	102.0
Potassium	(K)	4.6	4.8	4.5
Carbonate	(CO ₃)	4.0	10.0	1.0
Bicarbonate	(HCO ₃)	146.6	156.0	132.0
Sulfate	(SO ₄)	291.2	299.0	285.0
Chloride	(Cl)	92.9	95.0	89.0
Nitrate	(NO ₃)	0.21	0.6	0.0
Fluoride	(F)	0.30	0.35	0.17
Boron	(B)	0.08	0.11	0.07
Total Dissolved Solids		691.9	704.0	671.0
Hardness as CaCO ₃				
Total		329.1	338.0	316.0
Carbonate		126.7	131.0	118.0
Noncarbonate		202.4	209.0	198.0
Alkalinity - Phenolphthalein		3.3	8.0	0.0
Alkalinity - Total		126.7	131.0	118.0
Free Carbon Dioxide	(CO ₂)	1.1	1.4	0.9
Total Suspended Matter		721.3	746.0	708.0
Hydrogen Ion Concentration	(PH)	8.39	8.49	8.26
Electrical Conductivity E.C. x 10 ⁶ @ 25°C		1084.9	1110.0	1027.0
Temperature C°		17.1	24.6	11.0

NR - Not Reported

Table 12

CHEMICAL CHARACTER OF BLENDED WATER
AT LAKE SKINNER
Year Ending June 30, 1979
Samples Taken by M.W.D. and Analyzed by District Laboratory

Month	Total Hardness as mg/l CaCO ₃	Alkalinity as mg/l CaCO ₃		Magnesium as mg/l	Hydrogen Ion Concentration	Temperature When Sampled	
		Total				°F	°C
July	276	117		26.5	8.15	76.1	24.5
August	258	116		25.0	8.14	77.7	25.4
September	251	116		24.5	8.13	74.8	23.8
October	246	115		24.0	8.15	72.9	22.7
November	241	113		24.0	8.20	64.4	18.0
December	244	113		24.0	8.20	55.2	12.9
January	240	112		23.8	8.20	51.6	10.9
February	235	113		22.5	8.18	50.4	10.2
March	258	117		25.0	8.19	53.6	12.0
April	267	120		25.5	8.19	57.9	14.4
May	281	119		26.5	8.20	65.3	18.5
June	246	111		24.5	8.20	69.1	20.6

ANALYSIS YEAR ENDING JUNE 30, 1979

Constituent	Symbol	ANALYSIS		
		Average	Maximum	Minimum
Silica	(SiO ₂)	8.1	12.9	7.0
Calcium	(Ca)	61	69.0	57
Magnesium	(Mg)	24.7	26.5	22.5
Sodium	(Na)	90.0	97	85
Potassium	(K)	4.4	4.8	4.1
Carbonate	(CO ₃)	0	0	0
Bicarbonate	(HCO ₃)	141	146	135
Sulfate	(SO ₄)	200	234	183
Chloride	(Cl)	91	95	87
Nitrate	(NO ₃)	0.16	0.30	0.10
Fluoride	(F)	0.26	0.33	0.20
Boron	(B)	0.12	0.14	0.10
Total Dissolved Solids		550	604	517
Hardness as CaCO ₃				
Total		254	281	235
Alkalinity - Total		115	120	111
Free Carbon Dioxide		1.6	2.0	1.4
Hydrogen Ion Concentration	PH	8.18	8.20	8.13
Electrical Conductivity	EC x 10 ⁶ @ 25°C	904	980	860
Temperature	°C	17.8	25.4	10.2

Table 13

ASSESSED VALUATIONS AND TAX RATES OF THE
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Fiscal Year	Area (acres)	Assessed Valuation Total (\$)	Tax Rate	
			Per \$100 Secured	Per \$100 Unsecured
1929-30	-	\$ 2,439,836,920	0.04	0.00
1930-31	-	2,431,684,250	.03	.04
1931-32	-	2,382,184,445	.03	.03
1932-33	-	1,936,051,180	.04	.03
1933-34	-	1,654,403,890	.04	.04
1934-35	-	1,587,147,565	.10	.04
1935-36	-	1,783,531,020	.20	.10
1936-37	-	1,789,160,685	.37	.20
1937-38	-	1,827,765,725	.40	.37
1938-39	-	1,896,966,255	.40	.40
1939-40	-	1,910,152,190	.42	.40
1940-41	389,588	1,841,248,450	.49	.42
1941-42	399,875	1,900,599,914	.48	.49
1942-43	400,614	2,001,924,735	.48	.48
1943-44	401,190	2,005,496,430	.48	.48
1944-45	401,536	2,109,192,795	.48	.48
1945-46	402,779	2,159,731,425	.50	.48
1946-47	501,425	2,413,186,570	.48	.50
1947-48	546,573	3,443,212,822 (2)	.35	.48
1948-49	578,368	3,883,081,225	.34	.35
1949-50	585,184	4,181,812,855	.34	.34
1950-51	721,850	4,281,519,725	.31	.34
1951-52	995,130	4,674,664,040	.30	.31
1952-53	1,120,448	5,372,498,515	.28	.30
1953-54	1,368,038	6,015,691,980	.25	.28
1954-55	1,793,651	6,548,392,114	.23	.25
1955-56	1,876,256	8,514,868,335	.21	.23
1956-57	1,932,205	9,674,000,560	.19	.21
1957-58	2,046,189	11,235,906,510	.18	.19
1958-59	2,128,333	12,070,838,070	.18	.18
1959-60	2,171,290	12,714,205,470	.17	.18
1960-61	2,544,960	13,737,971,925	.16	.17
1961-62	2,647,014	14,803,202,587	.15	.16
1962-63	2,797,946	15,699,681,030	.14	.15
1963-64	2,825,306	17,261,412,395	.14	.14
1964-65	2,882,144	17,757,246,740	.14	.14
1965-66	2,890,266	19,143,157,788	.14	.14
1966-67	2,901,421	20,979,150,165	.14	.14
1967-68	3,061,885	22,732,157,500	.14	.14
1968-69	3,067,896	24,016,568,274	.16	.14
1969-70	3,072,058	25,572,510,561	.17	.16
1970-71	3,075,616	27,605,064,302	.17	.17
1971-72	3,093,303	29,023,413,462	.17	.17
1972-73	3,126,803	31,001,520,641	.15	.17
1973-74	3,127,680	32,838,476,378	.14	.15
1974-75	3,129,664	35,941,961,265	.14	.14
1975-76	3,132,012	39,585,365,754	.13	.14
1976-77	3,132,800	45,695,542,697	.12	.13
1977-78	3,267,533	51,268,796,300	.12	.12
1978-79	3,268,337	53,573,470,118	.10	.12
1979-80	-	64,119,383,253	.09	.10

(1) Includes secured, unsecured, and public utility valuations.

(2) First year in which Authority assessed valuation was included in District's assessed valuation.

SAN DIEGO COUNTY WATER AUTHORITY

Table 14
METROPOLITAN WATER DISTRICT ANNEXATION CHARGES
AND BALANCES ON AUTHORITY AREAS

Member Agencies	Date of Annexation	Amount of Annexation Charge	Remaining Balance 6/30/79
Annexation Charges Outstanding			
Buena Colorado M.W.D.	6-11-54	\$ 1,072,230	\$ 206,356.93
Carlsbad M.W.D.	6-16-54	548,100	100,499.48
Del Mar, City of	11-23-62	611,250	282,756.45
De Luz M.W.D.	6-28-67	2,002,000	*2,848,512.30
No. 1 Annexation of 1969	10-15-69	312,000	* 429,841.39
Escondido, City of	10- 9-50	386,000	20,476.84
Fallbrook P.U.D.			
No. 1 Annexation of 1950	8- 1-50	34,600	822.04
No. 2 Annexation of 1958	11-24-58	50,400	16,279.18
Fallbrook Community Air Park	12-22-69	59,800	* 78,720.42
Helix Water District			
El Cajon Dry Island Annexation	12-20-54	327,450	59,060.16
Helix-Watson Ranch Annexation	2-20-59	8,730	2,808.96
Helix-Sunny Slope Hts. Annexation	9-17-59	38,250	13,831.24
Olivethain M.W.D.	7-25-60	83,880	23,888.45
No. 1 Annexation of 1965	2-11-65	512,520	289,666.93
No. 4 Annexation of 1967	11-13-67	74,000	* 88,244.18
Gray M.W.D.	10-26-56	273,000	56,845.99
No. 3 Annexation of 1960	10-20-60	93,100	37,314.77
Padre Dam M.W.D. (not including Lakeside I.D.)			
(Formerly Rio San Diego M.W.D.)	6- 7-56	373,980	87,317.07
No. 2 Annexation of 1959	11- 6-59	109,110	39,403.10
No. 3 Annexation of 1960	10-17-60	289,890	115,388.48
No. 4 Annexation of 1970	8- 3-70	164,000	159,969.67
Poway M.W.D.	4-21-54	91,800	18,073.06
No. 1 Annexation of 1959	9-21-59	27,150	9,953.93
Rainbow M.W.D.	4-10-54	167,300	26,580.91
No. 1 Annexation of 1959	5-12-59	24,300	8,828.28
No. 3 Annexation of 1967	12- 6-67	1,728,000	*2,538,952.18
No. 5 Annexation of 1973	11-22-73	13,200	13,936.94
Ranona M.W.D.	8-27-57	339,000	98,687.28
No. 1 Annexation of 1959	5-29-59	42,330	15,412.65
No. 2 Annexation of 1961	9-22-61	15,480	6,560.35
No. 3 Annexation of 1963	9-20-63	10,560	5,185.00
No. 4 Annexation of 1967	11-27-67	480,000	* 632,796.43
No. 5 Annexation of 1972	5-17-72	732,000	1,002,504.91
Rincon del Diablo M.W.D.	6-14-54	357,200	190,079.22
No. 4 Annexation of 1972	11- 2-72	19,200	* 23,227.35
San Diegoito Water District			
No. 1 Annexation of 1959	9-15-59	71,820	26,164.10
No. 2 Annexation of 1972	12- 8-72	107,000	* 125,783.27
South Bay Irrigation District			
(not including City of Chula Vista)	11- 3-52	449,370	43,573.31
Valley Center M.W.D.	5- 9-55	205,680	42,627.64
No. 1 Annexation of 1960	12-12-60	23,700	9,465.00
No. 2 Annexation of 1967	11-29-67	22,000	* 28,555.52
No. 3 Annexation of 1967	11-30-67	502,000	* 679,079.03
Yuma M.W.D.	12-16-63	749,490	374,374.27
No. 1 Annexation of 1967	11-21-67	72,200	83,049.15
No. 2 Annexation of 1969	11-24-69	14,400	* 16,360.82
Pendleton Mt. Reservation-Nuclear			
Generating Plant	12-16-77	**2,405,229	**2,364,234.59
Total		\$16,497,699	\$13,301,982.82

Annexation charges received from other annexed areas not listed above having no remaining balance

\$13,854,958

*Annual interest charge on outstanding balance is greater than tax levy based on maximum MWD tax rate of 75¢ per \$100 of assessed valuation.

**Principal only.

TABLES

Table 15
WATER SALES BY METROPOLITAN WATER DISTRICT

Year	Fiscal Years 1941-42 to 1978-79						
	To Member Municipalities						
	Natural Water	Per cent	Treated Water	Per cent	Total to Agencies	To Others	Total
Acres feet		Acres feet		Acres feet	Acres feet	Acres feet	
1941-42	0	0	9,372.6	100	9,372.6	70.7	9,443.3
1942-43	0	0	14,457.8	100	14,457.8	2,626.4	17,084.2
1943-44	0	0	15,874.9	100	15,874.9	3,301.8	19,176.7
1944-45	0	0	30,591.3	100	30,591.3	1,715.7	32,307.0
1945-46	0	0	46,685.8	100	46,685.8	1,264.2	47,950.0
1946-47	0	0	59,861.8	100	59,861.8	524.0	60,385.8
1947-48	41,093.5	36	71,995.4	64	113,088.9	116.8	113,255.7
1948-49	71,642.6	49	73,237.1	51	144,879.7	128.4	145,008.1
1949-50	69,308.0	49	72,936.0	51	142,244.0	23,371.6	165,615.6
1950-51	75,000.9	54	63,493.1	46	138,494.0	26,978.6	165,472.6
1951-52	66,674.3	44	84,616.1	56	151,290.4	42,464.2	193,754.6
1952-53	30,845.3	24	99,589.6	76	130,434.9	31,682.4	162,117.3
1953-54	120,773.0	51	115,550.6	49	236,323.6	7,820.7	244,144.3
1954-55	192,544.7	59	134,923.3	41	327,468.0	58,164.5	385,632.5
1955-56	190,337.2	53	169,506.4	47	359,843.6	45,562.9	405,406.5
1956-57	286,059.1	60	191,110.7	40	477,169.8	66,074.1	543,243.9
1957-58	266,024.1	57	197,900.0	43	463,924.1	75,612.8	539,536.9
1958-59	244,354.2	46	282,248.1	54	526,602.3	74,107.1	600,709.4
1959-60	425,019.0	58	304,874.8	42	729,893.8	3,523.2	733,417.0
1960-61	594,521.1	64	335,207.2	36	929,728.3	4,099.4	933,827.7
1961-62	608,811.0	66	312,975.9	34	921,786.9	3,676.9	925,463.8
1962-63	668,881.8	66	348,092.6	34	1,016,974.4	3,677.0	1,020,651.4
1963-64	671,853.4	63	388,553.9	37	1,060,407.3	3,776.7	1,064,184.0
1964-65	645,577.3	58	471,042.0	42	1,116,619.3	5,035.3	1,121,654.6
1965-66	550,630.8	52	503,424.9	48	1,054,055.7	4,821.8	1,058,877.5
1966-67	523,141.2	50	531,659.7	50	1,054,800.9	4,513.0	1,059,313.9
1967-68	514,248.1	48	557,730.9	52	1,071,979.0	4,934.9	1,076,913.9
1968-69	455,174.3	43	599,237.7	57	1,054,412.0	2,232.4	1,056,644.4
1969-70	482,256.9	41	682,846.4	59	1,165,103.3	650.0	1,165,753.3
1970-71	520,983.9	46	612,511.6	54	1,133,495.5	150.3	1,133,645.8
1971-72	590,356.9	47	656,635.9	53	1,246,992.8	549.6	1,247,542.4
1972-73	569,290.7	48	606,120.4	52	1,175,411.1	4.3	1,175,415.4
1973-74	655,057.2	52	593,177.8	48	1,248,235.0	954.2	1,249,189.2
1974-75	721,969.9	54	607,014.7	46	1,328,984.6	147.7	1,329,132.3
1975-76	735,103.0	53	653,516.0	47	1,388,619.0	629.0	1,389,248.0
1976-77	560,124.0	40	830,011.0	60	1,390,135.0	331.0	1,390,466.0
1977-78	439,625.0	37	757,270.0	63	1,196,895.0	1,430.0	1,198,325.0
1978-79	458,512.0	37	777,177.0	63	1,235,689.0	261.0	1,235,950.0

SAN DIEGO COUNTY WATER AUTHORITY

Table 16
WATER PRODUCTION - METROPOLITAN WATER DISTRICT CONSTITUENT AREAS
 Figures Furnished by Metropolitan Water District

Constituent Areas	1977-78		1978-79		M.W.D.			Other		
	Amount Ac. Ft. (c)	Percent Increase or Decrease	Amount Ac. Ft. (c)	Percent Increase or Decrease	Direct Deliveries	Amount In Lieu Replen.	Total	Percent of Total	Amount, Ac. Ft.	Percent of Total
Anaheim	49,757	+10.4	54,916	+10.4	15,428	10,811	26,239	48	28,677	52
Beverly Hills	11,933	+ 7.2	12,795	+ 7.2	12,795	-	12,795	100	-	-
Burbank	19,951	+ 8.6	21,663	+ 8.6	15,294	2,321	17,615	81	4,048	19
Calleguas M.W.D.	75,837	+ 2.8	77,380	+ 2.8	57,971	-	57,971	75	19,409	25
Central Basin M.W.D.	190,698	+ 9.8	209,340	+ 9.8	53,441 (b)	5,052	58,493	28	150,857	72
Chico Basin M.W.D.	164,927	+ 2.4	169,896	+ 2.4	11,801 (b)	3,568	14,748	9	146,148	91
Coastal M.W.D.	27,287	+13.4	30,956	+13.4	30,202	-	30,202	98	754	2
Compton	7,235	+12.0	8,057	+12.0	2,910	-	2,910	34	5,157	66
Eastern M.W.D.	102,191	+ 8.6	111,018	+ 8.6	34,177 (a)	-	34,177	31	76,841	69
Foothill M.W.D.	12,311	+11.1	13,683	+11.1	6,917	802	7,719	56	5,964	44
Fullerton	26,835	+10.4	29,616	+10.4	15,831	3,056	18,887	64	10,749	36
Glendale	22,373	+ 7.3	24,007	+ 7.3	17,198	2,226	19,424	81	4,583	19
Las Virgenes M.W.D.	8,813	+11.2	9,803	+11.2	9,803	-	9,803	100	-	-
Long Beach	59,827	+ 8.1	64,690	+ 8.1	35,427	3,266	38,713	60	25,977	40
Los Angeles	482,625	+12.9	544,368	+12.9	8,072 (b)	1,370	9,442	2	535,326	98
Orange County M.W.D.	290,107	+ 8.0	313,458	+ 8.0	122,474 (b)	9,984	132,458	42	181,000	58
Pasadena	30,240	+10.0	33,209	+10.0	11,902	5,269	17,171	52	16,129	48
Pomona Valley M.W.D.	77,438	+ 5.6	81,748	+ 5.6	35,228	1,345	36,573	45	45,175	55
San Diego C.W.A.	175,464	+10.8	416,117	+10.8	285,835	-	285,835	69	130,282	31
San Fernando	3,030	+ 4.9	3,177	+ 4.9	68	-	68	2	3,109	98
San Marino	3,939	+14.5	4,510	+14.5	37	-	37	1	4,473	99
Santa Ana	33,469	+ 8.4	36,276	+ 8.4	12,700	233	12,933	36	23,343	64
Santa Monica	14,072	+12.5	15,830	+12.5	7,573 (b)	3,384	10,957	69	4,873	31
Torrance	18,707	+11.2	20,804	+11.2	10,340	909	11,249	83	3,556	17
Upper San Gabriel Valley M.W.D.	167,971	+ 8.0	181,447	+ 8.0	5,601 (b)	-	5,601	3	175,846	97
West Basin M.W.D.	155,120	+ 8.3	168,006	+ 8.3	116,260 (b)	7,461	123,721	74	44,285	26
Western M.W.D.	217,063	- 4.2	208,034	- 4.2	35,535	-	35,535	17	172,499	83
Totals	2,649,720	+ 7.8	2,856,916	+ 7.8	976,199	61,057	1,037,256	36	1,819,660	64

NOTES: (a) Includes sewage into San Jacinto Tunnel.
 (b) Does not include water delivered for replenishment.
 (c) Includes deliveries for in-lieu replenishment use.

San Diego County Water Authority
ANNUAL FINANCIAL REPORT
 YEAR ENDED JUNE 30, 1979

PEAT, MARWICK, MITCHELL & CO.
CERTIFIED PUBLIC ACCOUNTANTS
1400 CENTRAL FEDERAL TOWER
405 BROADWAY
SAN DIEGO, CALIFORNIA 92101

The Board of Directors
San Diego County Water Authority:

We have examined the balance sheets of San Diego County Water Authority as of June 30, 1979 and 1978, and the related statements of earnings, changes in financial position and changes in equity for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the aforementioned financial statements present fairly the financial position of San Diego County Water Authority at June 30, 1979 and 1978, and the results of its operations and changes in financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

The examinations referred to above were directed primarily toward formulating an opinion on the financial statements of San Diego County Water Authority, taken as a whole. The supplementary data included in Schedule 1 are presented for supplementary analysis purposes and are not necessary for a fair presentation of the financial position and results of operations and changes in financial position of San Diego County Water Authority. The supplementary data have been subjected to the auditing procedures applied in the examination of the basic financial statements and, in our opinion, are stated fairly in all material respects only when considered in conjunction with the financial statements taken as a whole.

September 7, 1979

Peat, Marwick, Mitchell & Co.

SAN DIEGO COUNTY WATER AUTHORITY

FINANCIAL REPORT

SAN DIEGO COUNTY WATER AUTHORITY

Balance Sheets

June 30, 1979 and 1978

<u>Assets</u>	<u>1979</u>	<u>1978</u>
Current assets:		
Cash and certificates of deposit	\$ 8,923,120	7,650,238
Accounts receivable, net	3,650,027	4,151,896
Current installments of long-term receivables (note 2)	81,993	48,362
Inventory of water in storage	158,000	463,972
Prepaid expenses	6,041	28,700
Total current assets	<u>12,819,181</u>	<u>12,343,368</u>
Restricted assets:		
Debt redemption:		
Waterworks bonds:		
Cash and certificates of deposit	1,628,800	1,115,347
Cash with fiscal agent	50,178	147,240
Taxes and interest receivable, less allowance for delinquent taxes of \$137,072 in 1979 and \$73,732 in 1978	42,245	25,949
U.S. Government contract:		
Cash and certificates of deposit	89,909	-
Taxes and interest receivable, less allow- ance for delinquent taxes of \$12,191 in 1978	-	2,009
Due from Metropolitan Water District (note 4)	3,257,140	3,463,942
Capital improvement, waterworks bonds:		
Cash and certificates of deposit	35,339	41,972
Investment in annuity contract	59,460	40,918
Total restricted assets	<u>5,163,071</u>	<u>4,837,377</u>
Property, plant and equipment, net (note 3)	91,391,573	89,728,757
Participation rights (note 3)	141,312,509	132,539,970
Long-term receivables, excluding current installments (note 2)	114,112	188,805
	<u>\$ 250,800,446</u>	<u>239,638,277</u>

See accompanying notes to financial statements.

<u>Liabilities and Equity</u>	<u>1979</u>	<u>1978</u>
Current liabilities, payable from current assets:		
Accounts payable	\$ 6,056,037	4,680,862
Advances and deposits by agencies	184,919	1,139,072
Accrued expenses	121,000	55,000
Total current liabilities, payable from current assets	<u>6,361,956</u>	<u>5,874,934</u>
Current liabilities, payable from restricted assets:		
Current installments of long-term debt (note 4)	2,209,030	2,119,030
Matured bond principal and interest payable	50,178	147,240
Accrued interest payable	666,300	704,400
Bank overdraft - U.S. Government contract	-	8,677
Total current liabilities	<u>9,287,464</u>	<u>8,856,281</u>
Deferred compensation payable	59,460	40,918
Long-term debt, excluding current installments (note 4):		
General obligation waterworks bonds	47,905,000	49,735,000
U.S. Government contracts	5,590,691	5,969,720
Annexation charges - Metropolitan Water District	13,301,983	13,472,190
Total long-term debt	<u>66,797,674</u>	<u>69,176,910</u>
Equity:		
Equity in property, plant and equipment (note 3)	35,722,190	31,946,978
Contributed capital (note 3)	128,010,527	119,067,781
Restricted balances:		
Waterworks bonds, debt redemption	1,004,745	436,896
U.S. Government contract, debt redemption	3,347,049	3,457,274
Appropriated, long-term projects	755,913	3,011,659
Unrestricted balance	5,815,422	3,645,580
Total equity	<u>174,655,848</u>	<u>161,566,168</u>
Commitments (note 5)		
	<u>\$ 250,800,446</u>	<u>239,638,277</u>

SAN DIEGO COUNTY WATER AUTHORITY

SAN DIEGO COUNTY WATER AUTHORITY

Statements of Earnings

Years ended June 30, 1979 and 1978

	1979	1978
Water sales	\$ 23,766,121	24,093,865
Cost of water sold	<u>21,964,845</u>	<u>22,882,489</u>
Gross margin from water sales	<u>1,801,276</u>	<u>1,211,376</u>
Operating expenses:		
Water treatment	91,504	84,176
Systems operations	113,026	101,162
Maintenance of structures and plant	150,314	128,793
Automotive operation, maintenance and shop expense	71,732	67,784
Depreciation expense	1,043,569	1,016,134
Administrative and general salaries	219,622	174,881
General expense and supplies	<u>573,927</u>	<u>505,729</u>
Total operating expenses	<u>2,263,694</u>	<u>2,078,659</u>
Net loss from operations	(462,418)	(867,283)
Nonoperating income (expense):		
Property tax income	6,012,133	8,123,221
Interest expense	(2,288,647)	(2,384,713)
Interest income	861,083	565,537
Tijuana water delivery fees	39,125	122,230
Other	<u>(4,978)</u>	<u>29,884</u>
Net earnings	\$ <u>4,156,298</u>	<u>5,588,876</u>

See accompanying notes to financial statements.

FINANCIAL REPORT

SAN DIEGO COUNTY WATER AUTHORITY

Statements of Changes in Financial Position

Years ended June 30, 1979 and 1978

	1979	1978
Sources of working capital:		
Net earnings	\$ 4,156,298	5,588,876
Add back depreciation which does not use working capital	<u>1,043,569</u>	<u>1,016,134</u>
Working capital provided by operations	5,199,867	6,605,010
Taxes and direct payments by member agencies to Metropolitan Water District for participation rights	8,942,746	8,927,325
Contributions by member agencies for property, plant and equipment	53,715	49,488
Decrease in waterworks bonds, capital improvement, net restricted assets, applied to new construction	6,633	157,093
Decrease in U.S. Government contract, debt redemption, restricted balance applied to debt redemption	110,225	358,023
Long-term debt, net	-	2,915
Decrease in working capital	<u>11,209</u>	<u>-</u>
	\$ <u>14,324,395</u>	<u>16,099,854</u>
Uses of working capital:		
Long-term debt, net	2,289,236	-
Capital expenditures	11,542,003	14,959,697
Increase in waterworks bonds, debt redemption, restricted balance, in excess of amounts applied to debt service	567,849	130,333
Increase (decrease) in other assets, net	(74,693)	161,819
Increase in working capital	<u>-</u>	<u>848,005</u>
	\$ <u>14,324,395</u>	<u>16,099,854</u>
Changes in components of working capital:		
Increase (decrease) in current assets:		
Cash, including certificates of deposit	1,272,882	22,634
Accounts receivable, net	(501,869)	1,903,947
Current installments of long-term receivables	33,431	42,055
Inventory of water in storage	(305,972)	(1,326,272)
Prepaid expenses	<u>(22,659)</u>	<u>20,120</u>
	<u>475,813</u>	<u>662,484</u>
Increase (decrease) in current liabilities, payable from current assets:		
Accounts payable	1,375,175	(1,223,477)
Advances and deposits by agencies	(954,153)	1,007,956
Accrued expenses	<u>66,000</u>	<u>30,000</u>
	<u>487,022</u>	<u>(185,521)</u>
Increase (decrease) in working capital	\$ <u>(11,209)</u>	<u>848,005</u>

See accompanying notes to financial statements.

SAN DIEGO COUNTY WATER AUTHORITY
 Statements of Changes in Equity
 Years ended June 30, 1979 and 1978

	Total equity	Unrestricted balance	Restricted balances			Equity in property, plant and equipment	
			Appropriated long-term projects	U.S. Government contract	Debt redemption Waterworks bonds		Contributed capital
Balance, July 1, 1977	\$ 147,919,059	1,905,177	3,742,238	3,815,297	306,563	110,140,456	28,009,328
Additions (deductions):							
Net earnings	5,588,876	4,565,207	-	243,105	1,795,333	-	(1,014,769)
Taxes and direct payments by member agencies to Metropolitan Water District for participation rights	8,927,325	-	-	-	-	8,927,325	-
Capital expenditures for property, plant and equipment:							
From operations	-	(3,555,383)	-	-	-	-	3,555,383
From contributions by member agencies	49,488	-	-	-	-	-	49,488
Waterworks bonds redeemed	-	-	-	-	(1,665,000)	-	1,665,000
Payments on U.S. Government contracts	-	-	-	(601,128)	-	-	601,128
Work performed for member agency, previously capitalized	(901,080)	-	-	-	-	-	(901,080)
Cost of land sold	(17,500)	-	-	-	-	-	(17,500)
Transfers	-	730,579	(730,579)	-	-	-	-
Balance, June 30, 1978	161,566,168	3,645,580	3,011,659	3,457,274	436,896	119,067,781	31,946,978
Additions (deductions):							
Net earnings	4,156,298	2,876,243	-	14,602	2,307,849	-	(1,042,396)
Taxes and direct payments by member agencies to Metropolitan Water District for participation rights	8,942,746	-	-	-	-	8,942,746	-
Capital expenditures for property, plant and equipment:							
From operations	-	(2,707,942)	-	-	-	-	2,707,942
From contributions by member agencies	53,715	-	-	-	-	-	53,715
Waterworks bonds redeemed	-	-	-	-	(1,740,000)	-	1,740,000
Payments on U.S. Government contracts	-	-	-	(379,030)	-	-	379,030
Work performed for member agency, previously capitalized	(63,079)	-	-	-	-	-	(63,079)
Transfers	-	2,001,541	(2,255,744)	254,203	-	-	-
Balance, June 30, 1979	\$ 174,655,868	5,815,422	755,915	3,347,049	1,004,745	128,010,527	35,722,190

See accompanying notes to financial statements.

SAN DIEGO COUNTY WATER AUTHORITY

Notes to Financial Statements

June 30, 1979 and 1978

(1) Summary of Significant Accounting PoliciesAccounting Method:

The Authority operates and reports as an enterprise utilizing the accrual method of accounting.

Taxes Receivable:

Uncollected taxes receivable are recorded at the amount billed and an allowance is established for the amount estimated uncollectible within the ensuing year.

Inventories of Water in Storage:

Inventories of water in storage are stated at cost using the first-in, first-out method.

Property, Plant, Equipment and Participation Rights:

Property, plant, equipment and participation rights are recorded at cost. Depreciation of property, plant and equipment is computed on the straight-line method over the estimated lives of the respective items. Participation rights are not amortized.

(2) Long-Term Receivables

	<u>1979</u>	<u>1978</u>
Annexation charges due from special districts	\$ 196,105	237,367
Less current installments of long-term receivables	<u>81,993</u>	<u>48,562</u>
Long-term receivables, excluding current installments	\$ <u>114,112</u>	<u>188,805</u>

(Continued)

SAN DIEGO COUNTY WATER AUTHORITY

Notes to Financial Statements, Continued

(3) Property, Plant, Equipment and Participation Rights and Equity Therein

	<u>1979</u>	<u>1978</u>
Property, plant, equipment and participation rights:		
Property, plant and equipment	\$ 96,008,280	95,424,468
Construction work in progress	<u>10,157,586</u>	<u>8,083,079</u>
Less accumulated depreciation	<u>14,774,293</u>	<u>13,778,790</u>
Net property, plant and equipment	91,391,573	89,728,757
Participation rights in Metropolitan Water District	<u>141,312,509</u>	<u>132,539,970</u>
Net property, plant, equipment and participation rights	232,704,082	222,268,727
Less total long-term debt	<u>69,006,704</u>	<u>71,293,940</u>
	163,697,378	150,972,787
Add:		
Construction capital projects - waterworks bonds, improvement assets, net of construction accounts payable	<u>35,339</u>	<u>41,972</u>
Equity in property, plant, equipment and participation rights	\$ <u>163,732,717</u>	<u>151,014,759</u>
Represented by:		
Equity in property, plant and equipment	35,722,190	31,946,978
Contributed capital	<u>128,010,527</u>	<u>119,067,781</u>
	\$ <u>163,732,717</u>	<u>151,014,759</u>
The property, plant and equipment was financed by:		
General obligation bonds	67,648,708	67,396,802
U.S. Government contract	14,873,408	14,873,408
Current revenues	12,270,802	11,938,896
Agencies contributions	<u>1,215,362</u>	<u>1,215,362</u>
	\$ <u>96,008,280</u>	<u>95,424,468</u>

(Continued)

SAN DIEGO COUNTY WATER AUTHORITY

Notes to Financial Statements, Continued

(4) Long-Term Debt

	Interest rate	1979	1978
General obligation bonds:			
Waterworks bonds, 1957, maturing February 1, 1979-1994	11-6%	\$ 24,260,000	25,455,000
Waterworks bonds, 1966, maturing October 1, 1978-2004	4-1/2% 5-1/2%	25,475,000	26,020,000
Total bonds		49,735,000	51,475,000
U.S. Government contract:			
Authority's share; second pipeline	2.599%	2,712,581	2,884,808
Metropolitan Water District's share; second pipeline	2.599%	3,257,140	3,463,942
Total U.S. Government contract		5,969,721	6,348,750
Annexation charges - Metropolitan Water District		13,301,983	13,472,190
Total long-term debt		69,006,704	71,295,940
Less current installments of long-term debt		2,209,030	2,119,030
Long-term debt, excluding current installments		\$ 66,797,674	69,176,910

(Continued)

SAN DIEGO COUNTY WATER AUTHORITY

Notes to Financial Statements, Continued

(4) Long-Term Debt, Continued

The Metropolitan Water District's share of the U.S. Government contract, \$3,257,140 and \$3,463,942 at June 30, 1979 and 1978, respectively, is also recorded as due from Metropolitan Water District.

The Authority's liability, \$13,301,983 and \$13,472,190 at June 30, 1979 and 1978, respectively, for annexation charges due Metropolitan Water District (MWD) and interest thereon are paid by means of a special tax levied on the properties within the annexed areas. Since the collections of these taxes are remitted directly to MWD by the County of San Diego, the Authority records the net collections as a reduction of its liability to MWD and an increase in its equity in participation rights. The Authority also receives credit for participation rights payments received by MWD, both in the form of additional taxes levied and collected on properties within the Authority and direct payments made by member agencies. The Authority records such credits when received by MWD as increases in participation rights and contributed capital.

(5) Pension Plan

The Authority is a member of the California Public Employee's Retirement System which provides retirement benefits for all of its permanent employees. The total pension expense was \$120,803 in 1979 and \$75,205 in 1978, which included amortization of prior service costs to 1980. The Authority's contribution rate was 15.82% of annual payroll in 1979 and 9.94% in 1978.

SAN DIEGO COUNTY WATER AUTHORITY

Schedule 1

SAN DIEGO COUNTY WATER AUTHORITY

Bonded Debt Maturities

June 30, 1979

Year ended June 30,	Waterworks Bonds		Total principal	Total Interest	Total
	1957 principal	1966 principal			
1980	\$ 1,260,000	570,000	1,830,000	2,087,250	3,917,250
1981	1,330,000	595,000	1,925,000	2,009,917	3,934,917
1982	1,400,000	625,000	2,025,000	1,931,967	3,956,967
1983	1,470,000	650,000	2,120,000	1,852,260	3,972,260
1984	1,540,000	680,000	2,220,000	1,767,890	3,987,890
1985	1,620,000	710,000	2,330,000	1,678,707	4,008,707
1986	1,680,000	745,000	2,425,000	1,584,486	4,009,486
1987	1,740,000	775,000	2,515,000	1,486,521	4,001,521
1988	1,815,000	815,000	2,630,000	1,384,475	4,014,475
1989	1,880,000	850,000	2,730,000	1,277,868	4,007,868
1990	1,960,000	890,000	2,850,000	1,166,815	4,016,815
1991	2,040,000	925,000	2,965,000	1,051,020	4,016,020
1992	2,100,000	970,000	3,070,000	930,117	4,000,117
1993	2,165,000	1,015,000	3,180,000	804,537	3,984,537
1994	260,000	1,060,000	1,320,000	694,630	2,014,630
1995	-	1,105,000	1,105,000	632,747	1,737,747
1996	-	1,155,000	1,155,000	577,377	1,732,377
1997	-	1,210,000	1,210,000	519,435	1,729,435
1998	-	1,265,000	1,265,000	458,797	1,723,797
1999	-	1,320,000	1,320,000	395,465	1,715,465
2000	-	1,380,000	1,380,000	329,315	1,709,315
2001	-	1,440,000	1,440,000	260,225	1,700,225
2002	-	1,505,000	1,505,000	188,072	1,693,072
2003	-	1,575,000	1,575,000	112,612	1,687,612
2004	-	1,645,000	1,645,000	37,012	1,682,012
	\$ 26,260,000	25,475,000	69,735,000	25,219,517	74,954,517