

**SAN DIEGO
COUNTY WATER AUTHORITY**

1944 - 1994

Fiftieth Anniversary Edition



**FORTY-EIGHTH
ANNUAL REPORT**

1994

SAN DIEGO COUNTY WATER AUTHORITY
Organized June 9, 1944

**FORTY-EIGHTH
ANNUAL REPORT**

of Authority Operations
for Fiscal Year Ending June 30, 1994

Lester A. Snow
General Manager

SAN DIEGO, CALIFORNIA
1994

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50th Anniversary commemorative photo of past and current Authority Directors and staff.

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Aerial view of Lake Murray Dam and the Alvarado Filtration Plant, April 1955.



San Diego County Water Authority

A Public Agency
 3201 Fifth Avenue • San Diego, California 92103-5718
 (619) 682-4100 FAX (619) 297-0511

June 30, 1994

**Board of Directors
 San Diego County Water Authority**

It is my pleasure to present this forty-eighth Annual Report, which chronicles the San Diego County Water Authority's activities during the fiscal year ending June 30, 1994.

The Authority celebrated its 50th anniversary during the fiscal year (the first annual report was not issued until 1947). Directors and staff past and present joined with friends of the Authority for a commemorative event held June 9, 1994 — 50 years to the day after the Authority opened its doors for the first time. In addition, thousands of people learned about the Authority's half-century of service to the region at an extensive exhibit at the Del Mar Fair.

San Diego County's water supply situation worsened but did not return to drought conditions. Locally, rainfall was about average, but when considered on a statewide basis 1994 was forecast to be the fourth driest year of the century. However, reservoir levels throughout California and along the Colorado River were still above average following the wet winter of 1993. Nearly full reservoirs in the county allowed local supplies to account for 22 percent of the total water use by Authority member agencies — the highest percentage since 1985.

The dry year added impetus to the Authority's ongoing plans to maintain a reliable regional water supply. The Authority continued its vigorous action to increase the dependable local yield through water reclamation and groundwater development and to manage demand through long-term conservation measures. These programs were detailed in the Water Resources Plan, adopted by the Board in December 1993. The plan's elements are designed to ensure that by 2010 water shortages will never exceed 12 percent, the standard set in the Authority's Strategic Plan.

Even with an increased local water supply, the region will still rely heavily on imported water to meet its needs. The Authority was active in efforts to ensure the continuing reliability of the State Water Project, which has provided up to half of urban Southern California's imported water in the past. The Authority and other major urban water agencies closely followed plans to develop a solution for problems surrounding the Sacramento-San Joaquin River Delta, source of the SWP's water. The urban agencies were determined that the Delta solution result in a reliable statewide water supply as well as a secure habitat for fish and wildlife.

Meanwhile, the Authority was busy improving the capacity, reliability and efficiency of its pipelines and associated facilities throughout the county. Four major projects in the Capital Improvement Program were completed — the Scripps Ranch, La Mesa/Lemon Grove, Lower Otay and San Marcos pipelines. The Emergency Water Storage Project was narrowed to four systems that would help protect the county against catastrophic economic losses during a sudden, prolonged interruption of the imported water supply. All four systems are being analyzed in a draft environmental impact report/environmental impact statement now being compiled.

When the Authority began operations 50 years ago, the potential of water shortages threatened the regional economy. A similar potential exists today. In the 1940s, the Authority's task was to transport San Diego's Colorado River entitlement to the county. The situation is more complex in the 1990s. Rather than having a single imported water supply, the Authority must determine the proper mix of imported and local sources to meet the region's needs. This responsibility represents the Authority's major challenge as we approach the 21st century.

Sincerely,

Lester A. Snow
 General Manager

MEMBER AGENCIES

- | | | | |
|---|---|--|--|
| <p>CITIES</p> <ul style="list-style-type: none"> • Del Mar • Escondido • Hemet City • Chula Vista • Poway • San Diego <p>COUNTY</p> <ul style="list-style-type: none"> • San Diego (in office) | <p>IRRIGATION DISTRICTS</p> <ul style="list-style-type: none"> • Santa Fe • South Bay • Vista <p>PUBLIC UTILITY DISTRICT</p> <ul style="list-style-type: none"> • California | <p>WATER DISTRICTS</p> <ul style="list-style-type: none"> • Mira • City • San Marcos • Vista <p>FEDERAL AGENCY</p> <ul style="list-style-type: none"> • Redwood Valley Reservation | <p>MUNICIPAL WATER DISTRICTS</p> <ul style="list-style-type: none"> • Carlsbad • Chula Vista • Escondido • Poway • San Marcos • Vista |
|---|---|--|--|

SAN DIEGO COUNTY WATER AUTHORITY

**MEMBER AGENCIES AND
REPRESENTATIVES ON BOARD OF DIRECTORS
As of June 30, 1994**

CITIES	DATE OF ENTRY
Del Mar	Nov. 23, 1962
Charles Newton	
Escondido.....	Oct. 9, 1950
David A. Drake	
National City.....	Jun. 9, 1944
Frank W. Chenelle	
Oceanside.....	Jun. 9, 1944
James F. Turner	
Poway.....	Apr. 21, 1954
Linda Brannon	
San Diego.....	Jun. 9, 1944
Rosalie Shanks Bregante, Christine Frahm, Marilyn Hardebeck, Francesca Krauel, Joseph Parker, John M. Leach, Bob Russell, Frederick H. Thompson, Harold Throckmorton, Maria Velasquez	
WATER DISTRICTS	
Helix.....	Jun. 9, 1944
H. Warren Buckner, Harry Griffen	
Otay.....	Oct. 26, 1956
Mark W. Watton	
San Dieguito.....	Dec. 13, 1948
James Bond	
Vallecitos.....	Feb. 25, 1980
Dale Mason	
IRRIGATION DISTRICTS	
Santa Fe.....	Dec. 13, 1948
Harold K. Friedland	
South Bay.....	Nov. 3, 1952
Cary F. Wright	
(Includes the city of Chula Vista, an independent member agency, from June 9, 1944 to Nov. 3, 1952)	
Vista.....	Jun. 11, 1954
Howard Williams	

MEMBER AGENCIES AND REPRESENTATIVES

MUNICIPAL WATER DISTRICTS

Carlsbad.....	Jun. 16, 1954
Ann Kulchin	
Olivenhain.....	Jul. 25, 1960
Ann Peay	
Padre Dam.....	Jun. 7, 1956
Gerald L. Johnson	
(Includes Lakeside I.D., an independent member agency, from June 9, 1944 to Nov. 3, 1952)	
Rainbow.....	Apr. 10, 1954
William Hughes	
Ramona.....	Aug. 27, 1957
Robert Krysak	
Rincon del Diablo.....	Jun. 14, 1954
Sherwood D. Anderson	
Valley Center.....	May 9, 1955
Gary A. Broomell	
Yuima.....	Dec. 16, 1963
Susan M. Collins	

PUBLIC UTILITY DISTRICT

Fallbrook.....	Jun. 9, 1944
Gordon W. Tinker	
(Includes DeLuz Heights MWD, an independent member agency, from June 28, 1967 to June 30, 1990)	

FEDERAL AGENCY

Pendleton Military Reservation.....	Dec. 16, 1977
Lawrence E. Carlson	

COUNTY OF SAN DIEGO (Ex Officio).....	Feb. 13, 1986
Pam Slater	

SAN DIEGO COUNTY WATER AUTHORITY

BOARD OF DIRECTORS

The San Diego County Water Authority is comprised of 23 member agencies and the County of San Diego as an ex officio member. Each member agency is represented by at least one director. A member agency is entitled to one additional representative for each full five percent of total assessed valuation contained within its boundaries, as determined by the Assessors's Office of the County of San Diego. These representatives are appointed by the chief executive officer of the respective agencies with approval of the agencies' governing bodies. During the year, only two agencies were represented by more than one representative: the City of San Diego had 10 representatives and the Helix Water District had two.

Officers of the Board of Directors begin service in January of odd-numbered years. In January 1993, John M. Leach was elected Chairman; Mark W. Watton, Vice Chairman; and Joseph Parker, Secretary.

To facilitate matters, most business coming before the Board is first considered by one of its committees. Each committee then reports to the full Board, which makes the necessary decisions. There are eight standing committees:

Administrative & Legal	Public Affairs
Engineering & Operations	Special Budget Committee
Fiscal Policy	Water Policy
Long Range Planning	Water Reclamation

Temporary or ad hoc committees and special appointments that existed during this year were:

- Audit Subcommittee
- Ad Hoc Board Communications Committee
- Colorado River Board
- Contracts, Purchasing & DBE/EEO Goals Subcommittee
- Ad Hoc Facilities/Space Committee
- 50th Anniversary Subcommittee
- Desalination Subcommittee
- IICP Appeals Board
- JPIA Insurance Committee
- Right of Way Protection Subcommittee
- San Diego Area Wastewater Management District
- San Dieguito Groundwater Basin Planning Task Force
- Storage Subcommittee

BOARD OF DIRECTORS

During the year, the following Directors were presented with service emblems:

Director	Length of Service
Frank W. Chenelle	3 years
David A. Drake	3 years
Christine Frahm	5 years
William D. Taylor	5 years
Gordon W. Tinker	10 years
Sherwood D. Anderson	15 years

During the year, the following Directors were seated or reelected:

Date	Director	Agency	Term Expires
08/12/93	John M. Leach	City of San Diego	02/24/1995
08/12/93	Harold K. Friedland	Santa Fe ID	12/13/1996
01/13/94	Howard Williams	Vista ID	06/30/1996
05/12/94	Pam Slater	County of San Diego	02/14/2000

ROSTER OF STANDING COMMITTEES

as of June 30, 1994

Administrative and Legal

Bob Russell, Chair
Gerald L. Johnson, Vice Chair
Rosalie Shanks Bregante
Gary A. Broomell
Robert Krysak
Ann Kulchin
Dale Mason
Charles Newton
Pam Slater
Howard Williams

Engineering and Operations

Gordon W. Tinker, Chair
H. Warren Buckner, Vice Chair
Frank Chenelle
Marilynn Hardebeck
Gerald L. Johnson
Francesca Krauel
Ann Kulchin
Fred Thompson
Howard Williams

Fiscal Policy

Linda Brannon, Chair
Mark W. Watton, Vice Chair
Sherwood D. Anderson
Susan Collins
Christine Frahm
Harry Griffen
Robert Krysak
Ann Peay
Bob Russell

Long Range Planning

Harold Throckmorton, Chair
Susan Collins, Vice Chair
James Bond
Lawrence E. Carlson
David Drake
William Hughes
Francesca Krauel
Charles Newton
Gordon W. Tinker
Maria Velasquez

Public Affairs

Maria Velasquez, Chair
James Turner, Vice Chair
James Bond
Linda Brannon
H. Warren Buckner
Harold Friedland
Marilynn Hardebeck
Dale Mason
Cary F. Wright

Water Policy

Christine Frahm, Chair
David Drake, Vice Chair
Gary A. Broomell
Harry Griffen
Dale Mason
Joseph Parker
Ann Peay
Harold Throckmorton
Mark W. Watton
Cary F. Wright

Water Reclamation

Sherwood D. Anderson, Chair
Fred H. Thompson, Vice Chair
Rosalie Shanks Bregante
Lawrence E. Carlson
Frank Chenelle
William Hughes
Joseph Parker
Pam Slater
James F. Turner

Special Budget Committee

Linda Brannon, Chair
Mark W. Watton, Vice Chair
Gary A. Broomell
Christine Frahm
Harry Griffen

ROSTER OF STANDING COMMITTEES

as of June 30, 1994

(continued)

Temporary or Ad Hoc Committees & Special Appointments

Audit Subcommittee

Susan Collins, Chair
Joseph Parker
Cary F. Wright

Contracts, Purchasing & DBE/EEO Goals Subcommittee

James F. Turner, Chair
Joseph Parker, Vice Chair
Sherwood D. Anderson
James Bond
David Drake
Bob Russell
Maria Velasquez

50th Anniversary Subcommittee

Mark W. Watton, Chair
Rosalie Bregante, Vice Chair
Susan Collins
Gerald L. Johnson
William Hughes
Bob Russell
Frederick H. Thompson
Cary F. Wright

Desalination Subcommittee

David Drake, Chair
Joseph Parker
James F. Turner
Cary Wright

Storage Subcommittee

Gerald L. Johnson, Chair
Cary F. Wright, Vice Chair
Rosalie Shanks Bregante
David Drake
Francesca Krauel
Dale Mason
Gordon W. Tinker
Mark W. Watton

IICP Appeals Board

H. Warren Buckner, Chair
Linda Brannon
Gary A. Broomell
Christine Frahm
Joseph Parker
James F. Turner, * Chair
Susan Collins*
Marilynn Hardebeck*
Dale Mason*
Frederick H. Thompson*

Right of Way Protection Subcommittee

Joseph Parker, Chair
Gordon W. Tinker
Christine Frahm
Rosalie Shanks Bregante*

Colorado River Board

Sherwood P. Anderson
Ann Peay, *

San Diego Area Wastewater Management District

Frank Chenelle

JPIA Insurance Committee

Frederick H. Thompson

San Dieguito Groundwater Basin Planning Task Force

Rosalie Shanks Bregante

Ad Hoc Facilities/Space Committee

Jim Bond, Chair
Rosalie Shanks Bregante
David Drake
William Hughes
Joseph Parker
James Turner

ROSTER OF STANDING COMMITTEES

as of June 30, 1994

(continued)

Temporary or Ad Hoc Committees & Special Appointments

Ad Hoc Board Communications Committee - T.E. 6/10/94

Ann Kulchin, Chair
Gary Broomell
Frank Chenelle
Francesca Krauel
Ann Peay
Fred Thompson
Howard Williams

*=Alternate

OFFICERS OF BOARD OF DIRECTORS

1993-94



Chair
JOHN M. LEACH
City of San Diego
5-86 to 9-92 &
8-93 to present
SF ID 9-92 to 8-93



Vice Chair
MARK W. WATTON
Otay Water District
2-85 to present



Secretary
JOSEPH PARKER
City of San Diego
5-86 to present

BOARD OF DIRECTORS

1993-94



S.D. ANDERSON
Rincon del Diablo
Municipal Water District
8-78 to present



JAMES BOND
San Diego
Water District
3-93 to present



LINDA BRANNON
City of Poway
1-91 to present



ROSALIE SHANKS
BREGANTE
City of San Diego
12-91 to present



GARY BROOMELL
Vidley Center
Municipal Water District
2-92 to present



H. WARREN BUCKNER
Helix Water District
11-92 to present

SAN DIEGO COUNTY WATER AUTHORITY
1993-94



LAWRENCE E. CARLSON
*Pendleton Military
Reservation*
12-86 to present



FRANK W. CHENELLE
City of National City
3-90 to present



SUSAN M. COLLINS
*Yuma
Municipal Water District*
2-91 to present



DAVID A. DRAKE
City of Escondido
9-89 to present



CHRISTINE FRAHM
City of San Diego
3-88 to present



HAROLD K. FRIEDLAND
*Santa Fe
Irrigation District*
3-90 to 9-92 and
8-93 to present



HARRY GRIFFEN
Helix Water District
7-56 to present



MARILYNN HARDEBECK
City of San Diego
11-91 to present



WILLIAM HUGHES
*Rainbow
Municipal Water District*
3-93 to present

SAN DIEGO COUNTY WATER AUTHORITY
1993-94



GERALD L. JOHNSON
*Padre Dam
Municipal Water District*
2-91 to present



FRANCESCA M. KRAUEL
City of San Diego
8-78 to 6-92 also
4-93 to present



ROBERT KRYSAK
Ranoma Water District
2-93 to present



ANN KULCHEN
*Carlsbad
Municipal Water District*
1-93 to present



JOHN M. LEACH
City of San Diego
5-86 to 9-92 and 8-93 to
present
Santa Fe I.D. 9-92 to 8-93



DALE MASON
*Vallecito
Water District*
3-80 to present



CHARLES NEWTON
City of Del Mar
5-93 to present



JOSEPH PARKER
City of San Diego
3-77 to 6-83 also
5-86 to present



MICHAEL E. PARRISH
City of San Diego
4-89 to 10-93

SAN DIEGO COUNTY WATER AUTHORITY

1993-94



ANN PEAY
*Olivenhain Municipal
Water District*
2-93 to present



BOB RUSSELL
City of San Diego
5-92 to present



PAM SLATER
County of San Diego
2-93 to present



WILLIAM D. TAYLOR
Vista Irrigation District
4-88 to 1-94



FREDERICK H. THOMPSON
City of San Diego
11-90 to present



HAROLD THROCKMORTON
City of San Diego
8-91 to present



GORDON W. TINKER
*Fullbrook Public
Utility District*
4-83 to present



JAMES F. TURNER
City of Oceanside
8-86 to present



MARIA VELASQUEZ
City of San Diego
6-92 to present

SAN DIEGO COUNTY WATER AUTHORITY

1993-94



MARK W. WATTON
Otay Water District
2-85 to present



HOWARD WILLIAMS
*Vista
Irrigation District*
1-94 to present



CARY F. WRIGHT
*South Bay
Irrigation District*
11-88 to present



**DIRECTORS REPRESENTING SDCWA ON METROPOLITAN
WATER DISTRICT BOARD OF DIRECTORS
1993-94**



CHRISTINE FRAHM
5-92 to present



HARRY GRIFFEN
1-83 to present



FRANCESCA M. KRAULL
10-83 to present



JOHN M. LEACH
11-92 to 11-93



DALE MASON
12-86 to present



JOSEPH PARKER
3-93 to present



MARK W. WATTON
11-93 to present

**WATER AUTHORITY MANAGEMENT
ON JUNE 30, 1994**



LESTER A. SNOW
General Manager



VINCENT F. BIONDO, JR.
General Counsel



ERGUN BAKALL
*Assistant General Manager
Chief Engineer*



SHIRLEY A. JACKSON
*Assistant General Manager
Administration*



CHARLES N. RHODES
*Assistant General Manager
Water Resources*



ROBERT R. CAMPBELL
Chief Financial Officer



JANET R. MALTMAN
*Executive Secretary
Board of Directors*



*Bridge crossing at Lake Hodges, circa 1928.
(San Diego Historical Society, Photographic Collection)*

REPORT OF ACTIVITIES

The past year reflected new, post-drought patterns of water use in San Diego County. Virtually all measurements of water usage - per capita use, agricultural use, and municipal and industrial use - remain down from pre-drought levels. Total water use in fiscal year 1994 was 536,907 acre-feet, which is 2 percent below the previous year and well below pre-drought levels. Total water use in 1994 was 109,738 acre-feet less than in 1990, even though the Authority service area gained about 168,580 more people during that time.

The drop in per capita water use, from 0.22 acre-feet per person in 1990 to 0.18 acre-feet per person in 1994, is largely attributable to conservation patterns established during the drought, as well as the effectiveness of "hard" conservation programs, such as the installation of water-efficient plumbing fixtures. Water conservation projects completed in 1994 saved an estimated 11,500 acre-feet. Conservation programs included the installation of almost 28,000 ultra-low-flush toilets, and audits for residential, business, and agricultural water users.

Water usage has also fallen because of a declining agricultural economy, with increasing water rates and other market forces causing some growers to reduce productive acreage. Total agricultural use was 78,916 acre-feet, which is just 65 percent of the use in 1990. Relatively mild weather in the past year contributed to reducing the demand for outdoor irrigation.

The San Diego region enjoyed higher-than-normal local water supplies during the fiscal year, reducing Authority water sales and eliminating concerns about near-term water shortages. Water sales to member agencies fell to 392,733 acre-feet in 1994, the first time sales have been below 400,000 acre-feet since 1984. Much of the local water was carried over from the previous winter, in which record amounts of rainfall filled reservoirs throughout the county.

Local supplies included 9,131 acre-feet of reclaimed water that was produced and used for beneficial purposes during the year. In addition to providing financial and technical assistance to traditional reclamation projects, the Authority studied a project that would repurify wastewater to drinking water quality. The repurified water would be blended in a local reservoir, treated with other supplies, and eventually delivered as a potable supply. Thus far, the project has received conceptual approval from the state Department of Health Services.

The Authority's Capital Improvement Program continued during the year, with work on 19 construction projects, including pipelines, flow control structures, pump stations, and environmental mitigation. Five major pipeline projects were completed resulting in 35 miles of new pipeline, at a cost of about

SAN DIEGO COUNTY WATER AUTHORITY

\$205 million.

The Emergency Storage Project developed 32 system alternatives for providing about 90,000 acre-feet of emergency water storage in the northern part of the county. In April 1994 four finalist alternatives were selected. The systems include combinations of constructing new reservoirs, expanding existing reservoirs, and re-operating existing reservoirs. They include:

- Expanded San Vicente Reservoir
- Proposed Moosa Canyon Reservoir and Lake Hodges
- Expanded and reoperated San Vicente Reservoir
- Proposed Olivenhain Reservoir, Lake Hodges and expanded San Vicente Reservoir

The Authority added 16 new positions during the year, increasing total staff from 147 to 163 people. The workforce composition met Authority affirmative action goals, increasing minority employment by 21 percent and female employment by 28 percent. The Authority's goal is to staff each occupational category in a way that reflects the availability of minorities and women in the community. The Authority also negotiated a new three-year agreement with its employees that will end June 30, 1997.

COUNTY WATER AUTHORITY: 50 YEARS OF SERVICE TO SAN DIEGO

The San Diego County Water Authority opened its doors for business on June 9, 1944, three days after D-Day. Allied troops were securing the positions they established three days earlier on the Normandy coast. Franklin D. Roosevelt was preparing to successfully seek an unprecedented fourth term as president. The St. Louis Cardinals were pursuing their third consecutive National League pennant.

San Diego County was perilously close to water shortages that would cripple the significant local war effort and the regional economy.

Area voters overwhelmingly approved formation of the Authority to solve this problem by importing water from the Colorado River.

At first, the Authority had no water to sell, no tax revenues and no funds, so its Board of Directors met at one of its member agencies, the La Mesa, Lemon Grove and Spring Valley Irrigation District (now the Helix Water District). William Jennings, an original



director who went on to be the Authority's general counsel from 1948 to 1971, served as secretary and informal counsel. Jennings' wife took the notes as part of what Jennings later described as "sort of a home-made operation."



From this humble origin, the Authority grew into an agency that has provided San Diego County with a safe, reliable supply of imported water since December 1947. Thanks to the efforts of the Authority and its member agencies, the region — with its semi-arid climate and periodic droughts —

has enjoyed one of the nation's most reliable water supplies. The Authority's organization in 1944 followed a long period during which community leaders struggled to secure an imported water supply to supplement local sources resulting from snow and rainfall. At the time, San Diego County had an annual entitlement of 112,000 acre-feet of water from the Colorado, but no way to get the water to San Diego.

Local leaders were divided on the solution to this quandary. Some favored building the county's own pipeline — a 67-mile connection with the All-American Canal, which snakes west from the Colorado along the U.S.-Mexico border.

Others advocated joining the Metropolitan Water District of Southern California (MWD) and tying into the district's Colorado River Aqueduct — then under construction — via a pipeline that would extend south into San Diego County from Riverside County.

Few people considered the issue to be pressing at the time. Local water industry leaders didn't expect to need imported water until some time near the turn of the century, when the county's population was projected to be 725,000 people (compared to about 290,000 in 1940). Local water resources would be adequate for the foreseeable future.

Then Japanese forces attacked Pearl Harbor and all bets were off. After the United States entered World War II in December 1941, San Diego County swiftly became a prime location for military bases and construction facilities. Swelled by military personnel, the population virtually doubled between 1940 and 1944. The influx of people strained the county's water resources to their limit — and beyond. In particular, the growing water shortage threatened the military effort.

Meanwhile, events were occurring that would lead to a solution to the shortages. In 1943, the State Legislature approved the County Water Authority Act, which was drafted by Phil D. Swing, who would be the Authority's first general counsel, and carried by Sen. Ed Fletcher, a long-time San Diego water leader. The legislation allowed formation of the San Diego County Water Authority. On May 16, 1944, local voters approved the Authority's organization by a 15-1 margin.



Fred A. Heilbron

The Authority began operations with nine member agencies — the cities of Chula Vista, Coronado, National City, Oceanside and San Diego; the La Mesa, Lemon Grove and Spring Valley Irrigation District; the Lakeside and Ramona irrigation districts; and the Fallbrook Public Utility District. (Ramona and Coronado withdrew from the Authority in 1946. Ramona rejoined the agency in 1957.)

Fred A. Heilbron of San Diego was the first board chairman (and, in fact, held the position until his death in 1973). He presided over a 12-member board of directors.

Yet, while the countywide organization for administering the county's Colorado River water rights was in place, the method of delivering the water remained in doubt until late 1944. Because of San Diego's significance to the military effort, President Roosevelt used his War Act powers to direct San Diego to join MWD and so gain a connection with the Colorado River Aqueduct. The pipeline would reach from the aqueduct's western end in Riverside County to the San Vicente Reservoir in Lakeside. Roosevelt directed the Navy Department and the Bureau of Reclamation to construct the pipeline at federal expense.

As the first Authority annual report noted, Roosevelt's directive "had a profound influence" on local water supply planning. "In effect, the local areas no longer had a free choice as to which route they might employ to bring in Colorado River water." The federal action preempted the idea of a locally owned and controlled Colorado River water pipeline.

The San Vicente Aqueduct — later renamed Pipeline One, as part of the right-of-way called the First San Diego Aqueduct — stretched 71 miles from Riverside County to San Vicente Reservoir.



The Colorado River Aqueduct

While the aqueduct was being constructed, the Authority used the proceeds of a \$2 million voter-approved bond issue to install pipelines that would deliver water from the aqueduct

to such communities as Fallbrook and Oceanside, in the North County, and Chula Vista and National City, in the South.

San Diego County's first imported water didn't reach San Vicente without further struggle. When World War II ended, the Navy Department canceled the project as a cost-savings measure. Local leaders — both civilian and Navy — realized that water demand was not going to return to former, pre-war levels and they joined to protest the decision.

Extended negotiations ensued between the Authority and Navy officials. The result was a contract under which the Navy would pay for the aqueduct's construction and the Authority would repay the debt over a 50-year period.

The first Colorado River water spilled down the aqueduct and into San Vicente on Nov. 24, 1947. Soon after, the Authority began delivering imported water to its member agencies. The water was heartily welcomed, as the county's reservoirs were down to an estimated three weeks of supply because of increased demand and abnormally low rainfall levels.

Originally, the Colorado River imports were considered supplemental to local sources, but the demand for imported water grew rapidly. Since the Navy designed the San Vicente Aqueduct primarily to meet military needs, it was only about half as large as needed for the entire county.

Plans to build a second pipeline were in the works soon after the first was completed in late 1947; the pipeline was completed in 1954. Pipeline 2 sits next to Pipeline 1 in the First San Diego Aqueduct.

The 1950s were a decade of rapid growth for the Authority. The number of member agencies doubled to 18, expanding the area served by more than four times. By 1960, the Authority served 142,241 acre-feet of water to 956,000 people — 95 percent of the county's population.

With the growth in population and water demand came a need for new water delivery facilities. A \$35 million bond issue to build Pipeline 3 garnered 93 percent support from county voters in 1957. Pipeline 3, the first barrel in the Second San Diego Aqueduct, was completed in late 1960. It more than doubled the Authority's water delivery capacity.

The 1960s largely represented a time of consolidation for the Authority, especially compared to the 1950s and what was to come in the future. The agency's service area increased by 30 percent in population and 39 percent in acreage. In 1970, the Authority served 249,258 acre-feet of water — 75 percent more water than was imported into the county 10 years earlier.

A new pipeline was added to the Authority's infrastructure in the 1970s. Pipeline 4 — also part of the Second Aqueduct — was completed to Lake Miramar in 1973, increasing the agency's water delivery capacity by 86 percent.

The 1970s also saw the arrival of State Water Project (SWP) deliveries in San Diego County. California voters approved the project in 1960, but SWP water didn't reach San Diego until 1978. Its arrival was delayed for one year by the severe 1976-77 drought. In addition, the Authority began delivering treated water in 1976; before that, the agency's water was chlorinated, but did not receive full filtration treatment.

The population served by the Authority grew to 1.8 million by 1980, up 44 percent in 10 years. These people, representing 99 percent of the county's population, lived on almost 900,000 acres.

The Authority's fifth pipeline was completed to a point north of San Marcos in 1982. Pipeline 5, the third barrel in the Second Aqueduct, increased the Authority's water delivery capacity by 54 percent.

In 1989, the Authority adopted a major Capital Improvement Program (CIP) designed to ensure a reliable regional water supply into the 21st century. The CIP is a long-range plan to improve and expand

the Authority's water delivery service throughout the county. The major CIP project is a sixth pipeline that will span the county's length by the turn of the century.

The Emergency Water Storage Project, one part of the CIP, is determining the best way to meet the county's water needs should the imported supply be interrupted by an earthquake, drought or other emergency.



The State Water Project

The Authority's service area remained almost static in size in the 1980s, but the population it served increased by one-third, to 2.4 million. By 1994, the service area population was 2.6 million and the service area encompassed 909,000 acres.

In recent years, the Authority has concentrated on expanding the region's water supply by making local water use as effective and efficient as possible.

The Water Resources Plan, adopted in 1993, outlines how the Authority and its member agencies might develop local water supplies through water reclamation, conservation, groundwater development and desalination.

The Authority implemented a major water conservation program in 1991, in reaction to the prolonged statewide drought. Asked to reduce their water use by 20 percent, county residents responded by cutting back 30 percent. Since the drought ended, the Authority has focused on long-term, permanent conservation measures such as efficient plumbing fixtures and low-water-use landscaping.

Regional water use continues to be lower than it was before the drought. The Authority's annual water importation rate reached a high of 647,481 acre-feet in fiscal 1989-90. By fiscal 1993-94, Authority water sales fell to 414,448 acre-feet, due to efficient water use and record rainfall in winter 1993 that swelled available local water supplies and reduced demand for imported water.

Today, the Authority continues to concentrate on its 50-year mission. Some of the methods the agency uses to meet the mission are different from those employed in the 1940s. Only recently, for example, has the Authority been involved with the development of local water resources. But in the main, the Authority's job remains the same — to supply the San Diego region with a safe, reliable supply of imported water.



Scenes from Authority history, clockwise from right: workers load backfill material on a construction project; a cropduster seeds an Authority right-of-way in 1958; pipe is laid for Pipeline 3.



The Authority celebrated its 50th anniversary in 1994 with a picnic in the park and a major exhibit at the Del Mar Fair. June 9, 1994 — the actual 50th anniversary of the Authority's organization — providentially fell on a regularly scheduled Board meeting day. The anniversary, with the theme of "Water: Our Past, Our Future", was celebrated at a large picnic in Balboa Park, directly behind the Authority's San Diego office building.

All past and present Authority Directors and staff were invited, along with Directors and senior staff of all member agencies, local elected officials and representatives of various state and federal agencies. More than 300 people came to the event, ate a barbecue lunch and a commemorative cake, and heard short speeches by Board Chair John M. "Mike" Leach and General Manager Lester A. Snow. Resolutions acknowledging the 50th anniversary from more than 20 public agencies were received.

The anniversary also was observed with an exhibit at the Del Mar Fair. The exhibit covered 1,500 square feet. Included was a large low-water-use landscape that included about 50 species of groundcover, shrubs and trees; a dry river bed; a hand pump; and walkways.

The focus of the exhibit was a 20-foot-long piece of 96-inch diameter steel pipe. A diatomaceous earth path led from one end of the exhibit through the pipe and to the other end of the exhibit. Thousands of people walked through the pipe and surveyed seven large panels that provided text and photos about the Authority, member agencies, current programs and future plans.

The display was staffed by one person from the Authority and representatives of the member agencies 12 hours a day for the 20-day fair. In all, about 150 people helped to staff the display; 21 of the member agencies participated.

The 50th anniversary also was observed in an issue of *WaterTalk* that was devoted to the Authority's history and the region's long struggle to secure and

maintain a reliable supply of imported water.



A major exhibit at the Del Mar Fair marked the 50th anniversary.

WATER AUTHORITY COMPOSITION

General

The San Diego County Water Authority is a water wholesaler, providing imported water to its 23 member agencies. The Authority purchases water from the Metropolitan Water District of Southern California. Authority member agencies include six cities, four water districts, eight municipal water districts, three irrigation districts, a public utility, and a federal agency. The County of San Diego is an ex officio member of the Authority. The Authority was created by the County Water Authority Act in 1943 for the purpose of importing water to the region.

Authority member agencies are diverse in their composition and water needs. For example, some agencies are almost exclusively urban, while others are almost entirely agricultural.

The city of San Diego, the Authority's largest member agency, has more population, geographical area and assessed valuation than any other member agency.

Five Authority member agencies — Fallbrook PUD, Rainbow MWD, Ramona MWD, Valley Center MWD, and Yuima MWD — located in the northern portion of the county, service primarily agricultural customers.

Geography

The Authority's service area encompasses 908,959 acres (1420.31 square miles), approximately the western third of the land area of San Diego County. The Authority's boundaries extend from the international border in the south to the Orange and Riverside county lines in the north, and from the Pacific Ocean on the west to the foothills on the east.

The largest Authority member agency, in terms of land area is the city of San Diego, with 210,626 acres. The smallest member agency is the city of Del Mar, with 1,159 acres. Table 3 shows the area for each member agency and its proportion to the Authority's total area.

Population

In 1993-94, the population within the Authority's service area reached 2,604,483 (see graph). This represents an increase of 32,481 during the year, which equates to an annual growth of 1.26 percent. Population statistics for each member agency are shown in Tables 2 and 3.

The City of San Diego also has the largest population of any Authority member agency with 1,194,950 people. Yuima MWD has the smallest population with 1,858 people. Average population density within the Authority's service area increased during the year from 2.83 people per acre to 2.87 people per acre. National City had the highest population density with 9.49 persons per acre, while Yuima MWD had the lowest population density with 0.15 persons per acre.

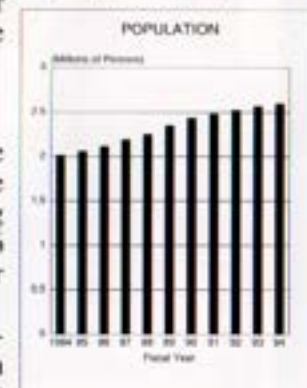
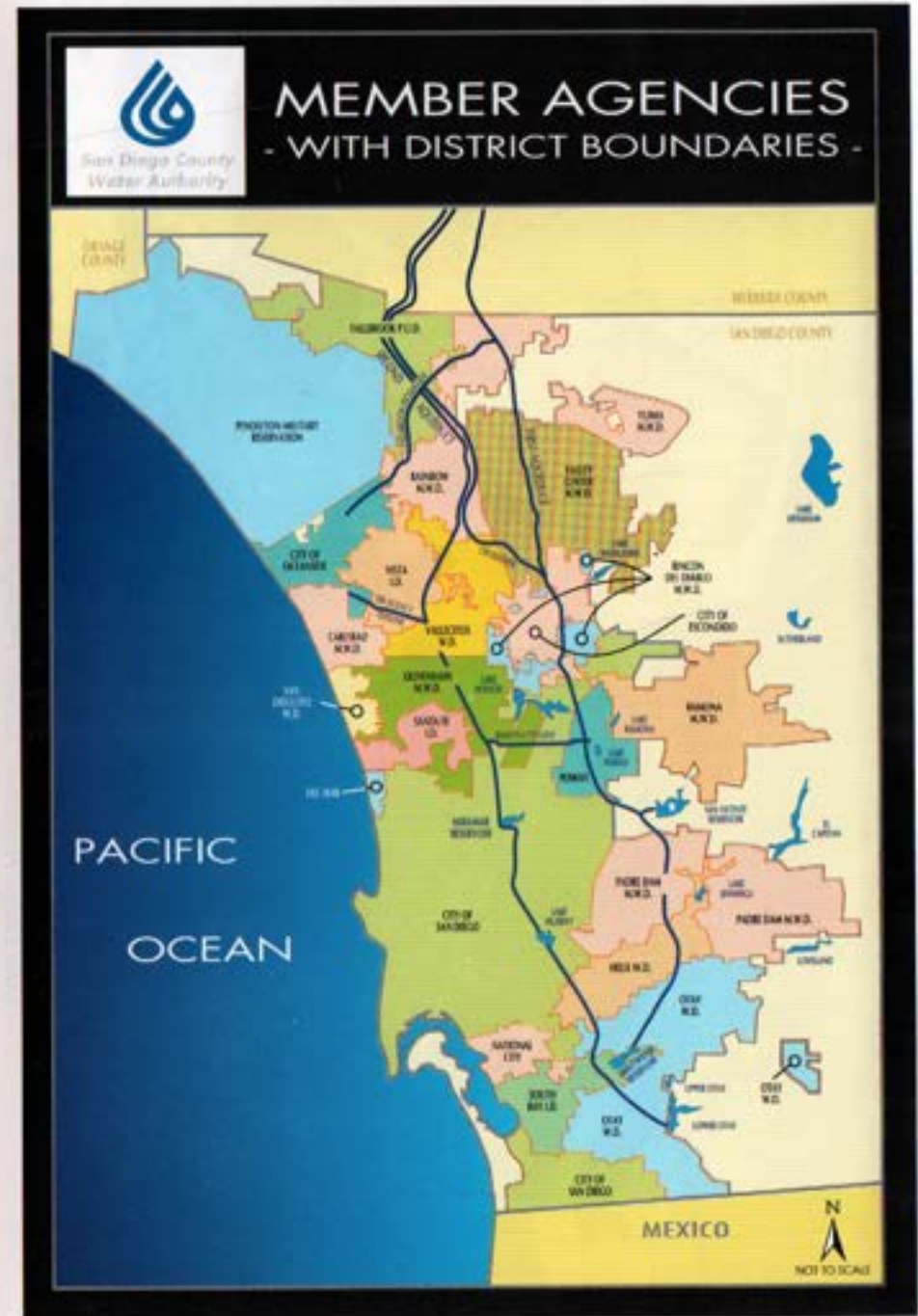


Figure No. 1

San Diego County Water Authority
Organization Chart
Figure No. 2



Map 1. Authority Area within San Diego County



*Celebrating the completion of Barrett Dam, circa 1922.
(San Diego Historical Society, Photographic Collection)*

WATER SUPPLIES, DELIVERIES, AND USE

Water Supplies

With most local reservoirs filled to capacity at the beginning of the fiscal year, the use of local supplies in the county increased by nearly 24,572 acre-feet from the previous year.

The Metropolitan Water District of Southern California (MWD) supplies the Authority with all of its imported water supplies. MWD obtains its imported supplies from the Colorado River Aqueduct (CRA) and the State Water Project (SWP). While the CRA flowed at near capacity, MWD received only a 50 percent allocation of SWP supplies due to the dry winter of 1994. At the conclusion of the rainy season, statewide precipitation was 45 percent of average compared with 120 percent of average in 1993. Existing state supplies were the result of carryover storage from the record amounts of precipitation received during the winter of 1992-93.

Water Deliveries

Water deliveries to the Authority's member agencies totalled 401,498 acre-feet by the end of the fiscal year. Of this total, about 8,764 acre-feet was considered operational water and was placed into storage in Authority accounts in member agency reservoirs. Authority deliveries to member agencies were 37,802 acre-feet less than the 430,535 acre-feet delivered in 1992-93 and 58 percent less than the recorded deliveries for 1989-90 which totalled 674,993 acre-feet.

An increase in local supplies from the record amounts of precipitation received the previous year was primarily responsible for the relatively low demand for imported supplies. From July through October 1993, local water continued to be about a third of the total use by member agencies. Local use averaged 19 percent of total use from October 1993 through June 1994 as 8 member agencies participated in the Seasonal Storage Program. Approximately 59,000 acre-feet was placed into storage during the seasonal storage period.

The highest monthly delivery to Authority member agencies occurred in June 1994 when the Authority delivered 52,053 acre-feet. The lowest delivery occurred in February when 16,398 acre-feet was delivered, and the area received 2.75 inches of rainfall.

MWD delivered 401,170 acre-feet to the Authority during the fiscal year. Treated water from the Robert A. Skinner Filtration Plant in Riverside County accounted for 204,763 acre-feet, and the balance, 196,407 acre-feet, was untreated. The total delivery was 29,750 acre-feet less than the previous fiscal year, which represents a 7 percent decrease.

Average flow rates in the Authority aqueduct system ranged from a low of 305 cubic feet per second (cfs) in February 1994, to a high of 886 cfs during June 1994. The average for the entire year was 553 cfs. Water deliveries to member agencies and others during the fiscal year are shown in Table 8. Annual water sales to individual agencies for the eight-year period 1986-87 through 1993-94 and total water sales from 1947-1994 are shown in Table 7.

Municipal and Industrial Water Use by Member Agencies

In order to determine water use, all the sources of supply that an agency utilizes to satisfy demand are totaled. In San Diego County, this includes water imported from MWD, and local water produced from impounding reservoirs and groundwater basins. Water use also includes the minor miscellaneous losses that occur in delivering supplies, such as pipeline leaks and breaks, and metering errors.

Total water use for 1993-94 was 536,907 acre-feet, which is 2 percent less than water use the previous year. Total use for 1993-94 was also 17 percent less than the 646,645 acre-feet that was used in 1989-90. Rainfall and ongoing conservation efforts were responsible for this continued reduction in demand. The combined water use of Authority member agencies is shown in Figure 4. The unshaded area indicates the proportion obtained from local sources compared with that supplied by the Authority.

Ten of the Authority's 23 member agencies rely entirely upon imported water. The remaining 13 agencies ranged from 98.1 percent dependent on Authority-supplied water (Ramona MWD) to 5.6 percent dependent (City of National City). Table 4 gives the percentage of Authority-supplied water to each of the member agencies.

Of the Authority's 908,959-acre service area, only about 58 percent is served with water. The low-

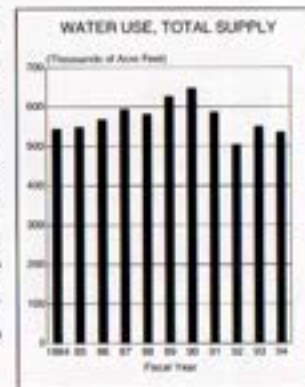
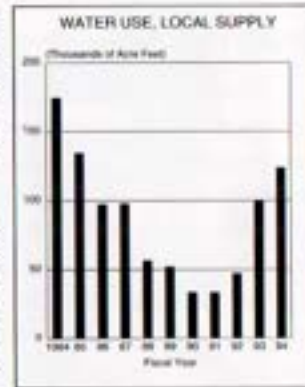
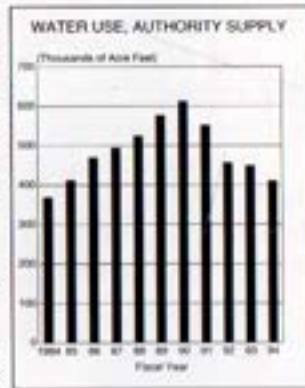


Figure No.3

SAN DIEGO COUNTY WATER AUTHORITY
WATER USE

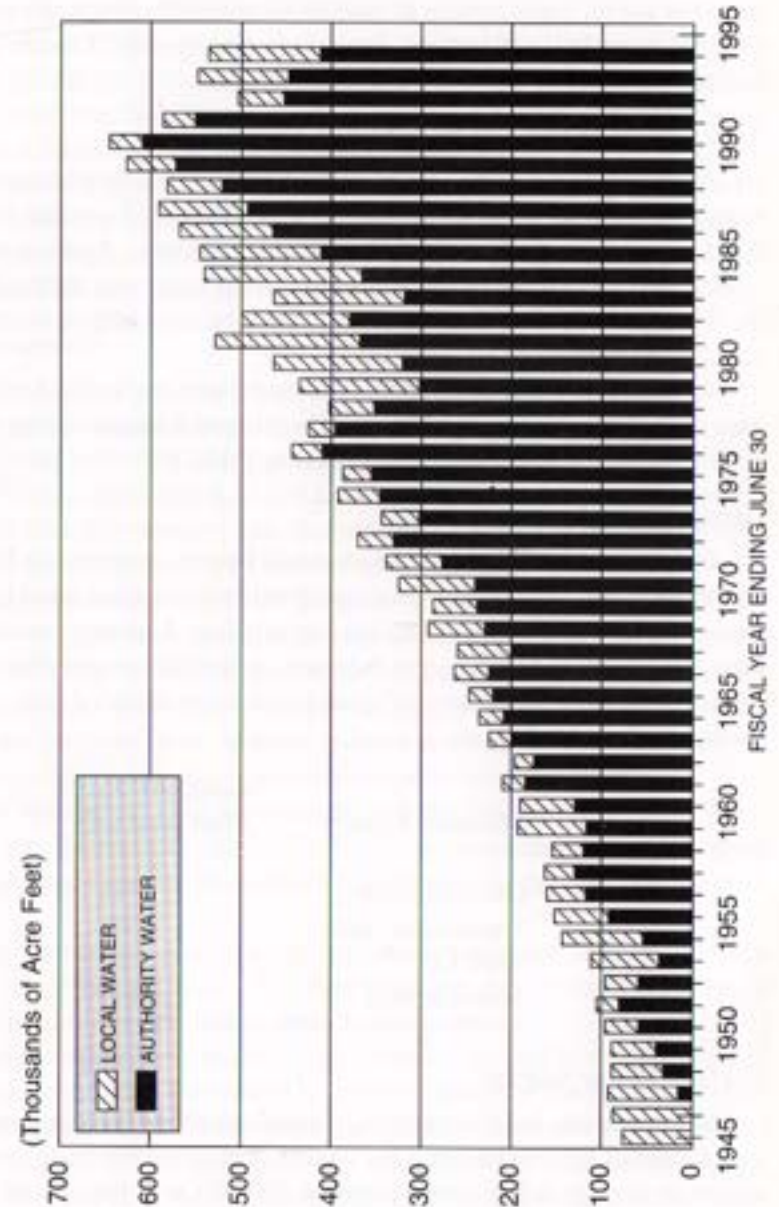


Figure No. 4

est per capita water use occurs in the urbanized portions of this area, as well as the highest use per unit area. The reverse is true for rural areas. Total average daily per capita consumption of municipal and industrial water for fiscal year 1993-94 was 161 gallons per capita per day (gpcd). This is a 16-percent decrease from 1989-90, when use was 192 gpcd.

Agricultural Water Use by Member Agencies

A total of 78,916 acre-feet of water was used for agricultural purposes by Authority member agencies during the year. This is 12 percent lower than the 89,051 acre-feet of agricultural use the previous year. Agricultural water use represented 15 percent of the Authority's total water use during the year, and the Authority supplied 90.5 percent of the total agricultural water used, compared to 77 percent of all water use.

Agricultural water demand has decreased steadily in the Authority service area since 1989-90, largely due to the prolonged drought. A complete summary of agricultural water use is contained in Table 4.

Groundwater Use

In June of 1994, the city of Oceanside began operating its Mission Basin Desalting Plant. This facility produces potable water from brackish groundwater wells. In addition to Oceanside, three other Authority member agencies have the ability to produce groundwater in significant quantities. These four agencies and the quantities of groundwater produced during the year are shown on the table below:

Member Agency	Groundwater Produced (af)
Oceanside (city)	595
Sweetwater Auth.	2,069
Vista I.D.	17
Yuima MWD	3,494

Surface Water Storage

Storage levels in local reservoirs remained above average from record levels of rainfall received around the county during the previous year. Combined reservoir storage in the county totalled 509,629 acre-feet, about 85% of total capacity in July 1993. As member agencies drew nearly 123,759 acre-feet from local supplies, reservoir levels dropped to 412,540 by the end of the fiscal year. In comparison, storage was greater than 535,000 acre-feet in June 1993.

Most of the region's local surface supply is produced by five member agencies: the city of San Diego, Helix Water District, Vista Irrigation District, city of Escondido and the Sweetwater Authority.

The city of San Diego owns and operates most of the surface water storage facilities within the Authority service area, including most of the surface impounding reservoirs. San Diego's system produced 54,206 acre-feet during the fiscal year. Of this amount, 7,089 acre-feet was delivered to the California-American Water Company for delivery to Coronado and Imperial Beach. Sweetwater Authority produced 18,222 acre-feet; Vista Irrigation District 13,559 acre-feet; Helix MWD 13,081; and the city of Escondido produced 8,706 acre-feet from local surface supplies.

Storage Agreements

The Authority does not own or operate any storage facilities. However, it does have an agreement with the city of San Diego to store up to 40,000 acre-feet in city-owned reservoirs. The agreement with San Diego also permits storage of up to 20,000 additional acre-feet in other city-owned reservoirs, subject to approval of the city manager. San Vicente and Lower Otay Reservoirs contain Authority-owned water stored under this agreement.

The storage agreement with San Diego provides a payment of \$2.20 per acre-foot to the city for the maximum amount of water stored at any given time during the year. The Authority also credits San Diego \$4.00 per acre-foot for any Authority-owned water that is sold to the city, pumped from storage, and placed into the city's system. Storage charges may be adjusted annually to reflect the cost of operating the reservoirs and associated facilities.

Authority also has storage agreements with the Ramona Municipal Water District and the Sweetwater Authority. These agreements meet operational goals of providing capacity in Authority aqueducts during periods of peak demand.

Under its agreement Ramona can purchase water for storage in Lake Ramona on an installment basis. The Authority can then request Ramona to draw upon this stored water during times of peak demand.

Sweetwater's agreement allows it to purchase treated water for storage during the winter months. This water is then available for use in the summer, during peak demands. Under this agreement, payment for water purchased and placed into storage is deferred until the water is removed from storage. Payment for all water is at the untreated rate. Each year, payment on all water remaining in storage on September 30 is due, with interest, in October.

Supply Sources

The Authority receives all of its imported water supplies from the Metropolitan Water District of Southern California (MWD). MWD in turn obtains its supplies from the Colorado River Aqueduct (CRA) and State Water Project (SWP). Over the past three years virtually 100 percent of the water delivered to the Authority has been from the Colorado River.

Imported water supplied about 77 percent of the municipal and industrial demand within the Authority's service area. Surface runoff into local impounding reservoirs and local groundwater supplied the remaining 23 percent. Table 4 shows the amounts of imported and local water used by the Authority's member agencies during the year.

In 1993-94, the Authority took 23.0 percent of MWD's total supply. Technically the Authority has a preferential right to only 12.23 percent of MWD's total supply. This has never been used as a basis for allocating supplies.

MWD Facilities

Colorado River supplies are transported from Lake Havasu, located on the Arizona/California border, through the Colorado River Aqueduct to Lake Mathews in Riverside County. Before reaching Lake Mathews, a portion of the water is diverted near the west portal of the San Jacinto Tunnel to Lake Skinner, via the San Diego Canal. The Casa Loma Canal can also direct Colorado River supplies to Lake Skinner via the San Diego Canal.

Lake Skinner is the major storage facility for the San Diego Canal, and has a storage capacity of 44,000 acre-feet. The Robert A. Skinner Filtration Plant, located at the reservoir, has a treatment capacity of 520 million gallons per day (mgd). These facilities are located in Riverside County, south of Winchester.

State Water Project supplies destined for the Authority are delivered to MWD at Lake Perris, which is the terminus of the 444-mile California Aqueduct. From there, SWP water normally flows through the Lakeview Pipeline to the San Diego Canal, where it is blended with Colorado River water, and then flows into Lake Skinner.

Authority Facilities

The Authority takes delivery of water from MWD in five pipelines buried in two rights of way called the San Diego Aqueducts. The delivery points are located about six miles south of the Riverside-San Diego County line. From there, water is distributed through approximately 250 miles of pipeline to the Authority's 23 member agencies through 88 service connections.

The San Diego Aqueduct system is managed from the Fred A. Heilbron Operations Center in Escondido. Delivery requests are received from member agencies, and aqueduct flows and deliveries are monitored and controlled

through a computer and telemetering system. Operations and maintenance field staff communicate with MWD's East Valley Operations Section at Lake Skinner by two-way radio.

The First Aqueduct is composed of pipelines 1 and 2. The lower reach of these pipelines receives filtered water from the Skinner Filtration Plant. From the delivery point south until Escondido, the First Aqueduct contains treated water. South of Escondido, it is refilled with untreated water from the Crossover Pipeline, which is linked to the Second Aqueduct. Off the First Aqueduct, the Fallbrook-Oceanside Branch Line originates at Rainbow and extends west to Oceanside's service area. The First Aqueduct ends at San Vicente Reservoir, which is owned and operated by the city of San Diego.

The three pipelines of the Second Aqueduct (pipelines 3, 4, and 5), although in common right of way for most of their length, do not share any facilities south of Lake Skinner and are operated independently. Pipeline 3 extends from Lake Skinner in Riverside County south to Lower Otay Reservoir. It delivers untreated water from Skinner south to a diversion structure at San Marcos, where it is refilled with treated water from Pipeline 4. Pipeline 3 delivers treated water at its terminus at Lower Otay Reservoir.

Pipeline 4 conveys treated water from Skinner until the diversion structure, and then is refilled with untreated water from Pipeline 3 until it terminates at the city of San Diego's Alvarado Treatment Plant along Lake Murray. Pipeline 5 delivers untreated water from Skinner south to the San Marcos diversion structure, where it is refilled with treated water from Pipeline 3. Pipeline 5 terminates at Paint Mountain.

To increase operational flexibility, several pipelines were constructed running east-west. The Tri-Agencies Pipeline is a branch line that extends west from San Marcos, and delivers treated water to service areas of the Vista Irrigation District, Carlsbad Municipal Water District, and the city of Oceanside. The Ramona Pipeline delivers water from the Second Aqueduct to the Olivenhain Water District, city of San Diego, and the Ramona Municipal Water District.

The design capacities of Authority pipelines at the point of delivery from the Metropolitan Water District are:

Pipelines 1 and 2 combined	196 cubic feet/second
Pipeline 3	250 cubic feet/second
Pipeline 4	380 cubic feet/second
Pipeline 5	450 cubic feet/second

(One cubic foot is equivalent to 7.48 gallons. One cubic foot per second flowing for 24 hours will produce nearly two acre-feet.)

Water Quality

Chemical constituents of Colorado River water are shown in Table 11. The analyses are based on samples taken from the West Portal of San Jacinto Tunnel. Total hardness ranged from a high of 337 milligrams per liter (mg/l) in February to a low of 315 mg/l in September. Water temperatures varied from a high of 81°F (27°C) in August to a low of 52°F (11°C) reported in January.

The chemical constituents of treated water at Lake Skinner are shown in Table 12. Total hardness ranged from a high of 330 mg/l in November to a low of 317 mg/l in April. Water temperatures ranged from a high of 81°F (27°C) recorded in August to a low of 52°F (11°C) in January.

The Water Authority measures and reports aqueduct water turbidity to meet the daily monitoring requirements of the California Safe Drinking Water Act. Additional water quality sampling and measurement is done by Authority member agencies.

Water Treatment

Authority member agencies that own and operate treatment plants within the County are: The cities of San Diego, Poway, Oceanside, and Escondido, (Escondido has a joint ownership with the Vista Irrigation District), Ramona Municipal Water District, San Dieguito Water District-Santa Fe Irrigation District (joint ownership), Helix Water District, and Sweetwater Authority (operating for South Bay Irrigation District and National City). The Authority purchases treated water from Helix and Poway to supply the Otay Water District, Padre Dam Municipal Water District, and Ramona Municipal Water District. The cost of all treated water delivered by the Authority to its member agencies is the same regardless of the treatment source.

Precipitation

Following the record rains of 1993, precipitation dropped back to near normal amounts. In San Diego County, rainfall is measured at three stations: Lindbergh Field, located in downtown San Diego at an elevation just slightly higher than sea level; Lake Cuyamaca, at an elevation of about 4,600 feet; and Lake Henshaw, in the northeastern corner of the county, at an elevation of about 2,600 feet. Rainfall at these stations for 1993-94 is shown below:

Location	Rainfall	Percent of Normal
Lindbergh Field	9.89 inches	100
Lake Cuyamaca	31.07 inches	83
Lake Henshaw	22.81 inches	87



El Capitan Dam spillway under construction, circa 1933.

1933 ESTIMATED COSTS

El Capitan Dam contract	\$ 2,687,000
Contingencies	77,000
Engineering	128,000
Rights of way	474,000
Road south side of reservoir	107,500
El Capitan San Diego pipeline	
25 miles 36-inch steel pipe	1,744,500
University Heights filter plant	<u>48,000</u>
Total	\$ 5,266,000

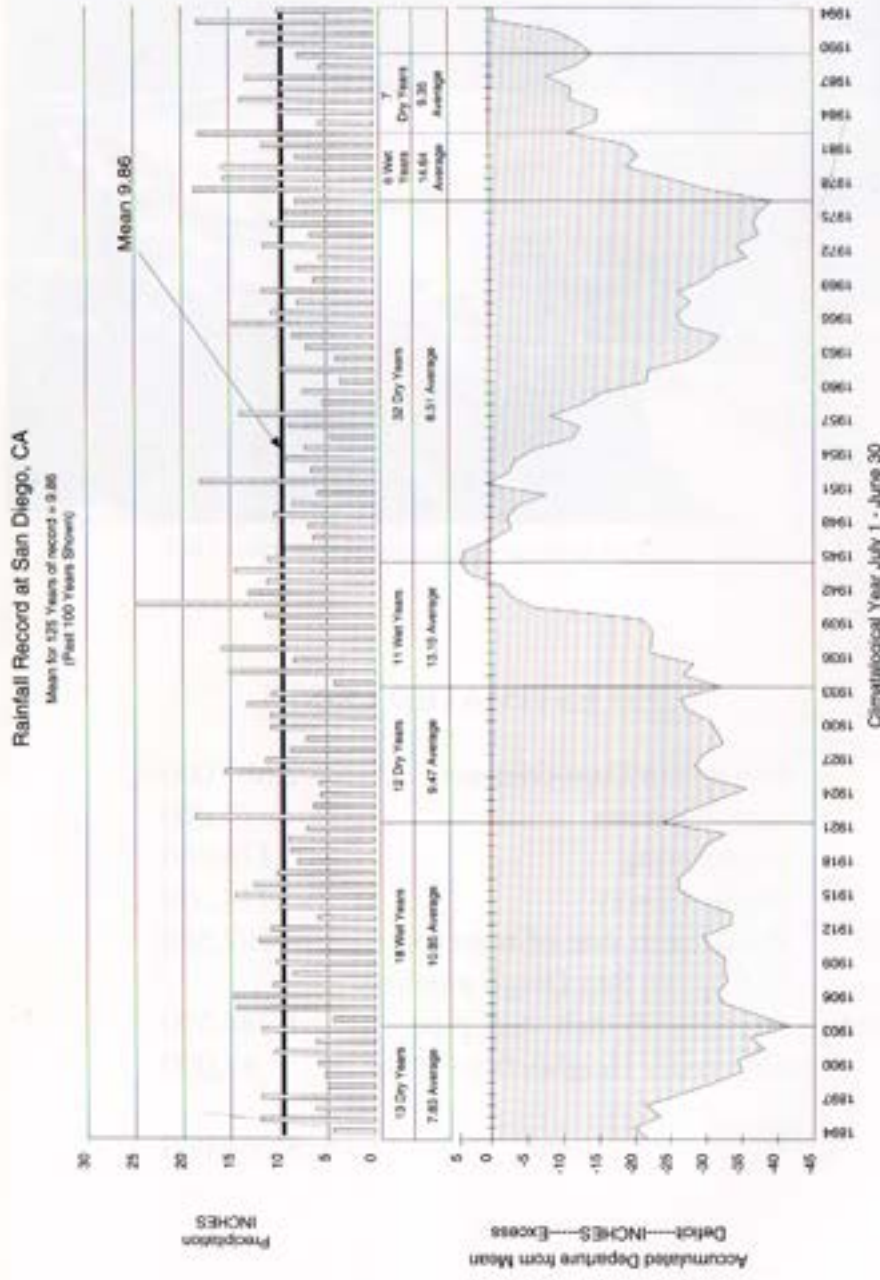
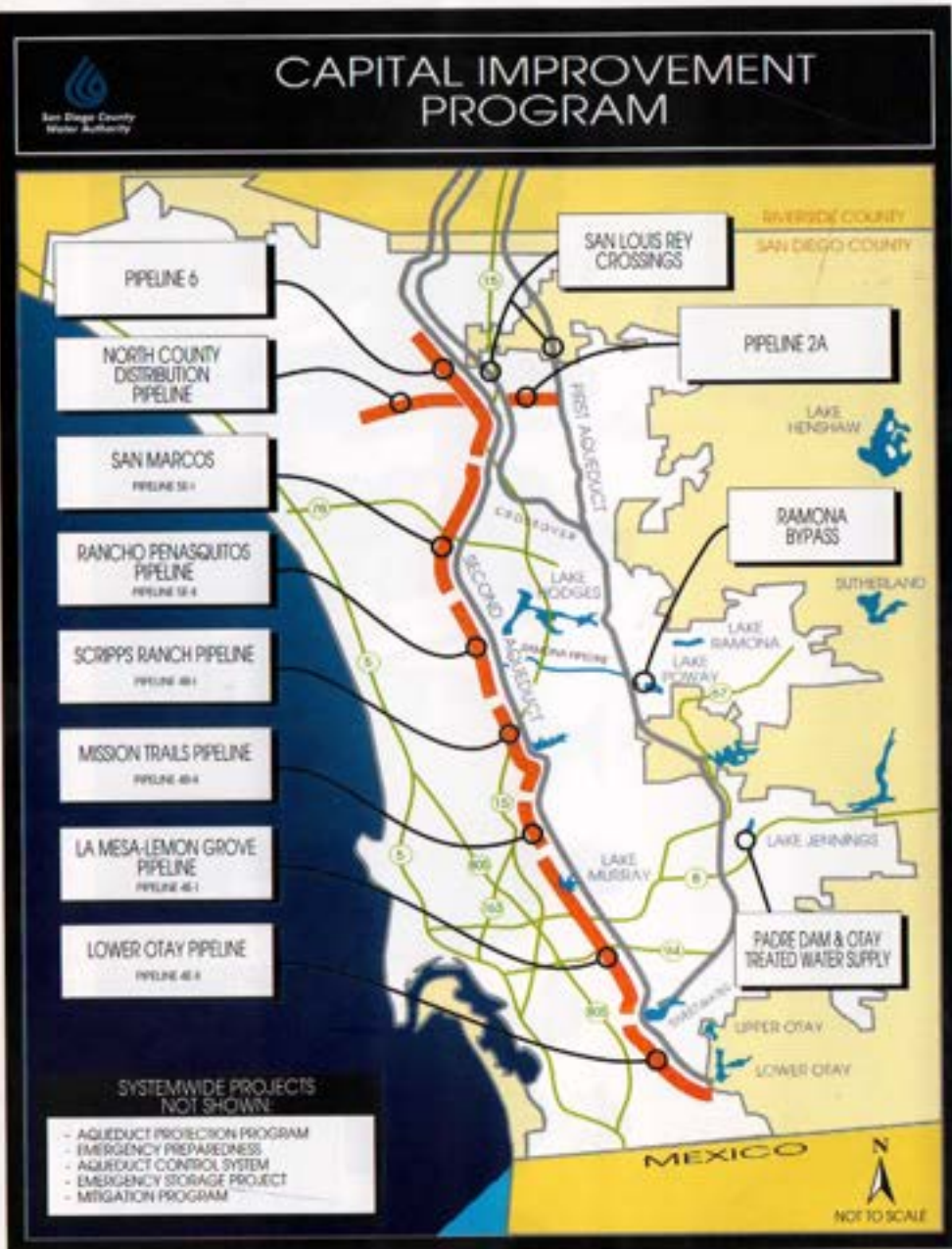


Figure No. 5



Engineer's camp during construction of the 31-mile San Diego Flume, circa 1887.
 (San Diego Historical Society, Photographic Collection)

ENGINEERING DEPARTMENT



Map 2.

The Engineering Department is responsible for the planning, design and construction of Authority facilities required to improve aqueduct system reliability and flexibility, and to meet existing and projected water demands of the Authority's member agencies. These responsibilities were met throughout the year by continuing the Capital Improvement Program (CIP), conducting engineering and feasibility studies on proposed projects, and evaluating the condition of existing aqueduct pipelines. The department supported the Operations and Maintenance, Right of Way and Water Resources departments. The department also assisted in evaluating project studies conducted for the Emergency Storage Program. The engineering staff operates from both the San Diego office and the Escondido Operations Center.

Capital Improvement Program

The CIP was developed in conjunction with the Authority's Water Distribution Plan to improve the reliability, flexibility and capacity of the existing aqueduct system. The current CIP includes 19 projects consisting of new pipelines, flow control facilities, flow regulatory structures, pump stations, as well as projects for mitigating environmental impacts, protecting pipelines at the San Luis Rey River crossing, evaluating emergency storage options and implementing a new aqueduct control system.

The Authority completed construction on approximately 35 miles of pipeline throughout San Diego County this year. Valued at \$205 million, the five completed projects are listed in Figure 6. At the end of the year, progress continued on 5 construction projects valued at \$65 million. Three new projects were awarded during the year with a value of \$10.5 million.

The Authority's Cowles Mountain Tunnel Project was awarded the 1993 Outstanding Civil Engineering Project by the American Society of Civil Engineers, San Diego Section and the Utility Project of the Year by the American Public Works Association San Diego-Imperial Counties Chapter. In addition, the Authority's San Marcos Pipeline was awarded the 1993 Outstanding Civil Engineering Project Award of Merit by the American Society of Civil Engineers, San Diego Section.

Figure No. 6

**SAN DIEGO COUNTY WATER AUTHORITY CAPITAL
IMPROVEMENT PROGRAM PROJECTS COMPLETED IN FY 93/94**

PROJECT	COMPLETION DATE	FINAL CONTRACT AMOUNT
Scripps Ranch Pipeline (Pipeline 4B, Phase I)	Mar 1994	\$54,156,779
La Mesa/Lemon Grove Pipeline and Cowles Mtn Tunnel (Pipeline 4 Extension, Phase I)		
City of Lemon Grove/San Diego County	Apr 1994	\$42,403,448
Helix Pipeline	Dec 1993	\$ 2,593,150
Lower Otay Pipeline (Pipeline 4E, Phase II)	May 1994	\$25,609,073
San Marcos Pipeline (Pipeline 5E, Phase I)	Jan 1994	\$79,560,101
Oceanside 5 Flow Control Facility	Dec 1993	\$625,884
TOTAL CONTRACT AMOUNT:		\$204,948,435

Scripps Ranch Pipeline (Pipeline 4B, Phase I)

The Scripps Ranch Pipeline project consists of 8.5 miles of 96-inch and 108-inch diameter pipeline extending through the communities of Scripps Ranch and Mira Mesa to the Mission Trails Regional Park east of Tierrasanta. The pipeline also traverses Naval Air Station Miramar. This pipeline project includes Pipeline 4B, Phase I and portions of Pipeline 4B, Phase II and Pipeline 5 Extension, Phase II. Portions of these Phase II projects were added to the Scripps Ranch Pipeline to address both engineering and environmental concerns.

A construction contract for the Scripps Ranch Pipeline was awarded to a joint venture of Kasler Corporation and L. H. Woods and Sons, Inc. in October 1991 for \$51,988,000. This contract was completed and accepted in March 1994 at a final contract amount of \$54,156,779.



Lower Otay Pipeline installation progressing up the south side of the Sweetwater River embankment.



Installation of 96-inch diameter pipeline along Scripps Ranch Boulevard. Trench backfilling operations are proceeding in the background.



Connection of the Scripps Ranch Pipeline to Pipeline 3. The work was designed to accommodate connections to future pipelines.

La Mesa/Lemon Grove Pipeline and Cowles Mountain Tunnel (Pipeline 4 Extension, Phase I)

This project consists of a 12-mile, 370-cfs, 96-inch and 108-inch diameter welded steel pipeline and the relocation of three flow control facilities (FCFs). The project also included the 6,800-foot Cowles Mountain Tunnel in Mission Trails Regional Park. The pipeline extends through the cities of San Diego, La Mesa and Lemon Grove, and San Diego County from the south end of the Mission Trails Pipeline at the Mission Gorge Road/Jackson Drive intersection to the north end of the Lower Otay Pipeline at Sweetwater Reservoir. The pipeline was constructed to provide treated water to central and southern San Diego County and allow Pipeline 3 to be converted for the delivery of untreated water to the Sweetwater and Lower Otay Reservoirs.

In September 1991, a construction contract involving 5 miles of the La Mesa/Lemon Grove Pipeline through the City of Lemon Grove and San Diego County was awarded to J.F. Shea Company of Walnut, California for \$43,141,000. This contract was completed and accepted in April 1994 at a final contract price of \$42,403,448. The remaining 5 miles of the La

Mesa/Lemon Grove Pipeline through the cities of San Diego and La Mesa was awarded to PCL Civil Constructors of Tempe, Arizona for \$40,498,600 in 1991. This contract is expected to be completed and accepted in July 1994 at a final contract price of \$41,808,702. Construction management services for the pipelines was provided by Morrison-Knudsen Corporation.

In October 1991, a construction contract for the Cowles Mountain Tunnel was awarded to Traylor Brothers of Pleasanton, California for \$10,899,000. This project was completed in September 1993. A claim regarding differing site conditions while tunneling through the mountain was decided through use of a Disputes Review Board. It is anticipated that final settlement will be approved by the Board of Directors in July 1994 resulting in a final contract price of \$12,341,448. The Cowles Mountain Tunnel project was awarded the 1993 Outstanding Civil Engineering Project Award by the American Society of Civil Engineers, San Diego Section and the Utility Project of the Year by the American Public Works Association San Diego-Imperial Counties Chapter.

In October 1992, a construction contract for the Helix Pipeline, consisting of 1.6 miles of 36-inch diameter pipe along El Cajon Boulevard and Baltimore Drive, was awarded to Vadnais Corporation of San Diego, California for \$2,749,350. The Helix Pipeline was required to extend service from the new treated water pipeline to the old FCF and existing facilities owned by the Helix Water District. This project was completed and accepted in December 1993 at a final contract price of \$2,593,150.

The new Helix 3, San Diego 13, and Otay 5 FCFs will be constructed as part of the La Mesa/Lemon Grove Pipeline project. New FCFs are required due to the difference in hydraulics and location between the existing Pipeline 3 and La Mesa/Lemon Grove Pipeline. These facilities are currently being designed by the consulting firm Montgomery Watson.



The La Mesa/Lemon Grove Pipeline included installation of a 48-inch ball valve to serve the city of San Diego and Helix Water District.



Installation of a 60-inch butterfly valve south of State Route 52. The valve is used to isolate the Scripps Ranch Pipeline at its connection with Pipeline 4.

Lower Otay Pipeline (Pipeline 4 Extension, Phase II)

This 8-mile, 200-cfs, 72-inch and 96-inch diameter welded steel pipeline is the southern-most segment of the new treated water pipeline serving the Authority's member agencies in central and south San Diego County. The project extends through the City of Chula Vista and unincorporated areas of the county from the southern end of the La Mesa/Lemon Grove Pipeline at Sweetwater Reservoir to Lower Otay Reservoir. With this pipeline, delivery of both treated and untreated water will be possible for the first time south of Lake Murray to south-central and south San Diego County. In July 1992, a construction contract for the pipeline was awarded to Kiewit Pacific Company of Vancouver, Washington, for \$24,437,000. The project was completed and accepted in May 1994 at a final contract price of \$25,609,073. Construction management services were provided by Parsons Brinckerhoff Construction Services.

The new Otay 3, Otay 4 and Otay 9 FCFs will be constructed as part of the Lower Otay Pipeline project. New FCFs are required due to the difference in hydraulics and location between the existing Pipeline 3 and Lower Otay Pipeline. Design of Otay 4 and Otay 9 was completed by ASL Consulting Engineers in April 1994. A single construction contract for the two facilities was awarded to Pascal and Ludwig Engineering of Ontario, California in June 1994 for \$1,124,000 and will take about one year to complete. ASL Consulting Engineers continued work on the design of Otay 3 FCF.

San Marcos Pipeline (Pipeline 5 Extension, Phase I)

This project is an extension of Pipeline 5 from the Diversion Structure in Twin Oaks Valley, extending through the City of San Marcos to Paint Mountain in the community of Elfin Forest. The Project involves construction of an 11-mile, 108-inch diameter welded steel pipeline. The pipeline will be part of a untreated water delivery system to improve system reliability. Initially, the pipeline will carry treated water, adding flexibility to the Authority's water supply system.

In September 1990, a construction contract for the San Marcos Pipeline was awarded to Kiewit Pacific Company for \$75,776,000. This project was completed and accepted in January 1994 at a final contract price of \$79,560,101. Authority staff and various specialty consultants provided construction management services. The San Marcos Pipeline was awarded the 1993 Outstanding Civil Engineering Project Award of Merit by the American Society of Civil Engineers, San Diego Section.

Oceanside 5 Flow Control Facility

This flow control facility provides 65 cfs of untreated water from the Second San Diego Aqueduct to the City of Oceanside's Robert Weese Water Filtration Plant. In December 1991, a contract was awarded to Bailey, Division of CMB Industries, for \$119,750 to manufacture a flow control sleeve valve. In August 1992, a construction contract was awarded to F.T. Ziebarth Company for \$439,300. The project was completed and accepted in December 1993 at a final contract price of \$625,884. Contract administration and inspection services were performed by Authority staff.

Mission Trails Pipeline and Flow Regulatory Structure (Pipeline 4B, Phase II)

This project is located in Mission Trails Regional Park in the City of San Diego. The project extends the 96-inch diameter, 370-cfs pipeline, 2.3-miles from the south end of the Scripps Ranch Pipeline, Pipeline 4BII section, to the north end of the La Mesa/Lemon Grove Pipeline at the Mission Gorge Road/Jackson Drive intersection. The project includes a 1,210-foot-long tunnel under the San Diego River to avoid impacts to environmentally sensitive riparian habitat, the historic Mission Flume, and existing Pipeline 4. The pipeline will provide treated water to central and southern San Diego County and allow Pipeline 3 to be converted for the delivery of untreated water to the Sweetwater and Lower Otay Reservoirs. An underground 18-million-gallon reinforced concrete flow regulatory structure (FRS) will be constructed to pressurize the new pipeline system south to its terminus at Lower Otay Reservoir. This new pipeline system will increase the available pressure to member agencies at lower flows, improve system reliability, and enhance operational flexibility of treated water deliveries.

In September 1993, a special exemption allowing transfer of property containing possible unexploded ordnance was granted for the FRS site by the United States Navy. In June 1994, a construction contract for the FRS was awarded to C.E. Wylie Construction Company for \$8,439,000. Construction management and contract administration will be provided by Authority staff with assistance by outside specialty inspection consultants.

Construction of 0.7 miles of this pipeline through the northern reaches of the Mission Trails Regional Park was completed as part of the Scripps Ranch Pipeline. A construction contract for the remaining 1.6 miles of pipeline was advertised for bids in June 1994.

Rancho Penasquitos Pipeline (Pipeline 5 Extension, Phase II)

This 9.7-mile, 620-cfs, 108-inch diameter pipeline will provide additional untreated water capacity from north-central to south San Diego County. The

pipeline extends from the south end of the San Marcos Pipeline at Paint Mountain to the north end of the Scripps Ranch Pipeline near Mercy Road in the City of San Diego. The project also includes a new flow regulatory structure (FRS) to be built adjacent to the existing Diversion Structure in Twin Oaks Valley. The FRS will improve hydraulic characteristics and control of the untreated water delivery system.

The Environmental Impact Report, prepared by P&D Technologies, was certified, the mitigation monitoring program was adopted, and the project was approved by the Board of Directors in July 1993. Black & Veatch was retained and began final design of the pipeline.

North County Distribution Pipeline

This 4-mile, 182-cfs, 72-inch diameter pipeline will provide treated water to the City of Oceanside, Rainbow Municipal Water District, Vallecitos Water District, and Vista Irrigation District. The project was approved in January 1993 under the Authority's Joint Facility Construction policy contained in the Strategic Plan.

The pipeline extends from the Second San Diego Aqueduct near the City of Oceanside's Robert Weese Water Filtration Plant westerly to the East Vista Way/Osborne Street intersection north of the City of Vista. Pipeline flow and pressure will be controlled by a one-million gallon prestressed, circular concrete Regulatory Structure located adjacent to the Second Aqueduct. The Regulatory Structure will allow the pipeline to convey treated water from both Pipeline 4 and the Robert Weese Filtration Plant. The project includes three flow control facilities; the joint-use NCDPI/ Rainbow 11 FCF, Vallecitos 8 FCF, and joint-use Oceanside 6/VID 11/Rainbow 12 FCF.

A Revised Mitigated Negative Declaration was prepared by staff and is expected to be certified by the Board of Directors next fiscal year. ASL Consulting Engineers completed preliminary engineering studies and continued preparation of final construction drawings and specifications.

Valley Center Pipeline (Pipeline 2A)

This project will connect the First San Diego Aqueduct to the Second San Diego Aqueduct, providing a means to transfer water between the two aqueducts to meet demands. The project includes 4.5-miles of 66-inch diameter pipeline, a 40-million-gallon-per-day, 800-horsepower pump station to boost water from the Second Aqueduct to the First Aqueduct, and a flow regulatory structure to dampen surge pressures in Pipeline 4 should a power failure occur at the pump station. The regulatory structure will also serve to reduce flow fluctuations in Pipeline 4 upon startup of the pumps.

The design consultant, Engineering-Science, continued work on design of the pipeline. Authority staff also began acquisition of the 64 parcels required for permanent right of way for the pipeline.

Pipeline No. 6

Pipeline No. 6 is a new untreated water conveyance facility extending from Lake Skinner in Riverside County to the Authority's existing Diversion Structure located north of San Marcos. Metropolitan will be responsible for the design and construction of the northerly portion of this project from Lake Skinner to the delivery point located just north of the San Luis Rey River. The Authority's portion of Pipeline No. 6 starts north of the River and consists of 11.7 miles of 108-inch diameter pipeline. The Environmental Impact Report for the project was certified by the Authority Board in June 1993. Project coordination continues with Metropolitan, and design work should begin by late 1994.

Ramona Bypass and Pressure Reducing Facility

The Authority and Ramona Municipal Water District executed an agreement in 1992 for water storage in Lake Ramona. The agreement allows the Authority to store up to 10,000 acre-feet of water in Lake Ramona. The Ramona Bypass and Pressure Reducing Facility will provide a means to transfer untreated water between Lake Ramona and the First San Diego Aqueduct. The construction of the facility will increase the reliability and operational flexibility of the First San Diego Aqueduct by providing an additional source of water. Authority staff continued work on design of the project.

Aqueduct Control System Project

The Aqueduct Control System project is a Supervisory Control And Data Acquisition (SCADA) system which consists of a new central computer located at the Escondido Operations Center, new Remote Terminal Units (RTUs) located along the aqueduct at the flow control facilities, and a new communications system to replace portions of the current telephone based system. Improvements to the existing system are being implemented to: (1) increase the operational speed and efficiency; (2) increase the number of facilities which can be monitored and controlled; (3) enhance the system capabilities in report generation, screen displays, archiving of historical data, and the ability to export data to other computers; and, (4) to reduce maintenance costs.

The development and installation of the SCADA component was awarded to Systems Integrated (SI) in April 1993. SI continued with installation of the computer hardware and software and remodel of the Operations Room.

The radio communication system will consist of transmitters at Escondido and at several FCFs (remote sites). The remote sites and Escondido radios will

be linked by repeater radio stations located at Mount Palomar and Mount Woodson. The repeater stations and Escondido radio are in place.

Fiber optic communication cable continued to be installed with the new pipeline projects along the Second Aqueduct. Fiber optic cable was installed and successfully tested on the San Marcos, Scripps Ranch, La Mesa/Lemon Grove and Lower Otay Pipelines.

National City/South Bay 4 Flow Control Facility

The National City/South Bay 4 FCF will provide up to 62 cfs of treated water from Lower Otay Pipeline to Sweetwater Authority and is located near Sweetwater Reservoir. ASL Consulting Engineers commenced design of the FCF, coordinating with Sweetwater Authority.

San Dieguito Water District/Santa Fe Irrigation District 3, 4, 5, & 6 Flow Control Facility

This flow control facility will provide 42 cfs of treated water and 84 cfs of untreated water from the Second San Diego Aqueduct to the R. E. Badger Treatment Plant to improve the operational flexibility of the plant and increase flow capacity into the Districts' distribution systems. The design was completed by Black & Veatch in December 1993. In February 1994, the Authority awarded a construction contract to J.R. Filanc Construction Company for \$971,000.

Aqueduct Protection Program

This program was initiated to protect and ensure the structural integrity of the Authority's existing prestressed concrete cylinder and steel pipelines. The program is being conducted in three phases:

- Phase 1: Corrosion survey of 82.5 miles of prestressed concrete cylinder pipelines and 42 miles of steel pipelines. The Phase 1 "over the pipeline" inspection was completed in November 1992.
- Phase 2: Condition assessment, repair prioritization, remediation design, and preparation of a long term corrosion protection program.
- Phase 3: Implement preventive maintenance repairs. These repairs will include items such as cathodic protection, internal joint repairs and concrete coating/lining rehabilitation.

The Aqueduct Protection Program is currently in Phase 2, with PSG Corrosion Engineering and Boyle Engineering Corporation providing consulting services to complete this Phase. The Authority staff is performing the internal and external pipeline inspections associated with Phase 2. During the past year, field inspections revealed that prestressed concrete cylinder pipeline sec-

tions were severely corroded and required replacement. One repair was performed in October 1993 after a failure occurred on Pipeline 4 immediately south of the San Dieguito River. A second repair was performed during a scheduled treated water shutdown in February 1994 when sections of Pipeline 3 were replaced in the vicinity of the Sweetwater Reservoir.

Preliminary Design of Permanent Protection of the San Luis Rey River Aqueduct Crossings

Authority staff continued to pursue a multi-faceted approach to protecting the San Luis Rey River Aqueduct Crossings. Due to erosion, sand cover over the pipelines has been significantly reduced and there is a concern that the pipelines could be exposed during high storm flows. The multi-faceted approach consists of three strategies: (1) monitoring new and expanded sand and gravel mining operations; (2) evaluating alternatives for providing permanent protection at the Aqueduct Crossings; and, (3) an emergency protection program. To date, the program has been successful in protecting the integrity of the pipelines at both crossings.

In October 1993, Parsons, Brinckerhoff, Gore and Storrie, Inc. completed a Preliminary Design Report for Permanent Protection of the San Luis Rey River Aqueduct Crossings. Authority staff utilized information in the Report to begin developing recommendations for protecting the Aqueduct crossings. The Authority also received \$333,545 in reimbursement funds through the Federal Emergency Management Act and State of California Natural Disaster Assistant Act for costs associated with the January 1993 repair work at the Second Aqueduct crossing.

Treated Water Supply Study

In July 1992, an agreement was awarded to Camp Dresser & McKee for preparation of a Treated Water Supply Study. The purpose of the study was to project future treated water demands within the Authority's service area, assess the adequacy of existing and proposed treatment facilities to meet those demands, and identify alternatives for meeting any projected shortfalls. Camp Dresser & McKee continued preparation of the study, incorporating comments received from the member agency Treated Water Supply Task Force.

Padre Dam and Otay Treated Water Supply Study

A final draft of the Padre Dam and Otay Treated Water Supply Study, prepared by John Powell and Associates, was distributed to participating agencies for their comments. The study evaluated alternatives to serving Padre Dam Municipal Water District and Otay Water District with treated water that the Authority currently delivers from the Helix Water District (Helix). Helix has

been supplying treated water to the Authority for delivery to the Padre Dam and Otay Water District since 1976. Expansion of the Helix's R.M. Levy Water Treatment Plant from 80 million gallons per day to 100 millions gallons per day was one of the alternatives evaluated.

Other Projects

Other important engineering activities for the fiscal year included:

- Working with the Operations and Maintenance Department for upgrading a number of the flow control facilities, including work on improving access, ventilation, problems with infiltration of groundwater, and corrosion.
- Supporting the work of the Emergency Storage Project Team by providing assistance for studies involving preliminary engineering, system reoperation/optimization, pipeline repair estimate reviews, groundwater study, technical memorandum review, cost estimate reviews, system screening model review, environmental review, and rights of way.
- Supporting the efforts of the Water Reclamation Department in development of the Water Repurification Project by providing technical review of the Feasibility Study.
- Assisting the Right of Way Department by conducting technical reviews of encroachment permit applications.



Excavator equipment constructing the tunnel below the city of San Diego's 66-inch PCCP Miramar Pipeline.



*Horse-drawn wagons taking lumber to flume construction site, circa 1886.
(San Diego Historical Society, Photographic Collection)*

RIGHT OF WAY DEPARTMENT

The Right of Way Department is responsible for the acquisition of all land and land rights to support the Capital Improvement Program. The lands acquired are managed and maintained by physical patrol thereby giving the highest priority to maintaining the integrity of the Aqueduct System. The Right of Way Department also processes requests for joint uses of the right of way system and is responsible for annexations and detachments, implementation of a Document Storage System (DSS), and a Geographical Information System known as the Right of Way Information Management System (RIMS).

ACQUISITION ACTIVITIES

Mitigation Site (Crestridge Habitat Mitigation Area)

In January 1994, the Authority acquired 261.05 acres of predominantly coastal sage scrub habitat for the California Gnatcatcher. This site is south of Interstate 8 in the Crest area of San Diego County. The land is required as preservation by the terms of a Biological Opinion issued by the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act to provide mitigation for the Authority Capital Improvement Program. The 261.05 acres not only mitigates for the Coastal Sage Scrub removed by implementation of the CIP, but reserves approximately 50 acres for future mitigation.

Managing this site has significantly increased the work load of the Department. The site is very attractive to off-roaders and campers requiring frequent inspection. Placement of gates and concrete barriers has decreased trespassing activity, but further measures are being considered. Negotiations continue with the Fish and Wildlife Service regarding site management. Ultimately, the Fish and Wildlife Service may require an on-site manager. Turning the property over to an environmental trust may one day be possible relieving the Authority of the responsibility for perpetual management.

Two existing tenants on the site were noticed to vacate and the remaining structures will be removed as we allow the property to return to its natural condition.

San Marcos Pipeline (Pipeline 5 Extension, Phase I)

All rights of way, except for one parcel, were completed by negotiation or settlement agreement. The one exception went to trial and an adverse judgment of over \$1,000,000 was found in the plaintiffs favor. The Authority won a new trial on appeal. Efforts to resolve the matter without trial continue.

Rancho Penasquitos Pipeline (Pipeline 5 Extension, Phase II)

Discussions continue with property owners adjoining the right of way on P5EII to minimize concerns during construction and use of the right of way once the project is completed. The Board's decision to revise Article 25 allowing fencing within the right of way has greatly reduced most owner's post construction concerns. Discussions centered on the Authority's encroachment policies and whether existing encroachments may be replaced following construction of the Pipeline.

The valuation of a parcel required for the expansion of the diversion structure was sent to an appraiser. We intend to acquire the property by early 1995.

Mission Trails Pipeline and Flow Regulatory Structure (Pipeline 4B, Phase II)

The most challenging acquisition to date, all acquisition except for permanent road access, has been completed. We have adequate temporary access for construction and acquisition of permanent access which will begin when the underlying fee is transferred from the U.S. Navy to the City of San Diego. The challenge in this acquisition was a Congressional Act restricting sale of property containing hazardous materials. This property is in the former Camp Elliott area and was used as an artillery range. Our acquisitions were cleared of all ordnance by the Corps of Engineers and special precautions will be taken by the contractors during excavation.

La Mesa/Lemon Grove Pipeline (Pipeline 4 Extension, Phase I)

Completion of the project required the acquisition of four additional parcels for facilities originally planned for location within the public right of way. The acquisitions were completed in sufficient time to allow the revised design to be constructed under the original construction contract.

Lower Otay Pipeline (Pipeline 4 Extension, Phase II)

The final two parcel acquisitions on P4EII went to trial. During the first day of trial, several motions on behalf of the owners were denied motivating the owners to negotiate. A settlement agreement was reached within two days. Late in the project, the owner of Bonita Golf Course denied the Authority's contractor access to the Pipeline alignment due to a dispute over damages caused as a result of heavy rains. The Authority had used the access for years, but the legal rights the Authority held were vague. This nearly went to condemnation, but was resolved by negotiation without a contract delay and without financial damages to the Authority.

Pipeline 2A

Offers on all but one of the 64 required parcels were made and negotiations continue. Condemnation proceedings commenced on 34 of the parcels and a second hearing to proceed with condemnation on the remaining parcels will be scheduled in early 1995. A number of settlements have been reached and several additional settlements are in escrow.

North County Distribution Pipeline

All property owners impacted by this project have received a letter of offer from the Authority. Of the required 24 parcels, 7 owners have accepted the offers. The Authority is still negotiating with the remaining property owners, but a Condemnation Hearing is scheduled for August 1994 and if a Resolution of Necessity is adopted, Orders for Immediate Possession of the right of way will be filed in Superior Court.

The most impacted parcel is the Vista Valley Country Club. Although not settled at year's end, negotiations have been friendly. The negotiations started in a strained atmosphere with Attorneys from both sides present. Once the club accepted the fact the pipeline must go through the golf course, they requested that negotiations continue without lawyers present. They have a high degree of confidence with our golf course consultants. As a result, a number of key points on crossing the golf course, continued play during construction, restoration and value of the easement rights have informally been resolved. An appraisal on potential business losses is pending. We will press for resolution, without trial, once the appraisal has been completed and approved. Business loss is the remaining issue to be resolved.

Pipeline 6

Meetings have been held between the Authority and Metropolitan Water District (MWD) staff regarding this project and the acquisition of needed right of way. Acquisition of approximately 100 parcels will not commence for some time. A number of property owner contacts, however, have been required as a result of the preparation and certification of the Environmental Impact Report and adoption of the preferred alignment corridor. As the final alignment and pipeline design develops, additional property owner contacts will be made in order to enter properties for survey, environmental, and geotechnical services and appraisal. This project may impact owners on both the Pipeline 2A and North County Distribution Pipeline alignments. We will continue efforts to keep these owners current on the progress of the design and development of the final alignment.

Emergency Storage Project

The Department continued to gain entry permission from property owners for consultants to go on site for environmental and geotechnical studies. Additional owners have been contacted by the Department through public and on-site meetings, letters, and phone conversations regarding the various issues pertaining to future acquisitions. Many owners were very reluctant to allow the consultants on their property. Through negotiation, we were able to gain access to all necessary parcels with only one court action.

As part of the Emergency Storage Project team, we participated in coarse and fine screening meetings for the drain and fill corridors and systems.

MANAGEMENT ACTIVITIES**Right of Way Patrol**

A third Right of Way Inspector was added to meet our goal of patrolling every accessible mile of right of way once a week, and cover the additional rights of way being added through the CIP. A change in Board policy allowing fencing within the rights of way, under strict guidelines, will increase patrol activity. The addition of the Crestridge mitigation property is a new management challenge requiring numerous patrols each week. Surprisingly, our Inspectors experienced a considerable increase in Underground Service Alert Notices (Dig Alert) and requests for mark outs and standbys.

Encroachments

We continue to enforce the provisions of Administrative Code Article 25 in the processing of Encroachment Permits, Improvement Plans, Grading Plans, and Subdivision Maps. Because of the amount of right of way being acquired from major developers, there was considerable effort to plan future allowable encroachments with the developers well in advance of subdivision development. This was accomplished extensively through the right of way negotiations for the Lower Otay Pipeline primarily in the area of Eastlake.

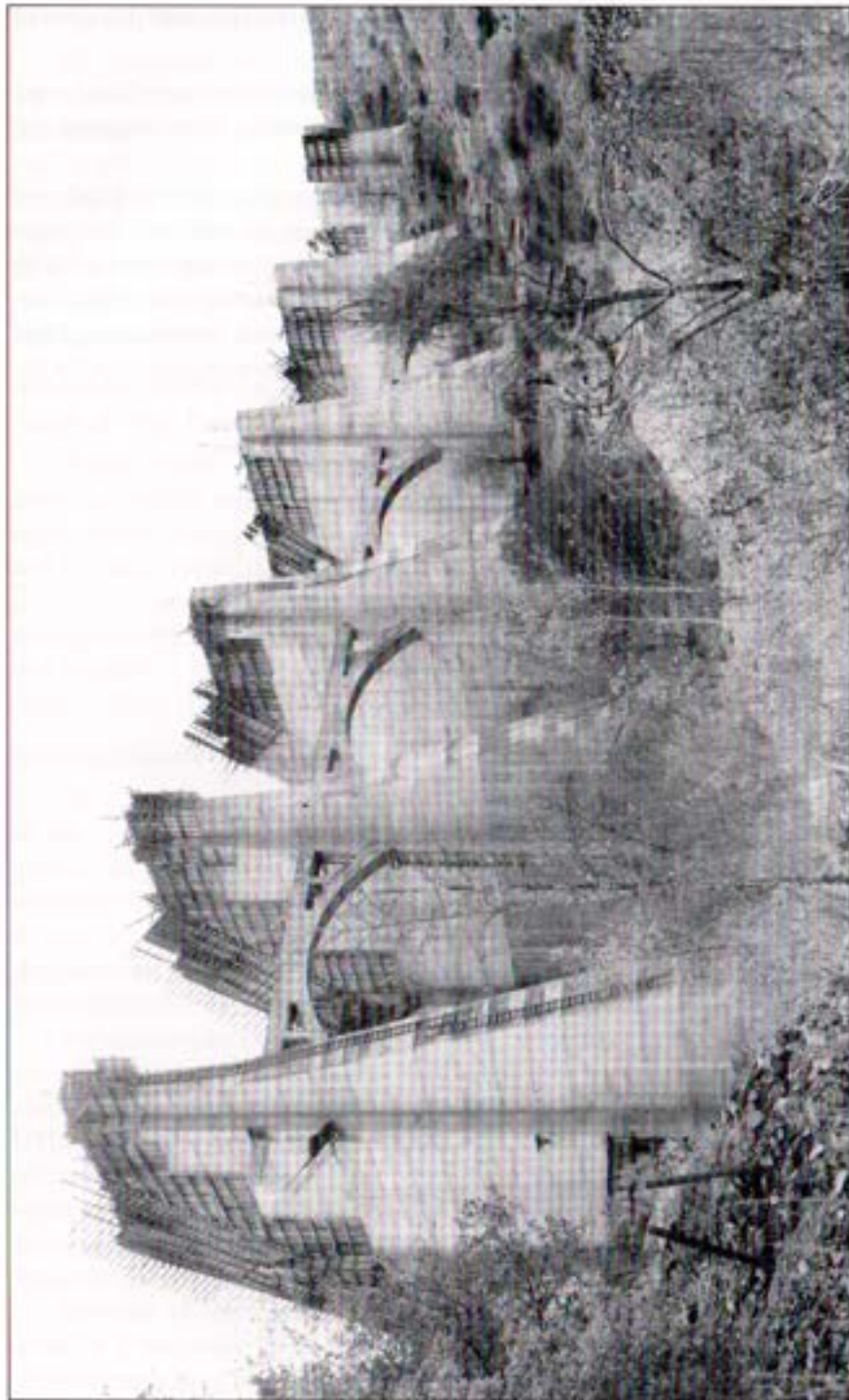
We continue to work very closely with Engineering to accommodate applicant requests for encroachments very often through innovative methods. For example, to accommodate street and utility construction over Pipeline 3, native soils were removed and a light weight backfill material was permitted. This allowed the development of a subdivision without exceeding the load bearing capacity of the pipeline. As a result of these types of efforts between the applicants and the Authority, only two applications were denied and appealed to the Board of Directors.

Because of the amount of current and projected encroachment activity, even in a recession period, an engineering technician was included in the 1994/95 operating budget and was approved by the Board in June.

Right of Way Information Management System (RIMS) and Document Storage System (DSS)

Advances were made in planning for the ultimate conversion of hard copy records to an electronic storage system. The hardware has been obtained and screening began for selection of a software system.

A successful demonstration of the RIMS pilot was provided by Black and Veatch. The pilot program for RIMS was developed concurrent with the design of Pipeline 5 Extension, Phase II (P5EII). The presentation was received with great enthusiasm. The database included Record of Survey drawings, construction drawings, photographs, encroachments, Board Resolutions, legal descriptions, and permits, all at survey level accuracy. A demonstration for the Board is being planned for early 1995.



Looking upstream at the buttresses for Sutherland Dam, circa 1951.

OPERATIONS AND MAINTENANCE DEPARTMENT

GENERAL

The Operations and Maintenance (O&M) Department controls and maintains the Authority's aqueducts and related facilities from the Operations Center in Escondido. The Authority has approximately 250 miles of large-diameter pipeline, with more than 1,600 appurtenant structures, that occupy approximately 1,400 acres of right of way in San Diego County.

Routine maintenance activities involve not only the water delivery systems, but also the extensive rights of way. Major work accomplished during the year included a program to modernize water meters, a safety upgrade for older structures, various construction projects, environmental compliance and health and safety training.

The O&M Department is divided into four sections: Administration, Operations, System Maintenance and Technical Services. The Operations Center site has three separate buildings, providing space for administrative offices, a motor vehicle maintenance and repair shop and a warehouse. The administrative building houses the computerized control system for the aqueducts, and also contains offices for operations, maintenance, technical services and engineering personnel.

The shop building has facilities for repairing and servicing all Authority vehicles and heavy equipment. This building contains vehicle bays, a small machine shop and an equipment maintenance office. The warehouse stores materials, supplies, tools, small equipment and vehicles. It also contains a valve service repair shop and carpentry shop.

Communications systems link department staff with member agencies and regional emergency response agencies. These systems include the Authority's agency radio system, the member agency communications system (MACS), the Metropolitan Water District's member agency radio system (MARS) networks, and a regional disaster response system that connects all water districts with local, state and federal governments.

ADMINISTRATION

The Administration section continued work on several major programs during the past year, including the O&M Department Strategic Operating Plan, systems modifications programs, Member Agency Communications System (MACS) manual, hazardous waste disposal, confined space permit program, emergency response plan, and the structure sealing program. In addition, staff

completed work on several projects including the mercury sealing project, residual asbestos monitoring, hazard communication training, and hazardous waste regulations training.

Administration continued to work closely with member agencies by holding quarterly "operating heads" meetings and hosting two MWD sponsored workshops. Staff assisted with the County Office of Disaster Preparedness (ODP) Energy Shortage Response Plan committee and as a member of the Fall 94 County-Wide Disaster Exercise planning committee.

Major Events

- Administration staff participated in the repair of 40-feet of Prestressed Concrete Cylinder Pipe (PCCP) on Pipeline 4 south of the San Dieguito River. Administration staff assisted with design of the repair pipe sections, inspection during repair pipe fabrication, and installation of the repair pipe sections.
- Administration staff participated in the repair of 100-feet of Prestressed Concrete Cylinder Pipe (PCCP) on Pipeline 3 within the Sweetwater Authority's Lower Otay Treatment Plant compound. Administration staff assisted in the project management, inspection and installation of the repair pipe sections.
- Residual asbestos contamination testing was completed at the Escondido Shop and at selected aqueduct structures.
- Administrative staff hosted a Chlorine Monitoring workshop for SDCWA Member Agencies.
- Representatives of various City, County and Government organizations attended the Emergency Response Exercise for Policy Makers workshop hosted by Administration staff.
- Administration staff established the Biannual Terminal Inspection (BTI) and Pull Notice Program (PNP) for Class A drivers as required by California Highway Patrol.

OPERATIONS

The Authority's water delivery system has five major pipelines, ranging in size from 48 to 108 inches, that serve both raw and treated water to member agencies. The present capacity of the system is 825 million gallons per day (mgd). The Operations section controls the flows in these pipelines in response

to flow requests from member agencies. The Operations Center Control Room is staffed daily, including weekends and holidays, from 7:00 a.m. to 4:30 p.m. After hours calls are transferred to the home of a system operator who can respond to emergencies.

The Operations section is further divided into control room operations and field operations. Control room operators regulate water flows to member agencies through a computerized control system that employs telemetry. The computer warns operators of any flow problems, using alarm displays, a synthesized voice, or a telephone call to the night-time operator. The night-time operator can also monitor and instruct the computer control system from home using a portable computer. All Operations personnel are certified for water distribution by the American Water Works Association (AWWA) and for water treatment by the State of California Health Department.

Field operations personnel do routine maintenance, repairs, and calibration on a variety of meters, pump stations, pressure control stations and valves located throughout the county. They also operate two hydroelectric power plants. Typical duties include reading meters, changing charts, and calculating water flows. Each active meter is checked at least three times per year for calibration. Meter accuracy is also checked upon request by a member agency or when there is some reason for questioning accuracy.

The Metropolitan Water District (MWD) controls flows into Authority aqueducts at the Robert A. Skinner Filtration Plant Operations Center. Authority Operations personnel can request flow changes twice a day, at 8:30 a.m. and 2:30 p.m., or upon request during an emergency. The Authority then shifts flows from one member agency service connection to another, with agency approval, to keep the pipeline flows in balance.

Because the Authority has no operational storage, flow changes must be carefully coordinated to balance the system and maintain proper flows to terminal service connections. The computer and an aqueduct flow status board indicate the amount of water available to meet the member agency needs. The computer and status board display each pipeline's current flow, requested flows, meter sizes, maximum allowable capacity flows, critical pipeline flows, and meter and valve information.

The Authority stores water in several reservoirs owned by member agencies, principally in San Vicente Reservoir, owned by the city of San Diego. Except in minor amounts, these water storage facilities cannot return stored water to the aqueduct for use elsewhere. The Vista Irrigation District, the Helix Water District and the city of San Diego have service connections through which flows of treated water can be put into the aqueduct when needed.

SAN DIEGO COUNTY WATER AUTHORITY

Operations personnel are working with Engineering, Technical Services, and the Authority's Aqueduct Control System vendor for the upcoming replacement of the computerized control system. The vendor is in the process of designing software and supplying hardware for the replacement of the Aqueduct Control System. The new Aqueduct Control System will replace the old out-dated computer that has been in service since March 1983.

Major Events

- Operations staff are participating with other Authority staff on the Aqueduct Computer Control System Design Committee.
- Metropolitan Water District (MWD) changed disinfection of treated water from chloramines to free chlorine disinfection for a 30 day period.
- There were several extensive data phone line outages and Aqueduct Computer Control System failures during the year.
- Staff participated in a program to replace type "M" mercury filled meters from the system.
- Pipeline 5 Extension, Phase I, was put into continual service during the year.
- Tie-ins were made into the system for the Oceanside #5 and Padre Dam #4 flow control facilities.
- A new procedure was implemented which has CWA Operators making all necessary manual flow changes.
- On October 29, 1993, a section of 96-inch prestressed concrete cylinder pipe failed just south of the San Dieguito River.
- Operations personnel worked closely with the City of San Diego during maintenance outages of a 66-inch pipeline and a 51-inch pipeline.
- A flow capacity test was run on Pipeline 5.
- All equipment was removed from the Rainbow Canyon Chlorine Facility.
- The main control room was relocated for the remodel and installation of the new Supervisory Control and Data Acquisition (SCADA) System.

MAINTENANCE

The Maintenance Section has four subsections: Construction, Equipment Operations, Mechanical Services and Rights of Way Maintenance. Maintenance activities are divided into two categories: preventive and corrective. Preventive maintenance is performed on a regular basis to keep equipment or structures operating effectively.

Examples of routine maintenance are the carpentry, painting, plumbing and masonry work required for buildings and grounds; the maintenance of

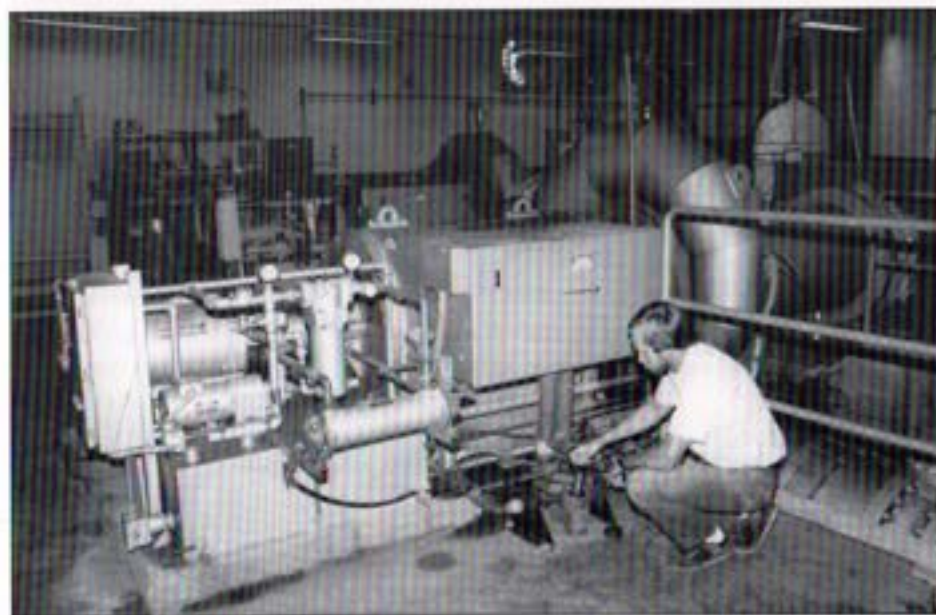
OPERATIONS AND MAINTENANCE DEPARTMENT

about 200 miles of dirt and asphalt roads; erosion control; construction of new control and metering facilities; and hazard inspections for potential damage to pipelines and easements. Inspection and preventive maintenance are required for more than 1,500 structures and more than 100 flow control facilities, each of which has at least two valves that are serviced on a regular basis.

Corrective maintenance is done to repair or restore equipment or structures to standard operating conditions. These actions may result from problems discovered during preventive maintenance or as a result of failure during operation. Actions are either scheduled and carried out as part of the normal work plan or they are unscheduled and done immediately as emergency maintenance.

The Maintenance Section has a variety of heavy equipment with which to accomplish its work, including a motor grader, track excavator, skip loader, wheel loader, 15-ton crane truck, two backhoes, two forklifts, two dump trucks, two truck tractors, and two lowboy trailers. Vehicles and other trucks are equipped with mobile radios and cellular phones for quick and efficient responses.

Major work during the year included excavation for the Aqueduct Protection Program, which inspected pipelines and installed corrosion protection systems; installation of safety ladders and positive air in flow control facilities; and inspection on various sections of pipelines 1, 2, and 4.



Systems Operator Bill Bachman checks and cleans packing lubrication strainers on one of the 1,050 Kilowatt generating units at the Alvarado Power Plant.



Senior Maintenance Specialist Gary Shaffer performs right-of-way maintenance with Authority flail mower.



Senior Maintenance Specialist Lewis Russo installs a culvert to control erosion damage to access road.

Major Events

- All Maintenance personnel attended Self Contained Breathing Apparatus (SCBA) and respirator training.
- Maintenance personnel repaired a main pipe failure in the Reche Station on the Fallbrook/Oceanside Pipeline.
- Building Maintenance crews completed construction of a hazardous waste containment area in the Escondido facility compound and worked on securing flow control facilities from intrusion by deer mice.
- Right of way crews worked on weed abatement in the Sweetwater area and on Pipeline 1. Crews also started walking the aqueduct looking for damage of any type.
- Maintenance crews worked on the Del Dios pipeline break.
- Mechanical Service crews replaced a Cla-valve at San Diego #12, replaced an 8-inch plug valve during the treated water shutdown, and pulled the required air valves and blowoffs during the shutdown.
- Maintenance crews continued with the Positive Air project, trenched at the Tri-Agencies Pipeline for electrical conduit, made preparations for the Cuyamaca College project, and installed a culvert on McMahr Road.
- Maintenance personnel installed packing on the #2 generator at Miramar Hydroelectric Plant, and removed a mercury meter at Padre Dam #4.
- Building Maintenance fabricated four gates for the mitigation property acquired by the Authority, installed grating at the 48-inch intertie at Paint Mountain, and painted the Miramar vents.

TECHNICAL SERVICES

The Technical Services Section is responsible for maintaining the Authority's electronic, electrical, and communications systems and equipment. Routine work included maintaining the computerized aqueduct control system, calibrating flow metering instruments, maintaining low-and medium-voltage power equipment, upgrading and maintaining associated office building systems, and routine daily inspections and repairs.

The Technical Services staff participated in Capital Improvement Program (CIP) projects, supporting the Engineering Department for project design, review and inspection during the installation phase. Technical Services staff performed various installations and upgrades on CIP projects that were outside of the contractor's scope of work.

Major activities during the fiscal year centered around the CIP modernization project of the Supervisory Control and Data Acquisition (SCADA) System. Preparation for new Remote Terminal Units (RTU) was completed at

45 Flow Control Facilities. This work included mounting new control cabinets and rewiring instrumentation, communication and electrical circuits. Central host computer equipment was relocated from the Escondido Operations Center Control Room to a temporary location in the Escondido warehouse building. This was accomplished in order to keep the existing SCADA System operational and perform remodel work in the existing control room. The new and old SCADA equipment will operate in tandem during the testing phase of the new system.

Technical Services personnel installed ventilation fans in 30 SDCWA Control Facilities as part of the confined space safety program.

A total of 20 additional electrical valve actuators, located on valves within SDCWA Flow Control Facilities, were targeted for replacement as part of an ongoing CIP project to replace 30 to 40 year old equipment that has reached the end of its useful life.

Major Events

- Installed a programmable logic controller into Rincon #1 Flow Control Facility in order to operate the Rincon #1 and #3 connections in a pressure mode.
- Staff installed the necessary control and communication equipment to connect the new Oceanside #5 Flow Control Facility into the existing Supervisory Control and Data Acquisition (SCADA) system allowing the station to be controlled from the Escondido Operations Center.
- Staff performed a path study to evaluate the feasibility of installing 950 megahertz radio communications at the flow control facility sites for data transfer.
- Staff executed the move of the Supervisory Control and Data Acquisition (SCADA) host computer equipment from the Escondido facility control room to the warehouse. This move was made to accommodate the remodel work in the control room for the new SCADA system.
- Staff installed a different telephone PBX switch into the Escondido facility. The switch, formerly located in the San Diego office allows the number of phone extensions to be expanded. The existing switch had been operated at capacity with no further expansion available.
- Staff performed various stage upgrade work at 45 Flow Control Facility sites in order to prepare them for the new Supervisory Control and Data Acquisition (SCADA) Remote Terminal Units (RTU).



Senior Systems Technician Greg Tucker and Systems Technician Bob Catalano layout a solar power panel at Rainbow #13 Flow Control Facility.



Systems Technician Gene Bencivenga installs a new panel board as part of the Supervisory Control and Data Acquisition (SCADA) system.

SHOP

The shop is responsible for acquiring, maintaining, repairing and disposing of all motorized vehicles and equipment and insuring their safe and reliable operation. Shop personnel obtained the permits and certifications required for compliance with federal, state and local regulations. Shop personnel installed various types of safety equipment, communications systems, and work equipment on Authority vehicles. They also designed and fabricated custom equipment and performed vehicle modifications to meet the specialized needs of the Authority. Additional maintenance and repairs are administered through service contracts as needed.

The shop maintains 19 passenger vehicles, 42 light duty utility vehicles, 13 medium and heavy duty vehicles, 15 trailers, 8 earth moving tractors, 4 cranes and numerous forklifts, welders, compressors, pumps, generators, electrical and pneumatic tools. The Authority fleet travels about 775,000 miles per year and consumes about 60,000 gallons of fuel.

The shop building received some much needed maintenance prior to the installation of several pieces of new equipment. Local High School students were hired through the Hire the Youth Program to paint the Shop building inside and out. The roof was resealed and the shop office was remodeled. Lube oil and waste oil systems were installed, a computerized engine analyzer was purchased, and the computerized Total Utility Maintenance Management System (TUMMS) for managing the fleet and facility was implemented. A 16-year-old three-axle truck tractor was replaced with a new model, and three new passenger vehicles were added to the fleet.

Major Events

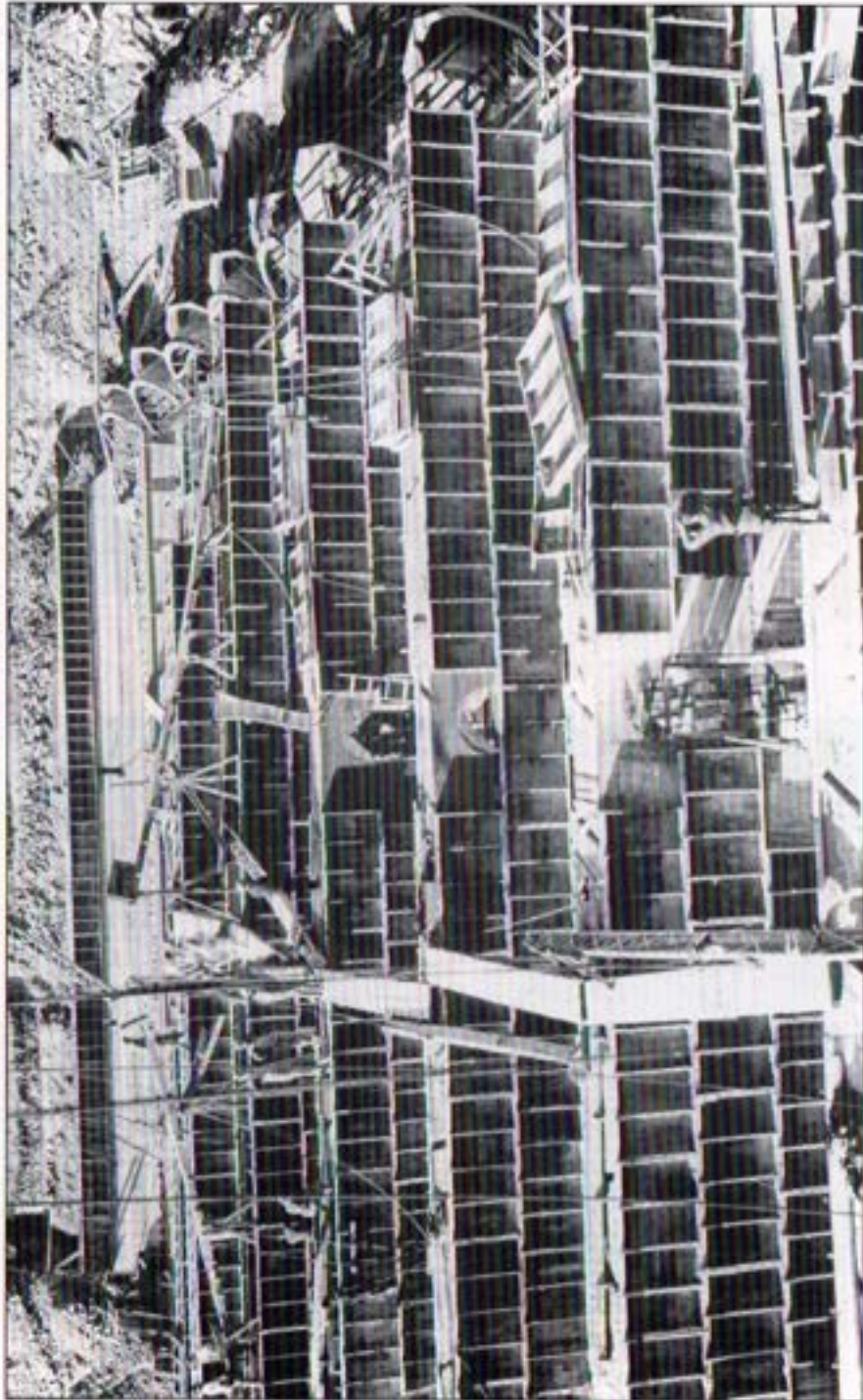
- Two light duty utility vehicles and two pool cars were prepared with the required Authority equipment and placed into service.
- A new medium duty, all wheel drive truck with a utility body was fully outfitted for use by the construction crews and put into service.
- Two vehicles and 11 pieces of equipment were surplused through the County auction.
- Smog certification tests were completed on numerous Authority vehicles, in accordance with Bureau of Automotive Repair (BAR) requirements.
- Oversize load permits for hauling heavy equipment and certifications to continue operating four mobile cranes and one bridge were renewed.
- The fuel dispensing system passed all APCD tests.
- A new heavy duty 3-axle truck tractor was outfitted with required equipment and put into service.



Equipment Mechanics Rick Burke and Mike Staley perform system inspection on Authority front end loader.



Equipment Mechanic Mike Staley performs a major service on Authority motor grader.



*Construction of Lake Hodges Dam, circa 1915.
(San Diego Historical Society, Photographic Collection)*

WATER RESOURCES PLANNING DEPARTMENT

The Water Resources Planning Department has three main functions: planning supplies to meet the projected needs of the San Diego region, ensuring that the Authority meets all environmental regulatory requirements, and promoting water conservation. To fulfill these functions, the department is divided into two sections. The Conservation Section is dedicated to various water-saving projects and programs, while the Planning Section has all other duties. In addition, the department oversees the Emergency Storage Project, which has a separate staff dedicated to providing emergency water storage for the region.

PLANNING SECTION

Planning Section staff spent much of the year working with the Metropolitan Water District on issues that will result in fundamental changes to future water resources planning. The major concerns included MWD's Integrated Resources Plan (IRP) and proposals to restructure MWD revenues away from water rates and toward non-rate revenue sources.

The IRP refocused MWD's role in developing regional water supplies. Previously, the major focus was securing imported supplies, and local supply project financial assistance was provided to lessen member agency dependence upon imported water. Under the IRP, MWD's member agencies have taken a more active role in regional water management, seeking to optimize the mix of imported and local supplies, and maximize regional benefits available to all member agencies.

The results of this ongoing effort could have significant impacts upon the relationships between MWD and its member agencies. The Authority's member agencies, which are almost wholly dependent upon imported water in a normal weather year, have great interest in proposals that could increase existing incentives to produce local supplies. Under the IRP, three imported and local supply mixes were studied: one emphasized reliance on imported supplies, a second emphasized maximizing local supplies, and the third was a blend of the first two, called the "intermediate" mix. Authority staff recommended the latter mix, and in June 1994 MWD adopted a plan to pursue the intermediate mix of imported and local resources.

Planning staff also spent much time reviewing an MWD revenue restructuring proposal. This effort, which was still under way at the end of the fiscal year, seeks to decrease the relative proportion of revenue from water rates, and increase the proportion that comes from non-rate sources. To do this, new

charges were proposed, such as a readiness-to-serve charge, that would pay the costs of increased reliability for existing users, a new demand charge, and a treated water peaking charge. These charges, if adopted, could spur reclaimed and other local water resource development. Under some of the new revenue scenarios, local resources that did not previously appear cost-effective could become so.

In May 1994, MWD announced the creation of an interruptible agricultural class of water service. This service offers agricultural water users a discount off of firm water prices, in exchange for the certainty of being cut first in time of supply shortfall. The Authority had worked vigorously for this service, and is still working to have agricultural water officially removed from MWD's designation as "surplus" water.

In addition to the focus on these MWD activities, Authority staff continued work related to improving the reliability of state and Colorado River water supplies, and responded to water-related state and federal proposed legislation. Other routine duties of the Planning Section include the maintenance of official records of Authority water deliveries, use and storage, and the physical maintenance of the San Diego office building.

Future Demand and Supplies

The Authority's first Water Resources Plan was completed in November 1993. The plan is a guideline for developing supplies to meet projected demands through the year 2010. One of the plan's major goals is to increase supply reliability such that by the year 2010, the Authority will never suffer a dry-year shortage greater than 12 percent of normal demand. This will be done by developing local supplies, such as groundwater and reclamation, and increasing the relative proportion of local supplies to the total.

Water transfers are expected to play a prominent role in future dry-year supplies. Transfers will likely seek water sellers from agricultural areas in the northern part of California, similar to the way in which the State Water Bank functioned in 1991-92. Transfers could also theoretically come from the Colorado River, through agencies such as the Imperial Irrigation District.

The Water Resources Plan recommends the development of a mix of local resources to increase overall supply reliability. The proportion of local water to total supply is expected to increase from the current 10 percent to about 18 percent during a normal weather year. The plan forecasts 50,000 acre-feet of additional reclaimed water, 15,000 acre-feet of groundwater, and 20,000 acre-feet of desalinated seawater by the year 2010. If these supplies are developed, the total normal year local supply would increase from 60,000 acre-feet per year to 145,000 acre-feet.

Seawater Desalination

In October 1993, the Authority Board of Directors decided not to pursue the development of a seawater desalination facility adjacent to San Diego Gas and Electric Company's (SDG&E) South Bay Power Plant, located in Chula Vista. The project would have combined a reverse osmosis desalination facility with SDG&E's proposed repowering of the South Bay Power Plant. The desalination facility could have produced up to 30,000 acre-feet of fresh water per year.

The major factor behind the Authority's decision not to pursue the desalination project was the loss of what had been perceived as collocation benefits that would have resulted from constructing the desalting plant in conjunction with the SDG&E's repowering project. Upon further evaluation, and as a result of detailed discussions with SDG&E, it was concluded that environmental, regulatory and institutional issues combined to make desalted water from this proposed facility more expensive than other water supply options available to the Authority. Later, SDG&E withdrew its proposal to repower the South Bay Power Plant.

ENVIRONMENTAL SECTION

The Environmental Section is responsible for ensuring that Authority projects meet all environmental regulations. Environmental work was highlighted during the year by the purchase of the 261-acre "Crest" property near El Cajon that the Authority acquired to preserve as gnatcatcher habitat. This property was acquired to serve as mitigation for a number of large pipeline construction projects. It also contains acreage beyond the actual mitigation requirements that may be "banked" against future requirements. One of the department's ongoing responsibilities will be to monitor and manage this property, as well as other mitigation sites resulting from Authority construction activity.

In addition to ensuring that local project needs are met, the Environmental Section stays abreast of environmental consequences of legislation such as the Endangered Species Act and Clean Water Act, with particular attention to how these laws impact imported water supplies from the State Water Project and the Colorado River. To meet an increased workload, the department hired an additional staff member and made provisions to acquire a geographic information system (GIS).

CONSERVATION SECTION

The Authority continued to operate a number of effective long-term water conservation programs, while implementing selected new measures during the year. A total water savings of nearly 11,500 acre-feet was realized during the fiscal year because of these efforts.

Conservation staff strived to ensure that the role of urban water conservation remained consistent in the Bay/Delta Process. The Authority continued to meet implementation standards for the Best Management Practices (BMPs) for water conservation that have grown out of that process. Staff also played an active role on the California Urban Water Conservation Council, which is charged with monitoring state-wide progress in implementing the BMPs.

The Ultra Low Flush Toilet (ULFT) Rebate/Voucher Program was the most prominent of the BMPs in operation during the year. Over 12,700 toilets were replaced during the year by participants receiving a rebate or voucher of up to \$75 per toilet. Funding was provided by MWD, the Authority and participating member agencies. DMC Inc. operated the program in close cooperation with Authority staff and the member agencies. More than 660 ULFTs were also installed in a variety of high-use public facilities. The Authority's member agencies played a key role in identifying sites for this program.

A program to install ULFTs in cooperation with community based organizations was implemented during the year. Through the program nearly 14,600 ULFTs were installed in low-income households. The program also provided employment opportunities for community residents.

In cooperation with San Diego Gas and Electric Company, the Authority implemented a Clothes Washer Rebate Program. The program offers a rebate to customers who purchase energy efficient clothes washers.

The Authority and its participating member agencies launched a Residential Survey Program for single family residential customers. The program provided surveys to over 600 customers during its first year.

Landscape water conservation was addressed through a variety of programs. The Authority contracted with the Mission Resource Conservation District (RCD) to provide daily weather information for use in setting landscape irrigation schedules. The information is gathered by the California Irrigation Management Information System (CIMIS), then provided to San Diegans through an Authority-sponsored toll-free phone number. Mission RCD provided landscape water management surveys for customers in the northern half of the county.



*Community Based Organization
ULFT Distribution Program
employee prepares old toilets for
recycling as road fill.*

Authority funding was also used by Schmidt Design Group as it provided similar audits in the southern half of the county. The Authority assisted in sponsoring a series of irrigation training sessions conducted in Spanish and English. Because so many of those involved in irrigation maintenance use Spanish as their primary language, this effort was especially beneficial. The training was funded in cooperation with the State Department of Water Resources, California Polytechnic Institute at San Louis Obispo, the Authority and its member agencies. A program to provide financial incentives to purchase efficient irrigation equipment was implemented for public institutions during the year.

Finally, the Authority and its member agencies continued to support efforts to maintain the high level of irrigation efficiency achieved by county agricultural users. Through the Agricultural Audit Program, Mobile Lab Team and the CIMIS phone number, users were provided valuable crop irrigation information.



*Water Resource Associate Vickie Driver
performs a landscape irrigation system evaluation.*



Map 3.

EMERGENCY STORAGE PROJECT

The objective of the Emergency Storage Project (ESP) is to provide sufficient emergency storage capacity so that the county can endure a prolonged interruption of its imported water supply without suffering lasting economic and environmental damage. Although temporary water supply shortages may be caused by several factors, two planning scenarios are being used to determine emergency storage requirements. One scenario involves interruption of water delivery to MWD for six months due to a great earthquake on the San Andreas or San Jacinto faults; this scenario assumes the Authority could still draw on MWD emergency storage, including the proposed Dominigoni Reservoir. The other scenario involves a two-month interruption of water deliveries from MWD to the Authority due to a major earthquake on the Elsinore Fault. In this scenario only water stored within the County would be available.

Emergency storage is being sized to meet demands to the year 2030. The amount of required storage is based upon the most current SANDAG population forecasts. This demand was then reduced by substantial enhancement of local yield from reclaimed water, groundwater development and desalination, as outlined in the Authority's November 1993 Water Resources Plan. The demand was also reduced to account for permanent conservation measures and an additional 25 percent rationing imposed on top of conservation. Based upon these factors the current emergency storage shortfall is estimated at approximately 90,100 acre-feet for the two-month scenario and 84,000 acre-feet for the six-month scenario.

Last year, 32 best representative emergency storage system alternatives were developed utilizing surface storage in new and/or expanded existing reservoirs, groundwater basins, and the re-operation of existing reservoirs. This year, these alternatives were compared in a two-step alternative screening process. The goal of this process was to complete an objective, un-biased alternatives analysis to identify final alternative systems to be compared in detail in the Environmental Impact Report/Environmental Impact Statement (EIR/EIS). In April 1994 the final four alternative systems were announced. Map 3 shows the potential new storage locations that are included in the final four systems.

The final four systems are (order does not indicate preference):

- San Vicente Expansion Stand Alone
- Moosa construction and Lake Hodges Re-operation
- San Vicente Expansion and San Vicente Re-operation
- Olivenhain construction, Lake Hodges Re-operation and San Vicente Expansion

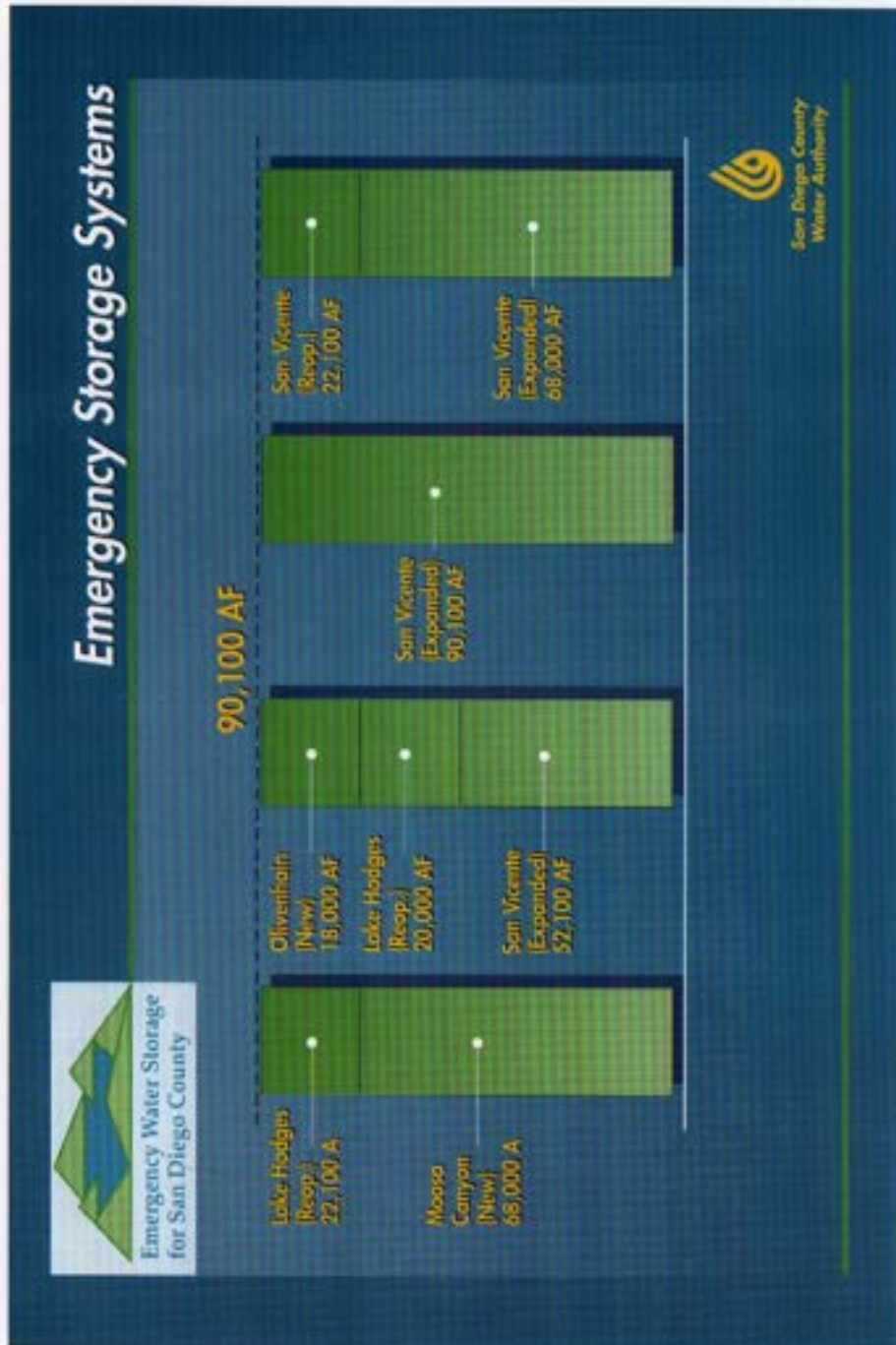


Figure No. 7

Figure 7 shows the storage volume supplied by each component of the final four systems.

The San Vicente expansion stand-alone alternative would require the existing San Vicente dam to be raised by 83 feet to contain the additional 90,100 acre-feet of emergency storage. A new 96-inch diameter pipeline would be built to connect San Vicente to the second aqueduct on the north side of Miramar Hill. Approximately five new pump stations would be required to supply all member agencies.

The Moosa/Lake Hodges alternative would require a new 340-foot high dam at Moosa Canyon to hold 68,000 acre-feet of emergency storage and re-operation of Lake Hodges to hold 22,100 acre-feet of emergency storage. An 84-inch pipeline would connect Moosa to Pipeline 6 and a 42-inch pipeline would connect Lake Hodges to the Second Aqueduct. Pump stations would be required at both reservoirs as well as at three other locations to serve all member agencies.

The San Vicente expansion and re-operation alternative would raise the existing dam 65 feet, adding 68,000 acre-feet of storage to San Vicente. Re-operation of the existing reservoir would provide an additional 22,100 acre-feet of emergency storage. The same facilities needed for the San Vicente expansion stand-alone alternative are required for this alternative.

The Olivenhain/Hodges re-operation and San Vicente expansion would require a new 320-foot high dam at the Olivenhain site to create 18,000 acre-feet of emergency storage and 6,000 acre-feet of storage for Olivenhain Municipal Water District, the re-operation of Lake Hodges to hold an additional 20,000 acre-feet, and the raising of San Vicente dam by 54 feet to hold 52,100 more acre-feet. A new 48-inch pipeline and pump station would connect Lake Hodges to Olivenhain and a new 60-inch pipeline and pump station would connect Olivenhain to the Second Aqueduct. A 72-inch diameter pipeline would connect San Vicente to the Second Aqueduct on the north side of Miramar Hill.

The EIR/EIS is expected to be distributed for public review during the third quarter of next fiscal year, and the preferred alternative should be selected sometime in the summer of 1995.



*Men constructing 36-inch concrete pipe sections, circa 1920.
(San Diego Historical Society, Photographic Collection)*

WATER RECLAMATION DEPARTMENT

Fiscal year 1994 saw the continued progress of the regional effort to expand the use of reclaimed water and brackish groundwater. The year was highlighted by the dedication of two new reclamation facilities, the expansion of two existing reclamation projects, and the start-up of the region's first brackish groundwater desalting facility. As a result, local water supplies increased by 3,670 acre-feet per year (AFY).

Construction, design, and planning efforts saw a sharp increase as well. Projects under construction represent 33,000 AFY of reclaimed water production capacity. Design contracts were let for an additional 11,500 AFY of reclaimed water distribution system capacity. Also important is the progress made toward expanding the market for reclaimed water through a total water recycling concept. This concept, known as water repurification, consists of the treatment of reclaimed water to a level that makes it suitable for introduction into an upstream reservoir.

Recognizing the need for policy direction and funding to further the water recycling effort, the Board of Directors acted upon a number of related recommendations of the Water Authority Reclamation Advisory Committee (WARAC). WARAC, which advises the Authority on water reclamation matters and groundwater planning and development, is comprised of members representing water and wastewater entities, state and local regulatory agencies, and potential reclaimed water users.

Water Reclamation and Groundwater Projects

Financial assistance programs play a critical role in the development of reclaimed water and groundwater supplies. These programs are available for all phases of water reclamation and groundwater recovery projects. Financial assistance programs administered by the Authority, the Metropolitan Water District of Southern California, the State Water Resources Control Board and the U.S. Bureau of Reclamation provided \$60,935,596 to San Diego County agencies in fiscal year 1994.

Six water reclamation projects and four groundwater development projects, with a combined reuse potential of over 23,500 acre-feet per year, were approved to receive funding under the Authority's Financial Assistance Program (FAP). The FAP provided a total of \$223,786 for reclaimed water and groundwater planning and development studies in fiscal year 1994.

The Authority entered into a long-term, operational funding agreement with the City of San Diego for its San Pasqual Aquaculture III Plant for the Reclaimed Water Development Fund (RWDF). The RWDF provides \$100 per

acre-foot for approved water reclamation projects. The Authority and Metropolitan also participate in joint participation agreements with Authority member agencies for Metropolitan's Local Projects Program (LPP). The LPP provides \$154 per acre-foot for approved water reclamation projects. These programs provided local agencies nearly \$500,000 to offset operating expenditures for fiscal year 1994.

The City of Oceanside's Mission Basin Desalting Plant, the first brackish groundwater desalter facility in the San Diego area, began operations in fiscal year 1994. The Authority, Metropolitan and the City of Oceanside take part in a joint participation agreement for recovery and clean-up of contaminated groundwater that is supported by Metropolitan's Groundwater Recovery Program. In fiscal year 1994, the City of Oceanside received \$234 per acre-foot to help offset the cost of operating its brackish groundwater desalination facility.

San Diego County agencies obtained approval for \$59.7 million in low interest construction loans for reclamation projects from the State Water Resources Control Board's State Revolving Fund and Water Reclamation Loan Program.

The U.S. Bureau of Reclamation's Public Law 102-575 Grant Program represents a new and potentially significant funding source for San Diego area reclamation projects. Under PL 102-575, the Central Valley Project Improvement Act, the federal government is authorized to provide grants for up to 25% of the capital cost of selected projects. The City of Escondido's reclamation project received a grant of \$400,000 under this program in fiscal year 1994.

Staff actively participated in the U.S. Bureau of Reclamation's *Southern California Comprehensive Water Reclamation and Reuse Study*. The focus of this federal study is on the regional development of reclaimed water.

The Authority, with the City of Escondido and the University of California Cooperative Extension Service, participated in a research study evaluating the use of reclaimed water for avocado production. This four-year investigation is 50% complete. The information gathered will be used by growers and member agencies in assessing the suitability of reclaimed water for irrigation of avocado crops.



Water Reclamation Associate Chris Reilly assists in monitoring the yield of avocado trees irrigated with reclaimed water.

Total reuse of water amounted to 9,163 acre-feet in fiscal year 1994. Reclaimed water use within the Authority's service area for the fiscal year is summarized in Figure 8.

Other Accomplishments

The Authority and the City of San Diego are studying the feasibility of using advanced water treatment technology to purify reclaimed water to a level equivalent to existing imported water supplies. The feasibility study is the natural outgrowth of a multi-year health effects study conducted by the City of San Diego. The health effects study showed that the quality of repurified water is comparable to the quality of imported raw water supplies and meets or exceeds all state and federal drinking water standards.

The Authority and the City of San Diego propose to construct a water repurification facility with a capacity of up to 20 million gallons per day to treat reclaimed water from the City's North City Water Reclamation Plant. The repurified water would be transported to the San Vicente Reservoir for blending with imported raw water supplies, and eventually conveyed via the existing El Monte Pipeline to the City's Alvarado Filtration Plant. The water would undergo additional filtration and disinfection before being introduced into the City's potable water delivery system. The State Department of Health Services has reviewed the repurification proposal and given conceptual approval for the proposed project. Should the water repurification program prove feasible, the program could begin operation as early as 2001.

The City of San Diego's San Pasqual Aquaculture III Plant is equipped with all of the advanced water treatment technology recommended for inclu-

SAN DIEGO COUNTY WATER AUTHORITY

sion in the water repurification demonstration project. As such, it will serve as an ongoing research facility to support the further development of the water repurification concept.

RECLAIMED WATER PRODUCTION

In SDCWA Service Area Fiscal Year 1993-1994 (Acre-Feet)

Location	Treatment Facility	M&I	Ag	Replnsh	Total
Encina WW Authority	Encina WWTP	125			125
City of Escondido	Hale Ave	0	1		1
Fairbanks Rnch CSD	Fairbanks Ranch			195	195
City of Oceans/Fallbrk	Fallbrook Plant #1	140	4		144
City of Oceanside	San Luis Rey	91		28	119
Otay WD	Jamacha Basin TP	749			749
Padre Dam MWD	Santee Lakes	466			466
Pendleton	Pendleton	390		3,800	4,190
Ramona MWD	Santa Maria	131	492	91	714
Ramona MWD	San Vicente		511	68	579
City of San Diego	Aquaculture Plant				0
City of San Diego	Wild Animal Park WRP	16			16
Santa Fe WD	Rancho Santa Fe WPCF			223	223
Vallecitos WD	Meadowlark	848			848
Valley Center MWD	Lower Moosa Canyon			245	245
Valley Center MWD	Skyline TP			31	31
City of Vista	Shadowridge	295			295
Whisp. Palms CSD	Whispering Palms WRF		136	55	191
TOTAL:		3,251	1,144	4,736	9,131

Figure No. 8

FINANCE DEPARTMENT

The Finance Department is responsible for the finance, treasury, accounting, budgeting, information systems, purchasing and warehousing operations of the Authority.

Finance Operations

In November of 1993 staff received Board approval to commence a short term variable rate debt program. The program was approved for an issuance amount of up to \$250 million, however it is anticipated that a maximum of \$110 million will be issued to fund the currently approved Capital Improvement Program. Due to delays in the Capital Improvement Program no short term debt was outstanding on June 30, 1994. It is anticipated that debt issuance will begin in the spring of 1995. The short term variable rate debt will benefit the Authority by providing rate smoothing, interest savings, and funding flexibility.

In October 1993 staff prepared an update to the Authority's Long Range Finance Plan to identify and review existing and new methods of financing the Authority's Capital Improvement Program. The update addressed how the future construction program will impact water rates. A significant policy shift resulted from this report that changed the Authority's commitment to funding the Capital Improvement Program. The 60% debt to 40% cash funding ratio objective was changed to a policy position that prescribes a funding mix that produces the overall lowest cost of financing and lowest water rate, given the current adopted Capital Improvement Program.

Investment Operations

The Director of Finance also acts as the Authority's Treasurer and is responsible for all funds not immediately required for the conduct of business. Board Policy requires the Authority's Treasurer to submit annually a statement of investment policy for Board review. The statement describes the Treasurer's investment authority, practices, and limitations as established by the Government Code and Board policy.

During the year the Treasurer was authorized to invest in the State Local Agency Investment Fund, bankers acceptances, treasury securities, repurchase agreements, reverse repurchase agreements, collateralized certificates of deposit, commercial paper, certain federal agencies and treasury money market funds.

Interest earnings for the year totalled (accrual basis) \$10,743,000. At year end the portfolio yield was 4.82 with average weighted days to maturity of 177 days. This yield compares to 3.70 percent in June of 1993. The improvement

SAN DIEGO COUNTY WATER AUTHORITY

in yield was due to a rise in general market rates.

During January of 1993 staff implemented a portfolio management software program that greatly enhances the tracking and reporting capability of the treasury function.

As of June 30, 1994 and 1993, the Treasurer's cash accountability was as follows:

	June 30	
	1994	1993
Collateralized demand deposits	\$ 786,000	\$ 7,113,040
Certificates of deposit	0	0
U.S. Government securities	79,624,000	114,918,693
Guaranteed investment contract deposits	33,260,000	103,365,208
Local Agency Investment Fund	65,000,000	15,000,000
Bankers Acceptances	4,929,874	8,050,121
Money Market	2,408,000	0
Agency Securities	21,765,803	4,349,322
Repurchase Agreements	0	6,680,000
Reverse Repurchase Agreements (2,985,000)	0	
Prime Commercial Paper	<u>14,932,990</u>	<u>3,988,956</u>
	<u>\$222,713,121</u>	<u>\$260,480,340</u>

As of June 30, 1994 and 1993, restricted reserve fund cash balances were as follows:

	June 30	
	1994	1993
Construction	\$ 62,024,267	\$ 99,582,650
Rate Stabilization	61,153,000	61,153,000
Pay-As-You-Go	57,737,000	38,692,717
Debt Service Reserve	25,789,221	25,784,980
Interest Arbitrage Rebate	<u>193,710</u>	<u>2,536,263</u>
	<u>\$206,897,198</u>	<u>\$227,749,610</u>

As of June 30, 1994 and 1993, unrestricted cash balances were as follows:

	June 30	
	1994	1993
Operating	<u>\$ 15,810,000</u>	<u>\$ 35,715,730</u>

FINANCE DEPARTMENT

Accounting Operations

Ernst & Young, the Authority's independent auditors, completed its review of the Authority's financial statements for the year ended June 30, 1994. This review is included along with the Auditor's opinion in Appendix C. The auditors found no material weaknesses in internal controls and issued an unqualified audit opinion.

The following is a comparative summary of operational highlights for fiscal year ended June 30, 1994:

SUMMARY (Dollars in Thousands)

	1994	1993
Water sales	\$161,968	\$150,586
Cost of sales	134,381	126,642
Operating expenses	13,154	11,910
Depreciation	4,929	4,896
Write down of Pamo Reservoir Project to estimated net realizable value	<u>2,158</u>	<u>2,000</u>
Operating income	7,346	5,138
Nonoperating income (expense)	27,765	25,169
Extraordinary loss on bond defeasance	0	(10,978)
Net income	<u>\$ 35,111</u>	<u>\$ 19,329</u>

Fiscal year 1993-94 water sales income and hydroelectric sales income increased \$11 million when compared with June 30, 1993. This increase is directly attributed to MWD and Authority water rate increases effective July 1, 1993. Actual water sales were 392,733 acre-feet, about 38,040 acre-feet less than the prior year. The reduced water sales resulted from the continuation of conservation awareness by consumers, mild weather and record rainfall during the 1993 winter months which filled local reservoirs. Several member agencies were able to draw from their reservoirs instead of purchasing water from the Authority.

Cost of sales increased by approximately \$8 million. The increase resulted from MWD water rate increases of 18 percent for raw water and 20 percent for treated water.

Operating expenses increased by approximately \$1,200,000 over fiscal year 1992-93. The Authority has for many years included in Construction in Progress \$4,158,000 of costs related to the construction of the Pamo Reservoir Project. During fiscal year 1994, the Authority downgraded Pamo Reservoir from a primary alternative site to a secondary alternative site in the Emergency Storage Study. Since Pamo is no longer a probable reservoir site, the Authority provided a \$2 million reserve in June 1993 for the estimated costs that may not

be recovered in the selection of a final site and increased operating expenses for that amount. The Authority has subsequently written off the balance of the Pamo Reservoir Project, \$2,158,000, as of June 30, 1994.

Non-operating income and expenses include property taxes, water standby availability charges, capacity charges, interest income from investments and interest expense on long-term debt, among other items. Total non-operating income increased by approximately \$2,500,000. This increase was primarily attributed to a \$2,200,000 increase in capacity charge revenues.

Debt Service Coverage

The outstanding bond covenants require the Authority to maintain a minimum level of operational earnings. Net water revenues, as defined by the agreements, must equal or exceed 120 percent of all debt servicing costs (principal and interest). The Authority's actual debt service coverage for June 30, 1994 was 158 percent and the last four years' coverage are as follows:

June 30,	Debt Service Coverage
1991	251 Percent
1992	212 Percent
1993	169 Percent
1994	158 Percent

Water Rates

Water rates were increased by MWD at the beginning of the year. The MWD untreated rate for non-interruptible water increased from \$269 to \$318 per acre-foot on July 1, 1993. The MWD treatment charge increased from \$53 to \$67 per acre-foot, resulting in an MWD rate for treated, non-interruptible water of \$385 per acre foot. These increases were passed on to Authority member agencies.

The Authority's surcharge for untreated water increased from \$55 to \$70 per acre foot and the \$7 treatment surcharge was eliminated by the Board of Directors. Authority rates for untreated and treated non-interruptible water were \$388 and \$455 per acre foot, respectively. Some member agencies with treatment plants have contracts with the Authority to provide treated water to agencies without treatment facilities and with limited or no access to treated water pipelines. A historical summary of water rates is provided in Figure 10.

Tax Rates/Assessed Valuation

The tax rate set by the Authority's Board of Directors is based upon the assessed valuation of taxable property within the Authority, and the Authority's debt requirements. Assessed valuation is also the basis for the number of direc-

tors and the number of votes each member agency receives. Property valuations are determined by the San Diego County Assessor, who also collects these taxes for the Authority.

The Authority's secured tax rate for 1993-94 was 0.00151 cents per \$100 dollars of assessed valuation, which is a minor decrease over the 1992-93 secured tax rate of 0.00332 cents per \$100 dollars of assessed valuation. Total tax revenue collections, including secured, unsecured, and in-lieu taxes, for 1993-94 were \$5,940,161, a reduction of \$2,321,637 from 1992-93 tax revenues of \$8,261,798. The reduction in the secured tax rates and tax revenues collected resulted from lower general obligation bond debt service requirements. The final payment on the 1957 General Obligation Bonds was made in February 1994 and the final payment to the U.S., Governmental Bureau of Reclamation will be made in February 1995.

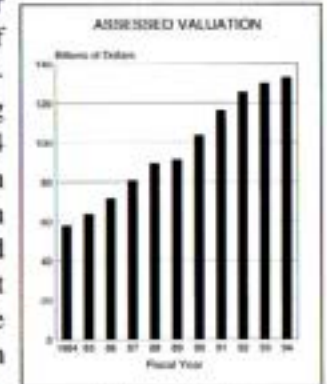


Figure No. 9

The total assessed valuation of taxable property within the Authority for 1993-94, according to the County Auditor's certification, was \$134,120,589,763, which is an increase of \$2,160,088,688 (or 1.6 percent) from the 1992-93 certified valuation of \$131,960,501,075.

The average assessed valuation of property within the Authority service area increased from \$145,178 per acre in 1992-93 to \$147,554 per acre in 1993-94. The assessed valuations for each member agency, the Authority, and San Diego County is shown in Table 5.

Capacity Charges

The Authority imposes capacity charges that are collected on new water meter hookups. These charges are designed to collect revenue from new development to pay the capital costs associated with increased demand that new development places upon the distribution system. Capacity charge revenues are restricted to pay for the Capital Improvement Program and are deposited in the Pay-As-You-Go Fund. The current capacity charge is \$1,413 per connection under one inch. A factor based upon meter size is applied to this charge to determine the cost of larger meters. Total revenue from capacity charges for the fiscal year ended June 30, 1994 was \$7,158,147, an increase of \$2,240,785 over the prior year. This is due to an increase of \$319 in the basic charge and increased new connections (see Table 10 for Collections by Member Agency).

SUMMARY OF WATER RATES
(Dollars per acre foot)

METROPOLITAN WATER DISTRICT				COUNTY WATER AUTHORITY			
FROM	TO	RATE		CWA RATE		TOTAL RATE	
		NON-INTERRUPTIBLE		CWA RATE		TOTAL RATE	
		UNTREATED	TREATED	UNTREATED	TREATED	UNTREATED	TREATED
701.04	1201.80	\$15.00	-	\$2.00	-	\$17.00	-
101.81	1201.81	-	-	\$2.00	-	\$10.00	-
101.82	1201.82	\$15.00	-	\$2.00	-	\$17.00	-
101.83	1201.83	\$21.00	-	\$2.00	-	\$23.00	-
101.84	6300.94	\$21.00	-	\$2.00	-	\$23.00	-
701.04	6300.95	\$23.00	-	\$1.25	-	\$24.25	-
701.05	6300.96	\$24.00	-	\$1.25	-	\$25.25	-
701.06	6300.97	\$24.00	-	\$1.25	-	\$25.25	-
701.07	6300.98	\$24.00	-	\$1.25	-	\$25.25	-
701.08	6300.99	\$24.00	-	\$1.25	-	\$25.25	-
701.09	6301.00	\$40.00	-	\$1.25	-	\$41.25	-
701.10	6301.01	\$44.00	-	\$1.25	-	\$45.25	-
701.11	6301.02	\$48.00	-	\$1.25	-	\$49.25	-
701.12	6301.03	\$52.00	-	\$1.25	-	\$53.25	-
701.13	6301.04	\$56.00	-	\$1.25	-	\$57.25	-
701.14	6301.05	\$60.00	-	\$1.25	-	\$61.25	-
701.15	6301.06	\$64.00	-	\$1.25	-	\$65.25	-
701.16	6301.07	\$68.00	-	\$1.25	-	\$69.25	-
701.17	6301.08	\$72.00	-	\$1.25	-	\$73.25	-
701.18	6301.09	\$76.00	-	\$1.25	-	\$77.25	-
701.19	6301.10	\$80.00	-	\$1.25	-	\$81.25	-
701.20	6301.11	\$84.00	-	\$1.25	-	\$85.25	-
701.21	6301.12	\$88.00	-	\$1.25	-	\$89.25	-
701.22	6301.13	\$92.00	-	\$1.25	-	\$93.25	-
701.23	6301.14	\$96.00	-	\$1.25	-	\$97.25	-
701.24	6301.15	\$100.00	-	\$1.25	-	\$101.25	-
701.25	6301.16	\$104.00	-	\$1.25	-	\$105.25	-
701.26	6301.17	\$108.00	-	\$1.25	-	\$109.25	-
701.27	6301.18	\$112.00	-	\$1.25	-	\$113.25	-
701.28	6301.19	\$116.00	-	\$1.25	-	\$117.25	-
701.29	6301.20	\$120.00	-	\$1.25	-	\$121.25	-
701.30	6301.21	\$124.00	-	\$1.25	-	\$125.25	-
701.31	6301.22	\$128.00	-	\$1.25	-	\$129.25	-
701.32	6301.23	\$132.00	-	\$1.25	-	\$133.25	-
701.33	6301.24	\$136.00	-	\$1.25	-	\$137.25	-
701.34	6301.25	\$140.00	-	\$1.25	-	\$141.25	-
701.35	6301.26	\$144.00	-	\$1.25	-	\$145.25	-
701.36	6301.27	\$148.00	-	\$1.25	-	\$149.25	-
701.37	6301.28	\$152.00	-	\$1.25	-	\$153.25	-
701.38	6301.29	\$156.00	-	\$1.25	-	\$157.25	-
701.39	6301.30	\$160.00	-	\$1.25	-	\$161.25	-
701.40	6301.31	\$164.00	-	\$1.25	-	\$165.25	-
701.41	6301.32	\$168.00	-	\$1.25	-	\$169.25	-
701.42	6301.33	\$172.00	-	\$1.25	-	\$173.25	-
701.43	6301.34	\$176.00	-	\$1.25	-	\$177.25	-
701.44	6301.35	\$180.00	-	\$1.25	-	\$181.25	-
701.45	6301.36	\$184.00	-	\$1.25	-	\$185.25	-
701.46	6301.37	\$188.00	-	\$1.25	-	\$189.25	-
701.47	6301.38	\$192.00	-	\$1.25	-	\$193.25	-
701.48	6301.39	\$196.00	-	\$1.25	-	\$197.25	-
701.49	6301.40	\$200.00	-	\$1.25	-	\$201.25	-
701.50	6301.41	\$204.00	-	\$1.25	-	\$205.25	-
701.51	6301.42	\$208.00	-	\$1.25	-	\$209.25	-
701.52	6301.43	\$212.00	-	\$1.25	-	\$213.25	-
701.53	6301.44	\$216.00	-	\$1.25	-	\$217.25	-
701.54	6301.45	\$220.00	-	\$1.25	-	\$221.25	-
701.55	6301.46	\$224.00	-	\$1.25	-	\$225.25	-
701.56	6301.47	\$228.00	-	\$1.25	-	\$229.25	-
701.57	6301.48	\$232.00	-	\$1.25	-	\$233.25	-
701.58	6301.49	\$236.00	-	\$1.25	-	\$237.25	-
701.59	6301.50	\$240.00	-	\$1.25	-	\$241.25	-
701.60	6301.51	\$244.00	-	\$1.25	-	\$245.25	-
701.61	6301.52	\$248.00	-	\$1.25	-	\$249.25	-
701.62	6301.53	\$252.00	-	\$1.25	-	\$253.25	-
701.63	6301.54	\$256.00	-	\$1.25	-	\$257.25	-
701.64	6301.55	\$260.00	-	\$1.25	-	\$261.25	-
701.65	6301.56	\$264.00	-	\$1.25	-	\$265.25	-
701.66	6301.57	\$268.00	-	\$1.25	-	\$269.25	-
701.67	6301.58	\$272.00	-	\$1.25	-	\$273.25	-
701.68	6301.59	\$276.00	-	\$1.25	-	\$277.25	-
701.69	6301.60	\$280.00	-	\$1.25	-	\$281.25	-
701.70	6301.61	\$284.00	-	\$1.25	-	\$285.25	-
701.71	6301.62	\$288.00	-	\$1.25	-	\$289.25	-
701.72	6301.63	\$292.00	-	\$1.25	-	\$293.25	-
701.73	6301.64	\$296.00	-	\$1.25	-	\$297.25	-
701.74	6301.65	\$300.00	-	\$1.25	-	\$301.25	-
701.75	6301.66	\$304.00	-	\$1.25	-	\$305.25	-
701.76	6301.67	\$308.00	-	\$1.25	-	\$309.25	-
701.77	6301.68	\$312.00	-	\$1.25	-	\$313.25	-
701.78	6301.69	\$316.00	-	\$1.25	-	\$317.25	-
701.79	6301.70	\$320.00	-	\$1.25	-	\$321.25	-
701.80	6301.71	\$324.00	-	\$1.25	-	\$325.25	-
701.81	6301.72	\$328.00	-	\$1.25	-	\$329.25	-
701.82	6301.73	\$332.00	-	\$1.25	-	\$333.25	-
701.83	6301.74	\$336.00	-	\$1.25	-	\$337.25	-
701.84	6301.75	\$340.00	-	\$1.25	-	\$341.25	-
701.85	6301.76	\$344.00	-	\$1.25	-	\$345.25	-
701.86	6301.77	\$348.00	-	\$1.25	-	\$349.25	-
701.87	6301.78	\$352.00	-	\$1.25	-	\$353.25	-
701.88	6301.79	\$356.00	-	\$1.25	-	\$357.25	-
701.89	6301.80	\$360.00	-	\$1.25	-	\$361.25	-
701.90	6301.81	\$364.00	-	\$1.25	-	\$365.25	-
701.91	6301.82	\$368.00	-	\$1.25	-	\$369.25	-
701.92	6301.83	\$372.00	-	\$1.25	-	\$373.25	-
701.93	6301.84	\$376.00	-	\$1.25	-	\$377.25	-
701.94	6301.85	\$380.00	-	\$1.25	-	\$381.25	-
701.95	6301.86	\$384.00	-	\$1.25	-	\$385.25	-
701.96	6301.87	\$388.00	-	\$1.25	-	\$389.25	-
701.97	6301.88	\$392.00	-	\$1.25	-	\$393.25	-
701.98	6301.89	\$396.00	-	\$1.25	-	\$397.25	-
701.99	6301.90	\$400.00	-	\$1.25	-	\$401.25	-
702.00	6301.91	\$404.00	-	\$1.25	-	\$405.25	-
702.01	6301.92	\$408.00	-	\$1.25	-	\$409.25	-
702.02	6301.93	\$412.00	-	\$1.25	-	\$413.25	-
702.03	6301.94	\$416.00	-	\$1.25	-	\$417.25	-
702.04	6301.95	\$420.00	-	\$1.25	-	\$421.25	-
702.05	6301.96	\$424.00	-	\$1.25	-	\$425.25	-
702.06	6301.97	\$428.00	-	\$1.25	-	\$429.25	-
702.07	6301.98	\$432.00	-	\$1.25	-	\$433.25	-
702.08	6301.99	\$436.00	-	\$1.25	-	\$437.25	-
702.09	6302.00	\$440.00	-	\$1.25	-	\$441.25	-
702.10	6302.01	\$444.00	-	\$1.25	-	\$445.25	-
702.11	6302.02	\$448.00	-	\$1.25	-	\$449.25	-
702.12	6302.03	\$452.00	-	\$1.25	-	\$453.25	-
702.13	6302.04	\$456.00	-	\$1.25	-	\$457.25	-
702.14	6302.05	\$460.00	-	\$1.25	-	\$461.25	-
702.15	6302.06	\$464.00	-	\$1.25	-	\$465.25	-
702.16	6302.07	\$468.00	-	\$1.25	-	\$469.25	-
702.17	6302.08	\$472.00	-	\$1.25	-	\$473.25	-
702.18	6302.09	\$476.00	-	\$1.25	-	\$477.25	-
702.19	6302.10	\$480.00	-	\$1.25	-	\$481.25	-
702.20	6302.11	\$484.00	-	\$1.25	-	\$485.25	-
702.21	6302.12	\$488.00	-	\$1.25	-	\$489.25	-
702.22	6302.13	\$492.00	-	\$1.25	-	\$493.25	-
702.23	6302.14	\$496.00	-	\$1.25	-	\$497.25	-
702.24	6302.15	\$500.00	-	\$1.25	-	\$501.25	-
702.25	6302.16	\$504.00	-	\$1.25	-	\$505.25	-
702.26	6302.17	\$508.00	-	\$1.25	-	\$509.25	-
702.27	6302.18	\$512.00	-	\$1.25	-	\$513.25	-
702.28	6302.19	\$516.00	-	\$1.25	-	\$517.25	-
702.29	6302.20	\$520.00	-	\$1.25	-	\$521.25	-
702.30	6302.21	\$524.00	-	\$1.25	-	\$525.25	-
702.31	6302.22	\$528.00	-	\$1.25	-	\$529.25	-
702.32	6302.23	\$532.00	-	\$1.25	-	\$533.25	-
702.33	6302.24	\$536.00	-	\$1.25	-	\$537.25	-
702.34	6302.25	\$540.00	-	\$1.25	-	\$541.25	-
702.35	6302.26	\$544.00	-	\$1.25	-	\$545.25	-
702.36	6302.27	\$548.00	-	\$1.25	-	\$549.25	-
702.37	6302.28	\$552.00	-	\$1.25	-	\$553.25	-
702.38	6302.29	\$556.00	-	\$1.25	-	\$557.25	-
702.39	6302.30	\$560.00	-	\$1.25	-	\$561.25	-
702.40	6302.31	\$564.00	-	\$1.25	-	\$565.25	-
702.41	6302.32	\$568.00	-	\$1.25	-	\$569.25	-
702.42	6302.33	\$572.00	-				

Information Systems supports daily activities such as word processing, spreadsheet utilization, database manipulation, electronic mail and other communication of information in hard copy and electronic form. In addition, Information Systems actively supports long-term information warehousing and distribution by providing programming and application development services.

During fiscal 1994 staff installed new high-end computers from Sun® Microsystems and relational database technology from Oracle® as core technologies used in Client/Server computing. Application Servers were developed for producing water use bills, for creating a Document Imaging System in Right-of-Way, and to centralize data used in Geographic Information Systems (GIS).

Policies that address capacity planning, disaster planning, system maintenance, archiving and tape back-up for the Wide-Area Network (WAN) were implemented to enhance the Information Systems Plan. The Ethernet WAN was extended by introducing dial-up facilities in Escondido and San Diego and by creating an Authority bulletin board system for public access to Authority information. An outside auditing firm conducted an extensive review of the Authority's Information Systems policies, procedures and technologies. The review found the current systems procedures and technologies to be in-line with industry standards and technical trends.

Current computer use at the Authority consists of three primary file servers, three secondary servers, five high-end applications servers and one-hundred and seventy-two PC's.

Purchasing and Warehouse Operations

A rewrite of the Purchasing and Contracting section of the Administrative Code was approved during the year. The revised code section provided Board approval and the necessary direction for the centralization of the procurement functions. Interim purchasing guidelines were prepared and distributed to assist departments while the Purchasing Procedures manual is developed. The Professional Service Selection Procedure and the Sole Source Policy were developed and implemented. Training of departments in the interim purchasing guidelines and in the selection of consultants in accordance with the Professional Service Selection Procedure was provided. Purchasing is conducting the solicitation of competitive bids for most major purchases.

The department reviewed the scopes of work for all construction bids and requests for proposals for consulting projects to provide required insurance limits and revisions to the language to ensure compliance with the Authority's insurance standards. The department acted as liaison to the Authority's Risk Management Consultant when additional expertise was required.

Warehouse staff began the implementation of a bar code system to automate the receipt and issuance of warehouse inventory. A bar code reader was purchased and the set up of inventory part numbers under the bar code systems was completed. Warehouse staff began the process of producing bar code labels for all inventory parts.

Deferred Compensation

The department administers a deferred compensation plan for Authority employees according to Section 457 of the Internal Revenue Code. This plan enables employees to defer portions of their compensation until retirement, disability, or death. At June 30, 1994, assets of the plan totalled \$3,185,943.



Barrett Dam construction camp school in the Corte Madera School District, circa 1921.
 (San Diego Historical Society, Photographic Collection)

PUBLIC AFFAIRS

The previous year's reorganization of the Public Affairs Department provided an excellent foundation for the diverse agenda pursued by staff in the Authority's 50th Anniversary year. The staff's efforts to communicate with the Authority's many audiences created new opportunities for outreach, education and awareness of Authority activities and water-related issues.

Staff worked within the Public Affairs Plan approved by the Public Affairs Committee of the Board of Directors to refine its communication strategies for member agencies, governmental and business officials, the news media and the general public. Messages about Authority programs and policies were delivered effectively and efficiently, using a variety of appropriate methods.

Information was disseminated about Authority activities, with particular attention to the Capital Improvement Program, Emergency Water Storage Project, earthquake preparedness, water conservation, water repurification, and the Authority's 50th Anniversary. Staff continued to participate in briefings for policymakers, community and business leaders and the media about the Authority's activities and concerns.

In addition, the department continued its successful school education program; published and distributed WaterTalk and Connections; wrote news releases, newspaper opinion pieces and letters to the editor; arranged for interviews of directors and staff by print and broadcast media; and prepared and distributed brochures on specific topics.

Governmental Relations

The department strengthened its efforts to assist board members in keeping area elected officials informed about the Authority and its activities. Considerable attention was paid to briefing officeholders and their staffs on critical issues, including Bay-Delta concerns, water repurification, capital improvement projects, and legislative matters. This effort helped to keep state and local policymakers current about the Authority and water issues important to the San Diego region.

The success of last year's efforts to educate new officeholders about water-related issues was repeated in 1993-94. Letters sent to new city councilmembers and other elected officials resulted in beneficial contacts and education on Authority programs.

Authority plans for implementing water repurification were introduced to many legislators and other influential community leaders. The feedback received about the project was very valuable and integrated into future planning efforts.

Staff monitored legislative developments on water-related issues, and provided support to board members, elected officials and other Authority staff in the form of documentation, written testimony and briefing sessions.

Assistance and organizational support was provided to Congressman Bob Filner and State Senator David Kelley in coordination of community forums on critical water-related issues for members of the public. Over 500 people attended these informative events. Staff also assisted Senator Kelley in organizing a tour of Colorado River Aqueduct facilities.

The successful liaison program initiated a year ago as part of the Public Affairs Plan grew and strengthened important relationships between the Authority, its member agencies, other governmental agencies and community organizations. A shifting of assignments in 1994 improved communication and the program's overall effectiveness.

The Authority was well-represented by board members and staff at numerous legislative hearings, planning meetings, seminars, forums, and social functions. Public affairs staff submitted papers and offered presentations at local, state and national government and water industry conferences. Staff represented the Authority at community events such as the Earth Day Fair and North County Water Agencies Fair. Thousands of people learned about Authority activities and received conservation information at these events.

Community Relations

The department engaged in many activities designed to inform the general public, various organizations and the business community about the Authority and water-related issues.

Staff focused considerable time and attention on community relations efforts supporting the Capital Improvement Program. Staff represented the Authority in many meetings with community leaders and interested citizens about CIP projects in their neighborhoods. Input was solicited on the impact of construction, safety issues, and concerns of businesses within the project areas. Staff worked with consultants to communicate with those affected by CIP issues via news releases, direct mail, print advertising, and newsletters. Staff also worked with consultants on dedication ceremonies for projects and reviewed materials produced by the consultants.

In an effort to improve community outreach on CIP issues, procedures for hiring community relations consultants were revised with input from Engineering staff. The new procedures will enhance the Authority's ability to direct its community relations programs and communicate with its consultants.

Staff also was actively involved in the Emergency Water Storage Project as it made significant progress toward its goal of providing a cost-effective and environmentally sensitive way to meet the county's needs during a lengthy

interruption of the imported water supply. Four systems were selected for inclusion in a rigorous environmental review process.

Staff had a major role in creation of a citizens' committee that participated in the process leading to the selection of the final four systems. Twenty-seven citizens representing San Diego County's diverse interests worked with Authority directors and staff on the committee. Committee members were briefed on the storage project, and reached consensus on factors that should be used to screen and rank proposed alternatives. Due to the success of the participation of the citizens' committee, a similar model is being used to examine the concept of constructing a water repurification system.

Staff continued to strengthen the Authority's relationship with members of the local business community through education on water-related issues and networking with business organizations, including the Greater San Diego Chamber of Commerce, Asian Business Association, Hispanic Chamber of Commerce, Black Chamber of Commerce, Biomedical Industry Council, San Diego Apartment Owners Association and San Diego Realtors Association. In addition, staff assisted board members in their efforts to work with business leaders to formulate political support for legislation and developed written materials for presentations in many arenas.

Media Activity

Media interest in the Authority ranged over a wide array of subjects. The status of the state and local water supply, water use and conservation, emergency water storage, earthquake preparedness, repurification, financing of water services, capital improvements, Bay-Delta issues, the relationship between the business community and the Authority, and the Authority's 50th Anniversary sparked coverage by print, radio and television reporters. Media personnel turned to the Authority through the Public Affairs Department for information on these and other topics. In response, the department issued news releases, wrote opinion pieces and letters to newspapers, scheduled and conducted media briefings, arranged many interviews with board members and staff, and answered innumerable telephone calls.

The Authority's success in making the news media aware of water supply issues kept interest high in potential water shortages, water use and Authority plans for improving local water supplies and lessening dependence on imported water. The Emergency Water Storage Project generated particular interest. As the project narrowed its focus to the final four system alternatives, media attention stepped up, yielding coverage not only in print, radio and television news reports, but in many longer-form public affairs interviews on radio and television as well.

Related subjects such as the Authority's capital improvements and earthquake preparedness created additional opportunities for the Authority to spread the message via the news media about its mission to provide a safe, reliable water supply to San Diego County. An opinion piece on the storage project and earthquake preparedness was submitted to all community newspapers in San Diego County. Many of them published the piece.

Major articles were written for the opinion sections of The San Diego Union-Tribune, The San Diego Business Journal, and the Sacramento Bee. Letters to the editor were also used as an effective method of communicating the Authority's message to the public. Directors and staff had many opportunities to appear on radio and television news and public affairs programs to discuss the Authority's activities and water-related topics.

Public affairs staff closed 1993-94 by generating excitement in the news media for 50th Anniversary activities, including the Del Mar Fair exhibit, and by looking ahead to the opportunities presented in the months to come to inform and educate the public about Authority efforts and goals.



Del Mar Fair visitors learned about the Authority's past, present and future.



Education Specialist Kelly Mooney demonstrates how water is purified to fourth grade students during a classroom presentation.

School Education Program

The increased demand for the Authority's education services is a tribute to their high quality and effectiveness. With several new programs being finalized, the Authority will be able to offer a complete and comprehensive array of educational programming to students from kindergarten through grade 12.

The school education program used classroom presentations, in-service training sessions, theater presentations, a teaching garden and a new, award-winning videotape production to bring the Authority's message to the county's students and teachers.

Fourth grade classroom presentations are an important part of the Authority's school program, providing staff with an excellent opportunity to assist teachers with their instruction in the classroom about California's water history and San Diego's water resources. In the 1993-1994 school year, the Authority reached 6,765 fourth grade students. The Authority's education resource specialists consistently receive outstanding evaluations from teachers regarding this program.

The School Theater Program is a superb vehicle for promoting water education in the schools. In the 1993-1994 school year, the program reached 76,734 students and 2,192 teachers at 136 schools. Through the use of drama and audience participation, students learn about our water resources and the

importance of using water wisely. With school assembly programs fading out of existence due to budget constraints, the Authority's School Theater Program fills an important void for many schools.

With 3,231 San Diego County teachers interested in presenting water information to their students, the Authority's In-Service Training Program doubled in 1993-1994. Authority education resource specialists offered free instruction to teachers in development and implementation of lesson plans complete with materials provided by the Authority. Nine programs are available for students at different grade levels.

The Authority developed exciting new curricula, publications, and a new educational video in 1993-1994. Staff revised and reprinted a third edition of the fifth/sixth grade unit, "Where in the World is The Water?"; created and distributed "Webster the Watersaurus," a new K-3 activity book; and cooperated with the San Diego County Office of Education, County Department of Public Works and I Love a Clean San Diego County, Inc. in the production of a major new secondary curriculum guide titled "San Diego: World in Harmony."

Work was begun on a major new Regional Water Quality Testing Program for junior and senior high schools. The program consists of nine tests that can be done by students on any local body of water. Students will collect data and enter it into a computer Bulletin Board Service (BBS) at the Authority for comparative studies with other locations.

The Authority is particularly proud of "The Water Game," an educational video produced by the Instructional Television division of the San Diego County Department of Education in cooperation with the Authority. The 14-minute production discusses types of water usage, water conservation and future water resources, using the lively and exciting format of a television game show. "The Water Game" was distributed to all San Diego County junior high schools.

"The Water Game" video was honored with a 1994 International Telly Award as the best non-broadcast educational video of the year.

Staff participated in four education advisory committees organized by the Metropolitan Water District, Department of Water Resources, Energy Education Committee, and ACWA's new Education Advisory Committee. Staff also participated in numerous fairs and conferences, including the Energy Education Conference, National Science Teachers Conference, the Greater San Diego County Science Fair, the Spring San Diego Home/Garden show, and the Greater San Diego Chamber of Commerce Expo '94.

The Authority's continuing mini-grant program is administered through the San Diego Gas & Electric sponsored Energy Education Committee. There were 20 water-related grants available for teachers last year. Teachers must submit a grant application to the committee for review and projects with the highest edu-

cational value are funded. Typical requests are for science kits, Xeriscape garden displays, various teaching materials and field trips to water treatment plants.

The Authority's Youth Merit Badge Program experienced a dramatic increase in participation from 160 students in 1992-1993 to 580 students in 1993-1994. The program allows students in any type of scouting program to earn a patch from the Authority by doing a series of water-related activities.

Various other water agencies in California, including the Western Municipal Water District, City of Santa Cruz Water Department and Riverside Municipal Water District, distributed Authority-developed curricula for use in their local schools.

Publications

The department's two publications were released on regular schedules in 1993-1994. Several other publications were produced for special projects and programs.

WaterTalk kept community leaders and interested citizens informed about the Authority's activities and current water issues. Regular editions of WaterTalk are published on a quarterly basis. In addition, special issues of WaterTalk were published focusing on long-term resource planning and the Emergency Water Storage Project.

Connections, the monthly employee newsletter, continued to keep personnel up to date about Authority plans and policies, major water-related developments and activities of fellow employees on and off the job.

The department also produced a regular newsletter featuring information and updates on the progress of the Emergency Water Storage Project. The newsletter was mailed to public officials, member agencies and citizens with an active interest in the storage project. Staff also helped to create a new informational brochure for the storage project.

In addition, the department developed and distributed "Quake/H2O," a concise fact card containing tips on earthquake preparedness and response. Some 250,000 cards were printed in English and 50,000 in Spanish for distribution to San Diego County households and businesses.

Joint Public Information Council

Staff worked with their counterparts at the member agencies on the Joint Public Information Council (JPIC). Council members met and exchanged support services and information in several valuable areas in 1993-1994. Programs within the Authority and the member agencies were strengthened as a result of the increasing level of cooperation and assistance.

During regular bimonthly meetings, JPIC members received briefings about Authority activities, actions taken by the Board of Directors, and water-related

issues. In turn, JPIC members offered information about individual member agency projects. The Authority offered special seminars on specific areas of concern to JPIC members, including a briefing by the program manager of the Bay-Delta Oversight Council. A workshop on the Metropolitan Water District's Integrated Resources Plan was videotaped and distributed for viewing.

In cooperation with JPIC members, a retail issues survey questionnaire was developed with an Authority consultant for administration by member agencies. The survey explored public attitudes toward rates, customer service, and water issues.

The Authority provided materials to JPIC members for use by their agencies, including new "Use Water Wisely" magnets and "Quake H2O" earthquake preparedness cards, both in English and Spanish.

A special JPIC subcommittee was formed to help organize the Authority's 50th Anniversary exhibit at the Del Mar Fair. Subcommittee members helped design the exhibit's physical layout, arranged for materials to construct it, and assisted the Authority in arrangements for staffing. Each member agency was assigned to staff the exhibit one day during the Fair's run. JPIC members designed displays and provided materials showcasing their agencies at the exhibit's information booth.

The department's Cooperative Communication Program provided five matching grants for a total of \$18,165.75 to member agencies for innovative communication campaigns. A committee of JPIC members reviewed applications and recommended appropriate funding. Projects funded in 1993-1994 include production of a North County Water Agencies calendar, pilot education programs, computer hardware and software, and a secondary teacher tour of Colorado River facilities.

50th Anniversary Activities

To commemorate the Authority's 50th Anniversary, the department organized a picnic in Balboa Park. Current and former Authority directors and staff, member agency representatives, government officials and other friends of the Authority gathered under the sun to talk about the Authority's legacy of providing a safe, reliable water supply to the people of San Diego County.

The 50th Anniversary was also the theme of an extraordinary exhibit at the annual Del Mar Fair. Visitors to the exhibit viewed historic photographs and learned about the Authority's early years while strolling through a beautiful xeriscape garden. Featured in the garden was a 20-foot section of 100-inch water pipeline that was used as a footbridge. Authority board members, staff, and member agency board members and personnel staffed the exhibit, talking to fairgoers and answering their questions.

EMERGING BUSINESS ENTERPRISE DEPARTMENT

The primary objective of the Authority's Emerging Business Enterprise (EBE) Program is to ensure EBEs are afforded an equal opportunity to compete for meaningful contracting and sub-contracting activities in the Authority's procurement process. A key strategy in influencing a positive outcome is the implementation of an aggressive outreach component.

During the past year, the Authority's outreach to EBEs resulted in direct contact with approximately fifty consultants, contractors, professional associations and/or community groups. A partial list of those professional association and community groups includes: Women Construction Owners and Executives, Asian Business Association, San Diego County Black Chamber, Business Innovation Center, Minority Supplier Development Council, Southeast Rotary Club, and Latino Builders. The Authority also conducted outreach to the EBE community by publishing quarterly advertisements in various minority and women focused media, as well as general circulated print media, of future contracting opportunities at the Authority. In addition, over 500 letters were mailed directly to CALTRANS certified EBEs informing them of sub-consulting opportunities that existed on Pipeline 6.

The department participated in the 3rd annual Contracting Connections Trade Fair and Educational Workshops held at the Del Mar Fairgrounds in October 1993. Over 500 attendees were present at the event. The department also took part in the 10 year anniversary of East Bay Municipal Utilities District's Minority and Women Business Enterprise Program, and provided key assistance in the opening of the Contracting Opportunity Center which had its official dedication in April 1994.

The department participated in approximately 15 pre-bid and pre-proposal meetings during the year. These outreach activities resulted in EBEs receiving 11.1% of prime and subcontract dollars awarded by the Authority. This is an increase of 1.4% over last year.



*Bridge crossing at Lake Hodges, December 1951.
(San Diego Historical Society, Photographic Collection)*

HUMAN RESOURCES

The Human Resources Department provides a variety of human resources-related support services that helps the Authority to achieve its organizational goals. During the fiscal year, the Department's staff included a director, three human resources analysts, and a human resources assistant. This staff provided support services for the Authority's eight departments and 166 budgeted positions.

Employment

As the beginning of the year, the Authority had 147 employees. By the end of the year this number increased to 163, a gain of 16 positions. During this period, the department's recruitment program assisted in hiring 22 new employees and promoting 18 employees. One employee retired and four employees left the Authority.

The following list indicates the positions filled during the year, by division:

Administrative Services Division

Accountant	Emerging Bus. Enterprise Asst.
Accounting Assistant	Human Resources Analyst
Accounting Specialist	(2) Info. Systems Specialists

Water Resources Division

Assistant Engineer	Water Resources Assistant
Clerical Assistant	Water Resources Associate

Engineering, Operations, and Maintenance Division

Assistant Engineer	Maintenance Specialist
Associate Civil Engineer	Mechanic
Engineering Aide	Right of Way Agent
(2) Engineering Technicians	Secretarial Specialist

Public Affairs

Public Affairs Specialist

Staff presented the Authority's first annual Equal Employment Opportunity/Affirmative Action Report issued under the Equal Employment Opportunity program. This report summarized the Affirmative Action efforts of the Authority for 1994, in achieving its Affirmative Action goals. Those

goals are to achieve workforce parity based on the actual availability of minorities and females in the San Diego county workforce for each occupational category utilized within the Authority. The efforts resulted in a 21.2% increase in minority employees and a 27.9% increase in female employees.

Staff also successfully coordinated the third year of the Authority's summer youth employment program and student intern program. Youths hired under the Authority's Summer Youth Employment guidelines work the summer months between June 15 and September 15. Student interns work throughout the school year. The departments of Human Resources, Administrative Support, Engineering, Finance and Planning are active participants.

Employee Relations

The Human Resources Department provides staff support for labor negotiations and ensures proper administration of labor contracts. Staff successfully coordinated the transition into the first year of the negotiated three-year agreement that will end June 30, 1997.

The department also has the responsibility to maintain the Authority's classification and compensation structure, based upon the principle of "equal pay for equal work." During the year staff conducted studies that resulted in a reclassification of several positions. Staff also conducted studies that resulted in the creation of four new classifications and four title changes effective fiscal year 1994-95. The new classifications and titles are:

NEW CLASSIFICATIONS

Assistant Systems Technician
Executive Secretary
Information Systems Assistant
Water Resources Aide

TITLE CHANGES

Accounting Technician
Board Secretary
Controller
Information Systems Technician

The Authority encourages employees to receive additional or continuing education. Costs for tuition and books are reimbursed by the Authority after employees successfully complete work-related courses of study taken on off-duty hours, at an accredited institution of learning. The Human Resources Department processed reimbursements of tuition and books for 10 employees during the fiscal year.

To boost employee morale and performance, the Authority has an incentive program that provides awards for Employee of the Quarter or Year, or for suggestions, attendance, and service. The recipients of these awards were honored at the annual Incentive Awards Banquet, hosted by the Authority and attended by employees, spouses, and guests. This year 10 suggestions were submitted by employees, of which 4 were judged to merit cash awards.

Health and Safety

The Human Resources Department is responsible for ensuring that the Authority's employees and property assets are protected. Actions are taken to prevent, control, reduce, or eliminate risks through the administration of safety and loss prevention programs, worker's compensation, employee benefits and employee assistance.

Staff evaluated the quality of the Authority's current health insurance programs. The results of the evaluation showed that the quality of care and benefits of both Kaiser and Prucare medical programs are satisfactory. Therefore, staff successfully negotiated contracts with both companies for calendar year 1995.

The department also satisfactorily processed several worker compensation claims and long-term disability claims, which included extensive counselling with employees and spouses.

Staff administered the Authority's injury and illness prevention program, which provides for a safe and healthy work environment and complies with all local, state, and federal safety and health laws and standards. Staff also assisted inspectors from various regulatory agencies and conducted a number of safety inspections of Authority facilities and equipment, making safety recommendations where necessary.

Safety training programs were conducted throughout the year, such as defensive driver training, earthquake preparedness, hazardous material handling, construction safety, confined space safety, CPR, and hearing protection.

Staff also continued to develop and maintain a safety resource center that contains a variety of safety reference materials, video tapes, and training aids for use by all employees and member agencies.

HUMAN RESOURCES



CHRIS ELMQUIST
Employee of the 1st Quarter



LAURA DAVIS
Employee of the 2nd Quarter



KATHY MORGAN
Employee of the 4th Quarter



SUE KING
*Employee of the 3rd Quarter
and
Employee of the Year*

GENERAL COUNSEL

The 1993-94 fiscal year marks completion of the second full year of the Authority's, in-house General Counsel's office. The state of the Authority's legal health is excellent. Despite increased activity, the budget was reduced for the second consecutive year and substantial savings were achieved in the amounts budgeted for outside counsel. This report highlights some of the important legal matters receiving attention during the 1993-94 fiscal year.

General

Day-to-day legal activities performed by the department include Capital Improvement Program (CIP) support and review of the environmental documentation necessary to accomplish it, maintenance of the Administrative Code, revisions to the Local Conflict of Interest Code, response to Director inquiries, review and approval of Board credentials for new directors, Association of California Water Agencies' Legal Affairs Committee, Brown Act compliance, bond and audit opinions, and review of documentation for the Authority's charges, taxes, and fees. Much that has been reported by other departments this year also required attention from this office, including the following:

- Revising, in conjunction with the Water Resources Planning Department, Administrative Code Article 27, the Authority's environmental protection procedures.
- Assisting the Engineering department and Authority's consultants in resolving the Traylor Brothers \$2.6 million Differing Site Condition claim on the Cowles Mountain Tunnel Project, by a Disputes Review Board. Negotiations resulted in an engineer's recommendation for a \$1.6 million settlement that will be on the Board's agenda at the July 14, 1994 meeting.
- Completing the Authority-City of San Diego reimbursement agreement for oversizing the La Mesa/Lemon Grove Pipeline under Interstate 8. At San Diego's request, the size was increased from 96 inches to 108 inches, and the City will pay the additional cost of \$1.48 million.
- Completing the utility and joint use agreements between the Authority and Caltrans for the Route 52 crossing. Reimbursement of \$1.6 million for the relocation of Pipeline 4 was secured.
- Revising the operating and construction agreements with Oceanside for the North County Distribution Pipeline to accommodate Oceanside's need for an emergency connection with Rainbow to serve the Morro Hills area. Additional agreements with Fallbrook and Rainbow for aban-

doing the Fallbrook/Oceanside line were required for the connection. Agreements were also required for four flow control facilities, two for Rainbow and one each for the Vista Irrigation District and Vallecitos. All of these agreements were drafted, revised, reviewed and approved by the affected member agencies and the Authority's Board.

The office also drafts, reviews and approves contracts, bonds, insurance policies, deeds, change orders and amendments. A total of 83 documents were processed for the last three months of the year.

Legislation

AB 842 (Frazee)

The San Diego Area Wastewater Management District (SDAWMD), a new agency, was formed by the Legislature to take over responsibility for the Metropolitan Sewer System from the City of San Diego. As originally established, the Authority was a voting member. Because of changed circumstances and to protect the Authority, the Board of Directors unanimously voted in February to accept the General Counsel's recommendation to seek legislation making the Authority a non-voting "Special Status Member Agency." The bill, AB 842, was carried by Assemblyman Frazee. It was passed, signed by Governor Wilson and published as Chapter 74, Statutes of 1994.

SB 7 (Kelly)

The Governor signed SB 7 (Kelly), Chapter 53, Statutes of 1993 which adds Section 13556 to the Water Code. It provides that any water supplier, including the Metropolitan Water District (MWD), may "acquire, store, provide, sell and deliver" reclaimed water for any beneficial use. This legislation should resolve the problems with MWD's local project funding for member agencies when portions of the reclaimed water would be sold to agriculture.

SB 376 (Bergeson)

The Authority worked with its legislative representatives, ACWA and Senator Bergeson's staff to clarify "standby or immediate availability charges" that were not covered by the new Brown Act Notice. The bill modifies the Brown Act to provide notice requirements for "new or increased assessments."

Endangered Species

The potential disruption of the Authority's ongoing construction projects from the federal listing of California gnatcatcher (*Poliophtila californica californica*) under the Endangered Species Act was one of this year's most serious legal concerns. A Section 7 Consultation on the gnatcatcher, in cooperation with the U. S. Navy, was successfully completed. The Biological Opinion issued by the U.S. Fish & Wildlife Service for the Authority's CIP was approved by the Board and the Navy in August. Work was also done with staff

to implement the opinion, including preparing documents for the acquisition and management of the required mitigation property.

Escrow for the Authority's purchase of 261 acres of gnatcatcher mitigation property closed January 27, 1994. In addition, an Interim Habitat Management Plan, which protects the long-term viability of the site, was signed by the Service and the General Manager.

Waterhog Registration

The Authority originated the "Don't be a Waterhog" slogan and a drawing of the "Waterhog." "Waterhog" materials include advertising and promotional trade pieces, film products used for educational purposes, printed materials, video tapes, camera-ready art and musical jingles. The Authority filed for and received federal and state protection of the rights to control the use of the materials. The registrations must be renewed prior to the year 2000.

Desalination

The San Diego Gas and Electric Company filed an Application before the Public Utility Commission of the State of California (PUC) for, among other things, a Certificate of Public Convenience and Necessity for the South Bay Repowering. Since the Authority was evaluating the feasibility of a desalination project that interrelated with the repowering, it was necessary to monitor the proceeding. The General Counsel's office also monitored an adjudicatory proceeding pending before the California Energy Resources Conservation and Development Commission (CEC) relating to the South Bay Repowering. Active participation before the PUC and CEC was halted when the South Bay Desalination Project was put on hold because SDG&E decided to withdraw its applications for the repowering project.

Emerging Business Enterprise Program

The Minority Business Enterprise and Women Business Enterprise (MBE/WBE) issue is being litigated across the country. Recent court decisions require evidence of past discrimination before race or gender-conscious preferences can be used in the award of public contracts. All of the applicable authorities and the text of the Authority's Emerging Business Enterprises (EBE) program were reviewed. The Authority's program gives all potential bidders a fair opportunity to compete. It does not "set aside" a specific percentage for minority or women-owned firms, and does not deny other firms the opportunity to submit a bid. The program is implemented on a case-by-case basis, with individual anticipated levels of EBE participation set following review of the scope of work by the EBE compliance officer. Revisions are underway that will allow continued effective enforcement of this program. A

decision on a disparity study for the Authority to document past discrimination was deferred by the Board pending results from the City of San Diego's study.

Federal Energy Regulatory Commission

Substantial attention was required this year for two major projects under the jurisdiction of the Federal Energy Regulatory Commission (FERC), an area of operations new to the Authority. One of the projects involved a proceeding before the FERC, filed by SOCAL Energy Limited Partnership Consolidated Pumped Storage, to develop and operate a pumped storage project on San Vicente Reservoir. San Vicente Reservoir, owned by the city of San Diego, is being considered as an Authority Emergency Storage Project (ESP) site. It was necessary to monitor the proceeding and the Authority will assist the city in protecting the mutual interest in San Vicente.

Two ESP alternatives involve Lake Hodges and the Olivenhain Reservoir. The Authority decided it was necessary to protect these sites from private parties who might be interested in developing them to generate hydroelectric-electric power. The Olivenhain Municipal Water District and the City of San Diego consented to filing for a preliminary permit from FERC by the Authority and the Board directed this office to apply at the February 10, 1994 Board meeting.

The application was filed on February 14, 1994. The project now has the official title "The Olivenhain-Lake Hodges Pumped-Storage Water Power Project, FERC Project No. 11460 (OLH PSP)" and a complex formal regulatory process has begun. The CEC was notified because the 250 to 500 megawatts of power that could be generated, is of sufficient impact to be a material factor in the CEC's preparation of the 1994 Electricity Report for the State of California. The preliminary permit was approved by the FERC on May 20, 1994, effective May 1, 1994, for a term of 36 months. During that time, the Authority must perform economic analyses, preliminary engineering, environmental studies and other work necessary to decide whether or not to proceed with preparation of a development application to construct and operate the project.

Metropolitan Water District

Support for the Authority's Metropolitan Water District (MWD) Delegation continues to be a priority. Work was done on the Section 135 preferential rights question. It was under review at MWD, and materials were prepared to assist the Authority's Delegation in making MWD fully aware of the Authority's position. Discussions were also held with MWD's attorneys about issues relating to a disparity study for the District's MBE/WBE program. MWD's new revenue structure was reviewed. Materials were sent to member

agency attorneys, and this office will work with them and staff next year on the implementation of the complex new revenue structure.

The issue of whether or not service to agriculture is "surplus" under Section 132 of the MWD Act required attention. A letter detailing the Authority position that much of San Diego County's agricultural production is a Municipal & Industrial use, which pays full price and is entitled a firm supply, was prepared for MWD's General Counsel. While the problem is not resolved, progress has been made. The new discounted interim agricultural water rate program implicitly adopts the Authority's position by limiting interruptions during droughts to users contracting for the discounted rate. Acceptance by MWD of a definition that surplus cannot include water needed by the Authority for all beneficial uses and must be limited to service outside MWD's boundaries will be pursued.

The MWD and Authority General Counsels cooperated on a recommendation for an appropriate response to the State Department of Water Resources' initial decision to allocate State Project water based on "need" without regard to financial payments or contract rights. The Authority Board, at the January 13, 1994 meeting, authorized legal action in support of MWD, if determined necessary by the General Manager and General Counsel. Although a confrontation was avoided by a change in the State's position and litigation was not required, it will be necessary to continue working with MWD to protect its rights in the State Project.

The General Counsel participated in MWD's assembly process that developed a draft of MWD's first Integrated Resource Plan (IRP). Work will be required next year as the Plan, a revised drought strategy, and an amended IRP move to a decision. This is a period of unprecedented change at MWD, and it remains to be seen if an acceptable level of reliability at an equitable price can be achieved.

Litigation

Despite an increase in litigation this year from the acceleration in the pace and scope of the Authority's activities, substantial savings were achieved in expenditures for outside counsel. Cost control from the active management of outside counsel and cost savings from an expanded capacity to keep some litigation "in house," are important office priorities. The majority of money budgeted for litigation in the operating and capital budgets was saved.

Water Quality Association v. City of Escondido. The Authority supported Escondido and its water quality ordinance against attacks from a trade group representing part of the water softener industry. Judge Jeffrey Miller denied WQA's preliminary motion for a full evidentiary trial on the CEQA cause of action, and the case was assigned to the Honorable David B. Moon, Jr.

Arguments concerning the Petition for Writ of Mandate on the CEQA cause of action were heard October 12, 1993. The Authority's General Counsel appeared as an intervenor to explain the importance of the ordinances to the development of reclaimed water for the region. Judge Moon ruled in favor of the City and the Authority and rejected WQA's CEQA challenge.

Trial on the remaining issues took place in December. The judge found for Escondido in deciding the ordinance did not take private property in violation of the Fifth Amendment, violate WQA's procedural due process rights, deny WQA's substantive due process rights, deny WQA equal protection of the laws or violate Water Code sections 13550 and 13551. The court expressly found Escondido had good reasons for adopting the ordinance and that its efforts to reclaim water were "laudable and farsighted." However, the court also ruled that Health & Safety Code sections 4045-4048 give the public a right to soft water, that section 6.5 of the ordinance restricted that right and was, therefore, preempted by state law. As a result, Escondido was restrained from enforcing Section 6.5 of its ordinance and can no longer prohibit installation of self-regenerating water softeners within the Hale Avenue service area or remove existing on-site regenerative water softeners upon resale of residential property.

As directed by the Board, this office will support the City of Escondido in its appeal of Judge Moon's decision. Amicus briefs supporting the Authority will be filed by MWD, the League of California Cities, ACWA, the California Association of Sewer Agencies, and the State Water Resources Control Board. Preparation of a brief for the Authority, coordination of the amicus participation and argument of the case before the Court of Appeal will be a priority matter next year.

Chatham Brothers. The Superfund hazardous waste cleanup of the Chatham Brothers Escondido Yard is another in-house case that requires attention. The Executive Committee of attorneys representing 52 companies responsible for the Site has approved a budget of \$6 million for the first stage of the cleanup effort. A proposed "de minimis" settlement that would limit the Authority's exposure was reviewed. Ample funds to cover the Authority's exposure remain from the insurance settlement previously approved by the Board. Since it is not possible to eliminate all future liability in return for a payment, the Authority will not participate as a member of the de minimis settlement group. We will monitor the progress on removing the contaminants to protect water quality in Lake Hodges.

New Cases

Despite a good record of construction practice, the increasing size and pace of the Authority's CIP projects generated some litigation. Nine new cases

were filed against the Authority during the year. Five of the new cases resulted from construction by PCL Civil Constructors on the La Mesa/Lemon Grove Project, Pipeline 4 Extension Phase I in the vicinity of 70th Street and El Cajon Boulevard. The trench near the intersection caved in on June 9, 1993. One injury and one fatality resulted, and three cases were filed as a result of this accident. Additionally, six businesses allegedly impacted by the project's construction have joined in two cases seeking payment for lost business. Two personal injury cases resulted from accidents in construction zones and two involved construction disputes with subcontractors. All the cases were defended, either in-house without any outside counsel expense or through active monitoring after the defense was accepted by the contractor. Three of the cases were finally resolved at no cost to the Authority, and similar results are expected for the other six next year.

Ongoing Litigation

Acton and Ames v. SDCWA. The Plaintiffs won a \$408,423 jury verdict in this personal injury case. They were employees of a subcontractor to the Kiewit Pacific Company, injured while welding inside the San Marcos Pipeline. The Authority and Kiewit were defended by the subcontractor's insurance company. A 10 percent share of responsibility for the verdict was assigned to the Authority. Motions for a New Trial or a Judgment Notwithstanding the Verdict have been made and, if necessary, an appeal will be filed. All costs for the defense and the Authority's share of any judgment will be paid by the subcontractor's insurer.

SDCWA v. Kerr. This fence encroachment case is pending in the Fourth District Court of Appeal. The Authority's reply brief presents the argument that, regardless of the mistake made by the Authority's employee, who told the Kerrs the fence was allowed, the most they could have obtained was a right to be paid for the cost of their encroachment. Oral argument was requested on July 22, 1993. Arguments are scheduled about one year from the request date. It is anticipated the appeal will be heard in August-September, 1994.

Millard dba Tekdraulics v. Papac. Papac, the Authority's contractor on the Escondido Pump Station, has substantially compromised their \$390,000 claim. Black & Veatch, the project's design engineer has been defending the Authority and will pay \$30,000. A change order was processed in accordance with normal contract procedures to authorize a \$10,000 extra work payment. It will also grant various time extensions, resolve delay claims and close out the contract. The lawsuit continued against the remaining defendants. A motion for a determination that the settlement with the Authority and Black & Veatch was in good faith was approved, and the case has been closed.

Right of Way Litigation

Results in the Authority's eminent domain litigation were excellent again this year. Almost without exception, the cases were resolved without trial at amounts substantially tracking the Authority's appraisals.

Pipeline 5. A decision, for the Authority, by the Fourth District Court of Appeal in the Mireiter case was granted a re-hearing before it was final. Additional arguments were heard, and the court was urged to reaffirm its opinion, which was similar to decisions by other state courts in Arkansas, Idaho and New York. Holding that subsequent knowledge of pre-existing conditions must be considered by the jury in valuing property. The court on October 4, 1993 again ruled for the Authority. The property owners petitioned the California Supreme Court for a hearing, but this petition was denied. It has now been finally established in a "case of first impression" that a jury must consider evidence like vernal pools, which reduce fair market value, that is discovered after the date of value. The case has been returned for a new trial to the San Diego County Superior Court.

Lower Otay Pipeline P4EII. This project required filing 12 cases to acquire 28 parcels necessary for construction. Despite the litigation, the Authority continued to work cooperatively with the owners to reach mutually agreeable settlements. All but two of these cases were resolved without trial. The Roark and Jensen cases required extensive pre-trial hearing and all issues were resolved for the Authority. The Authority's final offers were accepted on the first day of trial. All the right of way for the Lower Otay Pipeline was acquired this year.

Pipeline 2A. Appraisals for 18 remaining parcels of the 68 required for this North County project were reviewed and approved for a total of \$740,375. They included most of the material valuation problems. A public hearing on a Resolution of Necessity to condemn was held at the January 13, 1994 Board meeting. Eleven cases were filed during March for the first group of parcels. Three more complaints were filed in June. One parcel is under the protection of the bankruptcy court, and proceedings were filed seeking the court's permission to proceed. As of the date of this report, 33 of the parcels were either in escrow or covered by an Order of Possession.

North County Distribution Pipeline. Appraisals were approved for 13 parcels for the project totaling \$671,130. A hearing before the Board is scheduled for July, 1994 on the Resolution of Necessity to condemn. The cases should be filed shortly thereafter. The one single-family home required for the project was acquired and the relocation plan approved and executed. The Vista Valley Country Club (VVCC) property continues to be the most difficult acquisition for this project, and a series of meetings were held with the Authority's experts and the homeowners' association board, which operates

the golf course for its members. Unless the Association substantially lowers its \$1 million demand, litigation may be required.

Pipeline 5 Diversion Structure. The Authority and Vallecitos Water District are coordinating the acquisition of property required for the construction of a major diversion structure for Pipeline 5 and the construction of a 52-million gallon reservoir, respectively. The Authority needs four acres and the Vallecitos Water District 30 acres from an adjacent parcel owned by the same party. Vallecitos is ready to file condemnation, while the Authority is in the appraisal stage. It is anticipated that this will be a complicated acquisition, because of the agricultural businesses and a private well that are located on the properties.

Other Matters

Del Dios Pipeline Break Claims. The October 30, 1993 failure of the Del Dios Pipeline 4 and subsequent emergency drain-down of the aqueduct caused some property damage. The Joint Powers Insurance Association promptly and fairly adjusted most of the claims. However, the Molacek, Seaton, Benson, and Rubin claims required additional attention. An early solution that will avoid unnecessary litigation expenses is being pursued.

P4EII - Sweetwater Canyon Reimbursement. The Engineering Department was assisted in obtaining reimbursement for a portion of the cost of the Pipeline 4EII Sweetwater Canyon realignment change order, which resulted from a survey error in the vicinity of the Sweetwater Dam. After extended negotiations the designer and construction manager for the project, ASL Consulting Engineers and Parsons Brinckerhoff Construction Services, respectively, agreed to contribute \$108,000 to a resolution of the claim. The settlement was approved by the Board at the April 14, 1994 meeting.

Bonita Golf Course Dispute. For many years, the Authority used Conduit Road near the Sweetwater Dam to access the Second Aqueduct across property owned by Crockett, Inc. (Bonita Golf Course). It was thought to be a county road, which also was available for the Pipeline 4EII South Bay Pipeline Construction Project. A surveyor found evidence it might be a private road used by the Sweetwater Authority, as successor in interest to the old Kimball Brothers Water Company. Since the Authority needed access for patrol and maintenance of its pipelines and structures, as well as construction access for P4EII, negotiations with Sweetwater commenced. At issue was a complex matter of property rights complicated by an unsettled claim against the Authority's contractor for P4EII, Kiewit Pacific, for alleged damage to the golf course during construction of the pipeline. After extensive negotiations and prior to incurring delay damages by the contractor, the problem was resolved. Kiewit adjusted the damage claim, the Authority obtained a permanent easement across the golf course, and mutual releases were exchanged.

METROPOLITAN WATER DISTRICT MEMBERSHIP

The Metropolitan Water District of Southern California (MWD) is the primary water importer for most of coastal Southern California, delivering supplies to 142 incorporated cities in Ventura, Los Angeles, Orange, San Bernadino, Riverside, and San Diego counties. Water imported by MWD comes from two sources: the State Water Project (SWP) and the Colorado River Aqueduct (CRA). The Authority is one of the 27 MWD member agencies that are listed in Figure 13. All of the Authority's supplies are imported through MWD.

The MWD service area is shown in Map 4. This area encompasses 5,154 square miles, of which less than a square mile was added last fiscal year. The Authority's 1,420-square-mile service area represents 27.5 percent of the MWD total. MWD supplies water to an estimated 15.7 million people, of which 2.60 million, or 17 percent, live in San Diego County.

The Authority and MWD were both formed under state legislation, and both agencies operate in a similar fashion. Both agencies establish policy through a board of directors. Each director on the board is appointed by the chief executive officer of the agency represented, subject to approval from its legislative body.

Authority Representatives on MWD Board

MWD policy entitles each member agency to a minimum of one director. An additional representative may be appointed for each full three percent of the total MWD assessed valuation which lies within the member agency's boundaries. The Authority has six representatives on MWD's Board, all of whom are members of the Authority Board. During fiscal year 1994, these directors included Christine Frahm, Harry Griffen, Francesca Krauel, Dale Mason, Joseph Parker, Mark W. Watton, and John M. Leach.

Frahm served as chair of Special Audit Committee, as vice chair of Engineering and Operations Committee, and as a member of the Executive, Legal and Claims Committees, Ad Hoc Committee on Energy and Desalination, and Special Committee on Financial Policy. Griffen, who has served on the MWD Board for 31 years, served as a vice chair of the Executive Committee, and a member of the Water Problems, Finance and Insurance, and Special Audit Committees, and Committee on Legislation. Krauel served as chair of the Legal and Claims Committee, and a member of the Executive and Organization and Personnel Committees. Mason served as chair of Finance and Insurance Committee, and as a member of the Executive and Water

METROPOLITAN WATER DISTRICT MEMBERSHIP

Problems Committees, and Special Committee on Financial Planning. Parker is a member of the Engineering and Operations and Land Committees. Mark Watton served as a member of the Land and Organizational and Personnel Committees.

By the end of the fiscal year, Authority representatives had a total of 13,223 votes out of a total of 87,155, or 15.17 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.

Assessed Property Value

Total assessed value of taxable property within the boundaries of the Metropolitan Water District was \$881.5 billion, as of the end of June 1994. Assessed value is determined by assessors from the counties served for use in levying 1993-94 taxes. These valuations were increased \$16.7 billion, or 1.9 percent, above the previous year's valuation of \$864.8 billion. An estimated 12.9 percent of this increase, or \$2.2 billion, occurred within the Authority's boundaries.

The assessed valuation of MWD established for 1994-95 is \$887.4 billion which includes \$133.6 billion for the Authority's valuation. The assessed valuation of the Authority is 15.2 percent of the MWD total. For actual amounts, see Appendix A.

Water Sales

The MWD delivered 1,753,689 acre-feet of water during fiscal year 1993-94. The Authority received 401,170 acre-feet, or 22.9 percent of MWD's total deliveries. During the fiscal year, nearly all of the Authority's supplies came from the CRA. In past years, the Authority has received a greater blend of water from the State Water Project. The Authority is working with MWD to identify ways which the MWD system can be operated so that the current blend can be increased.

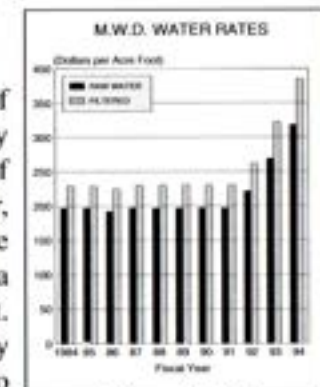
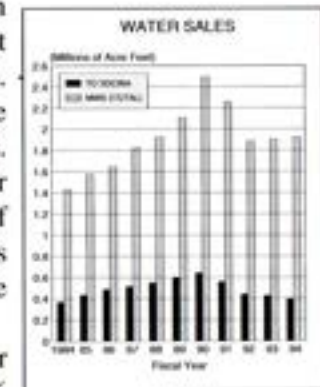
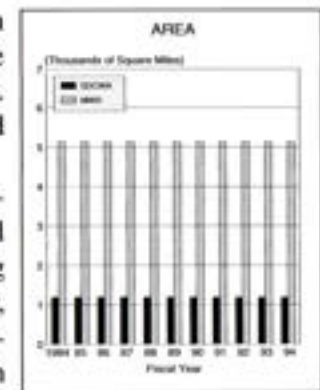


Figure No. 12

COLORADO RIVER BOARD MEMBERSHIP

The Colorado River Board is a public agency that represents California's interests in the water and power resources of the Colorado River. Six southern California water agencies are represented on the Board: the Authority, Metropolitan Water District, City of Los Angeles Department of Water and Power, Palo Verde Irrigation District, Coachella Valley Water District, and the Imperial Irrigation District. The Authority's representative on the Colorado River Board during 1993-94 was S.D. Anderson, who succeeded Anne Omstead on November 10, 1993. Anne Peay serves as the Authority's alternate to the Board.

A major issue this year was the designation of 1,980 miles of the Colorado River as critical habitat for four endangered fish species. The action, taken by the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act, is anticipated to have significant impacts on existing and future power generation capacity and could affect water diversions from the river. A joint multi-species conservation planning effort among Lower Division States/Indian Tribes was proposed as a method to address lower basin concerns.

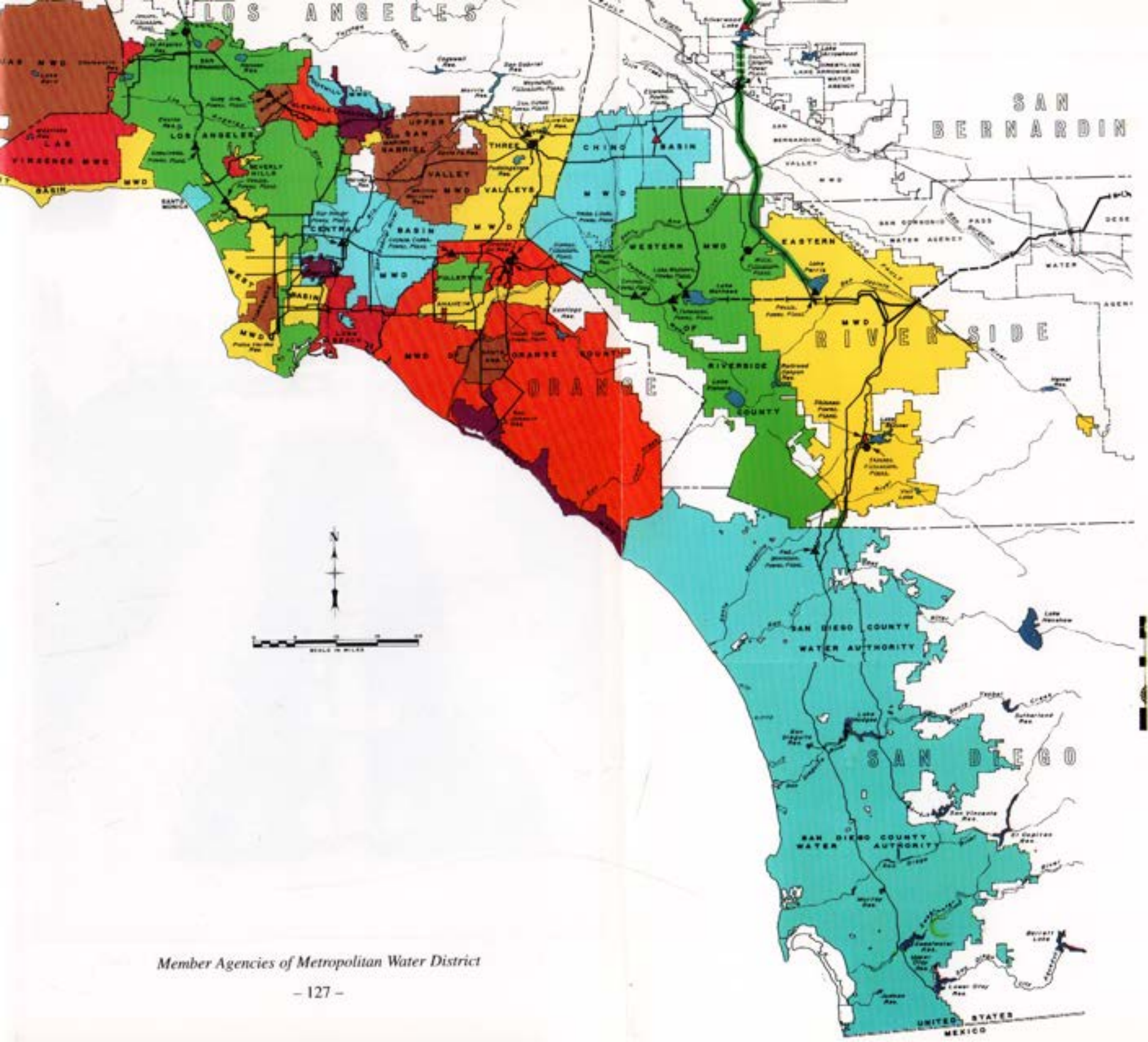
In addition, efforts by the seven Colorado River Basin States to ensure equitable management of water for all users were initiated in response to Nevada's need for more water. The Bureau of Reclamation has proposed new regulations affecting water entitlements if the states cannot reach a consensus solution. Specifically, discussions have focused on cooperation and innovative programs including interstate water banking, exchanges, and transfers to better manage available water resources within the entire basin. Efforts to protect existing levels of federal funding for salinity control programs and monitoring the EIS for the proposed Glen Canyon dam water release were additional topics requiring Board attention.

Other Board activities during the year focused on California's projected need for Colorado River water, and ways to ensure future supply reliability and manage demands within California. Examples of these programs include water conservation methods (such as lining the Coachella and All-American canals), water pricing, urban water reclamation, agricultural drainage and seepage recovery, groundwater recovery, agricultural land fallowing and water banking.

These management efforts are being pursued to keep the Colorado River Aqueduct full, and to meet the water requirements of other California Colorado River water users. An essential goal of the Board is to ensure that California's future demand for Colorado supplies does not exceed the state's basic apportionment, which is currently 4.4 million acre-feet (maf), plus provide for the transport, storage, and use of excess or surplus flow when available.

California's 1993-94 cumulative consumptive use by the agricultural agencies and Metropolitan was 3.7 and 1.3 maf, respectively. Total consumptive use by the three lower basin states was 7.8 maf, exceeding the basic apportionment of 7.5 maf.





Member Agencies of Metropolitan Water District



Five separate repair jobs at 42nd and Market Streets, June 5, 1949.

FORTY-EIGHTH ANNUAL REPORT

Fiscal Year Ending June 30, 1994

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TABLE 1
STATISTICAL SURVEY

	1992-93	1993-94	Percent Change
GROWTH OF SERVICE AREA			
Number of Agencies	23	23	0.0
Total Area-Acres	908,959	908,959	0.0
Population	2,572,002	2,604,483	+1.3%
Assessed Valuation	\$131,960,501,075	\$134,120,589,763	+1.6%
OPERATIONS			
Water Imported by Authority-af	433,134	401,498	-7.3%
Water Used by Member Agencies-af	551,835	536,907	-2.7%
Local Water Used-af	99,187	123,759	+24.8%
Authority Water Used-af	452,648	413,148	-8.7%
Miles of Pipeline	231	250	+7.6%
Miles of Patrol Roads Maintained	200	220	+10.0%
Number of Service Connections	87	88	+1.1%
FINANCIAL			
Water and Other Sales	\$150,586,000	\$161,968,000	+7.6%
Operating Expenses:			
Cost of Sales	\$126,642,000	\$134,381,000	+6.1%
Depreciation and Amortization	\$4,896,000	\$4,929,000	+0.7%
Operations and Maintenance	\$3,821,000	\$3,290,000	-13.9%
Planning and Reclamation	\$2,423,000	\$4,015,000	+65.7%
General and Administrative	\$5,666,000	\$5,849,000	+3.2%
Write down of Pamo Reservoir Project to estimated net realizable value	\$2,000,000	\$2,158,000	+7.9%
Total Operating Expenses	\$145,448,000	\$154,622,000	+6.3%
Operating Income	\$5,138,000	\$7,346,000	43.0%
Other Revenues, Expenses, and Losses:			
Property Taxes and In-lieu Charges	\$8,262,000	\$5,940,000	-28.1%
Water Availability Charges	\$15,823,000	\$18,054,000	+14.1%
Interest Expense	(\$14,306,000)	(\$6,972,000)	-51.3%
Interest Income	\$15,390,000	\$10,743,000	-30.2%
Total Other Revenues	\$25,169,000	\$27,765,000	+10.3%
Income before extraordinary loss	30,307,000	35,111,000	+15.9%
Extraordinary loss on bond defeasement	(\$10,978,000)	N/A	N/A
Net Income	\$19,329,000	\$35,111,000	+81.6%
Undesignated Retained Earnings at Beginning of Year			
	\$174,407,000	\$193,736,000	+11.1%
Undesignated Retained Earnings at End of Year			
	\$193,736,000	\$228,847,000	+18.1%

* 4E1 and 4E2 are completed but not currently in use.

TABLE 2
POPULATION GROWTH-COUNTY AND AUTHORITY AREA
1910-1994

(Includes Resident Military Personnel)

Year (as of April 1)	COUNTY		AUTHORITY		Percent of County Population in Authority
	Total Population	Average Annual Growth	Total Population	Average Annual Growth	
1910.....(1)	61,865	5,058			
1920.....(1)	112,248	9,741			
1930.....(1)	208,659	7,969			
1940.....(1)	289,348				
1946.....(3)	502,804	26,746 (3)	440,659	2,807	88%
1950.....(1)	556,808	42,478 (2)	451,886	50,083	81%
1955.....(4)	769,200	52,762 (2)	702,300	50,820	91%
1960.....(1)	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.....(1)	1,310,800	49,848 (5)	1,255,000	54,504	96%
1975.....(6)	1,560,038	49,632 (5)	1,527,520	54,027	98%
1980.....(1)	1,808,200	91,800 (5)	1,797,655	66,635	98%
1981.....(7)	1,900,000	44,000 (5)	1,864,290	25,075	98%
1982.....*(7)	1,944,000	42,035 (5)	1,889,365	45,222	97%
1983.....(7)	1,986,035	54,853 (5)	1,934,587	71,652	97%
1984.....(7)	2,040,888	42,471 (5)	2,006,239	40,761	98%
1985.....(7)	2,083,359	82,810 (5)	2,047,000	58,500	97%
1986.....(7)	2,166,169	74,490 (5)	2,105,500	75,500	97%
1987.....(7)	2,240,659	87,025 (5)	2,181,000	72,216	97%
1988.....(7)	2,327,684	90,492 (5)	2,253,216	92,992	97%
1989.....(7)	2,418,176	102,323 (5)	2,346,208	89,695	97%
1990.....(1)	2,520,499	28,234 (5)	2,435,903	49,789	97%
1991.....(8)	2,548,733	53,511 (5)	2,485,692	35,071	98%
1992.....(8)	2,602,244	46,353 (5)	2,520,763	51,239	97%
1993.....(8)	2,648,597	39,390 (5)	2,572,002	32,481	97%
1994.....(8)	2,687,987		2,604,483		97%

- (1) County population from U.S. Census Bureau Reports.
(2) Authority population based on U.S. Census Bureau Reports.
(3) Based on Special 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 Department of Planning and Land Use, San Diego County.
(8) Population estimates by State Department of Finance as of January 1.
* Corrected estimate by Integrated Planning Office, San Diego County.

TABLE 3

AREA - AUTHORITY MEMBER AGENCIES

Area Within Authority

	Changes		As of 6/30/94 (acres)	Percent of Total Authority Area 6/30/94
	As of 6/30/93 (acres)	During Year (acres)		
Carlsbad M.W.D.	20,374	266	20,640	2.27
Del Mar, City Of	1,159	0	1,159	0.13
Escondido, City Of	(2) 21,569	0	21,569	2.37
Fallbrook P.U.D.	(3) 27,988	0	27,988	3.08
Helix Water District	(4) 31,292	0	31,292	3.44
National City	5,577	0	5,577	0.61
Oceanside, City Of	26,575	0	26,575	2.92
Olivenhain M.W.D.	(5) 30,804	-273	30,530	3.36
Otay W.D.	(6) 63,062	0	63,062	6.94
Padre Dam M.W.D.	(7) 54,539	0	54,539	6.00
Pendleton Military Res.	134,625	0	134,625	14.81
Poway, City Of	23,214	0	23,214	2.55
Rainbow M.W.D.	47,237	23	47,260	5.20
Ramona M.W.D.	46,524	0	46,524	5.12
Rincon Del Diablo M.W.D.	(8) 10,323	273	10,596	1.17
San Diego, City Of	210,626	0	210,626	23.17
San Dieguito W.D.	5,647	0	5,647	0.62
Santa Fe I.D.	10,179	0	10,179	1.12
South Bay I.D.	15,566	0	15,566	1.71
Vallecitos W.D.	(9) 28,496	75	28,571	3.14
Valley Center M.W.D.	(10) 61,022	0	61,022	6.71
Vista I.D.	(1) 19,772	-365	19,407	2.14
Yuima M.W.D.	12,792	0	12,792	1.41
TOTAL AUTHORITY	908,959	0	908,959	100
SAN DIEGO COUNTY	2,725,100	0	2,725,100	

(1) Does not include 37 acres overlapping in City of Escondido.

(2) Includes 1,177 acres overlapping in Valley Center M.W.D., 405 acres overlapping in Vallecitos W.D., 37 acres overlapping in Vista I.D. and 16,369 acres overlapping in Rincon Del Diablo M.W.D.

(3) De Luz included in Fallbrook's figures.

(4) Includes 13 acres overlapping in Padre Dam M.W.D.

(5) Does not include 30 acres overlapping in City of San Diego.

(6) Adjusted for incorrect 1991 data.

(7) Does not include 13 acres overlapping in Helix W.D.

(8) Does not include 16,369 acres overlapping in City of Escondido.

(9) Does not include 405 acres overlapping in City of Escondido.

(10) Does not include 1,177 acres overlapping in City of Escondido.

(11) Population in agencies other than cities was furnished by agencies.

(12) Estimated by agencies.

TABLE 3 (continued)

POPULATION - AUTHORITY MEMBER AGENCIES AND COUNTY

(Includes Resident Military Personnel)

Population - U.S. Census					Density of Population 1994	
1980 (11)	1990 (12)	Decade Increase 1980-90 Percent	1994 Estimate (12)	Annual Increase 1993-94 percent	Per Acres	Per Sq. Mile
31,500	54,400	73	57,706	0.00	2.80	1,789
5,040	5,215	3	4,860	0.00	4.19	2,684
64,100	105,515	65	117,338	1.19	5.44	3,482
18,925	23,966	27	26,498	0.23	0.95	606
203,500	226,928	12	231,363	0.20	7.39	4,732
47,200	51,488	9	52,932	1.73	9.49	6,075
77,800	128,500	65	145,404	2.46	5.47	3,502
23,000	43,480	89	46,445	2.00	1.52	974
51,600	95,000	84	99,929	1.52	1.58	1,014
89,000	112,000	26	121,900	0.20	2.24	1,430
33,150	50,000	-	50,000	0.00	0.37	238
33,620	44,368	32	46,689	0.87	2.01	1,287
7,800	13,442	72	14,693	0.00	0.31	199
16,000	32,000	100	33,500	0.00	0.72	461
13,800	25,000	81	26,300	0.00	2.48	1,589
849,600	1,118,282	32	1,194,950	1.49	5.67	3,631
30,900	34,657	12	35,821	1.91	6.34	4,060
14,700	19,335	32	19,800	0.17	1.95	1,245
99,200	106,243	7	110,500	1.92	7.10	4,543
24,200	47,235	-	55,983	1.82	1.96	1,254
10,200	16,900	66	20,014	1.42	0.33	210
51,000	76,729	50	90,000	1.69	4.64	2,968
1,820	1,820	0	1,858	0.43	0.15	93
1,797,655	2,432,503	35	2,604,483	1.26	2.87	1,834
1,808,200	2,509,914	39	2,687,987	1.49	0.99	631

SAN DIEGO COUNTY WATER AUTHORITY

TABLE 4

WATER USE AND AUTHORITY STORAGE
FISCAL YEAR 1993-94

(Compilation of data furnished by member agencies)

	SOURCE OF WATER (3)				TOTAL WATER USE AC. FT.	GROSS AREA (2) ACRES	ESTIMATED AREA SERVED BY WATER SYSTEM ACRES
	LOCAL SUPPLY		AUTHORITY SUPPLY				
	AMOUNT AC. FT.	PERCENT	AMOUNT AC. FT.	PERCENT			
Carlsbad M.W.D.	0.0	0.0	15,113.6	100.0	15,113.6	20,640	19,770
Del Mar, City Of	0.0	0.0	1,352.4	100.0	1,352.4	1,159	1,082
Escondido, City Of	8,705.8	34.5	16,536.1	65.5	25,241.9	21,569	19,070
Fallbrook P.U.D.	271.3	2.1	12,407.3	97.9	12,678.6	27,988	14,224
Helix W.D.	13,081.1	35.6	23,683.2	64.4	36,764.3	31,292	30,260
National City, City Of	5,647.0	94.4	333.0	5.6	5,980.0	5,577	5,103
Oceanside, City Of	594.8	2.3	25,790.5	97.7	26,385.3	26,575	26,514
Olivenhain M.W.D.	0.0	0.0	12,436.0	100.0	12,436.0	30,530	15,860
Otay W.D.	0.0	0.0	21,176.8	100.0	21,176.8	63,062	41,894
Padre Dam M.W.D.	0.0	0.0	18,635.5	100.0	18,635.5	54,539	21,805
Pondleton Military Res. (5)	0.0	--	65.5	--	65.5	134,625	NA
Poway, City Of	2.6	0.0	11,048.3	100.0	11,050.9	23,214	12,832
Rainbow M.W.D.	0.0	0.0	22,251.4	100.0	22,251.4	47,260	17,631
Ramona M.W.D.	169.0	1.9	8,534.9	98.1	8,703.9	46,524	46,524
Rincon Del Diablo M.W.D.	0.0	0.0	6,165.5	100.0	6,165.5	10,596	8,656
San Diego, City Of (1)	54,206.0	25.9	155,375.3	74.1	209,581.3	210,626	137,902
San Dieguito W.D.	3,752.7	51.6	3,520.7	48.4	7,273.4	5,647	5,492
Santa Fe I.D.	5,685.5	51.7	5,309.4	48.3	10,994.9	10,179	10,179
South Bay I.D.	14,644.6	93.3	1,044.8	6.7	15,689.4	15,566	12,690
Vallecitos W.D.	0.0	0.0	12,107.9	100.0	12,107.9	28,571	14,417
Valley Center M.W.D.	0.0	0.0	33,798.6	100.0	33,798.6	61,022	41,649
Vista I.D.	13,558.7	69.9	5,850.3	30.1	19,409.0	19,407	16,513
Yuima M.W.D.	3,439.8	84.9	610.7	15.1	4,050.5	12,792	4,140
Total and Average	123,758.9	23.1	413,147.7	76.9	536,906.6	908,959	524,207

- (1) Includes production by City of San Diego for areas outside City (not in Authority).
 - (2) Does not include overlapping areas as shown in Table 1.
 - (3) Figures include losses from transmission and distribution system but not from reservoirs.
 - (4) Per capita use excludes agricultural water use.
 - (5) Does not include 6,615.7af of local water use.
- N.A. - Not Applicable

GROSS AREA SERVED BY WATER SYSTEM PERCENT	WATER USE PER ACRE SERVED AC.FT./ACRE/YR	ESTIMATED POPULATION	MEMBER AGENCIES' POOLED STORAGE IN SAN VICENTE RESERVOIR			TOTAL QUANTITY IN STORAGE 6/30/94 AC.FT.
			STORED WATER WITHDRAWN DURING FISCAL YEAR			
			BY DELIVERY AC.FT.	BY EVAPORATION AC.FT.	BY SPILL AC.FT.	
95.8	0.76	57.7	0.0	46.0	0.0	798.5
93.4	1.25	4.8	0.0	0.0	0.0	0.0
88.4	1.32	117.3	0.0	0.0	0.0	0.0
50.8	0.89	26.4	0.0	46.0	0.0	798.5
96.7	1.21	231.3	0.0	0.0	0.0	0.0
91.5	1.17	52.9	0.0	0.0	0.0	0.0
99.8	1.00	145.4	0.0	92.8	0.0	1,595.3
51.9	0.78	46.4	0.0	15.4	0.0	266.1
66.4	0.51	99.9	0.0	46.0	0.0	798.5
40.0	0.85	121.9	0.0	61.6	0.0	1,064.3
--	--	50.0	--	0.0	--	--
55.3	0.86	46.6	0.0	0.0	0.0	0.0
37.3	1.26	14.6	0.0	15.4	0.0	266.2
100.0	0.19	33.5	0.0	61.6	0.0	1,064.3
81.7	0.71	26.3	0.0	19.0	0.0	318.4
65.5	1.52	1,194.9	0.0	0.0	0.0	0.0
97.3	1.32	35.0	0.0	0.0	0.0	0.0
100.0	1.08	19.8	0.0	0.0	0.0	0.0
81.5	1.24	110.5	0.0	0.0	0.0	0.0
50.5	0.84	55.9	0.0	15.4	0.0	266.2
68.3	0.81	20.0	0.0	15.4	0.0	266.2
85.1	1.18	90.0	0.0	0.0	0.0	0.0
32.4	0.98	1.8	0.0	2.8	0.0	53.8
57.7	1.02	2,604.4	0.0	437.4	0.0	7,556.3

Storage Account closed out June 30, 1994 by 8/94. Balance transferred to CWA Storage in S.V. Reservoir.

ANNUAL REPORT

GROSS AREA SERVED BY WATER SYSTEM PERCENT	WATER USE PER ACRE SERVED AC.FT./ACRE/YR.	ESTIMATED POPULATION	WATER USE (4) PER CAPITA AC.FT./CAP.YR.	WATER USED FOR AGRICULTURAL PURPOSES					PERCENT OF AGRICULTURAL WATER TO TOTAL USE	MEMBER AGENCIES' POOLED STORAGE IN SAN VICENTE RESERVOIR					
				FROM LOCAL SUPPLY		FROM AUTHORITY		TOTAL AC.FT.		TOTAL QUANTITY IN STORAGE 6/30/93 AC.FT.	PLACED INTO STORAGE DURING FISCAL YEAR AC.FT.	STORED WATER WITHDRAWN DURING FISCAL YEAR			TOTAL QUANTITY IN STORAGE 6/30/94 AC.FT.
				AMOUNT AC. FT.	PERCENT	AMOUNT AC. FT.	PERCENT					BY DELIVERY AC.FT.	BY EVAPORATION AC.FT.	BY SPILL AC.FT.	
95.8	0.76	57,706	0.24	0.0	0.0	1,491.4	100.0	1,491.4	9.9	844.5	0.0	0.0	46.0	0.0	798.5
93.4	1.25	4,860	0.28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.4	1.32	117,338	0.17	1,897.9	35.0	3,531.7	65.0	5,429.6	21.5	0.0	0.0	0.0	0.0	0.0	0.0
50.8	0.89	26,498	0.22	140.2	2.0	6,716.1	98.0	6,856.3	54.1	844.5	0.0	0.0	46.0	0.0	798.5
96.7	1.21	231,363	0.16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
91.5	1.17	52,932	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
99.8	1.00	145,404	0.16	0.0	0.0	2,400.2	100.0	2,400.2	9.1	1,688.1	0.0	0.0	92.8	0.0	1,595.3
51.9	0.78	46,445	0.24	0.0	0.0	1,437.6	100.0	1,437.6	11.6	281.5	0.0	0.0	15.4	0.0	266.1
66.4	0.51	99,929	0.21	0.0	0.0	303.8	100.0	303.8	1.4	844.5	0.0	0.0	46.0	0.0	798.5
40.0	0.85	121,900	0.14	0.0	0.0	1,096.5	100.0	1,096.5	5.9	1,125.9	0.0	0.0	61.6	0.0	1,064.3
--	--	50,000	--	--	--	--	--	--	--	--	--	--	0.0	--	--
55.3	0.86	46,689	0.22	0.0	0.0	587.6	100.0	587.6	5.3	0.0	0.0	0.0	0.0	0.0	0.0
37.3	1.26	14,693	0.30	0.0	0.0	17,820.5	100.0	17,820.5	80.1	281.5	0.0	0.0	15.4	0.0	266.2
100.0	0.19	33,500	0.17	0.0	0.0	2,843.2	100.0	2,843.2	32.7	1,125.9	0.0	0.0	61.6	0.0	1,064.3
81.7	0.71	26,300	0.21	0.0	0.0	703.2	100.0	703.2	11.4	337.4	0.0	0.0	19.0	0.0	318.4
65.5	1.52	1,194,950	0.17	0.0	0.0	690.5	100.0	690.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0
97.3	1.32	35,821	0.17	686.8	54.5	573.7	45.5	1,260.5	17.3	0.0	0.0	0.0	0.0	0.0	0.0
100.0	1.08	19,800	0.51	473.3	48.8	497.5	51.2	970.8	8.8	0.0	0.0	0.0	0.0	0.0	0.0
81.5	1.24	110,500	0.14	20.5	85.4	3.5	14.6	24.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
50.5	0.84	55,983	0.17	0.0	0.0	2,337.2	100.0	2,337.2	19.3	281.6	0.0	0.0	15.4	0.0	266.2
68.3	0.81	20,014	0.32	0.0	0.0	27,475.0	100.0	27,475.0	81.3	281.6	0.0	0.0	15.4	0.0	266.2
85.1	1.18	90,000	0.20	918.4	73.4	332.3	26.6	1,250.7	6.4	0.0	0.0	0.0	0.0	0.0	0.0
32.4	0.98	1,858	0.06	3,343.2	84.9	593.7	15.1	3,936.9	97.2	56.6	0.0	0.0	2.8	0.0	53.8
57.7	1.02	2,604,483	0.18	7,480.3	9.5	71,435.2	90.5	78,915.5	14.7	7,993.7	0.0	0.0	437.4	0.0	7,556.3

Amounts include non-certified agricultural water use.

Interruptible Pool Storage Account closed out June 30, 1994 by Board Action on 6/8/94. Balance transferred to CWA Storage in S.V. Reservoir.

**ASSESSED VALUATION, TAX AND WATER AVAILABILITY COLLECTIONS
FISCAL YEAR 1993-94**

MEMBER AGENCIES	Assessed Valuation-Secured and Unsecured				Area 6/30/94 Acres	1993-94 Valuation Per Acre	Tax Assessments To date	Tax Uncollected 6/30/94	Tax Collected	Interest & Penalties
	1992-93 Total	1993-94 Total	1993-94 Change	1994-95 Total						
Carlsbad M.W.D.	5,177,717,875	5,144,189,981	-0.6%	4,993,777,718	20,640	252,488	5,999,997	39,833	5,960,164	61,964
Coronado, City of (2)	0	0	0.0%	0	0	0	-13,331	0	-13,331	0
Del Mar, City of	732,509,475	781,668,486	6.7%	762,130,816	1,159	674,434	517,350	6,599	510,751	10,783
Escondido, City of	3,013,920,576	2,995,045,740	-0.6%	2,968,354,693	21,569	138,859	4,163,182	15,213	4,147,969	36,318
Fallbrook	1,330,705,962	1,365,788,785	2.6%	1,357,592,537	27,988	48,799	1,842,285	11,267	1,831,018	29,628
Helix W.D.	8,898,350,902	8,992,689,002	1.1%	9,205,704,210	31,292	287,380	16,699,777	52,514	16,647,263	110,548
National City, City of	1,053,702,827	1,318,518,707	25.1%	1,394,163,818	5,577	236,421	2,403,833	5,763	2,398,070	13,660
Oceanside, City of	5,259,633,916	5,325,309,131	1.2%	6,594,264,208	26,575	200,395	5,922,502	33,916	5,888,586	66,029
Olivenhain M.W.D.	4,367,033,605	4,445,763,801	1.8%	4,426,847,248	30,530	144,329	3,459,602	30,656	3,428,946	49,562
Otay W.D.	5,898,730,794	6,196,663,805	5.1%	6,312,178,524	63,062	98,263	5,206,573	56,269	5,150,304	80,875
Padre Dam M.W.D.	4,266,624,904	4,388,417,453	2.9%	4,526,572,769	54,539	80,464	5,457,023	27,187	5,429,836	85,661
Pendleton Military Res.	132,355,014	136,916,430	3.4%	138,584,438	134,625	1,017	2,224,571	8	2,224,563	80
Poway, City of	2,904,506,260	3,026,118,551	4.2%	3,083,581,301	23,214	130,357	2,702,614	12,581	2,690,032	38,820
Rainbow M.W.D.	1,472,747,336	1,494,183,862	1.5%	1,454,508,898	47,260	31,632	1,914,810	11,563	1,903,247	54,649
Ramona M.W.D.	1,375,095,672	1,433,112,131	4.2%	1,486,845,523	46,524	30,804	1,782,936	10,196	1,772,740	45,082
Rincon del Diablo M.W.D.	2,970,548,406	3,035,051,965	2.2%	3,015,732,245	10,596	294,009	3,157,765	20,018	3,137,747	36,766
San Diego, City of	62,840,649,828	63,544,933,587	1.1%	64,039,222,113	210,626	301,697	32,433,961	230,863	32,203,098	268,679
San Dieguito W.D.	2,236,119,048	2,280,386,395	2.0%	2,285,983,335	5,647	403,823	3,052,478	15,432	3,037,046	26,888
Santa Fe I.D.	3,219,954,859	3,295,936,521	2.4%	3,312,087,828	10,179	323,798	4,088,613	21,772	4,066,841	34,071
South Bay I.D.	4,286,711,677	4,179,555,555	-2.5%	4,254,886,309	15,566	268,505	8,378,193	25,546	8,352,647	47,431
Vallecitos M.W.D.	2,969,763,966	3,039,717,041	2.4%	3,102,538,723	28,571	106,672	2,934,070	17,217	2,916,853	36,847
Valley Center M.W.D.	1,523,815,777	1,575,688,346	3.4%	1,560,583,748	61,022	25,822	1,983,090	12,506	1,970,584	57,816
Vista I.D. (3)	5,862,987,387	5,953,287,732	1.5%	4,696,173,697	19,407	301,097	6,146,391	38,241	6,108,151	70,581
Yuima M.W.D.	166,315,009	171,646,756	3.2%	174,643,886	12,792	13,418	321,792	1,143	320,649	7,424
Total Authority	\$131,960,501,075	\$134,120,589,763	1.6%	\$135,146,958,585	908,959	\$147,554	\$122,780,078	\$696,302	\$122,083,775	\$1,270,162
San Diego County (1)	\$147,388,447,414	\$146,021,435,927	-0.9%	\$147,186,431,004						

(1) Excluding 1,450,000 acres of non-taxable land in San Diego County.

(2) Excluded from CWA.

(3) Bueno Colorado M.W.D. was dissolved and was annexed primarily to Vista Irrigation District.

LIABILITY COLLECTIONS

1994-95	Area 6/30/94 Acres	1993-94 Valuation Per Acre	Tax Assessments To date	Tax Uncollected 6/30/94	Tax Collected	Interest & Penalties
Total						
4,993,777,718	20,640	252,488	5,999,997	39,833	5,960,164	61,964
0	0	0	-13,331	0	-13,331	0
762,130,816	1,159	674,434	517,350	6,599	510,751	10,783
2,968,354,693	21,569	138,859	4,163,182	15,213	4,147,969	36,318
1,357,592,537	27,988	48,799	1,842,285	11,267	1,831,018	29,628
9,205,704,210	31,292	287,380	16,699,777	52,514	16,647,263	110,548
1,394,163,818	5,577	236,421	2,403,833	5,763	2,398,070	13,660
6,594,264,208	26,575	200,395	5,922,502	33,916	5,888,586	66,029
4,426,847,248	30,530	144,329	3,459,602	30,656	3,428,946	49,562
6,312,178,524	63,062	98,263	5,206,573	56,269	5,150,304	80,875
4,526,572,769	54,539	80,464	5,457,023	27,187	5,429,836	85,661
138,584,438	134,625	1,017	2,224,571	8	2,224,563	80
3,083,581,301	23,214	130,357	2,702,614	12,581	2,690,032	38,820
1,454,508,898	47,260	31,632	1,914,810	11,563	1,903,247	54,649
1,486,845,523	46,524	30,804	1,782,936	10,196	1,772,740	45,062
3,015,732,245	10,596	294,009	3,157,765	20,018	3,137,747	36,766
54,039,222,113	210,626	301,697	32,433,961	230,863	32,203,098	268,679
2,285,983,335	5,647	403,823	3,052,478	15,432	3,037,046	26,886
3,312,087,828	10,179	323,798	4,088,613	21,772	4,066,841	34,071
4,254,886,309	15,566	268,505	8,378,193	25,546	8,352,647	47,431
3,102,538,723	28,571	106,672	2,934,070	17,217	2,916,853	36,847
1,560,583,748	61,022	25,822	1,983,090	12,506	1,970,584	57,816
4,696,173,697	19,407	301,097	6,146,391	38,241	6,108,151	70,581
174,643,886	12,792	13,418	321,792	1,143	320,649	7,424
5,146,958,585	908,959	\$147,554	\$122,780,078	\$696,302	\$122,083,775	\$1,270,162
7,186,431,004						

Receipts in Lieu of Taxes	Misc. Tax	Total Collections To date	Amount Paid for Service Connections to 6/30/94	Total Amount Paid by Each Member Agency to 6/30/94
33,275	11	6,055,414	7,931	6,063,345
187	0	-13,144	0	-13,144
531	1	522,066	0	522,066
29	29	4,184,345	9,254	4,193,599
4,420	43	1,865,109	67,773	1,932,882
4,931	784	16,763,525	28,906	16,792,431
6,828	96	2,418,655	0	2,418,655
2,601	100	5,957,317	126,369	6,083,686
1,250	0	3,479,758	89,024	3,568,782
4,455	45	5,235,679	208,574	5,444,252
3,003	132	5,518,633	45,244	5,563,877
0	0	2,224,642	0	2,224,642
15	9	2,728,876	103,875	2,832,751
23,680	1	1,981,577	193,484	2,175,061
5,400	59	1,823,280	3,379	1,826,659
58,801	1	3,233,316	14,527	3,247,843
53,695,245	2,467	86,169,488	610,595	86,780,084
5,426	131	3,069,492	47,206	3,116,697
2,893	1,914	4,105,720	58,787	4,164,507
629,977	143	9,030,198	0	9,030,198
0	0	2,953,700	14,769	2,968,469
1,011	26	2,029,438	162,555	2,191,993
10,803	124	6,189,658	207,439	6,397,097
1,500	0	329,574	28,424	357,998
\$54,496,261	\$6,117	\$177,856,315	\$2,028,116	\$179,884,431

TABLE 8

SALES OF IMPORTED WATER - FISCAL YEAR 93-94

(All Figures in Acre-Feet except as noted)

MEMBER AGENCIES	6 MONTH TOTAL							1993
	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.		
Carlsbad M.W.D.	1,662.9	1,691.7	1,603.4	1,475.0	1,160.1	979.7	8,572.8	
Del Mar, City Of	166.6	174.5	137.9	90.9	98.8	73.7	742.4	
Escondido, City Of	115.0	1,623.5	1,198.4	705.1	401.0	1,465.0	5,508.0	
Fallbrook P.U.D.	1,553.1	1,665.4	1,520.9	1,337.2	891.5	747.3	7,715.4	
Helix W.D.	1,367.8	1,224.1	1,400.9	1,586.5	2,786.5	2,679.5	11,045.3	
National City and South Bay I.D.	6.1	33.6	1,318.6	0.0	0.0	0.0	1,358.3	
Oceanside, City Of	2,861.7	3,026.2	2,916.0	2,349.6	2,010.6	1,294.0	14,458.1	
Olivenhain M.W.D.	1,546.3	1,551.2	1,394.2	1,185.7	904.4	769.5	7,351.3	
Otay W.D.	2,428.4	2,369.0	2,229.3	2,019.8	1,376.7	1,334.9	11,758.1	
Padre Dam M.W.D.	2,263.8	2,268.0	2,042.6	1,834.2	1,332.9	1,161.3	10,902.8	
Pendleton Military Reservation	6.0	6.6	11.6	7.8	6.4	2.8	41.2	
Poway, City Of	1,331.8	1,449.7	671.7	1,688.7	937.3	620.2	6,699.4	
Rainbow M.W.D.	3,010.7	3,065.7	2,700.8	2,450.3	1,552.7	1,349.6	14,129.8	
Ramona M.W.D.	513.5	601.9	481.0	457.0	429.9	339.3	2,822.6	
Rincon Del Diablo M.W.D.	714.4	751.8	673.6	594.7	408.9	353.4	3,496.8	
San Diego, City Of	12,106.4	12,612.6	11,844.3	11,266.2	8,121.0	7,352.9	63,303.4	
San Diego W.D.	424.3	403.4	362.7	260.3	419.7	170.2	2,040.6	
Santa Fe I.D.	745.2	708.6	621.5	448.4	576.8	232.2	3,332.7	
Villeitos C.W.D.	1,379.0	1,435.5	1,358.1	1,188.3	889.2	732.3	6,982.4	
Valley Center M.W.D.	4,588.9	4,934.7	4,562.2	3,899.8	2,132.8	1,571.9	21,710.3	
Vista I.D.	605.4	427.5	419.1	347.3	525.3	746.3	3,070.9	
Yuima M.W.D.	150.4	158.5	144.5	101.2	7.4	9.7	571.7	
Total Sales To Agencies	39,547.7	42,183.7	39,633.3	35,294.0	26,969.9	23,985.7	207,614.3	
Total Sales To Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Purchased From Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Sales To Agencies and Others	39,547.7	42,183.7	39,633.3	35,294.0	26,969.9	23,985.7	207,614.3	
Total To Authority Storage	795.2	467.7	666.8	623.0	1,056.8	878.7	4,488.2	
Total From Authority Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Flow In Authority System	40,342.9	42,651.4	40,300.1	35,917.0	28,026.7	24,864.4	212,102.5	
Total Evaporation Losses From Pool								
Storage In San Vicente	60.2	58.4	48.0	35.4	19.7	15.0	236.7	
Total Spill Losses From SV Pool	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Evaporation From Seasonal Storage Program								
In Otay, Ramona, San Vicente, and								
Sweetwater Reservoirs	111.0	116.9	100.0	79.0	48.5	40.9	496.3	
Total Spill Losses From CWA in SV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Spill Losses From CWA in Otay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RATE OF FLOW								
To Agencies and Others	643.2	686.1	666.1	574.0	453.2	390.1	568.9	
To Authority Storage	12.9	7.6	11.2	10.1	17.8	14.3	12.3	
From Authority Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
In Authority System	656.1	693.7	677.3	584.1	471.0	404.4	581.2	

TABLE 8

(Continued)

MEMBER AGENCIES	6 MONTH TOTAL						1994	FISCAL YEAR TOTAL	FISCAL YEAR C.F.S.
	JAN.	FEB.	MAR.	APR.	MAY	JUN.			
Carlsbad M.W.D.	1,037.1	681.9	848.7	1,022.8	1,263.4	1,535.9	6,389.8	14,962.6	20.67
Del Mar, City Of	99.1	73.4	78.2	99.9	105.6	153.8	610.0	1,352.4	1.87
Escondido, City Of	1,785.5	774.3	1,287.9	1,701.9	1,683.6	2,658.9	9,892.1	15,400.1	21.27
Fallbrook P.U.D.	905.0	321.9	467.4	669.2	623.2	1,017.2	4,003.9	11,719.3	16.19
Helix W.D.	2,759.1	2,177.5	2,377.0	1,078.9	1,167.0	2,462.2	12,021.7	23,067.0	31.86
National City and South Bay I.D.	0.0	0.0	1.7	5.6	6.1	6.1	19.5	1,377.8	1.90
Oceanside, City Of	1,967.4	1,216.0	1,583.9	1,704.6	2,058.9	2,801.6	11,332.4	25,790.5	35.62
Olivenhain M.W.D.	848.7	424.5	608.6	813.7	965.5	1,423.7	5,084.7	12,436.0	17.18
Otay W.D.	1,562.0	825.1	1,262.1	1,565.1	1,774.9	2,429.5	9,418.7	21,176.8	29.25
Padre Dam M.W.D.	1,277.0	783.5	993.9	1,265.5	1,414.7	2,003.2	7,737.8	18,640.6	25.75
Pendleton Military Reservation	3.7	2.2	2.6	3.3	3.7	8.8	24.3	65.5	0.09
Poway, City Of	871.9	342.4	617.6	985.9	698.9	1,329.5	4,846.2	11,545.6	15.95
Rainbow M.W.D.	1,771.8	218.4	978.5	1,045.9	1,293.3	2,851.7	8,159.6	22,289.4	30.79
Ramona M.W.D.	380.5	135.0	192.8	311.6	719.9	2,414.9	4,154.7	6,977.3	9.64
Rincon Del Diablo M.W.D.	461.6	232.2	330.0	429.8	511.7	703.4	2,668.7	6,165.5	8.52
San Diego, City Of	9,948.0	6,881.7	11,000.6	12,279.0	14,717.4	20,877.6	79,704.3	139,007.7	192.01
San Diego W.D.	255.3	159.9	331.6	119.7	176.9	436.5	1,479.9	3,520.5	4.86
Santa Fe I.D.	340.8	140.6	353.7	135.8	252.9	749.8	1,973.6	5,306.3	7.33
Villeitos C.W.D.	874.5	492.7	630.0	806.8	929.0	1,380.5	5,113.5	12,095.9	16.71
Valley Center M.W.D.	2,406.0	385.0	877.1	1,873.0	2,171.8	4,375.4	12,088.3	33,798.6	46.69
Vista I.D.	846.2	129.5	646.2	275.3	65.6	391.9	2,354.7	5,425.6	7.49
Yuima M.W.D.	0.0	0.0	0.0	0.0	0.0	40.6	40.6	612.3	0.85
Total Sales To Agencies	30,401.2	16,397.7	25,470.1	28,193.3	32,604.0	52,052.7	185,119.0	392,733.3	542.47
Total Sales To Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
Purchased From Others	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00
Total Sales To Agencies and Others	30,401.2	16,397.7	25,470.1	28,193.3	32,604.0	52,052.7	185,119.0	392,733.3	542.47
Total To Authority Storage	618.1	552.0	1,076.4	606.5	757.0	666.2	4,276.2	8,764.4	
Total From Authority Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Flow In Authority System	31,019.3	16,949.7	26,546.5	28,799.8	33,361.0	52,718.9	189,395.2	401,497.7	
Total Evaporation Losses From Pool									
Storage In San Vicente	19.6	18.0	27.7	32.9	35.7	66.8	200.7	437.4	
Total Spill Losses From SV Pool	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Evaporation From Seasonal Storage Program									
In Otay, Ramona, San Vicente, and									
Sweetwater Reservoirs	57.8	51.2	84.6	103.3	112.1	206.4	615.4	1,111.7	
Total Spill Losses From CWA in SV	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Spill Losses From CWA in Otay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
RATE OF FLOW									
To Agencies and Others	494.4	285.1	414.2	473.8	530.3	874.8	515.6	542.5	
To Authority Storage	10.1	9.6	17.5	10.2	12.3	11.2	11.9	12.1	
From Authority Storage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
In Authority System	504.5	294.7	431.7	484.0	542.6	886.0	527.6	554.6	

TABLE 9

ASSESSED VALUATIONS AND TAX RATES

Fiscal Years 1945-46 to 1993-94

Fiscal Year	Secured Property	Public Utilities	Unsecured Property	Total	Tax Rate per \$100	
					Secured	Unsecured
1945-46	\$212,062,975	\$29,253,700	\$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	47,177,300	338,886,890	0.14	0.14
1949-50	290,351,875	42,429,140	45,743,200	378,524,215	0.10	0.10
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	443,977,005	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	545,272,880	69,243,550	70,629,790	685,146,220	0.10	0.10
1955-56	627,062,960	87,485,390	79,936,450	794,484,800	0.09	0.10
1956-57	690,824,400	101,224,290	97,950,800	879,999,490	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	128,479,290	128,124,720	1,121,887,090	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	165,696,720	159,954,740	1,442,375,290	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	201,245,370	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	1,423,375,590	213,362,470	151,698,520	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	147,740,730	1,927,254,740	0.11	0.11
1967-68	1,735,209,870	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	2,063,618,560	210,839,100	237,951,409	2,512,409,091	0.09	0.09
1970-71	2,348,151,943	216,378,300	276,932,717	2,841,462,960	0.09	0.09
1971-72	2,755,734,087	231,191,301	306,608,099	3,293,533,487	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	393,360,174	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	4,829,303,071	283,156,410	503,493,823	5,415,953,304	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	6,272,490,327	554,099,470	707,294,537	7,533,884,334	0.06	0.11
1979-80	7,624,459,863	660,454,810	837,758,367	9,122,673,040	0.04	0.06
1980-81 (4)	9,163,752,692	731,869,180	438,834,623	10,334,456,495	0.05	0.04
1981-82	41,759,646,912	3,457,486,860	1,692,548,096	46,909,681,868	0.01	0.0125
1982-83	46,670,563,147	4,136,558,170	1,971,803,569	52,778,924,886	0.00817	0.01
1983-84	50,057,533,413	5,275,693,400	2,190,834,774	57,524,061,587	0.004605	0.00817
1984-85	55,587,979,549	5,666,443,560	2,577,402,391	63,831,825,500	0.00709	0.004605
1985-86	62,444,546,244	6,086,772,100	2,856,824,972	71,388,143,316	0.00531	0.007090
1986-87	70,584,788,216	7,095,945,340	2,952,629,417	80,633,362,973	0.00461	0.005310
1987-88	78,886,134,523	7,460,884,810	3,660,711,360	89,967,730,693	0.004	0.00461
1988-89 (5)	87,712,729,304	91,081,209	4,189,167,191	91,992,977,704	0.00403	0.004
1989-90	98,726,472,817	96,688,505	4,861,091,518	103,686,252,840	0.00432	0.00403
1990-91	111,400,613,016	94,328,268	5,633,160,953	117,128,102,237	0.00395	0.00432
1991-92	120,622,046,693	144,065,193	5,269,623,758	126,035,735,644	0.00320	0.00395
1992-93	125,954,623,975	66,258,740	5,403,856,209	131,424,738,924	0.00332	0.00320
1993-94	127,958,013,175	128,034,024	5,476,380,101	133,563,327,300	0.00151	0.00332

(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, Homeowners Exemption, and allocation of the 1% assessment from the County of San Diego.
 (4) Assessed valuation changed to full market value as determined by County Assessor.
 (5) Public utilities assessed valuation and procedures revised by State Board of Equalization.

TABLE 9 (Continued)

**TAX LEVIES AND TAX COLLECTIONS BY FISCAL YEAR
(Includes in Lieu of Taxes)**

Fiscal Years 1945-46 to 1993-94

Tax Levy (3)	Collection of Current Year's Taxes During Fiscal Year	Percentage of Levy Collected During Fiscal Year	Adjustments of Prior Year's Levies	Collection of Prior Year's Taxes During Fiscal Year	Total Tax Collections	Accumulated Delinquent Taxes	Ratio Accumulated Delinquent Taxes to Tax Levy
\$96,131	\$94,656	98.47	--	--	\$94,656	\$1,474	1.53
107,808	106,753	98.09	--	1,090	106,843	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	398,491	12,904	3.24
450,405	441,242	97.97	978	7,699	448,941	15,346	3.41
594,603	585,417	98.46	(1,140)	12,567	597,984	10,824	1.82
652,335	640,239	98.15	4,213	9,942	650,181	17,191	2.64
709,678	695,200	97.96	1,295	12,638	707,838	20,326	2.86
803,375	788,734	98.18	(2,099)	12,140	800,874	20,726	2.58
874,774	861,461	98.48	576	13,056	874,517	21,560	2.46
965,006	946,445	98.06	958	12,890	959,335	28,189	2.92
1,178,885	115,265	9.78	--	13,347	128,612	36,462	3.09
1,436,270	1,408,277	98.05	(5,274)	16,647	1,424,924	42,533	2.98
1,624,733	1,586,169	97.63	(8,720)	21,501	1,607,670	30,874	1.90
1,783,785	1,718,575	97.44	(2,276)	31,477	1,750,052	62,330	3.53
1,816,449	1,775,932	97.77	(3,688)	38,134	1,814,066	61,023	3.36
1,910,019	1,862,973	97.54	(268)	36,825	1,899,798	70,975	3.72
2,000,067	1,948,853	97.44	(6,588)	42,596	1,991,449	73,003	3.65
2,101,023	2,033,032	96.76	2,503	44,794	2,077,816	98,714	4.70
2,154,994	2,090,637	97.01	(7,164)	54,333	2,144,970	101,573	4.71
2,175,276	2,129,996	97.92	(301)	64,473	2,194,469	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	2,173,348	103,963	4.76
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	3,984,998	125,502	3.13
4,673,400	4,597,610	98.38	(4,753)	42,611	4,640,221	154,107	3.30
5,336,375	5,223,483	97.88	(17,845)	78,632	5,300,115	172,522	3.23
6,012,964	5,928,085	98.59	34,543	109,718	6,037,803	182,216	3.03
7,111,999	7,063,080	99.39	(6,021)	87,193	7,170,273	117,921	1.66
5,956,033	5,802,438	97.42	--	134,444	5,936,882	137,027	2.30
5,549,222	5,420,190	97.67	(105,757)	137,072	5,557,262	23,275	0.42
7,164,231	7,076,598	98.78	181,346	137,762	7,214,360	154,472	2.16
7,150,025	6,886,178	96.31	73,743	228,215	7,114,393	213,847	2.99
6,690,619	6,634,619	99.16	197,022	164,354	6,798,973	302,515	4.52
6,598,403	6,460,324	98.06	(47,042)	178,479	6,638,803	205,073	3.11
7,239,670	7,030,608	97.24	176,805	283,045	7,313,653	298,895	4.13
7,181,483	7,092,760	98.76	40,938	158,696	7,251,456	269,860	3.78
6,269,310	6,053,170	96.55	53,304	166,944	6,220,114	372,360	5.94
6,309,666	6,057,897	96.01	95,635	462,595	6,520,492	251,769	3.99
6,044,731	6,106,942	101.03	380,264	180,037	6,286,979	389,785	6.45
5,153,457	4,720,332	91.60	(149,925)	239,860	4,960,192	433,125	8.40
4,207,830	4,319,988	102.67	177,898	207,775	4,527,763	265,961	6.32
3,880,365	3,921,541	101.06	64,817	146,204	4,067,745	441,873	11.39
4,131,288	4,039,336	97.77	6,973	244,431	4,283,767	465,716	11.27
2,181,318	2,019,402	92.58	(1,061)	221,610	2,241,012	350,232	16.06

TABLE 10
REVENUE DEDICATED TO FINANCE
CAPITAL IMPROVEMENT PROGRAM

Fiscal Year 1993-94

MEMBER AGENCIES	Water Availability Charges Collections FY 1993-94	Accumulated Amount Paid By Member Agency to 6-30-94	Capacity		Total Dedicated Revenue to 6-30-94
			Charges Collections FY 1993-94	Charges Collections to 6-30-94	
Carlsbad M.W.D.	\$278,793	\$1,433,152	\$229,251	\$898,191	\$2,331,343
Del Mar, City of	21,642	120,795	5,014	23,878	144,673
Escondido, City of	188,803	938,457	255,719	756,873	1,695,330
Fallbrook	266,804	1,274,729	26,658	236,434	1,511,163
Helix W.D.	630,598	3,091,537	169,193	674,070	3,765,607
National City, City of	81,102	403,994	0	0	403,994
Oceanside, City of	450,891	2,166,892	854,675	2,622,699	4,789,591
Olivenhain M.W.D.	347,007	1,711,843	84,094	264,850	1,976,693
Otay W.D.	636,034	3,464,745	1,122,966	2,785,879	6,250,624
Padre Dam M.W.D.	658,293	3,113,435	290,751	718,395	3,831,830
Pendleton Military Res.	2,607	13,329	0	0	13,329
Poway, City of	260,216	1,301,888	0	254,541	1,556,429
Rainbow M.W.D.	506,454	2,379,337	54,232	372,155	2,751,492
Ramona M.W.D.	441,452	2,165,259	92,175	260,960	2,426,219
Rincon del Diablo M.W.D.	278,250	1,372,060	17,875	119,805	1,491,865
San Diego, City of	3,468,835	16,705,650	3,200,567	9,155,119	25,860,769
San Diego W.D.	133,436	620,211	2,844	116,821	737,032
Santa Fe I.D.	133,922	726,265	28,534	96,131	822,396
South Bay I.D.	283,345	1,408,623	103,267	383,622	1,792,245
Vallecitos M.W.D.	300,242	1,491,976	260,653	1,347,990	2,839,966
Valley Center M.W.D.	598,411	3,110,192	67,778	418,606	3,528,798
Vista I.D. (1)	425,586	2,083,285	291,901	1,242,670	3,325,955
Yuima M.W.D.	85,851	451,814	0	9,832	461,646
TOTAL	\$10,478,574	\$51,549,468	\$7,158,147	\$22,759,521	\$74,308,990

(1) Bueno Colorado M.W.D. was re-organized into Vista Irrigation District in November 1993.

TABLE 11
SAN JACINTO TUNNEL WEST PORTAL
CHEMICAL CHARACTERISTICS OF NATURAL COLORADO
RIVER WATER

Year Ending June 30, 1994

Samples Taken at Entrance of San Diego Aqueduct by M.W.D.
Analysis by District Laboratory

Month	Total Hardness as mg/l CaCO3	Alkalinity as mg/l Total	Magnesium as mg/l	(PH)	Temperature When Sampled	
				Hydrogen Ion Concentration	Celsius	Fahrenheit
July	329	135	31.5	8.37	26	79
August	323	134	30.5	8.35	27	81
September	315	128	30.5	8.27	26	79
October	317	128	32.0	8.34	24	75
November	330	131	30.5	8.36	20	68
December	332	131	32.0	8.29	13	55
January	329	132	31.5	8.32	11	52
February	337	133	32.0	8.31	12	54
March	327	135	32.0	8.40	14	57
April	322	135	31.0	8.27	16	61
May	328	132	30.0	8.27	20	68
June	325	134	30.5	8.38	24	75

ANALYSIS - YEAR ENDING JUNE 30, 1994

(mg/l Except PH, Conductivity, and Temperature)

Constituents	Symbol	ANALYSIS		
		Average	Maximum	Minimum
Silica	(SiO2)	8.5	9.3	7.7
Calcium	(Ca)	79	82	74
Magnesium	(Mg)	31.2	32	30.0
Sodium	(Na)	105	113	97
Potassium	(K)	5.3	6.8	4.4
Carbonate	(CO3)	1	2	0
Bicarbonate	(HCO3)	160	165	156
Sulfate	(SO4)	284	298	263
Chloride	(Cl)	94	100	90
Nitrate	(NO3)	1.00	1.56	0.55
Fluoride	(F)	0.34	0.37	0.30
Boron	(B)	0.14	0.14	0.00
Total Dissolved Solids		689	718	657
Hardness as CaCO3-Total		326	337	315
Alkalinity-Total		132	135	128
Free Carbon Dioxide	(CO2)	1.3	1.5	1.1
Hydrogen Ion Concentration	(PH)	8.33	8.4	8.27
Electrical Conductivity umho/cm		1099	1132	1071
Temperature (Celsius)		19	27	11
Bromide	(Br)	0.10	0.11	0.09

TABLE 12

CHEMICAL CHARACTERISTICS OF BLENDED TREATED WATER

Year Ending June 30, 1994
 Samples Taken at Entrance of San Diego Aqueduct by M.W.D.
 and Analysis by District Laboratory

Month	Total Hardness as mg/l CaCO3	Alkalinity as mg/l Total	Magnesium as mg/l	(PH)	Temperature	
				Hydrogen Ion Concentration	Celsius	Farenheit
July	321	124	31.3	8.09	26	79
August	320	123	31.3	8.14	27	81
September	324	122	30.8	8.08	26	79
October	325	122	30.5	7.85	23	73
November	330	124	31.3	7.88	18	64
December	329	128	32.0	7.94	13	55
January	330	130	31.0	7.95	11	52
February	328	128	32.0	7.89	12	54
March	322	126	28.5	7.82	14	57
April	317	125	30.0	7.89	19	66
May	266	115	26.0	7.97	22	72
June	247	110	23.8	7.97	24	75

ANALYSIS - YEAR ENDING JUNE 30, 1994

(mg/l Except PH, Conductivity, and Temperature)

Constituents	Symbol	ANALYSIS		
		Average	Maximum	Minimum
Silica	(SiO2)	8.9	10.7	7.7
Calcium	(Ca)	76	81	59
Magnesium	(Mg)	30.0	33.0	23.5
Sodium	(Na)	105	115	88
Potassium	(K)	5	7	4
Carbonate	(CO3)	1	0	0
Bicarbonate	(HCO3)	149	160	134
Sulfate	(SO4)	273	292	200
Chloride	(Cl)	96	99	88
Nitrate	(NO3)	0.60	1.30	0.1
Fluoride	(F)	0.25	0.38	0.2
Boron	(B)	0.16	0.16	0.14
Total Dissolved Solids		669	702	389
Hardness as CaCO3-Total		312	332	246
Alkalinity-Total		123	131	110
Free Carbon Dioxide	(CO3)	2.3	4.5	0.9
Hydrogen Ion Concentration	(PH)	8.09	8.44	7.80
Electrical Conductivity umho/cm		1078	1121	958
Temperature (Celsius)		21	27	12
Bromide	(Br)	--	--	--
Total Trihalomethanes		42	68	25

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	10	04
1934-35	-	1,587,147,565	20	10
1935-36	-	1,873,531,020	37	20
1936-37	-	1,789,160,685	40	37
1937-38	-	1,827,265,725	40	40
1938-39	-	1,896,966,255	42	40
1939-40	-	1,910,152,190	49	42
1940-41	399,588	1,841,248,450	48	49
1941-42	399,875	1,909,599,934	48	48
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	2,158,731,425	48	48
1946-47	501,425	2,413,186,570	35	48
1947-48	546,573	3,443,212,822 (2)	34	35
1948-49	578,368	3,680,081,225	34	34
1949-50	585,194	4,181,812,855	34	34
1950-51	721,850	4,281,519,725	31	34
1951-52	995,130	4,674,664,040	28	31
1952-53	1,120,448	5,372,498,510	25	28
1953-54	1,368,038	6,015,691,980	23	25
1954-55	1,793,051	6,548,390,114	21	23
1955-56	1,876,256	8,514,868,335	19	21
1956-57	1,932,205	9,074,000,990	18	19
1957-58	2,046,189	11,225,906,510	18	18
1958-59	2,128,333	12,070,838,070	17	18
1959-60	2,171,290	12,714,205,470	17	17
1960-61	2,544,960	13,737,971,925	15	17
1961-62	2,647,014	14,803,202,587	14	15
1962-63	2,797,946	15,699,681,030	14	14
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	19,543,157,788	14	14
1966-67	2,901,421	20,979,150,165	14	14
1967-68	3,061,855	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	27,605,064,300	17	17
1971-72	3,090,303	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	13	14
1975-76	3,132,012	39,585,385,754	12	13
1976-77	3,132,800	45,695,542,697	12	12
1977-78	3,267,533	51,268,798,300	12	12
1978-79	3,268,337	53,573,470,118	10	12
1979-80	3,270,880	64,119,383,253	09	10
1980-81	3,272,079	69,390,300,019	079	09
1981-82	3,273,339	114,726,854,882 (3)	0198% (3)	0198% (3)
1982-83	3,277,011	353,335,259,307	0180%	0188%
1983-84	3,280,294	379,798,761,242	0237%	0160%
1984-85	3,280,954	419,659,047,899	0150%	0237%
1985-86	3,282,745	458,782,059,816	0144%	0156%
1986-87	3,286,400	505,419,663,679	0148%	0164%
1987-88	3,287,309	564,692,806,207	0112%	0148%
1988-89	3,288,247	596,900,358,568	0110%	0112%
1989-90	3,288,754	671,699,558,661	0121%	0110%
1990-91	3,291,520	750,967,873,309	0097%	0121%
1991-92	3,295,385	820,543,619,722	0089%	0097%
1992-93	3,297,793	864,798,971,806	0089%	0089%
1993-94	3,298,281	881,467,895,664	0089%	0089%
1994-95	-	887,411,680,840	0089%	0089%

(1) Includes secured, unsecured, and public utility valuations.
 (2) First year in which Authority assessed valuation was included in District's assessed valuation.
 (3) Effective FY 1981-82 assessed valuation reported at 300% of full value, and tax rates levied in percentage of full assessed value.

TABLE 14

**METROPOLITAN WATER DISTRICT ANNEXATION CHARGES
AND BALANCES ON AUTHORITY AREAS**

Member Agencies	Date of Annexation	Remaining Balance at 6/30/94
Annexation Charges Outstanding		
Del Luz M.W.D.	6-28-67	3,452,396.06 *
No. 1 Annexation of 1969	10-15-69	715,162.84 *
Fallbrook P.U.D.		
Fallbrook Community Air Par	12-22-69	100,675.47 *
Olivenhain M.W.D.		
No. 1 Annexation of 1965	2-11-65	33,638.65
No. 4 Annexation of 1967	11-13-67	25,400.19
Padre Dam M.W.D.		
No. 4 Annexation of 1970	8-3-70	65,311.85
Rainbow M.W.D.		
No. 3 Annexation of 1967	12-6-67	3,945,524.36 *
No. 5 Annexation of 1973	11-22-73	7,190.45
Ramona M.W.D.		
No. 3 Annexation of 1963	9-20-63	0.00
No. 4 Annexation of 1967	11-12-67	274,728.38
No. 5 Annexation of 1972	5-17-72	348,684.54
Rincon del Diablo M.W.D.		
No. 4 Annexation of 1972	11-2-72	30,352.70 *
San Diego W.D.		
No. 2 Annexation of 1972	12-8-72	162,985.28 *
Valley Center M.W.D.		
No. 2 Annexation of 1967	11-26-67	20,662.72
No. 3 Annexation of 1967	11-30-67	298,783.22
Yuima M.W.D.		
No. 1 Annexation of 1967	11-21-67	17,482.41
No. 2 Annexation of 1969	11-24-69	6,829.83
Pendleton Military Res.-Nuclear Generating Plant	12-16-77	1,541,690.33
Total		\$ 11,047,499.28
Annexation charges received from other annexed areas not listed above having no remaining balance		\$ 24,966,768.00

* Annual interest charge on outstanding balance is greater than tax levy based on maximum MWD tax rate of .1875% of assessed valuation (formerly .75/\$100 of A.V.).

TABLE 15

WATER SALES BY METROPOLITAN WATER DISTRICT

Fiscal Years 1941-42 to 1993-94

Year	To Member Agencies						
	Natural Water		Treated Water		Total to Agencies	To Others	Total
	Acres Feet	Percent	Acres Feet	Percent	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	2,026.4	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	113,205.7
1948-49	71,642.6	49	73,237.1	51	144,879.7	128.4	145,008.1
1949-50	69,306.0	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	58,184.5	385,652.5
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	6,523.2	736,417.0
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	688,881.8	66	348,092.6	34	1,036,974.4	3,677.0	1,040,651.4
1963-64	671,853.4	63	388,533.9	37	1,060,387.3	3,776.7	1,064,164.0
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	692,846.4	59	1,175,103.3	650.0	1,175,753.3
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*	655,058.0	52	593,180.0	48	1,248,238.0	955.0	1,249,193.0
1974-75*	721,970.0	54	607,013.0	46	1,328,983.0	653.0	1,329,636.0
1975-76*	735,100.0	53	653,154.0	47	1,388,254.0	994.0	1,389,248.0
1976-77*	560,124.0	40	829,773.0	60	1,389,897.0	569.0	1,390,466.0
1977-78*	508,036.0	40	757,270.0	60	1,265,306.0	22,019.0	1,287,325.0
1978-79*	434,450.0	36	777,173.0	64	1,211,623.0	24,256.0	1,235,879.0
1979-80	438,414.0	34	843,800.0	66	1,282,214.0	2,620.0	1,284,834.0
1980-81	487,833.0	33	975,177.0	67	1,463,010.0	588.0	1,463,598.0
1981-82	562,650.0	37	940,660.0	63	1,503,310.0	989.0	1,504,299.0
1982-83	314,190.0	26	912,172.0	74	1,226,362.0	207.0	1,226,569.0
1983-84	364,608.5	26	1,062,123.5	74	1,426,732.0	1,210.0	1,427,942.0
1984-85	455,061.0	29	1,119,443.0	71	1,574,504.0 **	934.0	1,575,438.0
1985-86	500,955.0	30	1,145,856.0	70	1,646,811.0 **	346.0	1,647,157.0
1986-87	568,812.9	31	1,252,783.6	69	1,821,596.5 **	1,508.0	1,823,104.5
1987-88	598,722.0	31	1,322,484.0	69	1,921,206.0 **	675.0	1,921,881.0
1988-89	745,767.3 **	35	1,362,428.6	65	2,108,195.9 **	694.0	2,108,889.9
1989-90	1,035,681.0 **	41	1,464,980.0	59	2,500,661.0 **	783.0	2,501,444.0
1990-91	889,972.0 **	39	1,373,777.0	61	2,263,749.0 **	0.0	2,263,749.0
1991-92	805,111.9 **	43	1,063,795.5	57	1,868,907.4 **	0.0	1,868,907.4
1992-93	656,133.0 **	34	1,254,996.0	66	1,911,129.0 **	0.0	1,911,129.0
1993-94	642,218.0 **	33	1,287,103.0	67	1,929,322.0 **	0.0	1,929,322.0

*Revised

**Includes deliveries of reclaimed water to Las Virgenes, Coastal MWD, Long Beach and MWD of Orange Co.

TABLE 16

WATER DELIVERIES AND LOCAL SUPPLIES
METROPOLITAN WATER DISTRICT CONSTITUENT AREAS

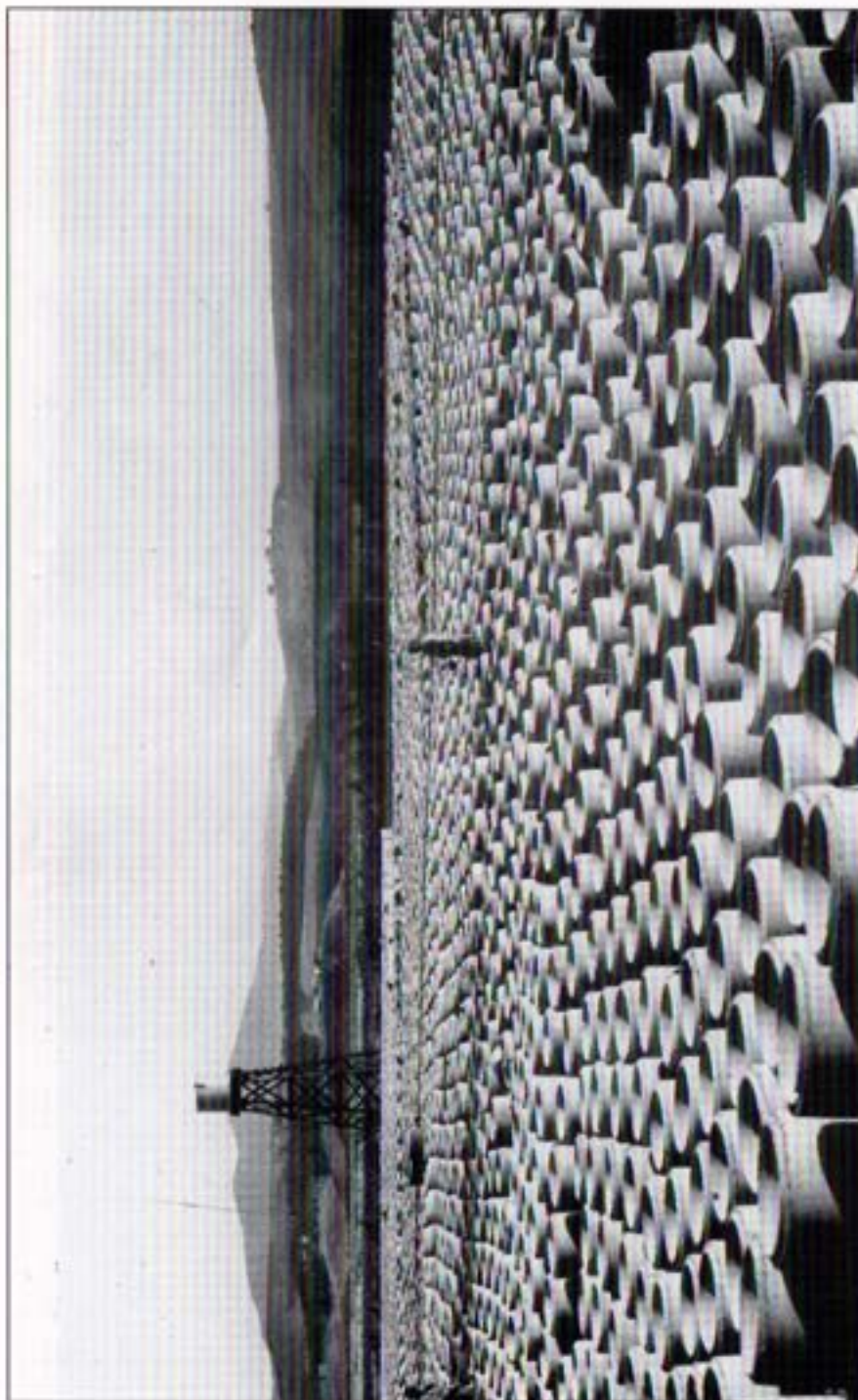
Figures Furnished by Metropolitan Water District (Acre Feet)

(1) M.W.D. Member Agencies	(2) Local M.W.D.		(3) Fiscal Year 1995-96		(4) Total Water Use (2)-(3)		(5) Local Water Supply		(6) Fiscal Year 1993-94		(7) Total Water Use (5)-(6)		(8) Difference in Totals (7)-(4)		(9) Percent Difference of Totals (8)/(4)		(10) Difference of M.W.D. Supply (6)-(3)		(11) Percent Difference of M.W.D. Supply (10)/(3)	
	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use	Water Supply	Use
Anaheim	50,861	22,795	73,656	43,420	23,533	66,853	43,420	0	13,014	13,014	13,014	455	455	3.62%	455	3.62%	738	5.63%	738	5.63%
Beverly Hills	0	12,559	12,559	0	0	12,559	0	0	19,975	19,975	19,975	2,483	2,483	10.87%	2,483	10.87%	789	4.11%	789	4.11%
Burbank	3,665	19,196	22,861	5,359	83,737	105,725	21,988	83,737	105,725	105,725	105,725	-9,032	-9,032	-7.87%	-9,032	-7.87%	-5,502	-4.26%	-5,502	-4.26%
Calleguas M.W.D.	25,428	69,329	114,757	21,988	93,186	231,173	137,967	93,186	231,173	231,173	231,173	-23,601	-23,601	-9.20%	-23,601	-9.20%	17,051	22.40%	17,051	22.40%
Central Basin M.W.D.	178,639	76,135	254,774	137,967	48,085	183,490	135,405	48,085	183,490	183,490	183,490	-1,308	-1,308	-0.71%	1,448	3.10%	1,448	3.10%		
Chino Basin M.W.D.	138,161	46,637	184,798	135,405	38,674	47,558	135,405	38,674	47,558	47,558	47,558	703	703	1.50%	536	1.40%	536	1.40%		
Coastal M.W.D.	8,517	38,338	46,855	8,664	5,190	9,148	8,664	5,190	9,148	9,148	9,148	-746	-746	-7.54%	-430	-4.65%	-430	-4.65%		
Compton	4,272	5,620	9,892	3,956	46,475	137,323	3,956	46,475	137,323	137,323	4,350	4,350	3.27%	-1,371	-2.87%	-1,371	-2.87%			
Eastern M.W.D.	85,127	47,848	132,975	90,849	8,058	14,784	90,849	8,058	14,784	14,784	14,784	-7	-7	-0.05%	411	4.77%	411	4.77%		
Foothill M.W.D.	6,176	8,815	14,991	5,758	10,648	30,541	5,758	10,648	30,541	30,541	30,541	-212	-212	-0.69%	-484	-4.35%	-484	-4.35%		
Fullerton	19,621	11,132	30,753	19,893	27,275	29,381	19,893	27,275	29,381	29,381	1,379	1,379	4.90%	992	3.77%	992	3.77%			
Glendale	1,719	26,283	28,002	2,156	16,367	19,621	2,156	16,367	19,621	19,621	-469	-469	-2.33%	-1,619	-8.10%	-1,619	-8.10%			
Las Virgenes	104	19,368	20,090	1,254	58,552	71,575	1,254	58,552	71,575	71,575	2,105	2,105	3.00%	12,458	27.00%	12,458	27.00%			
Long Beach	23,374	48,096	69,470	13,023	309,529	553,394	13,023	309,529	553,394	553,394	-30,760	-30,760	-5.59%	20,511	7.10%	20,511	7.10%			
Los Angeles M.W.D. of Orange County	297,136	289,018	566,154	243,865	206,297	419,042	243,865	206,297	419,042	419,042	-13,030	-13,030	-3.10%	5,320	2.60%	5,320	2.60%			
Peasadena	10,128	19,571	29,699	4,126	18,772	22,898	4,126	18,772	22,898	22,898	-6,801	-6,801	-22.90%	-790	-4.09%	-790	-4.09%			
San Diego C.W.A.	115,056	433,617	548,673	126,974 (a)	404,163	531,137	126,974 (a)	404,163	531,137	531,137	-17,536	-17,536	-3.20%	-29,454	-6.79%	-29,454	-6.79%			
San Fernando	3,183	580	3,763	2,642	790	3,441	2,642	790	3,441	3,441	-322	-322	-8.50%	219	37.76%	219	37.76%			
San Marino	5,264	1,017	6,281	5,304	1,637	6,941	5,304	1,637	6,941	6,941	660	660	10.51%	620	60.96%	620	60.96%			
Santa Ana	29,705	15,621	45,326	26,262	20,501	46,763	26,262	20,501	46,763	46,763	1,437	1,437	3.17%	4,880	31.24%	4,880	31.24%			
Santa Monica	8,733	5,299	14,032	9,385	4,735	14,090	9,385	4,735	14,090	14,090	58	58	0.41%	-564	-10.64%	-564	-10.64%			
Three Valleys M.W.D.	53,501	59,061	112,562	60,708	59,424	120,132	60,708	59,424	120,132	120,132	7,550	7,550	6.71%	343	0.68%	343	0.68%			
Torrance	1,007	19,869	21,476	316	20,754	21,070	316	20,754	21,070	21,070	-408	-408	-1.89%	885	4.45%	885	4.45%			
Upper San Gabriel Valley M.W.D.	159,181	10,205	169,386	150,923	7,645	158,568	150,923	7,645	158,568	158,568	-10,818	-10,818	-6.39%	-2,660	-25.09%	-2,660	-25.09%			
West Basin M.W.D.	20,422	140,300	160,722	9,902	162,638	162,540	9,902	162,638	162,540	162,540	1,618	1,618	1.13%	12,308	8.79%	12,308	8.79%			
Western M.W.D. of Riverside Co.	152,478	61,057	213,535	228,536	50,858	279,394	228,536	50,858	279,394	279,394	65,893	65,893	30.84%	-10,199	-16.70%	-10,199	-16.70%			
Totals	1,633,663	1,726,859	3,260,522	1,571,340	1,753,669	3,323,028	1,571,340	1,753,669	3,323,028	3,323,028	-36,493	-36,493	-1.00%	26,830	1.35%	26,830	1.35%			

(a) Figure includes water used at Fontbonne Military Reservation, includes water purchased locally, and excludes water used outside MWD's service area.



San Vicente Tunnel, San Diego Aqueduct, January 1946.



*Stored concrete pipe sections, circa 1920.
(San Diego Historical Society, Photographic Collection)*

MAJOR BOARD ACTIONS

July 8, 1993

- Motion:** Accepted a final offer of \$366,479, plus interest, in the SDCWA v. Western Salt Company for Pipeline 4 Extension, Phase II (Lower Otay Pipeline) Right of Way Parcels 200-F, 201-B, 202-B, 203-B, 204-E and 204-F.
- Motion:** Reduced the retention to 5% of the contract amount with Vadnais Corporation for Spec. 440, P4EI (Helix Pipeline)
- Motion:** Accepted the Right of Way Protection Subcommittee report and approved the policy clarifications as stated in the report.
- Motion:** Authorized the General Manager to request funds from MWD for a Fiscal Year 1994 Single Family Survey Program.
- Motion:** Authorized the General Manager to sign agreements with member agencies and MWD to operate a Public Facilities Irrigation Assistance Program.
- Motion:** Opposed on AB 1924 (Cortese) re use of force accounts.
- Motion:** Authorized the General Manager to join the Asian Business Association, the San Diego County Black Chamber of Commerce and the San Diego County Hispanic Chamber of Commerce at a cost not to exceed \$800.
- Resolution:** Approved the Environmental Impact Report for Pipeline 6, approved the project and adopted the Mitigation Monitoring Program.
- Motion:** Authorized the General Manager to execute an amendment to the existing agreement for services with CIC Research, Inc. to provide economic consulting services for the Emergency Storage Project which would provide a total contract amount over \$50,000 but not to exceed \$65,000.

July 28, 1993

- Resolution:** Adopted the Negative Declaration finding that there is no substantial evidence that the proposed Water Standby Availability Charge would have a significant effect on the environment.

SAN DIEGO COUNTY WATER AUTHORITY

- Ordinance: Fixed a Water Standby Availability Charge on land within the boundaries of the Authority for fiscal year 1993-94.
- Resolution: Certified completion and adequacy of the Final Environmental Impact Report for the San Diego County Water Authority's Pipeline 5 Extension, Phase II and Diversion Structure, making findings regarding each of the significant effects of the project and a brief explanation of the rationale for each finding, approved the project and mitigation monitoring plan, and authorized the filing of a Notice of Determination.
- Motion: Authorized the General Manager to execute Change Order No. 4 with Kiewit Pacific Company for realignment of the Pipeline 4 Extension, Phase II (Lower Otay Pipeline) along the south canyon wall of the Sweetwater Canyon for an amount not to exceed \$1.18 million and to extend the contract duration 119 calendar days, and to pursue appropriate reimbursement for a portion of the costs.

August 12, 1993

- Resolution: Approved the recommendation to ask the Governor to appoint Sherwood D. "Andy" Anderson as the Authority's alternate representative on the Colorado River Board.
- Resolution: Amended Article 18, Reserve Policy and Restricted Levels, of the Administrative Code to revise the Funds Established and Restricted Funds as required by the 1993 refunding of the 1989 bond issue.
- Motion: Approved the Financial Assistance Program applications for the June 1993 submittal period to include the following: City of Oceanside -\$8,280; City of San Diego - \$50,000, Olivenhain MWD - \$9,650 (and another \$9,650 if agreements can be worked out); and Vista ID (sponsored by the Bueno Colorado MWD) - \$15,815 to a total of \$93,350.
- Motion: Authorized the General Manager to enter into a Joint Participation Agreement between the Metropolitan Water District, the Water Authority, and the City of Oceanside for the Oceanside Desalter Project for recovery and utilization of contaminated groundwater.

MAJOR BOARD ACTIONS

- Resolution: Established amount due for in lieu charge as a condition of providing water service for FY 1993-94.
- Resolution: Established vote of representatives of member agencies as determined by assessed valuations for FY 1993-94.
- Resolution: Fixed the tax rate levy for FY 1993-94.
- Resolution: Authorized the Office of Procurement of the Department of General Services of the State of California to purchase certain items for and on behalf of the Authority.
- Motion: Authorized the General Manager to request \$50,000 from MWD for continuation of the Public Institutions Retrofit Program.
- Motion: Authorized the General Manager to request \$444,420 from MWD for continuation of the Community Based ULFT Replacement Program.
- Motion: Opposed AB 1234 - Bergeson, re Government Financing.
- Resolution: Authorized the design and construction of the Rainbow Municipal Water District No. 11 and 12 Flow Control Facilities, and authorized the General Manager to enter into an agreement with Rainbow MWD for the reimbursement of all design, construction and administrative costs incurred by the San Diego County Water Authority.
- Resolution: Authorized the design and construction of the Vista Irrigation District No. 11 Flow Control Facility, and authorized the General Manager to enter into an agreement with Vista Irrigation District for the reimbursement of all design, construction and administrative costs incurred by the San Diego County Water Authority.
- Resolution: Authorized the design and construction of the Vallecitos Water District No. 8 Flow Control Facility, and authorized the General Manager to enter into an agreement with Vallecitos Water District for the reimbursement of all design, construction and administrative costs incurred by the San Diego County Water Authority.

SAN DIEGO COUNTY WATER AUTHORITY

Motion: Accepted offer by the City of San Diego for the Pipeline 4B, Phase II Flow Regulatory Structure Site in the amount of \$150,087.

Resolution: Approved the Relocation Plan for the North County Distribution Pipeline.

September 9, 1993

Motion: Authorized the General Manager to amend the existing contract with the State Water Resources Control Board for staffing.

Resolution: Authorized the execution and delivery of a contract of indebtedness, an installment sale agreement, a trust agreement, and an escrow agreement, authorized the preparation, execution and delivery of a contract of purchase and an official statement and approved the preparation and distribution of a preliminary official statement in connection with water revenue refunding certificates of participation and certain other actions in connection therewith.

Motion: Authorized the General Manager to enter into contracts, in form approved by the General Counsel, for commercial paper dealer services with Lehman Brothers, Morgan Stanley & Co., and Artemis Capital.

Motion: Accepted the Cowles Mountain Tunnel, Specification 421, approved the recording of the Notice of Completion for the project, and authorized the release of retained funds following the expiration of the Notice of Completion period.

Motion: Approved change orders to the existing contract with Kasler Corporation/L.H. Woods and Sons, Inc. for the Scripps Ranch Pipeline in the amount of \$429,739.18; and authorized the General Manager to issue additional change orders as needed up to the limits established in the Administrative Code.

Motion: Approved an agreement amending the original 1947 Colorado River Association Six Agency Committee Joint Powers Agreement to provide for the appointment of alternate members.

MAJOR BOARD ACTIONS

Motion: Authorized the General Manager to enter into agreements with MWD and Authority member agencies to provide, respectively, \$60,000 and \$30,000 for program funding, and with Mission Resource Conservation District in an amount not-to-exceed \$80,000 for operation of the Single Family Survey Program.

Motion: Approved an annual report on progress in implementing the Best Management Practice's for submission to the California Urban Water Conservation Council.

Motion: Authorized the General Manager to extend agreements with MWD and Authority member agencies to provide, respectively, \$499,980 and \$200,000 for program funding and with the Center for Employment Training, MAAC Project, and Triple Crown in an amount not-to-exceed \$208,325 for the operation of the community based ULFT Replacement Program.

Motion: Supported an amendment to the Endangered Species Act providing for approval of multi-species conservation plans which anticipate and mitigate for effects upon species in advance of their listing under the Act.

Motion: Opposed AB 1384 (Costa) re eminent domain and environmental mitigation.

Motion: Approved staff's recommendation to make a final offer of \$105,000 on SDCWA v. Patricia Holland Roark and Hilda Edeen, Case No. 649798.

October 14, 1993

Motion: Instructed the General Counsel to not intervene in the Energy Commission Proceedings, 93-AFC-1; and instructed the General Manager to return to the Board with a report on water resource alternatives to the South Bay Desalt site.

Motion: Approved a settlement between SDCWA and Western Salt Company for Pipeline 4 Extension, Phase II (Lower Otay Pipeline) Right of Way Parcels 200-F, 201-B, 202-B, 203-B, 204-E and 204-F for a sum of \$371,364.

Resolution: Honored Michael Parrish upon his retirement from the Board.

SAN DIEGO COUNTY WATER AUTHORITY

- Motion: Authorized the General Manager to participate with MWD, Member Agencies, and SDG&E in the school showerhead retrofit program.
- Motion: Supported the amendments to the Clean Water Act relating to beneficial use of reclaimed water.
- Resolution: Requested informal terms and conditions from MWD for the Olympic Training Center Boathouse Annexation to Otay Water District.
- Motion: Declared miscellaneous items as surplus property for sale at the County of San Diego's public auction.
- Motion: Approved amendments to David J. Yerke, Inc. and Lee C. Johnson, Professional Services Agreements for appraisal services on Pipeline 2A and Pump Station Project and authorized the General Manager to execute the amendments.
- Motion: Approved negotiated acquisition of 300 Acres of Gnatcatcher Mitigation Property for the Capital Improvement Program for an amount not to exceed \$2.55 Million.
- Motion: Accepted audited financial statements for Fiscal Year 1992-93.
- Motion: Authorized the General Manager to enter into a Joint Participation Agreement for \$40,000 between the Water Authority and the City of Escondido to conduct a pilot test relating to irrigation of avocado trees with reclaimed water.
- Motion: Authorized the General Manager to negotiate and execute a Professional Services Contract with the CH2M HILL/Huntley Team for Phase I Groundwater Modeling of the San Dieguito Groundwater Basin, not to exceed \$100,000.
- Motion: Authorized a funding contribution of \$5,000 for the "Microbial Risk Assessment for Recycled Water" project.
- Resolution: Amended Section 14.16 of the Administrative Code to delegate authority to approve progress payments.

MAJOR BOARD ACTIONS

- Motion: Authorized the General Manager to enter into a special agreement with Western Salt and Eastlake Development and complete the acquisition of Parcels 200-F, 201-B, 202-B, 203-B, 204-E and 204-F.

November 10, 1993

- Resolution: Approved the recommendation of the Chair and Officers of the Board to appoint Sherwood Anderson as their representative on the Colorado River Board.
- Resolution: Approved the recommendation of the Chair and Officers of the Board to appoint Ann Peay as their alternate representative on the Colorado River Board.
- Resolution: Consented and approved the appointment of Mark Watton to fulfill the unexpired term of John M. Leach as a representative on the Metropolitan Water District Board.
- Motion: Authorized the General Manager to sign Agreements for pass-through of MWD funds to the City of San Diego for operation of the Ultra-Low Flush Toilet Rebate Program.
- Motion: Authorized the General Manager to enter into Agreements with MWD and the Authority's member agencies to provide funding, and with Demand Management Company, in an amount not-to-exceed \$1,805,400 for the operation of the ULFT Voucher Program.
- Resolution: Authorized the General Manager to execute an Agreement with the City of San Diego for storage in San Vicente and other City-owned reservoirs.
- Motion: Rejected bids received for a three axle truck tractor.
- Resolution: Authorized issuance of Commercial Paper in an amount not to exceed \$250 million.
- Resolution: Amended Section 2.8 of the Administrative Code to Clarify Board Procedures.
- Motion: Authorized the General Manager to enter into an interim Agreement with the San Diego Area Wastewater Management District.
- Motion: Approved suggestions to the Chairs of Board Committees.

SAN DIEGO COUNTY WATER AUTHORITY

- Motion: Approved recommended salary adjustments.
- Motion: Approved the Water Resources Plan Option 3 as the Authority goal for local water supply development and dry-year water transfers to meet future water demands and reduce the impact of drought in San Diego County; and amended the desalination section to read "Continue to monitor desalination technology as a potential future source of water with near-term financial participation only through the ongoing desalination projects of the Metropolitan Water District."
- Motion: Received and filed the staff report on the Emergency Storage Project.

December 9, 1993

- Motion: Authorized a funding contribution of \$5,000 for the video and public education program sponsored by the WaterReuse Association.
- Motion: Authorized the General Manager to negotiate and execute a PSA with Montgomery-Watson/NBS Lowry team for a water recycling feasibility study, for an amount not to exceed \$185,000 and authorized the General Manager to enter into a JPA with MWD and the City of San Diego for partial funding by MWD of the study.
- Motion: Directed the General Manager and General Counsel to initiate discussions with San Diego Area Wastewater Management District concerning a change in the Authority's voting status to ex-officio.
- Resolution: Certified an addendum to the Final Environmental Impact Report for Pipeline 4B, Phase II, Flow Regulatory Structure and approved access routes and required staff to investigate safety measures that may be necessary as it related to the schools along the route.
- Motion: Approved revisions to the San Diego County Water Authority Strategic Plan.
- Motion: Approved the PERS Contract Amendment Resolution implementing existing Memorandum of Understanding.

MAJOR BOARD ACTIONS

- Motion: Approved the acceptance of the Authority's offer of \$265,000 for the Ehler's Parcel (NCDP-21) for the North County Distribution Pipeline.
- Motion: Accepted the Helix Pipeline, Specification 440, recording of Notice of Completion, and release of retainage for Pipeline 4 Extension, Phase I.
- Motion: Accepted the Oceanside #5 Flow Control Facility, Specification 430, recording of Notice of Completion, and release of retainage.
- Motion: Accepted the Oceanside #5 Flow Control Facility, recording of Notice of Completion, and release of retainage for Sleeve Valve Purchase, Specification 429.
- Motion: Accepted the Scripps Ranch Pipeline, Specification 427, recording of Notice of Completion, and release of retainage for Pipeline 4B, Phase I, Schedule 2.
- Motion: Authorized the General Manager to request \$90,000 from MWD for a Commercial/Industrial Conservation Program.
- Motion: Authorized the General Manager to enter into an agreement to provide \$318,920 in Authority Funds for operation of the City of San Diego's ULFT Rebate Program.
- Motion: Deferred for one month, a position on SB 1250, Boatwright, re authorization of water service connections.
- Motion: Approved a policy position related to SB 377 and 273 opposing changes to the Government Code requiring approval of Capital Improvement Programs for utility construction by local government.
- Motion: Authorized the General Manager to participate with SDG&E in a \$12,500 Clothes Washer Rebate Program.
- Motion: Approved the Public Affairs Committee Goals and Objectives Statement.
- Motion: Approved the Draft Legislative Policy Guidelines.

SAN DIEGO COUNTY WATER AUTHORITY

Motion: Settled the Holland/Roark case number 649798 for \$105,000 including corral and relocation expenses; and the Jensen case number 649797 for \$110,000 including drainage repair, with both settlements inclusive of the three replacement costs and interest.

January 13, 1994

Resolution: Held Public Hearing re Resolution of Necessity for the acquisition of 34 parcels for the Pipeline 2A Project.

Resolution: Honored Bill Taylor upon his retirement from the Board of Directors.

Motion: Approved the Memorandum of Understanding with the City of San Marcos for the creation of riding and hiking trails on the Authority's rights of way, deleting the sentence "each party shall equally share the liability."

Motion: Awarded a bid to Pacific Freightliner in the amount of \$70,562.24 for a new three axle truck tractor, declaring #78, a 1976 Ford truck tractor as surplus property and authorized General Manager to dispose of Unit #78.

Motion: Accepted the San Marcos Pipeline, Specification 332; approved the recording of the Notice of Completion for the project; and authorized the release of retained funds following the expiration of the Notice of Completion period.

Motion: Accepted Change Order #'s 11-16 and authorized the General Manager to execute Change Order #17 to Kasler Corporation/L.H. Woods & Sons, Inc. for Pipeline 4B, Phase I (Scripps Ranch Pipeline) in the amount of \$779,219.02.

Motion: Waived the delinquency charge to Carlsbad Municipal Water District based on the facts found in the case.

Motion: Directed the General Manager to send a letter to the Department of Water Resources in support of the position taken by MWD and 12 other State Water Project (SWP) contractors, urging the Department to allocate available SWP supplies in accordance with SWP contracts and based upon contract entitlement. Further, the General Manager and General Counsel were authorized to participate in litigation in support of MWD, should such an action become necessary.

MAJOR BOARD ACTIONS

Motion: Incorporated, in lieu of adopting a specific position of opposition to AB 270, the principles underlying the opposition as stated in the staff recommendation and to add that to the legislative guidelines.

Motion: Incorporated, in lieu of stating a specific position of opposition on SB 1250, the principles that were stated in the staff recommendation into a legislative guideline for the Water Authority.

Resolution: Amended Section 16.8 (d) and (e) of the Administrative Code, Delinquency Charge and Board Action - Special Conditions.

Motion: Rejected the resolution to adjust the Director's per diem and to leave it at the current level.

Motion: Authorized the General Manager to execute an Interim Habitat Management Plan for Crestridge Mitigation Property.

February 10, 1994

Motion: Approved the Executive Committee's recommendation to remove the COLA provision from the General Manager's contract for this calendar year; the Authority would provide a one-time bonus payment of \$5,000 for his accomplishments for 1993; and, replace the COLA provisions with a management incentive compensation plan (MICP), to be developed.

Motion: Approved the Executive Committee's recommendation to remove the COLA provision from the General Counsel's contract for this calendar year; the Authority would provide a one-time bonus payment of \$4,500 for his accomplishments for 1993; and, replace the COLA provisions with a management incentive compensation plan (MICP), to be developed.

Motion: Authorized the General Manager to enter into Joint Participation Agreements with each of the following agencies: Olivenhain MWD (SRF loan application) -\$7,125, City of San Diego (UCSD pipeline predesign) -\$15,000, Sweetwater Authority (brackish water desalination facilities predesign) - \$50,000 and (brackish water desalination facilities EIR) - \$44,511, Tia Juana Valley CWD (phase II groundwater management plan) - \$27,750 and (phase III groundwater management plan) - \$34,740 for a total of \$179,136.

SAN DIEGO COUNTY WATER AUTHORITY

- Motion: Authorized the General Manager to enter into agreements with MWD and Authority member agencies to provide program funding, and for the operation of the \$180,000 Commercial/Industrial Conservation Program.
- Motion: Approved a position of support for H.R. 3020 (Filner) amending the Water Quality Act re treatment works being constructed by the International Boundary and Water Commission in San Diego.
- Motion: Supported revisions to the Clean Water Act amendments re water reclamation and directed staff to take all reasonable steps to assure incorporation of the amendments in the Clean Water Act reauthorization.
- Motion: Authorized staff and the legislative advocate to seek amendments to S. 1114 in the areas of exemptions to the Clean Water Act, as noted and to consider an amendment limiting the right to appeal permit decisions under Section 404 of the Clean Water Act.
- Motion: Supported H.R. 3392 (Slattery/Bliley) re amending to the Safe Drinking Water Act.
- Motion: Authorized the General Manager to execute the first amendment to Utilities Agreement No. 25611 with CALTRANS to provide for the reimbursement increase of \$1,599,739.92 in added costs for the relocation of Pipelines 3 and 4 at State Route 52.
- Motion: Awarded the San Dieguito/Santa Fe 3, 4,5 and 6 Flow Control Facility Specification 452 to J. R. Filanc Construction Company for the sum of \$971,000.
- Motion: Authorized the General Manager to submit a preliminary permit application to the Federal Energy Regulatory Commission as a first step to potentially developing the proposed pumped-storage facilities.
- Motion: Approved the annual SANDAG Regional Growth Management Strategy Consistency Checklist.

MAJOR BOARD ACTIONS

- Motion: Authorized deletion of the firm of Jennings, Engstrand & Henrikson, and added the firms of Best, Best & Krieger and Bartz & McCarberg to the General Counsel's authorization under Resolution No. 92-13 to retain special counsel for the Authority's condemnation litigation and related matters to accomplish the SDCWA's Capital Improvement Program.
- Resolution: Amended Article 2, section 2.8, Order of Procedure at Meetings, of the Authority's Administrative Code.
- Resolution: Amended Article 14, Purchasing Policy, of the Administrative Code.
- Motion: Authorized the expenditure of \$360,000 to make emergency repairs to Pipeline 3 at the Sweetwater Reservoir; approved the General Manager's award of a construction contract to Chilcote, Inc. for an amount not to exceed \$250,000 to perform the replacement work; authorized the General Manager to expend \$45,000 to purchase 40 feet of steel pipe; and authorized the General Manager to award a contract to fabricate 60 feet of steel pipe to replace repair sections for a not to exceed amount of \$65,000.

March 10, 1994

- Resolution: Concurred in the nomination of Warren Buckner to the office of President of the Association of California Water Agencies Joint Powers Insurance Authority.
- Resolution: Concurred in the Nomination of Wes Bannister to the Office of Vice President of the Association of California Water Agencies Joint Powers Insurance Authority.
- Motion: Authorized the General Manager to execute an amendment to the existing agreement for services with GEI Consultants, Inc. for a revised total contract amount not to exceed \$5,530,000.
- Resolution: Requested formal terms and conditions from the Metropolitan Water District of Southern California for the concurrent annexation of territory to said agencies (Olympic Training Center Boathouse).

SAN DIEGO COUNTY WATER AUTHORITY

- Motion: Directed staff to review with member agencies and the business community the options presented in the Board report and determine what affect water supply availability and cost had in decisions made by businesses and industry to locate and/or remain in the San Diego region; and report back to the Board the results of the review process.
- Motion: Authorized the Chair to sign a letter to EPA with comments on the proposed EPA Bay-Delta water quality standards.
- Motion: Approved a position of neutral watch on AB 2673, Cortese, re water supply and growth.
- Resolution: Amended Article 16, Section 16.8 of the Administrative Code to revise the collection procedure for water deliveries.
- Motion: Approved a Computer Purchase Program.
- Resolution: Amended Article 25 of the Administrative Code regarding the placement of fences in the Authority's rights of way.
- Motion: Accepted Pipeline 4B, Phase I, Spec. 427, recorded of Notice of Completion and release of retainage.
- Motion: Approved Utility Agreement 25660 and consented to common use agreement 25660 between the Authority and the State of California (CALTRANS) re construction of SR56 over the Second San Diego Aqueduct.
- Motion: Authorized the General Manager to sell the Green and Bradley houses acquired for the Pipeline 4 Extension, Phase II Project through competitive bid.
- Motion: Approved an exception to the provision of Article 25 to allow placement of a fence across the Authority's right of way in the Spring Valley area.
- Motion: Authorized the General Manager to execute a professional services agreement with Rauscher Pierce Refsnes, Inc. for financial advisory services in an amount not to exceed \$100,000, annually, plus reimbursement for out-of-pocket expenses, for a term not to exceed three years.

MAJOR BOARD ACTIONS

April 14, 1994

- Motion: Appointed Sherwood "Andy" Anderson as the alternate representative to the San Diego Area Wastewater Management District.
- Motion: Authorized the General Manager to enter Into a Joint Participation Agreement for development of reclaimed water supplies between the Authority and the City of San Diego for the San Pasqual Aquaculture III Plant.
- Resolution: Established the need for standby charges for fiscal year 1994-95 and set a hearing date for adoption of standby charges for fiscal year 1994-95.
- Resolution: Fixed the time and place for a public hearing regarding capacity charges.
- Motion: Maintained the Authority's component for untreated and treated water at \$70 per acre foot for fiscal year 1994-95.
- Motion: Adopted final acceptance, recorded Notice of Completion, and release of retainage for Pipeline 4 Extension, Phase I, (La Mesa/Lemon Grove Pipeline), Specification 423.
- Motion: Accepted \$90,000 counter offer from Ronald D. and Sharon K. Thompson for Parcel 4 for the Pipeline 2A (P2A) Project.
- Motion: Accepted \$60,751 by Roscoe N. and Virginia J. Nelson for Parcel 11 for the Pipeline 2A (P2A) Project.
- Motion: Granted road easement to Leonel A. Gurrola, crossing the Second Aqueduct Right of Way in Proctor Valley.
- Motion: Rejected bids for Pipeline 4B, Phase II, Mission Trails Pipeline, Specification 445.
- Motion: Approved agreements with Fallbrook Public Utilities District and with Rainbow Municipal Water District and City of Oceanside for ownership transfer of the Fallbrook-Oceanside Pipeline.
- Motion: Approved construction and operation agreements between the City of Oceanside and the SDCWA for the North County Distribution Pipeline.

SAN DIEGO COUNTY WATER AUTHORITY

- Motion: Authorized the General Manager to accept ASL's and Parsons Brinckerhoff's settlement offer for a combined amount of \$108,000 for reimbursement of additional construction costs in conjunction with Pipeline 4 Extension, Phase II, Spec. 432, (Lower Otay Pipeline) Change Order No. 4.
- Motion: Authorized the General Manager to sponsor an exhibit at SDG&E's Commercial/Industrial Conservation Technology Center in an amount not to exceed \$10,000.
- Motion: Authorized the General Counsel recommendations on the trial court decision in the Water Quality Association v. City of Escondido case.
- Motion: Opposed AB 2673, Cortese, Planning and Zoning Procedures, unless it is amended to apply only to East Bay Municipal Utilities District.
- Motion: Transferred funds to pay for a \$6,000 increase in the 50th Anniversary celebration budget.

May 12, 1994

- Resolution: Found no substantial evidence that the proposed capacity charges would have a significant effect on the environment and approved a Negative Declaration for such charges.
- Ordinance: Fixed capacity charges on ultimate users of water from the San Diego County Water Authority.
- Resolution: Adopted the Negative Declaration finding that there is no substantial evidence that the proposed Water Standby Availability Charge will have a significant effect on the environment.
- Ordinance: Fixed a Water Standby Availability Charge on land within the boundaries of the Authority for fiscal year 1994-95.
- Resolution: Amended Article 27, California Environmental Quality Act Implementation Guidelines, of the Administrative Code.
- Motion: Authorized the General Manager to Join the San Diego Economic Development Corporation's Team San Diego for an amount not-to-exceed \$1,000.
- Resolution: Amended Article 14, Section 14.13, Cooperative Purchasing, of the Administrative Code.

MAJOR BOARD ACTIONS

- Resolution: Approved the relocation of Valley Center #4 Flow Control Facility along the Valley Center Pipeline (Pipeline 2A).
- Motion: Approved final acceptance, Notice of Completion, and release of retainage for Pipeline 4 Extension, Phase II, (Lower Otay Pipeline) Specification 432.
- Motion: Awarded bid to Pacific Freightliner for \$65,328.85 for the purchase of a new water truck.
- Motion: Approved agreement with City of San Diego for reimbursement of costs for the La Mesa/Lemon Grove Pipeline, 4 Extension, Phase I.
- Motion: Reaffirmed the Board's policy re temporary service connections and directed the General Counsel to return with documents amending the Administrative Code, Section 16.1, to include criteria for delaying the existing surcharge for temporary service connections and delegated authority to the General Manager to authorize the delay.
- Motion: Authorized the General Manager to sign agreements with member agencies and with MWD to increase the amount for funding and operation of the Commercial/Industrial Conservation Program from \$180,000 to \$385,000.
- Resolution: Set the formal terms and conditions and approved the Olympic Training Center Boathouse Annexation to Otay Water District.
- Motion: Authorized the General Manager to set a date for converting the Fiscal Year 1995 Ultra-Low Flush Toilet Rebate/Voucher Program to vouchers only.
- Motion: Supported Proposition 180, the California Safe Neighborhood Parks, Gang Prevention, Tree Planting, Wildlife, Coastal, Senior Center, Park, Wetlands, Rivers, Forest and Agricultural Land Conservation Act of 1994.

June 9, 1994

- Resolution: Approved the Final Operating and Capital Budget for Fiscal Year 1994-95 appropriating funds and establishing expenditure controls.

SAN DIEGO COUNTY WATER AUTHORITY


- Resolution: Approved the Memorandum of Understanding with Teamsters Union Local 911, dated July 1, 1994 through June 30, 1997.
- Motion: Approved the General Manager's recommendations for salary and benefits package for the confidential, professional and management employees.
- Motion: Approved a 3-year lease of 10,600 square feet at 3252 Fifth Avenue, San Diego, California, for \$353,374 and approved payment of the lease in accordance with option 1 which stated all lease payments would be made on a monthly basis, with the first year cost of \$108,436.
- Resolution: Amended Article 15 of the Administrative Code by deletion of section 15.5 to close out the Interruptible Storage Pool.
- Resolution: Amended Article 15 of the Administrative Code to establish interim agricultural water rates.
- Resolution: Amended Article 16 of the Administrative Code by the addition of subsection (d) to authorize the General Manager to extend the date for the imposition of temporary service connection surcharges under certain conditions.
- Resolution: Adopted classification and salary plan, establishing a list of classified positions and a salary range for each position.
- Motion: Authorized the General Manager to amend agreements with MWD to provide funding, and with Mission RCD and Schmidt Design Group, Inc. in an amount not-to-exceed \$180,000 for fiscal year 1995 operation of the Large Turf Audit Program.
- Motion: Authorized the General Manager to amend agreements with MWD and member agencies to provide funding, and with Mission RAD and VIEWtech, in an amount not-to-exceed \$120,000 for operation of the fiscal year 1995 Residential Survey Program.
- Motion: Authorized the General Manager to amend agreements to pass-through MWD funds, and to provide up to \$318,920 in Authority funds for operation of the City of San Diego's fiscal year 1995 ULFT Rebate program.

MAJOR BOARD ACTIONS

- Motion: Authorized the General Manager to amend agreements with MWD and member agencies to provide funding, and with DMC, in an amount not-to-exceed \$1,880,000 for fiscal year 1995 for operation of the ULFT Voucher Program.
- Motion: Authorized the General Manager to amend agreements with MWD and member agencies to provide funding, and with MWD, in an amount not-to-exceed \$1,200,000 for operation of the fiscal year 1995 Community Based ULFT Distribution Program.
- Motion: Authorized the General Manager to provide comments at hearings re SB 1924, McCorquodale, relating to the State Water Project.
- Motion: Approved Authority participation of \$50,000 in joint funding effort for Bay Delta environmental and regulatory matters.
- Motion: Approved Legislative Policy Guidelines concerning the California Endangered Species Act legislation.
- Motion: Directed the General Counsel to prepare an amendment to Article 5 and the addition of Article 29 to the Administrative Code to reflect the current organizational structure.
- Motion: Approved a purchase order for \$52,318 to SDG&E to extend electrical services to Del Luz 1 and Rainbow 9 Flow Control Facilities.
- Motion: Revised Board position of opposition, unless amended, on AB 2673, Cortese, re local public water systems: service needs: findings of fact.
- Motion: Awarded a construction contract to C. E. Wylie Construction Company for Specification 446, Pipeline 4B, Phase II (Mission Trails Pipeline) Flow Regulatory Structure for \$8,439,000.
- Motion: Awarded a construction contract to Pascal and Ludwig Engineering for Specification 433 for Otay 4 and 9 Flow Control Facilities for \$1,124,500.
- Motion: Approved a revision to the Reclaimed Water Development Funding Policy to reflect sales revenue for reclaimed water will be based on the actual retail rate charged by the agency or 85% of the agency's full retail rate for the class of service receiving reclaimed water, whichever is greater.

SAN DIEGO COUNTY WATER AUTHORITY
FINANCIAL STATEMENTS

*Years ended June 30, 1994 and 1993
with Report of Independent Auditors*

 **ERNST & YOUNG LLP**

SAN DIEGO COUNTY WATER AUTHORITY

Financial Statements

Years ended June 30, 1994 and 1993

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Report of Independent Auditors

The Board of Directors
San Diego County Water Authority

We have audited the accompanying balance sheets of the San Diego County Water Authority (the Authority) as of June 30, 1994 and 1993, and the related statements of revenues, expenses and changes in undesignated retained earnings, and cash flows for the years then ended. These financial statements are the responsibility of the Authority's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the San Diego County Water Authority at June 30, 1994 and 1993, and the results of its operations and its cash flows for the years then ended in conformity with generally accepted accounting principles.

Ernst + Young LLP

September 2, 1994

SAN DIEGO COUNTY WATER AUTHORITY

Balance Sheets

	June 30	
	1994	1993
Assets		
Current assets:		
Cash and cash equivalents (Note 3)	\$15,810,000	\$35,715,000
Accounts and taxes receivable (Notes 1 and 4)	37,606,000	25,875,000
Inventories	6,653,000	4,832,000
Other current assets	185,000	175,000
Total current assets	60,254,000	66,597,000
Restricted cash, cash equivalents and investments (Notes 3 and 4):		
Cash and cash equivalents	66,379,000	36,918,000
Investments	140,518,000	190,832,000
	206,897,000	227,750,000
Property, plant and equipment, net (Notes 1, 2 and 7)		
	518,726,000	470,432,000
Deferred compensation deposit (Note 6)		
	3,186,000	2,654,000
Other assets (Note 4)		
	8,112,000	8,786,000
	\$797,175,000	\$776,219,000
Liabilities and equity		
Current liabilities:		
Accounts payable and accrued liabilities	\$45,157,000	\$55,788,000
Current maturities of long-term debt (Note 4)	14,101,000	8,676,000
Total current liabilities	59,258,000	64,464,000
Long-term debt (Note 4)		
	431,170,000	445,077,000
Deferred compensation (Note 6)		
	3,186,000	2,654,000
Commitments and contingencies (Notes 2 and 7)		
Equity:		
Contributions in aid of construction	13,561,000	9,135,000
Retained earnings (Note 4):		
Designated for rate stabilization	61,153,000	61,153,000
Undesignated	228,847,000	193,736,000
Total equity	303,561,000	264,024,000
	\$797,175,000	\$776,219,000

See accompanying notes.

FINANCIAL STATEMENTS

Statements of Revenues, Expenses And Changes
In Undesignated Retained Earnings

	June 30	
	1994	1993
Water sales	\$161,968,000	\$150,586,000
Operating expenses:		
Cost of sales	134,381,000	126,642,000
Depreciation and amortization	4,929,000	4,896,000
Operations and maintenance	3,290,000	3,821,000
Planning and reclamation	4,015,000	2,423,000
General and administrative	5,849,000	5,666,000
Write down of Pamo Reservoir Project to estimated net realizable value (Note 2)	2,158,000	2,000,000
Total operating expenses	154,622,000	145,448,000
Operating income	7,346,000	5,138,000
Other revenues (expenses):		
Property taxes and in-lieu charges	5,940,000	8,262,000
Water availability and capacity charges	18,054,000	15,823,000
Interest expense	(6,972,000)	(14,306,000)
Interest income	10,743,000	15,390,000
Total other revenues	27,765,000	25,169,000
Income before extraordinary loss	35,111,000	30,307,000
Extraordinary loss on bond defeasance (Note 4)		
	-	10,978,000
Net income	35,111,000	19,329,000
Undesignated retained earnings at beginning of year		
	193,736,000	174,407,000
Undesignated retained earnings at end of year	\$228,847,000	\$193,736,000

Statements of Cash Flows

	June 30	
	1994	1993
Operating activities		
Net income	\$35,111,000	\$19,329,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	4,929,000	4,896,000
Write down of Pamo Reservoir Project	2,158,000	2,000,000
(Increase) decrease in accounts and taxes receivable	(11,732,000)	5,071,000
(Increase) decrease in inventories	(1,821,000)	3,173,000
Increase in other current assets	(10,000)	(68,000)
(Increase) decrease in other assets	255,000	(1,029,000)
Decrease in accounts payable and accrued liabilities	(10,631,000)	(9,195,000)
Net cash provided by operating activities	18,259,000	24,177,000
Capital and related financing activities		
Purchase and disposal of property, plant and equipment	(54,962,000)	(164,041,000)
Contributions in aid of construction	4,426,000	1,994,000
Proceeds from issuance of long-term debt	-	135,650,000
Principal repayment of debt	(8,481,000)	(144,390,000)
Net cash used for capital and related financing activities	(59,017,000)	(170,787,000)
Investing activities		
Proceeds from sale of investment securities (net)	50,314,000	188,649,000
Net cash provided by investing activities	50,314,000	188,649,000
Increase in cash and cash equivalents	9,556,000	42,039,000
Cash and cash equivalents at beginning of year	72,633,000	30,594,000
Cash and cash equivalents at end of year	\$82,189,000	\$72,633,000
Supplemental cash flow information		
Cash paid during the year for interest	\$26,432,000	\$29,771,000

See accompanying notes.

Notes to Financial Statements
June 30, 1994

1. Organization and summary of significant accounting policies

Organization

The San Diego County Water Authority (the Authority) was organized on June 9, 1944 under the County Water Authority Act (the Act) for the primary purpose of providing a supplemental supply of imported water to its member agencies for domestic, municipal and agricultural uses. The Authority consists of 24 member agencies which are each represented by at least one person on the Authority's Board of Directors. The Authority is a member of The Metropolitan Water District of Southern California (MWD) and historically, the Authority has purchased from MWD all the water it requires to meet the demands of the member agencies.

The Metropolitan Water District Act provides a preferential right for the purchase of water by each of the MWD constituent agencies. This preferential right is calculated using a formula and based upon such formula, the Authority has a statutory preferential right to approximately 12% of MWD's total supply. MWD, however, has never applied such criteria to limit the Authority's purchases and has a written policy to meet all the supplemental needs of each of its member agencies, including the Authority. In November of 1990, the MWD Board implemented the Incremental Interruption and Conservation Plan to allocate limited water supplies during drought years. During the shortage of fiscal 1992, the Authority was able to meet the demands of its member agencies.

Basis of accounting

The Authority is accounted for as an enterprise fund (proprietary fund type). A fund is an accounting entity with a self-balancing set of accounts established to record the financial position and results of operations of a specific governmental activity. The activities of enterprise funds closely resemble those of ongoing businesses in which the purpose is to conserve and add to basic resources while meeting operating expenses from current revenues. Enterprise funds account for operations that provide services on a continuous basis and are substantially financed by revenues derived from user charges. As an enterprise fund, the Authority uses the accrual basis of accounting, revenues are recognized when earned and expenses are recognized as they are incurred.

Property taxes and in-lieu charges

The Authority is authorized under the Act to levy taxes on all taxable property within its boundaries for the purpose of carrying on its operations and paying its obligations, subject to certain limitations in the Act, the Revenue and Taxation Code and the California Constitution. The Authority levies taxes to meet its debt service requirements on its general obligation bonds and its obligation under the contract with the U. S. Government (Note 4).

1. Organization and summary of significant accounting policies (continued)

Property taxes are levied annually by the Authority's Board of Directors as of July 1, using a lien date of March 1, and are payable by property owners in two equal installments which are due by December 10th and April 10th, respectively. The taxes levied are billed and collected by the County of San Diego and are remitted to the Authority throughout the year.

Member agencies of the Authority may elect to pay in-lieu charges instead of the tax levy. Included in the accompanying statements of revenues, expenses and changes in undesignated retained earnings for the years ended June 30, 1994 and 1993, are in-lieu charges of \$619,000 and \$693,000, respectively.

Inventories

Inventories consist primarily of water in storage and are stated at the lower of cost (first-in, first-out) or market (market value - \$11,244,000 at June 30, 1994).

Property, plant and equipment

Depreciation is computed utilizing the straight-line method over the following estimated useful lives:

Water systems	10 to 75 years
Buildings	40 years
Other equipment	5 to 15 years
Automobiles	4 years

Contributions in aid of construction

Amounts received from member agencies and other entities for construction of service connections or other facilities are included in the accompanying balance sheets as contributions in aid of construction.

Capitalized interest

The Authority capitalizes interest on self-constructed assets based on a weighted average interest rate on obligations outstanding during the period of construction. Interest earned on interest-bearing investments acquired with proceeds of related tax-exempt borrowings is offset against the interest cost in determining the maximum interest capitalizable. Interest capitalized during the years ended June 30, 1994 and 1993 was \$18,912,000 and \$14,435,000, respectively.

Revenue policies

The principal portion of the Authority's revenues is provided by sales of water. Water is delivered to member agencies on demand and revenue is recognized at the time of delivery. The Authority also has two other separate revenue sources as part of its Capital Finance Plan to fund the Capital Improvement Program. A water availability standby charge was put into effect in fiscal 1990 and generated revenue of \$10,896,000 and \$10,905,000 for the years ended June 30, 1994 and 1993, respectively. Commencing October 1, 1990, the Authority also implemented a capacity

1. Organization and summary of significant accounting policies (continued)

charge on all new water meters purchased within the boundaries of the Authority, generating revenue of \$7,158,000 and \$4,918,000 in fiscal 1994 and 1993, respectively.

Included in restricted cash, cash equivalents and investments at June 30, 1994 and 1993, is approximately \$57,737,000 and \$38,693,000, respectively, related to the water availability standby and capacity charges.

Disclosures about Fair Value of Financial Instruments

Statement of Financial Accounting Standards No. 107, "Disclosures about Fair Value of Financial Instruments", requires disclosure of fair value information about certain financial instruments when it is practicable to estimate such value. The following methods and assumptions were used by the Authority in estimating its fair value disclosures for financial instruments:

Cash and cash equivalents: The carrying amounts approximate fair value because of the short maturity of these items.

Investments: The fair value for investments is based on quoted market prices. The carrying amounts approximate fair value.

Debt instruments: The fair value of long-term debt is based on quoted market prices, quoted market prices of similar instruments and discounted cash flow analysis.

Budgets and budgetary accounting

Annual budgets adopted by the Board of Directors provide for operations, debt service and capital expenditures of the Authority. Budgetary controls are set by the Board of Directors. The Board of Directors adopts an operating budget at the beginning of the Authority's fiscal year. The legally adopted budget requires that expenditures not exceed appropriations in total for the Authority. The Board of Directors may make appropriation adjustments to the budget during the year as deemed necessary. The Authority adhered to the prescribed budget as discussed above for the years ended June 30, 1994 and 1993.

2. Property, plant and equipment

Property, plant and equipment is stated at cost and consists of the following:

	June 30	
	1994	1993
Water Systems	\$177,639,000	\$171,033,000
Buildings	6,133,000	6,432,000
Automobiles and equipment	6,016,000	5,538,000
Construction in progress	376,784,000	330,993,000
	566,572,000	513,996,000
Less accumulated depreciation	47,846,000	43,564,000
	\$518,726,000	\$470,432,000

2. Property, plant and equipment (continued)

The Authority originally capitalized in construction in progress \$4,158,000 related to the construction of the Pamo Reservoir Project. In 1993 the Authority down graded the status of the site from a primary alternative future reservoir site to a secondary alternative site pending completion of a county-wide water storage study and plan. Since Pamo was no longer a probable reservoir site, management provided \$2,158,000 during 1994 and \$2,000,000 in fiscal 1993 as a reserve for the estimated costs which may not be recovered in the selection of the final site.

3. Cash, cash equivalents and investments

Cash and cash equivalents consist of short-term highly liquid investments with maturities of 90 days or less at the date of purchase. The California Government code requires California banks and savings and loan associations to secure public fund deposits by pledging government securities or mortgages as collateral. The market value of pledged securities or mortgages must equal at least 110% or 150%, respectively, of public fund deposits. The Authority currently requires government securities as collateral on all its investments with such institutions.

The Authority may waive collateral requirements for deposits which are fully insured up to \$100,000 by the Federal Deposit Insurance Corporation (FDIC).

The surplus funds of the Authority may be invested in any of the following approved investments: treasury bills and/or notes; collateralized commercial bank certificates of deposit; collateralized savings and loan certificates of deposit; guaranteed investment contract deposits collateralized by direct U.S. government obligations; State of California Local Agency Investment Fund; domestic bankers acceptances; agency securities; commercial paper; repurchase agreements; reverse repurchase agreements; and government money market funds.

3. Cash, cash equivalents and investments (continued)

The Authority's investments are categorized to give an indication of the level of custodial credit risk assumed by the Authority at year-end. Category 1 includes cash deposits and investments that are insured, collateralized or registered or for which the securities are held by the Authority or its agent in the Authority's name. Category 2 includes uninsured and unregistered investments for which the securities are held by the broker's or dealer's trust department or agent in the Authority's name. Category 3 includes uninsured and unregistered investments for which the securities are held by the broker or dealer, or by its trust department or agent but not in the Authority's name.

	June 30, 1994			Total Cost	Market Value
	Category				
	1	2	3		
U.S. Treasury Securities	\$79,624,000	\$ -	\$ -	\$79,624,000	\$79,210,000
Agency Securities	21,766,000	-	-	21,766,000	21,671,000
Bankers' Acceptances	4,930,000	-	-	4,930,000	4,963,000
Prime Commercial Paper	14,933,000	-	-	14,933,000	14,979,000
Demand deposits, certificates of deposit, and other	100,000		686,000	786,000	786,000
	<u>\$121,353,000</u>	<u>\$ -</u>	<u>\$686,000</u>	<u>122,039,000</u>	<u>121,609,000</u>
Investments in State Treasurer's Investment Pool				65,000,000	65,000,000
Guaranteed Investment Contract Deposits				33,260,000	33,260,000
Money Market Funds				<u>2,408,000</u>	<u>2,408,000</u>
Total cash, cash equivalents and investments				<u>222,707,000</u>	<u>\$222,277,000</u>
Less:					
Restricted cash, cash equivalents and investments				<u>206,897,000</u>	
Current unrestricted cash, cash equivalents and investments				<u>\$15,810,000</u>	

4. Long-term debt

Long-term debt consists of the following:

	June 30	
	1994	1993
Water revenue certificates of participation and general obligation bonds, including an arbitrage rebate liability of \$194,000 in 1994 and \$2,535,000 in 1993	\$444,994,000	\$453,106,000
U. S. Government contract	277,000	647,000
Total long-term debt	445,271,000	453,753,000
Less amounts due within one year	14,101,000	8,676,000
	<u>\$431,170,000</u>	<u>\$445,077,000</u>

The fair value of debt instruments at June 30, 1994 was \$445,271,000.

Defeasement of 1989 Water Revenue Certificates of Participation

In February, 1993, the Authority issued \$135,650,000 of Water Revenue Refunding Certificates of Participation, Series 1993A (the 1993A Certificates) with interest rates ranging from 2.83% to 8.50% to advance refund \$140,000,000 of outstanding Certificates of Participation Series, 1989A (the 1989A Certificates) with interest rates ranging from 6.65% to 7.30%. The net proceeds of \$132,601,000 (after payment of \$3,049,000 in underwriting fees, insurance and other issuance costs) plus an additional \$19,915,000 of the 1989A Certificates reserve funds and other monies were used to purchase U.S. government securities. Those securities were deposited in an irrevocable trust with an escrow agent to provide for all future debt service payments on the 1989A Certificates. As a result, the 1989A Certificates are considered to be defeased and the liability for those bonds has been removed from the balance sheet.

Although the advance refunding resulted in the recognition of an accounting loss of \$10,978,000 for the year ended June 30, 1993, the Authority in effect reduced its aggregate debt service payments by \$28,557,000 through the year 2009 and obtained an economic gain (difference between the present values of the 1989A Certificates and the 1993A Certificates debt service payments) of \$3,951,000.

1993 Water Revenue Refunding Certificates of Participation

To provide funds for the refunding of the 1989A Certificates, the Authority issued the 1993A Certificates in February, 1993 in the aggregate principal amount of \$135,650,000. The Series 1993A Current Interest Certificates, with an aggregate principal amount of \$85,050,000, carry interest rates ranging from 3.50% to 5.50% payable semi-annually on May 1 and November 1. These certificates mature serially between May 1, 1994 and May 1, 2005 and are not subject to prepayment. The series 1993A Floating Auction Tax Exempts (the Floats), with an aggregate principal amount of \$25,300,000, carry an initial interest rate of 2.83% payable every 28 days. The Floats are due April 22, 2009 and are subject to mandatory sinking fund payment prior to maturity at an amount equal to the principal amount plus accrued interest without premium.

4. Long-term debt (continued)

The 1993A Residual Interest Tax Exempt Securities (the Rites) with an aggregate principal amount of \$25,300,000 carry interest rates ranging from 8.25% to 8.50% payable every 28 days. The Rites mature serially between April 26, 2006 and April 22, 2009 and are not subject to mandatory prepayment.

Included in Certificates of Participation at June 30, 1994 and 1993 is \$131,200,000 and \$135,650,000, respectively.

The Certificates require that a reserve be maintained in an amount equal to the lesser of \$13,565,000, 100% of the maximum annual installment payments or 125% of average annual installment payments. A surety bond has been obtained by the Authority and issued in satisfaction of this requirement.

1991 Water Revenue Certificates of Participation

To provide funds for the acquisition and construction of water system improvements, the Authority issued Series 1991A and 1991B Water Revenue Certificates of Participation in November, 1991 in the aggregate principal amount of \$300,000,000. The Series 1991A Certificates, with an aggregate principal amount of \$163,300,000, carry interest rates ranging from 5.20% to 6.40% payable semi-annually on May 1 and November 1. These Certificates mature serially between May 1, 1995 and May 1, 2008 and may be redeemed at premiums decreasing from 2% in 2001 to 1% in 2003 (thereafter at par). The Series 1991B Certificates consist of Short-Term Auction Rate and Complementary Auction Rate Certificates in the aggregate principal amount of \$136,700,000 with interest at 6.30% payable on Thursday, December 12, 1991 and each successive fifth Thursday thereafter. These Certificates mature as follows: 2011 - \$56,700,000 and 2021 - \$80,000,000.

The Certificates require that a reserve be maintained in an amount equal to the lesser of \$25,644,000, 100% of the maximum annual payments, or 125% of the average annual payments. Included in restricted cash, cash equivalents and investments is \$25,644,000 at June 30, 1994 and 1993, which represents the required reserve, and \$34,957,000 and \$105,033,000, respectively, which represents unexpended proceeds of the Certificates.

1957 Waterworks General Obligation Bonds

To provide funds for the construction of a second aqueduct and related works, the Authority issued general obligation bonds in the aggregate principal amount of \$35,000,000 with interest rates ranging from 1% to 6% payable semi-annually on February 1 and August 1. The bonds fully matured on February 1, 1994. Included in Certificates of Participation and General Obligation Bonds at June 30, 1993 is \$260,000.

4. Long-term debt (continued)

1966 Waterworks General Obligation Bonds

During 1968 the Authority issued General Obligation Bonds in the aggregate principal amount of \$30,000,000 with interest rates ranging from 4.50% to 5.50% payable semi-annually on April 1, and October 1, for the construction of a second pipeline to the second aqueduct. The bonds mature serially through October 1, 2003 and may be redeemed on or after October 1, 1980 at premiums decreasing from 3.50% in 1980 to 0.50% in 2002. Included in Certificates of Participation and General Obligation Bonds at June 30, 1994 and 1993 is \$13,600,000 and \$14,660,000, respectively.

U.S. Government Contract

The U.S. Government constructed an aqueduct for which the title was conveyed to the Authority upon its completion. The Authority is reimbursing the U.S. Government for the cost of the aqueduct in quarterly principal installments of \$92,000, plus interest at 2.60% annually.

The Authority has entered into an agreement with MWD whereby a portion of the U.S. Government contract will be paid by MWD. Included in accounts and taxes receivable and other assets are the current portion of this receivable of \$197,000 at June 30, 1994 and the current and noncurrent portion of this receivable of \$197,000 and \$148,000, respectively, at June 30, 1993.

Certain outstanding debt agreements require the Authority to maintain a minimum level of operational earnings. Exclusive of the tax revenue and debt servicing costs associated with voter-approved general obligation bonds and other voter-approved debt, net water revenues, as defined by the agreements, must equal or exceed 120% of all other debt servicing costs (principal and interest). The Authority was in compliance with all of its covenants, including meeting its debt service ratio requirement.

In fiscal 1990, the Authority established a water rate stabilization fund for the purpose of identifying amounts available to mitigate future water rate increases. The Authority will transfer portions of its net water revenues (as defined) which exceed its debt service ratio requirement, into the rate stabilization fund and from time to time transfer amounts from its rate stabilization fund into net water revenues to meet its debt service ratio requirements. As of June 30, 1994 and 1993, the balance in this fund, which is included in restricted cash, cash equivalents and investments, totaled \$61,153,000 and is also reflected as designated retained earnings in the accompanying balance sheet.

4. Long-term debt (continued)

For the years ended June 30, 1994 and 1993, the Authority's actual debt service ratio is calculated as follows:

	June 30	
	1994	1993
Net water revenues (as defined)	\$47,162,000	\$47,512,000
Transfer to rate stabilization fund	-	-
Net water revenues	\$47,162,000	\$47,512,000
Debt service requirements (principal and interest)	\$29,805,000	\$28,105,000
Debt service ratio (as defined)	158%	169%

Included in other assets are deferred financing costs of \$7,423,000 and \$7,811,000, net of accumulated amortization, at June 30, 1994 and 1993, respectively. The deferred financing costs are being amortized over the life of the related obligations.

The aggregate principal and interest payments on long-term debt at June 30, 1994 are as follows:

	Principal Payment	Interest Payment	Total Debt Service
1995	\$ 14,101,000	\$ 26,508,000	\$ 40,609,000
1996	14,285,000	25,023,000	39,308,000
1997	14,990,000	24,312,000	39,302,000
1998	15,755,000	24,370,000	40,125,000
1999	16,575,000	22,713,000	39,288,000
Thereafter	369,565,000	206,069,000	575,634,000
	\$445,271,000	\$328,995,000	\$774,266,000

5. Retirement plan

Public Employees Retirement System plan description

The Authority is a member of the California Public Employees' Retirement System (PERS), an agent multiple-employer pension system that acts as a common investment and administrative agent for participating public entities within the State. The Authority's total covered payroll for employees participating in PERS for the fiscal year ended June 30, 1994 and 1993 is \$7,720,000 and \$6,871,000, respectively. The Authority's total payroll is \$8,042,000 and \$7,248,000 for the years ended June 30, 1994 and 1993, respectively.

5. Retirement plan (continued)

All permanent employees of the Authority are eligible to participate in PERS upon entry into employment. Retirement benefits vest after five years of service and PERS also provides death and disability benefits. Retirement benefits are based on the highest annual salary and years of credited service.

Employee and employer contributions

Both the Authority and the employees are required to contribute to PERS. The Authority pays its share and the entire portion of the employees' share. The employee rate of 7% is set by statute and therefore, generally remains unchanged from year to year. The Authority is required to contribute the remaining amounts necessary to fund the benefits for its members, using the actuarial basis recommended by PERS actuaries and actuarial consultants and adopted by the PERS Board of Administration.

Funding status and progress

The amount shown below as the "pension benefit obligation" is a standardized disclosure measure of the present value of pension benefits, adjusted for the effects of projected salary increases and step-rate benefits, estimated to be payable in the future as a result of employee service to date. The measure is intended to help users assess the funding status of PERS on a going concern basis, assess the progress made in accumulating sufficient assets to pay benefits when due, and make comparisons among employers. The measure is the actuarial present value of credited projected benefits and is independent of the funding method used to determine contributions to PERS.

The 1994 PERS information relating to funding status, progress, actuarially determined contribution requirements and trend information is not available as of the issuance of the Authority's audited financial statements. The most recently available information has been provided.

The pension benefit obligation was computed as part of an actuarial valuation performed as of June 30, 1992, but reflects all Plan amendments adopted through June 30, 1993. Significant actuarial assumptions used in the valuation include the following: (a) a rate of return on the investment of present and future assets of 8.75% a year, compounded annually; (b) projected salary increases attributable to inflation of 4.5% per year compounded annually; (c) additional projected salary increases of 2.5% per year, attributable to seniority/merit; and (d) no post retirement benefit increases.

5. Retirement plan (continued)

The total unfunded pension benefit obligation applicable to the Authority's employees was \$837,000 at June 30, 1992 and is computed as follows:

Pension benefit obligation:

Retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits	\$5,773,000
Current employees:	
Accumulated employee contributions, including allocated investment earnings	2,091,000
Employer-financed vested	2,239,000
Employer-financed nonvested	596,000
Total pension benefit obligation	<u>10,699,000</u>
Net assets available for benefits at cost (market value is \$11,124,000)	<u>9,862,000</u>
Unfunded pension obligation	<u>\$ 837,000</u>

There were no changes in benefit provisions in the current year.

Actuarially determined contribution requirements and contributions made

PERS uses the entry-age normal actuarial cost method. As a projected benefit cost method, it takes into account those benefits that are expected to be earned in the future as well as those already accrued. The normal cost for an employee is the level amount which would fund the projected benefit if it were paid annually from the date of employment until retirement. PERS uses a modification of the entry-age method in which the Authority's total normal cost is expressed as a level percentage of payroll. PERS uses this same method to amortize any unfunded actuarial liabilities. The amortization period of the unfunded liability ends in the year 2000.

The significant actuarial assumptions used to compute the actuarially determined contribution requirement are the same as those used to compute the pension benefit obligation, as previously described.

The contributions to PERS for 1994 were \$1,251,000. The contributions to PERS for 1993 and 1992 of \$1,160,000 and \$965,000, respectively, were made in accordance with actuarially determined requirements computed through an actuarial valuation performed as of June 30, 1992 and 1991, respectively. The contributions consisted of \$953,000 and \$808,000 normal costs (13.87% and 14.43% of current covered payroll) and \$207,000 and \$157,000 amortization of the unfunded actuarial accrued liability (3.01% and 2.80% of current covered payroll), respectively.

5. Retirement plan (continued)

Trend information

Trend information gives an indication of the progress made in accumulating assets to pay benefits when due. Systemwide, ten year trend information is not yet available.

	(1)	(2)	(3)	(4)	(5)	(6)
						Unfunded Pension Benefit Obligation as a Percentage of Covered Payroll
Fiscal year ending June 30	Net assets available for benefits (at cost)	Pension Benefit Obligation	Percentage Funded (1)/(2)	Unfunded Pension Benefit Obligation (2) - (1)	Annual Covered Payroll	(4)/(5)
1987	\$4,812,000	\$ 5,996,000	80.3	\$1,184,000	\$2,067,000	57.3
1988	\$5,527,000	\$ 6,483,000	85.3	\$ 956,000	\$2,448,000	39.1
1989	\$6,565,000	\$ 7,499,000	87.5	\$ 934,000	\$2,647,000	35.3
1990	\$7,683,000	\$ 8,719,000	88.1	\$1,036,000	\$3,501,000	29.6
1991	\$8,628,000	\$ 9,781,000	88.2	\$1,153,000	\$4,342,000	26.6
1992	\$9,862,000	\$10,699,000	92.2	\$ 837,000	\$5,599,000	14.9
1993	Not Available					

Analysis of dollar amounts of net assets available for benefits, pension benefit obligation, and unfunded pension benefit obligation in isolation can be misleading. Expressing the net assets available for benefits as a percentage of the pension benefit obligation provides one indication of the funding status on a going-concern basis. Analysis of this percentage over time indicates whether the Fund is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the Fund. Trends in the unfunded pension benefit obligation and annual covered payroll are both affected by inflation. Expressing the unfunded pension benefit obligation as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids in the analysis of progress made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the Fund. For fiscal 1994, 1993 and 1992, the Authority's contributions to the System, all made in accordance with actuarially determined requirements, were 16.2 percent, 16.9 percent, and 17.2 percent, respectively, of annual covered payroll.

6. Deferred compensation plan

The Authority has adopted and administers a deferred compensation plan in accordance with Section 457 of the Internal Revenue Code. Generally, all eligible employees may defer receipt of a portion of their salary until future years. Once deferred, the compensation is not available to the employees until termination, retirement, death or unforeseeable emergency. The employees are not liable for income taxes on amounts deferred until the funds are withdrawn. At June 30, 1994 and 1993, assets of the plan totaled \$3,186,000 and \$2,654,000, respectively.

6. Deferred compensation plan (continued)

All compensation deferred under the plan, all assets purchased with the deferred amounts and all income attributable to these amounts or assets (until paid or made available to the employee or other beneficiary) are the sole property of the Authority, subject to the claims of the Authority's general creditors. Participants' rights to deferred amounts under the plan are equal to those of the general creditors of the Authority.

7. Commitments

The Authority is a participant in the Association of California Water Agencies Joint Powers Insurance Authority (JPIA) for the purpose of providing general liability insurance for the member agencies. In addition, the Authority maintains excess insurance coverage. The Authority has a self-insured retention level of \$25,000 per claim and the total coverage limit is \$10,000,000.

The Authority is also a participant in the JPIA and maintains excess insurance coverage for workers' compensation. Liabilities under this program are accrued and charged to expense when the claims are reasonably determinable and when the existence of the Authority's liability is probable. The Authority's self insurance retention is \$15,000 per accident/per employee and the total coverage limit is \$5,000,000.

The Authority is committed to a long-range effort to increase the present aqueduct capacity, obtain additional water from MWD, provide additional storage within the county and maximize the use of existing storage reservoirs. The Authority estimates that the cost of the Capital Improvement Program (the Program) will be approximately \$836 million and will be expended over the next ten years. Included in the Program estimate is \$450 million for new storage facilities. Based upon the nature of the storage facilities actually selected and the sites thereof, however, the costs of such new storage facilities could substantially increase. It is expected that some major storage improvements will be completed by 2000. The Authority expects to fund approximately 60 percent of these requirements through the sale of bonds or other debt obligations. The remaining portion will be funded from operations.