THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

ANNUAL REPORT 2014

The fountain in the courtyard of Metropolitan's Union Station headquarters building – turned off in response to ongoing drought.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

ANNUAL REPORT FOR THE FISCAL YEAR

July 1, 2013 to June 30, 2014

LOS ANGELES, CALIFORNIA
2014

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LIST OF ABBREVIATIONS

Abbreviation	Term
AB	Assembly Bill
AF	Acre-feet or acre-foot
BDCP	Bay Delta Conservation Plan
BTG	Business Technology Group
CalPERS	California Public Employee Retirement System
CDPH	California Department of Public Health
CFO	Chief Financial Officer
CIP	Capital Investment Plan
CRA	Colorado River Aqueduct
CVWD	Coachella Valley Water District
CY	Calendar year
D/DBP	Disinfectants/Disinfection Byproducts
DSC	Delta Stewardship Council
DVL	Diamond Valley Lake
DWR	Department of Water Resources
EEO	Equal Employment Opportunity
EIR	Environmental Impact Report
EMIS	Environmental Management Information System
EPA	Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
FY	Fiscal year
GFOA	Government Finance Officers Association
GHG	Greenhouse gas
HAA5	Five haloacetic acids
HRIS	Human Resources Information System
IID	Imperial Irrigation District
IRP	Integrated Water Resources Plan
ICS	Intentionally Created Surplus
LRP	Local Resources Program
MAF	Million acre-feet
MCL	Maximum Contaminant Level
MIB	Methylisoborneol
MOU	Memorandum of Understanding

LIST OF ABBREVIATIONS

Abbreviation	Term
NDMA	N-Nitrosodimethylamine
O&M	Operations & Maintenance
QSA	Quantification Settlement Agreement
RAA	Running Annual Average
RPDM	Real Property Development and Management
SB	Senate Bill
SDCWA	San Diego County Water Authority
SFCWA	State and Federal Contractors Water Agency
SES	Safety and Environmental Services
SIFMA	Securities Industry & Financial Markets Association
SWP	State Water Project
SWRCB	State Water Resources Control Board
T&O	Taste and odor
TDS	Total dissolved solids
TOC	Total organic carbon
TTHM	Total trihalomethane
USDOE	U.S. Department of Energy
WQCP	Water Quality Control Plan
WRM	Water Resource Management
WSO	Water System Operations

Metropolitan mourned the loss of John V. "Jack" Foley, who first led the board from 1993 through 1998, and who had begun his second two-year term as board chairman at the time of his passing.

Normally full, this finished water reservoir was drained during a May 2014 shutdown at the Jensen Water Treatment Plant.

About Metropolitan

The Metropolitan Water District of Southern California is a regional wholesaler that delivers water to 26 member public agencies serving about 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties.

Metropolitan is governed by a 37-member board of directors representing the 26 member agencies consisting of 14 cities, 11 municipal water districts and one county water authority, which collectively serve the residents and businesses of more than 300 cities and numerous unincorporated communities.

Metropolitan directors are selected by their respective member agencies and may serve on the board of that particular member agency. It is a diverse group drawn from a variety of sectors, including business, government, engineering and agriculture. The board operates under a weighted voting system, with voting share determined by assessed property valuation.

The mission of Metropolitan is to provide its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

To supply Southern California with reliable and safe water, Metropolitan owns and operates an extensive range of capital facilities including the Colorado River Aqueduct, 16 hydroelectric facilities, nine reservoirs, 830 miles of large-scale pipes, and five water treatment plants. Four of these treatment plants are among the 10 largest plants in the nation. In fact, Metropolitan is the largest distributor of treated drinking water in the United States.

The district imports water from the Colorado River and Northern California to supplement local supplies, and helps its member agencies develop increased water conservation, recycling, storage and other local resource programs.

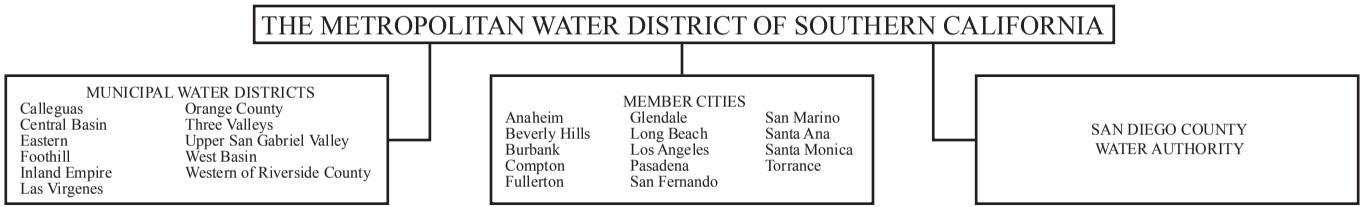
Metropolitan was established in 1928 under an act of the state Legislature to construct and operate the 242-mile Colorado River Aqueduct, which runs from an intake at Lake Havasu on the California-Arizona border, to an endpoint at Metropolitan's Lake Mathews reservoir in Riverside County.

When Metropolitan began delivering water, its service area consisted of approximately 625 square miles. Its service area has increased by 4,575 square miles since that time. The expansion is primarily the result of annexation of the service areas of member agencies.

In 1960, Metropolitan, along with 30 other public agencies, signed a long-term contract that made possible the construction of the State Water Project's 444-mile California Aqueduct, which currently serves urban and agricultural agencies from the San Francisco Bay Area to Southern California. As the largest of the now 29 contractors, Metropolitan contracts with the state Department of Water Resources, which operates the SWP, for slightly less than half of all State Water Project supplies.

Water supplies from the State Water Project travel to Southern California via the California Aqueduct. Metropolitan also has ground-water banking partnerships and water transfer arrangements that secure additional supplies, and provides financial incentives to its member agencies for local investments in water management projects and programs. An increasing percentage of Southern California's water supply comes from these local resources, including: conservation, water recycling and recovered groundwater.

Metropolitan's Board of Directors typically meets on the second Tuesday of each month. Board committee meetings usually occur on the Monday preceding the board meeting, and the second and fourth Tuesday of the month. Board and committee meetings are open to the public and are broadcast on the Internet through Metropolitan's website, www.mwdh2o.com. A schedule of board and committee meetings is available on the Web.



Calleguas MWD
Berylwood Heights Mutual Water
Brandeis Mutual
Butler Ranch
California American Water Company
California Water Service Company
Camarillo
Camrosa Water District
Crestview Mutual Water Company
Golden State Water Company
Lake Sherwood Community Services District
Oak Park Water Service
Oxnard
Pleasant Valley Mutual Water Company
Simi Valley
Solano Verde Mutual Water Company
Thousand Oaks
Ventura Co. Water Works Dist. (Nos.1 and 19)
Zone Mutual Water Company

Central Basin MWD
Bell Gardens
Bellflower-Somerset Mutual Water Co.
California Water Service Company
Cerritos
Commerce
Downey
Golden State Water Company
Huntington Park
La Habra Heights County Water District
Lakewood
L.A. County Rancho Los Amigos
Lynwood
Maywood Mutual Water Co. Nos. 1, 2 and 3
Montebello
Norwalk
Orchard Dale Water District
Paramount
Park Water Company
San Gabriel Valley Water Company
Santa Fe Springs
Signal Hill
South Gate
Suburban Water Systems
Vernon
Walnut Park Mutual Water Company
Water Replenishment District of So. Cal.

Eastern MWD
Hemet
Lake Hemet Municipal Water District
Nuevo Water Company
Perris
Rancho California Water District
San Jacinto

Foothill MWD
Crescenta Valley Water District
La Canada Irrigation District
Las Flores Water Company
Lincoln Avenue Water Company
Mesa Crest Water Company
Rubio Canon Land & Water Assoc.
Valley Water Company

Inland Empire Utilities Agency
Chino
Chino Hills
Cucamonga Valley Water District
Fontana Water Company
Monte Vista Water District
Ontario
San Antonio Water Company
Upland
Water Facilities Authority

MWD of Orange County
Brea
Buena Park
East Orange County Water District
El Toro Water District
Emerald Bay Service District
Fountain Valley
Garden Grove
Golden State Water Company
Huntington Beach
Irvine Ranch Water District
La Habra
La Palma
Laguna Beach County Water Dist.
Mesa Water District
Moulton Niguel Water District
Newport Beach
Orange
Orange County Water District
San Clemente
San Juan Capistrano
Santa Margarita Water District
Seal Beach
Serrano Water District
South Coast Water District
Trabuco Canyon Water District
Tustin
Westminster
Yorba Linda Water District

San Diego County Water Authority
Carlsbad Municipal Water District
Del Mar
Escondido
Fallbrook Public Utility District
Helix Water District
Lakeside Water District
National City
Oceanside
Olivenhain Municipal Water District
Otay Water District
Padre Dam Municipal Water District
Camp Pendleton Marine Corps Base
Poway
Rainbow Municipal Water District
Ramona Municipal Water District
Rincon del Diablo Municipal Water District
San Diego
San Dieguito Water District
Santa Fe Irrigation District
South Bay Irrigation District
Sweetwater Authority
Vallecitos Water District
Valley Center Municipal Water District
Vista Irrigation District
Yuima Municipal Water District

Three Valleys MWD
Boy Scouts of America, Firestone Ranch Reserv.
Cal Poly Pomona
Covina
Covina Irrigating Company
Glendora
Golden State Water Co. (San Dimas & Claremont)
La Verne
Mt. San Antonio College
Pomona
Rowland Water District
Suburban Water Systems
Valencia Heights Water Company
Walnut Valley Water District

Upper San Gabriel Valley MWD
Arcadia
Azusa
Monrovia
Main San Gabriel Basin Watermaster/Alhambra
Golden State Water Company
South Pasadena
Suburban Water Systems
Valley County Water District

West Basin MWD
California American Water Co. (L.A. Division)
California Water Service Company
Golden State Water Company
El Segundo
Inglewood
Lomita
Los Angeles County Waterworks District #29
Manhattan Beach
Water Replenishment Dist. of So. Cal.

Western MWD of Riverside County
Box Springs Mutual Water Company
Corona
Eagle Valley Mutual Water Company
Elsinore Valley MWD
Lee Lake Water District
Norco
Rancho California Water District
Riverside

Figure 1. Composition of The Metropolitan Water District of Southern California

DIRECTORS
JUNE 30, 2014

Chairman
Randy A. Record
Eastern Municipal Water District

Vice Chair
David D. De Jesus
Three Valleys Municipal Water District

Vice Chair
Gloria Gray
West Basin Municipal Water District

Vice Chair
John W. Murray Jr.
Los Angeles

Secretary
John T. Morris
San Marino

DIRECTORS
JUNE 30, 2014

Judy Abdo
Santa Monica

Linda Ackerman
Municipal Water District of Orange County

Robert Apodaca
Central Basin Municipal Water District

Yvonne Arcenaux
Compton

Richard W. Atwater
Foothill Municipal Water District

Sylvia Ballin
San Fernando

Brett R. Barbre
Municipal Water District of Orange County

Steve Blois
Calleguas Municipal Water District

Glenn A. Brown
Burbank

Michael Camacho
Inland Empire Utilities Agency

Glen C. Dake
Los Angeles

Donald L. Dear
West Basin Municipal Water District

DIRECTORS
JUNE 30, 2014

Larry D. Dick
Municipal Water District of Orange County

Thomas P. Evans
Western Municipal Water District of Riverside County

Jennifer Fitzgerald
Fullerton

Laura Friedman
Glendale

Daniel E. Griset
Santa Ana

Michael T. Hogan
San Diego County Water Authority

Paul Koretz
Los Angeles

Cynthia Kurtz
Pasadena

Russell Lefevre
Torrance

Keith Lewinger
San Diego County Water Authority

Suja Lowenthal
Long Beach

Vincent Mudd
San Diego County Water Authority

DIRECTORS
JUNE 30, 2014

Kristine L. Murray
Anaheim

Glen D. Peterson
Las Virgenes Municipal Water District

Jesús E. Quiñonez
Los Angeles

Fern Steiner
San Diego County Water Authority

Michael Touhey
Upper San Gabriel Valley Municipal Water District

Leticia Vasquez
Central Basin Municipal Water District

Robert Wunderlich
Beverly Hills

BOARD OF DIRECTORS
July 1, 2013 to June 30, 2014

OFFICERS OF THE BOARD

Chairman..... John V. Foley
Chairman..... Randy A. Record
Vice Chair..... David D. De Jesus
Vice Chair..... Gloria Gray
Vice Chair..... John W. Murray Jr.
Vice Chair..... Randy A. Record
Secretary..... John T. Morris

MEMBERS OF THE BOARD

Anaheim..... Kristine L. Murray
Beverly Hills..... Robert Wunderlich
Burbank..... Glenn A. Brown
Calleguas Municipal Water District..... Steve Blois
Calleguas Municipal Water District..... Gail Pringle
Central Basin Municipal Water District..... Robert Apodaca
Central Basin Municipal Water District..... Leticia Vasquez
Compton..... Yvonne Arceneaux
Compton..... Diana Sanchez
Eastern Municipal Water District..... Randy A. Record
Foothill Municipal Water District..... Richard W. Atwater
Foothill Municipal Water District..... James T. Edwards
Fullerton..... Thomas S. Babcock
Fullerton..... Jennifer Fitzgerald
Glendale..... Laura Friedman
Inland Empire Utilities Agency..... Michael Camacho
Las Virgenes Municipal Water District..... Glen D. Peterson
Long Beach..... Suja Lowenthal
Los Angeles..... Glen C. Dake
Los Angeles..... David W. Fleming
Los Angeles..... Aaron A. Grunfeld
Los Angeles..... Paul Koretz
Los Angeles..... John W. Murray Jr.
Los Angeles..... Jesús E. Quiñonez

BOARD OF DIRECTORS
July 1, 2013 to June 30, 2014

Municipal Water District of Orange County ..... Linda Ackerman
Municipal Water District of Orange County ..... Brett R. Barbre
Municipal Water District of Orange County ..... Larry D. Dick
Municipal Water District of Orange County ..... John V. Foley
Pasadena ..... Cynthia Kurtz
San Diego County Water Authority..... Michael Hogan
San Diego County Water Authority..... Keith Lewinger
San Diego County Water Authority..... Vincent Mudd
San Diego County Water Authority..... Fern Steiner
San Diego County Water Authority..... Douglas Wilson
San Fernando ..... Sylvia Ballin
San Marino..... John T. Morris
Santa Ana..... Daniel E. Griset
Santa Monica ..... Judy Abdo
Three Valleys Municipal Water District..... David D. De Jesus
Torrance..... Russell Lefevre
Torrance..... Bill D. Wright
Upper San Gabriel Valley
Municipal Water District ..... Michael Touhey
West Basin Municipal Water District..... Donald L. Dear
West Basin Municipal Water District..... Gloria Gray
West Basin Municipal Water District..... Edward C. Little
Western Municipal Water District
of Riverside County..... Thomas P. Evans

Note:
This list includes all officers and members who served on the board at any time during the fiscal year.

BOARD OF DIRECTORS
MEMBERS OF STANDING COMMITTEES
June 30, 2014

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John T. Morris, Secretary
Michael Camacho
Daniel E. Griset
Linda Ackerman
Brett R. Barbre
Thomas P. Evans
Jesús E. Quiñonez

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Judy Abdo
Robert Apodaca
Yvonne Arceneaux
Sylvia Ballin
Brett R. Barbre
Michael Camacho
Laura Friedman
Gloria Gray
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Cynthia Kurtz
Russell Lefevre
Keith Lewinger
Suja Lowenthal
John T. Morris
Vincent Mudd
Kristine Murray

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Steve Blois
Michael Camacho
Glen C. Dake
David D. De Jesus
Russell Lefevre
Suja Lowenthal
John T. Morris
Glen D. Peterson
Fern Steiner

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Glen C. Dake
Donald L. Dear
David D. De Jesus
Thomas P. Evans
Cynthia Kurtz
Keith Lewinger
Michael Touhey
Leticia Vasquez

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Richard W. Atwater
Sylvia Ballin
Michael Camacho
Donald L. Dear
Jennifer Fitzgerald
Daniel E. Griset
Vincent Mudd
John W. Murray, Jr.
Fern Steiner
Leticia Vasquez
Robert Wunderlich

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Sylvia Ballin
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Thomas P. Evans
Laura Friedman
Gloria Gray
Michael T. Hogan
Jesús E. Quiñonez
Robert Wunderlich

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Richard W. Atwater
Glenn A. Brown
Michael Camacho
Larry D. Dick
Gloria Gray
Daniel E. Griset
Paul Koretz
Keith Lewinger
Suja Lowenthal
John T. Morris
Glen D. Peterson
Jesús E. Quiñonez
Fern Steiner

HISTORICAL
ROLL OF DIRECTORS
June 30, 2014

ANAHEIM

A. W. Franzen .....March 1, 1929 to April 11, 1930
O. E. Steward.....April 18, 1930 to April 12, 1935
E. P. Hapgood.....May 3, 1935 to June 14, 1960
Charles A. Pearson .....July 12, 1960 to May 8, 1972
Keith A. Murdoch.....June 13, 1972 to May 29, 1979
Joseph C. Truxaw .....August 17, 1979 to November 20, 1990
Bob Kazarian .....November 20, 1990 to July 12, 1994
Edward G. Alario .....November 8, 1994 to April 14, 1998
S. Dale Stanton .....April 14, 1998 to July 8, 2004
Tom Tait .....July 8, 2004 to December 13, 2005
Marcie L. Edwards .....December 13, 2005 to August 18, 2009
KRISTINE L. MURRAY .....August 18, 2009 to

BEVERLY HILLS

Paul E. Schwab.....March 1, 1929 to June 19, 1931
George R. Barker.....June 19, 1931 to August 2, 1935
Arthur Taylor.....August 2, 1935 to August 2, 1951
Floyd E. Fischer .....August 17, 1951 to December 2, 1977
Ellen Stern Harris .....January 10, 1978 to March 10, 1981
Nicholas H. Cominos.....March 10, 1981 to September 1, 1984
Mel Odom.....January 11, 1983 to February 14, 1984
Ina S. Roth.....February 14, 1984 to February 11, 1992
Dan Webster .....March 10, 1992 to September 8, 1999
Betty H. Harris .....September 8, 1999 to June 14, 2007
ROBERT WUNDERLICH .....July 6, 2007 to

BURBANK

Harvey E. Bruce .....March 1, 1929 to February 11, 1933
James L. Norwood.....March 10, 1933 to April 30, 1943
May 9, 1947 to October 13, 1953
Frank C. Tillson.....May 14, 1943 to May 9, 1947
Walter H. Long.....October 13, 1953 to June 13, 1961
Earle C. Blais.....June 13, 1961 to June 11, 1985
Michael A. Nolan .....June 11, 1985 to July 9, 1991
Larry L. Stamper .....July 9, 1991 to June 6, 1995
Thomas H. McCauley.....June 6, 1995 to December 16, 1998

Fred Lantz ..... January 12, 1999 to March 9, 1999
George E. Battey Jr. ..... March 9, 1999 to December 10, 2001
GLENN A. BROWN ..... December 10, 2001 to

CALLEGUAS MUNICIPAL WATER DISTRICT

Richard Bard ..... January 10, 1961 to August 22, 1969
Carl E. Ward ..... September 16, 1969 to February 9, 1993
Vincent M. Hardy ..... October 14, 1980 to June 30, 1990
Patrick H. Miller ..... August 21, 1990 to February 1, 1999
Jeffrey A. Borenstein ..... April 7, 1999 to December 31, 2000
Ted Grandsen ..... February 9, 1993 to December 11, 2012
Gail Pringle ..... December 11, 2012 to March 10, 2014
STEVE BLOIS ..... March 10, 2014 to

CENTRAL BASIN MUNICIPAL WATER DISTRICT

Milo Dellmann ..... November 23, 1954 to November 23, 1983
Claire S. Thompson ..... November 23, 1954 to November 30, 1959
Frank H. Wheelock ..... November 23, 1954 to April 10, 1973
Victor H. York ..... November 23, 1954 to November 30, 1963
E. Thornton Ibbetson ..... December 8, 1959 to January 12, 1998
William H. Kent ..... October 10, 1961 to April 7, 1977
Carl Fossette ..... March 13, 1973 to May 30, 1986
Douglas W. Ferguson ..... June 14, 1977 to August 11, 1993
Leonis C. Malburg ..... July 8, 1986 to May 8, 1995
Gary A. Morse ..... August 11, 1993 to February 10, 1997
January 5, 1999 to June 6, 2003
Jorge G. Castro ..... February 10, 1997 to March 9, 1999
Phillip J. Pace ..... May 8, 1995 to January 8, 2008
Richard F. Mayér ..... January 12, 1998 to January 5, 1999
Charles M. Treviño ..... March 9, 1999 to December 31, 2000
ROBERT APODACA ..... June 6, 2003 to August 18, 2009
February 11, 2013 to
Phillip D. Hawkins ..... January 8, 2008 to February 11, 2013
Edward C. Vasquez ..... August 18, 2009 to July 13, 2010
Rudy C. Montalvo ..... July 13, 2010 to February 11, 2013
LETICIA VASQUEZ ..... February 11, 2013 to

COASTAL MUNICIPAL WATER DISTRICT
(absorbed into MWDOC in 2001)

C. C. Cravath.....August 14, 1942 to January 22, 1957
Lynndon L. Aufdenkamp .....January 22, 1957 to February 12, 1991
James E. O'Connor .....December 7, 1976 to July 1, 1979
John Killefer.....January 12, 1982 to September 9, 1993
Wayne T. McMurray.....February 12, 1991 to December 31, 2000
Donald C. Simpson.....October 7, 1996 to December 9, 1996
Langdon W. Owen.....December 9, 1996 to January 17, 2001

COMPTON

C. A. Dickison.....July 17, 1931 to January 20, 1933
William H. Foster.....January 20, 1933 to June 28, 1935
Warren W. Butler .....June 28, 1935 to January 24, 1980
Regina Murph.....March 11, 1980 to March 25, 2003
Kenneth M. Orduna.....April 8, 2003 to January 14, 2004
Isadore Hall III .....February 9, 2004 to April 13, 2009
YVONNE ARCENEAUX.....April 13, 2009 to September 14, 2010
March 11, 2014 to
Diana Sanchez.....September 14, 2010 to March 11, 2014

EASTERN MUNICIPAL WATER DISTRICT

Irwin E. Farrar.....August 31, 1951 to March 1, 1982
Doyle F. Boen.....March 9, 1982 to October 11, 1994
Chester C. Gilbert.....October 11, 1994 to June 1, 1999
Clayton A. Record Jr. .....June 1, 1999 to January 9, 2001
Marion V. Ashley.....January 9, 2001 to January 6, 2003
RANDY A. RECORD.....January 14, 2003 to

FOOTHILL MUNICIPAL WATER DISTRICT

Nelson Hayward.....February 8, 1955 to July 4, 1959
Conrad R. Fanton .....November 10, 1959 to November 2, 1964
A. B. Smedley .....April 13, 1965 to August 1, 1990
Brooks T. Morris .....September 11, 1990 to November 27, 1991
William T. O'Neil.....January 14, 1992 to May 10, 1999
James T. Edwards.....May 10, 1999 to April 1, 2014
RICHARD W. ATWATER.....April 3, 2014 to

FULLERTON

Walter Humphreys ..... April 10, 1931 to January 19, 1945
H. H. Kohlenberger ..... July 27, 1945 to March 7, 1959
Hubert C. Ferry ..... February 23, 1960 to February 8, 1983
Norman L. De Vilbiss ..... February 8, 1983 to April 12, 1988
James H. Blake ..... August 23, 1988 to August 3, 2012
Thomas Babcock ..... September 6, 2012 to February 11, 2014
JENNIFER FITZGERALD ..... February 11, 2014 to

GLENDALE

W. Turney Fox ..... March 1, 1929 to November 27, 1931
Samuel G. McClure ..... November 27, 1931 to January 13, 1933
Frank P. Taggart ..... January 13, 1933 to August 31, 1934
Bernard C. Brennan ..... August 31, 1934 to April 23, 1937
Herman Nelson ..... June 4, 1937 to August 27, 1954
Paul L. Burkhard ..... September 28, 1954 to June 10, 1958
Normal C. Hayhurst ..... June 10, 1958 to June 9, 1970
Lauren W. Grayson ..... June 9, 1970 to May 21, 1972
William H. Fell ..... June 13, 1972 to July 13, 1976
C. E. Perkins ..... July 13, 1976 to July 13, 1988
James M. Rez ..... August 23, 1988 to March 9, 2009
Peter Kavounas ..... March 9, 2009 to December 8, 2009
LAURA FRIEDMAN ..... December 8, 2009 to

INLAND EMPIRE UTILITIES AGENCY
(formerly Chino Basin MWD)

A. C. Reynolds ..... February 12, 1952 to March 12, 1963
Ray W. Ferguson ..... March 12, 1963 to December 31, 1980
Carl B. Masingale ..... March 10, 1981 to August 9, 1984
John G. Gilday ..... September 11, 1984 to February 15, 1985
Edward A. Girard ..... March 12, 1985 to May 31, 1990
Anne W. Dunihue ..... September 20, 1988 to February 11, 1992
Bill M. Hill ..... August 21, 1990 to February 9, 1999
Dwight F. French ..... February 11, 1992 to August 18, 1994
Wyatt L. Troxel ..... August 19, 1994 to November 14, 2003
Gene Koopman ..... February 9, 1999 to December 31, 2000
November 14, 2003 to February 10, 2009
Angel Santiago ..... February 10, 2009 to February 3, 2011
MICHAEL CAMACHO ..... February 3, 2011 to

LAS VIRGENES MUNICIPAL WATER DISTRICT

Earle Brookins.....December 13, 1960 to March 26, 1963
A. Myron McBride.....March 26, 1963 to May 11, 1965
A. Macneil Stelle.....June 8, 1965 to October 23, 1967
March 11, 1975 to February 9, 1993
Whitney P. Reeve.....December 19, 1967 to March 11, 1975
GLEN D. PETERSON .....February 9, 1993 to

LONG BEACH

Nowland M. Reid .....April 10, 1931 to January 27, 1933
W. M. Cook.....January 27, 1933 to April 30, 1943
Gus A. Walker.....April 30, 1943 to December 31, 1976
Lloyd C. Leedom.....May 9, 1947 to June 30, 1979
Samuel C. Rue.....October 9, 1979 to March 12, 1985
Ida Frances Lowry.....March 12, 1985 to February 9, 1993
Henry J. Meyer.....February 9, 1993 to August 19, 1997
Helen Z. Hansen.....August 19, 1997 to May 13, 2008
SUJA LOWENTHAL .....May 13, 2008 to

LOS ANGELES

John R. Haynes.....March 1, 1929 to February 4, 1930
John R. Richards.....March 1, 1929 to October 28, 1947
W. P. Whitsett .....March 1, 1929 to January 10, 1947
John G. Bullock.....November 1, 1929 to September 15, 1933
O. T. Johnson Jr.....November 5, 1929 to August 29, 1930
W. L. Honnold.....February 28, 1930 to July 21, 1933
J. Eisner .....August 29, 1930 to July 2, 1937
Walter A. Ham .....January 20, 1933 to January 4, 1935
D. W. Pontius .....January 20, 1933 to September 3, 1955
Perry H. Greer .....July 21, 1933 to August 14, 1950
V. H. Rossetti .....October 13, 1933 to November 19, 1960
Otto J. Emme.....January 11, 1935 to October 22, 1947
Louis S. Nordlinger .....August 13, 1937 to June 8, 1940
Joseph Jensen .....August 16, 1940 to February 3, 1944
March 8, 1946 to July 8, 1974
Ransom W. Chase .....March 14, 1947 to February 11, 1975
Gordon B. Crary .....March 14, 1947 to November 8, 1959
Howard D. Mills.....March 14, 1947 to March 17, 1965

W. R. Fawcett ..... May 13, 1952 to November 27, 1953
Luther C. Anderson..... January 12, 1954 to February 11, 1975
Noah Dietrich..... November 8, 1955 to November 23, 1970
Ferdinand Mendenhall ..... July 29, 1958 to October 8, 1974
Ben P. Griffith..... August 9, 1960 to June 7, 1961
Pietro Di Carlo ..... February 14, 1961 to November 7, 1967
William S. Peterson ..... February 14, 1961 to August 10, 1979
Aubrey E. Austin Jr..... February 28, 1961 to May 13, 1975
Albert F. Bush..... November 14, 1961 to February 11, 1975
John W. Luhring ..... January 16, 1962 to August 8, 1967
Joseph M. Quinn ..... May 14, 1968 to September 18, 1973
B. Walter Hicks..... May 8, 1973 to August 20, 1974
Samuel B. Nelson ..... September 18, 1973 to October 9, 1984
Katherine B. Dunlap ..... August 20, 1974 to September 11, 1984
Jerry Godell..... October 8, 1974 to October 9, 1984
Edward L. Kussman..... October 8, 1974 to November 8, 1993
Herman Leavitt ..... February 11, 1975 to August 19, 1975
Yolanda M. Nava..... February 11, 1975 to September 14, 1976
S. Dell Scott ..... February 11, 1975 to October 12, 1993
Willie J. Stennis ..... May 13, 1975 to December 31, 1978
Mladin Zarubica..... August 19, 1975 to March 16, 1981
Soledad S. Garcia..... September 14, 1976 to September 11, 1984
Mark Lainer ..... November 13, 1979 to February 12, 1991
Mark Nathanson..... April 14, 1981 to September 11, 1984
Michael Glazer..... September 11, 1984 to April 9, 1991
Helen Romero Shaw ..... September 11, 1984 to November 8, 1993
Marilyn L. Garcia..... October 9, 1984 to February 9, 1993
Rachel Levin..... October 9, 1984 to April 4, 1989
Frank S. Wyle ..... October 9, 1984 to August 1, 1991
Robert Abernethy..... April 4, 1989 to October 13, 1992
February 9, 1993 to November 8, 1993
Vernon R. Watkins..... February 12, 1991 to August 20, 1992
Alf W. Brandt ..... April 9, 1991 to February 13, 1996
Michael J. Gage ..... August 1, 1991 to September 21, 1993
Carolyn L. Green ..... August 20, 1992 to December 31, 1995
April 30, 1996 to May 16, 1997
William G. Luddy ..... October 13, 1992 to May 10, 2005
George Wein..... October 12, 1992 to August 20, 2002
David Y. Handelman ..... November 8, 1993 to November 14, 1995
Kenneth T. Lombard..... November 8, 1993 to April 11, 1995

Katherine W. Moret.....November 8, 1993 to December 31, 2000
Christopher C. Pak .....November 8, 1993 to December 19, 1995
Bonny L. Herman .....April 11, 1995 to April 12, 2004
Larry J. Kosmont.....February 13, 1996 to December 31, 2000
Aaron E. Michaelsen .....February 13, 1996 to January 13, 1997
L. Michael Russell.....June 11, 1996 to January 12, 1998
S. David Freeman .....January 12, 1998 to December 31, 2000
Ronald R. Gastelum .....January 12, 1998 to November 10, 1998
Jorge G. Castro .....June 7, 1999 to October 7, 2003
Deborah Dentler .....August 20, 2002 to January 6, 2006
David Farrar .....October 7, 2003 to January 6, 2006
Robert B. Simonds .....April 12, 2004 to January 6, 2006
Ronald F. Deaton.....May 10, 2005 to January 6, 2006
Aaron A. Grunfeld.....January 6, 2006 to May 12, 2014
JOHN W. MURRAY JR. .....January 6, 2006 to
JESÚS E. QUIÑONEZ.....January 6, 2006 to
Nancy Sutley .....January 6, 2006 to May 12, 2009
David W. Fleming .....May 12, 2009 to January 14, 2014
PAUL KORETZ.....January 14, 2014 to
GLEN C. DAKE.....May 12, 2014 to

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Glenn P. Allen .....December 11, 1951 to December 17, 1986
W. B. Hellis.....August 19, 1955 to February 9, 1975
William J. Teague.....February 11, 1969 to October 10, 1972
Robert R. Dowling .....September 14, 1971 to May 11, 1976
Doyle Miller .....October 10, 1972 to October 31, 1987
Carl J. Kymla.....October 9, 1973 to October 20, 1993
Philip J. Reilly .....December 9, 1975 to December 8, 1978
Gerald E. Price .....May 11, 1976 to December 31, 1988
M. Roy Knauft Jr.....September 13, 1977 to January 12, 1993
Kenneth H. Witt .....October 13, 1981 to December 31, 2000
William F. Davenport.....January 13, 1987 to February 14, 1995
John V. Foley .....August 22, 1989 to March 21, 2014
Wesley M. Bannister .....January 12, 1993 to October 31, 2006
Jerry A. King .....January 11, 1994 to July 21, 1999
Robert J. Huntley.....February 14, 1995 to October 31, 1999
Peer A. Swan .....August 31, 1999 to June 30, 2002
Ed Royce Sr.....February 7, 2000 to December 31, 2000

Langdon W. Owen ..... January 17, 2001 to April 24, 2003
Ergun Bakall ..... July 1, 2002 to December 8, 2009
LARRY D. DICK ..... August 12, 2003 to
Steve Anderson ..... January 30, 2007 to January 16, 2008
LINDA ACKERMAN ..... April 8, 2008 to
BRETT R. BARBRE ..... December 8, 2009 to

PASADENA

Franklin Thomas ..... March 1, 1929 to August 27, 1952
Morris S. Jones ..... September 16, 1952 to October 10, 1961
Robert B. Diemer ..... January 16, 1962 to October 27, 1966
Don C. McMillan ..... January 10, 1967 to October 26, 1975
Karl A. Johnson ..... December 9, 1975 to April 11, 1980
Martin Goldsmith ..... July 8, 1980 to June 11, 1985
Timothy F. Brick ..... June 11, 1985 to December 31, 2012
CYNTHIA KURTZ ..... April 8, 2013 to

SAN DIEGO COUNTY WATER AUTHORITY

Fred A. Heilbron ..... January 10, 1947 to February 14, 1973
J. L. Burkholder ..... January 24, 1947 to April 6, 1953
Richard S. Holmgren ..... August 11, 1953 to February 19, 1963
J. William Fisher ..... April 12, 1955 to October 11, 1955
Hans H. Doe ..... August 20, 1959 to October 20, 1986
Paul Beermann ..... February 19, 1963 to July 9, 1963
Harry Griffen ..... February 19, 1963 to October 13, 1997
George R. Henderson ..... August 13, 1963 to November 29, 1964
Ralph E. Graham ..... September 14, 1971 to January 14, 1975
August 17, 1979 to June 28, 1982
Raymond E. Badger ..... September 18, 1973 to May 14, 1979
Lloyd L. Lee ..... November 20, 1973 to December 31, 1980
John M. Cranston ..... January 14, 1975 to December 31, 1986
John P. Starkey ..... January 13, 1981 to March 12, 1992
Michael D. Madigan ..... August 18, 1982 to October 13, 1992
Francesca M. Krauel ..... November 8, 1983 to August 20, 2001
John F. Hennigar ..... November 18, 1986 to October 31, 1989
Dale Mason ..... January 13, 1987 to February 8, 1999
Herbert H. Stickney ..... November 14, 1989 to April 13, 1993
Christine M. Frahm ..... April 14, 1992 to March 12, 1999
John M. Leach ..... October 13, 1992 to October 25, 1993

Joseph Parker.....April 13, 1993 to January 11, 1999
June 7, 1999 to February 10, 2009
Mark W. Watton.....December 13, 1993 to January 12, 1998
February 8, 1999 to May 14, 2001
Gordon W. Tinker .....October 12, 1997 to December 31, 2000
Claude A. “Bud” Lewis.....January 12, 1998 to December 7, 2006
James F. Turner .....January 11, 1999 to December 31, 2000
February 10, 2003 to August 17, 2004
Harold W. Ball .....May 14, 2001 to February 10, 2003
George I. Loveland.....October 15, 2001 to November 1, 2006
W.D. “Bud” Pocklington.....August 17, 2004 to December 14, 2010
James H. “Jim” Bond .....November 1, 2006 to February 10, 2009
James M. Barrett.....December 7, 2006 to July 12, 2010
KEITH LEWINGER .....February 10, 2009 to
FERN STEINER .....February 10, 2009 to
Lynne L. Heidel.....July 12, 2010 to November 5, 2012
James Bowersox .....December 14, 2010 to December 12, 2011
Douglas Wilson .....December 12, 2011 to August 27, 2013
VINCENT MUDD .....November 5, 2012 to
MICHAEL T. HOGAN.....August 27, 2013 to

SAN FERNANDO

Neville R. Lewis.....December 14, 1971 to August 21, 1984
Pat J. Modugno.....August 21, 1984 to August 8, 1986
Doude Wysbeek .....December 9, 1986 to June 10, 1997
Sergio Rascon.....June 10, 1997 to July 7, 2000
Hugo C. Mejia .....July 7, 2000 to November 8, 2004
Steven Veres.....November 8, 2004 to September 5, 2007
SYLVIA BALLIN.....September 5, 2007 to

SAN MARINO

Harry L. Heffner.....March 1, 1929 to September 29, 1933
John H. Ramboz .....September 29, 1933 to November 18, 1960
Howard A. Miller .....January 10, 1961 to April 26, 1975
Preston Hotchkis.....June 10, 1975 to September 10, 1986
Preston B. Hotchkis.....March 10, 1987 to March 13, 1990
JOHN T. MORRIS .....March 13, 1990 to

SANTA ANA

S.H. Finley ..... March 1, 1929 to April 10, 1942
A. H. Allen ..... April 10, 1942 to December 10, 1968
Howard W. Crooke ..... December 10, 1968 to September 1, 1977
John Garthe ..... November 8, 1977 to July 9, 1991
Daniel H. Young ..... July 9, 1991 to December 31, 1993
Lee Harry ..... February 8, 1994 to April 8, 1997
Thom Coughran ..... April 8, 1997 to February 3, 2005
DANIEL E. GRISET ..... February 3, 2005 to

SANTA MONICA

George H. Hutton ..... March 1, 1929 to January 16, 1931
Arthur A. Weber ..... January 16, 1931 to October 12, 1934
William H. Carter ..... February 15, 1935 to March 13, 1936
Edmond S. Gillette ..... June 12, 1936 to January 8, 1937
Arthur P. Creel ..... January 8, 1937 to March 3, 1941
Samuel G. McClure ..... March 21, 1941 to November 14, 1947
Samuel J. Crawford ..... December 5, 1947 to September 15, 1959
Mark T. Gates ..... January 12, 1960 to July 12, 1972
Francis A. Goplen ..... August 18, 1972 to December 9, 1980
Robert Gottlieb ..... December 9, 1980 to December 8, 1987
Christine E. Reed ..... March 8, 1988 to April 24, 1996
JUDY ABDO ..... June 11, 1996 to

THREE VALLEYS MUNICIPAL WATER DISTRICT

Hugh W. Stiles ..... December 8, 1950 to December 31, 1961
Arthur H. Cox ..... January 16, 1962 to April 16, 1974
William C. Leech ..... April 16, 1974 to February 9, 1982
William H. Koch ..... February 9, 1982 to February 12, 1985
Mel Harper ..... February 12, 1985 to February 18, 1986
Richard W. Hansen ..... June 10, 1986 to August 20, 1991
Bruce R. J. Milne ..... August 20, 1991 to February 10, 1997
Henry S. Barbosa ..... February 10, 1997 to February 20, 2002
DAVID D. DE JESUS ..... March 8, 2002 to

TORRANCE

John Dennis .....March 17, 1931 to April 14, 1933
J. R. Jensen .....April 14, 1933 to December 31, 1933
Charles T. Rippy.....January 19, 1934 to August 8, 1950
George W. Stevens .....September 22, 1950 to June 13, 1961
George A. Bradford.....June 13, 1961 to October 13, 1964
George Vico .....November 17, 1964 to August 13, 1968
Ben Haggott.....August 13, 1968 to November 14, 1982
Marvin Brewer .....March 8, 1983 to November 27, 1993
Bill D. Wright.....March 8, 1994 to June 30, 2013
RUSSELL LEFEVRE .....September 24, 2013 to

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT

J. Ercel Cleminson.....April 9, 1963 to January 30, 1964
Howard H. Hawkins .....April 9, 1963 to December 31, 1989
February 9, 1993 to March 4, 1997
Frank E. Vachon.....March 10, 1964 to March 10, 1970
Robert T. Radford.....March 10, 1970 to December 31, 1970
Travis L. Manning.....January 12, 1971 to December 31, 1978
Burton E. Jones.....January 9, 1979 to February 9, 1993
John E. Maulding .....January 9, 1990 to February 9, 1993
Anthony R. Fellow .....February 9, 1993 to February 10, 2009
February 9, 2010 to July 19, 2011
Edward L. Chavez August 30, 2011 to January 9, 2012
Frank F. Forbes.....March 4, 1997 to December 31, 2000
R. William "Bill" Robinson.....February 10, 2009 to February 9, 2010
Stephen Millard .....January 9, 2012 to February 8, 2013
MICHAEL TOUHEY .....February 8, 2013 to

WEST BASIN MUNICIPAL WATER DISTRICT

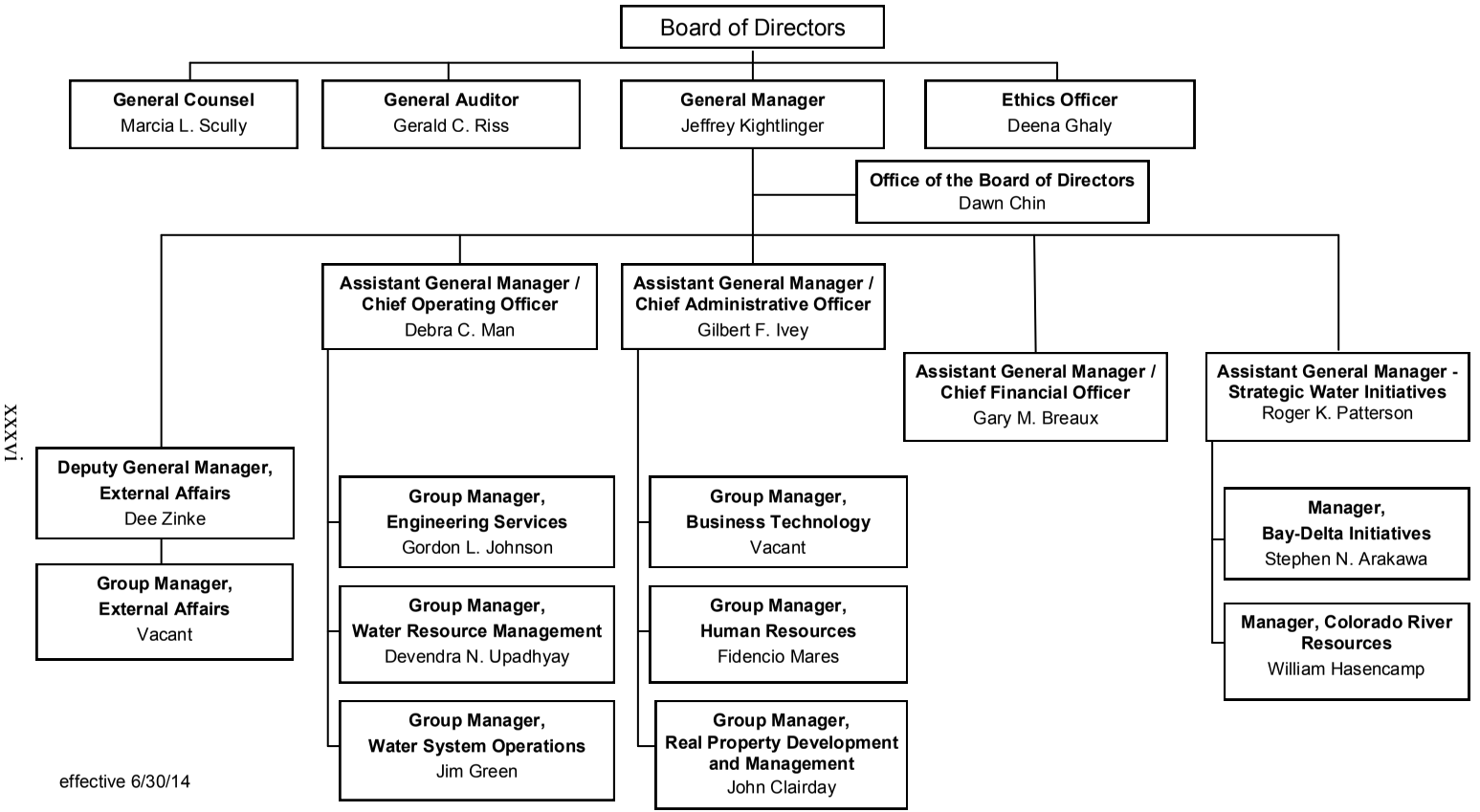
Robert E. Austin .....August 20, 1948 to October 21, 1968
Ben Haggott.....March 10, 1953 to October 8, 1956
W. C. Farquhar .....August 19, 1955 to July 13, 1976
T. V. Tallon .....August 9, 1960 to April 9, 1963
Louis J. Alexander.....August 13, 1963 to March 30, 1972
Charles D. Barker .....September 10, 1963 to December 31, 2000
Einar C. Matson.....November 12, 1968 to February 12, 1984
Lester E. Carlson .....October 8, 1974 to September 2, 1988

E. L. Balmer..... August 19, 1976 to May 23, 1989
Harold E. Crozier..... October 25, 1988 to April 9, 1991
Charles L. Stuart ..... July 11, 1989 to April 11, 1995
Robert Goldsworthy..... April 9, 1991 to March 8, 1994
Edward C. Little..... March 8, 1994 to January 12, 1998
January 5, 1999 to September 5, 2001
April 9, 2007 to September 24, 2013
Bondie O. Gambrell..... April 11, 1995 to February 10, 1997
Mark S. Dymally..... February 10, 1997 to January 5, 1999
Carol W. Kwan ..... January 12, 1998 to January 5, 1999
September 5, 2001 to April 9, 2007
Willard H. Murray Jr..... January 5, 1999 to April 13, 2009
GLORIA GRAY ..... April 13, 2009 to
DONALD L. DEAR ..... September 24, 2013 to

WESTERN MUNICIPAL WATER DISTRICT OF RIVERSIDE COUNTY

Howard Boylan..... December 14, 1954 to July 13, 1976
Lois B. Krieger ..... August 19, 1976 to December 31, 2000
John M. Mylne III..... October 12, 1993 to January 7, 2008
S.R. "Al" Lopez..... January 7, 2008 to July 13, 2009
THOMAS P. EVANS ..... July 13, 2009 to

Notes:
Current Directors' names are shown in capital letters.
A 2001 reorganization reduced the number of directors on the board from 51 to 37.


Board of Directors
General Counsel
Marcia L. Scully
General Auditor
Gerald C. Riss
General Manager
Jeffrey Kightlinger
Ethics Officer
Deena Ghaly
Office of the Board of Directors
Dawn Chin
Assistant General Manager / Chief Operating Officer
Debra C. Man
Assistant General Manager / Chief Administrative Officer
Gilbert F. Ivey
Assistant General Manager / Chief Financial Officer
Gary M. Breaux
Assistant General Manager - Strategic Water Initiatives
Roger K. Patterson
Deputy General Manager, External Affairs
Dee Zinke
Group Manager, External Affairs
Vacant
Group Manager, Engineering Services
Gordon L. Johnson
Group Manager, Water Resource Management
Devendra N. Upadhyay
Group Manager, Water System Operations
Jim Green
Group Manager, Business Technology
Vacant
Group Manager, Human Resources
Fidencio Mares
Group Manager, Real Property Development and Management
John Clairday
Manager, Bay-Delta Initiatives
Stephen N. Arakawa
Manager, Colorado River Resources
William Hasencamp
effective 6/30/14

STAFF
June 30, 2014

EXECUTIVE MANAGEMENT

General Manager ..... J. Kightlinger
General Counsel ..... M.L. Scully
General Auditor ..... G.C. Riss
Ethics Officer ..... D. Ghaly
Assistant General Manager/Chief Operating Officer ..... D. Man
Assistant General Manager/Chief Administrative Officer ..... G.F. Ivey
Assistant General Manager/Chief Financial Officer ..... G. Breaux
Assistant General Manager/Strategic Water Initiatives ..... R.K. Patterson
Deputy General Manager, External Affairs ..... D. Zinke

BUSINESS TECHNOLOGY

Group Manager ..... Vacant
Director, Information Technology Section ..... T. Miller
Manager, Administrative Services Section ..... O. Tucker
Manager, Business Outreach Section ..... J. Arena

CHIEF FINANCIAL OFFICER

Manager, Financial Services Section ..... K.R. Norris
Controller ..... T.E. DeBacker
Manager, Budget & Financial Planning ..... J.M. Skillman

ENGINEERING SERVICES

Group Manager/Chief Engineer ..... G. Johnson
Manager, Program Management Section ..... W. Lieu
Manager, Facility Development Section ..... M. Rojas
Manager, Infrastructure Reliability Section ..... J. Bednarski

EXTERNAL AFFAIRS

Group Manager ..... Vacant
State Legislative Representative ..... K. Cole
Federal Legislative Representative ..... B. Hiltscher
Manager, Media Services Section ..... A. Acuña
Manager, Legislative Services Section ..... N. Purkiss
Manager, Conservation & Community Services Section ..... Y.L. Martinez
Executive Strategist ..... T. Philp
Special Projects Manager ..... M. Westford

STAFF
June 30, 2014

HUMAN RESOURCES

Group Manager ..... F. Mares
Manager, Employee Relations Section ..... S. Lem
Manager, Total Compensation Section ..... D. Pitman

LEGAL

Assistant General Counsel ..... S.B. Bennion
Assistant General Counsel……...……H.C. Beatty

OFFICE OF THE BOARD OF DIRECTORS

Board Executive Secretary ..... D. Chin

REAL PROPERTY DEVELOPMENT & MANAGEMENT

Group Manager ..... J.C. Clairday

STRATEGIC WATER INITIATIVES

Manager, Bay-Delta Initiatives ..... S.N. Arakawa
Manager, Colorado River Resources..... W.J. Hasencamp
Special Projects Manager ..... B.W. Burman
Special Projects Manager ..... R.D. Neudeck
Executive Strategist..... M.J. Wheeler

WATER RESOURCE MANAGEMENT

Group Manager ..... D. Upadhyay
Manager, Resource Implementation Section..... K. Donhoff
Manager, Resource Planning & Development Section ..... G.L. Chan

WATER SYSTEM OPERATIONS

Group Manager ..... J.F. Green
Assistant Group Manager..... B.M. Coffey
Manager, Water Operations & Planning Section ..... B. Yamasaki
Manager, Power Operations & Planning Section……J. Lambeck
Manager, Water Quality Section ..... M.H. Stewart
Manager, Operations Support Services Section ..... C. Spradling
Manager, Conveyance & Distribution Section..... G. Boyd
Manager, Water Treatment Section..... H. Collins
Manager, Operational Safety & Environmental Services Section..... B. Koch

Ralph Brisette, the sole survivor of a June 1971 Sylmar tunnel explosion, looks at the memorial erected in their honor in the Metropolitan courtyard, during a December 2013 ceremony attended by the families of the 17 workers who lost their lives.

General Manager Jeffrey Kightlinger looks on as Gov. Jerry Brown – in an unprecedented January 2014 visit to Metropolitan – urges a 20 percent reduction in Southern California water use in response to historically dry conditions.

Introduction

California's drought extended into a third and historic year in 2014, creating unprecedented water supply challenges for the Metropolitan Water District of Southern California and all of the state. In fact, seven of the past eight years have been dry, making this one of the longest dry periods in California's recorded history. Decades of investments to increase the Southland's network of water storage helped to preserve reliable water supplies. Drought-year water management dominated the activity that also saw planning advances in the Sacramento-San Joaquin Delta and the Colorado River.

Public attention remained focused on the drought as a record-dry January set the stage for a third consecutive dry year. Gov. Jerry Brown on Jan. 17 declared a statewide drought emergency and called on all Californians to reduce their water use. Metropolitan in the ensuing weeks responded with a suite of actions:

- Declaring a formal water supply alert that embraced the governor's call to reduce water use.
- Doubling Metropolitan's conservation budget from $20 million to $40 million.
- Launching a $5.5 million public outreach campaign to spur conservation, intensify drought awareness and highlight rebate programs for turf removal and water-saving devices.
- Maximizing the use of stored Colorado River water in parts of the service area typically served exclusively by State Water Project supplies.

Above-average rain conditions in March and April failed to make up for the record dry start to the year, prompting the California Department of Water Resources to limit deliveries of the State Water Project to a record-low 5 percent of a full delivery. Southern California took heed. Throughout the service area, demands on Metropolitan in the first half of 2014 tracked significantly below the previous dry cycle of 2009, providing encouraging evidence that

residents and businesses took seriously the call to conserve. Metropolitan met the demands of its member agencies by drawing on its storage reserves to supplement the available supplies from the State Water Project and Colorado River.

Acute short-term conditions and important long-term planning milestones highlighted the 2013/14 year. In September 2013, Metropolitan's Board of Directors sought to advance a new generation of local supply development by funding 16 projects led by member agencies. The goal was to find ways to shrink regulatory hurdles and other barriers in hopes of advancing recycled water, stormwater capture, ocean desalination and groundwater recovery projects. In line with Metropolitan's Integrated Water Resources Plan, the projects embrace "foundational actions" that lay the groundwork for a more diverse portfolio of local supplies in the years ahead.

Spring 2014 on the Colorado River saw the historic release of more than 100,000 acre-feet of Mexico's water through downstream "pulse flows" designed to gauge the environmental benefits of flows destined for Mexico's Sea of Cortez. The release was part of the agreements associated with Minute 319 of the International Water Treaty between the United States and Mexico to advance mutually beneficial water management objectives. On the U.S. side of the border, the Basin States developed a drought contingency plan to address low water levels in Lake Mead that by June 30 were just 8 feet above the trigger level for a first-ever shortage declaration.

The Bay Delta Conservation Plan – the ongoing federal-state effort to solve the water system/ecosystem challenges in the Delta – reached an important milestone with the release of 25,000 pages of draft environmental impact/habitat planning documents in December. The size and complexity of the documents prompted extension of the public comment period beyond the end of the 2013/14 year. The draft proposal called for constructing three new intakes on the northern Sacramento River and twin tunnels of a combined 9,000 cubic-feet-per-second capacity to protect and transport current water supplies to the existing state and federal aqueduct systems in the southern Delta. To help improve the ecology of the struggling estuary, the BDCP proposed to enhance or restore more than 140,000 acres of Delta habitat. Metropolitan, Southland water agencies, business groups and

other key stakeholders supported the draft as a workable framework toward a final plan.

The spring's demanding water agenda overshadowed financial achievements for Metropolitan that included the lowest rate increases in more than a decade, and a healthy reserve, a third of which the board voted to place in a water management fund for water supplies needed in future rainless days. The board in April adopted a two-year budget that called for 1.5 percent rate increases for each of the two years as part of a broader strategy of directing funds to pay down debt and long-term financial obligations, while funding capital investments.

Metropolitan lost one of its wisest and most thoughtful leadership voices in March with the passing of two-time Board Chairman John V. "Jack" Foley. The 83-year-old Foley had represented the Municipal Water District of Orange County since August 1989. In May, the board elected Randy Record of the Eastern Municipal Water District as Metropolitan's new chairman. A fifth-generation San Jacinto Valley farmer, he was the second member of the Record family to serve as a Metropolitan director. His father, Clayton A. Record Jr., had served on Metropolitan's board from June 1999 to January 2001.

Metropolitan's prudent water management actions leading up to and during 2013/14 allowed it to have considerable water supplies still in reserve for the onset of 2015. Despite the severe conditions, actions taken throughout the year positioned Southern California to make important advances in local supplies on the Colorado River and in the Delta.

A crane hoists a multi-nozzle gate at the Jensen Water Treatment Plant effluent, May 2014.

CHAPTER 1

Delivering Metropolitan's Water Supplies

Metropolitan supplies water to its 5,200-square-mile service area, a six-county region from Ventura County in the north to San Diego County in the south, through a conveyance and distribution system consisting of the 242-mile-long Colorado River Aqueduct, State Water Project supplies and its five pumping plants, approximately 830 miles of pipeline, five water treatment plants and nine reservoirs. In addition, Metropolitan has 16 hydroelectric power recovery plants throughout its system. See Table 1-1 for the rated capacity of Metropolitan's five treatment plants.

TABLE 1-1
METROPOLITAN'S DISTRIBUTION SYSTEM
WATER TREATMENT PLANTS

Plant (Location)	Process/ Water Type	Rated Capacity (MGD)
Joseph Jensen Water Treatment Plant (Granada Hills)	Conventional treatment with ozone SPW	750
Robert A. Skinner Water Treatment Plants #1, #2, & #3 (Winchester)*	Conventional treatment and direct filtration with ozone, blend of CRW/SPW	630
F. E. Weymouth Water Treatment Plant (La Verne)	Conventional treatment, blend of CRW/SPW	520
Robert B. Diemer Water Treatment Plant (Yorba Linda)	Conventional treatment with ozone, blend of CRW/SPW	520
Henry J. Mills Water Treatment Plant (Riverside)	Conventional treatment with ozone SPW	220

SPW = State Project Water
CRW = Colorado River Water
MGD = Million Gallons per Day
* Consists of three separately regulated water treatment plants

In fiscal year 2013/14, Metropolitan sold 2.06 million acre-feet of water, with daily system deliveries as high as 7,400 AF per day. An acre-foot will serve two households in and around their homes for a year. Treated water sales were 1.03 million AF and untreated water sales were also 1.03 million AF. Drought conditions that began in January 2013, and continued into this fiscal year, led to water sales that were about 200,000 AF higher than the prior fiscal year.

Despite one of the worst droughts in recorded history, sales in FY 2013/14 remained near the 10-year average annual sales of 2.03 million AF. This was due to various factors, most notably ongoing significant conservation throughout the region and investments in local resource projects. Table 1-2 shows the monthly water sales for all member agencies in FY 2013/14. Figure 1-1 shows the total fiscal year water sales by category, Figure 1-2 shows the monthly water sales by category and Figure 1-3 shows a comparison of water sales by category for the past two fiscal years. Table 1-3 shows historical water sales by calendar and fiscal year, and Table 1-4 shows the water use by member agency for FY 2013/14. Major shutdowns and service interruptions are shown in Table 1-5.

Calendar year 2013 was the driest year statewide since California began measuring rainfall in 1849 and conditions remained dry through the first six months of 2014. The combination of drought and regulatory restrictions on exports from the Delta prompted Metropolitan to draft storage, maximize available supplies, and operate the system in new and unique ways to preserve extremely limited SWP supplies. As of January 2014, dry-year storage had dropped by 15 percent over the previous year, from 2.7 to 2.3 million AF.

Unfortunately, the extremely dry conditions continued, and the Department of Water Resources briefly dropped the SWP allocation to zero on Jan. 31, 2014. Although the allocation was restored to 5 percent, this was still the lowest allocation in SWP history, and represented less than 100,000 AF of SWP Table A supplies for Metropolitan.

TABLE 1-2
MONTHLY WATER SALES FOR ALL MEMBER AGENCIES
Fiscal Year 2013/14
(Acre-Feet)

Month	Full Service*	Agricultural	Storage Program**	Totals
July	195,406	0	728	196,135
August	194,237	0	0	194,237
September	193,020	0	0	193,020
October	199,861	48	0	199,909
November	146,349	0	9,139	155,488
December	136,242	0	0	136,242
January	150,580	81	0	150,661
February	119,721	0	0	119,721
March	137,273	0	0	137,273
April	168,690	0	616	169,307
May	198,563	0	2,197	200,761
June	199,619	0	4,024	203,644
Totals	**2,039,562**	**129**	**16,706**	**2,056,396**

* Includes Full Service and Exchange sales
** Includes sales from the Conjunctive Use, Emergency Storage and Soboba Settlement Programs.

Metropolitan supplemented its low 2014 SWP supplies through a number of SWP actions, including withdrawing 220,000 AF of carryover water conserved from 2013, 220,000 AF of contractual Flexible Storage supplies from Castaic Lake and Lake Perris, as well as 28,000 AF of purchases and exchanges. SWP deliveries were also supplemented by 90,000 AF of withdrawals from Metropolitan groundwater storage programs in the Central Valley. By the end of June 2014, an additional 500,000 AF of storage reserves was drafted to supplement the low SWP supply.

This extraordinary water supply situation led to a multi-pronged strategy for adapting to the severe dry conditions. In March 2014, after a scheduled shutdown on the Colorado River Aqueduct, Metropolitan maximized at an 8-pump flow, with an anticipated delivery of 1.2 million AF in CY 2014. Additionally, Metropolitan tapped dry-year storage reserves to bridge the estimated 1.2 million AF gap between imported supplies and demands forecast

for CY 2014. Additionally, due to the historic shortage of SWP supplies, Metropolitan developed and implemented a number of operational actions and capital projects to move stored water from Diamond Valley Lake – along with CRA deliveries – into those areas that customarily received SWP supplies only. Chief among these were (1) operating the Greg Avenue Pump Station on the East Valley Feeder to move Colorado River supplies as far west as the San Fernando Valley; and (2) working collaboratively with member agencies with the ability to shift their deliveries from service connections taking SWP water to those delivering DVL or CRA water into their systems. By the end of CY 2014, it is expected that these actions will offset SWP demands approximately 130,000 AF, or almost 8 percent of total forecast demand.

Major Accomplishments for Fiscal Year 2013/14

System Operations and Planning

- Adapted to the lowest SWP allocation in the history of the State Water Project (5 percent) in 2014 by shifting deliveries and implementing operational actions that are expected to reduce SWP use by approximately 130,000 AF in CY 2014.
- Developed capital projects to further enhance operational flexibility by reducing the size of the service area traditionally served by only SWP supplies.

Colorado River

- Delivered 1.013 MAF of water supplies on the Colorado River Aqueduct in CY 2013.
- Began implementing plans to maximize Colorado River Aqueduct deliveries following the March 2014 scheduled shutdown; forecast diversions of Colorado River water and programs are approximately 1.2 million AF for CY 2014.
- Stored 61,000 AF into the Advance Delivery Account with Desert Water Agency and Coachella Valley Water District and withdrew 104,000 AF of intentionally created surplus water from Lake Mead during CY 2013.

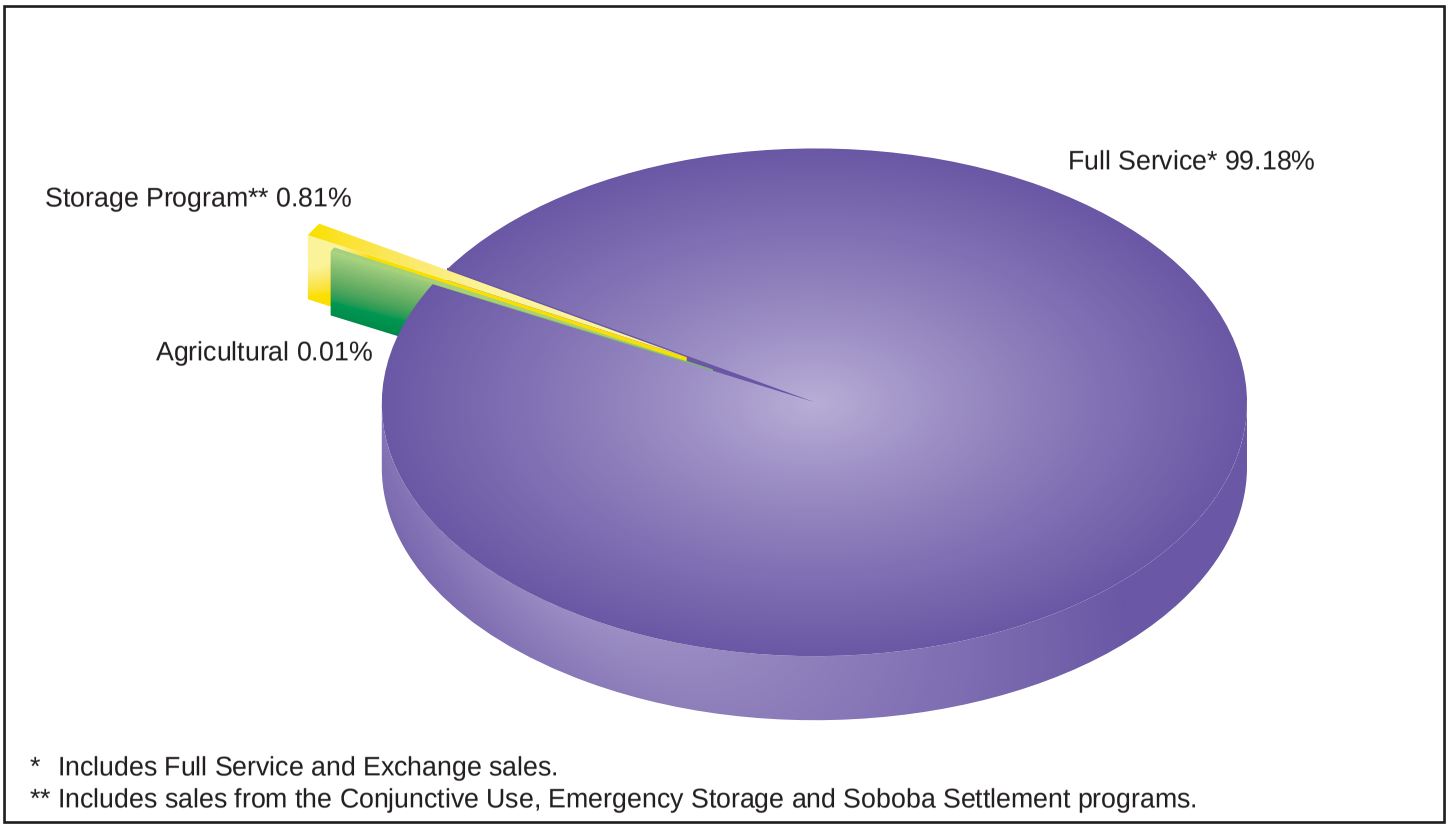


Figure 1-1. Total Water Sales for Fiscal Year 2013/14 - All Member Agencies

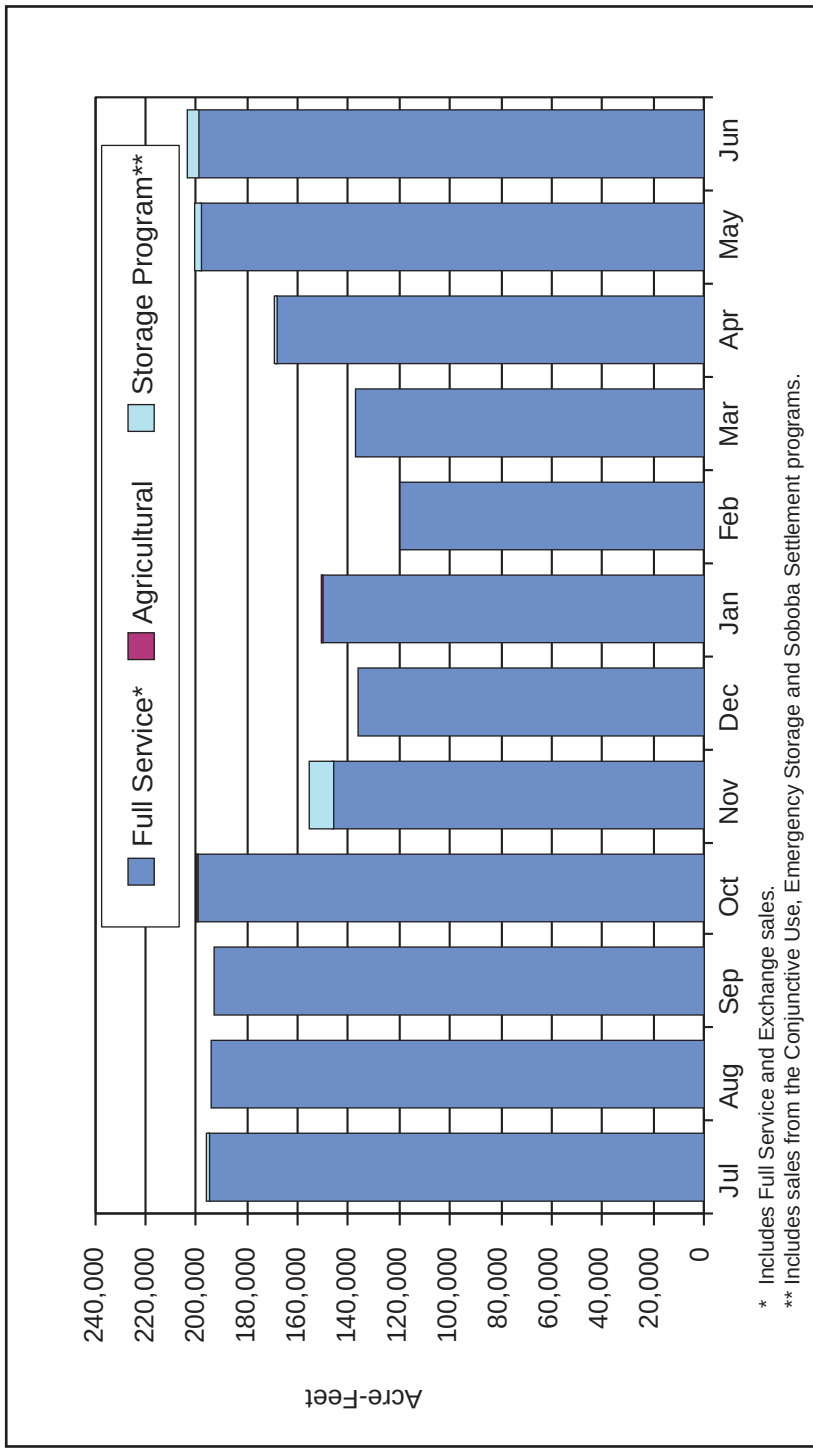


Figure 1-2. Monthly Water Sales for Fiscal Year 2013/14 - All Member Agencies

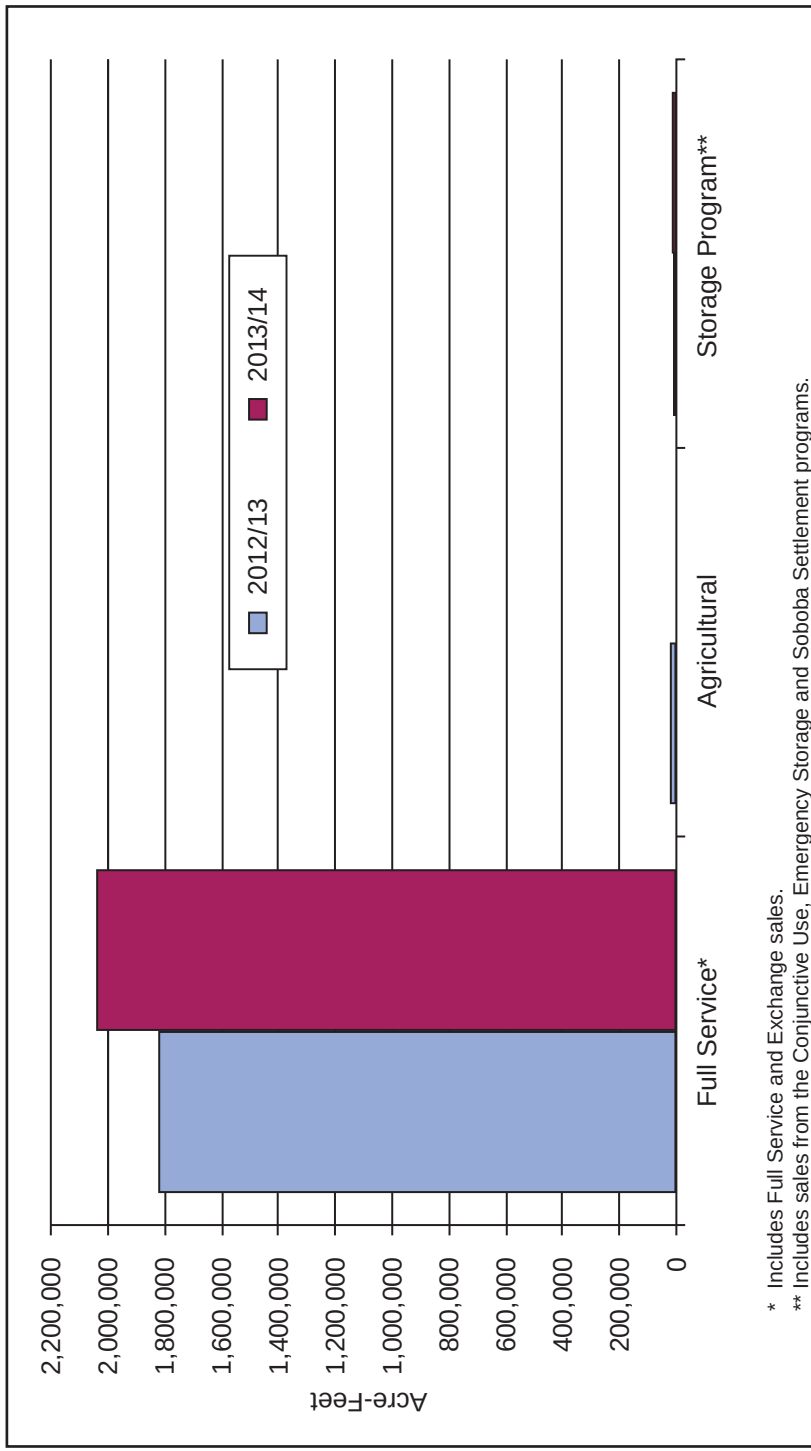


Figure 1-3. Comparison of Water Sales to Member Agencies For The Past Two Fiscal Years

TABLE 1-3
HISTORICAL WATER SALES
Calendar Year & Fiscal Year Totals
(Acre-Feet)

	Calendar Year	Fiscal Year		Calendar Year	Fiscal Year
1941	4,444		1978	1,302,312	1,198,325
1942	12,391	9,739	1979	1,230,068	1,235,193
1943	16,355	14,566	1980	1,295,903	1,282,064
1944	24,567	15,875	1981	1,597,315	1,462,825
1945	37,883	30,606	1982	1,366,664	1,502,949
1946	54,134	46,686	1983	1,180,616	1,226,783
1947	73,573	59,721	1984	1,547,078	1,428,253
1948	148,178	113,090	1985	1,653,414	1,574,216
1949*	163,817	145,008	1986	1,685,359	1,642,249
1950*	170,825	165,616	1987	1,857,591	1,825,657
1951*	192,416	165,473	1988	2,017,403	1,923,824
1952	203,068	197,210	1989	2,371,479	2,095,079
1953	221,022	219,397	1990	2,626,124	2,511,375
1954	333,968	245,875	1991	1,809,606	2,264,864
1955	386,341	385,946	1992	1,989,165	1,888,907
1956	482,909	405,962	1993	1,812,644	1,910,644
1957	518,754	543,706	1994	1,955,411	1,930,529
1958	578,384	539,734	1995	1,458,237	1,591,496
1959	660,718	601,099	1996	1,675,254	1,641,670
1960	816,722	734,919	1997	1,838,675	1,787,857
1961	977,795	935,228	1998	1,413,674	1,569,024
1962	1,033,361	931,795	1999	1,776,306	1,593,687
1963	943,745	1,020,822	2000	2,325,836	2,075,680
1964	1,122,880	1,064,381	2001	2,100,771	2,164,556
1965	1,105,809	1,148,847	2002	2,438,570	2,326,920
1966	1,115,040	1,059,631	2003	2,251,051	2,271,628
1967	1,008,946	1,059,354	2004	2,440,724	2,437,678
1968	1,208,064	1,077,178	2005	2,003,041	2,076,100
1969	997,623	1,057,335	2006	2,129,518	2,116,039
1970	1,152,914	1,165,866	2007	2,390,535	2,351,927
1971	1,184,697	1,113,968	2008	2,178,630	2,250,184
1972	1,213,417	1,248,710	2009	1,963,448	2,137,979
1973	1,218,156	1,177,860	2010	1,658,597	1,780,030
1974	1,223,256	1,139,175	2011	1,650,260	1,613,529
1975	1,294,650	1,329,636	2012	1,748,167	1,708,565
1976	1,390,822	1,389,248	2013	1,955,799	1,856,537
1977	1,312,876	1,390,466	2014		2,056,396

Note:
* Calendar years 1949, 1950 and 1951 are estimated values.
Figures from 1979 to present consist of billable sales of treated and untreated water, including exchanges.

TABLE 1-4
WATER USE BY METROPOLITAN'S MEMBER AGENCIES
Fiscal Year 2013/14[1]
(Acre-Feet)

Member Agency	Total Local Production[2]	Total Local Use[3]	MWD Direct Deliveries[4]	MWD Indirect Deliveries	MWD Total Deliveries	Total Water Use[5]	MWD Direct Deliveries as % of Total Use
Anaheim	53,769	53,769	13,635		13,635	67,404	20%
Beverly Hills	747	747	11,632		11,632	12,379	94%
Burbank	13,330	13,330	8,817	7,000	15,817	22,147	40%
Calleguas	39,479	49,716	113,856		113,856	163,571	70%
Central Basin	196,456	219,828	33,951		33,951	253,778	13%
Compton	7,858	7,858	44		44	7,902	1%
Eastern	129,117	129,117	106,193		106,193	235,309	45%
Foothill	9,674	9,674	9,795		9,795	19,469	50%
Fullerton	21,279	21,279	8,776		8,776	30,055	29%
Glendale	10,196	10,196	20,341		20,341	30,537	67%
Inland Empire	236,947	236,947	67,038	796	67,833	303,984	22%
Las Virgenes	5,001	5,145	22,360		22,360	27,505	81%
Long Beach	32,576	32,576	36,340		36,340	68,916	53%
Los Angeles	148,906	149,777	447,113		447,113	596,890	75%
MWDOC	350,188	364,463	191,518	50,701	242,218	555,981	34%
Pasadena	10,896	10,883	23,097		23,097	33,979	68%
San Diego CWA	89,049	89,049	545,659		545,659	634,708	86%
San Fernando	3,108	3,108	61		61	3,170	2%

TABLE 1-4 (Continued)
WATER USE BY METROPOLITAN'S MEMBER AGENCIES
Fiscal Year 2013/14[1]
(Acre-Feet)

Member Agency	Total Local Production[2]	Total Local Use[3]	MWD Direct Deliveries[4]	MWD Indirect Deliveries	MWD Total Deliveries	Total Water Use[5]	MWD Direct Deliveries as % of Total Use
San Marino	4,418	4,418	1,583		1,583	6,001	26%
Santa Ana	28,259	28,259	10,343		10,343	38,602	27%
Santa Monica	8,621	8,621	5,900		5,900	14,521	41%
Three Valleys	58,291	58,291	67,962	3,110	71,072	126,253	54%
Torrance	4,623	11,109	17,210		17,210	28,318	61%
Upper San Gabriel	211,736	171,174	3,490	31,289	34,779	174,665	2%
West Basin	65,460	63,508	120,915		120,915	184,422	66%
Western	190,584	190,584	75,910		75,910	266,494	28%
	1,930,567	1,943,425	1,963,536	92,895	2,056,431	3,906,960	50%

Footnotes:

[1] Local supply data includes three year averages for those sources unavailable at time of publication.

[2] Total Local Production = groundwater, groundwater recovery, surface water, recycled water and Los Angeles Aqueduct supplies produced, but not necessarily used, within a member agency boundary, not including water used for environmental purposes.

[3] Total Local Use = Total Local Production adjusted for inter-agency water transfers and locally produced water, not including water used for environmental purposes.

[4] MWD Direct Deliveries include exchanges. Deliveries may differ from sales due to timing of program certifications, credits, and other billing adjustments.

[5] Total Water Use = Total Local Use + MWD Direct Deliveries.

TABLE 1-5
2013/14 MAJOR SHUTDOWNS & SERVICE INTERRUPTIONS

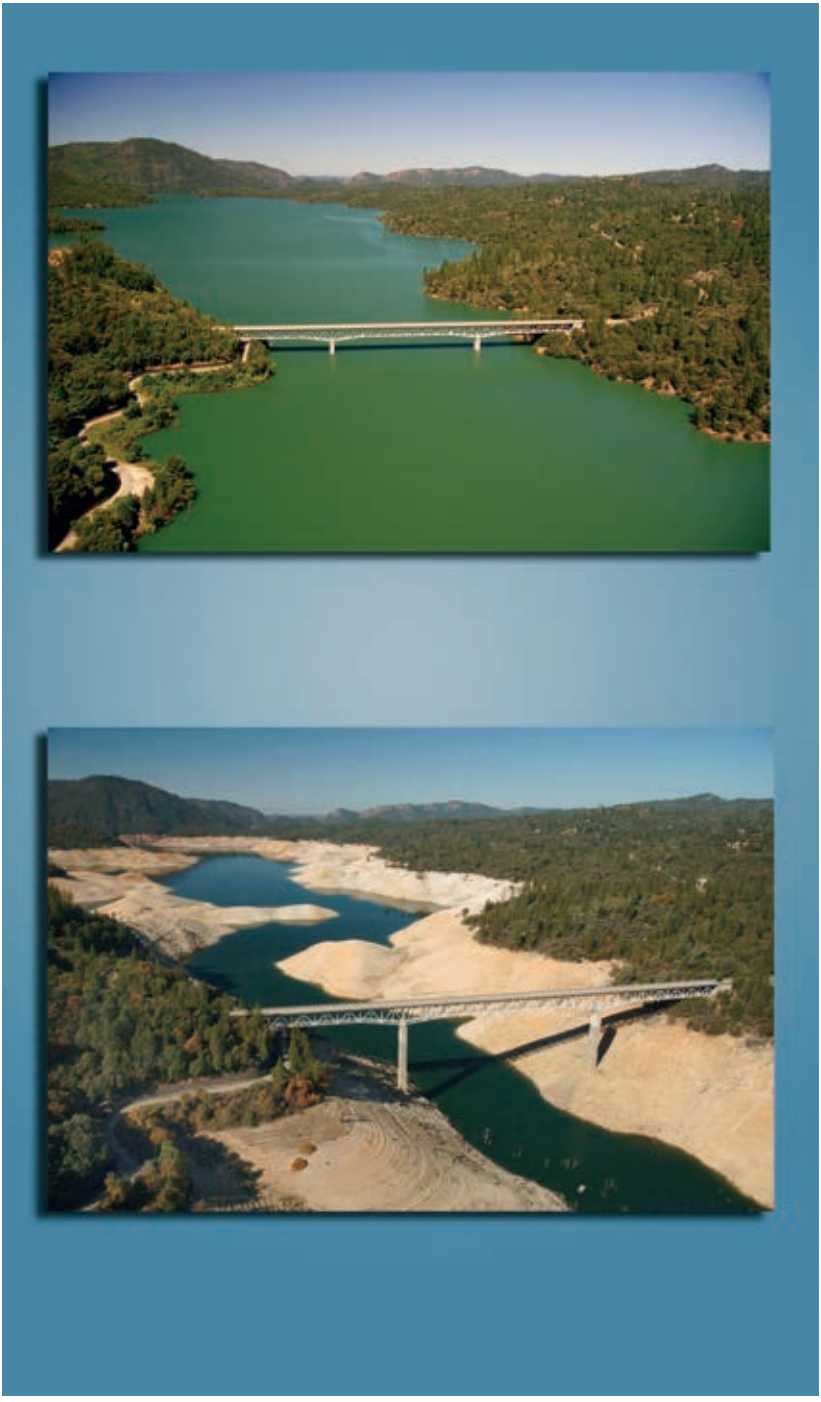
FACILITY	DATES	NO. OF DAYS	LIMITS OF SHUTDOWN	PURPOSE
WEST VALLEY FEEDER NO. 1	Jul 22-28, 2013	7	Entire Pipeline	For support structure upgrades at 9 locations between De Soto & Chatsworth Park.
SAN DIEGO PIPELINE 4 (REDUCED FLOW)	Oct 6-26, 2013	21	From the Skinner plant to San Diego County Water Authority's pipeline connection	For SDCWA contractor to perform internal inspection of Pipeline 4 from Diversion Structure south to Paint Mountain Vent.
SAN DIEGO PIPELINE 3 (REDUCED FLOW)	Nov 3-12, 2013	10	From Lake Skinner to SDCWA pipeline connection	For SDCWA to inspect and repair pipeline within jurisdiction. Also performing relining work from Sweetwater to Lower Otay.
COLORADO RIVER AQUEDUCT -San Jacinto Pipeline -San Jacinto Pipeline 1 & 2	Nov 5-9, 2013	5	From Whitsett Intake Pumping Plant to Lake Mathews	For installation of barrier necessary to begin the adit rehabilitation and SCE testing.
FOOTHILL FEEDER -San Fernando Tunnel -Jensen Treatment Plant (Reduced Flow)	Nov 6, 2013	1 day	Entire Pipeline	For a shutdown of DWR's Castaic Lake Outlet Tower.
WEYMOUTH TREATMENT PLANT (REDUCED FLOW)	Nov 28 - Jun 2, 2014	187	Weymouth treatment plant	For seismic retrofit of the sump area below the filters of filter buildings 1 and 2 and to complete electric work related to seismic retrofits.
RIALTO FEEDER -Etiwanda Pipeline	Dec 9-10, 2013	2	From California Department of Water Resources's Devil Canyon Power Plant to Live Oak Reservoir.	For replacement of two leaking 24-inch butterfly bypass valves at the Etiwanda Pipeline turnout to ensure 100 percent isolation for the Etiwanda Pipeline Liner repair shutdown.

TABLE 1-5 (Continued)
2013/14 MAJOR SHUTDOWNS & SERVICE INTERRUPTIONS

FACILITY	DATES	NO. OF DAYS	LIMITS OF SHUTDOWN	PURPOSE
ALLEN MCCOLLOCH PIPELINE	Jan 13-23, 2014	11	From Diemer treatment plant to Irvine	For inspection and repair of any mortar lining damage.
COLORADO RIVER AQUEDUCT -San Jacinto Pipeline -San Jacinto Pipeline 1 & 2	Feb 18 - Mar 6, 2014	16	From Whitsett Intake Pumping Plant to Lake Mathews	For rehabilitation of the Gene Pumping Plant Delivery Line Expansion Joints, San Jacinto Adit Repairs, NERC testing and tunnel cleaning.
SECOND LOWER FEEDER (SITE 1)	Feb 10-24, 2014	15	From South Coast Feeder interconnect to Bixby sectionalizing valve	For PCCP repairs.
ORANGE COUNTY FEEDER	Feb 20-25, 2014	6	From Willits PCS to pipeline terminus	For replacement of a 12-inch valve at the Irvine Regulating Structure, a 6-inch valve and repair of a pinhole leak.
IRVINE CROSS FEEDER	Feb 20-25, 2014	6	Entire pipeline	For PCCP inspection.
SAN DIEGO CANAL -Lakeview Pipeline	Feb 21-28, 2014	8	From Casa Loma Canal to Lake Skinner	For additional engineering inspections, removal of silt and debris buildup at 4 locations along the San Diego Canal.
WEST VALLEY FEEDER NO.1	Mar 10-18, 2014	9	Entire Pipeline	For PCCP inspection.
SAN DIEGO PIPELINE 4	Mar 16-18, 2014	3	From Skinner treatment plant to SDCWA jurisdiction	For SDCWA's contractor to connect new piping from Twin Oaks Treated Flow Control Facility to SDPL #4 and Metropolitan to replace an air release isolation valve.

TABLE 1-5 (Continued)
2013/14 MAJOR SHUTDOWNS & SERVICE INTERRUPTIONS

FACILITY	DATES	NO. OF DAYS	LIMITS OF SHUTDOWN	PURPOSE
SANTA MONICA FEEDER	Jun 9-13, 2014	5	From Turnout at BH-01 Service Connection to pipeline terminus	For installation of a sectionalizing valve for future tie-in of a relocated portion of the Santa Monica Feeder between Wilshire Blvd and Santa Monica Blvd. and reinforced concrete and metallic pipeline (RCMP) inspection.
YORBA LINDA FEEDER	Mar 19-26, 2014	8	Entire Pipeline	For visual inspection of pipeline.
SAN DIEGO PIPELINE 4	Mar 24-26, 2014	3	From Skinner treatment plant to SDCWA connection	For SDCWA's contractor to remove bulkhead.
ETIWANDA PIPELINE	May 1 - Sept 30, 2014	153	Entire Pipeline	For pilot project for lining repair.
JENSEN TREATMENT PLANT -East Valley Feeder -Sepulveda Feeder -West Valley Feeder No. 1 -West Valley Feeder No. 2 -Calabasas Feeder	May 9-12, 2014	4	Jensen treatment plant	For installation of multi-nozzle gate for throttling control through Jensen Effluent Channel
SECOND LOWER FEEDER (SITE 2)	May 12 - Jul 17, 2014	67	From Bixby sectionalizing valve to 223rd lateral interconnection	For PCCP repairs.
SAN DIEGO PIPELINE 3 (REDUCED FLOW)	Jun 22 - 28, 2014	7	From Lake Skinner to SDCWA connection	For SDCWA to reline portions of pipe within jurisdiction.



Lake Oroville provides an example of the impacts of one of the driest years in recorded history in California, showing how levels dropped between July 2011 (above) and October 2013 (below).

CHAPTER 2

Strategic Water Initiatives

Metropolitan provides imported water supplies to its member agencies from two primary sources, the Colorado River and the Sacramento-San Joaquin Delta watersheds. The staff of Strategic Water Initiatives coordinates resources throughout the organization to manage and protect Metropolitan's interests in these two key watersheds.

Bay-Delta Initiatives

California experienced one of the driest years in recorded history, with statewide impacts that triggered unprecedented actions to meet water demands. The critical need for long-term water reliability solutions became a focal point throughout the state. Progress continued on the Bay Delta Conservation Plan to address the challenges in the Sacramento-San Joaquin Delta. Metropolitan staff worked with state, federal and other water agencies to provide comprehensive legal, policy, scientific and engineering expertise for multiple ongoing programs that aim to manage supplies and ecosystem restoration in the Delta. Staff also provided monthly financial tracking and reporting to management on Bay-Delta expenditures. Figure 2-1 shows a map of the Delta region.

Near-Term Actions

Habitat Restoration

Progress on two habitat restoration projects in the Delta continues to move forward. Construction on the Lower Yolo Project is now scheduled to begin in 2015, once significant permits are approved. Metropolitan assisted in completion of the Final Environmental Impact Report and Final Long Term Management Plan and key habitat studies.

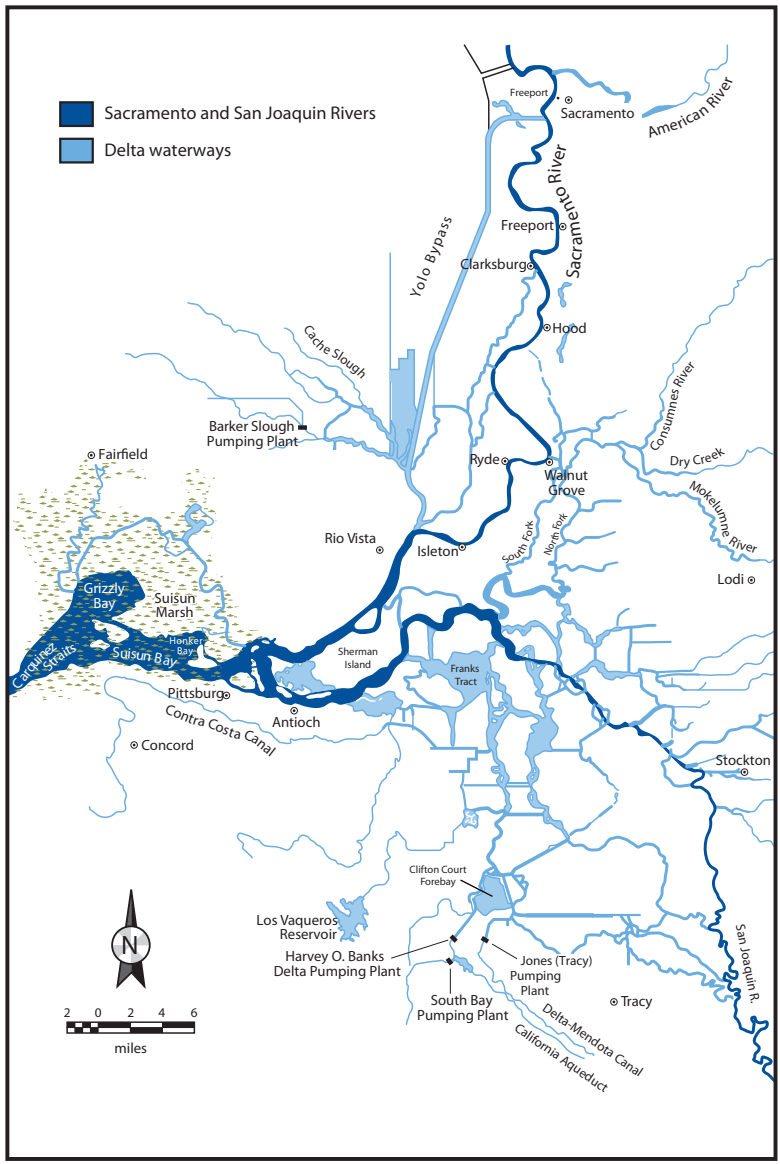


Figure 2-1. Map of the Delta Region

Metropolitan also helped develop draft monitoring and aquatic benefits assessment programs to meet the habitat crediting requirements, and to document the benefits for listed fish species. For the Tule Red Project, the State and Federal Contractors Water Agency continues to develop conceptual design alternatives, including the modeling of local and regional hydrodynamics and sediment transport. Completion of the design is expected in 2015 with construction slated to begin in 2016.

Turbidity Forecasting

Metropolitan staff participated with other water users on the multi-agency Delta Conditions Team to monitor Delta smelt salvage and implementation of the smelt biological opinion's Reasonable and Prudent Alternative. Dry conditions persisted in northern California throughout the winter of 2013-14. As a result, a significant "first flush" event did not occur and smelt concern levels were not reached. This Delta planning group continues to evaluate the historical frequency of first flush events and the ability of the projects to control turbidity during such events.

Regulatory Activities

Gov. Jerry Brown proclaimed a State of Emergency in January 2014 to address the record dry conditions around the state. In response to this proclamation, the State Water Resources Control Board issued a statewide notice of water shortages and potential for future curtailment of water right diversions, then held a workshop to discuss potential options for curtailing water use for the Delta and Sacramento and San Joaquin River watersheds. Metropolitan staff collaborated with DWR and other water contractors and provided input to the SWRCB. In May 2014, the board issued notices of curtailment to post-1914 water right holders in the Delta and Sacramento and San Joaquin River watersheds instructing them to cease diversions.

Also in response to the drought, DWR and Reclamation jointly filed a Temporary Urgency Change Petition to temporarily modify requirements in their water right permits and licenses for the State Water Project and Central Valley Project. The SWRCB issued an order approving the petition in January 2014; the order has been modified several times since January in response to hydrologic

conditions. Metropolitan staff continues to monitor hydrologic conditions in collaboration with DWR and other water contractors and provide input to the SWRCB.

The SWRCB is continuing its phased review and update of the 2006 Water Quality Control Plan for the Bay-Delta. Phase 1 focuses on the southern Delta salinity objectives while Phase 2 considers the comprehensive review of the other elements of the Bay-Delta WQCP. In support of its Phase 2 proposed changes to the WQCP, the SWRCB held two workshops to solicit expert scientific input on selected topics. Metropolitan staff, serving in a lead role, participated with other water contractor representatives on expert panels to provide scientific input on both workshops.

Long-Term Actions

Bay Delta Conservation Plan

Metropolitan is continuing to work closely with state and federal officials, fishery agencies and other public water agencies to successfully complete the Bay Delta Conservation Plan, a critical program to help restore ecosystem functions in the Delta and provide improved water supply reliability.

Metropolitan staff work helped inform the public draft of the BDCP and Environmental Impact Report/Environmental Impact Statement that were posted on the BDCP website for public comment during FY 2014. Metropolitan also participated in efforts to develop a public review draft of the BDCP Implementing Agreement, which is the contractual basis for outlining roles, responsibilities and commitments for the BDCP.

Metropolitan staff helped assess Delta conveyance options and provide independent risk assessments, cost estimates and engineering and technical support.

Delta Stewardship Council

The Delta Stewardship Council's Delta Plan and its associated regulations became final on Sept. 1, 2013, when the California Office of Administrative Law approved the Delta Plan regulations. The DSC's Interagency Implementation Committee met for the first time in

April 9, 2014. The purpose of the committee is to build interagency cooperation and coordination for actions that would contribute toward the long-term health of the Delta.

Water Quality

Metropolitan continued to advocate for water quality controls and policies to address water quality stressors in the Bay-Delta ecosystem. In July 2013, following a multi-year stakeholder process involving Metropolitan and other state and local agencies, the Central Valley Regional Water Quality Control Board adopted a Drinking Water Policy for the Delta and its tributaries, to provide additional protections for drinking water supplies.

The SWRCB and Central Valley and San Francisco Bay Regional water boards continued their efforts to address nutrient impacts in the Bay-Delta and develop nutrient water quality objectives. Metropolitan participated in these processes throughout the year to provide input concerning development of a nutrient science plan, nutrient assessment framework for determining nutrient impairment, nutrient monitoring plans and modeling tool development. Metropolitan also submitted written comments supporting the nutrient controls for the Stockton Regional Wastewater Control Facility discharge permit and testified at the Central Valley Regional Water Quality Control Board hearing in June 2014 when the permit was adopted.

Emergency Preparedness Plan

Metropolitan continued in a lead role facilitating development of DWR's emergency preparedness and response plans for Delta levee failures, including a comprehensive effort to develop an emergency freshwater pathway for resumption of water exports following major levee failures. DWR reports this plan will be issued as a final document by late 2014. Metropolitan has worked with DWR to develop emergency response tools to guide emergency operations, which will facilitate planning by DWR and other agencies in simulated and actual flood and earthquake emergencies. DWR completed land purchases and leases for continued emergency stockpiling over several years in Stockton and Rio Vista. The Corps of Engineers has stockpiled various flood-fighting materials at their West Sacramento storage facility.

Science Development

Metropolitan staff developed a method for estimating the number of adult Delta smelt that would be expected to be salvaged by the state and federal export facilities each winter provided that operations conformed to the adult Delta smelt Reasonable and Prudent Alternative under the Federal Endangered Species Act. This method could allow the U.S. Fish and Wildlife Service to generate an Incidental Take Limit that avoids unusually large Delta smelt salvage, without inhibiting operations in most years.

Metropolitan staff submitted a paper for publication concluding that the location of Delta smelt during the fall months may be determined as much or more by geographical location as by salinity. This conclusion casts doubt on the common assumption that Delta smelt can be shifted in Suisun Bay by increasing delta outflow.

Metropolitan funded a field study by Dr. Lenny Grimaldo in 2014 to monitor longfin smelt and Delta smelt larval density in near-shore and marsh channel locations around Suisun Bay. The study will improve understanding of longfin and delta smelt spawning behavior.

Metropolitan, the State Water Contractors, the state Department of Fish and Wildlife and University of California Davis developed a set of experiments that will help determine whether longfin smelt abundance increases in wet years are caused by increased flows in tributaries to San Francisco Bay, rather than by increased Delta outflow.

Colorado River Resources

Drought conditions continued in the Colorado River Basin in 2013/14, with 12 of the previous 15 years experiencing below-normal snowfall and snowmelt runoff in the Basin. Due to drought conditions, Lake Powell released the lowest amount of water into Lake Mead since the reservoir was initially filled, which resulted in Lake Mead dropping 23.3 feet during the fiscal year. On June 30, 2014, Lake Mead reached 1,082.7 feet above sea level – 39 percent of capacity; the lowest year-end level since the reservoir was initially filled in the 1930s. Lake Mead ends the fiscal year just 7.7 feet above

the level that would trigger a first-ever shortage declaration on the Colorado River.

Figure 2-2 shows a map of the Colorado River Basin and the states that rely on the Colorado River system for water. The map also shows California's major water agencies with water supply contracts from the Bureau of Reclamation. California has a basic apportionment of 4.4 million acre-feet, most of which is used by Metropolitan and the higher-priority agricultural users (Palo Verde Irrigation District, Yuma Project Reservation Division, Imperial Irrigation District and Coachella Valley Water District).

For the 12th consecutive year, no surplus water was available to Metropolitan in FY 2014. Metropolitan's supplies from the Colorado River were limited to its 550,000 acre-foot Basic Apportionment plus water management programs developed to augment that amount. In calendar year 2013, a total of about 1.013 MAF of water was delivered to Metropolitan's service area from the Colorado River. Of that amount, a total of 180,000 acre-feet was exchanged with San Diego County Water Authority.

Managing Colorado River Programs

During the fiscal year, Metropolitan partnered with Imperial Irrigation District to fund and implement their joint agricultural conservation program. New programs were added to reach the full yield of 105,000 acre-feet available under the agreement. Metropolitan also reached agreement with Coachella Valley Water District to obtain 13,000 acre-feet of water by CVWD reducing its call on its ability to obtain 20,000 acre-feet of water from the IID Conservation Program each year.

In FY 2014, for the second year in a row, Metropolitan held its fallowing call to the minimum amount provided for under the Palo Verde Irrigation District Land Fallowing Program. About 32,000 acre-feet of water was transferred during the fiscal year. In response to dry conditions, on July 31, 2013 Metropolitan doubled its annual fallowing call, which is made one year in advance. Metropolitan will receive the additional water supply in fiscal year 2015.

Fig. 2-2. Map of the Colorado River Basin

Lake Mead Storage

Metropolitan took delivery of a record amount of Intentionally Created Surplus water from Lake Mead during calendar year 2013, withdrawing 94,000 acre-feet from its ICS account. The water was added to the yield from the water supply programs and delivered through the Colorado River Aqueduct to Metropolitan's service area. As of June 30, 2014, Metropolitan's ICS storage credit balance was 474,000 acre-feet.

Mexico Pulse Flow

In spring 2014, a 105,000 AF pulse flow of water was released from Morelos Dam in northern Mexico into the formerly dry Colorado River channel, as part of a five-year agreement reached in November 2012 between the United States and Mexico on a binational water management agreement. For two months, water flowed south through the Colorado River Delta, eventually reaching the Pacific Ocean. The environmental conditions of the area were monitored before and after the pulse flow, and a report is being prepared documenting the effectiveness of the event in restoring lost habitat in the region. The development and implementation of the pulse flow program was part of Minute 319 to the United States and Mexico International Water Treaty

Agreement with IID

When Minute 319 was signed in late 2012, IID declined to be a party to that agreement. During 2013, IID re-evaluated its position and expressed interest in joining the funding of conservation activities in Mexico, in return receiving a portion of the water conserved by those projects. Because the Minute had already been approved, IID and Metropolitan pursued a separate agreement that was finalized in December 2013. It allows IID to reimburse 50 percent of the costs Metropolitan pays for conservation activities in Mexico. In return, Metropolitan provides 50 percent of the ICS credits it receives from the program to IID. Per the provisions of Minute 319, the ICS would be made available to the project funders no later than 2017.

The Anaheim Water Recycling Demonstration Project is owned and operated by the city of Anaheim and will provide about 110 acre-feet per year of recycled water for toilet flushing and landscape irrigation.

CHAPTER 3

Water Resource Management

The Water Resource Management Group is responsible for planning, securing and managing high-quality water resources for Metropolitan's member agencies in a reliable, cost-effective and environmentally responsible manner. WRM's principal responsibilities include managing imported water supplies and quality, advancing water-use efficiency, and providing supply and demand forecasts that are the foundation for resource and facility planning. Other responsibilities include developing and implementing timely resource programs and projects, creating facility plans, assisting member agencies in optimizing local resources to benefit the entire Metropolitan service area, and ensuring a fair return on Metropolitan's contractual investments in local and imported resources.

Metropolitan continued to develop programs to balance locally-developed resources with imported supplies, as the region faced one of the driest years on record. Water years 2012 and 2013 were dry in the California and Upper Colorado River Basin watersheds where Metropolitan imports its water supplies. Water year 2014, which began on October 1st, continued this dry trend. Precipitation in some areas of California is tracking near the driest year of record. The impacts of two dry years on reservoir storage and groundwater levels are also evident.

State Water Project Resources

Metropolitan currently has a water supply contract for 1,911,500 acre-feet annually with the California Department of Water Resources, subject to availability. Drought conditions in fiscal year 2013/14 substantially reduced the amount of available water. As a result of these low supply conditions, Metropolitan managed 885,415 AF through the State Water Project system, either delivering water to Metropolitan's service area or storing supplies outside

the MWD service area (Fig. 3-1). Deliveries to Metropolitan's service area include exchange deliveries with Desert Water Agency and Coachella Valley Water District, exchange deliveries with other SWP partners, and withdrawals from storage programs. Water stored outside Metropolitan's service area includes flexible storage accounts, carryover, deliveries to exchange partners, and groundwater storage programs. During FY 2013/14, Metropolitan exercised its SWP water management programs to ensure delivery capability under these dry-year conditions, which included drafting more than 111,800 AF from its San Joaquin Valley and Mojave storage accounts, and nearly 190,000 AF from its flexible storage accounts. FY 2013/14 deliveries and storage are subject to change based on future reconciliations by the Department of Water Resources.

Metropolitan's net SWP payments during FY 2013/14 were $431 million (Table 3-1) on a modified accrual basis, or $425 million on a cash basis, which was the reporting system used prior to FY 2013. Metropolitan also administered existing storage programs located outside its service area along the SWP system. These programs are described on the following pages.

Water Storage Programs

Semitropic/Metropolitan Water Banking and Exchange Program

Under the 1994 agreement with Semitropic Water Storage District, Metropolitan can store up to 350,000 AF in the groundwater basin underlying Semitropic and retrieve a minimum of 31,500 AF annually. During FY 2013/14, Metropolitan received 60,643 AF from Semitropic. The total water in storage on June 30, 2014 was 224,482 AF.

Arvin-Edison/Metropolitan Water Management Program

Under the December 1997 agreement with Arvin-Edison Water Storage District, Metropolitan can store up to 350,000 AF in the groundwater basin underlying Arvin-Edison and retrieve up to 75,000 AF per year. During FY 2013/14, Metropolitan recovered 17,100 AF from Arvin-Edison to improve reliability. In addition, Metropolitan participated in a water quality exchange of 20,460 AF with Arvin-Edison in FY 2013/14 pursuant to a water quality provision of the agreement. The exchange improved water quality in the

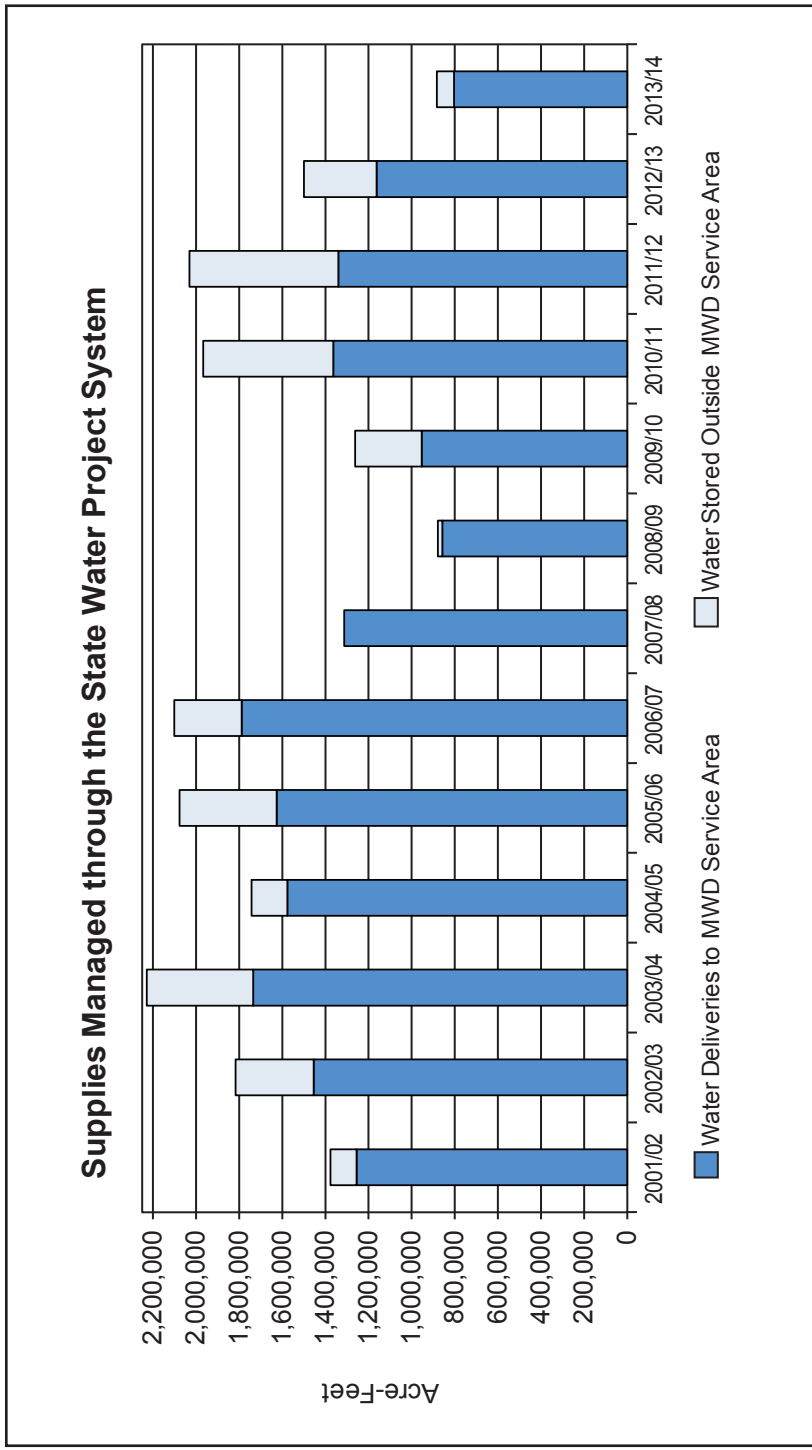


Figure 3-1. Supplies Managed through the State Water Project System

TABLE 3-1
CHARGES, PAYMENTS AND CREDITS UNDER THE STATE WATER AND DEVIL CANYON CASTAIC CONTRACTS

(Millions of Dollars)

	Conservation (Delta)		Transportation								
Fiscal Year	Capital	Minimum OMP&R [1]	Capital	Minimum OMP&R [1]	Variable	Extra * Capacity Costs	Devil Canyon/ Castaic	Subtotals	Credits	Totals	Accumulated Totals
1963-73	2.50	0.66	197.31	19.33	1.02	39.16	3.56	263.54	(15.62)	247.91	247.91
1973-83	80.68	29.43	484.57	181.61	59.06		70.74	906.09	(49.53)	856.56	1,104.47
1983-93	163.85	127.62	662.42	1,391.73	88.29	85.62	88.50	2,608.03	(373.17)	2,234.86	3,339.33
1993/94	23.50	16.92	74.35	147.75	(5.86)	25.24	9.89	291.79	(101.81)	189.98	3,529.31
1994/95	22.58	17.29	77.05	150.63	8.96	24.01	10.24	310.76	(94.13)	216.63	3,745.94
1995/96	21.85	19.68	81.31	111.87	3.11	26.08	10.60	274.49	(65.33)	209.16	3,955.10
1996/97	21.51	21.19	85.23	109.56	10.00	29.18	10.44	287.11	(38.30)	248.81	4,203.91
1997/98	21.79	22.87	90.07	138.35	6.67	27.58	9.56	316.87	(64.74)	252.14	4,456.05
1998/99	20.56	23.07	90.58	139.60	6.50	29.48	9.40	319.19	(74.96)	244.23	4,700.28
1999/00	19.16	24.11	89.26	164.26	12.05	29.99	10.32	349.15	(70.06)	279.09	4,979.37
2000/01	26.91 [2]	24.60	115.99 [2]	156.53	35.73	32.99	10.81	403.57	(27.19)	376.38	5,355.75
2001/02	8.46	25.20	60.24	147.23	111.75	38.99	10.53	402.40	(68.44)	333.97	5,689.72
2002/03	16.32	25.90	88.45	161.36	64.83	32.95	10.26	400.07	(57.10)	342.97	6,032.68
2003/04	18.39	27.86	94.86	169.12	110.22	31.49	10.23	462.18	(69.47)	392.71	6,425.39
2004/05	20.60	29.65	98.51	149.53	102.39	28.28	10.99	439.94	(66.68)	373.26	6,798.65
2005/06	17.36	28.37	88.80	140.92	130.82	23.60	11.10	440.97	(41.33)	399.64	7,198.30
2006/07	21.34	25.40	87.95	172.78	88.82	28.64	11.90	436.83	(74.20)	362.63	7,560.92
2007/08	23.95	15.33	80.98	188.78	165.49	36.24	12.12	522.90	(58.60)	464.30	8,025.22
2008/09	23.18	30.50	73.30	224.90	56.72	31.30	13.40	453.30	(58.59)	394.71	8,419.93
2009/10	34.69	39.06	91.87	205.72	71.27	35.93	13.97	492.49	(54.28)	438.22	8,858.15
2010/11	34.70	49.13	97.02	206.13	100.66	36.22	14.10	537.96	(46.08)	491.88	9,350.03
2011/12	26.52	57.29	94.26	197.73	109.67	38.73	14.68	538.88	(59.04)	479.84	9,829.87
2012/13 [3]	34.62	61.06	72.72	170.08	135.15	35.30	14.35	523.28	(42.33)	480.95	10,310.81
2013/14	27.13	60.51	93.50	163.40	91.77	30.64	14.21	481.17	(49.77)	431.40	10,742.21
TOTALS	732.16	802.72	3,170.60	5,008.89	1,565.09	777.61	405.88	12,462.96	(1,720.75)	10,742.21	

* Includes costs for excess capacity constructed for Metropolitan on the System and East Branch Enlargement

[1] Minimum Operations, Maintenance, Power, and Replacement charge

[2] DWR requested early payment of $36M to manage cash shortages due to 2001 California's energy crisis

[3] Reporting changed from cash to modified accrual basis in FY 2012/13

California Aqueduct, lowering total dissolved solids and bromide levels, but did not result in an increase in supply. The total water in storage on June 30, 2014 was 183,705 AF.

San Bernardino/Metropolitan Coordinated Operating Agreement

A July 2000 coordinated operating agreement with San Bernardino Valley Municipal Water District provides for the annual purchase of 20,000 AF and a carryover storage account of 50,000 AF. The agreement also provides Metropolitan with the option to purchase additional water when available. San Bernardino Valley Municipal Water District did not make any supplies available for Metropolitan to purchase in FY 2013/14 due to drought conditions limiting water availability. There was a carryover balance of zero on June 30, 2014.

Kern Delta/Metropolitan Water Management Program

A May 2003 agreement with the Kern Delta Water District allows Metropolitan to store up to 250,000 AF in the groundwater basin underlying Kern Delta and retrieve up to 50,000 AF per year. During FY 2013/14, Metropolitan received 16,365 AF from Kern Delta. The total water in storage on June 30, 2014 was 162,963 AF.

Mojave/Metropolitan Water Storage Program

In October 2003, Metropolitan entered into a demonstration agreement with Mojave Water Agency. The agreement allows for the exchange of SWP water on the basis of one acre-foot of return water for each acre-foot of water previously delivered to Mojave. In July 2011, the agreement was amended to extend the term to 2035 and reduce program costs. During FY 2013/14, Metropolitan recovered 17,706 AF. The total water remaining in the exchange account on June 30, 2014 was 39,404 AF.

Water Transfers and Exchanges

Dry conditions in the SWP watershed resulted in a final 2013 SWP allocation of 35 percent. Continued record-dry conditions resulted in a 2014 SWP allocation of 5 percent as of June 30, 2014. Despite these low SWP allocations, Metropolitan did not pursue significant SWP water transfer supplies in FY 2013/14 due to near record-high Metropolitan storage levels and the high purchase costs of

transfer supplies. Metropolitan did, however, purchase 14,584 AF of less costly Yuba Accord water transfer supplies in CY 2013 and anticipates purchasing 10,000 AF in CY 2014.

Yuba Accord Water Transfers

In summer 2013, Metropolitan purchased 14,584 AF of supplies made available by the Yuba County Water Agency under a 2007 long-term agreement with DWR. After carriage and conveyance losses, Metropolitan received 10,209 AF.

Multi-Year Water Pool Demonstration Program

In summer 2013, Metropolitan purchased 30,000 AF of supplies made available through the Multi-Year Pool Demonstration Program. Metropolitan's board authorized participation in this new program, which does not incur carriage or conveyance losses.

San Gabriel Valley Municipal Water District Exchange

Metropolitan entered into a purchase and exchange agreement with San Gabriel Valley Municipal Water District in September 2013. As a result of the agreement, Metropolitan obtained 481 AF of additional supply by exchange and purchased 4,038 AF. The agreement has provided both Metropolitan and San Gabriel Valley Municipal Water District with improved reliability.

Colorado River Resources

During FY 2013/14, no surplus was available to Metropolitan, and California was limited to its basic apportionment of 4.4 MAF. Acquisitions and exchanges made possible by the 2003 Quantification Settlement Agreement continued during the year. The QSA established water use limits for Imperial Irrigation District and Coachella Valley Water District, and provides the means for Metropolitan to acquire water to augment its basic annual apportionment of Colorado River water. Metropolitan conveyed 1,117,578 AF in its Colorado River Aqueduct during FY 2014, about 350,000 AF more than the previous year. Metropolitan achieved this by taking advantage of 2007 water management agreements that allow

agencies to develop and store new water supplies in Lake Mead as intentionally created surplus. As of December 2013, Metropolitan had 474,063 AF of intentionally created surplus stored in Lake Mead. Metropolitan began drawing on this account during calendar year 2014, in order to maintain deliveries on the Colorado River Aqueduct. Figure 3-2 illustrates annual water supplies managed through the Colorado River system. These supplies include diversions into Metropolitan's service area and water stored or exchanged outside Metropolitan's service area, including intentionally created surplus supplies since calendar year 2003.

Figure 3-3 illustrates the shift from long-term dry conditions that had impacted the storage levels of lakes Mead and Powell through FY 2013. There was above-average precipitation in the first nine months of the 2014 water year (October 1 to September 30), resulting in a projected 2014 April through July unregulated inflow to Lake Powell of approximately 100 percent of normal.

Water Supply Acquisitions and Exchanges

In calendar year 2013, Metropolitan obtained 98,307 AF from its agricultural conservation program with IID, while an additional 32,750 AF was made available from Metropolitan's land fallowing agreements with farmers in the Palo Verde Valley. In addition, 180,256 AF were delivered to San Diego County Water Authority by exchange, consisting of 100,000 AF of IID conservation plus 80,256 AF of conserved water from the Coachella Canal and All-American Canal lining projects, which was conveyed through the Colorado River Aqueduct. The lining projects also produced 16,000 AF that was used by Metropolitan.

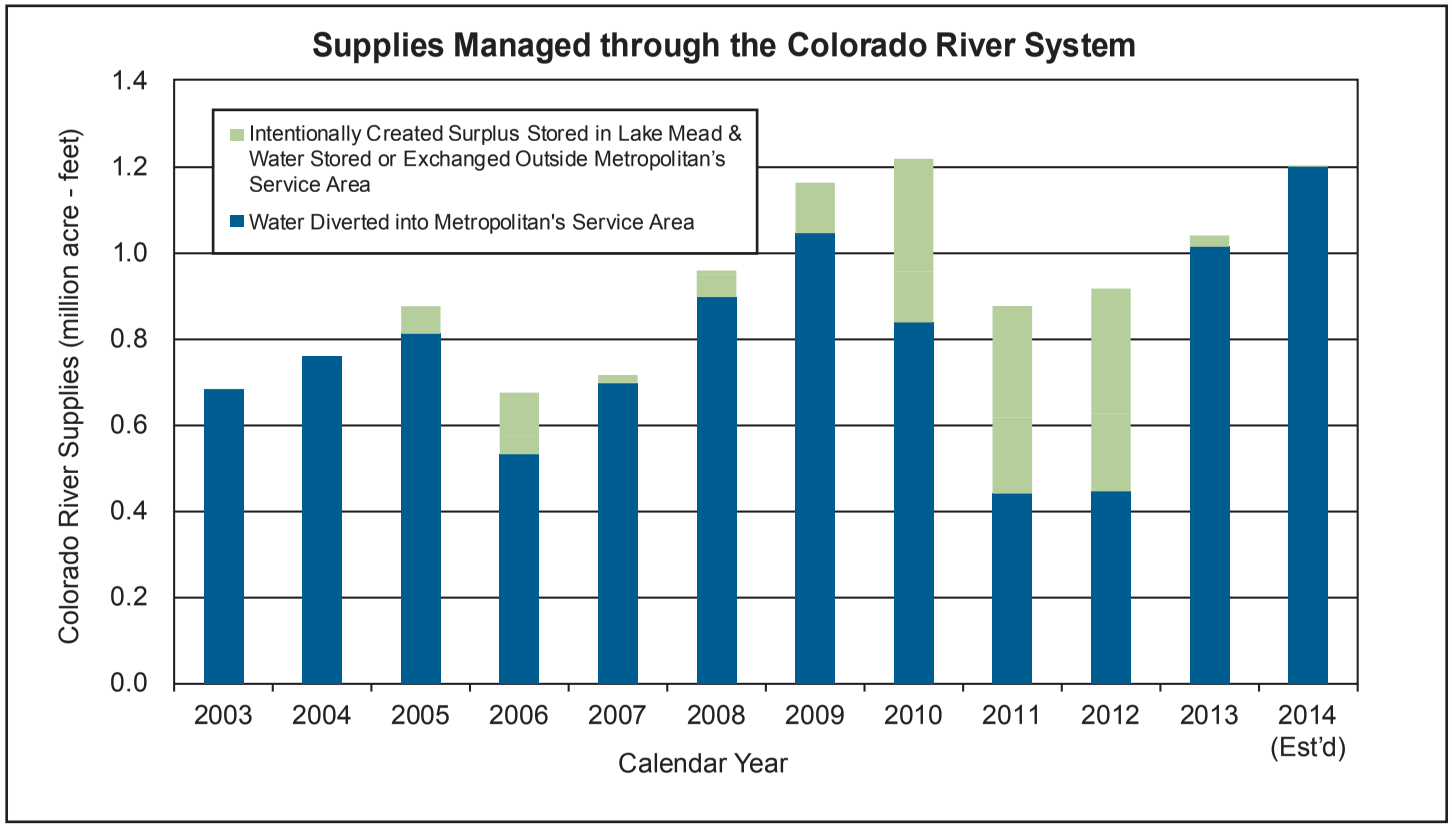


Figure 3-2. Supplies Managed through the Colorado River System

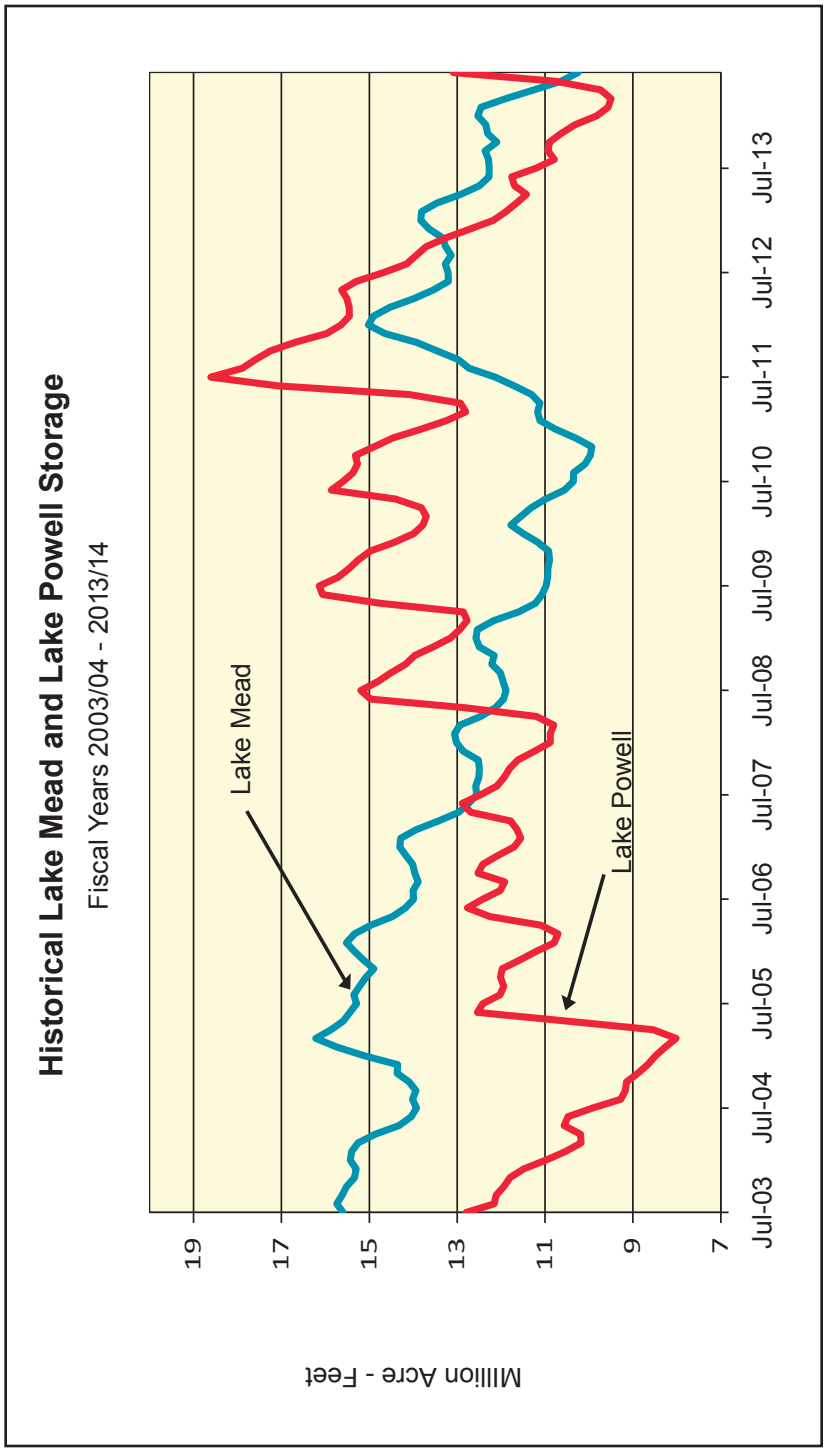


Figure 3-3. Historical Lake Mead & Lake Powell Storage

Local Resources

Water Recycling and Groundwater Recovery

Metropolitan's Local Resources Program has provided about $487 million since its inception in 1982, producing about 2.7 MAF of recycled water and recovered groundwater, through financial incentives of up to $250 per acre-foot. Currently, there are 99 projects under contract expected to produce about 419,000 AF per year once fully implemented. Contracts include performance targets that are assessed every year and when targets are not met, reductions to the contract can be made.

During FY 2013/14, Metropolitan provided $36 million for development of 237,000 AF under the LRP. Two new projects were approved and are expected to produce up to 6,100 AF per year once fully implemented. Including LRP projects, the region used about 320,000 AF of recycled water (Fig. 3-4), and about 125,000 AF of recovered groundwater (Fig. 3-5).

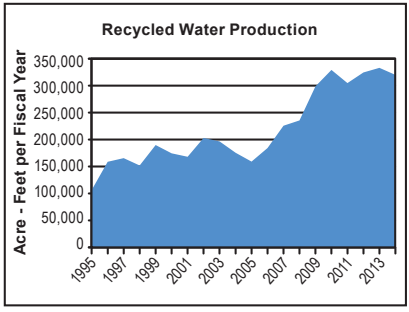


Figure 3-4

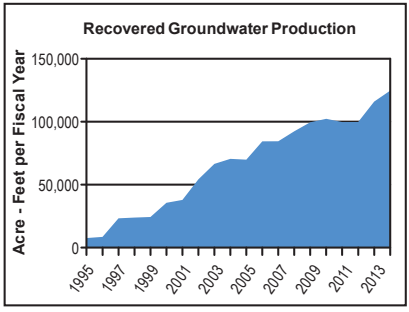


Figure 3-5

Figures reflect deliveries for Metropolitan-assisted projects and payments reported through June 2014 and are subject to change.

Seawater Desalination

Metropolitan provides financial incentives of up to $250 per acre-foot for development and use of desalinated seawater under its Seawater Desalination Program. Since the program's inception in 2001, Metropolitan has entered into agreements with its member agencies to fund three local seawater desalination projects amounting to 46,000 AFY of potential production. The three projects are currently in the planning stages. During FY 2013/14, Metropolitan continued coordinating regulatory policy for seawater desalination through financial support and participation in CalDesal, a consortium of California water agencies that works with state lawmakers and regulatory agencies to advance seawater and groundwater desalination.

Groundwater Storage

Metropolitan's dry-year conjunctive use programs store wet-year imported supplies to enhance reliability during dry, drought and emergency conditions. In late FY 2013/14, Metropolitan initiated calls for use of conjunctive use storage, due to continuing dry conditions. Storage in conjunctive use accounts totaled 66,000 AF on July 1, 2013 after reconciliation. Nearly 7,000 AF were produced during the fourth quarter of the FY 2013/14, leaving an ending balance of 59,000 AF in the storage accounts. Table 3-2 shows the balance of stored water in each in-region groundwater conjunctive use program.

TABLE 3-2
METROPOLITAN'S CONJUNCTIVE USE PROGRAMS

Conjunctive Use Program	Total Storage Capacity (AF)	2013/14 Beginning Balance (AF)	Change in Storage (AF)	2013/14 Ending Balance (AF)
Los Angeles County				
Claremont	3,000	1,501	0	1,501
Compton	2,289	0	0	0
Foothill	9,000	507	106	401
Live Oak	3,000	687	0	687
Long Beach Phase 1	13,000	6,402	0	6,402
Long Beach – Lakewood	3,600	900	0	900
Orange County				
Orange County	66,000	47,896	5,257	42,639
San Bernardino County				
Chino Basin	100,000	0	0	0
Riverside County				
Elsinore Basin	12,000	8,107	1,580	6,527
TOTAL	**211,889**	**66,000**	**6,943**	**59,057**

Some 2013/14 beginning balances differ from 2012/13 ending balances due to data received after publication of the 2013 Annual Report. 2013/14 data presented in this table includes CUP production data through May 2014 that was received by July 7, 2014. CUP production data for June 2014 was not available in time for this report.

Conservation and Water-Use Efficiency

In February 2014, with California in one of its worst droughts on record, Metropolitan's board adopted a Water Supply Alert Resolution calling for its member agencies, retail water agencies, and cities to implement extraordinary conservation measures and enforce water waste ordinances. Subsequently, Metropolitan doubled its conservation budget to encourage water savings, by approving an additional $20 million budget and increasing incentive rates for water saving devices and replacing turf with sustainable landscaping. Further, Metropolitan approved a multi-media advertising campaign to highlight the drought and offer conservation tips.

Since 1985, the population within Metropolitan's service area has increased by more than five million, but demands have remained flat. Potable per capita water use has declined 24 percent during this period, largely attributed to conservation efforts.

Information on Metropolitan rebates for rain barrels and other water-saving items is available at bewaterwise.com

Water Resource and System Planning

Integrated Water Resources Planning

Metropolitan's Integrated Water Resources Plan represents a diversified 25-year strategy to balance locally-developed resources with imported supplies. Adopted by Metropolitan's board in 1996 and updated in 2004 and 2010, the IRP has fostered supply diversity and stability through investments in water conservation, recycling, groundwater treatment, storage and transfers.

In November 2013, Metropolitan staff updated the board on actions taken over the last year and reported on progress toward achieving the 2010 IRP's long-term goals in four major resource areas: the Colorado River Aqueduct, the State Water Project, storage and transfers, and demand management. Throughout the year, Metropolitan developed programs to achieve long-term resource targets and near-term reliability.

In September 2013, under the board-approved Foundational Actions Funding Program, funding was authorized for more than a dozen technical studies/pilot projects by member agencies that enable effective future resource planning and potential development in the areas of recycled water, seawater desalination, stormwater and groundwater. By early 2014, Metropolitan signed about $3 million in contracts for 13 projects, which are currently underway.

Water Resource Data

Figure 3-6 displays precipitation for FY 2013/14 compared to average annual precipitation figures for three weather stations within Metropolitan's service area. Due to dry weather between November and April, annual precipitation figures for all three stations reflect below-average conditions throughout the service area. For 2013/14, Los Angeles Civic Center recorded precipitation of 6.1 inches, about 40 percent of the average annual precipitation of about 15 inches.

Figure 3-7 displays population served by Metropolitan since 1990, with historical population based on state Department of Finance estimates and projections based on regional transportation planning

agencies. In 1990, the population served was approximately 15 million people. Since 1990, the population served has increased to more than 18 million people.

Figure 3-8 displays Metropolitan's historical water sales and exchanges since FY 1989/90, which have ranged between 1.53 MAF and 2.50 MAF. Variations in sales are attributed to many factors that include weather, hydrologic conditions and economic activity.

Figure 3-9 displays Metropolitan's calendar year ending storage reserves for the past 10 years. Metropolitan maintains roughly 630,000 to 650,000 AF of these reserves as emergency storage. The remaining storage is available to help mitigate shortfalls between supplies and demands. Metropolitan stored water during wet years for use during dry years. From 2007 through the end of 2009, Metropolitan withdrew 1.39 MAF of storage to balance water supplies and demands. These shortfalls were due in large part to low SWP deliveries, a result of new fisheries restrictions and a sequence of dry hydrologic conditions. The use of this stored water helped to buffer the region from significant shortage impacts. Metropolitan was able to refill this storage in the next three years due to improved hydrologic conditions on the SWP combined with successful conservation measures and other strategic investments, which allowed Metropolitan to return 1.77 MAF to storage. Metropolitan entered the current drought with record-level storage that was being used to meet demands. At the end of calendar year 2013, Metropolitan had total storage reserves of 2.95 MAF, consisting of 2.32 MAF of dry-year storage and 630,000 AF of emergency storage.

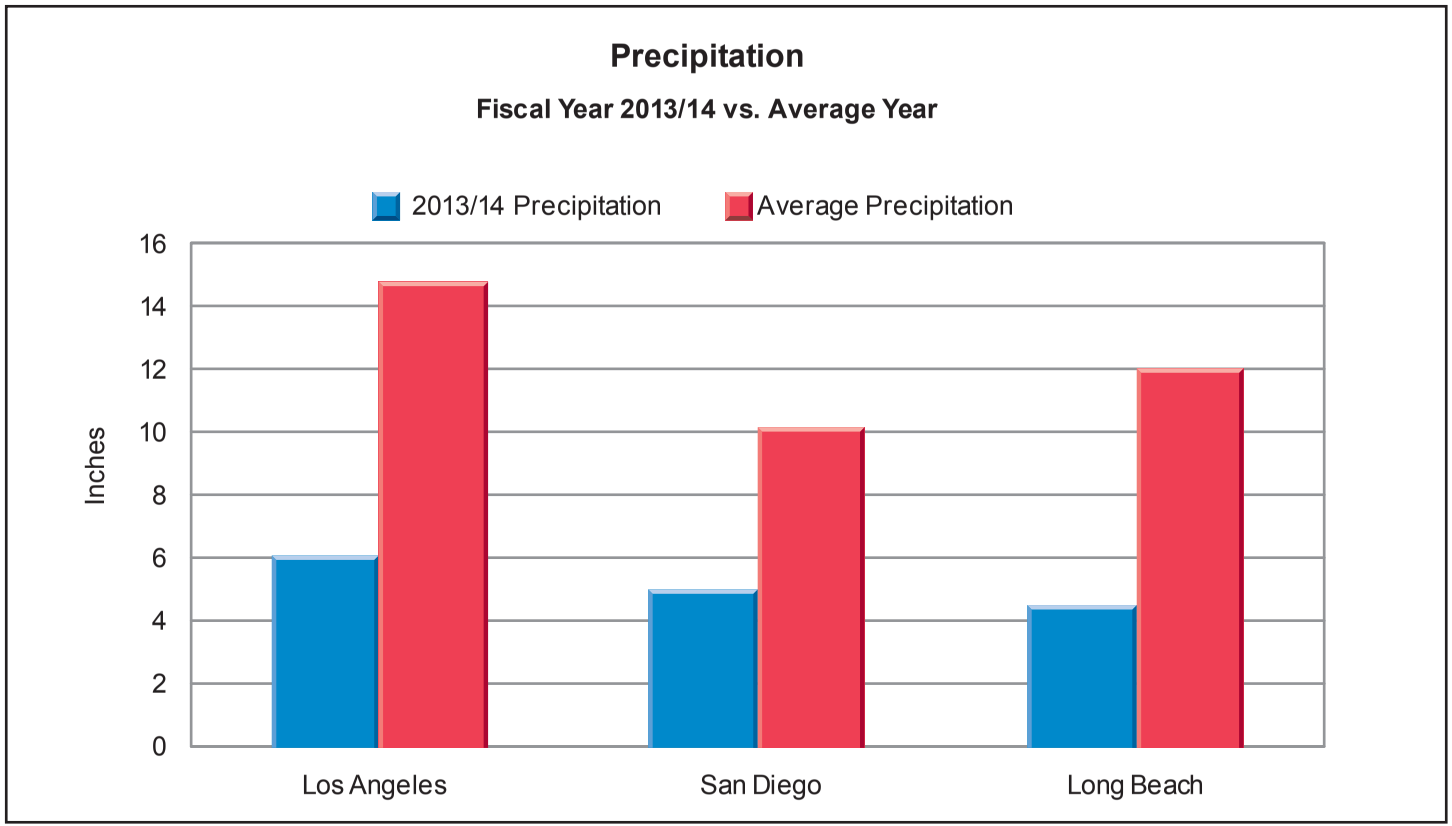


Figure 3-6. Precipitation

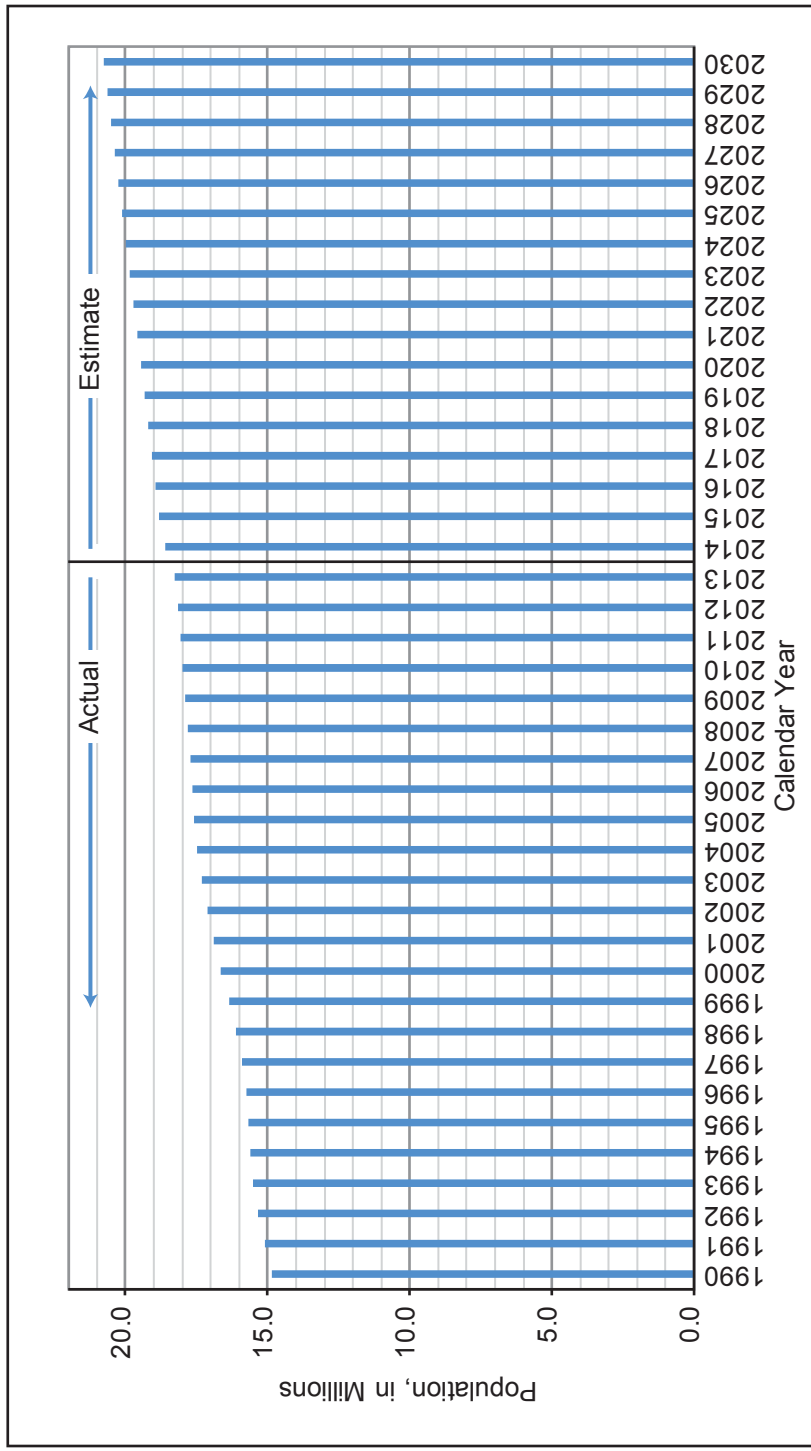


Figure 3-7. Population Growth

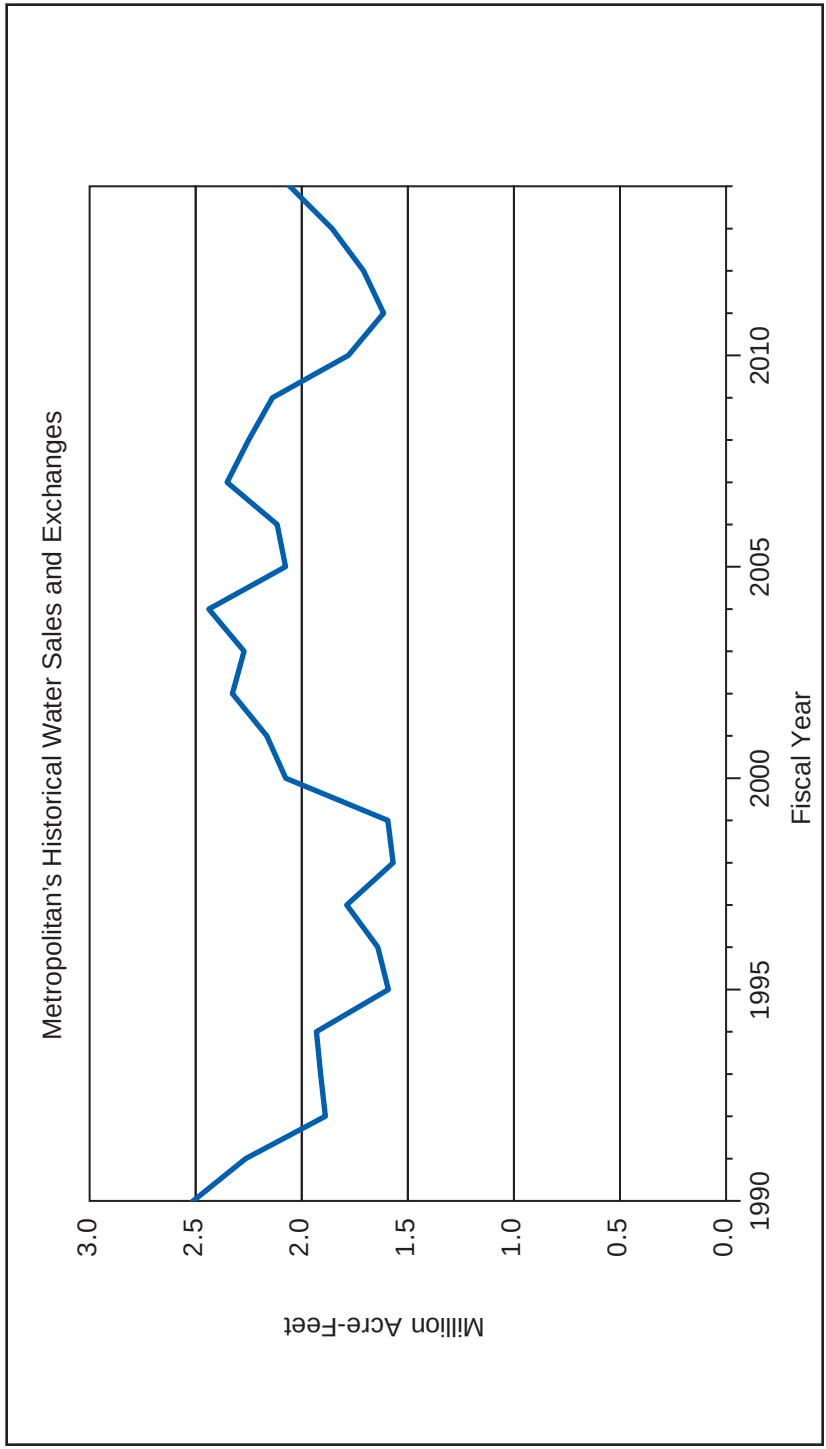


Figure 3-8. Metropolitan's Historical Water Sales and Exchanges

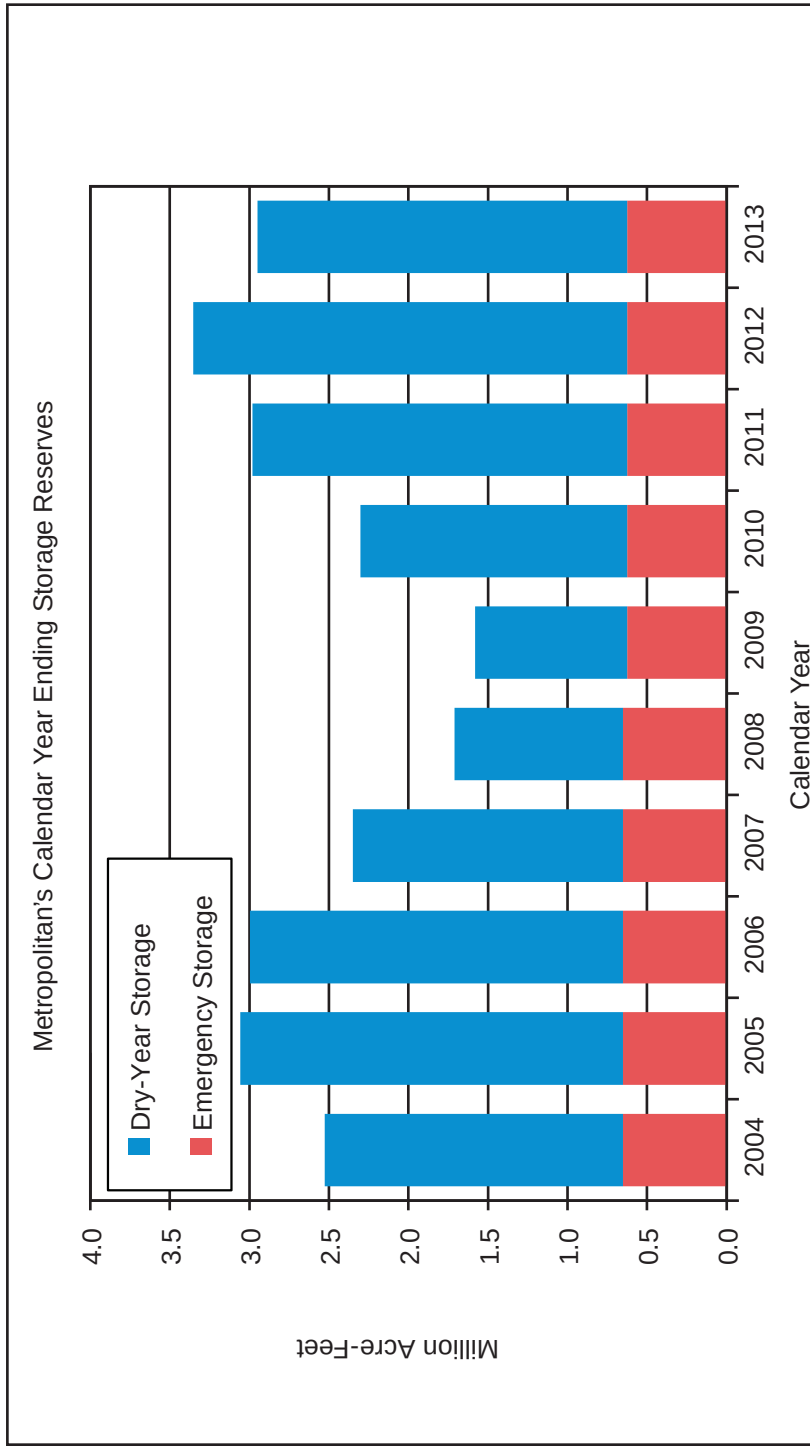


Figure 3-9. Metropolitan's Calendar Year Ending Storage Reserves

Coating repairs to hydroelectric generator discharge piping at Wadsworth Pumping Plant.

CHAPTER 4

Water System Operations

The Water System Operations Group conveys, treats and distributes water for nearly 19 million Southern Californians. WSO ensures excellent water quality for Metropolitan's six-county service area that meets all drinking water standards, and operates and maintains Metropolitan's five treatment plants with a combined capacity of more than 2.6 billion gallons of water per day. WSO balances demand and supply as it operates, manages and maintains Metropolitan's water and power systems. It also oversees security; provides machine and fabrication services to support Metropolitan infrastructure; offers technical advice and support to member agencies, customers and other entities; provides technical training to ensure an effective, efficient and safe work environment; runs Metropolitan's Apprenticeship Program; assists in planning, design and construction of new facilities; and responds to emergencies to restore service in the shortest time possible.

Water Treatment

Metropolitan's five water treatment plants treat water from the Colorado River and Northern California. The Robert B. Diemer Water Treatment Plant provides treated water to areas of Orange County and coastal Los Angeles. The Joseph Jensen Water Treatment Plant supplements local water supplies in the San Fernando Valley, Ventura County and central Los Angeles, while the F.E. Weymouth Water Treatment Plant generally serves eastern Los Angeles County, the San Gabriel Valley and parts of Orange County. The Henry J. Mills Water Treatment Plant serves western Riverside County and Moreno Valley. The Robert A. Skinner Water Treatment Plant serves parts of Riverside County and meets the supplemental treated water needs of San Diego County. During 2014, WSO integrated Diemer's

newly constructed ozone facilities into plant operations. Ozone equipment performance was certified in spring 2014. The new ozone facility and the plant's 50th anniversary were celebrated in October 2013 with an open house and a commendation from the Municipal Water District of Orange County.

At the Weymouth plant, staff replaced aging filter turbidity monitoring instruments when it became clear that staff could no longer expect to receive spare parts. The instruments monitor and control filter operation and their data is used to report drinking water compliance to regulatory agencies.

Skinner received upgrades to the potable water and the solids thickener pump systems. The potable water system supports chemical feed systems, safety shower and eye wash stations, chlorine disinfection, and all other domestic water needs within the plant. The thickener pump station is part of the system that manages water treatment residual solids. These upgrades have improved treatment plant reliability.

The 1-megawatt Skinner solar facility received final incentive payments from Southern California Edison this year. Solar generation produced 2.25 million kWh this year, which averaged 20 percent of total plant energy needs. During peak hours, solar energy provides as much as 50 percent of Skinner energy consumption. Staff began evaluating new, cost-effective solar projects at the Weymouth and Jensen water treatment plants. Solar power initiatives protect Metropolitan from energy price volatility and reduce carbon emissions from purchased power.

The Mills plant added variable-frequency drive electric motors to the traveling bridges used to remove settled solids, including sand and silt, from the sedimentation basins. The motors allow plant operators to improve solids handling, reduce the volume of recycled water and reduce power costs.

In response to current drought conditions, Metropolitan reconfigured Jensen operations, enabling western portions of the service area to receive Colorado River water. Other projects included upgrading the potable water sampling system and installing a multi-nozzle gate in the reservoir outlet to control the distribution system

operations. The modifications provide for reliable operations under current drought conditions.

As a result of these and numerous other capital projects during this fiscal year, Metropolitan invested more than $97.4 million in refurbishing, upgrading and expanding its five water treatment plants.

Water Quality

Regulations

In August 2013, the California Department of Public Health announced its plan to regulate hexavalent chromium in drinking water at 10 parts per billion. On July 1, 2014, California will become the first state to regulate hexavalent chromium. Water utilities must comply with the new maximum contaminant level by the end of 2015. The setting of the MCL concludes nearly 15 years of state effort examining the potential human health efforts, available treatment technologies, and costs. Metropolitan provided extensive comments to CDPH as part of the standard-setting process.

Metropolitan's source and treated water supplies are below the MCL and will require no additional capital or operating costs to comply. In the summer of 2013, Gov. Brown's administration proposed to transfer the drinking water regulatory program from the state Department of Public Health to the State Water Resources Control Board. Staff supported this transition by participating on a four-month transition advisory panel which provided recommendations to the administration. The transfer is effective July 1, 2014.

Water Quality Monitoring

Water quality staff performed approximately 251,000 analytical tests using 168 methods on nearly 48,000 samples this year. The number of samples collected from Metropolitan's treatment plants, distribution system and source water may change each year depending on regulations, monitoring plan, operations and water quality studies.

Chemical/Physical

Staff analyzed Metropolitan's source and treated waters for inorganic and organic compounds, physical properties and other constituents. Table 4-1 lists the locations sampled for organic chemicals while Tables 4-2 through 4-4 show results for trace metals, radiologicals, and general minerals and physical analyses. No herbicides, pesticides, or synthetic organic compounds were detected.

TABLE 4-1
SAMPLE LOCATIONS FOR ORGANIC COMPOUNDS
Fiscal Year 2013/14

Source Water	Treated Water
Devil Canyon Afterbay	Diemer Plant Effluent
Diamond Valley Lake (West Basin Center/12-meter depth)	Jensen Plant Effluent
Jensen Plant Influent	Mills Plant Effluent
Lake Havasu Intake (12-meter depth)	Skinner Reservoir Effluent[1]
Lake Mathews Headworks	Weymouth Plant Effluent
Lake Perris (near outlet tower at 9-meter depth)	
Lake Skinner Outlet Conduit	
San Jacinto Tunnel	

[1]Skinner Reservoir Effluent is a combined effluent from three Skinner plants.

TABLE 4-2
TRACE METALS IN METROPOLITAN'S WATER SUPPLIES
Fiscal Year 2013/14 Averages (in micrograms per liter or µg/L)

Metal	Maximum Contaminant Level (MCL)	Minimum Reporting Level	SOURCE WATERS											TREATMENT PLANT EFFLUENTS				
			Lake Havasu	San Jacinto Tunnel	Lake Mathews	Castaic Lake at Jensen Influent	Silverwood Lake	Mills Influent	Lake Perris	Weymouth Influent	Diemer Influent	Diamond Valley Lake	Lake Skinner	Weymouth	Diemer	Jensen	Skinner	Mills
Aluminum	1000 (200*)	10	24	15	46	63	24	28	37	31	29	ND	17	110	170	73	ND	90
Antimony	6	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	10	0.5	2.8	2.7	2.7	3.1	3.7	3.5	2.5	2.7	2.7	2.6	2.7	1.7	2.3	2.3	0.7	1.7
Barium	1000	5	116	112	111	36	32	43	43	107	111	34	97	105	107	35	98	42
Beryllium	4	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron	--	20	110	100	100	180	140	140	140	110	110	140	110	120	110	180	110	140
Cadmium	5	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	50	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium 6	--	0.03	0.03	ND	ND	0.29	0.40	0.26	0.06	ND	0.04	ND	ND	0.06	0.06	0.30	0.08	0.28
Copper	1300† (1000*)	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Iron	300*	50	ND	ND	ND	ND	ND	ND	ND	64	ND	ND	ND	ND	ND	ND	ND	ND
Lead	15†	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lithium	--	10	39	37	36	ND	ND	ND	ND	37	38	ND	31	37	37	ND	33	ND
Manganese	50*	5	ND	ND	ND	6	25	20	17	6	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	--	2	4	4	4	2	ND	ND	ND	4	4	2	4	4	4	3	4	ND
Nickel	100	2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	100*	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Strontium	--	20	990	1000	990	270	250	240	240	920	940	290	860	910	940	270	880	240
Thallium	2	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	50‡	1	2.6	2.4	2.6	4.8	6.0	4.0	3.9	2.9	3.0	2.2	2.4	2.7	2.8	4.4	ND	3.4
Zinc	5000*	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not Detected

* Secondary standard based on consumer acceptance rather than health considerations.

† Action level. The MCL for lead has been replaced with a treatment technique requiring agencies to optimize corrosion control treatment when the action level is exceeded in more than 10 percent of samples collected at the consumers' tap. Copper has a similar treatment technique requirement in addition to the secondary MCL.

‡ California notification level: a health-based advisory level.

TABLE 4-3
RADIOLOGICAL COMPLIANCE MONITORING[1]
2011 Four Quarter Ranges (in picoCuries per liter or pCi/L)

LOCATION	GROSS ALPHA	GROSS BETA	RADIUM 226	RADIUM 228	COMBINED RADIUM	STRONTIUM 90	TRITIUM	URANIUM	RADON 222
MCL	**15**	**50***	**NA**	**NA**	**5 ****	**8**	**20,000**	**20**	**NA*****
DLR	**3**	**4**					**1,000**	**1**	**100**
Lake Havasu Intake	3.2–5.6	ND–4.5	ND	ND	ND	ND	ND	2.0–2.7	ND
San Jacinto Tunnel West Portal	3.5–7.6	ND–6.4	ND	ND	ND	ND	ND	2.6–5.1	ND
Lake Mathews	ND–4.7	ND–7.4	ND	ND	ND	ND	ND	2.4–3.3	ND
Silverwood Lake	ND	ND–4.4	ND	ND	ND	ND	ND	ND–1.0	ND
Lake Perris	ND	ND	ND	ND	ND	ND	ND	ND–1.9	ND
Diamond Valley Lake	ND	ND–4.0	ND	ND	ND	ND	ND	1.0–1.6	ND
Lake Skinner	ND–3.1	ND–5.5	ND	ND	ND	ND	ND	ND–2.2	ND
Weymouth Plant Effluent	ND	ND–6.1	ND	ND	ND	ND	ND	1.2–1.7	ND
Diemer Plant Effluent	ND–3.2	ND–4.1	ND	ND	ND	ND	ND	1.7–1.9	ND
Jensen Plant Influent	ND	ND–5.0	ND	ND	ND	ND	ND	1.1–1.5	ND
Jensen Plant Effluent	ND	ND–4.2	ND	ND	ND	ND	ND	ND–1.5	ND
Mills Plant Effluent	ND	ND	ND	ND	ND	ND	ND	ND–1.0	ND
Skinner Reservoir Effluent [2]	ND	ND–5.3	ND	ND	ND	ND	ND	ND–1.8	ND

[1] Results obtained during Calendar Year 2011 triennial sampling. Data are reported for three years until the next samples are collected.

[2] This is a combined effluent from three Skinner plants.

* The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.

** Standard is for radium 226 and radium 228 combined.

*** To date, there has been no significant regulatory action on the proposed federal standards.

DLR = Detection Limits for Purposes of Reporting

MCL = Maximum Contaminant Level

NA = Not Applicable. Standards have not been established for these constituents.

ND = Not Detected. All results less than DLR were reported as ND.

TABLE 4-4
GENERAL MINERAL AND PHYSICAL ANALYSIS OF METROPOLITAN'S WATER SUPPLIES
Fiscal Year 2013/14 Averages

CONSTITUENTS	UNITS	SOURCE WATERS								TREATMENT PLANT EFFLUENTS				
		Lake Havasu	San Jacinto Tunnel	Lake Mathews	Castaic Lake at Jensen Influent	Silverwood Lake at Devil Canyon	Lake Perris	Diamond Valley Lake	Lake Skinner	Weymouth	Diemer	Jensen	Skinner	Mills
Silica	mg/L	8.0	7.9	7.9	12.1	10.0	9.3	9.4	7.8	7.9	8.0	11.9	7.9	9.7
Calcium	mg/L	72	71	70	26	24	25	27	64	67	68	26	63	24
Magnesium	mg/L	25	25	25	12	10	13	13	23	24	24	12	23	11
Sodium	mg/L	82	84	84	61	65	61	55	79	87	88	65	85	71
Potassium	mg/L	4.3	4.4	4.4	2.8	2.6	3.0	3.3	4.2	4.4	4.3	2.7	4.2	2.7
Carbonate	mg/L	0	0	0	0	2	0	2	0	0	0	0		
Bicarbonate	mg/L	165	162	157	102	93	107	97	153	144	143	104	145	92
Sulfate	mg/L	216	215	217	48	44	44	63	194	215	218	54	192	55
Chloride	mg/L	79	80	81	80	86	84	71	79	86	86	81	88	91
Nitrate	mg/L	1.3	1.1	0.8	2.6	1.9	0.3	0.5	0.7	0.9	0.9	2.6	0.8	2.1
Fluoride	mg/L	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.3	0.8	0.9	0.8	0.8	0.8
Total Dissolved Solids (TDS)	mg/L	570	570	569	295	292	293	294	530	565	568	308	536	313
Total Hardness as $CaCO_3$	mg/L	283	281	278	116	103	116	124	258	266	271	114	253	107
Total Alkalinity as $CaCO_3$	mg/L	135	133	129	84	79	88	82	126	118	117	86	119	76
Free Carbon Dioxide	mg/L	2.1	1.4	1.4	3.0	1.4	1.8	2.6	1.4	2.0	1.9	1.0	1.8	0.7
pH	pH	8.14	8.29	8.27	7.79	8.19	8.06	8.09	8.27	8.08	8.10	8.26	8.17	8.35
Specific Conductance	µS/cm	925	929	930	544	544	548	537	879	932	939	563	896	577
Color	CU	4	2	2	7	7	7	4	4	1	1	1		
Turbidity	NTU	0.68	0.36	0.98	1.7	0.84	1.1	0.65	0.54	0.05	0.04	0.04	0.06	0.06
Temperature	°C	19	21	21	16	16	19	17	20	20	22	20	23	19
Bromide	mg/L	0.07	0.05	0.06	0.25	0.29	0.27	0.21	0.08	NA	NA	NA	NA	NA
Total Organic Carbon	mg/L	3.09	2.99	2.97	2.43	2.62	3.60	2.55	3.06	NA	NA	NA	NA	NA
Cyanide	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Foaming Agents (MBAS)	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Threshold Odor Number (TON)	--	5	8	8	5	8	12	10	8	3	1	3		
Saturation Index	--	NA	NA	NA	NA	NA	NA	NA	NA	0.50	0.55	0.21	0.61	0.20
Aggressiveness Index	--	13	13	13	12	12	12	12	13	12	12	12	12	12
State Project Water	%	0	0	0	100	100	100	94	11	7	8	100	15	100

ND - Not Detected
NA - Not Applicable
mg/L - milligrams per liter
µS/cm - microSiemen per centimeter
NTU - Nephelometric Turbidity Unit
CU - Color Units

Total Dissolved Solids

Salinity of the Colorado River Aqueduct is typically higher than the State Water Project, largely due to natural saline deposits within the geology of the Colorado River watershed (Figure 4-1). Changes occur more rapidly in water from the State Water Project as opposed to those in the Colorado River Aqueduct. Figure 4-2 presents total dissolved solids levels (as flow-weighted averages), a measurement of salinity, in the effluent from the five treatment plants. The Diemer, Skinner and Weymouth plants treated lower blends of SWP supply due to its limited availability during the drought, resulting in TDS levels above Metropolitan's water quality goal of 500 milligrams per liter (mg/L).

Disinfection Byproducts

Metropolitan has been reporting compliance under the Stage 2 Disinfectants and Disinfection Byproducts Rule since April 2013. The rule establishes an MCL for total trihalomethanes and five haloacetic acids based on the running annual average at each sampling location. The running annual averages at each location were below the MCLs of 80 micrograms per liter (µg/L) for TTHMs, 60 µg/L for HAA5 and 10 µg/L for bromate. Table 4-5 shows the levels of disinfection byproducts TTHMs, HAA5 and bromate in plant effluent. Figures 4-3 and 4-4 summarize long-term trends for TTHMs and HAA5.

Figure 4-5 exhibits levels of the DBP precursors, total organic carbon and bromide, in plant influent. The gap in bromide data at Skinner is due to influent chlorination to control quagga mussels during FY 2009 and 2010. Bromide levels naturally drop every spring and summer due to Sierra snowmelt and increased outflow from the Delta. Figure 4-6 shows levels of bromate, a byproduct of ozone treatment, which came online at Mills in 2003, Jensen in 2005 and Skinner in 2010. Mills began applying an ammonia-chlorine bromate control strategy in October 2010, and when demands justify its use, the strategy results in lower bromate levels and operating costs.

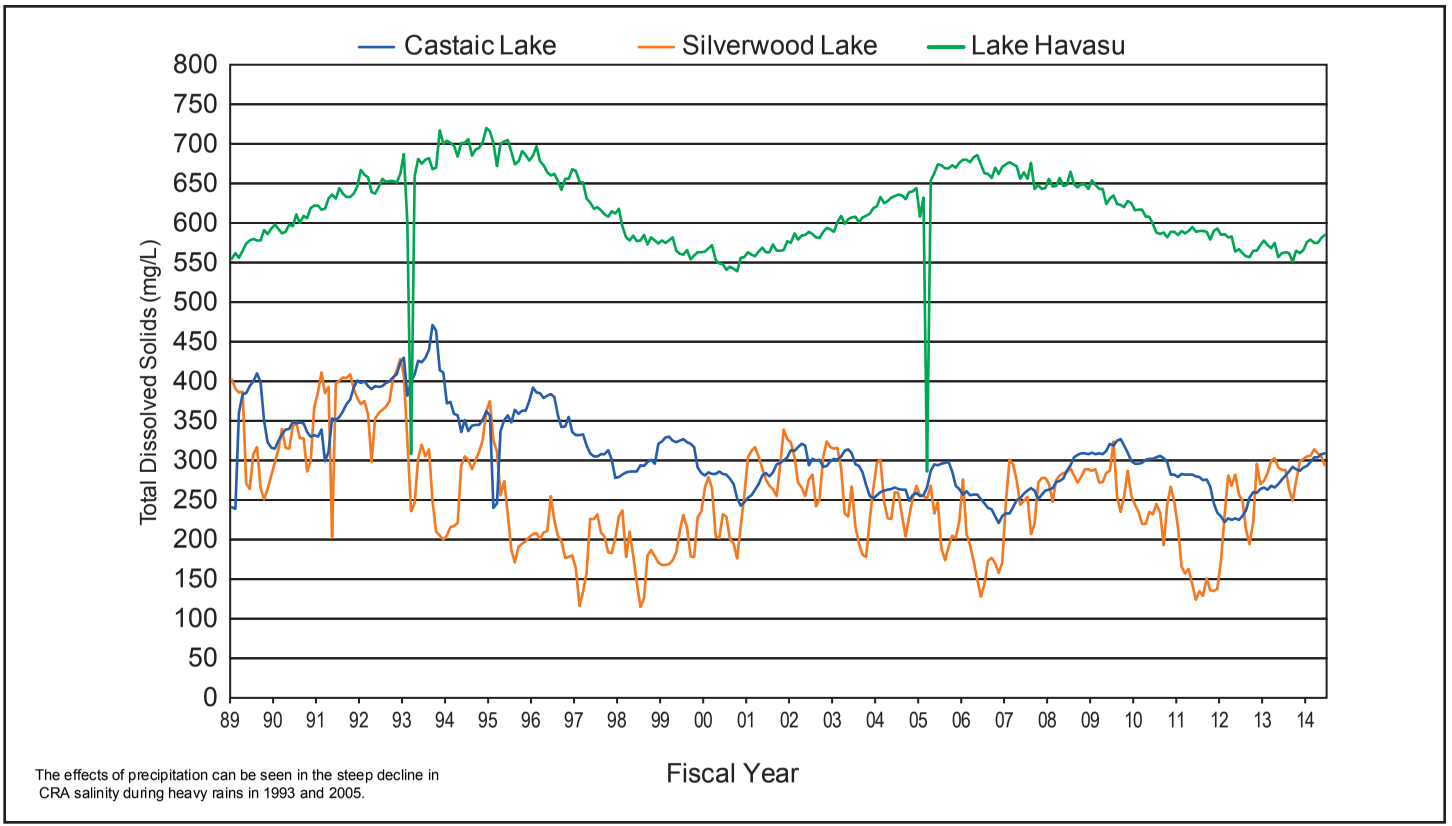


Figure 4-1. Total Dissolved Solids in East Branch SWP (Silverwood Lake), West Branch SWP (Castaic Lake), and CRA (Lake Havasu)

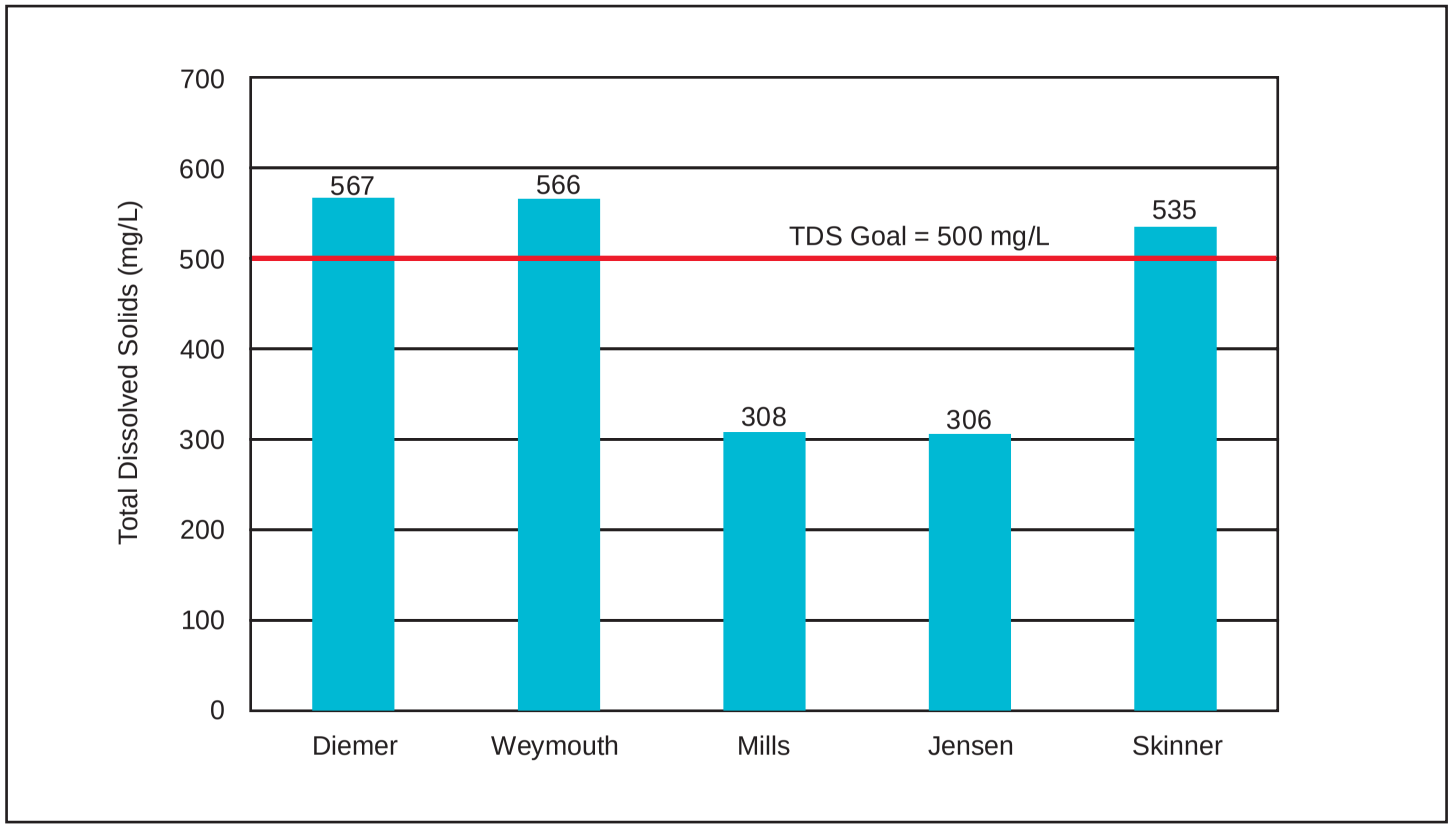


Figure 4-2. Total Dissolved Solids in Plant Effluent, Annual (Flow-Weighted) Averages, Fiscal Year 2013/14

TABLE 4-5
DISINFECTION BYPRODUCT LEVELS
Fiscal Year 2013/14

	TTHMs (µg/L)[1]		HAA5 (µg/L)[2]		Bromate (µg/L)	
Plant Effluent	**Quarterly Range**	**Annual Average**	**Quarterly Range**	**Annual Average**	**Quarterly Range**	**Annual Average**
MCL		**80**		**60**		**10**
Diemer	25–37	28	7.2–14	9.6	NA	NA
Jensen	10–55	23	2.7–3.8	3.3	6.0–8.1	7.4
Mills	16–24	19	3.2–6.9	5.8	1.8–6.4	4.1
Skinner	11–23	16	2.4–7.8	5.3	2.2–4.2	3.0
Weymouth	23–41	31	4.6–14	9.2	NA	NA
Distribution System	**FY Range**	**LRAA Range**	**FY Range**	**LRAA Range**		
	12–55	16–42	2.0–21	5.1–14		

Notes:

[1] TTHMs = total trihalomethanes in micrograms per liter (µg/L) or parts per billion

[2] HAA5 = five regulated haloacetic acids

MCL - Maximum Contaminant Level

NA - Not analyzed

ND - Not detected

LRAA - Locational Running Annual Average

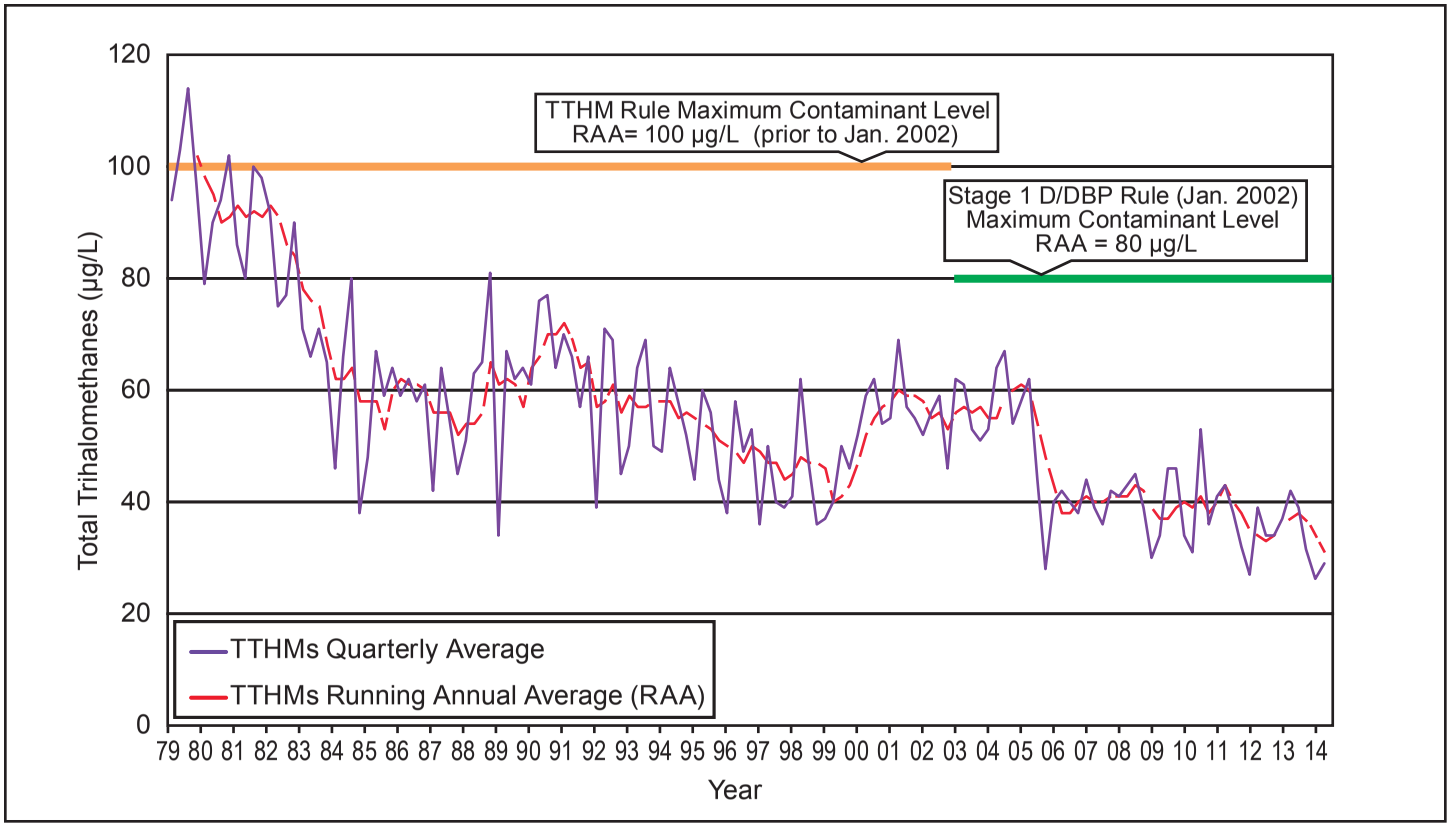


Figure 4-3. Trihalomethane Levels - Distribution Systemwide Quarterly and Running Annual Averages (µg/L = micrograms/Liter or parts per billion)

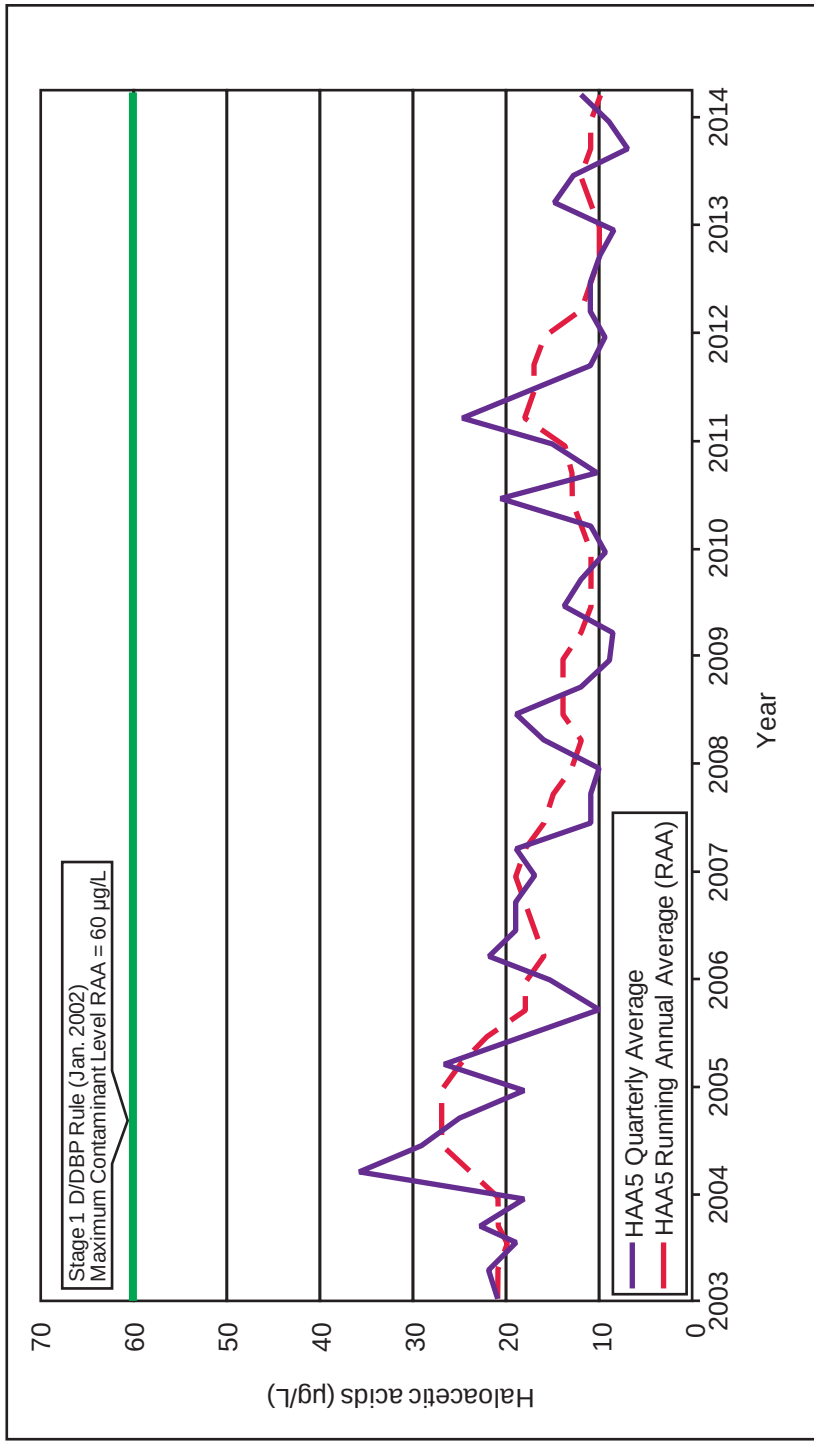


Figure 4-4. Haloacetic Acids - Distribution Systemwide Quarterly and Running Annual Averages (µg/L = micrograms per liter or parts per billion; HAA5 = five regulated haloacetic acids)

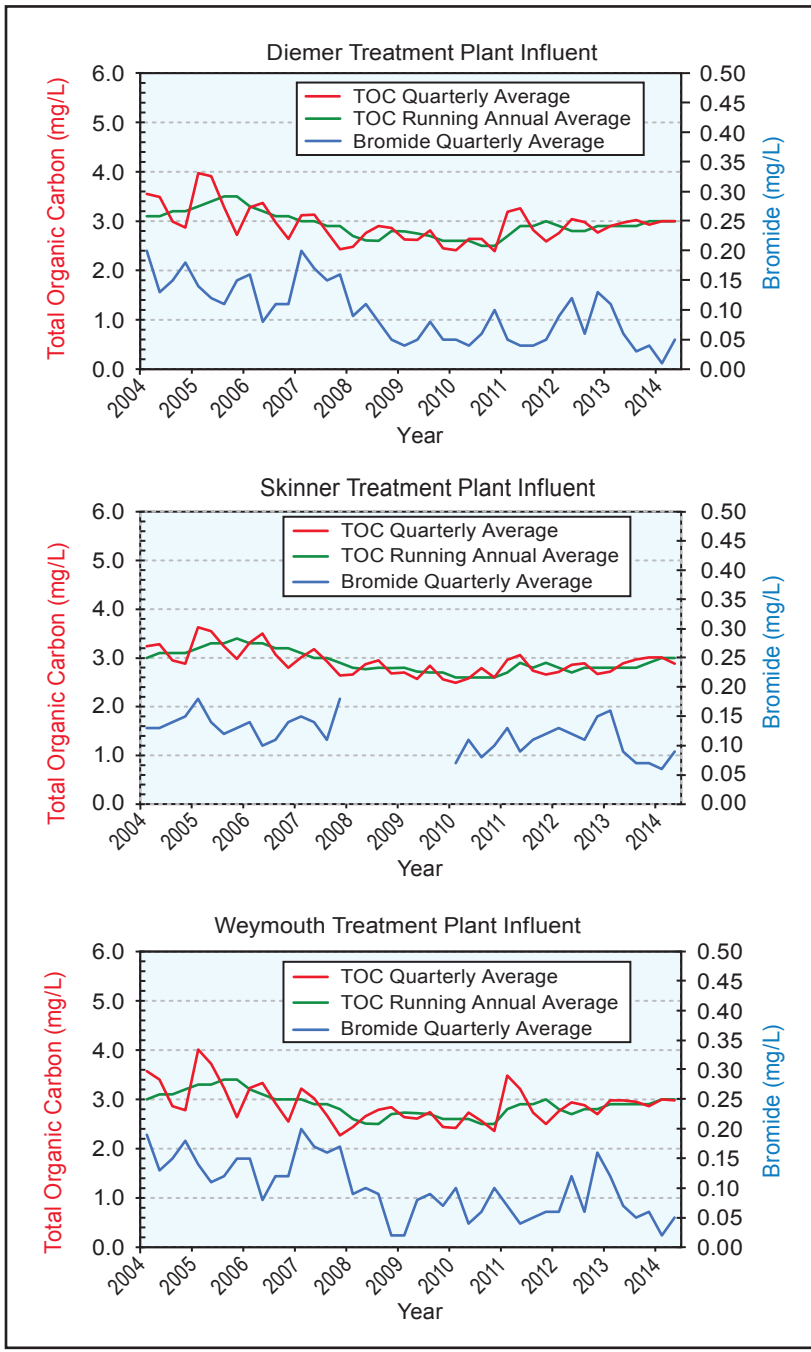


Figure 4-5. Total Organic Carbon (TOC) and Bromide Levels in Treatment Plant Influent, FY 2004-2014 (Chlorination to control quagga mussels restricted bromide measurements at Skinner in FY 2009 and 2010.)

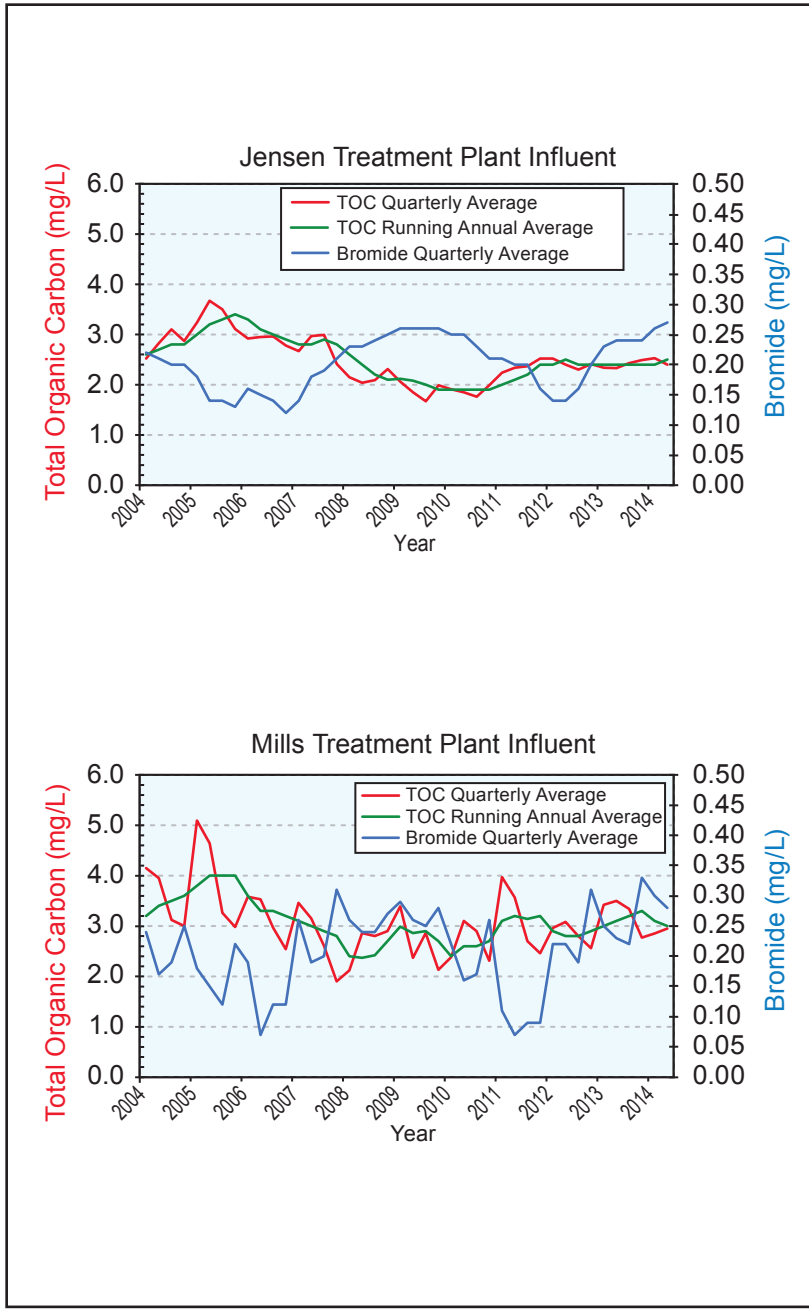


Figure 4-5 (Continued). Total Organic Carbon (TOC) and Bromide Levels in Treatment Plant Influent, FY 2004-2014

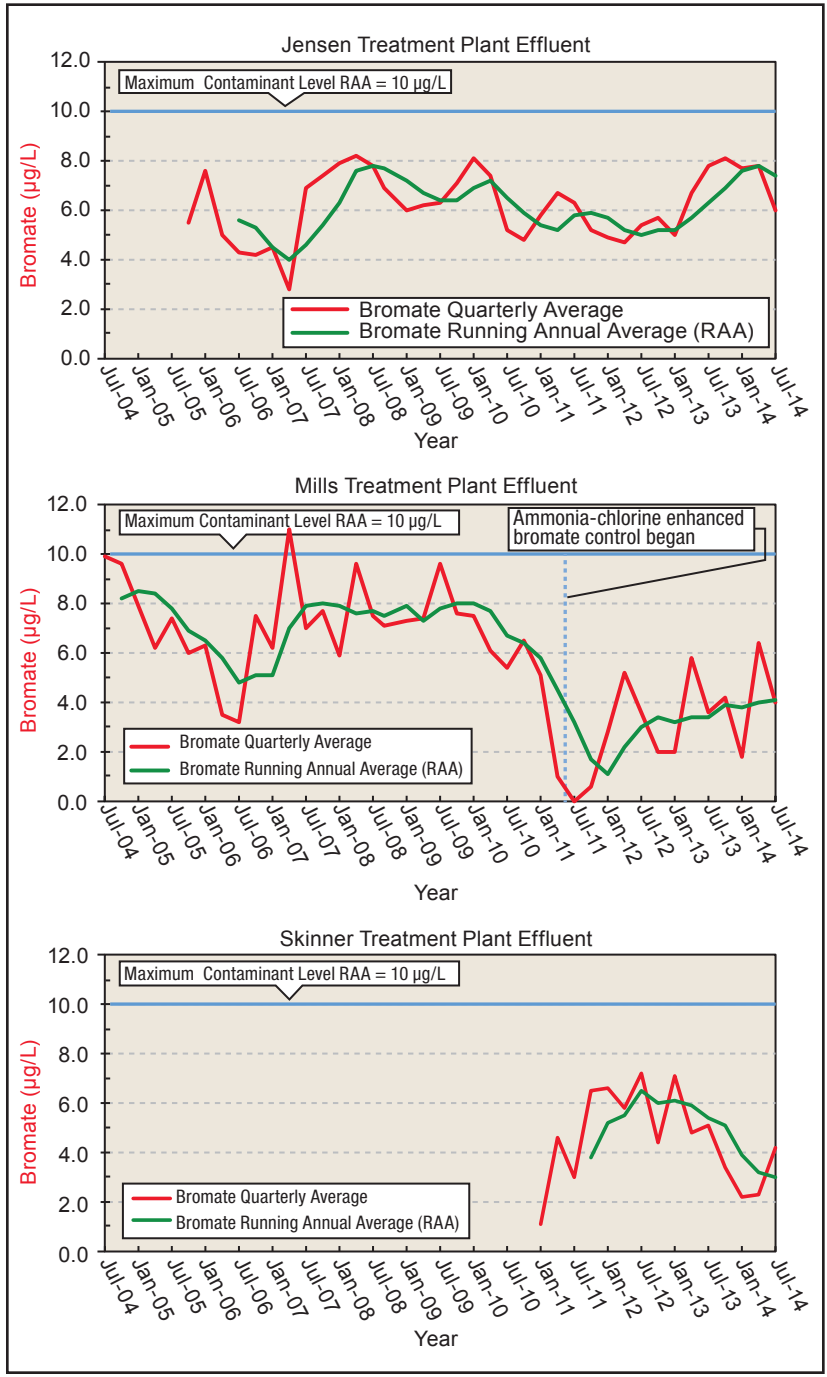


Figure 4-6. Bromate Levels in Treatment Plant Effluent, 2004 - 2014 (Jensen and Skinner Ozone came online in 2005 and 2010, respectively)

Microbiological

Metropolitan complied with state and federal drinking water regulations by monitoring treatment plant influent for total coliforms and *E. coli* (Table 4-6). Coliforms are bacteria that naturally occur in the environment while *E. coli*, a coliform that may indicate fecal contamination, is a factor used in measuring the quality of influent water. The different ranges observed at the plants may be influenced by the natural variability of raw water coliforms, changes in source water, storm events or other factors.

Metropolitan also analyzed nearly 8,000 bacteriological compliance samples in the distribution system to monitor the microbial quality downstream of the water treatment plants. The monthly average of 0.02 percent total coliform-positive samples was well below the regulatory standard of 5.0 percent.

TABLE 4-6
RAW WATER COLIFORM RESULTS
Fiscal Year 2013/14

	Treatment Plant Influent[1]				
	Diemer	**Jensen**	**Mills**	**Skinner**	**Weymouth**
	(CFU/100 mL)				
Total Coliforms					
Range	ND-92	210-5,400	15-3,600	100-2,100	ND-3,400
Average[2]	17	1,900	550	1,100	490
E. coli					
Range	ND	ND-3	ND-22	ND-6	ND
Average[2]	ND	1	4	3	ND

Notes:
[1] Samples were collected weekly and analyzed by membrane filtration.
[2] Annual average of monthly averages.
CFU/100 mL = Colony-forming units per 100 milliliters
ND = Not Detected; method detection limit is 1 CFU/100 mL.

System Management and Pathogen Monitoring

Algae Control Program

Staff analyzed more than 2,900 samples for the earthy/musty taste-and-odor compounds 2-methylisoborneol and geosmin to monitor and manage T&O events in source water (Fig. 4-7). Half of the samples were used to evaluate T&O problems caused by blue-green algae in the State Water Project. This reflects the high algae production potential of SWP supplies, requiring numerous algae control treatments by the state Department of Water Resources. Meanwhile, Metropolitan treated Lake Skinner twice during the year with a total of 12 tons of copper sulfate to manage T&O events (Fig. 4-8).

Quagga Mussel Control Program

Metropolitan's program for monitoring and controlling invasive quagga mussels has been in effect since their detection in the Lower Colorado River in 2007. Staff continued to collaborate with federal and state agencies to improve mussel management strategies and early warning invasion detection. Quagga control strategies in the CRA system include chlorination at strategic sites along with desiccation and removal of mussels during shutdowns. Mussel populations in the CRA continue to show seasonal fluctuations but the control measures have successfully limited further population increases. Staff monitored five sites along the CRA and three sites on the SWP. No quagga mussels have been detected at the SWP sites.

Pathogen Monitoring Program

Metropolitan's Pathogen Monitoring Program has routinely tested for the pathogenic protozoa *Cryptosporidium* and *Giardia*. Monthly monitoring of the plant influent and effluent during FY 2013/14 revealed neither pathogen to be present. In the last 15 years, 1 percent of the monthly plant influent samples tested positive for either microbe, and all plant effluent samples were negative.

N-Nitrosodimethylamine

Since 1999, Metropolitan has monitored its distribution system for N-nitrosodimethylamine, a byproduct of the disinfection process that occurs during chloramination. Table 4-7 shows NDMA levels in the distribution system for FY 2013/14. The concentrations were all below the notification level of 10 nanograms per liter (ng/L) established by CDPH in 2002.

TABLE 4-7
N-NITROSODIMETHYLAMINE LEVELS (ng/L)
IN THE DISTRIBUTION SYSTEM
Fiscal Year 2013/14

Sample Location[1]	Range (ng/L)[2]
Diemer Plant	ND
Jensen Plant	ND-2
Mills Plant	3-6
Skinner Plant	2-4
Weymouth Plant	ND
Central Pool Sites	3-4

ND - Not Detected; NDMA reporting level is 2 ng/L

[1] Plant locations are distribution system sites associated with each treatment plant.
[2] Nanograms per liter (parts per trillion); CDPH notification level is 10 ng/L

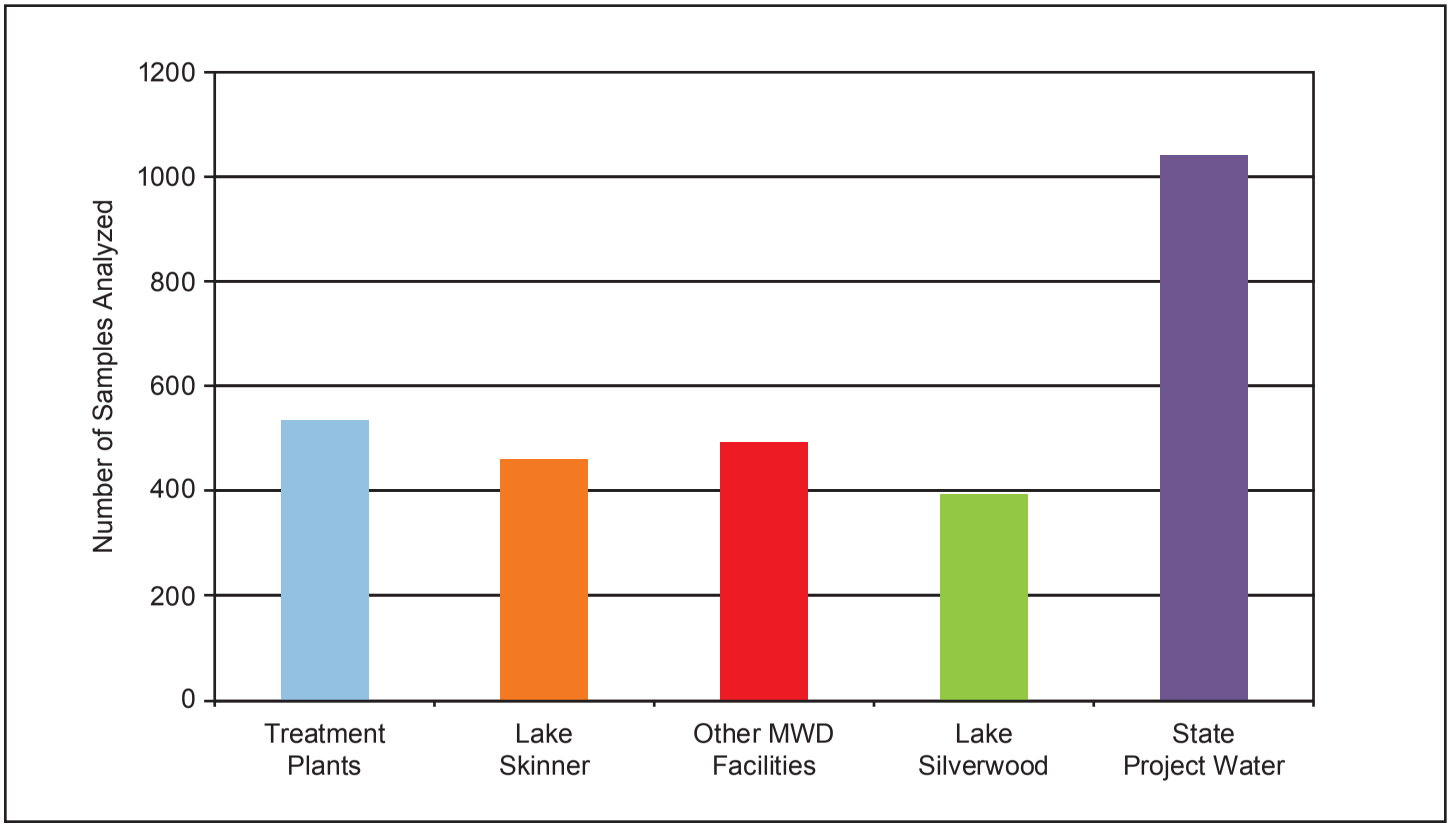


Figure 4-7. Number of Samples Analyzed for the Taste and Odor Compounds 2-Methylisoborneol (MIB) and Geosmin in Source and Finished Water, Fiscal Year 2013/14

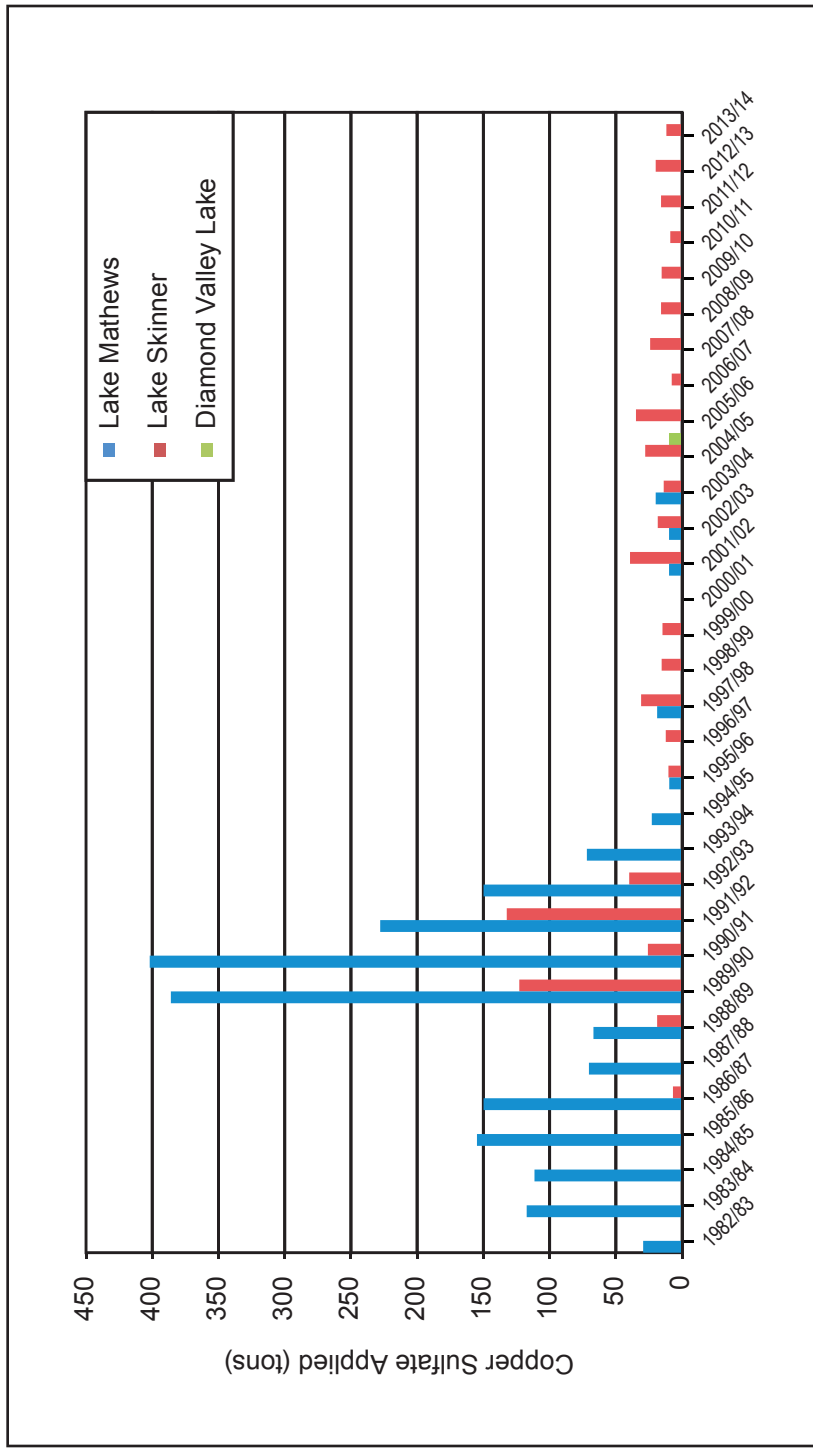


Figure 4-8. Copper Sulfate Usage between 1982/83 and 2013/14 in Metropolitan's Reservoirs

Source Water Protection

Watershed Protection

Metropolitan continued its oversight and coordination on water quality issues with key Colorado River stakeholders though active participation in the Lower Colorado River Water Quality Partnership, Lake Mead Water Quality Forum and Clean Colorado River Sustainability Coalition. Staff also collaborated with DWR and SWP municipal contractors on Delta and SWP water quality monitoring and forecasting programs, focusing on the effects of drought on water quality.

Staff reviewed and commented on legislation, policies and external projects affecting source water protection. In partnership with the Southern Nevada Water Authority and Central Arizona Project, Metropolitan commented on a uranium leasing program in the upper Colorado River Basin. In addition, Metropolitan coordinated with the County of Riverside and Riverside Flood Control and Water Conservation District regarding development proposals in the Lake Mathews watershed to ensure compliance with the Drainage Water Quality Management Plan and protection of Lake Mathews.

Salinity Control

Metropolitan continued to engage in salinity control efforts through the Colorado River Basin Salinity Control Forum to mitigate salt loading into the Colorado River. Metropolitan also continued to work with the U.S. Bureau of Reclamation and Southern California Salinity Coalition on technical studies to update a 1999 Salinity Management Study which estimated economic damages from salinity.

Uranium Mill Tailings

April 2014 marked a 5-year milestone for the U.S. Department of Energy's removal of uranium mill tailings along the banks of the Colorado River near Moab, Utah. Through June 2014, USDOE removed over 40 percent of the original 16 million-ton pile of mill tailings and shipped them via rail to an engineered disposal site approximately 30 miles northwest of Moab. USDOE anticipates completion of tailings removal by 2025. Metropolitan closely monitored remedial efforts and continued to advocate for increased funding to expedite cleanup. The project's budget was increased to

$38 million for federal FY 2014, allowing for additional tailings removal with year-round operations.

Topock Chromium 6 Remediation Project

Metropolitan continued working with stakeholders to support Pacific Gas & Electric's chromium 6 groundwater remediation efforts along the Colorado River near Topock, Ariz. The selected groundwater treatment method involves biological treatment within the groundwater basin enhanced by 90 percent fresh water flushing. The design submittal will be completed in September 2014. Metropolitan supports the selected treatment approach to remediate the contaminated groundwater. Construction is expected to be completed in 2017 followed by operation of the treatment system for an estimated 30 years. Interim measures, consisting of groundwater extraction and treatment, have been in place since 2004 to prevent chromium 6 migration to the Colorado River. Levels of chromium 6 in the river remain at typically non-detect levels (< 0.03 µg/L).

Perchlorate Remediation

Perchlorate loading into Las Vegas Wash has dropped more than 90 percent since 1998 as a result of remediation at the former Tronox, Inc. site, now owned by the Nevada Environmental Response Trust, and American Pacific Corp. site in Henderson, Nev. (Figure 4-9). Levels have consistently remained at approximately 1 µg/L at Metropolitan's Lake Havasu intake (Figure 4-10).

Metropolitan participated in stakeholder meetings with the Nevada Division of Environmental Protection to monitor perchlorate remediation progress and assert Metropolitan's interests to ensure cleanup efforts remain at current levels. In April 2014, a $5.15 billion settlement was reached in a lawsuit involving Tronox and site predecessors regarding legacy environmental liabilities. The settlement represents one of the largest environmental recoveries in history. Approximately $1.1 billion will be directed to the Environmental Response Trust for cleanup efforts, ensuring adequate funds are available for full remediation of the site and protection of the downstream Colorado River. The Environmental Response Trust completed a work plan and is conducting a comprehensive remedial study that will identify the long-term treatment remedy for the Tronox perchlorate plume.

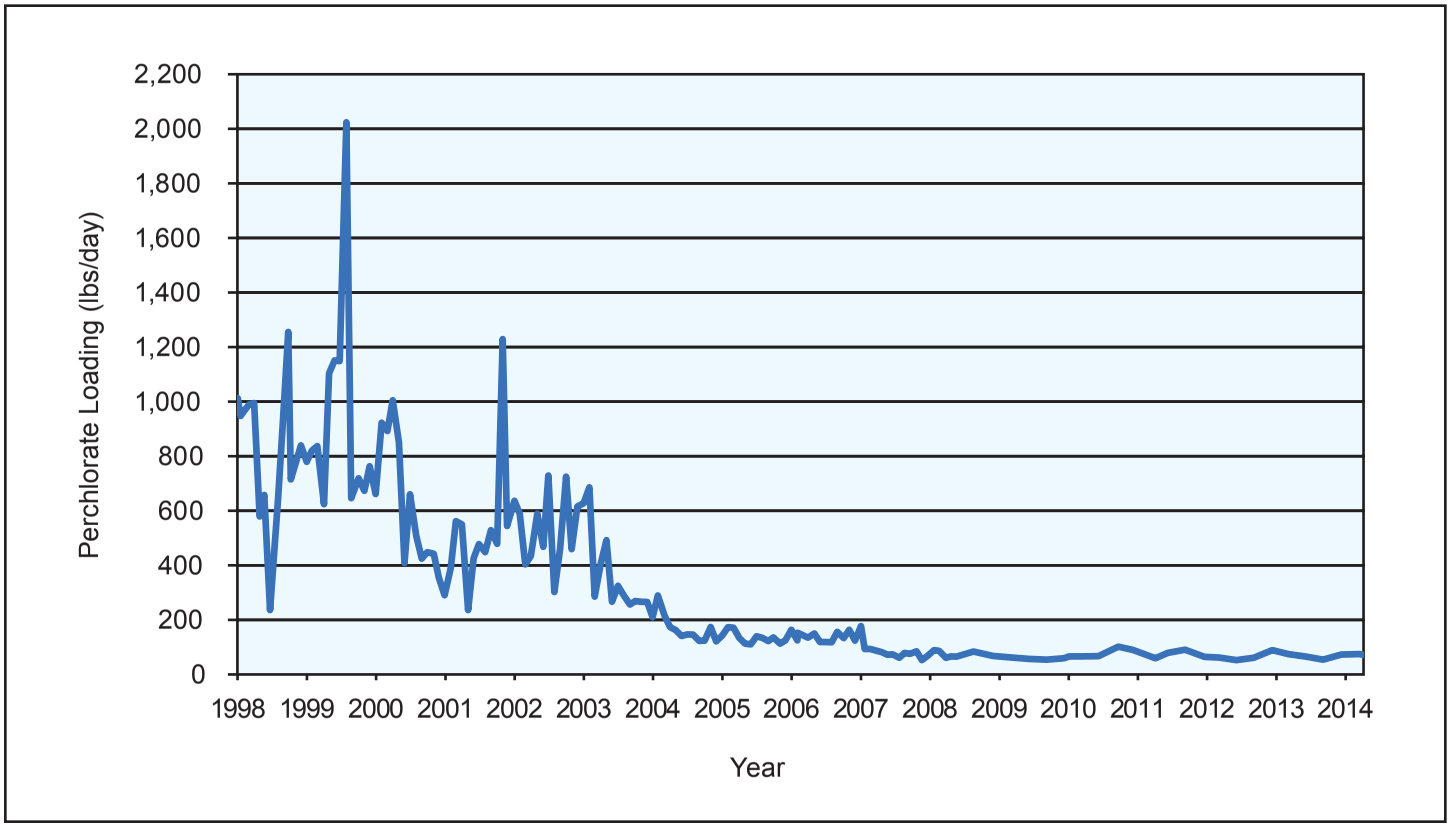


Figure 4-9. Perchlorate Loading in Las Vegas Wash at Northshore Road (½ mile upstream of Lake Mead)

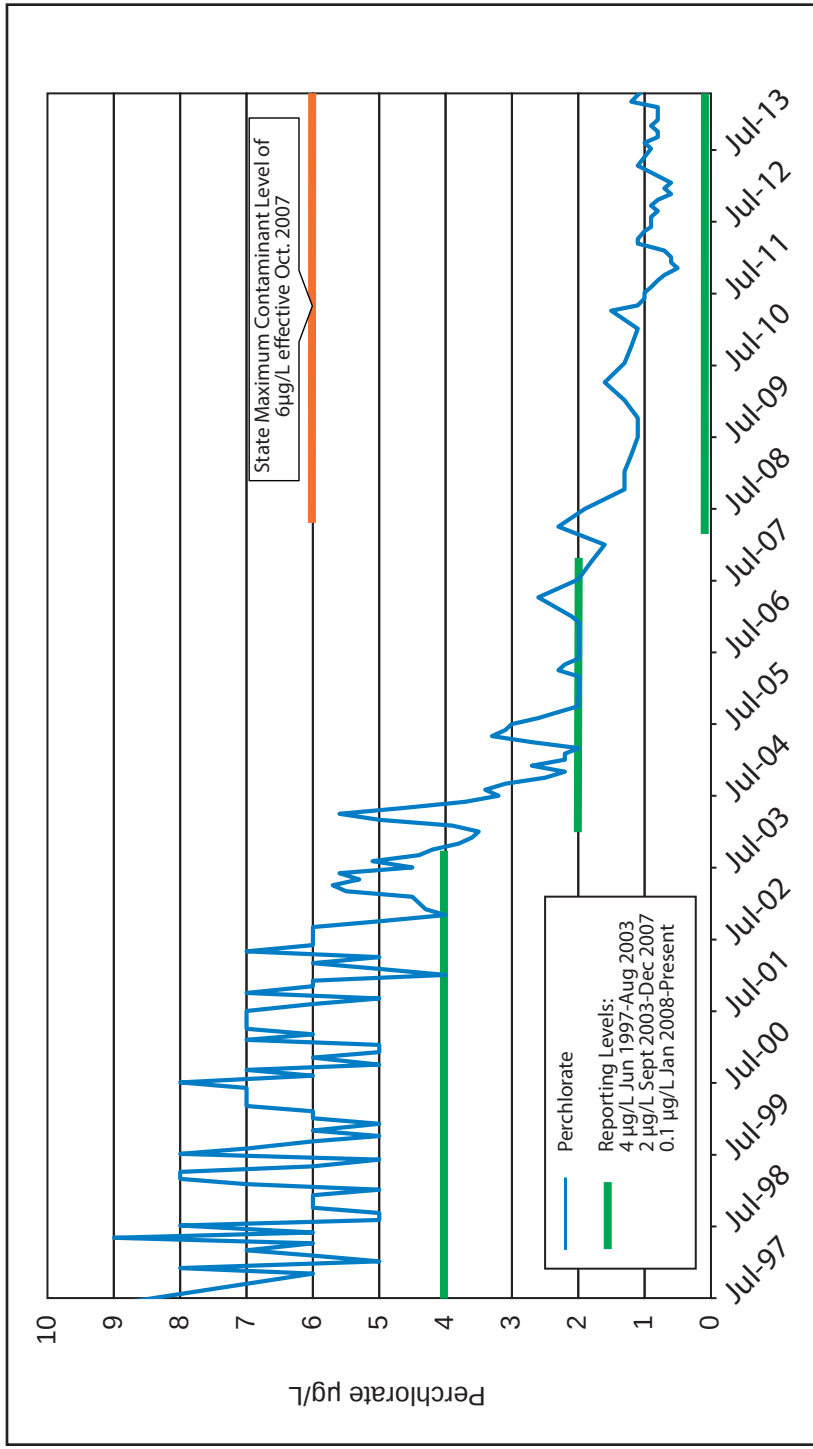


Figure 4-10. Perchlorate Levels at Lake Havasu

Technology Assessment

Treatment Process Optimization and Development

Staff completed a pilot study to evaluate chromium 6 removal from surface water using a modified approach to Metropolitan's conventional filtration processes. Also completed was a lab study investigating impacts of desalinated seawater on disinfection byproduct formation and chloramine residuals when blended with Metropolitan's treated water. In addition, studies continued concerning optimization of ozone disinfection and treatment, improving biofiltration operations and identifying factors affecting NDMA formation. Metropolitan's extensive assessment of its treated water distribution system received American Water Works Association honors.

Funded Projects

Metropolitan continued progress on four projects funded by the Water Research Foundation to study disinfection byproducts and contaminants that may be regulated in the future, e.g., nitrosamines and cyanotoxins, and alternative water treatment coagulant aids (Table 4-8).

Service to Member Agencies and Drinking Water Industry

Metropolitan conducted meetings and webinars updating member agency water quality managers on operational and water quality issues. Along with its member agencies, Metropolitan prepared for California's implementation of the nation's first major drinking water regulation for chromium 6. Metropolitan provided comments, technical assistance and other related services to the state's drinking water program and its member agencies as well as supporting industry efforts to guide the transfer of the state's drinking water program from the California Department of Public Health to the State Water Resources Control Board. Other areas of focus included chemical security, consumer confidence, constituents of emerging concerns and discharge permitting.

TABLE 4-8
ACTIVE WATER QUALITY GRANTS[1]
Fiscal Year 2013/14

Prime Funding Agency	Title of Grant Project	Total Project Budget[2]	Amount of Award to MWD[3]
Water Research Foundation (WaterRF)	Optimizing Conventional Treatment for Removal of Cyanobacteria and Toxins	512,400	62,100
WaterRF	Controlling the Formation of Nitrosamines During Water Treatment	599,007	400,000
WaterRF	Investigating Coagulant Aid Alternatives to polyDADMAC[4] Polymers	540,670	50,000
WaterRF	Nitrosamine Occurrence Survey	711,902	400,000
	TOTALS	**$ 2,363,979**	**$ 912,100**

Notes:

[1] Externally-funded grant projects managed by Water Quality's principal investigators during the fiscal year.

[2] Reimbursable dollars plus total in-kind commitments from all participating agencies; includes payments to subcontractors as applicable.

[3] Amount managed by Metropolitan; award amounts may occasionally change from prior years due to realigned budgets.

[4] Acronym for polydiallyldimethylammonium chloride, a type of flocculant or coagulant used in water purification/treatment.

Conveyance, Distribution and Support

Conveyance and Distribution

Water System Operations' Conveyance and Distribution Section performs preventive and corrective maintenance activities throughout the year with the objective of ensuring reliable deliveries to member agencies. In addition, the section plans and performs shutdowns to complete pipeline and facility inspections, performs local repairs on pipelines or equipment, and supports capital improvement program projects. A description of FY 2013/14 activities follows:

Crews successfully completed shutdowns on the CRA, the San Diego Canal and pipelines throughout Metropolitan's service area. In addition, crews performed two major multi-week shutdown repairs on the Second Lower Feeder as part of the first phase of the Prestressed Concrete Cylinder Pipe Rehabilitation Program for the distribution system. This high priority repair work consisted of dewatering and securing the pipeline so that the steel sleeves could be installed inside the existing pipe to restore its design strength. The refurbished Bixby Road sectionalizing valve, installed the previous year, played a crucial role in the shutdown and helped to minimize the impact to the affected member agencies by decreasing the overall length of pipe that was taken out of service to accommodate the new steel sleeve installation.

The Coatings Program protects Metropolitan's physical assets from corrosion and harsh environment to maximize the useful life of pumps, valves, meters, pipes, buildings and delivery lines. In FY 2013/14, the teams coated 167 pieces of equipment and 965 structures. Structures that are particularly vulnerable to water damage – such as vaults located below road grade – were sealed to prevent water intrusion that accelerates corrosion.

Throughout FY 2013/14, WSO maintained an eight-pump flow capability on the Colorado River Aqueduct. To ensure consistent operation and reliability, refurbishment work took place during a 16-day shutdown of the CRA and portions of the San Diego Canal. Originally scheduled for 24 days, the duration was reduced by eight days due to a combination of strategic work planning and better

than anticipated progress on some of the more difficult repairs. Early completion proved beneficial, allowing an additional 20,000 acre-feet of water to be moved through the system. Work highlights included repairs to the Gene Pumping Plant delivery line expansion joints, seismic reinforcement of the San Jacinto East Portal tunnel access, 45 miles of tunnel cleaning, scraping and removal of scale and debris in the CRA and interconnected San Diego Canals, testing of high voltage equipment to meet regulatory requirements, recoating of transformers and piping systems, and various repairs to cooling water and ancillary systems throughout the five Desert pumping plants. Such work helps ensure reliability and maximum CRA flows for the dry year.

WSO undertook several other supporting CRA reliability projects, including repairs to three main pump units, and refurbishing insulators and damaged high-voltage lines on the critical 230kV transmission system that powers all five CRA pumping plants.

During FY 2013/14, crews performed nearly 346,000 hours of maintenance on conveyance and distribution infrastructure, including shutdowns. See Table 1-5 for a full list of shutdowns that occurred during the year.

Operations Support Services

In support of Metropolitan's core operational functions, Operations Support Services provides manufacturing services, maintenance engineering, rehabilitation, new construction, emergency response, and fleet services. Operations Support Services also provides several of these functions on a reimbursable basis to the Department of Water Resources, member agencies and other public entities.

Manufacturing Services

Manufacturing services provided by the La Verne Shops include fabrication, machining and coating services, repairing and testing of valves and pumps, refurbishing equipment, diving inspections, floating reservoir cover maintenance, and crane maintenance and annual certification.

During FY 2013/14, the La Verne Shops supported Metropolitan infrastructure by helping to maximize operational flexibility and expand the delivery of Colorado River water and DVL water into areas served by the State Water Project. These drought relief efforts included manufacturing of three pump support assemblies for Greg Avenue Pumping Plant; manufacturing a stainless steel, flow control plate for the Jensen Finished Water Reservoir outlet gate; and refurbishing a 24-inch diameter conical plug valve for the PC-1 Interconnection Project on the Lakeview Pipeline. The La Verne Shops were also utilized effectively to maintain infrastructure reliability for Metropolitan such as manufacturing 500 feet of 68-inch diameter steel pipe for strengthening the Second Lower Feeder's pre-stressed concrete pipeline.

Construction Services

Construction Services staff provides services to protect Metropolitan infrastructure and optimize its operation and maintenance. In FY 2013/14, notable projects included the repair of the Greg Avenue Pump Station support, installation of the multi-nozzle flow control plate for Jensen Finished Water Reservoir, and rehabilitation of the Lower Feeder tower.

Power Equipment and Reliability

The Power Equipment and Reliability staff focuses on maintenance and reliability engineering issues and responsibility for hydroelectric power plant, high voltage and HVAC (heating, ventilation and air conditioning) maintenance. For power plants, preventive maintenance ensures reliability of the hydroelectric plants and supports Metropolitan's power recovery program to offset costs for importing water supply into the service area. This year, staff performed preventive and predictive maintenance on Greg Avenue, Foothill, Red Mountain, Rio Hondo, and Sepulveda hydroelectric plants. Staff coordinated with the Federal Energy Regulatory Commission triennial inspections for nine of Metropolitan's 16 small hydroelectric plants. FERC inspections examine the maintenance, repairs, site security, and overall condition of the facilities. Reports from this year's inspections were favorable with no major findings.

As the owner of the CRA 230-kilovolt electrical transmission system, Metropolitan complied with applicable North American Electric Reliability Corporation's reliability standards for these facilities, and supported compliance activities required for Metropolitan's power operations. This effort led to a successful self-audit for 2013.

Staff monitored conditions of all high-voltage transformers throughout the district and completed infrared thermography surveys of electrical systems at all water treatment plants, pressure control structures and hydroelectric plants. These surveys avert in-service failures and improve overall reliability of Metropolitan's facilities. Staff also completed preventative and corrective maintenance of all HVAC systems at the ozone facilities and other key facilities requiring proper cooling and ventilation.

As part of Metropolitan's infrastructure reliability effort, staff continued to implement condition-based maintenance techniques, including vibration monitoring of operating equipment. Staff developed new maintenance operating procedures to standardize equipment maintenance, and completed development of failure codes for major equipment. A corrosion assessment guide was developed to serve as a common reference for field personnel when monitoring structures and equipment conditions.

Fleet Services

Metropolitan operations depend on modern, well-maintained operating equipment such as vehicles, construction equipment, emergency generators and pumps. Fleet Services staff assesses, creates specifications, procures and maintains more than 1,750 vehicles and pieces of equipment valued at approximately $45 million. Staff maximized asset value and longevity through a comprehensive maintenance program, completing 3,200 preventative maintenance inspections on the fleet over the past year. This was accomplished while meeting all regulatory requirements, including California's air quality regulations.

Security and Emergency Management

Protecting critical infrastructure is a primary WSO objective. Security professionals provide 24/7 security monitoring and response working with a contracted guard force and a security system that protects 72 facilities with hundreds of card readers, door alarms, motion detectors and closed-circuit cameras.

Security staff updated the vulnerability assessment for Metropolitan's critical infrastructure, providing recommendations for security enhancements such as motion-activated lighting, defensive landscaping, electronically-monitored fencing, hardened locks/chains, and other security hardware. These enhancements incorporate physical security into the maintenance and upgrading of the infrastructure.

Emergency Management staff responded to numerous events this year. Staff coordinated with Metropolitan's management and outside agencies during multiple earthquakes, including the magnitude 4.4 Encino earthquake on March 17 and the magnitude 5.1 La Habra earthquake on March 28. Staff also monitored numerous brushfires during the year, including the Silver and Etiwanda fires, and multiple brushfires in San Diego County in May 2014.

Metropolitan's Emergency Response Organization conducted several meetings with member agencies in the western portion of the system on joint communications, and a tabletop exercise that led to a well-received full-scale exercise in November 2013 that demonstrated the benefits of the increased member agency involvement and collaboration. A new plan calls for every member agency to be involved in at least one emergency response exercise over the next five years.

Emergency Management staff continues to work with the California Institute of Technology to test the ShakeAlert earthquake early-warning program. For the past year, staff has been monitoring an early version of this system and advised Caltech researchers on how Metropolitan could use this system in the future.

Energy Management

High Interest Hoover Dam Loans Repaid

On March 12, Metropolitan and the other 14 Hoover Dam power contractors repaid $124 million in federal loans for improvements to the Hoover Dam spillways and the construction of the Hoover Dam visitor center. This will result in a $2.3 million annual reduction in Metropolitan's Hoover power costs allowed Metropolitan and the other contractors to take advantage of the current low interest rates.

Hydroelectric Power Recovery Plant Operations

Metropolitan has 16 small-conduit hydroelectric power recovery plants that generated a total of 216 million kilowatt-hours for FY 2013/14 (Table 4-9), and produced gross revenues of $15.5 million. This was about 100 million kilowatt-hours less generation and $9 million less revenue compared to FY 2012/13. The lower energy production is due to a low State Water Project allocation, low reservoir elevations and pipeline flows that were either too high or too low for operating the power plants. Further, the Yorba Linda Power Plant remained off-line to allow facility modifications to accommodate the new Diemer ozone facilities. Generation from all 16 power plants was sold under contractual agreements with Pacific Gas & Electric, Southern California Edison, the City of Colton, Energy America, LLC, Southern California Public Power Authority, Los Angeles Department of Water and Power and DWR.

New Small Hydroelectric Contract

Metropolitan signed a two year contract for the sale of renewable energy from five of its small hydro generators to Energy America, LLC. The generators were under contract to Southern California Edison until Oct. 31, 2013. Metropolitan negotiated contracts through 2015 at a price about $13/megawatt-hour higher than non-renewable market energy prices.

Solar Power Energy Production

Metropolitan has two solar photovoltaic energy facilities. The facility at the Skinner plant is rated at one megawatt and the Diamond Valley Lake Visitor Center facility is rated at 0.52 megawatts. During FY 2013/14, the Skinner plant produced 2,317 megawatt-hours (MWh) of energy and the visitor center produced 329 MWh, all of which offsets retail energy purchases at the two locations.

TABLE 4-9
HYDROELECTRIC POWER RECOVERY PLANTS –
PRODUCTION FOR THE PAST TWO FISCAL YEARS

Power Plant	Nameplate Capacity (Megawatts)	2013/14 Production (kWh)	2012/13 Production (kWh)
Greg Ave.	1	0	2,606,400
Lake Mathews	5	31,269,066	25,649,769
Foothill Feeder	9	54,484,345	56,141,087
San Dimas	10	17,322,039	27,886,726
Yorba Linda	5	0	0
Sepulveda Canyon	9	0	18,962,400
Venice	10	0	6,261,449
Temescal	3	17,142,953	17,871,814
Corona	3	16,351,921	17,409,069
Perris	8	903	1,270,191
Rio Hondo	2	1,946,949	3,548,191
Coyote Creek	3	13,182,538	5,190,930
Red Mountain	6	22,664,551	26,472,580
Valley View	4	14,434,686	11,576,057
Etiwanda	24	6,864,114	41,550,437
Wadsworth (DVL)	30	20,536,569	55,026,724
TOTAL	131	**216,200,634**	**317,423,824**

Annual Power generation varies significantly, depending on: Member Agency demands, mix of water sources (Colorado vs. State Water Project), and planned shutdowns. Power Plants are listed in the order they became operational. Greg Avenue was first and Wadsworth last

Colorado River Aqueduct Power

In FY 2013/14, Metropolitan pumped more than 1.1 million AF through the Colorado River Aqueduct, requiring nearly 2.2 billion kilowatt-hours of electricity. Energy costs for pumping Colorado River water are shown in Table 4-10. The current and historical energy resources used to meet CRA water delivery energy requirements are shown in Table 4-11 and Figures 4-11 and 4-12.

In March, Metropolitan began purchasing supplemental energy to support the eight-pump-flow operation of the CRA. Metropolitan purchased both next-day and month-ahead energy from energy traders and imported the energy into California. These energy purchases supplement the energy received from Hoover and Parker dams and the contractual energy from Southern California Edison. It is anticipated supplemental energy will be required for the remainder of CY 2014 and into CY 2015.

TABLE 4-10
ENERGY COST FOR PUMPING
COLORADO RIVER WATER
Fiscal Year 2013/14

Energy Source	Cost ($)
Hoover Power Plant	19,236,555
Parker Power Plant	2,792,358
Energy Purchases/Sales [1]	6,808,920
Exchange (Edison & DWR) [2]	0
Colorado River Water Pumping Revenue [3]	(1,221,885)
Benefit Energy and Exchange Surcharge [4]	192,916
Reduction in Energy Surcharge [5]	(46,926)
TOTAL	**27,761,938**

Notes:
[1] Energy Purchases/Sales. A negative number indicates net revenue to Metropolitan.
[2] Cost of exchanging energy with another utility.
[3] Payments received for energy costs associated with moving non-Metropolitan water on the CRA.
[4] Tax paid to State of California for Edison Benefit and Exchange energy.
[5] Reduction in tax due to transmission losses and small hydro generation

TABLE 4-11
METROPOLITAN'S HISTORICAL CRA ELECTRIC ENERGY USE
Kilowatt Hours

	Hoover	Parker	Edison Benefit [1]	Edison Exchange [2]	DWR Exchange [2]	Edison & DWR Exchange & Edison Benefit	Energy Purchases/Sales [3]	Total
1987/88*	1,432,001,000	290,400,000	216,981,190	1,764,000	0	218,745,190	832,498,639	2,773,644,829
1988/89	1,231,206,000	237,142,000	215,485,363	(27,764,000)	0	187,721,363	735,276,330	2,391,345,693
1989/90	1,205,476,000	230,545,000	219,139,828	24,777,000	0	243,916,828	754,629,485	2,434,567,313
1990/91	1,130,155,000	223,831,000	221,837,010	13,298,000	0	235,135,010	871,799,953	2,460,920,963
1991/92	1,086,888,000	206,513,000	210,490,214	16,145,000	0	226,635,214	891,296,400	2,411,332,614
1992/93	966,614,000	182,606,000	208,800,738	(28,220,000)	0	180,580,738	1,035,586,974	2,365,387,712
1993/94	1,256,009,000	214,961,000	199,304,945	(16,175,000)	0	183,129,945	914,591,730	2,568,691,675
1994/95	1,166,517,000	217,365,000	186,648,325	(88,977,000)	0	97,671,325	680,010,352	2,161,563,677
1995/96	1,357,937,000	237,627,000	286,971,075	(32,150,000)	0	254,821,075	401,318,041	2,251,703,116
1996/97	1,292,375,000	243,993,000	253,134,785	47,302,000	0	300,436,785	595,050,513	2,431,855,298
1997/98	1,370,317,000	302,069,000	200,076,045	90,000,000	(123,316,955)	166,759,090	327,992,313	2,167,137,403
1998/99	1,411,403,000	297,219,000	212,312,000	13,490,000	108,417,736	334,219,736	329,691,494	2,372,533,230
1999/00	1,392,515,000	262,383,000	263,326,907	(26,405,000)	3,967,942	240,889,849	646,961,000	2,542,748,849
2000/01	1,311,068,000	243,647,000	173,785,599	21,586,000	0	195,371,599	788,937,000	2,539,023,599
2001/02	1,322,037,000	241,048,000	199,205,189	(54,931,000)	0	144,274,189	804,044,166	2,511,403,355
2002/03	1,193,682,000	230,871,000	284,085,067	50,371,800	(162,807,504)	171,649,363	232,051,017	1,828,253,380
2003/04	1,179,118,000	229,886,000	164,721,756	(61,823,800)	105,280,095	208,178,051	(141,923,768)	1,475,258,283
2004/05	931,893,000	198,606,000	381,481,989	18,022,000	5,059,196	404,563,185	(39,632,380)	1,495,429,805
2005/06	1,158,901,000	212,687,000	405,612,265	(116,265,000)	37,054,891	326,402,156	74,465,049	1,772,455,205
2006/07	1,143,870,000	229,881,000	387,630,441	(38,400,000)	68,876	349,299,317	(421,365,512)	1,301,684,805
2007/08	1,117,068,000	217,106,000	431,283,980	70,272,000	0	501,555,980	(250,140,000)	1,585,589,980
2008/09	1,075,217,000	223,056,000	260,209,614	90,363,000	0	350,572,614	371,765,025	2,020,610,639
2009/10	994,222,000	195,063,000	233,871,837	21,870,000	0	255,741,837	595,894,000	2,040,920,837
2010/11	1,094,130,000	225,236,000	227,018,084	(160,574,000)	0	66,444,084	583,958,000	1,969,768,084
2011/12	1,165,206,000	214,680,000	35,860,567	(33,725,000)	0	2,135,567	33,603,000	1,415,624,567
2012/13	1,075,958,000	236,045,000	234,852,498	53,437,000	0	288,289,498	(100,968,000)	1,499,324,498
2013/14	1,099,377,000	224,957,000	574,836,315	90,393,000	0	665,229,315	203,715,000	2,193,278,315

Notes:

* Includes June 1987 data

1 Energy provided by Southern California Edison (Edison) at no cost pursuant to 1987 Service and Interchange Agreement.

2 Energy exchanged with Edison. Negative number indicates net energy banked with Edison.
Positive number indicates net energy received from Edison. These numbers represent what is in the Exchange Balance as of June 30.

3 Energy Purchases/Sales. A negative number indicates net energy sold to others.

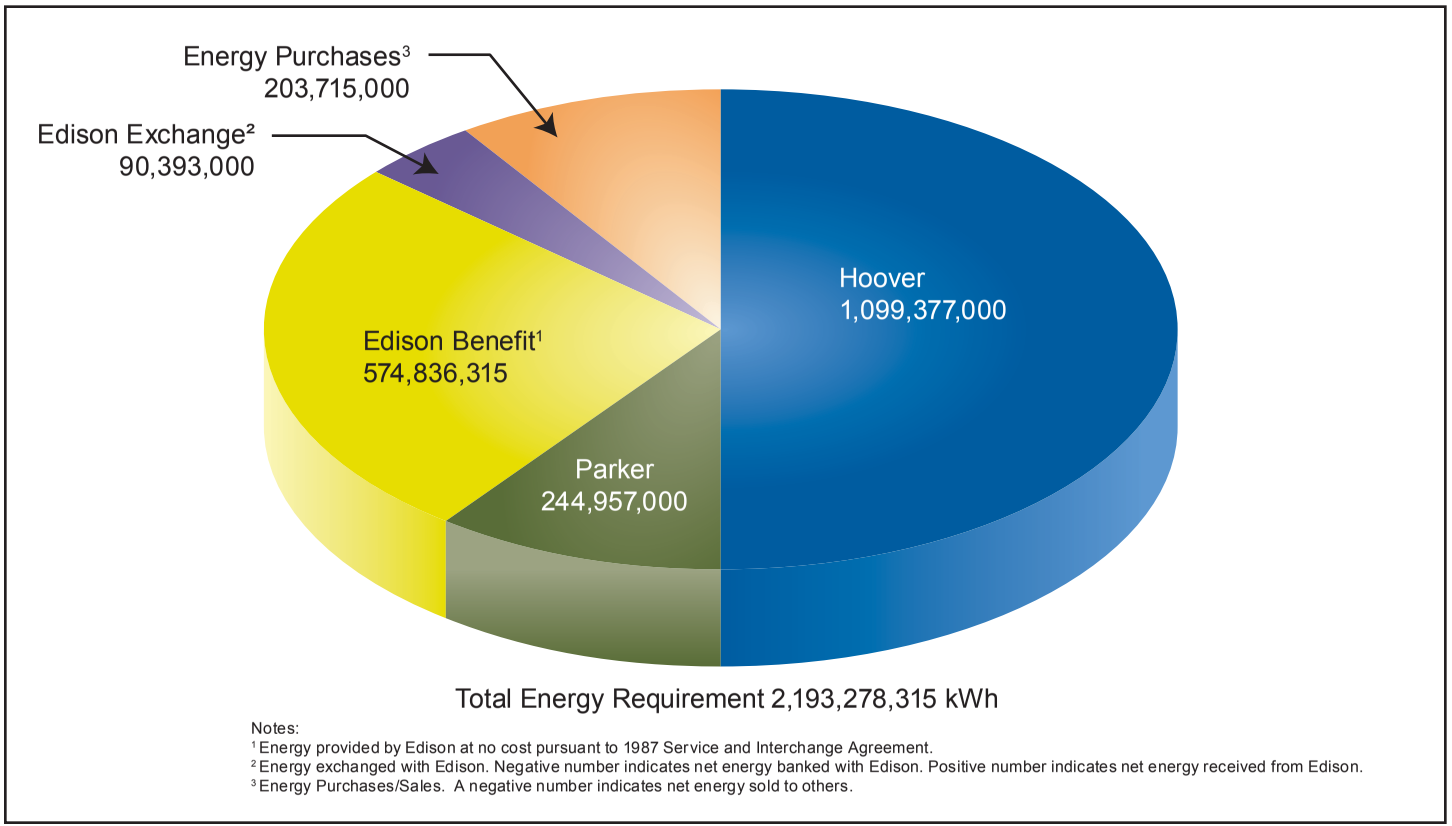


Figure 4-11. Metropolitan's CRA Electric Energy Use (kWh)
Fiscal Year 2012/13

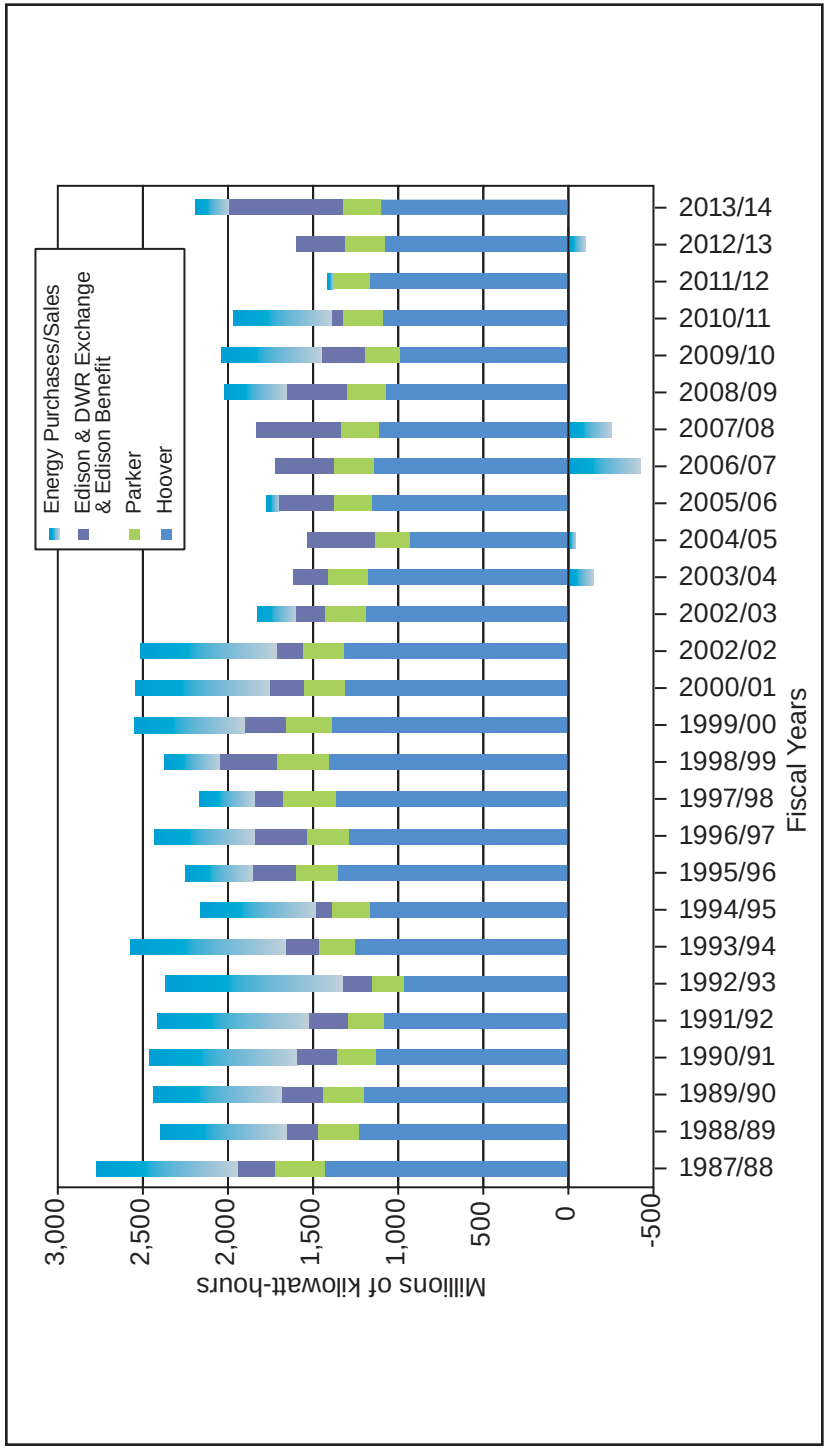


Figure 4-12. CRA Energy Mix 1988 to 2014

Greenhouse Gas Impacts

Metropolitan continued its efforts to mitigate the impacts of California's greenhouse gas regulations on CRA power costs. Under current regulations, Metropolitan is required to buy allowances, offsets and the like for the greenhouse gases associated with the supplemental, non-hydroelectric power Metropolitan imports into California to help meet the pumping demands of the CRA. During the fiscal year, Metropolitan spent approximately $1.7 million to acquire these so-called compliance instruments. In addition, the California Air Resources Board will provide a limited number of free allowances to Metropolitan in the future.

Assistance Plan for San Onofre Outage

Metropolitan and member agencies in the south Orange County area developed a report which listed actions that water agencies could take if the outage of the San Onofre Nuclear Generating Station caused power overloads or instability on the local power system. Prepared at the request of the Brown Administration, the report called for the use of backup and portable generators to replace energy from the local electric utility. These generators are specifically designed to provide critical energy supplies on the loss of utility power and could quickly relieve overload conditions. These and other actions were not required as the demand for energy during the summer of 2013 remained moderate and no unplanned outages of large electrical equipment were experienced.

New Hoover Dam Turbines

Two new turbines were installed in Hoover Dam generators this year that can operate much more efficiently over a wide range of reservoir elevations. As the elevation of Lake Mead declines, these turbines provide the capability to produce more power than prior models. Three such turbines now operate at Hoover, with two more planned over the next two years.

Safety and Environmental Services

Operational Safety and Environmental Services Section staff continued to oversee compliance with environmental and safety regulations and procedures. Staff conducted numerous site inspections to proactively address environmental and safety issues. In addition, there were 83 routine regulatory inspections in the areas of air quality, wastewater, hazardous materials, hazardous waste, stormwater, underground and aboveground petroleum storage tanks, and safety. Staff coordinated and tracked all identified corrective actions. A new environmental management information system was fully implemented. EMIS tracks all incident (spills, agency inspections, and injuries) information (including corrective actions), permits, hazardous waste, industrial hygiene, and safety programs.

Environmental

Staff provided all required compliance reporting for air quality, wastewater, stormwater, underground storage tanks, and hazardous materials/hazardous waste. Staff negotiated with and secured dewatering permits from regulatory agencies in support of Metropolitan's shutdown projects. Staff also managed 350 air quality permits for portable and stationary equipment.

Staff prepared and submitted more than 100 wastewater, storm water and air quality reports, plans, and permits to comply with regulatory requirements. Staff continued to update and implement 22 plans for oil spill prevention control and countermeasures to comply with regulations for aboveground fuel tanks. All 42 of Metropolitan's petroleum underground storage tanks were tested to comply with leak prevention requirements, and two aboveground storage tanks were upgraded to meet state vapor recovery regulations. Staff submitted nearly 40 annual disclosures and business plans dealing with hazardous materials for required Metropolitan sites.

Health & Safety

Staff provided safety coverage during the 2013/14 shutdown season to successfully minimize accidents and injuries. This included safe work practices and ventilation monitoring for all underground operations. Staff proactively addressed safety performance through site inspections, safety toolbox talks, safety committee communications, and revision of safety procedures. Staff reinforced requirements of the Injury and Illness Prevention Program by engaging staff and managers in safe work practices.

Table 4-12 shows the injuries, illnesses and incidents that required time off from work during FY 2013/14 for each Metropolitan facility. The Occupational Health and Safety Administration defines Total Incident Rate (also known as injury/illness rate), as the number of recordable incidents in a year per 100 employees. Overall, Metropolitan's Total Incident Rate is below the average federal and state Total Incident Rate for water utilities. A recordable incident is generally defined as a new work-related injury or illness that results in death, lost time from work, work restriction, or medical treatment beyond first aid.

Safety and Environmental Services staff investigated each incident and worked with WSO managers to implement proactive measures to protect employees. In addition, SES staff implemented the Job Safety Hazard Checklist to improve project planning and coordination. As a result, employees anticipate work hazards and develop measures to minimize risk through engineering controls, safe work procedures and personal protective equipment.

Apprenticeship Program Training

The Apprenticeship Program trained industrial mechanics and electricians to ensure skilled trades persons were available to repair and maintain Metropolitan's water treatment and conveyance and distribution system. The state Department of Apprenticeship Standards continues to recognize Metropolitan's curriculum as meeting the breadth and level commensurate with journey-level mechanical and electrical trades.

Apprenticeship Program has several classes in progress to graduate journey-level electricians and mechanics. Apprentices in their course of work/study must pass more than 90 tests, over 700 hours of classroom instruction, and 7,200 hours of on-the-job training. A total of 61 journey and electrical craft persons have completed the program accounting for approximately 31 percent of the apprentice trades.

Metropolitan recruited apprentices in early 2014 using preparation seminars, written examinations, physical ability testing, and interviews. A total of 579 candidates took the written exam. For the first time, a physical abilities test was incorporated into the recruitment process in order to make candidates aware of the physical requirements of the job and to demonstrate their ability to perform typical job-related tasks. A total of 18 pre-apprentice positions were offered and are scheduled to begin employment in July 2014.

TABLE 4-12
ACCIDENT INCIDENTS
Fiscal Year 2013/14

Location	Total Incident Rate	DART* Incident Rate
Diemer	15.2	10.7
Diamond Valley Lake	8.3	8.3
Eagle Mountain	41.0	30.8
Eagle Rock	0	0
Gene Camp	6.6	5.5
Hinds	0	0
Iron Mountain	0	0
Jensen Plant	7.5	4.5
La Verne	3.3	2.7
Lake Mathews	12.5	3.1
Lake Skinner	11.3	8.5
Mills Plant	7.6	3.8
Sacramento	0	0
Soto Street	10.3	6.8
Sunset	0	0
Union Station	0.3	0.3
Washington, D.C.	0	0
AVERAGE RATE	**4.0**	**2.8**
Federal Utility Average	**5.8**	**2.9**
State Utility Average	**4.1**	**3.0**

* Days Away, Restricted and Transferred Rate.

Ozone generation building tilt-up wall panel installation.

CHAPTER 5

Engineering Services

The Engineering Services Group is a full-service engineering organization that delivers projects so that Metropolitan can treat and distribute water reliably to its member agencies. Engineering Services provides a wide range of technical services with a focus on cost-effectiveness and customer service. Its key functions include program management, engineering design, environmental planning, construction management, facility planning, geodetics and field survey, dam surveillance and corrosion control. In addition to performing its core operation and maintenance activities, Engineering Services provides oversight of Metropolitan's Capital Investment Plan, which represents Metropolitan's commitment to construct and rehabilitate facilities that enable long-term, reliable water deliveries.

Below are highlights of Engineering Services' major activities for fiscal year 2013/14:

Capital Investment Plan

Each year, Engineering Services manages and executes capital projects that range in cost from less than $100,000 to more than $100 million. Key driver categories that indicate the business objective driving the need for a specific project within the CIP are: Infrastructure Reliability, System Expansion/Supply Reliability, Water Quality, Cost Efficiency/Productivity, and Regulatory. Figure 5-1 depicts the actual fiscal year 2013/14 expenditures by category.

During FY 2013/14, capital expenditures totaled approximately $171 million, with Water Quality and Infrastructure Reliability projects representing the largest components at approximately $55 million and $103 million, respectively.

The Infrastructure Reliability expenditures were spread across nearly 300 projects, with the largest being upgrades to the coating, fabrication and machine shops at the F. E. Weymouth Water Treatment Plant; electrical and seismic upgrades at the Weymouth plant and Robert B. Diemer Water Treatment Plant; refurbishment of components of the Colorado River Aqueduct, and rehabilitation of pre-stressed concrete cylinder pipelines. For a list of projects that completed construction during the year or were under design, see Tables 5-1 through 5-3. Figure 5-2 shows long-term expenditures of the CIP by driver category.

Additional capital work underway during the year included the following:

Colorado River Aqueduct Recordation Program

Staff successfully concluded a decade-long recordation effort to survey and record title documents for Metropolitan's CRA properties. This program enabled Metropolitan to record documents with county recorders' offices, thereby reducing the risk of encroachments or property disputes.

Chlorine Containment and Handling Facilities Program

A construction contract awarded for a chlorine containment system at the Chemical Unloading Facility represents the final phase of Metropolitan's chlorine containment program. Containment facilities have already been completed at Metropolitan's five treatment plants. This program enhances safety by reducing the potential for exposure to plant personnel or the public of an accidental release of chlorine.

Treated Water Cross Connection Prevention Program

FY 2013/14 marked the successful conclusion for a decade-long effort to relocate 300 underground structures to protect water quality throughout the distribution system by eliminating potential cross connections, which prevented possible contamination of drinking water within the distribution system.

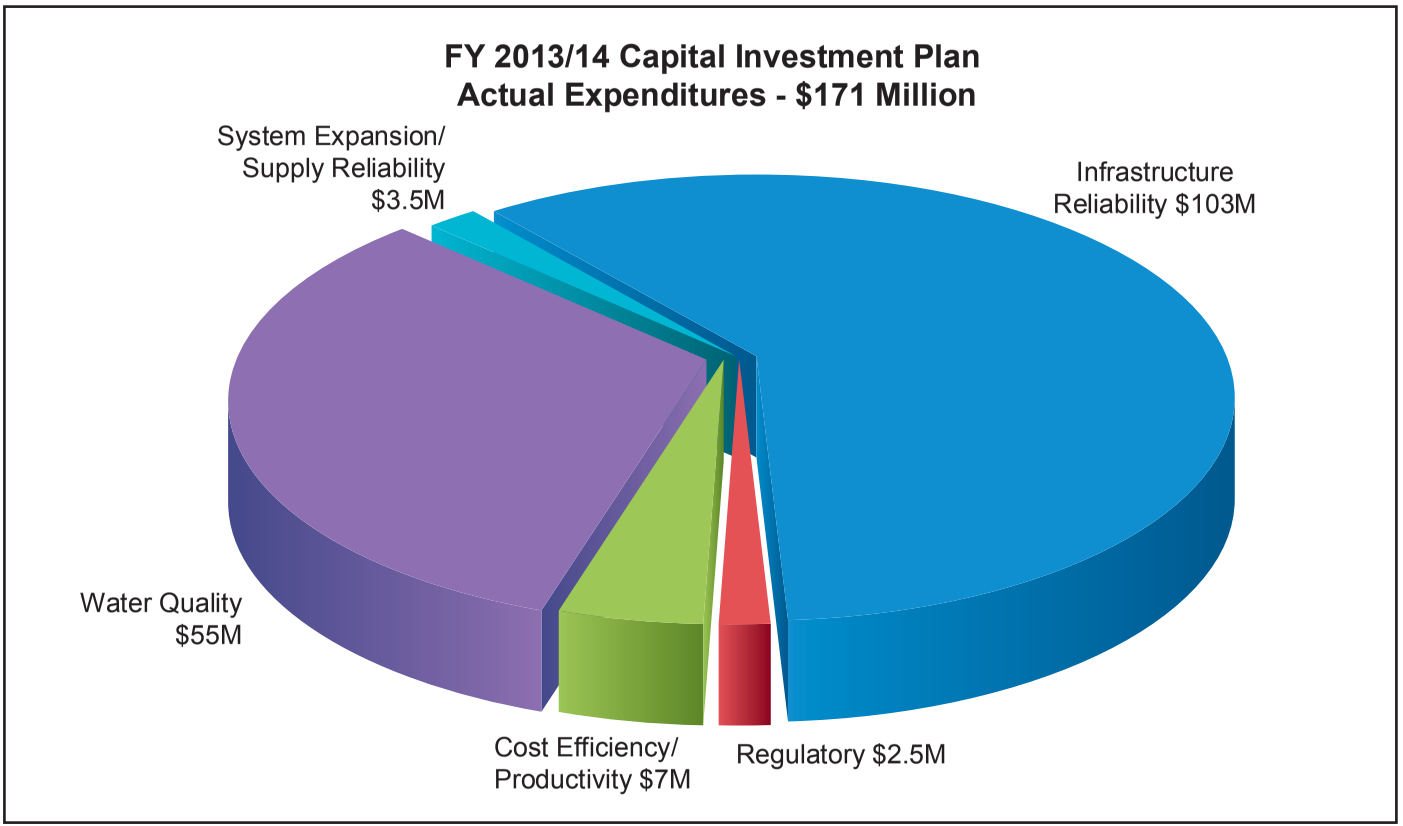


Figure 5-1. Fiscal Year 2013/14 Capital Investment Plan Expenditures

TABLE 5-1
CONSTRUCTION CONTRACTS COMPLETED AS OF JUNE 30, 2014 (Unaudited)

Completion Date	Contract / Spec. No.	Project	Base Bid Amount	Final Amount
7/18/13	1718/1639	La Verne Maintenance Shops Upgrade - Phase 1	6,684,000	6,964,144
8/12/13	1743/1711	Hinds Pumping Plant Standby Diesel Engine Generator Replacement	1,053,900	1,137,400
9/10/13	1763/1742	Oak Street Pressure Control Structure Roof Replacement	87,000	87,000
9/18/13	1759/1720	Temescal and Corona Power Plants Standby Diesel Engine Generator Replacement	323,580	328,403
9/26/13	1754/1689	Danby Towers Foundation Rehabilitation	638,000	676,000
10/3/13	1758/1663	Diemer Finished Water Reservoir and East Washwater Tank Seismic Upgrades	3,606,445	3,663,292
10/21/13	1766/1723A	Lake Mathews Vehicle Exhaust Systems Installation	96,000	96,000
10/29/13	1767/1693A	West Valley Feeder No. 1 Valve Modifications - Stage 2	415,000	439,554
10/30/13	1689/1628	Weymouth Electrical Upgrades	25,130,000	27,014,262
12/17/13	1775/1612	Temescal Power Plant Access Road Repair	97,777	97,777
12/26/13	1748/1706A	Weymouth Filter Rehabilitation/Outlet Chemical Trench	2,104,770	2,177,249
1/8/14	1749/1719A	CRA Wide Area Network Microwave Upgrade	682,366	689,961
1/22/14	1742/1697	Weymouth Emergency Broadcast System Rehabilitation	1,438,442	1,489,466
2/14/14	1765/1734	Jensen Chlorine Scrubber Platform	209,950	223,950

TABLE 5-1 (Continued)
CONSTRUCTION CONTRACTS COMPLETED AS OF JUNE 30, 2014 (Unaudited)

Completion Date	Contract / Spec. No.	Project	Base Bid Amount	Final Amount
3/26/14	1783/1781	Headquarters Building Third Floor Beam Seismic Upgrades	83,919	83,919
4/3/14	1772/1740	San Jacinto Tunnel East Entrance Adit Rehabilitation	1,877,777	1,903,568
4/7/14	1778/1757A	Gene Pumping Plant Delivery Pipe Expansion Joint Repair	835,000	TBD
4/10/14	1736/1662	Copper Basin Reservoir Outlet Structure Rehabilitation	2,982,500	TBD
6/5/14	1771/1735	Sepulveda Feeder Stray Current Mitigation (Cathodic Protection)	878,500	1,005,599
6/30/14	1739/1690	Mills Sodium Hydroxide Tank Replacement	622,650	TBD

TABLE 5-2
MAJOR CONSTRUCTION CONTRACTS IN PROGRESS
AS OF JUNE 30, 2014 (UNAUDITED)
Accrual Basis

Contract No.	Project	Percent Contract Complete through 6/30/2014	Estimated Contract Completion Date	Contract Earnings through 6/30/2014[1]	Base Bid Amount
1738	La Verne Maintenance Shops Upgrade - Phase 4	84	Oct 2014	14,139,320	16,300,127
1741	Weymouth Oxidation Retrofit Program - Ozonation Facilities	59	Aug 2016	56,450,904	95,497,513
1761	Jensen Module No. 1 Filter Surface Wash System Upgrades	71	Nov 2014	7,224,695	9,983,091
1762	Headquarters Building Data Center Uninterruptible Power System Upgrade	99	Aug 2014	486,192	490,292
1773	Diemer Electrical Upgrades - Stage 2	14	Mar 2016	1,587,301	11,110,000
1774	Weymouth Water Treatment Plant Filter Buildings Seismic Upgrades	75	Feb 2015	2,857,380	3,801,758
1776	Yorba Linda Power Plant Turbine Replacement	33	Jun 2015	1,602,621	4,901,567
1777	Weymouth Backup Domestic Water Pipeline Replacement	62	Sep 2014	229,800	368,480
1779	Second Lower Feeder PCCP Repairs - Phase 1	96	Jul 2014	2,202,000	2,292,000
1780	Etiwanda Pipeline North Liner Repair - Pilot Phase	31	Oct 2014	1,168,700	3,725,000
1781	Jensen Washwater Tanks Seismic Upgrades	3	Jan 2015	86,280	3,053,634

TABLE 5-2 (Continued)
MAJOR CONSTRUCTION CONTRACTS IN PROGRESS
AS OF JUNE 30, 2014 (UNAUDITED)
Accrual Basis

Contract No.	Project	Percent Contract Complete through 6/30/2014	Estimated Contract Completion Date	Contract Earnings through 6/30/2014[1]	Base Bid Amount
1782	2nd Lower Feeder Stray Current Mitigation (Cathodic Protection)	92	Sep 2014	822,000	894,600
1784	Sepulveda Feeder South Reach Stray Current Mitigation (Cathodic Protection)	21	Aug 2014	144,245	671,853
1785	Chemical Unloading Facility Chlorine Containment and Handling Facilities	5	Jan 2017	1,135,252	22,888,888
1786	Second Lower Feeder PCCP Repairs - Phase 2	1	May 2015	69,125	5,946,507
1787	Inland Feeder/Lakeview Pipeline Intertie	3	Apr 2015	665,000	20,365,430

[1]Earnings reflected represent the value of work performed by the contractor as of the date indicated and include contract retention and other similar deductions from amounts earned by the contractor but otherwise required to be withheld by Metropolitan by law or contract.

TABLE 5-3
MAJOR ENGINEERING PROJECTS IN DESIGN

Program Number	Program Title	Program Estimate	Project Description	Estimated or Actual Completed Date for Final Design
15320	Cabazon Radial Gate Facility Improvements	$3,697,000	Improvements to Cabazon Radial Gate Facility	August 2015
15346	Chlorine Containment and Handling Facilities	$162,410,000	Chemical Unloading Facility Chlorine Containment Facility	December 2013
			Weymouth Filter Outlet Chlorination Capacity Increase	June 2014
15377	Conveyance and Distribution System Rehabilitation	$117,505,000	Orange County Feeder Lining Repair	June 2015
			Upper Newport Bay Blow-Off Structure Rehabilitation	July 2015
			West Valley Feeder 1, Access Roads and Structure Improvements Stage 3	November 2016
15441	Conveyance and Distribution System Rehabilitation, FY 2006/07 through FY 2011/12	$114,849,000	Orange County Feeder Cathodic Protection	August 2015
			Santiago Lateral Sectionalization Valve Replacement	April 2015
			Skinner Area Facilities Pavement Repairs	May 2015
			Lake Mathews Forebay Repairs	December 2016
			Lake Mathews Hydroelectric Plant Repairs	March 2015
			Collis Street Valve Replacement	March 2015
			DVL Inlet/Outlet Fish Screen Rehabilitation	April 2015
			Etiwanda Pipeline Lining Replacement	November 2014
			Glendale-01 Service Connection Rehabilitation and Upgrade	December 2013
			Orange County Feeder Relocation	January 2014
			Santa Ana River Bridge Seismic Retrofit	January 2015
			Second Lower Feeder Cathodic Protection System	January 2014
			Allen McColloch Pipeline Cathodic Protection	September 2014
			Sepulveda Canyon Control Facility Water Storage Tanks -- Seismic Retrofit	March 2015
			Sepulveda Feeder Cathodic Protection System	August 2013
			Sepulveda Feeder South Cathodic Protection System	March 2014
			Palos Verdes Reservoir Sodium Hypochlorite Feed System Upgrade	May 2014

TABLE 5-3 (Continued)
MAJOR ENGINEERING PROJECTS IN DESIGN

Program Number	Program Title	Program Estimate	Project Description	Estimated or Actual Completed Date for Final Design
15480	Conveyance and Distribution System - Rehabilitation FY 2012/13 through FY 2017/18	$17,210,700	Lakeview Pipeline Repair	August 2016
			Upper Feeder - Structural Protection	October 2014
			Lakeview Pipeline Repairs Phase 1 - Bernasconi Tunnel Lining	July 2014
			Orange County Conveyance and Distribution Service Center	June 2016
15373	CRA - Conveyance Reliability Program	$117,232,000	CRA - Copper Basin and Gene Wash Dam Sluiceways	June 2015
			CRA - Discharge Line Isolation Gates	December 2014
			CRA - Sand Trap Equipment Upgrades	January 2015
15385	CRA - Discharge Containment Program	$8,354,000	CRA - Pumping Plant Wastewater System Replacement - Gene and Iron Mountain	June 2015
			CRA - Pumping Plant Wastewater System Replacement - Hinds and Eagle Mountain	November 2014
			CRA - Transformer Oil And Sodium Hypochlorite Containment	December 2015
			CRA - Wastewater System Rehabilitation Project - Intake Pumping Plant	June 2015
15374	CRA - Pumping Plant Reliability Program	$25,649,000	CRA - Main Pump Suction And Discharge Lines, Expansion Joint Repairs	December 2016
			CRA - Pumping Plant Reliability Program, Discharge Line Coupling Installation	December 2017
15438	CRA - Reliability Program FY 2006/07 through FY 2011/12	$64,826,000	CRA - Canal Improvements	August 2015
			CRA - Pumping Plant Sump System Rehabilitation	August 2015
			CRA - Radial Gates Replacement	August 2015
			CRA - Seismic Retrofit Of 6.9kv Switch Houses	December 2015
			Gene Storage Building Replacement	July 2014
			Intake Power and Communications Line Relocation	March 2015
			Intake Pumping Plant Standby Generator Replacement	April 2015
			Iron Mountain Service Pit Rehabilitation	October 2015
			Iron Mountain Generator Replacement	December 2015
			CRA - Mile 12 Flow and Chlorine Monitoring Station Upgrades	June 2015

Time periods or other information listed in project titles can change as a result of re -scoping during preliminary design.

TABLE 5-3 (Continued)
MAJOR ENGINEERING PROJECTS IN DESIGN

Program Number	Program Title	Program Estimate	Project Description	Estimated or Actual Completed Date for Final Design
15483	CRA Reliability Program FY 2012/13 through FY 2017/18	$16,217,000	CRA - Delivery Line No. 1 Supports Rehab - Five Pumping Plants	June 2016
15419	Dam Rehabilitation & Safety Improvements	$16,170,000	DVL Dam Monitoring System Upgrade	November 2014
15380	Diemer Improvements Program	$285,285,000	Diemer Basin Rehabilitation Diemer Main Washwater Reclamation Plant Diemer Electrical Improvements, Stage 2 Diemer Filter Outlet Conduit Seismic Upgrade - North East Slope	August 2014 August 2015 July 2013 September 2015
15436	Diemer Improvements Program FY 2006/07 through FY 2011/12	$90,377,000	Diemer Administration Building Seismic Upgrades Diemer Chemical Feed System Improvements Diemer Filter Building Seismic Upgrades Diemer Filter Valve Refurbishment Diemer Sample Line and Analyzer Improvements	December 2014 December 2015 Nov 2014: Phase I - Jun2016:Phase II Nov 2014: Phase I - Jun2016:Phase II May 2016
15478	Diemer Improvements Program FY 2012/13 through FY 2017/18	$14,737,000	Diemer Chemical Tank Farm Improvements	November 2015
15389	Diemer Oxidation Retrofit Program	$372,927,000	Diemer South Slope Revegetation and Mitigation Improvements	August 2014
15474	Distribution System Infrastructure Protection Program	$2,000,000	Distribution System Infrastructure Protection Improvements for Orange County Distribution System Assessments of San Bernardino County	December 2015 December 2015
15472	Enhanced Bromate Control Program	$18,093,000	Enhanced Bromate Control - Mills Enhanced Bromate Control - Weymouth	February 2015 April 2015

TABLE 5-3 (Continued)
MAJOR ENGINEERING PROJECTS IN DESIGN

Program Number	Program Title	Program Estimate	Project Description	Estimated or Actual Completed Date for Final Design
15473	Headquarters Building Seismic Modification	$12,400,000	Headquarters Building Seismic Assessment	December 2015
15458	Hydroelectric Power Plant Improvements Program	$16,178,200	Foothill Hydroelectric Plant Rehabilitation	October 2015
			San Dimas Hydroelectric Plant Rehabilitation	April 2016
			Sepulveda Canyon Hydroelectric Plant Rehabilitation	May 2015
			Venice Hydroelectric Plant Rehabilitation	August 2016
15371	Jensen Improvements Program	$100,925,000	Jensen Tank Farm Chemical Containment Repair	March 2015
			Jensen Module 1 Filter Valve Replacement	June 2014
			Jensen Solids Transfer System	May 2014
			Jensen Module 1 Traveling Bridge Repairs	December 2015
			Jensen Washwater Return Pump Mod. (Phase II)	December 2015
			Jensen Entrance Improvements	June 2016
			Modules Nos. 2 and 3 Traveling Bridge Rehabilitations	December 2015
15442	Jensen Improvements Program FY 2006/07 through FY 2011/12	$81,445,000	Jensen Electrical System Reliability	April 2014
			Jensen Modules Nos. 2 & 3 Flocculator Refurbishment	June 2015
			Jensen Washwater Tanks Seismic Upgrades	November 2013
15486	Jensen Improvements Program FY 2012/13 through FY 2017/18	$1,918,000	Jensen Chemical Unloading Facilities Containment Upgrade	April 2014
15395	La Verne Shop Facilities Upgrade	$41,566,000	La Verne Machine And Fabrication Shop Equipment Design and Procurement	December 2015
15434	Mills Plant Ozone System Reliability Program	$7,169,000	Mills Ozone System Reliability Upgrade	September 2014
15452	Mills Improvements Program FY 2006/07 through FY 2011/12	$27,533,000	Mills Electrical Improvements	March 2015
			Mills Industrial Wastewater Handling Facilities Improvements	July 2014
15479	Mills Improvements Program FY 2012/13 through FY 2017/18		Mills Solids Handling Facility Stage 1	November 2014

Time periods or other information listed in project titles can change as a result of re -scoping during preliminary design.

TABLE 5-3 (Continued)
MAJOR ENGINEERING PROJECTS IN DESIGN

Program Number	Program Title	Program Estimate	Project Description	Estimated or Actual Completed Date for Final Design
15471	PCCP Rehabilitation and Replacement Program	$45,285,000	Second Lower Feeder PCCP Rehabilitation	December 2016
			Rialto Pipeline PCCP Carbon Fiber Joint Repairs	September 2028
			Second Lower Feeder Urgent Repairs Sites 1 & 2	August 2013
			Second Lower Feeder Urgent Repairs Site 3	December 2013
15391	Power Reliability and Energy Conservation Program	$105,253,000	La Verne Water Quality HVAC Chiller Replacement	October 2014
15417	Reservoir Cover and Replacement Program	$25,763,000	Palos Verdes Reservoir Cover Replacement	September 2014
15369	Weymouth Improvements Program	$296,443,000	Weymouth Filter Building Seismic Upgrades	July 2014
			Weymouth Washwater Tanks Seismic Upgrades	Nov 2014:Phase I- Jun 2016:Phase 2
			Basin Drop Gate Replacement	February 2015
			Weymouth - Structural Integrity Project	June 2015
			Weymouth Filter Valve Replacement	Jun 2016:Phase I- May 2017:Phase II
15440	Weymouth Improvements Program FY 2006/07 through FY 2011/12	$30,725,000	Weymouth Basins Nos. 5-8 Rehabilitation	August 2015
			Weymouth Dry Polymer System Replacement	May 2014
15477	Weymouth Improvements Program FY 2012/13 through FY 2017/18		Weymouth Backup Domestic Water Supply Pipeline Replacement	September 2013
			Weymouth Basin Inlet Gates Improvements	October 2015
			Weymouth Domestic and Fire Water System Improvements	June 2015
			Weymouth Filter Rehabilitation	October 2014
			Weymouth Basin Inlet Channel Seismic Upgrade	June 2016
			Weymouth Stormwater Management Improvements	December 2015
			Weymouth Seismic Assessment for Building No. 30, 40, & 50	October 2015
15392	Weymouth Oxidation Retrofit Program	$338,510,000	Weymouth Hypochlorite and Sulfuric Acid Feed Facilities	May 2015
15341	White Water Siphon Protection	$12,010,000	Whitewater Siphon Protection Improvements	December 2014
15446	Yorba Linda Power Plant Modifications	$23,040,000	Yorba Linda Power Plant Rehabilitation	November 2013

Time periods or other information listed in project titles can change as a result of re -scoping during preliminary design.

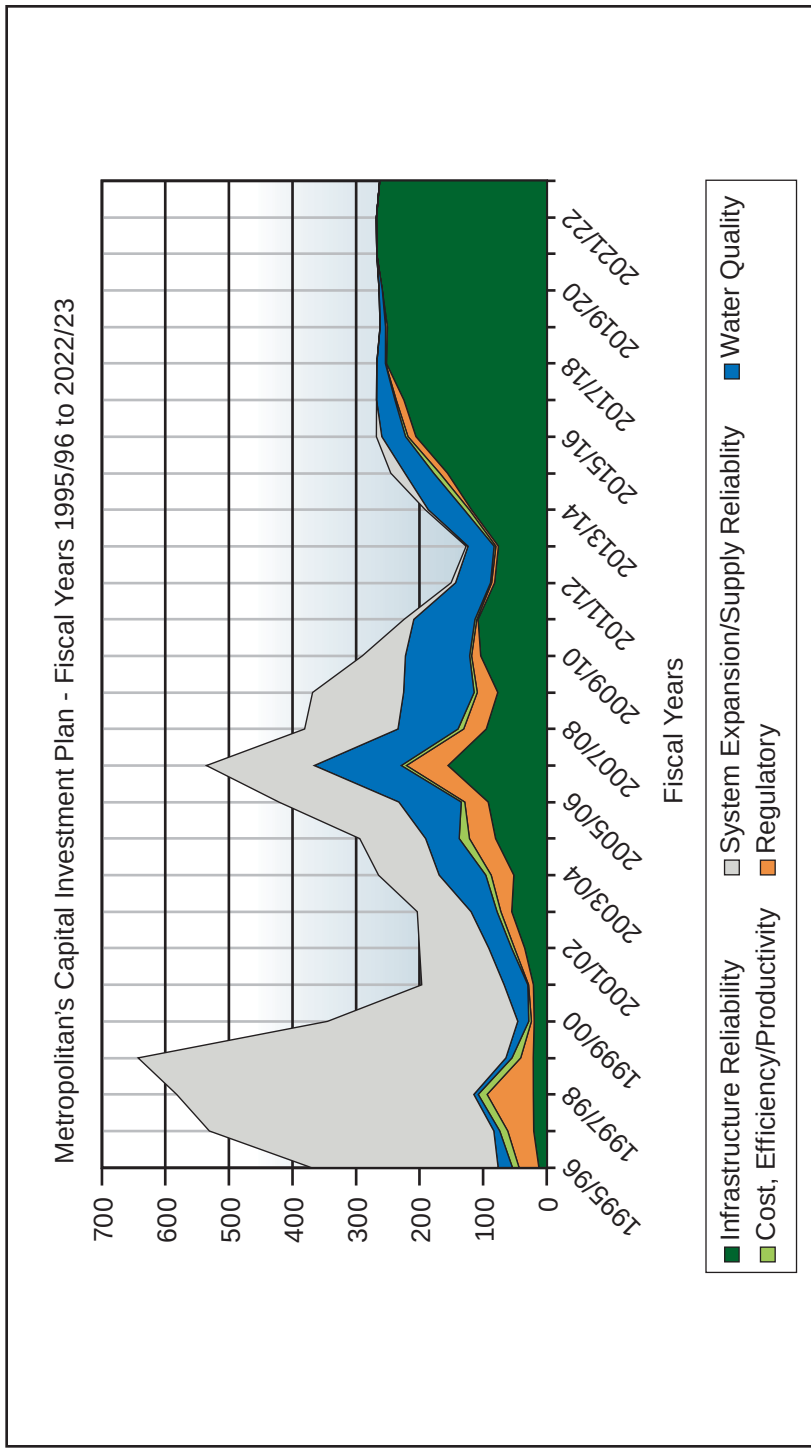


Figure 5-2. Metropolitan's Capital Investment Plan - Fiscal Years 1995/96 to 2022/23

Yorba Linda Power Plant Modifications

Improvements to the Yorba Linda power plant included delivery of a new turbine generator to the adjacent Diemer plant, and awarding of a contract to modify the hydroelectric plant structure and install the new equipment, which is needed to accommodate the power demands of Diemer's new ozonation facilities.

La Verne Machine Shop Upgrades

Construction of upgrades to the coating, fabrication, and machine shops at the Weymouth plant neared completion. This key facility provides Metropolitan with the capability to refurbish a variety of equipment, such as large pumps and gates, and to fabricate pipe for emergency repairs.

Oxidation Retrofit Program

The Oxidation Retrofit Program was established to add ozonation facilities that reduce the level of disinfection byproducts and improve the water quality at Metropolitan's five treatment plants. Ozone is now in use as the primary disinfectant at the Joseph Jensen, Henry J. Mills, and Robert A. Skinner water treatment plants. Crews completed primary construction of ozonation facilities at the Diemer plant, allowing start-up and testing activities to commence. Staff also continued to manage the initial stage of construction of ozonation facilities at the Weymouth plant. As a result of ongoing favorable pricing conditions, increasing demands for treated water in the Weymouth service area, and with construction proceeding smoothly, design of the Stage 2 work was expedited and a favorable change order was negotiated with the contractor to increase the plant's ozonation capacity to the full Weymouth plant treatment capacity of 520 million gallons per day.

Refurbishment and Replacement

Following are highlights of key accomplishments in the refurbishment and replacement of Metropolitan's aging infrastructure:

Treatment Plant Improvements

- Completed a new filtered water concrete trench to route chemical piping to new injection points along the filtered water outlet channel at the Weymouth plant; staff also replaced the Weymouth emergency broadcast system .
- Replaced three deteriorated sodium hydroxide storage tanks at the Mills plant.
- Continued construction to replace the Jensen plant's filter surface wash system and upgrade the Diemer electrical system.

Conveyance and Distribution System Improvements

- Completed replacement of the standby generators at Temescal and Corona power plants.
- Completed the second phase of construction to modify valve vaults on West Valley Feeder No. 1.
- Finished installation of 23 stray current drain stations along a 15-mile portion of the Sepulveda Feeder.
- Replaced the existing telecommunication line at the San Gabriel Tower with fiber optic cable.
- Continued the first phase of construction to replace the lining on the Etiwanda Pipeline, along with final design to replace the floating cover and liner at Palos Verdes Reservoir.

Colorado River Aqueduct Improvements

- Installed new microwave systems to increase the reliability of communication between CRA facilities.
- Rehabilitated the electrical transmission tower foundations at Danby Lake near Iron Mountain Pumping Plant.

- Completed repairs to structurally reinforce a 230-foot-long reach of the East Entrance Adit to the San Jacinto Tunnel.
- Rehabilitated the impeller on Pump Unit No. 8 at the Hinds Pumping Plant, and repaired a leaking pump suction joint at Iron Mountain Pumping Plant.
- Repaired the expansion joints on the 10-foot-diameter delivery pipelines at Gene Pumping Plant.

PCCP Rehabilitation Program

Staff initiated a comprehensive long-term program to refurbish 100 miles of Metropolitan's 163 miles of pre-stressed concrete cylinder pipe. Preliminary design and preparation of environmental documentation commenced for rehabilitation of all PCCP portions of the Second Lower Feeder. Staff also began developing a hydraulic model of Metropolitan's distribution system that will be employed as a tool to minimize overall repair costs and hydraulic impacts to member agencies.

Right of Way and Infrastructure Protection Program

Staff initiated a comprehensive program to protect access rights, minimize erosion, and acquire programmatic environmental permits for needed repairs throughout the distribution system. This effort will enable rehabilitation work and operational activities to continue over a 10- to 15-year period with a minimum of delays, and will provide relief from escalating permitting costs.

Seismic Assessment and Retrofit Program

- Completed seismic upgrades to the finished water reservoir and east washwater tank at the Diemer plant.
- Completed a seismic assessment of the Union Station Headquarters Building, and initiated preliminary design.

Drought Response

In response to the historic low allocation of State Water Project supplies to Metropolitan, staff initiated several projects to deliver Colorado River water to portions of the distribution system that previously could only receive State Water Project supplies.

The first project involves constructing an intertie from the Inland Feeder to the Lakeview Pipeline, which will allow Diamond Valley Lake to serve as a backup water source for the Mills Plant. The second project will refurbish the Greg Avenue Pumping Plant, giving it the ability to pump treated water from the Weymouth plant into the Jensen service area. In the past, this pumping has occurred on an intermittent basis only. Staff completed immediate repairs to place the pumping plant into continuous service, and initiated a full-scale rehabilitation of the facility.

Infrastructure Protection

Engineering Services regularly monitors critical facilities such as dams, reservoirs, pipelines and chemical tanks to assess their condition and identify needed repairs to maintain reliable operation. Staff also reviews third-party requests for crossings or use of Metropolitan's right-of-way.

Following are highlights of key accomplishments in the monitoring and protection of Metropolitan's infrastructure:

Corrosion Control

- Continued external corrosion monitoring for 450 miles of metallic pipeline within the distribution system.

Dam Safety

- Staff maintained a continuous dam safety program for all permitted Metropolitan dams, including regular on-site inspections and submittal of surveillance reports to the California Division of Safety of Dams.

Field Survey and Geodetics

- Surveyed more than 110 locations to prevent third-party contractor damage to pipelines, and to prevent or document unauthorized encroachments onto Metropolitan property.

Environmental Planning

Engineering Services provides specialized support for Metropolitan's planning, construction, and operational activities to comply with state and federal environmental regulations. Staff provided clearances under the California Environmental Quality Act for over 100 O&M activities by Water System Operations, and for 170 capital projects. This effort included the preparation of two Environmental Impact Reports, two Negative Declarations, five EIR addenda and 37 environmental notices.

Energy Management

Staff completed assessing the cost-effectiveness of developing solar generation projects at Metropolitan's treatment plants. Staff also reported on Metropolitan's complete greenhouse gas emissions inventory to The Climate Registry, and reported a portion of these GHG emissions to the California Air Resources Board under mandatory reporting regulations.

Bay-Delta

Engineering Services provided direct support for the Delta Habitat Conservation and Conveyance Program and the Bay Delta Conservation Plan, in collaboration with Metropolitan's Bay-Delta Initiatives office. Key activities during the fiscal year included the following:

- Staff continued development of the conveyance project's implementation plan and preliminary design.
- Refined engineering studies to relocate river intake pump stations to a combined pump plant located at Clifton Court Forebay.

- Completed the Conceptual Engineering Report with the Department of Water Resources, including related documents supporting an optimized tunnel alignment through Staten Island and the reconfigured Clifton Court Forebay.
- Continued to provide environmental planning support on the Environmental Impact Report/Environmental Impact Statement, project mitigation, and environmental permits.

Cooperative Education Program

Engineering Services continued to offer summer and year-round student intern positions for the 12th year. This program is designed to provide engineering students an opportunity to augment their studies with practical work experience in the water industry. A total of 151 college students have participated since 2002, with 16 students recruited for fiscal year 2013/14.

Tronox Site in Henderson, Nev.

CHAPTER 6

Legal

The Legal Department represents Metropolitan, its directors, officers and, on occasion, employees in litigation and administrative proceedings; renders legal advice; prepares or reviews contracts; and monitors litigation, administrative proceedings, and state and federal legislative and regulatory proposals that could affect Metropolitan.

Major Events

Bay-Delta

Metropolitan attorneys provided legal advice regarding the development of the Bay Delta Conservation Plan and associated environmental documentation. Staff drafted legal memoranda and agreements and provided assistance on topics involving the state and federal Endangered Species Acts, National Environmental Policy Act, Natural Communities Conservation Planning Act and the California Environmental Quality Act. Staff attorneys represented Metropolitan's legal position in meetings with state and federal agencies and environmental organizations, and coordinated technical/ legal comments on the Bay Delta Conservation Plan environmental review documents and effects analysis on behalf of joint state and federal water contractors. Staff attorneys drafted comments submitted by Metropolitan and contributed to comments submitted by the State Water Project and Central Valley Project contractors regarding the Delta Stewardship Council's Fifth Draft Delta Plan, Final Delta Plan, Program Environmental Impact Report, and associated regulations adopted by the Stewardship Council. Legal staff worked with counsel for the State Water Contractors to initiate and represent Metropolitan in litigation that challenges the validity of certain policies in the Delta Plan and associated regulations for exceeding the Stewardship Council's authority under the Delta Reform Act and other laws, and also challenges the adequacy of the program Environmental Impact Report under the California Environmental Quality Act.

Legal staff continued to participate with outside counsel representing Metropolitan in federal court litigation challenging the 2008 Delta smelt biological opinion and the 2009 salmon biological opinion. The federal district court invalidated both the Delta smelt and salmon biological opinions. However, the Ninth Circuit Court of Appeals reversed the district court's ruling, and upheld the Delta smelt biological opinion. Metropolitan and others have petitioned the Ninth Circuit for reconsideration of that decision and the Ninth Circuit has yet to rule on the appeal in the salmon biological opinion case. Staff attorneys assisted in the appeals before the Ninth Circuit and are collaborating with other state and federal water contractors on analyses and comments being prepared in the event that new biological opinions are required. Legal staff also supported and participated with federal and state agencies in a Collaborative Science and Adaptive Management Program to develop scientific analyses for future Endangered Species Act regulation of impacts to Delta smelt and salmon species.

Staff attorneys monitored and assisted outside counsel in lawsuits brought by the State Water Contractors challenging the California Endangered Species Act take permit for longfin smelt and challenging the California Endangered Species Act consistency determinations issued for Delta smelt and salmon, which are based on the Delta smelt and salmon biological opinions. Legal staff continued to evaluate possible enforcement actions concerning other stressors that adversely impact threatened and endangered species in the Bay-Delta.

State Water Project

After successfully intervening in the *Solano County Water Agency, et al v. Department of Water Resources* lawsuit in support of the Department of Water Resources' administration of the State Water Project contract's shortage provisions, legal staff coordinated litigation activities among the Department of Water Resources and Metropolitan's co-parties and assisted in preparing legal briefs defending Metropolitan's interests in its State Water Project contract rights. Staff attorneys also participated in negotiation and drafting of agreements settling the litigation on favorable terms accepted by the trial court that resulted in the dismissal of the case with prejudice.

Colorado River

Staff attorneys represented Metropolitan's interests in state court litigation challenging validity of the Quantification Settlement Agreement and 12 related agreements. Legal staff assisted in drafting briefs and pleadings for the appeal of the final QSA judgment following the second trial court proceeding after remand. Legal staff represented Metropolitan's interests in a federal lawsuit filed by the County of Imperial and Imperial County Air Pollution Control District asserting that adoption of the federal QSA violated the National Environmental Policy Act and the Clean Air Act. Staff attorneys assisted in drafting briefs that resulted in an appellate decision upholding the trial court's judgment in favor of the Secretary of the Interior's decision to approve the federal QSA. Legal staff continued to enforce the terms of the QSA-related agreements among the participating agencies. Staff attorneys provided legal support in negotiations to resolve disputes over the QSA water transfers and proposals to ensure compliance with QSA mitigation obligations.

Legal staff continued to support real property issues relating to the provision of water to the Pechanga Tribe. Staff attorneys defended Metropolitan's water rights as a defendant-intervenor in litigation filed by the Navajo Nation challenging the Secretary of the Interior's Colorado River operations and lack of specific allocation of Colorado River water to the Navajo Nation.

Water Quality

Metropolitan attorneys participated in litigation in support of the National Pollutant Discharge Elimination System permit issued in 2010 for the Sacramento Regional County Sanitation District's wastewater treatment plant. The permit contains strict discharge limits and requires nitrification/de-nitrification facilities to address environmental harms from this major discharger of ammonia and limits the discharge of nitrogen to the Bay-Delta. The permit also requires tertiary filtration facilities to address pathogens. Sacramento Regional had been seeking to overturn the permit requirements through an administrative appeal and litigation.

Staff attorneys participated in discussions that resulted in a full legal settlement in which the sanitation district agreed both to the ammonia and nitrate limits and to permit terms that require pathogen filtration at a lower hydraulic capacity than originally required.

For Metropolitan, the other water agencies, and the state and regional boards, the settlement secures the most favorable terms of the permit and avoids continued litigation. It is anticipated that the amended permit will issue in August 2014 and the new filtration facilities will be operational in 2023. The settlement represents a significant step in addressing the environmental health of the Delta.

Legal staff continued to monitor Tronox's Adversary Action against Kerr-McGee regarding the alleged fraudulent transfer of legacy environmental obligations from Kerr-McGee to Tronox. In December 2013, a New York bankruptcy judge issued an opinion in the Adversary Action finding that Kerr-McGee acted with "intent to hinder" creditors when it spun off Tronox. In April 2014, the case settled for $5.15 billion, the largest recovery for cleanup of environmental contamination ever in the United States. Upon approval of the settlement by the federal court, the Nevada Environmental Response Trust will receive approximately $1.1 billion to be used to clean up the Tronox site in Henderson, Nev.

Staff attorneys continued to represent Metropolitan in *Orange County Water District v. Northrop* in which Metropolitan is a cross-defendant alleged to have contributed to perchlorate found in local groundwater. Staff attorneys coordinated analysis of treatment protocols, costs and historical sources of perchlorate and developed Metropolitan's defense. Legal staff monitored the first phase of trial, the resolution of dispositive motions, the resolution of pending cross-complaints and entry of final judgment.

Staff attorneys represented Metropolitan in numerous "copper pipe cases," which allege that Metropolitan and other water districts are providing "aggressive and/or corrosive" water to consumers, resulting in the occurrence of pinhole leaks in residential copper plumbing. These cases are primarily being handled in-house and as a cooperative effort with co-defendants Santa Margarita Water District, Moulton Niguel Water District and Irvine Ranch Water District. Pending cases are being consolidated for a threshold legal issues trial focused on compliance with federal and California water treatment standards.

Water Supply

Staff attorneys provided legal advice on proposals to expand the Palo Verde Fallowing and Land Management Program or to establish new water conservation projects within the Palo Verde Irrigation

District and Bard Irrigation District. Staff attorneys drafted agreement amendments, assignments and easement transfers related to the sale of lands enrolled in the Palo Verde Fallowing and Land Management Program.

Staff attorneys provided legal support to monitor the implementation of a Colorado River agreement with Mexico referred to as Minute 319, which seeks to develop a long-range plan allowing Mexico to store Colorado River water in Lake Mead and providing that Mexico will share in Colorado River shortages. Staff attorneys assisted with legal issues arising out of the Minute 319 pilot project for funding conservation projects in Mexico in exchange for a portion of the water supply made available by the projects.

Legal staff continued to participate in meetings with other Colorado River water users and the seven Colorado River Basin States regarding issues related to the drought, including negotiations to increase Lake Mead and Lake Powell reservoir levels.

Corporate Resources/District Infrastructure

Staff attorneys provided legal support in the negotiation and settlement of disputes and litigation relating to the construction of the Perris Valley Pipeline South. Staff attorneys provided legal support on issues related to Diamond Valley Lake Visitors Center, and surrounding facilities. Legal staff assisted in drafting an agreement to settle a dispute between Metropolitan and the Western Center Community Foundation. Staff attorneys provided legal advice on the potential for working with Eastern Municipal Water District to create a reclaimed water storage facility on Metropolitan's property.

Finance

Legal staff assisted and advised with adoption of rates and charges as well as investment and taxation issues. Staff attorneys prepared bond and disclosure documents (Appendix A) and worked with outside bond counsel on the issuance and remarketing of several series of Water Revenue Bonds and Refunding Bonds.

Staff attorneys, with outside counsel, continued to represent Metropolitan in litigation seeking to invalidate Metropolitan's rates and charges adopted in April 2010, April 2012 and April 2014, and other claims. Staff attorneys secured the dismissal of various claims in the 2010 and 2012 cases, including rate challenges under

Proposition 13, Proposition 26 (in the 2010 case) and the MWD Act; a "dry-year peaking" claim; and a claim that a provision in demand management contracts is unconstitutional. The trial court ruled against Metropolitan's allocation of State Water Project and Water Stewardship Rate costs to transportation rates. The court's decisions are subject to appellate review.

Operations

Legal staff monitored activities of Regional Water Quality Control boards considering adoption of municipal stormwater discharge permits having the potential to impact Metropolitan's operations. Staff attorneys provided legal advice in connection with the Emerging Constituents Task Force established by the Santa Ana Regional Water Quality Control Board to study approaches for potential new regulation of trace chemicals in surface and groundwater supplies.

In *Foli v. Metropolitan*, legal staff coordinated with outside counsel to defend plaintiffs' appeal to the Ninth Circuit Court of Appeals of the trial court's dismissal of plaintiffs' original and first amended complaints against Metropolitan, in which plaintiffs alleged that fluoridation of drinking water violates constitutional rights against forced medication.

Real Estate Matters

Legal staff provided counsel to Real Property Development and Management on third-party property rights requests and inquiries on such matters as leases, licenses, entry permits and road easements. Staff provided legal advice regarding the acquisition of property interests necessary for Metropolitan operations, including access permits, pipeline easements and fee simple acquisitions for the construction, operation and maintenance of public water facilities. Legal staff updated lease agreements and assisted staff in the negotiation of new commercial lease tenancies and the amendment of agreements with existing tenants. Legal staff also advised the Real Property Development and Management staff in the execution of a 45-year ground lease for recreational purposes on 23 acres located at the Joseph Jensen Water Treatment Plant.

Managing Energy Costs

Legal staff provided counsel and support in connection with the Federal Energy Regulatory Commission relicensing of the Oroville Power Facilities and in related federal and state administrative, regulatory and legal proceedings. Legal staff participated in ongoing negotiations for renewal of Metropolitan's contract for power generated at Hoover Dam Powerplant in accordance with the Hoover Power Allocation Act of 2011. Staff attorneys provided legal advice on discussions with the Bureau of Reclamation related to reimbursable costs incurred at Parker Dam and the Mead Substation.

Staff attorneys provided legal support for AB 32, California's climate change regulation, including drafting comments on cap-and-trade regulations, participating in meetings with California Air Resources Board staff, providing white papers to senior managers, drafting legislation to ensure equitable treatment of Metropolitan and other water agencies, providing input on the governor's investment plan and drafting a multi-agency agreement to ensure funding of AB 32-compliant Metropolitan projects.

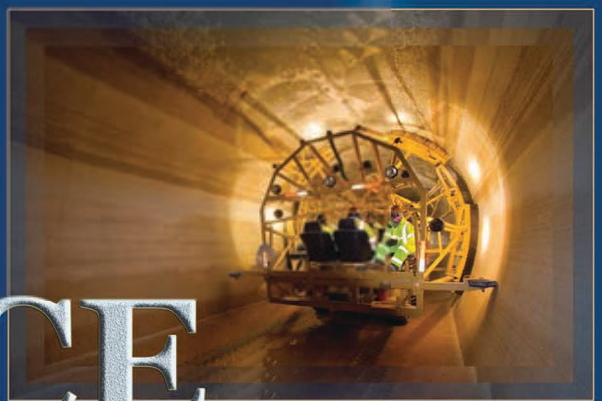
Workforce

Staff attorneys provided counsel to management and Human Resources staff on labor and employment law issues and compliance. Staff attorneys represented Metropolitan in two employment lawsuits. In one, Metropolitan's motion for summary judgment was granted. The court entered judgment against plaintiff and awarded Metropolitan its costs. The parties executed an agreement resolving the matter. In the second, Metropolitan filed a demurrer challenging the causes of action. In response, the plaintiff dismissed three causes of action and agreed to mediate, which resulted in a settlement.

Staff attorneys defended Metropolitan's interests and management rights in several matters before the Public Employment Relations Board. Of eight active matters, three charges were withdrawn based on settlement agreements, one has been placed in abeyance, one will be set for an informal conference, another will be set for an administrative trial and two remain under review. Legal staff defended Metropolitan's interests in hearing officer appeal requests lodged by the bargaining units involving 10 grievances and two disciplinary actions. Metropolitan prevailed in one, with two settled and seven pending.

FINANCE

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



Biennial Budget

Investing in Reliability

Fiscal Years
2014/15 and 2015/16

CHAPTER 7

Finance

The Office of the Chief Financial Officer is responsible for providing innovative, proactive and strategic financial direction in support of the mission of Metropolitan's Board of Directors, management and employees; maintaining Metropolitan's strong financial position and high credit ratings; helping to achieve equitable water rates and charges that generate sufficient revenues; assisting in the efficient management of Metropolitan's financial resources; and ensuring that adequate financial controls are in place to accurately record financial transactions, communicate financial results and protect Metropolitan assets.

Chief Financial Officer

The roles and responsibilities of the Office of the CFO include:

- Providing comprehensive financial analyses, planning, and management services that include developing the biennial revenue requirement, supporting cost-of-service studies, recommended water rates and charges, and long-range financial planning.
- Developing a biennial budget that supports Metropolitan's business planning and performance measurement programs.
- Maintaining Metropolitan's official accounting records, cash control and accounting services related to vendor, payroll and other payments.
- Collecting, investing, safekeeping, and disbursing Metropolitan's funds.
- Maintaining effective financial controls to safeguard assets.

- Issuing debt to efficiently fund Metropolitan's Capital Investment Plan at the lowest possible cost, and managing the debt program by prudently utilizing interest rate swaps and asset liability management techniques.
- Continuing and improving relations with Metropolitan's bond investors, including investors supporting Metropolitan's diversified variable rate bond portfolio.
- Developing and maintaining accounting guidelines and policies for accurate and timely financial reporting and control.
- Accounting for cash receipts and receivables, and determining the availability of funds for investment.
- Providing timely financial reporting, preparing the annual tax levy and annexation fee calculations, and administering rates and charges.
- Managing Metropolitan's Business Continuity Program to ensure critical business processes can be restored in the event of a disaster.

FY 2013/14 Major Financial Activities and Accomplishments

Security Sales/Debt Administration

Metropolitan maintained Standard & Poor's highest long-term water revenue bond ratings of AAA, the second highest credit rating for Moody's of Aa1, and Fitch ratings of AA+.

In July 2013, Metropolitan issued $104.8 million of Special Variable Rate Water Revenue Refunding Bonds, 2013 Series E (Flexible Index Mode), at variable rates, to refund variable rate Water Revenue Refunding Bonds issued in 2009.

In September 2013, Metropolitan secured bank supported liquidity requirements for the $146 million 2008 Series A-2 variable rate Water Revenue Refunding Bonds. In January 2014, Metropolitan secured bank supported liquidity requirements for the $89 million 2000 Series B-3 and the $89 million 2000 Series B-4 variable rate Water Revenue Bonds.

In March 2014, Metropolitan issued $95.9 million of Water Revenue Refunding Bonds, 2014 Series A, approximately $10.6 million of Water Revenue Refunding Bonds, 2014 Series B (Federally Taxable) and $30.3 million of Water Revenue Refunding Bonds, 2014 Series C-1, C-2, and C-3 (Term Mode), at a combined true interest cost of 3.65 percent, to refund Water Revenue Refunding Bonds, issued in 2004, 2008 and 2010. In addition, a portion of bond proceeds was used to pay swap counterparties to terminate $147 million of interest rate swaps from 2004 and 2006.

In May 2014, Metropolitan issued approximately $79.8 million of Special Variable Rate Water Revenue Refunding Bonds, 2014 Series D, at variable rates, to refund fixed and variable rate Water Revenue Refunding Bonds, issued in 2004, 2010 and 2012.

At various times throughout the year, Metropolitan successfully re-priced the 2009 Series A-2, 2011 Series A-1, the 2011 Series A-3 SIFMA Index Notes and the 2013 Series E Flexible Index Notes at rates equal to the SIFMA index plus one to two basis points. SIFMA stands for the Securities Industry and Financial Markets Association.

The CFO office worked with the Legal Department and Water System Operations staff to effect the repayment of Metropolitan's share of the Hoover Dam Visitor Center Loan and Hoover Dam Air Slots Loan. The loans were long-term obligations originally financed at high interest rates. Metropolitan worked with the other 14 contractors to repay the loans, which will provide approximately $2.3 million of annual savings to Metropolitan through 2045.

Treasury Operations

- Successfully managed Short Term and Bond Reserve portfolios averaging $1.2 billion in compliance with the California Government Code and Metropolitan's investment policy.
- Earned effective yields of 0.60, 3.89, and 1.69 percent respectively, for the Core, Bond Reserve, and Long-Term portfolios during FY 2013/14.
- Monitored performance by the external managers of the $326 million long term portfolio, to ensure compliance with Metropolitan's Statement of Investment Policy.

- Provided the necessary liquidity to fund approximately $1.569 billion in expenditures during fiscal year 2013/14.
- Managed debt service, which includes the calculation and coordination of approximately $348.8 million in debt service and swap payments.
- Managed net interest exposure within board-approved parameters.

Accounting Operations

- Provided accurate, timely and transparent financial reports to the board and member agencies.
- Recorded and reported Metropolitan's financial activities in a timely manner, ensuring sufficient financial controls to protect Metropolitan's assets.
- Completed the FY 2012/13 external audit with an unqualified (i.e. "clean") opinion.
- Achieved internal financial audit reviews with ratings of generally satisfactory or higher and no major findings.
- Maintained the 90-day past-due amounts on non-DWR accounts receivable to below $600,000.
- Continued the documentation and testing of internal controls over financial reporting, concluding that the controls were effective for the fiscal year ending June 30, 2014.
- Received the Award of Excellence from the Government Finance Officers Association for FY 2012/13 for financial reporting.

Budget and Financial Planning

- Completed Metropolitan's biennial budget and water rates and charges covering FY 2014/15 and 2015/16.
- Developed a 10-year long-range financial plan that supports the potential implementation of the Bay Delta Conservation Plan while mitigating cost impacts to Metropolitan's service area.

- Developed proposal for use of reserves to address under-funded liabilities and manage water supplies.
- Worked with the Legal Department on a proposal to maintain Metropolitan's ad valorem property tax assessment at the FY 2013 rate to offset a portion of State Water contract costs.
- Received the GFOA Distinguished Budget Presentation Award for the FY 2012/13 and 2013/14 biennial budget, with special performance measures recognition.

Business Continuity

- Conducted the annual Business Recovery Exercise with Information Technology, activating the Disaster Recovery Facility and successfully testing Metropolitan's ability to recover critical business systems in the event of a major regional disaster.
- Initiated Metropolitan's Business Impact Analysis project with the Emergency Management Working Group as the steering committee to document the business functions and processes that if disrupted, could adversely impact Metropolitan's ability to fulfill its mission; the resources required to perform those processes; and how soon those resources would be needed after a disruption.

Financial Information

Metropolitan operates as a utility enterprise and maintains its accounting records in accordance with generally accepted accounting principles for proprietary funds as prescribed by the Governmental Accounting Standards Board.

Revenues

Metropolitan's principal revenue source is water sales and exchange transactions, which include all revenues received by Metropolitan from charges for the sale and availability of water, including Metropolitan's water rates, readiness-to-serve charge and a capacity charge. Other sources of revenue include property taxes, interest income and power revenues. Water rates and charges are established by the board of directors on a biennial basis and are not subject to regulation by the California Public Utilities Commission or any other governing body.

The rate structure implemented on Jan. 1, 2003 unbundled Metropolitan's previous water rate into separate rates and charges (a power rate, a treatment surcharge, a system access rate, a water stewardship rate and a capacity charge) to reflect the different services provided by Metropolitan. This rate structure also includes a two-tiered block pricing structure for water supply. Effective Jan. 1, 2014, the full service Tier 1 rate (including all rate elements), which is based on recovering the cost of maintaining a reliable amount of supply, was $593 per acre-foot for untreated water. Likewise, the full service Tier 2 rate, which is set at Metropolitan's cost of developing additional supply to encourage efficient use of local resources, was $735 per acre-foot. The surcharge for water treatment was set at $297 per acre-foot. A complete list of current water rates and charges is available in Table 7-1.

TABLE 7-1
WATER SALES RATE STRUCTURE-CURRENT

(Dollars per acre-foot-unless otherwise specified)

	Calendar Year [1]									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Tier 1 Supply Rate	$ 148	$ 140	$ 106	$ 104	$ 101	$ 109	$ 73	$ 73	$ 73	$ 73
Delta Supply Surcharge [2]	n/a	n/a	58	51	69	--	--	--	--	--
Tier 2 Supply Rate	290	290	290	280	280	250	171	169	169	154
Water Supply Surcharge	--	--	--	--	--	25	--	--	--	--
System Access Rate	243	223	217	204	154	143	143	143	152	152
Water Stewardship Rate	41	41	43	41	41	25	25	25	25	25
System Power Rate	161	189	136	127	119	110	110	90	81	81
Full Service Untreated:										
Tier 1	593	593	560	527	484	412	351	331	331	331
Tier 2	735	743	686	652	594	528	449	427	427	412
Replenishment Water Rate [3]:										
Untreated	n/a	n/a	422	409	366	294	258	238	238	238
Treated	n/a	n/a	651	601	558	436	390	360	335	325
Interim Agricultural Water Program [4]:										
Untreated	n/a	n/a	537	482	416	322	261	241	241	241
Treated	n/a	n/a	765	687	615	465	394	364	339	329
Treatment Surcharge	297	254	234	217	217	167	157	147	122	112
Full Service Treated:										
Tier 1	890	847	794	744	701	579	508	478	453	443
Tier 2	1,032	997	920	869	811	695	606	574	549	524
Capacity Charge ($ per cubic foot second)	8,600	6,400	7,400	7,200	7,200	6,800	6,800	6,800	6,800	6,800
Readiness-to-Serve Charge ($Millions)	166	142	146	125	114	92	82	80	80	80

[1] Rates are set on a calendar year basis.

[2] The Delta Supply Surcharge was suspended after 2012.

[3] The Replenishment Program was discontinued after 2012.

[4] The Interim Agricultural Water Program was discontinued after 2012.

Metropolitan is empowered under the Metropolitan Water District Act to levy and collect taxes on all taxable property within its boundaries for the purpose of carrying on its operations and paying obligations. Property taxes are levied annually by the board to pay Metropolitan's general obligation bond debt service and part of its State Water contract costs.

Metropolitan's revenues in fiscal year 2013/14 totaled $1.782 billion. Sources of revenues include water sales, exchange transactions, readiness-to-serve charges, capacity charges, power recoveries, property taxes, investment income and other income, such as rents. Total revenues were $202 million more than the prior fiscal year, almost entirely due to higher water sales.

Table 7-2 lists revenues by source and the change in revenues from the prior year.

TABLE 7-2
REVENUES
(Dollars in Millions)

	Year Ended June 30,		
	2014	**2013**	**Change**
Water sales	$ 1,513	$ 1,311	$ 202
Readiness-To-Serve Charge	154	144	10
Power Sales [1]	15	25	(10)
Taxes (Net)	95	95	-
Investment Income	5	(1)	6
Other	-	6	(6)
Total	**$ 1,782**	**$ 1,580**	**$ 202**

[1] Previously referred to as power recoveries or hydroelectric power sales.

Expenses

Metropolitan continued its efforts to manage finances, control costs, enhance productivity and pay for conservation and local resource programs during the fiscal year. Major components of Metropolitan operations and maintenance costs include labor, chemicals, utilities, outside services, materials and operating equipment. Table 7-3 lists expenses by function and the changes from the prior year, while Table 7-4 summarizes changes in net position (revenues and expenses).

Metropolitan is one of 29 contractors to the State Water Project. Under the contract, Metropolitan is obligated to pay the state Department of Water Resources its portion of the costs for construction of the system as well as the minimum operations, maintenance, power and replacement costs of the project regardless of the amount of water actually delivered. Variable power charges are based on actual deliveries of supplies from the State Water Project.

In addition, Metropolitan has an obligation to pay its share of the capital and operating costs of certain off-aqueduct power facilities regardless of the amount of water delivered; adjustments to such charges are made in subsequent periods based on actual water deliveries.

Metropolitan also buys power to pump Colorado River water into its service area. The power is secured by Metropolitan under federal energy contracts and from purchases of supplemental energy from a variety of sources as available. In addition, Metropolitan has entered into, and is negotiating, a number of agreements with entities along the Colorado River that have higher priority rights to water on the Colorado River. These agreements give Metropolitan firm rights to water that it otherwise would not have.

Future construction requirements to expand facilities, construct new facilities, and provide enhanced water treatment capability are being funded primarily from operating revenues. General obligation bond debt service is funded from ad valorem property taxes along with operating revenues. Tables 7-5 and 7-6 show assessed valuations and property tax rates for FY 2014, while Table 7-7 shows property tax levies and collections. Revenue bond debt service is funded from

water sales revenues. Table 7-8 is a 10-year summary of net operating income and revenue bond service coverage, while Table 7-9 is a listing of Metropolitan's 10 largest water customers.

Fiscal year 2013/14 expenses totaled $1.383 billion. Expenses include power and water costs, operations and maintenance costs, depreciation and amortization, and interest on debt obligations. Total expenses were $175 million more than the prior year, mainly due to $139 million in additional power and water costs and $20 million more in operations and maintenance costs.

TABLE 7-3
EXPENSES
(Dollars in Millions)

	Year Ended June 30,		
	2014	**2013**	**Change**
Power and Water Costs	$ 510	$ 371	$ 139
Operations and Maintenance	440	420	20
Depreciation and Amortization	261	265	(4)
Bond Interest	147	150	(3)
Other	25	2	23
Total	**$ 1,383**	**$ 1,208**	**$ 175**

Budget Process

Metropolitan combines elements of program budgeting and performance reporting in its budget system. These elements provide for funding, analysis, review and control. The biennial budget for fiscal years 2014/15 and 2015/16 was presented to and discussed by the board during February and March, and approved in April 2014.

The biennial budget process begins in July of odd-numbered years (e.g., July 2013 for the FY 2015 & FY 2016 biennial budget) when each group identifies major maintenance and capital projects. Project requests are submitted to the Engineering Services Group beginning in July, giving staff adequate time to plan project design and construction schedules, and to allow the Water System Operations Group to plan for system shutdowns. Each department and group

prepares operating budgets from August to November. Each program is analyzed and reviewed as to resources required and the extent to which the program is consistent with the priorities and strategies of the General Manager's Business Plan. All recommended programs are then incorporated into the overall budget. The proposed biennial budget includes a 10-year forecast of expenditures and projected rates and charges. These forecasts incorporate projected costs associated with the repair and replacement of existing infrastructure, and also the projected costs of a Bay Delta Conservation Plan, to help member agencies and the general public understand long-term cost trends and potential future water rate impacts.

Budgetary control is maintained through monthly variance reports, which compare budget estimates with actual revenues and expenses for board and management information and form the basis for corrective actions. All major expense categories are controlled via the board-approved biennial budget and authorized appropriations.

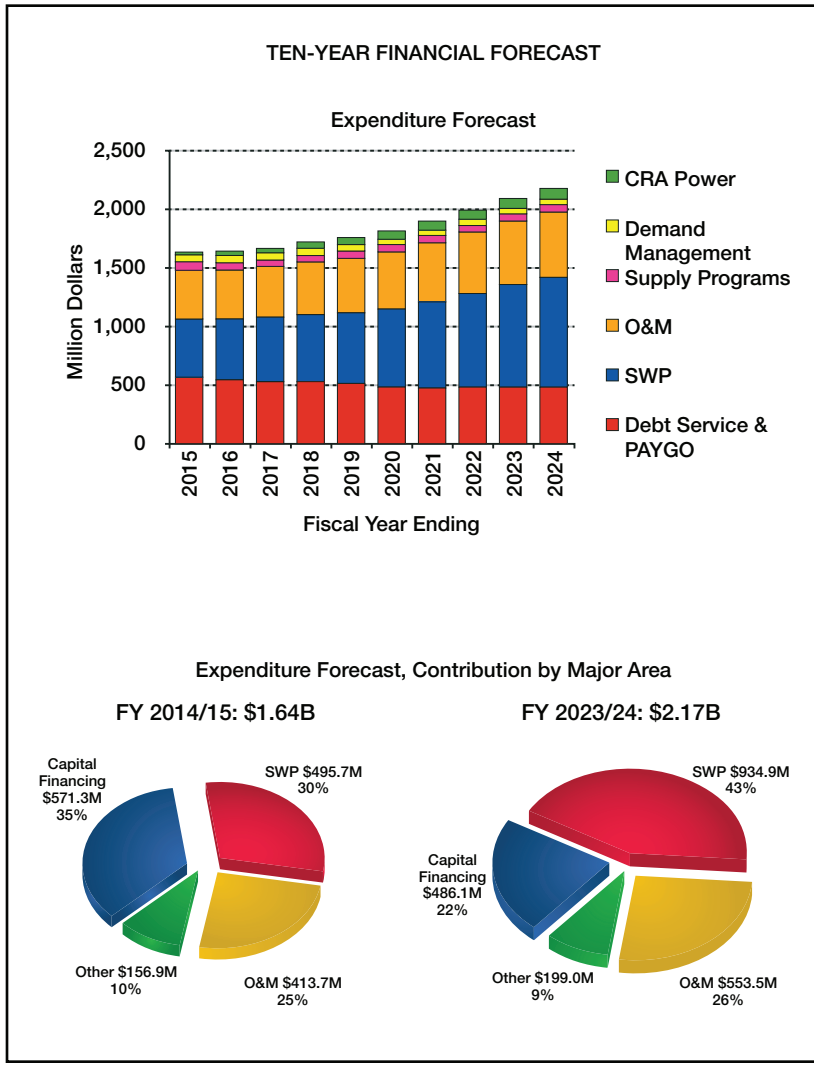
Treasury Operations and Cash Management

Annually, Metropolitan's board approves the Statement of Investment policy and delegates to the Treasurer the authority to invest Metropolitan funds.

Investments by the Treasurer are limited to those instruments specified in the board-approved investment policy, which sets out, in order of priority, three fundamental criteria to be followed: Safety, liquidity and return.

Metropolitan is permitted by state law and board policy to invest in a variety of instruments including U.S. Treasury securities, federal agencies, repurchase agreements, negotiable certificates of deposit, bankers' acceptances, prime commercial paper, asset and mortgage-backed securities, and California local agency securities, including securities issued by Metropolitan. Investments can also be made in corporate notes, time deposits, investment contracts, shares of beneficial interest, and the Local Agency Investment Fund.

Treasury activities during the year included the management of the short-term and bond reserve portfolios and oversight of the firms managing the long-term investment portfolios. Metropolitan's total portfolio averaged approximately $1.226 billion during fiscal year 2013/14, with cash basis investment earnings of approximately $15.7 million. As of June 30, 2014, the market value of Metropolitan's investment portfolio was approximately $1.5 billion.



A page from the Biennial Budget for Fiscal Years 2014/15 and 2015/16

TABLE 7-4
TEN-YEAR SUMMARY OF CHANGES IN NET POSITION (UNAUDITED) - ACCRUAL BASIS[1]
(Dollars in Millions)

	Fiscal Year Ended June 30,									
	2014	2013	2012 [3] As Adjusted	2011 [3] As Adjusted	2010	2009 [4] Restated	2008	2007	2006	2005
Water sales	$ 1,484.7	$ 1,282.5	$ 1,123.3	$ 1,001.0	$ 1,010.9	$ 999.5	$ 958.7	$ 930.9	$ 832.4	$ 780.2
Readiness-to-serve charges	154.0	144.0	135.5	119.5	103.0	87.0	82.1	80.0	80.0	80.0
Capacity charge [2]	28.4	28.7	33.0	34.4	33.4	32.6	32.6	32.3	31.8	30.0
Power recoveries	14.6	24.5	31.5	22.9	18.3	17.4	23.1	26.1	26.8	20.9
Operating revenues	1,681.7	1,479.7	1,323.3	1,177.8	1,165.6	1,136.5	1,096.5	1,069.3	971.0	911.1
Taxes, net	94.5	94.8	79.2	79.3	98.1	105.6	98.7	96.4	102.7	91.8
Investment income	5.7	(0.4)	4.1	2.0	40.6	27.3	65.9	55.3	32.5	47.2
Other, net	-	6.1	0.6	22.0	6.4	6.0	2.9	10.1	4.6	7.2
Nonoperating revenues	100.2	100.5	83.9	103.3	145.1	138.9	167.5	161.8	139.8	146.2
Total revenues	1,781.9	1,580.2	1,407.2	1,281.1	1,310.7	1,275.4	1,264.0	1,231.1	1,110.8	1,057.3
Power and water costs	(510.1)	(371.3)	(384.0)	(364.8)	(433.7)	(402.1)	(350.3)	(335.4)	(366.2)	(278.5)
Operations and maintenance	(439.7)	(419.8)	(433.5)	(394.9)	(395.6)	(440.0)	(405.0)	(368.4)	(370.4)	(321.2)
Depreciation and amortization	(261.5)	(265.4)	(290.1)	(286.4)	(246.4)	(226.1)	(228.9)	(214.4)	(205.3)	(210.5)
Operating expenses	(1,211.3)	(1,056.5)	(1,107.6)	(1,046.1)	(1,075.7)	(1,068.2)	(984.2)	(918.2)	(941.9)	(810.2)
Bond interest	(146.7)	(150.2)	(135.8)	(135.7)	(133.3)	(103.4)	(120.0)	(118.9)	(110.0)	(100.3)
Interest and adjustments on OAPF [5]	(1.6)	(2.1)	(2.6)	(3.0)	(3.4)	(3.8)	(4.1)	(4.5)	(4.9)	(5.4)
Other, net	(23.7)									
Nonoperating expenses	(172.0)	(152.3)	(138.4)	(138.7)	(136.7)	(107.2)	(124.1)	(123.4)	(114.9)	(105.7)
Total expenses	(1,383.3)	(1,208.8)	(1,246.0)	(1,184.8)	(1,212.4)	(1,175.4)	(1,108.3)	(1,041.6)	(1,056.8)	(915.9)
Contributed capital	2.2	1.7	13.6	17.7	4.6	66.1	15.6	14.5	15.2	7.7
Cumulative effect of change in accounting principle				(8.2)		0.5				
Change in net position	$ 400.8	$ 373.1	$ 174.8	$ 105.8	$ 102.9	$ 166.6	$ 171.3	$ 204.0	$ 69.2	$ 149.1

[1] Metropolitan implemented GASB Statement No. 63, *Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources and Net Position*, in fiscal 2012. This pronouncement requires that the difference between assets and liabilities be reported as net position, therefore, net assets are now referred to as net position.

[2] Capacity charge revenue has been segregated from water sales revenue starting with fiscal year 2014.

[3] Adjustment relates to the adoption of GASB No. 65, *Items Previously Reported as Assets and Liabilities*. This pronouncement requires debt issuance costs (except prepaid insurance costs) to be recognized as expense in the period incurred.

[4] Restatement relates to implementation of Governmental Accounting Standards Board (GASB) Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments* . This pronouncement requires derivative instruments to be reported at their fair value on the statements of net position along with a related deferred outflow to be recorded for effective hedges.

[5] Off-Aqueduct Power Facilities.

TABLE 7-5
TEN MEMBER AGENCIES WITH LARGEST ASSESSED VALUATIONS
YEAR ENDED JUNE 30, 2014
(Dollars in Billions)

Member Agency	Assessed Valuation	*Percent of Total
Los Angeles	$ 434.0	19.88
San Diego County Water Authority	381.6	17.48
MWD of Orange County	369.2	16.91
West Basin MWD	149.9	6.87
Central Basin MWD	116.5	5.34
Inland Empire Utilities Agency	83.5	3.82
Calleguas MWD	81.8	3.75
Upper San Gabriel Valley MWD	79.8	3.65
Western MWD	77.8	3.56
Eastern MWD	55.9	2.56
	$1,830.0	**83.81**
Total Gross Assessed Valuation (All 26 Member Agencies)	**$2,183.4**	

* Total may not foot due to rounding.

TABLE 7-6
TEN-YEAR SUMMARY OF ASSESSED VALUATIONS AND PROPERTY TAX RATES
(Dollars in Billions)

Fiscal Year Ended June 30,	Gross Assessed Valuation [1]	Homeowner's Exemption	Net Assessed Valuation [2]	Secured Property Percentage Tax Rate
2014	$ 2,183.4	$ 16.3	$ 2,167.0	0.0035
2013	2,097.4	16.7	2,080.7	0.0035
2012	2,067.5	16.9	2,050.5	0.0037
2011	2,049.1	17.1	2,031.9	0.0037
2010	2,081.9	17.2	2,064.7	0.0043
2009	2,120.9	17.2	2,103.7	0.0043
2008	2,015.4	17.1	1,998.3	0.0045
2007	1,839.5	16.9	1,822.6	0.0047
2006	1,642.2	17.0	1,625.2	0.0052
2005	1,478.0	16.8	1,461.2	0.0058

[1] Gross assessed valuations (before deduction of Homeowner's and Business Inventory Exemptions), as of August each year, of all secured and unsecured property within Metropolitan's service area, as certified by the County Auditor-Controllers for the respective counties.

[2] May not foot due to rounding.

TABLE 7-7
TEN-YEAR SUMMARY OF PROPERTY TAX LEVIES
AND COLLECTIONS
CASH BASIS

(Dollars in Thousands)

Fiscal Year Ended June 30,	Total Tax Levy	Tax Collections			Outstanding Delinquent Taxes [1]	Percent of Current Taxes Collected to Total Tax Levy	Percent of Total Tax Collections to Total Tax Levy	Percent of Delinquent Taxes to Total Tax Levy
		Current	Delinquent	Total				
2014	$ 100,066	$ 96,036	$ 2,671	$ 98,707	$ -	96.0	98.6	0.0
2013	94,963	92,578	4,076	96,654	2,671	97.5	101.8	2.8
2012	92,247	80,775	9,478	90,253	4,076	87.6	97.8	4.4
2011	95,385	71,069	16,987	88,056	9,478	74.5	92.3	9.9
2010	107,892	82,164	15,083	97,247	16,987	76.2	90.1	15.7
2009	109,776	91,632	12,951	104,583	15,083	83.5	95.3	13.7
2008	107,059	87,670	11,224	98,894	12,951	81.9	92.4	12.1
2007	103,913	81,315	13,647	94,962	11,224	78.3	91.4	10.8
2006	104,531	91,042	4,988	96,030	13,647	87.1	91.9	13.1
2005	100,114	88,201	8,761	96,962	4,988	88.1	96.9	5.0

[1] Delinquent taxes shown are net of the "Allowance for Uncollectibles" - determined by historical trends of collections and payments.

TABLE 7-8
TEN-YEAR SUMMARY OF NET OPERATING INCOME AND REVENUE BOND DEBT SERVICE COVERAGE[1] (UNAUDITED)
(Dollars in Millions)

	Fiscal Year Ended June 30,									
	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
Water Sales [2]	$ 1,485	$ 1,283	$ 1,062	$ 996	$ 1,011	$ 988	$ 968	$ 892	$ 827	$ 819
Additional Revenues [2]	182	173	168	153	135	120	114	113	111	113
Total Revenues	1,667	1,456	1,230	1,149	1,146	1,108	1,082	1,005	938	932
Operating Expenses	(854)	(793)	(792)	(853)	(825)	(782)	(792)	(648)	(693)	(594)
Net Operating Revenues	813	663	438	296	321	326	290	357	245	338
Hydroelectric Power Revenue & Other	34	48	87	96	52	43	48	51	54	31
Interest on Investments [3]	19	(2)	11	17	19	32	46	33	26	27
Adjusted Net Operating Revenues	866	709	536	409	392	401	384	441	325	396
Bonds and Additional Bonds Debt Service	(343)	(298)	(297)	(277)	(244)	(223)	(219)	(200)	(176)	(157)
Subordinate Revenue Obligations	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Funds Available from Operations	$ 522	$ 410	$ 238	$ 131	$ 147	$ 177	$ 164	$ 240	$ 148	$ 238
Ratios										
Bonds and Additional Bonds Debt Service Coverage	2.52	2.38	1.81	1.48	1.61	1.80	1.76	2.21	1.85	2.52
Debt Service Coverage on all Obligations	2.51	2.37	1.80	1.47	1.60	1.79	1.75	2.19	1.84	2.51

[1] Prepared on a modified accrual basis for fiscal years 2013-2014 and on a cash basis for fiscal years 2005-2012.

[2] Fiscal years 2005-2013 restated to include exchange sales in Water Sales. They were previously reported under Additional Revenues.

[3] Excludes interest applicable to Bond Construction accounts, Excess Earning account(s), Other Trust accounts, and the Deferred Compensation Trust account.

Minor differences are due to rounding.

TABLE 7-9
TEN LARGEST WATER CUSTOMERS
Year Ended June 30, 2014
Accrual Basis (Dollars In Millions)

Agency	Water Sales and Exchanges	*Percent of Total	Water Sales and Exchanges in Acre-Feet	* Percent of Total
San Diego CWA	$ 328.7	22.1	545,659	26.7
City of Los Angeles	307.3	20.7	441,871	21.6
MWD of Orange County	185.5	12.5	231,941	11.3
West Basin MWD	104.9	7.1	120,915	5.9
Calleguas MWD	101.6	6.8	116,685	5.7
Eastern MWD	80.5	5.4	101,622	5.0
Western MWD of Riverside	60.7	4.1	76,194	3.7
Three Valleys MWD	55.6	3.7	71,072	3.5
Inland Empire Utilities Agency	40.2	2.7	67,833	3.3
Central Basin MWD	29.4	2.0	33,951	1.7
Total	**$ 1,294.4**	**87.2**	**1,807,743**	**88.5**
Total Revenue	**$1,484.6**	**Total Acre-Feet**	**2,043,720**	

* Total may not foot due to rounding.

Metropolitan's 7th annual Spring Green Expo and ECO Innovators Showcase held at the Union Station Headquarters building.

CHAPTER 8

Business Technology

The Business Technology Group provides technical and general services that support Metropolitan in securing, conveying, treating, and distributing water for its service area. BTG is responsible for Metropolitan initiatives related to information technology, administrative services, business outreach, sustainability efforts, and grant management and annexation administration. One of BTG's primary responsibilities continues to be workforce succession planning. As a result of retirements, BTG continues to update its Workforce Skills Assessment and Succession Plan efforts to ensure appropriate skill sets are in place, knowledge is retained, leadership is developed and integrated, and recruiting/hiring is specifically targeted.

Information Technology

Business Technology delivers information technology options, services and solutions in the areas of enterprise and business applications, control systems, mobile/wireless computing, telecommunications, network services and information security.

IT Strategic Plan Update

Metropolitan's IT Strategic Plan continues to guide investment and deployment of information technology to help optimize water system operations, improve asset management, streamline business operations and manage costs. During the year staff embarked upon an update of the strategic plan to guide investment over the next three to five years.

Some highlights for the 2013/14 fiscal year:

- Continued ongoing security monitoring to protect Metropolitan's cyber assets by employing the latest technologies and business practices.

- Finished replacement of Metropolitan's 6-year-old personal computers throughout all organizations.
- Completed wide area network upgrades on the Colorado River Aqueduct between Gene Pumping Plant and Iron Mountain Pumping Plant to enhance communications and data links connecting the CRA facilities, the Operations Control Center in Eagle Rock, and Metropolitan's Headquarters.
- Finished the Water System Control Master Planning effort to fully coordinate the operational and business needs of Metropolitan's Supervisory Control and Data Acquisition Systems.
- Finished prototype testing and started final design for rehabilitation and upgrades of end-of-life control and electrical protection systems at the Hiram Wadsworth Pumping Plant.
- Awarded contract for the Communication Infrastructure Reliability Upgrade project based upon VoIP (Voice over Internet Protocol) technology, providing increased reliability, reduced downtime and added communications capabilities.
- Continued to evaluate technology advancements such as cloud computing, mobile/Web-enabled applications and wireless device data retrieval.
- Finished providing secure remote access for managers to approve employee timesheets and purchase requisitions via mobile devices.
- Partnered with External Affairs to support Metropolitan's Web redesign project to improve the look and functionality of the current website.

Administrative Services

Business Technology has focused on business process sustainability and achieving cost reductions and efficiencies in a broad range of services that include contracting services, procurement of goods and nonprofessional services, inventory management, warehousing, building services, and Metropolitan's Rideshare Program. In addition, Business Technology aims to provide these services in a sustainable

manner that reduces Metropolitan's impact on natural and non-renewable resources.

Spring Green Expo

Metropolitan hosted the 7th Annual Spring Green Expo and ECO Innovators Showcase college competition for staff, member agencies and the surrounding community. The event highlighted environmental problems, and the businesses and students who are working to solve them, focusing on the actions individuals can take to live and work sustainably. Highlights included the highest seminar attendance since the Expo's 2008 inception and the display of 38 student projects from 20 Southern California universities/colleges, a 35 percent increase over last year. There was also growing vendor interest, with 25 percent of the vendors being newcomers to the Expo.

Print/Copy/Scan/Fax Study

Staff completed a project to replace printer/copier/fax/scanning equipment throughout Metropolitan. The all-in-one strategy will reduce costs, improve productivity and decrease energy usage.

Other Highlights for Fiscal Year 2013/14

- Performed numerous preventive maintenance procedures to building equipment and systems at Metropolitan's headquarters and the DVL Visitor Center
- Ensured Metropolitan's Rideshare Program remained compliant with South Coast Air Quality Management District's regulatory requirements, with employee participation topping 40 percent.
- Initiated an energy management/usage audit of Union Station and identified potential cost-saving, sustainable projects.
- Partnered with the Real Property Development and Management Group to support the effort of leasing office space to new tenants.

Business Outreach

Metropolitan's Business Outreach Program promotes cost-effective, inclusive business and economic development in Southern California through increased outreach and support for member agencies, regional and small business and the disabled veteran business communities.

For example, Metropolitan hosted the 8th Annual California Construction Expo with other California government agencies to present the increasing opportunities available in public works programs for contractors, designers, and construction professionals. There were over 2,200 attendees, 150 exhibitors, 40 public agencies, 250 subcontractors, 25 large primes, and $10 billion in construction projects.

Highlights for Fiscal Year 2013/14

- Surpassed the board's Small Business Program goal of 18 percent by achieving 33 percent small business participation in business contracting.
- Partnered with public agencies to develop a uniform online Small Business Certification System to increase access to government contracts for regional and small businesses.
- Partnered with member agencies, water agencies and Isle Utilities to form a U.S. Water Technology Approval Group to identify, develop and commercialize emerging water technologies.

Strategic Planning

Business Technology's management team in partnership with Human Resources completed a strategic planning effort to prepare employees for adapting to evolving technology and changing conditions in Metropolitan's workforce, while mitigating skill gaps and vulnerabilities. Business Technology recognizes the need to transform its business through innovation and developed six strategic objectives:

- Implement innovative solutions to improve business operations.
- Deploy cloud-based solutions for cost reduction and efficiencies.
- Use mobile technology to improve business productivity.
- Simplify access to business information.
- Foster a culture of innovation.
- Become trusted business advisors to our customers.

Grant Management Program

The Grant Management Program completed a policy and procedures manual for internal stakeholders. It also incorporated a number of new payment and reporting practices providing greater flexibility and oversight into the grant management program.

Annexations

In a newly assigned responsibility from Real Property Management Group, Business Technology processes member agency requests involving annexation into Metropolitan's service area, including the ability to levy standby charges. Metropolitan's board acted on 13 requests that added 15 acres to the service area.

A candidate for Metropolitan's pre-apprentice program taking a job-related physical agility test.

CHAPTER 9

Human Resources

The Human Resources Group continued to foster a high performance workplace, excellent leadership and management practices that engage employees, promote alignment with business goals, and ensure the right talent is available to support current and future business needs. Staff have streamlined and implemented cost-effective Human Resources programs that deliver outstanding value and support from pre-hire though retirement.

Major Activities and Accomplishments

Human Resources used the foundations established in the Strategic HR Plan as a framework for HR excellence at Metropolitan. This year, Human Resources emphasized effective deployment of consistent and cost-effective HR practices, improvements in customer service, ensuring compliance with a wide range of regulatory and legal requirements and providing effective workforce management and talent development throughout the organization.

Strategic HR Plan Deployment

Human Resources continued to meet key board objectives related to the Strategic HR Plan regarding performance culture, integrated talent management and effective management of the workforce.

Staff extensively revised HR Operating Policies and met with bargaining units to complete this process. HR improved management decision-making by realigning Metropolitan Operating Policies with organizational reporting relationships.

Human Resources continued to reduce its head count from 44 to 42 full-time equivalent employees during fiscal year 2013/14. It met monthly with group managers to identify HR issues and support needs, and worked closely with management on the effective deployment of HR initiatives and early resolution of HR issues.

Ensuring High Performance

The MyPerformance Evaluation process sets clear performance expectations that clarify work products, goals and performance competency expectations for both employees and for managers, as it fosters continuing conversations about performance throughout the year. On July 1, 2013, all employees were placed on a common performance evaluation date to further align this performance planning process with Metropolitan business planning cycles. Bargaining unit concerns about the MyPerformance process design were collaboratively resolved.

HR also facilitated the Department Head Performance Evaluations of executive officers who report directly to the board. In July 2013, 89 percent of the board participated by providing direct feedback on strategic, operational, personal and team leadership, board relationships and business results over the previous fiscal year. In September, executive officers made presentations to the board about follow-up action plans drafted in response to the board's evaluation feedback.

Succession Planning

Staff continued working to ensure talent is available to fill needed positions. HR expanded internal staff development and training opportunities, worked with local management to identify and assess skill gaps, facilitated leadership development workshops, and supported organizational realignments.

Human Resources also provided the board and management with workforce analytics to help in planning for pending workforce retirements and diversity outreach efforts. Staff participated in regional workforce development committees and university and college groups to align technical educational curriculum with Metropolitan needs. In May, HR and Water System Operations staff proposed training approaches at the Southwestern Regional Water Conversation event in San Diego on how to design and deliver community college training

programs that best meet the needs of the water industry. HR also participated in a three-day Succession and Talent Management workshop to stay abreast of best implementation practices, and assisted in preparing a Water Research Foundation's report on *Competency Model Development and Application to Meet Water Utility Workforce Needs.*

Management Excellence

Human Resources continues to foster management excellence. The online course curriculum was aligned with 16 core MyPerformance management competency expectations, and access to leading management experts through the Institute of Management Studies program provided state-of-the-art management tools. Internally, HR provided presentations to more than 220 managers by various management experts and offered seminars and training throughout Metropolitan on leadership, persuasive communication, business case writing, collaboration and innovation. HR also arranged for workshops on legal aspects of managing people and performance. Preparations began for an all-manager Management Forum planned for July 2014.

HR administered coaching sessions using 11 external experts, and provided internal coaching interventions and consultation for managers on issues ranging from transition management and personal development to succession planning.

Metropolitan's tuition reimbursement program provided on-site certificate programs in strategic leadership, water leadership and management by partnering with the University of California, San Diego and the California State University campuses at Los Angeles and San Luis Obispo.

Recruitment

Human Resources participated in 12 job fairs to enhance recruitment of veterans, diverse populations and difficult-to-fill positions. Metropolitan also increased outreach toward these groups, as well as people with disabilities, resulting in more diverse job applicant pools.

Human Resources filled more than 170 openings, a 70 percent increase resulting from retirements and previously unfilled openings, and developed viable candidate pools for potential future openings. In addition, HR initiatives helped managers and recruiters meet deadlines for time-to-hire goals. HR also provided Pre-Apprentice training to 594 participants, reviewed more than 1,440 apprenticeship applications and conducted validated physical ability tests for 173 apprentice candidates before inviting 90 candidates for interviews and filling 18 new apprentice positions. In addition, Metropolitan placed 14 student interns in the WSO and Business Technology groups.

Total Compensation

Amid a reduction in the number of new job audit requests, classification staff completed 23 job audits, 21 job analyses and 39 management-requested promotions. In addition, staff reviewed and modified job descriptions, as needed, to keep them current, and respond to various salary survey requests.

Benefits

Metropolitan staff maintained compliance with the Patient Protection and Affordability Care Act, informing employees of their rights to affordable health coverage and the available resources under Covered California and the Health Insurance Marketplace. HR published a Metropolitan benefits guidebook, as required under health care reform, and conveyed the value of Metropolitan benefits through the 2013 Total Compensation Statements issued to all employees in April 2014.

Benefits conducted an internal audit to ensure all active employees provided documented proof of relationships for all dependents listed on their health and voluntary plans. In accordance with state law, Benefits prepared for a similar audit by CalPERS of all Metropolitan employees and retirees. September's Open Enrollment launch provided 541 one-on-one employee consultations, processed all open enrollment changes for plan year 2014, and provided confirmation statements to all eligible employees.

Staff reviewed deferred compensation plan features and participant fees, which resulted in changing the fund lineup to offer Vanguard Target Date Funds in lieu of risk-based profile funds, while

implementing a lower cost-share class by reducing or eliminating the revenue share component. Metropolitan also partnered with Great-West and Financial Finesse to develop a participant video on transitioning from risk-based profile funds to Vanguard Target Date Funds, and provided onsite workshops at most of Metropolitan's locations. Staff also posted a Request for Proposal for the third-party record keeping and investment services currently provided by Great-West.

To ensure fiduciary responsibility, staff hosted instructor-led and webcast workshops on financial planning, budgeting, the new fund lineup, investment basics, pre-retirement and retirement issues at various Metropolitan locations for all employees. Two-hundred sixty employees participated in the workshops to help them transition into retirement or simply seek more value from the benefits Metropolitan provides.

HR also developed and conducted training sessions for field supervisors and managers on employee leave rights under state and federal law, and coordinated with HR medical benefits staff on explaining provisions dealing with Workers Compensation, medical restrictions and light-duty assignments.

Employee Relations

The Employee Relations Section responded to all grievances within the prescribed timeframes and worked collaboratively with the bargaining units whenever possible to resolve grievances. The Employee Relations Section also continued to partner with Legal on unfair labor practice charges, hearing officer appeals and employment litigation.

Employee Relations staff investigated and resolved Equal Employment Opportunity complaints filed by Metropolitan employees, and handled numerous informal complaints and inquiries. All formal investigations were completed internally within prescribed timeframes, saving the cost of outside investigators.

Equal Employment Opportunity Program Office

The EEO Program office updated and implemented its annual report on Affirmative Action and nondiscrimination programs;

expanded outreach efforts, improved personnel processes and record keeping, and ensured that workplace barriers do not exist for protected veterans and persons with disabilities. Staff also presented an assessment of organizational diversity to the Organization, Personnel and Technology Committee.

Staff trained managers on their responsibilities under Metropolitan's Affirmative Action Plan and Nondiscrimination programs and shared Metropolitan's Reaffirmation Statement of EEOP with the workforce, while maintaining a 95 percent completion rate on mandatory online EEO workforce training.

Organizational Development and Training

Staff taught 49 unique courses to 1,014 employees. Curriculum focused on management development, teamwork and collaboration, writing and communication, effective performance management and meeting mandatory training requirements. Expanded offerings of SkillSoft online courses provided all employees 24/7 access to videos, readings and courses on topics relevant to their work or career needs.

Ninety-five percent of managers completed mandatory reasonable-suspicion training, while 87 percent of Metropolitan's nearly 1,500 non-management employees completed Drug and Alcohol Awareness training.

Staff conducted education fairs at the Union Station Headquarters building, Weymouth plant and outlying facilities featuring 25 colleges and universities. HR promoted Metropolitan's tuition reimbursement program and established partnering agreements with six local universities to provide tuition discounts, grants and other additional educational benefits for employees who use the tuition reimbursement program.

HR partnered on a pilot Administrative Training series to enhance administrative staff skills in the Business Technology Group. HR supported strategic planning in BTG, collaboration initiatives for Engineering Services and facilitated group Leadership Forums and Management workshops. Staff helped design a Career Launch initiative for Engineering Services, provided communications training, plus mentoring for new associate engineers, while supporting student

intern recruitments for the Real Property, Business Technology, and Water Resource Management groups.

Metropolitan also hosted two semi-annual Service Awards program recognition luncheons honoring more than 150 employees for 20 to 35 years of service.

Risk Management

Risk Management completed incident reports involving Metropolitan property damage, liability issues, workplace injuries, regulatory visits, criminal activity and spills. Staff also completed risk assessments of professional service agreements, purchase orders, construction contracts, entry permits, easements, special events and film permits within required timeframes.

Risk Management continued to improve claims communication and coordination with Legal and Human Resources, resulting in more accurate liability reserves, and also provided feedback into the claims settlement and litigation process. Risk Management supported the planning and execution of the Spring Green Expo.

Workers' Compensation and Medical Screening

Staff reduced the overall claim reserves (based on cost-per-claim) by 14 percent during fiscal year 2013/14 and transitioned the workers' compensation claims program to a new third-party claim administrator with an anticipated annual service fee savings of 13 percent over the prior fiscal year.

Human Resources Information Systems

HRIS began the MyHR upgrade to PeopleSoft 9.2 and updated HR systems to comply with requirements for new medical plans, MOUs and agreements and new EEOC veterans' status tracking. HRIS staff processed all MWD employee job actions and organizational changes keeping MyHR, the employee data system of record, up-to-date. In addition, staff streamlined and enhanced the Employee Change Data Form processes.

Metropolitan's leasing uses include farming, aquatics, boating, classrooms and athletic fields near Diamond Valley Lake, along with various telecommunications sites and office space.

CHAPTER 10

Real Property

The Real Property Development and Management Group oversees Metropolitan's real estate holdings, and seeks to improve the value realized from these assets, while protecting Metropolitan's core infrastructure. RPDM operates under the leadership of the Office of the Chief Administrative Officer, in accordance with policy principles adopted by the board in August 2011 for managing Metropolitan's real property assets. During FY 2013/14, the group worked to achieve sound financial results and key organizational objectives.

Revenue and Property Management

Revenue generation remained a major focus in the CAO's office, with $5.8 million in revenue generated for fiscal year 2013/14. Revenue enhancing activities included headquarters leasing, the sale of surplus lands, and collection of fees from permits, licenses, leases and easements for various uses of Metropolitan's properties. Staff from the Revenue and Property Management Unit also sought to ensure compliance with the terms and conditions of all agreements by performing annual site inspections to verify current usage and condition of the property, collection of rent, and maintenance of current insurance coverage. Staff continues evaluating changes in right-of-way conditions as it develops strategic right-of-way protection policies, and assesses Metropolitan's responses that reduce or remediate existing and potential future risks.

Metropolitan executed 49 agreements for compatible third-party use of MWD-owned land, involving surplus property sales, telecommunication leases, office leases, construction-related projects, encroachment and access permits. Metropolitan also received revenue from the granting of easements, parking permits and filming permits, all of which helps offset water rate increases.

Highlights for FY 2013/14

- Sold a 17.8-acre portion of an Inland Feeder parcel located in the unincorporated community of Mentone, generating over $516,000 in revenue and eliminating approximately $18,000 of annual operating costs.
- Issued three filming permits and seven parking permits, resulting in $29,998 and $16,712 in revenue, respectively.
- Terminated the option agreement with Holy Hill Community Church for the purchase of Metropolitan's Sunset Garage and received $90,000 in option fees; staff is exploring other offers to purchase the property and is researching alternative relocation options for Metropolitan's fleet operations currently located at the facility.

Headquarters Leasing Highlights

- Relocated RPDM staff to the 10th floor, freeing up the remainder of the third-floor low rise area for leasing purposes**.**
- Granted a two-year lease with Louis Berger Group, Inc. for office space on the third-floor low rise.
- Granted a four-year office lease on the third-floor low rise to the High Speed Rail Authority, through the California Department of General Services.
- Granted a two-year lease with MWH Americas, Inc. for office space on the third-floor low rise.

Planning and Acquisition

The Planning and Acquisition Unit plans, researches and acquires properties needed for future water conveyance and operations. Staff duties include analyzing real property needs for new facilities and rights of way, detailed property negotiations, relocation services, valuation studies and appraisals.

Unit staff worked collaboratively with Bay-Delta Initiatives to assist the State and Federal Contractors Water Agency on developing land acquisition strategies for habitat restoration. Staff researched properties of interest to SFCWA, coordinating the appraisal process and assisting the development of SFCWA acquisition strategies. Staff also participated in a multi-agency workgroup to develop a real property acquisition management plan for the Bay Delta Conservation Plan's dual tunnel construction and operation proposal.

Metropolitan acquired 30 consents, permits, leases, easements and other agreements in support of Metropolitan's infrastructure construction, repair, relocation, service connection and maintenance projects.

Highlights for Fiscal Year 2013/14

- Worked with Legal and Engineering Services on evaluating right of way repair projects in Orange County, reviewing a consultant's cost study that provided a range of value for permanent and temporary easements at 22 project sites.
- Completed an Etiwanda Pipeline Repair Project cost study that provided a range of value for 16 properties using two different temporary easement scenarios per property.
- Obtained seven agreements granting access for site inspections, environmental surveys, and land appraisals for the Etiwanda Pipeline North Liner Repairs.
- Obtained three access permits from adjacent property owners to facilitate construction of a block wall at the F. E. Weymouth Water Treatment Plant.
- Acquired a 25-year antenna site agreement to allow for the installation, modification and maintenance of telecommuni-

cation equipment located at Christmas Tree Pass near Laughlin, Nev. in connection with Metropolitan's two-way radio upgrade capital project.

Diamond Valley Lake Recreation Area

The Diamond Valley Lake Recreation Area contains public recreation and education facilities, including the DVL Marina, Lakeview and North Hills trails, and Valley-Wide Recreation District's DVL Community Park and DVL Aquatic Center. These provide community recreational opportunities such as boating, fishing, hiking, biking, horse-riding, and aquatics. Diamond Valley Lake has hosted approximately 637,000 visitors at its marina facilities and approximately 151,000 private boats have launched since the 2003 public opening. The DVL Visitor Center houses key functions of the External Affairs Education program, and is also partially leased to the Western Science Center. The DVL Visitor Center and Western Science Center continue to attract year-round visitors for a variety of educational/community events and uses.

Highlights for Fiscal Year 2013/14

- Commissioned an economic strategy and market demand report for Metropolitan's excess land holdings at DVL, including real estate market analysis, plus evaluation of issues such as renewable energy, access, infrastructure, highest and best use of the property, lease versus sale scenarios, and the best timing and strategy for disposition.
- Received a land-use alternatives analysis from Cal Poly Pomona regional planning students regarding the DVL Visitor Center and surrounding properties, dealing with watershed, usage, long-term revenues and sustainability practices.
- Renewed the classroom lease and added additional administrative office space for the Western Science Center.
- Received $46,732 as Metropolitan's percentage of revenues under a lease with Urban Park Concessionaires for the operation, management and maintenance of the DVL marina, North Hills Trail and the Lakeview Trail; the lease was extended an additional 2 years and 5 months.

Staff Training and Development

RPDM staff continued honing their skills through numerous Metropolitan-sponsored training classes and several seminars, webinars and courses offered by the Appraisal Institute and the International Right of Way Association. Staff attended a Group training class: *Success Signals: Understanding Personality Styles at Work.*


California is in a serious drought.
Don't waste another minute wasting water.
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FITNESS CENTER INCENTIVE PROGRAM
INCENTIVES FOR ON-SITE RECYCLED WATER CONVERSIONS
TURF REMOVAL PROGRAM
RESIDENTIAL REBATE PROGRAM
SoCal Water Smart
Increasing conservation
HONORABLE JERRY BROWN
JEFFREY KIGHTLINGER
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5 THINGS TO KNOW ABOUT THE DROUGHT
DROUGHT 2014

CHAPTER 11

External Affairs

The External Affairs Group is responsible for working with state and federal legislators to enhance and protect the operational interests of Metropolitan and its member public agencies, while advancing the adopted policies of the board. External Affairs provides clear and direct communication of Metropolitan's operations, policies, and programs to the public and other stakeholders, including member agencies, local officials, the media, business groups, environmental and community organizations. To do this, External Affairs staff produces and distributes numerous publications, brochures and videos, and also manages Metropolitan's various websites and a wide-ranging K-12 water resource education program.

Following is a summary of key responsibilities and programs of the sections within External Affairs.

Legislative Services

The Legislative Services Section promotes and protects the interests of Metropolitan and its member agencies before executive, legislative and regulatory agencies of the state and federal government. The section assists in identifying and defining policy objectives with key legislators and other water policymakers in support of Metropolitan's board-approved objectives. The section directs an extensive outreach program among member agencies and other stakeholders to mobilize support for these objectives.

During the 2013/14 fiscal year, the state released a public draft and Environmental Impact Report/Environmental Impact Statement for the Bay Delta Conservation Plan, a comprehensive effort to improve the

state's water supply reliability, restore the Sacramento-San Joaquin Delta's ecosystem, and provide seismic protection for the state's water supply and delivery network. During the year, Legislative Services staff met with numerous stakeholders, elected officials and organizations on a near-daily basis, educating them about the BDCP. This educational effort culminated in a letter-gathering effort encouraging Southern Californians to comment in support of the state's preferred alternative for the BDCP. Throughout the state, thousands of businesses, labor groups, organizations and residents were briefed, received presentations and were contacted through action alerts about the BDCP to deliver comments in support of the project.

At the state level, Metropolitan engaged in a wide range of legislative policy issues, including ongoing negotiations on the 2014 water bond. Revising the 2014 bond captured the attention of many legislators, with no fewer than 11 measures proposed during the 2013/14 legislative session. These measures identified various infrastructure investment priorities such as surface storage, groundwater cleanup, environmental restoration in the Delta and its watershed, and water recycling. After the governor made his bond priorities known, the range of proposals narrowed, but the negotiations continue. Metropolitan also supported legislation to reform the Urban Water Management Planning Act and further advance water use efficiency and drought relief, while helping defeat legislation to require legislative authorization for construction of new Delta conveyance.

At the federal level, Metropolitan supported many legislative efforts, including measures to protect and enhance funding for water infrastructure. Metropolitan supported coalition efforts leading to the enactment of the Water Resources Reform and Development Act. The final measure that emerged from the House and Senate conference included some, but not all, funding opportunities that Metropolitan and its partners sought, while authorizing significant funding for water projects important to millions of Southern California drinking water users and their local providers. Metropolitan worked with its member agencies and stakeholders on preserving its flexibility and autonomy in connection with a proposed Environmental Protection Agency rule change governing the waters of the United States, which could potentially expand EPA jurisdiction over previously unregulated waters.

Conservation and Community Services

The Conservation and Community Services Section works with member agencies, community groups, educators and others on a variety of issues and programs that impact Metropolitan's service territory. These include conservation, water quality, education, environmental issues, and general public outreach. Staff also meets regularly with member agency education coordinators.

Conservation Outreach

Metropolitan sponsored conservation and Delta-related educational outreach efforts and programs throughout Southern California during fiscal year 2013/14.

Metropolitan, in cooperation with the district's 26 member public agencies, launched a multi-pronged research-based public outreach and advertising campaign in late April that is expected to run through October 2014 to promote the need to conserve water during the historic, ongoing drought.

The ad buy is part of $5.5 million authorized by Metropolitan's Board of Directors in March 2014 for a regional communications, outreach and advertising campaign. The campaign tagline "Don't Waste Another Minute Wasting Water" reinforces the immediate nature of the action that residents need to take – and emphasizes the seriousness of the drought.

The comprehensive campaign recognizes the ethnically and linguistically diverse public that Metropolitan serves and tailors materials to reach those audiences through television and radio advertisements and traffic report sponsorships. The campaign also uses online, streaming radio and mobile ads, plus focused billboard and movie theater advertising.

Community Programs

In 2013/14, the Community Partnering Program helped sponsor nearly 50 water-related education and outreach programs for several organizations, including community groups, public agencies, non-profit organizations, educational institutions, member agencies and professional associations. Projects included community festivals

and events, publications, garden projects, educational materials dealing with watersheds, conservation, water recycling, among other initiatives.

Education Programs

The Southern California World Water Forum College Grant Program concluded its third funding cycle, 2011–2014, on June 30, 2014. The World Water Forum was co-sponsored by the U.S. Bureau of Reclamation and the Los Angeles County Sanitation Districts with in-kind support from Water for People and the Friends of the United Nations. The program provided 15 grants to colleges and universities for local and globally-focused projects that foster a better understanding and community awareness of water issues, while improving technology related to water supply and delivery, water conservation, and/or sanitation programs.

Staff conducted workshops, in-teacher training, field trips and informational booths promoting all of Metropolitan's K-12 curriculum and programming.

Metropolitan's trademark high school education program, Solar Cup™ 2014 drew 40 teams from Southern California high schools to Lake Skinner in Temecula on May 16-18, with more than 800 students participating in the 12th annual event. The event attracted a wide variety of media coverage via approximately 15 print and electronic media outlets, with extensive local news reports originating from throughout Southern California. The seven-month program immersed students in engineering, math and communication concepts, as they created water conservation-focused public service announcements.

The Diamond Valley Lake Education Program conducted numerous field trips that engaged more than 2,300 fourth- through seventh-graders through all-day instruction. Staff also collaborated with the Western Center Outreach Program to provide ongoing activities at the DVL Visitor Center for close to 5,000 second- through fifth-grade students.

Metropolitan's "Water is Life" Student Art and Calendar Program features student artwork representing the importance of conservation inside and outside the home. The 2014 Student Art Exhibit was

displayed at 27 member and retail agencies this year and viewed by more than 20,000 people.

Metropolitan's Web page for K-16 students drew nearly 35,000 visitors, representing a 50 percent increase from 2013.

Media Services

The Media Services Section helps communicate Metropolitan's messages, programs, information and achievements. The Press Office prepares and distributes news releases and other media materials; conducts briefings; maintains media contacts; develops video; and, assists in drafting and submitting opinion pieces and letters to the editor. The Publications team produces print, video and online materials that support Metropolitan's external and internal communication needs, while Web Services manages internal and external websites to provide a coordinated presentation to Metropolitan's audiences and customers.

Press Office

The Press Office informs the media and the public about Metropolitan's programs, issues and other key priorities. Press Office staff assist reporters and editors from television, newspapers, radio, magazines, wire services and Internet news/blog sites, as well as trade and specialty publications. Metropolitan news is disseminated through electronic press releases, letters to editors, opinion pieces, speeches, videos, blogs, newsletters and staff-produced special events. The Press Office managed numerous media inquiries, including those related to the statewide drought and unprecedented dry conditions, the Bay Delta Conservation Plan, the Colorado River Basin, water quality, groundwater, Lake Perris, Diamond Valley Lake, water rates and budget reserves. Staff coordinated on-camera, radio and print interviews; managed the writing and placement of opinion pieces; arranged meetings with editorial boards and assisted in Public Records Act requests.

Staff coordinated a joint news conference with the office of Gov. Jerry Brown in response to the governor's declaration of a statewide drought emergency. In addition, staff coordinated a joint news conference and Web page regarding the Upper Feeder shutdown,

and also updated member agency Public Information Officers on the Bay Delta Conservation Plan. Media Services staff also began posting and distributing a new Metropolitan blog called "H2Outlook."

Press Office staff also teamed with the state Department of Water Resources to conduct an inspection trip for Southern California news media of the Sacramento-San Joaquin Delta.

During the year, the Press Office issued statements by General Manager Jeffrey Kightlinger, and also issued about 45 press releases about various topics. These included the drought, the conservation outreach campaign, the Bay Delta Conservation Plan, major shutdowns, Solar Cup, Spring Green, the ECO Innovators Showcase competition, the passing of Chairman Foley, the election of Director Randy Record as chairman, the seating of several new Metropolitan board members and Gov. Brown's visit to Metropolitan.

Staff coordinated a joint news conference and Web page regarding the Upper Feeder shutdown, and also updated member agency Public Information Officers on the Bay Delta Conservation Plan. Media Services staff also began posting and distributing a new Metropolitan blog called "H2Outlook."

Metropolitan received coverage in major newspapers and in other print and electronic outlets throughout the region, the state and the nation.

Publications

External Affairs designed and produced brochures and publications, including the annual Water Quality Report, the annual report to the California Legislature on Achievements in Conservation, Recycling and Reuse, and various new conservation materials. The team also produced and distributed to more than 20,000 subscribers several editions of the Your Water electronic newsletter that covers important topics, including water quality and supply issues, member agency news and other key water developments. External Affairs helped design, create and disseminate promotional materials for meetings, special events and other forums, including the 50-year anniversary of the Diemer facility. Staff also produced the Annual Report and produced obituaries for retirees and current employees.

Web Services

The Web Services staff develops and maintains Metropolitan's multiple Internet and intranet sites, along with websites for the board of directors and member agencies.

In response to the drought, Web Services also reintroduced the water alert gauge with mobile capability and created a drought 2014 Web page on bewaterwise.com with regularly updated information and headlines on drought impacts, water supply conditions and conservation tips.

Web Services also developed and enhanced Web pages, for the On-Site Retrofit Program, Bay Delta Conservation Plan, Solar Cup, Water Quality Report and the SB60 Annual Progress Report. Staff posted several Your Water e-newsletters that were distributed to more than 20,000 subscribers.

Customer Service

The Customer Service Unit coordinates services for member agencies, businesses, and the public and also conducts customer satisfaction surveys. Survey results (ratings and written comments) are shared with management and staff responsible for information and follow-up action.

Staff assisted member agencies, businesses and the public with requests for general information, speakers and other services. Staff also coordinated management's regular meetings with member agency managers, and assisted various groups with public relations for numerous projects, including Real Property Development and Management, Engineering Services, Water System Operations, and Water Resource Management.

During capital improvement and maintenance projects, staff conducted and oversaw outreach efforts to residents, local governments and businesses affected by work at Metropolitan facilities, including the Allen-McColloch Pipeline, Second Lower Feeder, Orange County Feeder, Irvine Cross Feeder, Etiwanda Pipeline, Sepulveda Feeder, Inland Feeder, Lakeview Pipeline and Santa Monica Feeder.

Auditors apply data mining and population stratification techniques to analyze financial transactions.

CHAPTER 12

Internal Audit

The Audit Department provides independent, objective assurance and consulting services designed to add value and improve operations. Audit responsibilities are carried out by audit professionals who evaluate the extent to which internal controls mitigate risks effectively. The Audit Department also determines whether activities are consistent with policies, procedures and mandates. In this way, audit staff assists management in assessing risks that could impact the achievement of their objectives.

Audits are performed in accordance with The Institute of Internal Auditors' mandatory guidance including the *International Standards for the Professional Practice of Internal Auditing*. These standards help define the Audit Department's responsibilities and establish expectations for auditor professionalism and independence. This independence is assured through the General Auditor's reporting line to the Board of Directors and the Audit and Ethics Committee.

The Audit and Ethics Committee directs the focus of audit resources by review and approval of the General Auditor's annual Audit Plan. The fiscal year 2013/14 Audit Plan resulted from an internal assessment of risks and input from key stakeholders including board members, management and staff.

Major Activities and Accomplishments

During fiscal year 2013/14, the Audit Department contributed to governance activities through the following major actions:

- Successfully carried out the FY 2013/14 Audit Plan.
- Completed 27 audits, performed nine special requests, and monitored six higher-risk areas, which included participating in two Information Technology implementation projects. Results are summarized on the next page:

List of Completed Reviews	Number of Reports
Financial/Contractual Audits:	**27**
Oracle Application Security	
Federal Grants Administration	
Surplus Equipment	
Community Partnering and California Friendly Landscape programs	
Jensen Water Treatment Plant Improvements Program	
Conveyance and Distribution System Rehabilitation Program Phase II	
Consulting Agreements – Environmental Science Associates; IDS Group; Roctest Ltd.	
Workers' Compensation Program	
Metropolitan Trust Funds	
Arvin-Edison Water Management Program	
Software License Purchasing and Tracking	
Consulting Agreements Less Than $250,000	
Procurement Card Program	
Commercial Conservation Program	
Prestressed Concrete Cylinder Pipe Rehabilitation and Replacement Program	
Payroll	
Semitropic Water Banking and Exchange Program	
Construction Contract – J.F. Shea Construction, Inc.	
Gas Card Program	
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- Applied substantial efforts to communicating issues and developing recommendations related to two audits with "Less than Satisfactory" audit opinions (Procurement Card and Gas Card audits).
- Reassessed the Audit Plan quarterly to evaluate whether it was meeting the needs and requests of the board and management, focused on areas of greatest concern or highest risks, and determined whether adequate progress was being achieved.
- Evaluated management's response to all significant control issues noted in audit reports; tracked and reviewed management responses on 38 recommendations included in audit reports, and ensured timely responses to all reports.
- Implemented population stratification and data mining methodologies to test large quantities of financial transactions; identified transactions that contradicted expected parameters for further follow-up and resolution.
- Performed review procedures related to internal controls over financial reporting to provide reasonable assurance that they were adequate; procedures included review of audit results, process walkthroughs and substantive testing.

Quality Assurance Activities

Professional auditing standards require that internal auditors commit to improving internal processes and methods and to maintaining an internal quality program. In this regard, the Audit Department performs a Quality Assurance & Improvement Program that includes auditor training, ongoing and periodic internal quality reviews, and external independent quality assessments. Activities during FY 2013/14 included the following:

- Completed an internal quality self-assessment that evaluated conformance with auditing standards; assessed governance practices; reviewed a sample of audit work papers; critiqued planning, field work, and reporting practices; appraised staff development and resource management activities; and surveyed the Audit Department staff for feedback.

- Conducted anonymous client surveys on their perceptions of the audit process, including strengths and opportunities for improvement.
- Migrated to new computers as part of Metropolitan's computer replacement project; promoted use of technology to reduce paper usage and enhance communications.
- Developed a Business Impact Analysis identifying key audit business processes and disaster recovery objectives as part of Metropolitan’s business continuity planning.
- Identified training opportunities for audit staff, who earned more than 300 continuing professional education credit hours in courses including audit risk assessment, fraud indicators and government auditing.

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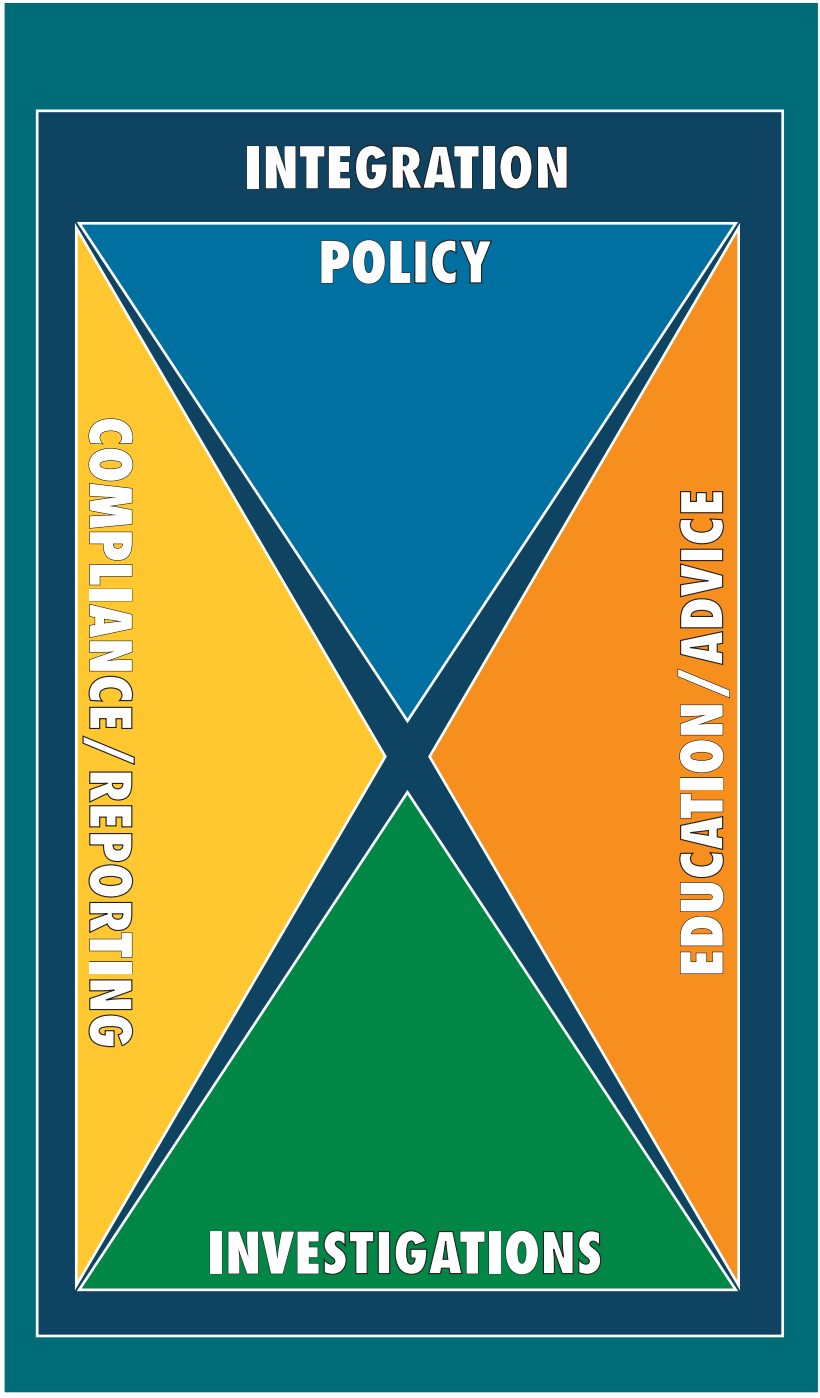
INTEGRATION
POLICY
COMPLIANCE / REPORTING
EDUCATION / ADVICE
INVESTIGATIONS

CHAPTER 13

Ethics

The Ethics Office operates under the central tenet that secrecy and conflicts of interest are inherently corrosive to any governmental system. Through the use of policy, compliance, education, advice, and investigative functions, the Ethics Office seeks to promote transparency, prevention, and thoughtful management of potential conflicts of interest. This allows the public to know how its business is conducted and keeps decision-makers better focused on the public interest.

Policy Initiatives

This year, the Ethics Office undertook a comprehensive review of Metropolitan's ethics programs. The process involved analyses by office staff, consultation with other departments, and several board public workshops to explore, discuss and make decisions about the foundational elements of the program.

In August 2013, the Board of Directors approved new guiding principles for the office. These principles establish standards for Metropolitan's internal ethics rules. Specifically, the ethics rules must be clear, objective and focused, and they must promote accountability. The principles stress that when dealing with alleged violations of Metropolitan's rules, the Ethics Office must undertake investigations with integrity and independence, and maintain the highest standards of professionalism and procedural justice.

With the input of the General Counsel's Office and following the board's directives, the Ethics Office developed and put into effect new investigation guidelines. Defining more detailed procedures that the Ethics Office will use in responding to alleged violations, these new guidelines enhance due process and privacy protections for those accused of ethics violations, as well as for whistleblowers and cooperating witnesses.

In November 2013, the Board of Directors convened a public workshop to discuss a range of potential changes to Metropolitan's internal ethics rules. Some of the topics, such as rules concerning procurement integrity and disclosure of campaign contributions, were deferred to later consideration due to the issues' depth and complexity. The remaining proposed rules received board approval in January 2014. The amended rules address abuse of position or authority, and release of confidential information.

Compliance and Education

Compliance and training, along with prevention and detection, should always be the cornerstone of an effective ethics program. The Ethics Office tracks and ensures compliance with biennial state law ethics training requirements (AB 1234) and certain state law-required sexual harassment prevention training.

This fiscal year, the Ethics Office assumed new responsibilities for Metropolitan's compliance with state conflicts-of-interest laws. These additional roles include serving as Metropolitan's designated filing officer for required disclosures of financial interests by directors, officers and employees. The Ethics Office obtains all required disclosure statements, files them, and forwards to the Fair Political Practices Commission the statements of directors and Metropolitan officers who manage public investments. For other Metropolitan filers, Ethics maintains these records for mandatory public access. This fiscal year, the office processed approximately 350 conflict-of-interest statements. Ethics also helps filers identify and correct common errors in filling out the complex forms.

Regarding its education program, the office is retooling its education and outreach materials to reflect and communicate the recent policy changes.

Advice and Investigations

The Ethics Office provides written advice to Metropolitan directors and employees on the complexities of Metropolitan's operations and business practices, with an eye to providing advice that is not only accurate, but workable and practical. In fiscal year 2013/14, the office responded to some 58 separate advice requests.

Allegations of ethics violations are lodged as complaints for potential investigation. In FY 2013/14, the office processed 43 complaints. Many complaints were closed after initial review, either because they did not allege facts amounting to an ethics code violation, or because there was insufficient evidence to warrant continued investigation. Four complaints proceeded past the preliminary stage, as the Ethics Office undertook four full investigations.

Integration

Each Ethics Office function supports and enhances the others. When they all work together, the individual components – from customized policy-making to practical and relevant education advice to fair and thorough investigation – produce a unified and consistent message. As such, they form the building blocks of a true organizational ethical culture at Metropolitan.

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