THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- **Board of Directors**
  Legal and Claims Committee

12/8/2015 Board Meeting

Revised 7-4

Subject

Authorize amendments to the Administrative Code to eliminate provisions relating to the Replenishment Service and Interim Agricultural Water Programs, and to modify a provision relating to Estimates of Water Requirements

Executive Summary

In December 2012, the Board eliminated the Replenishment Service Program and in October 2008, the Board approved changes to the Interim Agricultural Water Program (IAWP), including a five-year phase out of the program. Both programs were discontinued after December 31, 2012. In conjunction with the elimination of these programs, Metropolitan's rate structure no longer reflected discounts for these water management programs. Water used for replenishment and agricultural purposes has been billed at full service rates and charges since that time. Provisions describing these programs and their administration remained in the Administrative Code for a period of three years after the programs ended, to allow for the resolution of any adjustments due to errors or omissions that may have occurred. Three years have elapsed since the Replenishment Service Program and the IAWP were discontinued so these Administrative Code provisions, which are the subject of this board action, are no longer necessary. The board action also includes modification of a provision relating to the timing of water delivery estimates.

Details

Background

In the past, Metropolitan's water rates and charges included water rates for providing interruptible Replenishment Service Program water supplies for the purpose of storage in local groundwater and surface water reservoirs, as well as an IAWP that provided a discounted rate for the ability to interrupt deliveries by up to 30 percent, when needed under supply shortfalls.

In October 2008, the Board approved changes to the IAWP, including a five-year phase out of the program. In December 2012, the Board eliminated the Replenishment Service Program. Both programs were discontinued after December 31, 2012. Although the aforementioned board actions eliminated the two programs and their respective program rates from the rate structure, the sections of the Administrative Code pertaining to the references and definitions of these two programs remained for a period of three years to allow for the possibility of making corrections for errors and omissions under the provisions of Section 4507(n), as shown below:

> **"Discovery of Mistakes or Errors.** In the event a mistake or error is discovered in a District water sales record, the General Manager shall initiate appropriate corrective action. No mistake or error made more than three years prior to its discovery shall be corrected unless otherwise specified in an agreement with the District. In the event a mistake or error is discovered by a member agency in its water sales record or certifications, no mistake or error made more than three years prior to its discovery shall be corrected unless otherwise specified in an agreement with the District."

Three years have elapsed since the Replenishment Service Program and the IAWP were discontinued, so these Administrative Code provisions are no longer necessary.

A summary of the Administrative Code changes is shown below. **Attachment 1** includes the proposed amendments to the Administrative Code in underline format. **Attachment 2** includes the proposed amendments as they would appear in the Administrative Code. The proposed amendments are necessary to update the Administrative Code to reflect the elimination of the Replenishment Service Program and the IAWP. The proposed amendments also modify the timing of member agencies' estimates of water requirements, because many member agencies revise their delivery estimates on a fiscal year timeline.

Summary of Proposed Revisions to the Administrative Code

Changes to Division 4: Water Service Policies

1. ~~Repeal~~ Amend Section 4106 (Interim Agricultural Water Program Purposes), and Section 4114 (Replenishment Service) to reflect that these programs have been discontinued. Certain other replenishment references will remain in the Administrative Code, such as Section 4107 (Groundwater Replenishment by Spreading), because they apply to definitions or programs that remain in effect like the Groundwater Conjunctive Use Programs.

2. Modify Section 4501(a) (under Obligation to Pay for Water Delivered) to eliminate reference to Chapter 9, which pertains to IAWP Service Regulations.

3. Repeal Section 4503(d) (under Suspension of Deliveries) to eliminate reference to adjustment of Replenishment Service certifications during shutdowns.

4. Modify Section 4505 (Estimates of Water Requirements and Schedules of Deliveries) to eliminate references to IAWP and Replenishment Service Program deliveries. Additionally, change the date that the agencies shall furnish their delivery estimates from April 1 to July 1.

5. Under Section 4507 (Billing and Payment for Water Deliveries), repeal:
   - Section 4507(b) Exclusive Interim Agricultural Water Program Facility
   - Section 4507(c) Full Service and Interim Agricultural Water Program Facility
   - Section 4507(d) Exclusive Direct Groundwater Replenishment Facility
   - Section 4507(g) Late Agricultural Certifications During an Interim Agricultural Water Program Reduction Period
   - Section 4507(h) Ratio of Water Use for Full Service and Interim Agricultural Water Program Service
   - Section 4507(i) Provisions Regarding the Sale, Delivery, and Use of Interim Agricultural Water Program Water

6. Modify Sections 4507(e), 4507(j), 4507(k), 4507(l), 4507(m), and 4507(n) to eliminate references to IAWP and Replenishment Service Program. Additionally, modify Section 4507(j) to replace "reduced rates" with "applicable credit" since program discounts no longer apply.

7. Modify Section 4512 (Sales Subject to System and Water Availability) to eliminate reference to deliveries of groundwater for replenishment purposes and to restate the principles generally applicable to all water sales and deliveries, as follows:

   - From: "All sales and deliveries of water at the rates established by Section 4401 shall be subject to the ability of the District to sell and deliver such water under operating conditions determined by the General Manager, and, to the extent not inconsistent herewith, shall be subject to the provisions of this chapter, and Chapter 9.

     With respect to water delivered for groundwater replenishment purposes, deliveries of such water may be made at the General Manager's discretion when water and system capacity are

considered available for same."

To:

"~~All sales and deliveries of water at the rates established by Section 4401 shall be subject to the ability of the District to sell and deliver such water under operating conditions determined by the General Manager, and, to the extent not inconsistent herewith, shall be subject to the provisions of this chapter, and Chapter 9~~.

~~With respect to water delivered for groundwater replenishment purposes, deliveries of such water may be made at the General Manager's discretion when water and system capacity are considered available for same.~~"

~~To:~~ The District will endeavor to satisfy all requests for water sales and deliveries made by the ~~Member~~ member ~~Public~~ public ~~Agencies~~agencies. Deliveries shall be subject to operational, supply or demand conditions, as determined by the General Manager. The District will develop annual operating plans in coordination with ~~Member~~ member public ~~Agencies~~agencies. The annual operating plans shall be developed to meet requested deliveries under anticipated conditions. In the event of adjustments to deliveries due to changes in planned operations or in supply or demand conditions, the District and the ~~Member~~ member public ~~Agencies~~ agencies will communicate and coordinate operations.

8. Repeal Section 4514 (Replenishment Service)

9. Repeal Chapter 9: Interim Agricultural Water Program Service Regulations, in its entirety

10. Minor editorial cleanup items throughout Division IV, such as paragraph renumbering

Policy

Metropolitan Water District Administrative Code Section 4106: Interim Agricultural Water Program Purposes

Metropolitan Water District Administrative Code Section 4114: Replenishment Service

Metropolitan Water District Administrative Code Section 4503: Suspension of Deliveries

Metropolitan Water District Administrative Code Section 4505: Estimates of Water Requirements and Schedules of Deliveries

Metropolitan Water District Administrative Code Section 4507: Billing and Payment for Water Deliveries

Metropolitan Water District Administrative Code Section 4512: Sales Subject to System and Water Availability

Metropolitan Water District Administrative Code Section 4514: Replenishment Service

Metropolitan Water District Administrative Code Chapter 9: Interim Agricultural Water Program Service Regulations

By Minute Item 47672, dated October 15, 2008, the Board approved changes to the Interim Agricultural Water Program.

By Minute Item 49272, dated December 12, 2012, the Board approved adjustments to member agency Tier 1 limits and eliminated the Replenishment Service program; and authorized amendments to the Administrative Code.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is not defined as a project under CEQA because it involves continuing administrative activities, such as general policy and procedure making (Section 15378(b)(2) of the State CEQA Guidelines). In

addition, where it can be seen with certainty that there is no possibility that the proposed action in question may have a significant effect on the environment, the proposed action is not subject to CEQA (Section 15061(b)(3) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not defined as a project and is not subject to the provisions of CEQA pursuant to Sections 15378(b)(2) and 15061(b)(3) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action is not defined as a project and is not subject to CEQA, and

Approve amendments to the Administrative Code to reflect the elimination of the Replenishment Service Program and Interim Agricultural Water Program, and to modify the timing of delivery estimates (**Attachment 2**).

Fiscal Impact and Business Analysis: None. Metropolitan has already eliminated the Replenishment Service Program and Interim Agricultural Water Program. These amendments help to clarify the Administrative Code and keep it current with the program changes already approved by the Board through prior actions, and modify the timing of delivery estimates to conform with many member agencies' fiscal year timeline.

Option #2

Do not approve amendments to the Administrative Code to reflect the elimination of the Replenishment Service Program and Interim Agricultural Water Program, and to modify the timing of delivery estimates (**Attachment 2**).

Fiscal Impact and Business Analysis: None.

Staff Recommendation

Option #1

12/3/2015

Marcia L. Scully *Date*
General Counsel

12/3/2015

Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – The Administrative Code of the Metropolitan Water District of Southern California (with changes marked)

Attachment 2 – The Administrative Code of the Metropolitan Water District of Southern California (clean version)

Division IV

WATER SERVICE POLICIES

Chapter 1

DEFINITIONS

4127. Emergency Storage Program Purposes

§ 4100. General.

The definitions in this Chapter shall govern the meaning of the terms when used in this Division.

Res. 7666 - April 13, 1976; Section 313.2 amended by M.I. 33642 - March 10, 1981. Section 312.2 repealed and Section 4100 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4101. Colorado.

"Colorado" as a source of water shall mean water obtained by the District from the Colorado River through facilities owned by the District.

Res. 7666 - April 13, 1976; Section 312.2.1 amended by M.I. 33642 - March 10, 1981. Section 312.2.1 repealed and Section 4101 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4102. State.

"State" as a source of water shall mean water obtained by the District from facilities of the California State Water Project.

Res. 7666 - April 13, 1976; Section 312.2.2 amended by M.I. 33642 - March 10, 1981. Section 312.2.2 repealed and Section 4102 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4103. Treated Water.

"Treated water" shall mean water that is treated by filtration and disinfection at any District water treatment facility.

Res. 7666 - April 13, 1976; Section 312.2.3 amended by M.I. 33642 - March 10, 1981. Section 312.2.3 repealed and Section 4103 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 40976 - August 19, 1994.

§ 4104. Untreated Water.

"Untreated water" shall mean water that is not treated water.

Res. 7666 - April 13, 1976; Section 312.2.4 amended by M.I. 33642 - March 10, 1981. Section 312.2.4 repealed and Section 4104 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4105. Domestic and Municipal Purposes.

"Domestic and municipal purposes" shall mean, but is not limited to, the use of water for all domestic, municipal, commercial, industrial, and recreational purposes.

Res. 7666 - April 13, 1976; Section 312.2.5 amended by M.I. 33642 - March 10, 1981. Section 312.2.5 repealed and Section 4105 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 44005 - May 17, 2000.

§ 4106. Interim Agricultural Water Program Purposes.

"Interim Agricultural Water Program purposes" shall mean the service of water pursuant to the Interim Agricultural Water Program and this Division IV which is delivered and used for the growing or raising, in conformity with recognized practices of husbandry, for the purposes of commerce, trade, or industry, or for use by public educational or correctional institutions, of agricultural, horticultural, or floricultural products, and produced (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, or (3) for the feeding of fowl or livestock for the purpose of obtaining their products for human consumption or for the market, such products to be grown or raised on a parcel of land having an area of not less than one acre utilized exclusively therefor.

(a)"Interim Agricultural Water Program purposes limited to the growing of field and nursery crops and row crops" shall mean the service of water related to the growing of crops generally planted and harvested annually or more frequently, and other Interim Agricultural Water Program purposes not included in the definitions of Sections 4106(b) and 4106(c).

(b)"Interim Agricultural Water Program purposes limited to the growing of trees and vines" shall mean the service of water limited to the growing of crops which are planted less frequently than annually in the expectation of long-term yield therefrom.

(c)"Interim Agricultural Water Program purposes limited to the feeding of fowl or livestock" shall mean the service of water encompassing the raising of animals for human consumption or for the market or for the purpose of obtaining their products for human consumption or for the market.

(d) The Interim Agricultural Water Program was discontinued after December 31, 2012.

Res. 7666 – April 13, 1976; Section 312.2.6 amended and paragraphs (a), (b) and (c) [formerly Sections 313.2.6.1 - 312.2.6.3] added by M.I. 33642 – March 10, 1981. Section 312.2.6 repealed and Section 4106 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; Section renamed and paragraphs (a)-(c) amended by M. I. 44005 - May 17, 2000; Paragraph amended by M.I. 44812 - March 12, 2002.

§ 4107. Groundwater Replenishment by Spreading.

"Groundwater replenishment by spreading" shall mean the act of spreading or causing to be spread, water for the purpose of replenishing natural groundwater basins, without regard to subsequent use of the water.

Res. 7666 - April 13, 1976; Section 312.2.7 amended and paragraphs (a)and (b) [formerly Sections 313.2.7.1 - 312.2.7.2] added by M.I. 33642 - March 10, 1981. Section 312.2.7 repealed and Section 4107 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended and paragraphs (a) and (b) deleted by M.I. 42608 - September 9, 1997.

§ 4108. Groundwater Replenishment by Injection.

"Groundwater replenishment by injection" shall mean the act of injecting or causing to be injected, water for the purpose of replenishing natural groundwater basins.

(a) "Direct ~~Replenishment~~ replenishment by ~~Injection~~injection" shall mean groundwater replenishment that results from the act of injecting without regard to subsequent use of the water.

(b) "Seawater barrier groundwater replenishment" shall mean groundwater replenishment having as a principal purpose the injection of water for the purpose of maintaining groundwater barriers designed and intended to avoid the contamination of groundwater storage basins by the intrusion of seawater.

Former Section 4108 renumbered to Section 4109 and new Section 4108 added by M.I. 42608 - September 9, 1997; paragraph (b) amended by M. I. 44812 - March 12, 2002; paragraph (b) deleted and paragraph (c) renumbered by M. I. 45249 - March 11, 2003.

§ 4109. In-Lieu Groundwater Replenishment.

"In-lieu groundwater replenishment" shall mean maintenance or replenishment of water supplies in groundwater basins by reduction or elimination of extraction therefrom through the substitution of deliveries of water to consumers from surface distribution facilities in lieu of such extraction.

Section 312.2.8 - M.I. 33642 - March 10, 1981. Section 312.2.8 repealed and Section 4108 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41468 - June 13, 1995; Section 4108 renumbered to Section 4109 by M.I. 42608 - September 9, 1997.

§ 4110. Direct Reservoir Replenishment.

"Direct ~~Reservoir~~ reservoir ~~Replenishment~~replenishment" shall mean the act of storing water in surface reservoirs for long-term storage by delivering water directly into a reservoir.

Section 312.2.9 - M.I. 33642 - March 10,1981. Section 312.2.9 repealed and Section 4109 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41617 - October 10, 1995; Section 4109 renumbered to Section 4110 by M.I. 42608 - September 9, 1997; paragraph and title amended by M. I. 45249 - March 11, 2003.

§ 4111. In-Lieu Reservoir Replenishment.

"In-~~Lieu~~ lieu ~~Reservoir~~ reservoir ~~Replenishment~~replenishment" shall mean the act of storing water in surface reservoirs for long-term storage by reducing or eliminating local supply outflow, through substitution of deliveries of water to consumers from surface distribution facilities in lieu of such withdrawals, thus conserving storage acquired from local sources.

Previous Section 4110 renumbered to Section 4111 and new Section 4110 added by M.I. 41617 - October 10, 1995; Section 4110 renumbered to Section 4111 by. M.I. 42608 - September 9, 1997; paragraph and title amended by M. I. 45249 - March 11, 2003.

[§ 4112 repealed by M. I. 45249 - March 11, 2003.]

[§ 4113 repealed by M. I. 44812 - March 12, 2002.]

§ 4114. Replenishment Service.

"Replenishment Service" shall mean delivery of water for long-term storage in either groundwater basins or surface reservoirs by direct or in-lieu means. Direct means shall be either through groundwater spreading or through injection. ~~Such service shall be governed by the provisions of Section 4514.~~ The Replenishment Service Program was discontinued after December 31, 2012.

M.I. 37006 - February 9, 1988; amended by M.I. 37764 - July 11, 1989; amended by M.I. 41468 - June 13, 1995; amended by M.I. 42109 - October 8, 1996; paragraph and title amended by M. I. 45249 - March 11, 2003.

[§ 4115 repealed by M. I. 44812 - March 12, 2002]

[§ 4116 repealed by M. I. 44812 - March 12, 2002]

§ 4117. Cooperative Storage Program.

"Cooperative Storage Program" shall mean the program that provides a means for coordinating the District's carryover storage needs with storage capacity available to member public agencies, on the basis that the stored water will eventually be released to respective participating member public agencies pursuant to the regulations provided by Section 4517.

M.I. 40976 - August 19, 1994; Original Section 4117 repealed and Section 4118 renumbered 4117 by M.I. 44005 - May 17, 2000.

§ 4118. Cooperative Storage Program Sale.

"Cooperative Storage Program Sale" shall describe the transaction that occurs at the time a water delivery is made by the District under the Cooperative Storage Program. Any such delivery is deemed a sale to the receiving member public agency when delivered to it for storage, with payment to the District deferred as provided in subsection 4517(i). For administrative record keeping purposes, such a transaction will be recorded as an advance delivery until invoiced as a sale by the District at the time of release.

M.I. 40976 - August 19, 1994; amended by M.I. 41404 - May 9, 1995; Original Section 4119 renumbered 4118 by M.I. 44005 - May 17, 2000; amended by M. I. 44812 - March 12, 2002.

§ 4119. Wheeling Service.

"Wheeling Service" shall mean the use of Metropolitan's facilities, including its rights to use State Water Project facilities, to transport water not owned or controlled by Metropolitan to its member public agencies, in transactions entered into by Metropolitan for a period of up to one year.

M.I. 42335- March 11, 1997; Original Section 4120 renumbered 4119 by M. I. 44005 - May 17, 2000.

§ 4120. Purchase Order; Purchase Order Commitment.

"Purchase Order" shall mean a member agency's written commitment to purchase a specified total volume of water from the District during a specified period, as provided in Section 4404. "Purchase Order commitment" shall mean the amount of system water a member agency commits to purchase over the term of the Purchase Order.

M. I. 44812 - March 12, 2002; amended by M. I. 45249 - March 11, 2003; amended by M.I. 49952 - November 18, 2014.

§ 4121. Supply Rates.

"Supply Rate" shall mean (i) the Tier 1 Supply Rate and (ii) the Tier 2 Supply Rate, as applicable to a particular purchase of water pursuant to Section 4404. The Tier 1 and Tier 2 Supply Rate shall be set from time to time by the District to recover the cost of maintaining existing supplies and developing additional supplies of water.

M. I. 44812 - March 12, 2002.

§ 4122. Base Period Demand; Revised Base Firm Demand; Initial Base Firm Demand.

"Base Period Demand" shall mean the amount specified in a member agency's Purchase Order, that is either: a) the member agency's Revised Base Firm Demand, as specified in this Section; or b) the member agency's highest fiscal year purchases from fiscal year 2003 through 2014; provided, however, that if the member agency's five-fiscal year rolling average of purchases of water from the District for the most recent five fiscal year period, excluding water purchased under an interruptible program, exceeds the member agency's Initial Base Period Demand, then the member agency's Base Period Demand for each subsequent calendar year shall be increased to the member agency's five-fiscal year rolling average. "Initial Base Firm Demand" shall mean the member agency's highest annual delivery of water from the District, excluding water delivered under Long-Term Seasonal Storage Service, Interruptible Service, and Interim Agricultural Water Program Service, during any fiscal year from fiscal year 1989/90 through fiscal year 2001/02.

Effective as of January 1, 2013, each member agency's Revised Base Firm Demand is as follows:

Member Agency	**Revised BFD**
Anaheim	27,154
Beverly Hills	14,867
Burbank	18,640
Calleguas	122,498
Central Basin	119,617
Compton	5,620

Eastern	102,694
Foothill	13,081
Fullerton	12,554
Glendale	29,135
Inland Empire	103,648
Las Virgenes	22,999
Long Beach	57,560
Los Angeles	372,959
MWDOC	311,769
Pasadena	23,533
San Diego	655,903
San Fernando	1,049
San Marino	1,998
Santa Ana	21,797
Santa Monica	12,344
Three Valleys	83,248
Torrance	23,297
Upper San Gabriel	74,698
West Basin	175,024
Western	94,567

M. I. 44812 - March 12, 2002; amended by M. I. 45249 - March 11, 2003; added second and third paragraphs by M.I. 49272 - December 11, 2012; amended first and third paragraphs, and deleted second paragraph by M.I. 49952 - November 18, 2014.

§ 4123. System Access Rate.

"System Access Rate" shall mean a dollar per acre-foot water rate imposed by the District to recover a portion of the District's costs associated with the conveyance and distribution system, including capital, operating and maintenance costs.

M. I. 44812 - March 12, 2002.

§ 4124. Water Stewardship Rate.

"Water Stewardship Rate" shall mean a dollar per acre-foot water rate imposed by the District to recover a portion of the costs of the District's financial commitment to conservation, water recycling, groundwater recovery and other water management programs approved by the Board.

§ 4124 Repealed by M. I. 45249 - March 11, 2003; Re-adopted by M.I. 49187 - September 11, 2012.

§ 4125. System Power Rate.

"System Power Rate" shall mean a dollar per acre-foot water rate imposed by the District to recover the melded cost of power necessary to pump water from the State Water Project and Colorado River through the conveyance and distribution system for the District's member public agencies.

M. I. 44812 - March 12, 2002.

§ 4126. Treatment Surcharge.

"Treatment Surcharge" means a dollar per acre-foot water rate imposed by the District to recover the District's costs of providing water treatment capacity and operations.

M. I. 44812 - March 12, 2002.

§ 4127 Emergency Storage Program Purposes.

"Emergency Storage Program purposes" shall mean delivery of water pursuant to the Emergency Storage Program for the purpose of emergency storage in surface water reservoirs and storage tanks. Emergency Storage Program purposes include initially filling a newly constructed reservoir or storage tank and replacing water used during an emergency. Emergency Storage Program service shall be governed by the provisions of Sections 4507 and 4518.

M.I. 45941 – October 12, 2004.

Chapter 2

REGIONAL WATER MANAGEMENT

Sec.

§ 4200. Water Availability.

District water will be available only to cities and areas now or hereafter included within the legal boundaries of the District. This means that District water will not be sold or released under any terms to any area as long as such area is outside the boundaries of the District except as may be approved by the Board.

Section 301.1.1 - Special Water Problems Committee - October 26, 1938. Section 301.1.1 repealed and Section 4200 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 40976 - August 19, 1994.

§ 4201. Mission Statement.

The mission of The Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way.

M.I. 39412 - January 14, 1992.

§ 4202. Avoidance in District Service Area of Overlapping or Paralleling Governmental Authorities (Laguna Declaration).

(a) The District is prepared, with its existing governmental powers and its present and projected distribution facilities, to provide its service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs for domestic, industrial and municipal water, the District will be prepared to deliver such supplies.

(b) Taxpayers and water users residing within the District already have obligated themselves for the construction of an aqueduct supply and distribution system. This system has been designed and constructed in a manner that permits orderly and economic extensions and enlargements to deliver the District's full share of Colorado River water and State Project water as well as water from other sources as required in the years ahead. Establishment of overlapping and paralleling governmental authorities and water distribution facilities to service Southern California areas would place a wasteful and unnecessary financial burden upon all of the people of California, and particularly the residents of Southern California.

Section 301.2 based on M.I. 14727 - December 16, 1952. Section 301.2 repealed and Section 4201 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4201 renumbered Section 4202 by M.I. 39412 - January 14, 1992.

§ 4203. Water Transfer Policy.

To meet its public water supply objectives in the future, Metropolitan will vigorously pursue the development of water transfers, subject to the following considerations:

(a) Water transfers, including water marketing, will be developed only on a voluntary basis with willing partners;

(b) A full-range of water transfer options will be pursued, including arrangements with appropriate state and federal agencies, public and private water entities, and individual water users;

(c) Water transfers will be designed to protect and, where feasible, enhance environmental resources;

(d) Water transfers will be designed to avoid contributing to or creating a condition of long-term groundwater overdraft;

(e) Efforts will continue to develop water transfers in cooperation with the agricultural community, which seek to avoid unreasonable operational and financial impacts; and

(f) Strategies will be developed to appropriately address community impacts of water transfers.

M.I. 39412 - January 14, 1992.

§ 4204. Sale of Water by State in District Boundaries.

The State shall make no other contract to supply project water for use within the boundaries of the District without the consent of the District, and shall not authorize any other contractor to supply project water for use outside such other contractor's boundaries and within the boundaries of the District without the consent of the District.

Section 322.13.1 based on Amendment No. 12 to Metropolitan - State Water Contract dated November 11, 1960 - Article 15(d) thereof; amended by M.I. 33642 - March 10, 1981; Section 322.13.1 repealed and Section 4202 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4202 renumbered Section 4204 by M.I. 39412 - January 14, 1992.

§ 4205. Sale of Water By One Member Public Agency to Another.

The General Manager and General Counsel shall report to the Board any sale of water by one member public agency to another. The District will not deliver water at the request of one member public agency into the territory of another member public agency without written authorization from both affected member public agencies.

Section 322.13.2 based on M.I. 15647 - May 4, l954; amended by M.I. 32690 - April 10, 1979; amended by M.I. 33642 - March 10, 1981. Section 322.13.2 repealed and Section 4203 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4203 renumbered Section 4205 by M.I. 39412 - January 14, 1992; amended by M. I. 45637 - January 13, 2004.

§ 4206. Carryover Storage.

(a) The General Manager is authorized to store District water in any storage facility within any member public agency of the District where storage capacity is available. Further, the General Manager is instructed that no water is to be delivered or supplied under any storage contract until he has determined that sufficient water supplies will be available to fill the District's storage reservoirs.

(b) The General Manager is authorized to modify any arrangements with member public agencies for storage of water to provide for carryover storage, which modification shall be effective only when in writing and executed by the General Manager.

(c) Following the conclusion of each calendar year, the General Manager shall evaluate the District's carryover storage and determine the amount of carryover storage the District is expected to need during the ensuing calendar year.

Section 322.13.3 based on M.I. 25031 - December 14, 1965; paragraph (b) [formerly Section 322.13.3.2] added by M.I. 27396 - March 11, 1969; amended by M.I. 33642 - March 10, 1981; paragraph (a) [formerly Section 322.13.3.1] amended by M.I. 35992 - March 11, 1986. Section 322.13.3 repealed and Section 4204 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4204 renumbered Section 4206 by M.I. 39412 - January 14, 1992; paragraph (a) amended by M.I. 40976 - August 19, 1994; paragraph (c) added by M.I. 40969 - August 19, 1994; paragraph (b) amended by M.I. 41404 - May 9, 1995.

§ 4207. Exchange of Water.

(a) The District's policy is that any exchange of Colorado River water for State Project water between the District and any state water service contractors shall be based upon such contractor paying all of the costs associated with delivery of State water at such contractor's delivery point, or at such other point as may be mutually agreed upon, which would result in the lowest cost to the District under such exchange.

(b) If two or more member public agencies of the District desire to enter into a water exchange arrangement, the District will cooperate in such an arrangement, subject to available capacity in the District's facilities and subject to availability of water for such exchange purposes, as determined by the District.

(c) The General Manager is authorized to enter into any economically beneficial water exchange agreement, in form approved by the General Counsel, without prior Board approval upon a determination that the exchange provides water quality benefits. The annual total of all exchanges under this subsection authority shall not exceed 50,000 acre-feet. The annual cumulative net exchange cost of exchanges under this subsection shall not exceed $500,000. Water exchanges authorized under this subsection are exempt from competitive bidding requirements under the terms of Administrative Code Section 8103. Such agreement shall be reported to the Board at the next meeting after which it is made.

Section 322.13.4 – paragraph (b) [formerly Section 322.13.4.2] based on M.I. 23612 – February 11, 1964 and paragraph (a) [formerly Section 322.13.4.1] based on M.I. 25756 – December 13, 1966; amended by M.I. 33642 – March 10, 1981. Section 322.13.4 repealed and Section 4205 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; Section 4205 renumbered Section 4207 by M.I. 39412 - January 14, 1992; paragraph (c) added by M. I. 44109 - July 11, 2000.

§ 4208. No Recreational Use of Lake Mathews.

The policy existing since 1939 that Lake Mathews not be used for recreational purposes is reaffirmed.

Section 322.13.6 based on M.I. 16404 – May 10, 1955 and M.I. 31249 – April 24,1961; amended by M.I. 33642 – March 10, 1981; renumbered 322.13.5 by M.I. 34182 – April 13, 1982. Section 322.13.5 repealed and Section 4206 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; [§ 4207 - repealed by M.I. 36806 - September 22, 1987.]; Section 4206 renumbered Section 4208 by M.I. 39412 - January 14, 1992.

§ 4209. Contracts.

The District may join or enter into agreements with member public agencies to make more effective use of water resources, including agreements providing for the wheeling, exchange, or banking of water, so long as such agreements serve a purpose of the District.

Section 322.6.12 - March 10, 1981, effective July 1, 1981; Section 322.6.12 repealed and Section 4208 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; Section 4208 renumbered Section 4209 by M.I. 39412 - January 14, 1992.

§ 4210. Water Conservation.

It shall be the policy of the District to undertake and support water conservation programs. To that end, the District may develop and implement such programs and enter into agreements with member public agencies and other organizations to make more efficient use of water resources through water conservation programs so long as such agreements serve a beneficial purpose of the District.

M.I. 36775 - August 18, 1987; Section 4209 renumbered Section 4210 by M.I. 39412 - January 14, 1992.

§ 4211. Sale of Water to State or Federal Governmental Agencies.

Subject to the provisions of Section 131 of the Metropolitan Water District Act, the General Manager is authorized to enter into contracts for the sale of water for any purpose or use with the United States of America or with any board, department, or agency thereof or with the State of California. Such contracts shall contain at a minimum the following terms:

1. The State or Federal Governmental Agency shall furnish, install, and remove, at no expense to Metropolitan, the facilities required to pump, measure, and transport the water.

2. Metropolitan's option to sell water to a State or Federal Governmental Agency shall be limited to a total quantity of 100 acre-feet per year, per connection, per agency.

3. The price of the water shall be Metropolitan's rate per acre-foot for the class of water in effect at the time of delivery, plus a reasonable capital facility charge and a minimum monthly standby rate if the connection is not used during a billing period.

4. The State or Federal Governmental Agency shall hold Metropolitan harmless from all claims and damages resulting from interruptions in water deliveries and from all damages resulting directly or indirectly from Metropolitan's delivery of water to the State or Federal Governmental Agency.

5. The agreement shall be terminable by either party upon giving written notice to the other party thirty days prior to the effective date of termination.

M.I. 42055 - September 10, 1996.

Chapter 3

WATER SALES REVENUE

Sec.
4300. General
4301. Cost of service and Revenue Requirement
[4302. Repealed]
[4303. Repealed]
4304. Apportionment of Revenues and Setting of Water Rates
4305. Setting of Charges to Raise Fixed Revenue

§ 4300. General.

The amount of revenue to be raised through the sale of water at rates and charges established pursuant to Sections 4400 and 4401 shall be determined in accordance with the provisions of this chapter.

Section 311.1 - M.I. 33007 - November 13, 1979, as clarified by M.I. 33059 - January 15, 1980. Section 311.1 repealed and Section 4300 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M. I. 44812 - March 12, 2002; amended by M.I. 49187 - September 11, 2012.

§ 4301. Cost of Service and Revenue Requirement.

(a) The District shall fix rates for water such that anticipated water sales revenues, together with anticipated revenues from any water standby or availability of service charge (such as the readiness-to-serve charge or capacity charge) or assessment, ad valorem tax revenues, and other revenues pay the expenses of the District, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by the District, and provide for the payment of the interest and principal of the District's outstanding bonded debt. Subject to the foregoing, such rates and charges shall reflect the costs of the District's major service functions, including water supply, conveyance, power, storage, distribution and treatment to the greatest degree practicable.

(b) Notwithstanding the provisions in subsection (a) above, amounts raised by ad valorem property taxation shall not exceed the limitations established by section 124.5 of the Act and, subject to those limitations, shall be not less than the approximate equivalent of the amounts levied for fiscal year 1990-91.

Section 311.2 - M.I. 33007 - November 13, 1979, as clarified by M.I. 33059 - January 15, 1980. Section 311.2 repealed and Section 4301 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended and paragraph (b) added by M.I. 38749 - February 12, 1991; paragraph titled changed and paragraph (a) amended by M. I. 44812 - March 12, 2002; paragraph (a) amended by M. I. 46148 - March 8, 2005; paragraphs (a)-(b) amended by M.I. 49187 - September 11, 2012.

[§ 4302 Repealed by M. I. 44812 - March 12, 2002]

[§ 4303 Repealed by M. I. 44812 – March 12, 2002]

§ 4304. Apportionment of Revenues and Setting of Water Rates.

(a) Not later than at its February meeting the General Manager shall present to the Finance and Insurance Committee of the Board:

(1) Determinations of the revenue requirements and cost of service analysis supporting the rates and charges required during the biennial period beginning the following July 1, as determined by the General Manager in accordance with current Board policies, and,

(2) Recommendations of rates including, but not limited to, the System Access Rate, Water Stewardship Rate, System Power Rate, Treatment Surcharge, and the Supply Rates for the various classes of water service to become effective each January 1 of the biennial period. These recommended rates shall be the General Manager's determination, made in accordance with current Board policies, of the rates necessary to produce substantially the revenues to be derived from water sales during the biennial period beginning the following July 1.

(b) Not later than at its February meeting, the General Manager shall also present to the Finance and Insurance Committee recommendations regarding the continuation of a water standby charge or the imposition of an availability of service charge (such as the readiness-to-serve charge and capacity charge), which shall be the General Manager's determination, made in accordance with current Board policies, of the charge necessary to produce substantially the revenues to be derived from fixed revenue sources, if any, exclusive of taxes, during the biennial period beginning the following July 1 which the Finance and Insurance Committee has determined to be necessary.

(c) Not later than its February meeting the Finance and Insurance Committee shall set a time or times for, and shall thereafter hold, one or more meetings of the Finance and Insurance Committee, to be held prior to its regular April meeting, at which interested parties may present their views regarding the proposed water rates and availability of service charges to said committee. The Finance and Insurance Committee shall direct the General Manager to cause the publication of a notice of such public hearing to be published in newspapers of general circulation within the District’s service area. Such notice shall be published not less than 10 days prior to the public hearing.

(d) Not later than its regular April meeting the Finance and Insurance Committee shall make its determination regarding the revenue requirement to be paid from water rates and the water rates to become effective each January 1 of the biennial period and shall recommend said water rates to the Board no later than the Board's regular April meeting.

(e) Not later than its April meeting, the Board shall establish water rates for deliveries beginning each January 1 of the biennial period.

(f) Proposals for changes in water rates to become effective at times other than on January 1 shall require adequate notice to the public and a hearing before such proposals are acted upon by the Board, unless the Board finds that an immediate change in water rates is urgent.

Section 311.5 - M.I. 32924 – September 18, 1979, as clarified by M.I. 33059 – January 15, 1980; paragraph (g) [formerly Section 311.5.7] amended by M.I. 34867 – September 13, l983. Section 311.5.7 repealed and Section 4304 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended, new paragraphs (d), (f), (i) and (j) added and other paragraphs renumbered by M.I. 39976 - December 8, 1992; paragraphs (b) through (g), (i) and (j) amended by M.I. 41389 - May 9, 1995; paragraphs (a)-(d) amended by M.I. 42193 - December 10, 1996; paragraphs (b) through (g), and (i) and (j) amended by M.I. 43587 - June 8, 1999; paragraphs (a) through (k) amended by M. I. 44582 – August 20, 2001; paragraphs (a) – (g), (i), and (j) amended by M. I. 44812 - March 12, 2002; paragraph (a) amended, (a) (i) & (a) (ii) added, paragraphs (b) & (c) deleted, paragraphs (d) (e) (f) renumbered to (b) (c) (d), paragraph (g) renumbered to (e) and amended, paragraphs (h) (i) renumbered to (f) (g), and paragraphs (j) (k) renumbered to (h) (i), by order of M. I. 45537 - October 14, 2003; paragraphs (a)-(e) and (g)-(h) amended by M. I. 46064 – January 11, 2005; paragraphs (a) through (e), (g) and (h) amended (committee name change) by M. I. 46148 - March 8, 2005; paragraphs (a)-(i) amended by M.I. 46983 February 13, 2007; paragraph(b) and (c) amended, paragraph (d) deleted and renumbered by M.I. 47636 - September 9, 2008; paragraphs (c)-(e) amended by M.I. 48171 - February 9, 2010; paragraphs (a)-(g) amended by M.I. 48534 - January 11, 2011; amended § 4304 title, amended paragraphs (a)-(f), deleted former paragraphs (f) and (g), and renumbered former paragraph (h) by M.I. 49187 - September 11, 2012.

§ 4305. Setting of Charges to Raise Fixed Revenue.

(a) Not later than its regular May meeting each year, the Finance and Insurance Committee shall make its final determination regarding the water standby charge or other fixed revenue charge, if any, for the fiscal year beginning the following July 1, and shall recommend such charge, if any, to the Board at its regular May meeting.

(b) Not later than such May meeting, the Board shall consider and take action upon the recommendations, if any, of the Finance and Insurance Committee regarding a fixed revenue source, exclusive of taxes, to become effective the following January 1 or for the fiscal year beginning the following July 1, as determined by the Board for each fixed revenue source.

M.I. 49187 - September 11, 2012.

Chapter 4

CLASSIFICATION AND RATES

Sec.
4400. Basic Statement
4401. Rates
4402. Readiness-to-Serve Charge
4403. Capacity Charge
4404. Purchase Orders
4405. Wheeling Service

§ 4400. Basic Statement.

The rates and charges set forth herein, so far as practicable, shall result in revenue to meet the obligations set forth in Section 134 of the Metropolitan Water District Act.

Section 312.1 based on Res. 7666 - April 13, 1976; amended by M.I. 33642 - March 10, 1981. Section 312.1 repealed and Section 4400 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41468- June 13, 1995.

§ 4401. Rates.

(a) The rates per acre-foot for water sold and delivered for each class of service on order of any member public agency for use therein shall be as follows:

(1) For all water that does not meet criteria for other classes of service or special programs as defined in this Division, each of the following is applicable:

System Access Rate:

Effective Date:	01/01/2014	**Rate:**	$243.00
	01/01/2015		$257.00
	01/01/2016		$259.00

Water Stewardship Rate:

Effective Date:	01/01/2014	**Rate:**	$ 41.00
	01/01/2015		$ 41.00
	01/01/2016		$ 41.00

System Power Rate:

Effective Date:	01/01/2014	**Rate:**	$161.00
	01/01/2015		$126.00
	01/01/2016		$138.00

Treatment Surcharge (Applicable to treated water):

Effective Date:	01/01/2014	**Rate:**	$297.00
	01/01/2015		$341.00
	01/01/2016		$348.00

Supply Rate:

Tier 1 Supply Rate – The Tier 1 Supply Rate shall apply to water purchases which in the aggregate for any calendar year, are less than or equal to 60 percent of the Revised Base Firm Demand of such member agency as specified in Section 4122, unless that member agency has executed a Purchase Order, as defined in Section 4120, in which case the Tier 1 Supply Rate applies to water purchases as established by the Purchase Order terms.

Effective Date:	01/01/2014	**Rate:**	$148.00
	01/01/2015		$158.00
	01/01/2016		$156.00

Tier 2 Supply Rate –The Tier 2 Supply Rate shall apply when a member agency's cumulative total of water purchases for the calendar year exceeds 60 percent of the member agency's Revised Base Firm Demand as specified in Section 4122, or according to the terms of a Purchase Order for member public agencies that execute a Purchase Order.

Effective Date:	01/01/2014	**Rate:**	$290.00
	01/01/2015		$290.00
	01/01/2016		$290.00

(2) [Reserved]

(b) The rates for water established by Section 4401(a) shall not apply to water sold and delivered by the District to any purchaser other than a member public agency; and said rates for water shall not apply to water sold and delivered by the District for any use outside the District, or to water sold and delivered by the District for any use within the District in substitution for water used outside the District, regardless of whether or not such water be purchased by, or delivered pursuant to the order of, any member public agency; but such water shall be sold and delivered pursuant to such contract and upon such terms and conditions as the Board shall authorize and determine for each such transaction.

(c) For purposes of agreements existing under the Local Resource Program, Local Project Program, Groundwater Recovery Program and other similar programs, references to the "full service water rate," "full service treated water rate," "treated non-interruptible water rate" or "other prevailing rate" or to the "reclaimed water rate" or "recycled service rate" shall be deemed to refer to the sum of the System Access Rate, Water Stewardship Rate, System Power

Rate, the expected weighted average of Tier 1 Supply Rate and Tier 2 Supply Rate (equal to the estimated sales revenues expected from the sale of water at the Tier 1 and Tier 2 Supply Rates divided by the total District sales in acre-feet expected to be made at the Tier 1 and Tier 2 Supply Rates), a Capacity Charge expressed on a dollar per acre-foot basis and Treatment Surcharge.

Section 312.3 based on Res. 7666 - April 13, 1976; paragraphs (a)(1) through (a)(3) [formerly Sections 312.3.1 through 312.3.3] amended by M.I. 31919 – August 19, 1977, M.I. 33644 – March 10, 1981; amended by M.I. 33642 – March 10, 1981; paragraphs (a)(1) through (a)(3) amended by M.I. 34156 – March 9, 1982, effective July 1, l982, M.I.34635 - March 8, 1983 effective July 1, 1983, M.I. 34851 – September 13, 1983 effective January 1, 1984; paragraphs (a)(4) and (a)(5) [formerly Sections 312.3.4 and 312.3.5] added and paragraphs (b) and (c) [formerly Sections 312.3.4 and 312.5] renumbered by M.I. 34867 – September 13, 1983; paragraph (a)(4) amended by M.I. 34930 – November 8, 1983, effective January 1, 1983; paragraphs (a)(1) through(a)(3) amended by M.I. 35064 – March 13, 1984 effective July 1, l984; paragraph (a)(4) amended by M.I. 35482 – January 8, 1985; paragraphs (a)(1) through (a)(3) amended by M.I. 35558 – March 12, 1985 effective July 1, 1985, M.I. 36001 – March 11, 1986. Section 312.3 repealed and Section 4401 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraph (a)(1) through (a)(3) and (a)(5) amended by M.I. 36540 - March 10, 1987, effective July 1, 1987; paragraph (c) deleted by M.I. 36811 - September 22, 1987; paragraph (a)(4) amended by M.I. 37006 - February 9, 1988; paragraphs (a)(1) through (a)(3) and (a)(5) amended by M.I. 37045 - March 8, 1988, effective July 1, 1988; par. (a)(4) amended by M.I. 37566 - March 14, 1989 and pars. (a)(1) through (a)(3) and (a)(5) amended by M.I. 37574 - March 14, 1989, effective July 1, 1989; paragraph (a)(4) amended by M.I. 37764 - July 11, 1989, effective August 1, 1989; paragraphs (a)(1) through (a)(5) amended by M.I. 38196 - April 17, 1990, effective July 1, 1990; paragraph (b) renumbered to (c) and new paragraph (b) added by M.I. 38196 - April 17, 1990; paragraphs (a)(1) through (a)(5) amended by M.I. 38867 - April 9, 1991, effective July 1, 1991; paragraph (b) repealed and paragraph (c) renumbered by M.I. 39370 - December 10, 1991; paragraph (a)(1), and (a)(3) through (a)(5) amended by M.I. 39503 - March 10, 1992, effective July 1, 1992; paragraphs (a)(1), and (a)(3) through (a)(5) amended by M.I. 40142 - March 9, 1993, effective July 1, 1993 and April 1, 1993 respectively; paragraph (a)(5) amended for rate to become effective July 1, 1993 by M.I. 40173 - April 13, 1993; paragraphs (a)(1), (a)(3) through (a)(6) amended by M.I. 40731 - March 8, 1994; paragraphs (a)(1) through (a)(3) and (a)(5) amended and (a)6) added by M.I. 40865 - June 14, 1994; paragraph (a) amended, paragraph (b) added and paragraph (c) amended and renumbered by M.I. 41468 - June 13, 1995; paragraph (a)(3) amended by M.I. 41652 - November 14, 1995; paragraph (a) amended by M.I. 41816 - March 12, 1996 to be effective January 1, 1997; paragraph (a)(1) amended by M.I. 42278 - February 11, 1997; paragraphs (a)(1) through (a)(4) amended and paragraph (a)(5) added by M.I. 42335 and 42336 - March 11, 1997; paragraphs (a)(1) and (a)(2) amended by M.I. 42608 - September 9, 1997; paragraphs (a) (1), (2), (3), (4), and (b) amended by M.I. 42870 - March 10, 1998; paragraphs (a) (1), (2), (3), (4), and (b) amended by M.I. 43354 - January 12, 1999; paragraphs (a) (1), (2), (3), and (4) amended by M.I. 43936 – March 14, 2000; paragraphs (a)(1), (2), (3), (4), and (5) amended by M.I. 44386 – March 13, 2001; paragraph (a) (1) and (2) amended, paragraphs (a) (3), (4), and (5) sub-paragraph (b) deleted, old paragraph (c) renamed (b), and new paragraphs (a) (3) and (c) added by M. I. 44812 - March 12, 2002; paragraph (a) (2) amended by M. I. 45249 - March 11, 2003; paragraph (c) amended by M. I. 45257 - March 11, 2003; paragraphs (a) (1), (2), (3) amended by M.I. 45690 – March 9, 2004; paragraph (c) amended by M. I. 45943 – October 12, 2004; paragraph (a) (1), (2), (3) amended by M. I. 46149 - March 8, 2005; paragraphs (a) (1) (2) (3) amended by M. I. 46593 – March 14, 2006; paragraph (a)(1)-(3) amended by M. I. 47064 – April 10, 2007; paragraph (a)(3) amended by M. I. 47259 – October 9, 2007; paragraphs (a)(1)(2) and (3) amended by M.I. 47422 – March 11, 2008; paragraphs (a)(1)(2) and (3) amended by M.I. 47859 – April 14, 2009; paragraph (a)(1) amended by M.I. 48232 – April 13, 2010; paragraphs (a)(1)-(3) amended by M.I. 49026 – April 10, 2012; paragraph (a)(2) amended by M.I. 49272 - December 11, 2012; paragraph (a)(1) amended, paragraph (a)(2) deleted and reserved, and paragraph (3) deleted by M.I. 49734 – April 8, 2014; amended paragraph (a)(1) sections covering "Tier 1 Supply Rate," and "Tier 2 Supply Rate" by M.I. 49952 - November 18, 2014.

§ 4402. Readiness-to-Serve Charge.

(a) The readiness-to-serve charge shall be set by the Board from time to time to recover the costs of emergency system storage and the cost of system conveyance capacity for peak and standby use not recovered by property tax revenue. The readiness-to-serve charge will be allocated among the member public agencies beginning January 1, 2003, in proportion to the

average of deliveries (including exchanges and transfers) through Metropolitan's system (in acre feet) to each member public agency during the ten-year period ending June 30, 2001; and thereafter as a ten-year rolling average; provided that Metropolitan sales of reclaimed water under the Local Projects Program, and Local Resources Program, groundwater under the Groundwater Recovery Program and deliveries under Replenishment and Interim Agricultural Water Service shall not be included in the water deliveries calculation.

(b) The readiness-to-serve charge shall be due monthly, quarterly or semiannually, as agreed upon by Metropolitan and the member public agency. If a standby charge is collected on behalf of a member public agency, the member public agency will be credited for the amount of net collections. This charge is subject to the provisions of Sections 4507 and 4508.

(c) The General Manager shall establish and make available to member public agencies procedures for administration of the readiness-to-serve charge, including filing and consideration of applications for reconsideration of their respective readiness-to-serve charge. The General Manager shall review any applications for reconsideration submitted in a timely manner. The General Manager shall also establish reasonable procedures for the filing of appeals from his determination.

M.I. 41468 - June 13, 1995; paragraph (b) amended by Resolution 8492 adopted by M.I. 41816 - March 12, 1996; paragraphs (b) and (e) amended by M. I. 44582 – August 20, 2001; paragraph (a) amended, paragraphs (b) and (c) deleted, paragraphs (d) and (e) renamed (b) and (c) respectively by M. I. 44812 - March 12, 2002; paragraph (a) amended by M. I. 45249 and M. I. 45257 - March 11, 2003; paragraph (a) amended by M. I. 45943 – October 12, 2004.

§ 4403. Capacity Charge.

(a) Beginning January 1, 2004, the capacity charge shall be payable by each member agency for system capacity based on the maximum summer day demand placed on the system between May 1 and September 30 for the three-calendar year period ending December 31, 2002, and thereafter for a rolling three-calendar year period.

(b) The capacity charge shall be due monthly, quarterly or semiannually, as agreed upon by Metropolitan and the member public agency.

M.I. 41468 - June 13, 1995; paragraphs (b) and (f) amended by M. I. 44582 – August 20, 2001; old Section deleted and renamed, new paragraphs (a)-(d) added by M. I. 44812 - March 12, 2002; paragraphs (a) and (b) amended by M. I. 45249 - March 11, 2003 and paragraphs (a) and (b) amended and paragraphs (c) and (d) deleted by M. I. 45257 - March 11, 2003; paragraph (a) amended by M. I. 45943 – October 12, 2004; Section title and paragraph (b) amended by M. I. 46148 - March 8, 2005.

§ 4404. Purchase Orders.

(a) The General Manager shall establish and make available to member public agencies the form of the Purchase Order and procedures for its administration. The General Manager shall establish a deadline by which all Purchase Orders shall be executed by member public agencies that desire to enter into such agreements with the District. Following the deadline

established by the General Manager, no member public agencies will be allowed to execute Purchase Orders.

(b) The term of the Purchase Orders shall be specified in the Purchase Order. All Purchase Orders in effect for the same time period shall be on substantially the same terms. All amendments to Purchase Orders require approval by the Board.

(c) Each member public agency executing a Purchase Order shall commit to purchase at least its Purchase Order Commitment during the term of the Purchase Order.

(d) Purchase Orders shall permit a member public agency to purchase up to 90 percent of its Base Period Demand at the Tier 1 Supply Rate for the term of the Purchase Order.

(e) All water deliveries under a Purchase Order shall be subject to the operational conditions and constraints contained in this Division. In addition, all billings and payments for such water shall be subject to the provisions of this Division in the same manner as other water delivered by Metropolitan.

M.I. 41468 - June 13, 1995; old Section deleted and renamed, new paragraphs (a)-(g) added by M. I. 44812 - March 12, 2002; paragraph (d) amended by M.I. 48800 – September 13, 2011; amended paragraphs (b), (d), and (e), deleted prior paragraphs (e) and (f), and renumbered prior paragraph (g) as paragraph (e) by M.I. 49952 - November 18, 2014.

§ 4405. Wheeling Service.

(a) Subject to the General Manager's determination of available system capacity, Metropolitan will offer wheeling service. The determination whether there is unused capacity in Metropolitan's conveyance system, shall be made by the General Manager on a case-by-case basis in response to particular requests for wheeling.

(b) The rates for wheeling service shall include the System Access Rate, Water Stewardship Rate and, for treated water, the Treatment Surcharge, as set forth in Section 4401. In addition, wheeling parties must pay for their own cost for power (if such power can be scheduled by the District) or pay the District for the actual cost (not system average) of power service utilized for delivery of the wheeled water. Further, wheeling parties shall be assessed an administration fee of not less than $5,000 per transaction.

M.I. 42335 - March 11, 1997; paragraph (a) amended, paragraphs (b) and (c) deleted, and new paragraph (b) added by M. I. 44812 - March 12, 2002.

Chapter 5

WATER SERVICE REGULATIONS - GENERAL

Sec.

§ 4500. Adoption of Regulations.

Subject to all applicable provisions of the Metropolitan Water District Act, as said Act may be amended from time to time, the following regulations shall govern the service of water by the District.

Section 322.1 based on Res. 7260 - May 12, 1970, amending Res. 3896 - August 18, 1950; amended by M.I. 33642 - March 10, 1981. Section 322.1 repealed and Section 4500 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4501. Obligation to Pay for Water Delivered.

(a) All water delivered through any service connection to a member public agency for use within the member public agency shall be supplied in accordance with the provisions of the Metropolitan Water District Act and the rules and regulations of the District governing such service, as set forth in Chapter 5~~ and Chapter 9~~. The District shall bill the member public agency for all water delivered through the service connection, and the member public agency shall pay the District for all water so delivered at the rate or rates and within the period from time to time fixed by the Board.

(b) In the event that any member public agency shall request in writing a delivery of water directly by the District into any distribution system owned by some other agency which serves water within the corporate area of the member public agency, the member public agency

shall be obligated to pay the District for all water so delivered at the rates and under the conditions from time to time fixed by the Board; and such delivery into such other system shall constitute delivery to such member public agency for the purpose of these regulations.

(c) Member public agency system losses of District-supplied water are losses that are inherent in the operation of a water distribution system. These include losses occasioned by evaporation, seepage, spillage, leakage, pipeline failure, or system testing. Such losses shall be charged to a member public agency in direct proportion to the classes of service in which they occur and at the rates prescribed in Section 4401 for water sold and delivered for each such class of service. Such system losses shall not affect a member public agency's obligation to sustain an interruption or reduction in the delivery of water as set forth in this Code.

Section 322.2 based on Res. 7260 – May 12, 1970, amending Res. 3896 – August 18, 1950; amended by M.I. 33642 – March 10, 1981. Section 322.2 repealed and Section 4501 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraphs (a) and (c) amended by M.I. 40865 - June 14, 1994; paragraph (a) amended by M.I. 41468 - June 13, 1995; paragraph (c) amended by M.I. 42278 - February 11, 1997; Paragraph (c) amended by M. I. 44005 - May 17, 2000.

§ 4502. Liability and Indemnification.

Neither the District nor any of its officers, agents, or employees shall be liable for the control, carriage, handling, use, disposal, or distribution of water supplied or delivered by the District to a member public agency after such water has been delivered to such member public agency; nor for claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water beyond the point of such delivery; and the member public agency shall indemnify and hold harmless the District and its officers, agents, and employees from any such damages or claims of damages, and shall reimburse the District for costs of repair of the District's facilities and other damages resulting from the operations of the member public agency. Neither the member public agency nor any of its officers, agents, or employees shall be liable for the control, carriage, handling, use, disposal, or distribution of water prior to such water being delivered to the member public agency; nor for claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water prior to its delivery to such member public agency, excepting, however, claims by the District for costs of repair to the District's facilities and other damages resulting from the operations of the member public agency; and the District shall indemnify and hold harmless the member public agency and its officers, agents, and employees from any such damages or claims of damages, except claims by the District for costs of repair of the District's facilities and other damages resulting from the operations of the member public agency.

Section 322.3 based on Res. 7260 – May 12, 1970, amending Res. 3896 – August 18, 1950; amended by M.I. 33642 – March 10, 1981; amended by M.I. 34826 – August 17, 1983. Section 322.3 repealed and Section 4502 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended by M. I. 44812 - March 12, 2002.

§ 4503. Suspension of Deliveries.

(a) Whenever repairs or maintenance of the District's system, in the opinion of the General Manager of the District, shall require suspension of delivery of water at any point or points, such delivery may be suspended without liability on the part of the District; provided, that except in cases of emergency, as determined by the General Manager, notice of such suspension of service shall be given to the affected member public agency in advance of such suspension. Metropolitan will make a concerted effort to notify and work with member public agencies regarding all scheduled interruptions. The District will schedule non-emergency interruptions for the low demand months of the year, typically October through April, in coordination with the member public agencies.

(b) Each member agency shall have sufficient resources such as local reservoir storage, groundwater production capacity, system interconnections or alternate supply source to sustain:

(1) A seven-day interruption in Metropolitan deliveries from raw and treated water distribution facilities based on average annual demands of the affected facility.

(2) For service connections installed or modified after December 31, 2008 on raw water conveyance facilities, a seven-to twenty-one-day interruption in Metropolitan raw water deliveries based on average annual demand of the affected facility.

If a member public agency has been provided with a sixty (60) day notice of when an interruption in service is to occur, the member public agency shall be responsible for and reimburse direct costs, excluding labor costs, incurred by Metropolitan in the event that a scheduled non-emergency interruption is postponed or cancelled at the request of the member public agency as a result of insufficient local resources, and the District agrees to such cancellation or postponement. Direct costs shall be determined by Metropolitan's General Manager, in consultation with the affected member agency. These direct costs shall be applied to the member public agency's water invoice following cancellation or postponement of the shutdown.

(c) Except in cases of emergency, the District, working with the member agencies, will produce a shutdown schedule each September for the annual shutdown season from October through April. The District will also develop a three-year shutdown schedule, which will give notice of the proposed shutdowns greater than seven days at least one-year in advance.

~~(d) Replenishment Service certifications will be adjusted for the reduction of credits that are accrued due to shutdowns that are greater than seven days. No adjustments will be made for shutdowns seven days or less unless the member agency provides a service to the District by serving another member agency in-lieu of District deliveries during a shutdown even if the shutdown is seven days or less.~~

Section 322.4 based on Res. 7260 – May 12, 1970, amending Res. 3896 – August 18, 1950; amended by M.I. 33642 – March 10, 1981. Section 322.4 repealed and Section 4503 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended by M.I. 42278 - February 11, 1997; paragraph amended by M. I. 44812 - March 12, 2002; paragraph amended by M. I. 45943 – October 12, 2004; paragraphs assigned (a), (b), (c), & (d)

Provisions updated to reflect the actions of the Board of Directors through its 11/18/2014 meeting.

designations and amended by M. I. 45988 – November 9, 2004; paragraph (b) amended, (b)(1) and (2) added by M. I. 47730 - December 9, 2008.

§ 4504. Rates of Flow.

(a) Within any 24-hour period, changes in rate of flow through any service connection serving a member public agency will be limited to ten (10) percent above and below the previous 24-hour average rate of flow except when a specific request for a change in rate that would exceed such limitations has been made to the District; such requests (1) shall be made at least 6 hours in advance of the time such change is to be made; (2) shall be approved by the General Manager only if in his judgment the change would not adversely affect the District's ability to apportion available water equitably. The General Manager is hereby authorized to reduce the maximum obtainable rate of flow at any service connection where this regulation is being violated and in the event the capacity of the distribution system is insufficient to accommodate the above mentioned daily fluctuations in delivery rate, the General Manager shall regulate the rates of flow at any or all service connections so as to assure equitable service to all agencies. However, the District will endeavor to meet all reasonable demands for service so long as comparable service can be provided to all member public agencies being served from a related section of the District's distribution system.

(b) When flow through a service connection serving a member public agency is reduced below ten (10) percent of the requested or actual maximum design capacity of the meter, whichever is less, at that connection during a period when the service connection turnout valve is in the open position, the member public agency will be charged as though a flow equaling ten (10) percent of the capacity of such meter were being delivered, as determined by the General Manager, unless the District has been advised by the member public agency that no deliveries are required at that connection for a specified period. This Section 4504(b) shall not apply to those service connections which are not connected to pressure pipelines of the District or to those service connections being operated intermittently in a manner determined by the General Manager to be of benefit to the District under conditions such that when flow does occur at these service connections it exceeds ten (10) percent of the meter capacity. The General Manager shall have the power to waive the requirements of this Section 4504(b), with respect to any meter where the agency served by the meter is doing everything within its capability, as determined by the General Manager, to adjust its facilities and operations so as to be able to take delivery at rates of flow not less than ten (10) percent of the requested or actual maximum design capacity of the meter, whichever is less, at that connection during a period when the service connection turnout valve is in the open position.

(c) When flow through a service connection serving a member public agency is increased above the actual maximum design capacity of the meter, the member public agency will be charged as though a flow equaling one hundred and twenty-five (125) percent of the capacity of such meter were being delivered, as determined by the General Manager.

(d) The General Manager shall have the power to waive the provisions of Sections 4504(a), 4504(b) and 4504(c) for a specified period with respect to any service connection if in his judgment such a waiver will serve to accomplish the current objectives of the District and

will not adversely affect the operation of the District's distribution system or impair its ability to provide service to all member public agencies.

Paragraph (b) [formerly Section 322.5.2] based on Res. 7241 - February 10, 1970 and Res. 7260 - May 12,1970; paragraph (a) [formerly Section 322.5.1] based on Res. 7260 - May 12, 1970 amending Res. 3896 - August 18, 1981; paragraph (c) [formerly Section 322.5.3] added by M.I. 31817 - June 14, 1977; section amended by M.I. 33642 - March 10, 1981. Section 322.5 repealed and Section 4504 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; paragraph (a) amended, paragraph (c) added and paragraph (d) renumbered and amended by M.I. 42278 - February 11, 1997.

§ 4505. Estimates of Water Requirements and Schedules of Deliveries.

(a) General. - Before ~~April~~ July 1 of each year, each member public agency shall furnish the District, in form provided by the District, with an estimate of the amounts of water to be furnished to such member public agency by the District. These estimates will be used by the District in planning the construction needed to complete the District's ultimate aqueduct and distribution system; in planning the future operation of such system; and in preparing notices for submission to the State Department of Water Resources which will be used by the State to order power for pumping on the State Water Project.

(b) Contents of Estimates

(1) Each estimate furnished by a member public agency pursuant to Section 4505(a) shall contain, as a minimum, for each service connection and for each month of the year beginning with the succeeding July 1, and for the entire member public agency for each month of the succeeding four years, the following information:

(i) The quantity of water to be delivered by Metropolitan to the member public agency in full service.

~~(ii) The quantity of water to be delivered by Metropolitan to the member public agency in Interim Agricultural Water Program service.~~

(ii~~i~~) With regard to water estimated to be delivered in full service, the quantity of water to be used for seawater barrier groundwater replenishment.

(~~iv~~iii) With regard to water estimated to be delivered in ~~for replenishment~~full service, the quantity of water to be used for:

(aa) ~~In-Lieu Groundwater, Replenishment exclusive of groundwater replenishment by spreading or injecting; and~~groundwater replenishment,

~~(bb) Groundwater replenishment by spreading or injecting.~~

(~~cc~~bb) ~~Direct Reservoir Replenishment.~~reservoir replenishment

~~(dd) In-Lieu Reservoir Replenishment~~

(2) The estimate shall constitute the member public agency's request for deliveries for the first of the five years covered therein.

Section 322.6 based on Res. 7260 – May 12, 1970; amended and paragraph (b) [formerly Section 322.6.2] added by M.I. 33642 – March 10, 1981] effective July 1, 1981; paragraph (a) [formerly Section 322.6.1] amended by M.I. 36374 - November 18, 1986. Sections 322.6.1 and 322.6.2 repealed and Section 4505 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraph (b)(iii) added and previous paragraph (b)(iii) renumbered to (b)(iv) and amended by M.I. 37764 - July 11, 1989; paragraphs (b)(1)(ii) and (iv) amended and subparagraph (cc) repealed by M.I. 40865 - June 14, 1994; paragraph (a) amended by M.I. 41468 - June 13, 1995; paragraphs (a) and (b)(1) amended by M.I. 42278 - February 11, 1997; Paragraphs ((b) (1) (ii), (iii); (aa), and (bb) amended by M I. 44005 - May 17, 2000; sub-paragraph(aa) amended by M. I. 44812 - March 12, 2002; sub-paragraph (iii) deleted and renumbered, sub paragraphs (aa) and (cc) amended, and (dd) added by M. I. 45249 - March 11, 2003.

§ 4506. Metering of Water.

All water delivered by the District shall be metered. Meter readings shall be made on or about the last day of each calendar month for billing purposes. Meters and control valves on water lines of the District shall be owned and operated by the District. Any member public agency may have any meter through which water is served from the District's facilities to any area within such member public agency tested by the District at any time. Any member public agency affected shall have the right to be represented by a qualified observer at and during any such tests. In the event that any such test shall disclose an error exceeding 2 percent, an adjustment shall be made in charges made to the affected member public agency, covering the known or estimated period of duration of such error, but in no event exceeding six months, and the expenses of such test shall be borne by the District; otherwise, such expense shall be borne by the member public agency requesting such test.

Section 322.7 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.7 repealed and Section 4506 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4507. Billing and Payment for Water Deliveries.

(a) **Timeframe for Billing and Payment.** Except as noted herein below, invoices shall be mailed electronically, or, if requested by the member agency, by hardcopy via United States mail, not later than the tenth day of the month following delivery to a member public agency. Each such invoice shall indicate the date of mailing and the date on which the payment thereunder becomes delinquent and shall show the total amount of water delivered for each class of service, the charges for water sold and delivered for each class, the readiness-to-serve and capacity charges, as applicable, and the total amount due and owing, all as determined by the General Manager. Payment of the amount shown on any such invoice shall be due on the last business day of that month and shall be delinquent if not received by the Treasurer of the District before the close of crediting activity on the last business day of the first month following such date of mailing. When making any such payment the member public agency shall specify the invoice or invoices to which the payment shall be credited by the District.

(1) For purposes of Section 4507(a), "business day" shall mean any day other than a Saturday, a Sunday, or a Holiday (as defined in Section 1106).

(2) For purposes of Section 4507(a), "received by the Treasurer of the District" shall mean receipt either (1) in the office of the Treasurer or (2) by crediting pursuant to advance agreement with the Treasurer to the District's general demand account at the District's principal depository bank, in such form that the funds are immediately available for investment or other use or disposal by the District.

(3) For purposes of Section 4507(a), "crediting activity" shall mean either (1) 2:00 p.m. if payment is delivered to the office of the Treasurer, or (2) the cutoff time for crediting by the District's principal depository bank of that day's transactions if payment is initiated by wire transfer, automated clearinghouse transfer, interbranch transfer, direct deposit, or by other means pursuant to advance agreement with the Treasurer.

If, under advance agreement with the Treasurer, a member agency has authorized payment of any invoice by automated clearinghouse transfer initiated by the Treasurer, the Treasurer shall initiate such transfer for processing two business days prior to the business day on which such payment shall be delinquent. Failure of such transfer shall not relieve such member agency from liability for such payment or charges in the event such payment should become delinquent, except as specifically provided under advance agreement with the Treasurer.

~~(b) **Exclusive Interim Agricultural Water Program Facility.** In the event water delivered by the District through a particular facility is used exclusively for Interim Agricultural Water Program purposes and the member public agency desires to be charged therefor at the rates for water sold and delivered for Interim Agricultural Water Service provided in Section 4401, a statement relating the facts concerning the use of water delivered through each such facility must be certified to the District in writing by a responsible officer of the member public agency at least 30 days prior to the end of each one-month period during which such deliveries are made. In cases where such use of all water delivered through a particular facility will remain the same for an extended period the initial or current certification will remain in effect until the use of the water from a certified exclusive use service connection changes. At that time a new statement relating the facts concerning the use must be re-certified to the District within 30 days.~~

~~(c) **Full Service and Interim Agricultural Water Program Facility.** In cases where water through a particular facility is delivered during any month for both full service and Interim Agricultural Water Service, the bill for water delivered in such month will be prepared by applying the rates for water sold and delivered in full service to the total quantity of water delivered. If the member public agency desires to receive credit for such water so delivered as was used in Interim Agricultural Water Service the facts concerning the quantities of water so used must be certified to the District via the District's electronic certification and billing system by an authorized user for the member public agency purchasing such water as set forth in Sections 4507(f) and (g), and each such certification shall cover a period of not more than one calendar month. The value of such credits shall be based on the difference in water rates in effect at the time the water is used, regardless of the date of delivery.~~

~~(d) **Exclusive Direct Groundwater Replenishment Facility.** In the event water delivered by the District through a particular facility is used exclusively for direct groundwater replenishment through spreading the member public agency shall be charged therefore at the rates for water sold and delivered for Replenishment Service as set forth in Section 4401, when Replenishment Service water is available as determined by the General Manager. When Replenishment Service is not available, the member public agency shall be charged at the rates for water sold and delivered set forth in Section 4401(a) (1).~~

(~~e~~b) **Full Service~~, Interim Agricultural Water Program,~~ and Emergency Storage Program~~, and Replenishment Water~~ Facility.** In cases where water through a particular facility is delivered during any month for full service or ~~Interim Agricultural Water Service or both, and for~~ Emergency Storage Program Service ~~or Replenishment Service~~, the bill for water delivered in such month will be prepared by applying the rates for water sold and delivered in full service to the total quantity of water delivered. ~~In addition to the procedures for crediting Interim Agricultural Water Program Service, i~~If the member public agency desires to receive credit for water used in Emergency Storage Program Service, ~~or Replenishment Service~~ the facts concerning the quantities of water so used must be certified to the District via the District's electronic certification and billing system by an authorized user for the member public agency purchasing such water as provided for in Section 4507 (~~f~~c) ~~and (h)~~. The amount of such credits shall be based on the difference in water rates in effect at the time the water is used.

(~~f~~c) **Late Certifications.** Based on available information, the District will notify a member agency for any certification that it has not received, if known, three months from the end of the month for which the agency would normally certify. No certification received after six months following the end of any month in which such a credit is claimed will be accepted. Certifications must be received by Metropolitan before 3:30 p.m. on the third working day after the end of the month to receive credit for any preceding month on the next bill, subject to the provisions with respect to late certifications in this Section. This Section applies to all cases where a certification is required to receive a credit, whether or not specifically named in this Section, unless otherwise provided by this Code.

~~(g) **Late Agricultural Certifications During an Interim Agricultural Water Program Reduction Period.** Certifications for Interim Agricultural Water Program use during a reduction period will be considered late if not received within three months of the month being certified. The Member Agency will be assessed a $10,000 penalty for each month that a certification, or multiple certifications for the same month, are turned in after the three-month deadline.~~

~~(h) **Ratio of Water Use for Full Service and Interim Agricultural Water Program Service.** In the event water is delivered by the District into facilities into which water from other sources also is delivered, and the combined waters are used for Interim Agricultural Water Program Service and for full service, then the quantity of water for which the member public agency shall, upon filing the required certifications of usage, be charged at the rates charged for water sold and delivered in Interim Agricultural Water Program Service during any month shall be a ratio equal to (1) the total District Full Service supply to the participating agency's system divided by (2) the total quantity of combined waters supplied for all purposes during such~~

~~month. This ratio shall be applied to total agricultural use which is intended for participation in the Interim Agricultural Water Program. This ratio will also be applied to system gains, losses and differences because of timing of meter readings attributable to Interim Agricultural Water Program use and in accordance with Section 4501 (c) of this Code.~~

~~(i) **Provisions Regarding the Sale, Delivery, and Use of Interim Agricultural Water Program Water.** In order for any member public agency to be charged at the rate charged for water sold and delivered in Interim Agricultural Water Program Service, such member public agency shall be subject to and shall observe the following provisions regarding the sale, delivery, and use of such water:~~

~~(1) All water sold for use for Interim Agricultural Water Program Service shall be metered, either at the District's meter where all downstream water deliveries are exclusively for Interim Agricultural Water Program purposes, or at the point where the downstream section of an agency's distribution system is used exclusively to deliver water for Interim Agricultural Program Water service, or at the point of delivery to the Interim Agricultural Program Water user.~~

~~(2) When the water delivered to a final user through a single meter is used for Interim Agricultural Water Program Service and incidental domestic uses related to residency, such final user shall be charged for, and the Interim Agricultural Water Program certification submitted to the District shall reflect, at least .06 acre-feet of water per month per single family dwelling as water sold and delivered in full service, and the balance as water used for Interim Agricultural Water Program Service. If a higher constant than .06 acre-feet is used under the retail rate structure, the certification shall reflect that higher constant.~~

~~(3) All certifications as to the Interim Agricultural Water Program use of District supplied water must be on forms provided by the District and be accompanied by data and calculations reflecting the method used in determining the quantities certified.~~

~~In the absence of the submission of certifications reciting the facts concerning the usage of water for Interim Agricultural Water Program Service, and stating that such usage was in conformity with the provisions described herein, it shall be conclusively presumed that the water was used for full service, and the District's billing shall be on this basis as provided in Section 4507 (f) and (g).~~

(~~j~~d) **Determination by General Manager as to Type of Delivery.** In the event the respective quantities of water sold and delivered in any month on order of any member public agency for use therein in ~~Interim Agricultural Water Program Service, Emergency Storage Program Service, Replenishment Service, or~~ any ~~other~~ water program or contract requiring certification, ~~-~~are not determinable to the satisfaction of the General Manager in time for preparing regular monthly bills, then billing and payment for all water sold and delivered in such month to such member public agency shall be made at the rates prescribed for water used in full service in Section 4401(a)(1) hereof. Upon the determination by the General Manager of the correct quantities of water sold and delivered and used in ~~Interim Agricultural Water Program Service, Emergency Storage Program Service, Replenishment Service, or~~ any ~~other~~ water

program or contract requiring certification, any adjustment which is necessary to give effect to the ~~reduced rates~~ applicable credit ~~to~~ for the water used in ~~Interim Agricultural Water Program Service, Emergency Storage Program Service, Replenishment Service, or~~ any ~~other~~ water program or contract requiring certification, ~~-~~shall be made by application of credits on subsequent purchases of water from the District by such member public agency. Such adjustments shall not be made in cases where a claim for the ~~reduced rates~~applicable credit is not submitted within the period provided in Section 4507(~~f~~c) ~~and (g)~~.

(~~k~~e) **Obligation to Pay for Appropriate Class of Service.** If water has been sold and delivered at the rates prescribed for water sold in ~~Interim Agricultural Water Program Service, Emergency Storage Program Service, Replenishment Service, or other~~ any water program or contract, and appropriate certifications have been submitted for the water so used, but the water has in fact been used in full service or another class of service, the member public agency shall be obligated to pay the difference between the rates prescribed for water sold for ~~Interim Agricultural Water Service, Emergency Storage Program Service, Replenishment Service, or other~~the applicable water program or contract and the rates prescribed for the class of service actually used.

(~~l~~f) **Submission of Documentation by Member Agency.** With respect to water sold and delivered at the rates prescribed for water sold under water programs or contract (unless otherwise specified in an agreement with the District~~, and excluding Interim Agricultural Water Program Service, which shall be documented as provided in Section 4902, and Replenishment Service, which shall follow the provisions outlined in its Handbook~~), original documentation supporting the use of such water as certified must be submitted no later than December 31 following the end of the fiscal year for which a certification is submitted, unless otherwise specified in an agreement with the District. If the documentation is not submitted by December 31 following the end of the fiscal year for which a certification was submitted, an agency will receive a late penalty of $2,500. If the agency does not submit documentation by February 28/29 following the end of the fiscal year for which a certification was submitted, it shall be conclusively presumed that:

(1) The water sold from the District was used for full service, and the District's next monthly billing shall reflect such adjustment; or

(2) The yield was not produced as certified and the District's next monthly billing shall reflect such adjustment.

This provision will apply individually to each program or agreement that an agency or sub-agency participates in separately.

(~~m~~g) **Review Process.** With respect to water sold and delivered at the rates prescribed for water sold under water programs or contract (unless otherwise specified in an agreement with the District~~, and excluding Interim Agricultural Water Program Service, which shall be reviewed as provided in Section 4902, and Replenishment Service, which shall follow the provisions outlined in its Handbook~~) the District will complete its review within twelve months from date of receipt of the original supporting documentation.

(1) Should the District not complete its review within twelve months of the submittal of all source documentation, the review will be considered complete and the certifications final.

(2) When the review is completed, the District will notify the member agency of its initial findings for its comments. The member agency will provide its comments within 60 days. Metropolitan staff and the agency will work together to reconcile any differences.

(3) If the member agency and Metropolitan staff cannot reconcile the differences, Metropolitan's Water System Operations' Group Manager has the responsibility to consult with the member agency and make a final ruling, subject to the General Manager's oversight. If the ruling is unsatisfactory to the agency, it can be appealed to Metropolitan's Finance and Insurance Committee.

(4) If the member agency does not provide further documentation correcting Metropolitan staff findings within the 60 day comment period as specified in (~~m~~g) (2), then it shall be conclusively presumed that the District's findings are correct and the District's next monthly billing shall reflect such adjustment.

(~~n~~h) **Discovery of Mistakes or Errors.** In the event a mistake or error is discovered in a District water sales record, the General Manager shall initiate appropriate corrective action. No mistake or error made more than three years prior to its discovery shall be corrected unless otherwise specified in an agreement with the District. In the event a mistake or error is discovered by a member agency in its water sales record or certifications, no mistake or error made more than three years prior to its discovery shall be corrected unless otherwise specified in an agreement with the District.

(1) A District water sales record shall include a water billing invoice, or district invoice for other water-related charges.

(2) If the District finds the mistake or error, the discovery of the mistake or error shall be documented in writing to the member agency. The date of discovery for corrective action purposes shall be the date notice is sent to the member agency.

(3) If the member agency discovers the mistake or error, the discovery of the mistake or error shall be documented in writing to the District by either a revised certification form or letter, whichever is applicable. The date of discovery for corrective action purposes shall be the date the certification or letter is received by the District.

(4) If an incorrect invoice has been issued to a member public agency, the General Manager shall notify the affected agency of any adjustment and the manner of making any required credit or charge, neither of which shall bear interest.

(5) Mistakes or errors shall also include but are not limited to mistakes or errors in metering or recording deliveries to member agencies, entry or calculation errors in fixed

charges, discovery of errors in either a member agency or sub-agency submitted certification(s), or processing of a certification(s) for the Local Projects Program, the Local Resources Program, the Groundwater Recovery Program, Conservation Credit Program, ~~Interim Agricultural Water Program, Replenishment Service Program,~~ or any other water management program or storage programs or agreements unless specified otherwise in the contract.

(6) Any mistakes or error for a fiscal year period that is less than five acre-feet cumulative by agency or sub-agency, by program or agreement, shall be waived.

(~~o~~i) **Rate Change.** In the event that deliveries of water are made by the District to member public agencies over a billing period during which the District's water rates change, the General Manager may cause the meters recording deliveries of water during such period to be read at the end of the period and the statement of charges for such deliveries of water may be based on a proration between the previous and new water rates for the periods of time during which each were in effect as determined by the General Manager.

Section 322.8 based on Res. 7291 – October 13,1970; amended, paragraphs (c) through (h) [formerly Sections 322.8.3 through 322.8.8] added, and paragraph (i) [formerly Section 312.9] amended and renumbered by M.I. 33642 – March 10, 1981; paragraphs (c) and (f)(2) amended by M.I. 33691 – April 14, 1981; paragraph (a) [formerly Section 322.8.1] amended and paragraphs (a)(1) through (a)(3) added by M.I. 34215 – May 11, 1982; paragraph (d) amended by M.I. 35430 – December 11, 1984; paragraph (a) amended by M.I. 36374 - November 18, 1986. Section 322.8 repealed and Section 4507 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraph (a) amended by M.I. 37271 - August 23, 1988; amended by M.I. 37764 - July 11, 1989; paragraph (c) amended by M.I. 39082 - July 9, 1991; paragraph (f) amended by M.I. 40389 - August 24, 1993; paragraphs (a), (a)(2) and (3) amended by M.I. 40463 - September 21, 1993; paragraphs (c), (d), (f) through (i)(1) and (2) and (j), (k) and (l) amended by M.I. 40865 - June 14, 1994; paragraph (a) amended by M.I. 41468 - June 13, 1995; paragraphs (e) and (f) amended by M.I.41617 - October 10, 1995; paragraphs (a), (b), (d)-(m) amended by M.I. 42278 - February 11, 1997; Titles added to paragraphs (a)-(n), original paragraphs (b)-(l) renumbered and amended, new paragraphs (k)-(m) (1)-(6) added, and paragraph (m) amended and (m) (1)-(6) added by M. I. 44005 - May 17, 2000; paragraph (l)(3) amended by M.I. 44582 – August 20, 2001; paragraphs (a) and (f) amended and new paragraph (o) added by M. I. 44812 - March 12, 2002; paragraphs (a), (d), (e), (i), (j), (k), (l), (m)(5) amended by M. I. 45249 - March 11, 2003; paragraphs (e), (i), and (j) amended by M.I. 45941 – October 12, 2004; paragraph (a) amended by M. I. 46148 - March 8, 2005; paragraph (l)(3) amended by M. I. 46983 - February 13, 2007; paragraphs (c), (i)(3), (j) amended, paragraph (g) added and renumbered by M. I. 47259 - October 9, 2007; paragraphs (l), (m), (n)(1)-(6), (o), (p) amended by M.I. 47672 – October 14, 2008; paragraphs (c), (e), (i)(3), (j) amended by M.I. 47998 - August 18, 2009; paragraph (3) amended by M.I. 48534 - January 11, 2011; deleted paragraph (p) by M.I. 49952 - November 18, 2014.

§ 4508. Additional Payment and Reporting in the Event of Delinquency in Payment for Water.

In the event any member public agency shall be delinquent in the payment for water delivered and other charges as invoiced by the District, an additional charge equal to two (2) percent of such delinquent payment for each month or portion thereof that such payment remains delinquent shall be assessed, and the member public agency shall pay such charge to the District in addition to the amount of such delinquent payment. Notwithstanding the above, if the total period of delinquency does not exceed five (5) business days, the additional charge shall be equal to one (1) percent of such delinquent payment. Invoices for delinquencies including additional charges shall be mailed not later than the tenth day of each month. In the event any member public agency shall be delinquent for more than thirty (30) days in the payment for water, such delinquency shall be reported by the General Manager to the Board of Directors of

the District at its next meeting. The Board, in its discretion and upon such other conditions as it may prescribe after giving the member public agency a reasonable opportunity to be heard, may order the termination of service to such member public agency until all delinquent payments, including additional charges, are made to the District or may authorize such other actions as may be legally available to effectuate collection.

Section 322.9 based on Res. 7291 - October 13, 1970; amended by M.I. 33642 - March 10, 1981; amended by M.I. 34215 - May 11, 1982 effective July 1, 1982. Section 322.9 repealed and Section 4508 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41468 - June 13, 1995.

§ 4509. Water Restricted to Use Within the District.

In order to insure that water served by the District is not used for the direct or indirect benefit of areas outside the District, the amount of water served by the District's facilities that shall be made available to any member public agency shall be limited to an amount equal to that required for uses within the area of the District lying within, or served by or through, such member public agency. No area lying outside the boundaries of the District shall be served with water from the District's facilities, except as service to such area may, when found to be such by the Board, be a reasonably unavoidable incident to the service of such water within the District, and under such circumstances the amount of water served by the District that shall be made available to any member public agency shall be limited to an amount equal to that required for uses within the area of the District lying within, or served by or through, such member public agency. Any question of fact involved in the application of this Section 4509 shall be finally determined by the Board, after giving the member public agency concerned adequate opportunity to present pertinent factual evidence and the views of such member public agency.

Section 312.10 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.10 repealed and Section 4509 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4510. Application of Regulations.

The provisions hereof shall not be applicable to service of water to the United States of America, or to any board, department or agency thereof, to the State of California, or to the service of surplus water under contract made in accordance with statute, but such service shall be controlled by the applicable contract.

Section 312.11 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.11 repealed and Section 4510 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4511. Notices.

All notices and communications from member public agencies of the District, relating to the service of water or the administration of these regulations by the District, shall be addressed to the General Manager, Post Office Box 54153, Los Angeles, California 90054.

Section 312.12 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.12 repealed and Section 4511 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4512. Sales Subject to System and Water Availability.

~~All sales and deliveries of water at the rates established by Section 4401 shall be subject to the ability of the District to sell and deliver such water under operating conditions determined by the General Manager, and, to the extent not inconsistent herewith, shall be subject to the provisions of this chapter, and Chapter 9.~~

~~With respect to water delivered for groundwater replenishment purposes, deliveries of such water may be made at the General Manager's discretion when water and system capacity are considered available for same.~~

The District will endeavor to satisfy all requests for water sales and deliveries made by the member public agencies. Deliveries shall be subject to operational, supply or demand conditions, as determined by the General Manager. The District will develop annual operating plans in coordination with member public agencies. The annual operating plans shall be developed to meet requested deliveries under anticipated conditions. In the event of adjustments to deliveries due to changes in planned operations or in supply or demand conditions, the District and the member public agencies will communicate and coordinate operations.

M.I. 36811 - September 22, 1987; amended by M.I. 40865 - June 14, 1994; amended by M.I. 42278 - February 11, 1997.

§ 4513. Equal Opportunity Requirements.

Pursuant to contract between agencies of the United States and the District, any delivery of water by the District to a member public agency shall be subject to the following provisions. For the purposes of these provisions only, the member public agency is therein referred to as "Contractor."

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Federal Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without discrimination because of race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a

notice, to be provided by the Federal Contracting Officer, advising said labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order 11246 of September 24, 1965, as amended, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by said amended Executive Order and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Federal Contracting Officer and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further Federal Government contracts in accordance with procedures authorized in said amended Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said amended Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of said amended Executive Order, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

M.I. 36781 - August 18, 1987.

§ 4514. [Repealed]~~Replenishment Service~~.

~~(a) General - The goals of the Replenishment Service program are to:~~

~~1. Achieve greater conjunctive use of imported and local supplies.~~

~~2. Encourage construction of additional local production facilities.~~

~~3. Reduce member agencies' dependence on deliveries from Metropolitan during periods of shortage.~~

~~Member agencies are encouraged to take replenishment water through a discounted rate offered by Metropolitan. This economic incentive encourages local agencies to invest in new water production, storage, treatment and transmission facilities, or to fully utilize existing facilities. These facilities are needed to augment local agencies' capability to produce local water, as well as store imported water purchased from Metropolitan during periods of abundance.~~

~~To receive the lower rates, agencies must certify to Metropolitan the amounts of imported water that they have stored in local reservoirs and groundwater basins by direct and in-lieu means. Certification forms are provided to agencies to assist in their calculations and standardize the certifications. Agencies shall comply with the administrative procedures as set forth in the most current Replenishment Service Handbook, as amended from time to time by the General Manager, to receive the Replenishment Service rate on water purchased from Metropolitan.~~

~~(b) Storage Types - Replenishment Service water shall be stored for long-term storage. Long-term storage is that water delivered by Metropolitan to a member public agency or sub-agency for storage, by direct or in-lieu methods, beyond a 12-month period. Under this concept, total annual purchases from Metropolitan increase by the amount of Replenishment Service water purchased. Water that an agency leaves in storage to replace groundwater overdraft in any previous drought year when Replenishment Service was declared unavailable is considered long-term storage.~~

~~(c) Normal Period of Availability – Replenishment Service water service shall be available between July 1 through June 30 whenever and so long as the General Manager determines that water and system capacity are available. If required for Metropolitan's system regulation, groundwater replenishment by spreading or injecting or water deliveries/sales pursuant to any storage or operating agreement, may be offered to specific member public agencies during any time of the year at the Replenishment Service rate at the General Manager's discretion. If an agency should take Replenishment Service water when it is deemed not available by the General Manager then it shall pay the rates for that water set forth in Section 4401(a)(1). With respect to service for direct reservoir replenishment and for groundwater replenishment by spreading or injecting, service availability may be activated or terminated immediately upon notice by the General Manager to affected member public agencies. With respect to service for in-lieu groundwater replenishment or in-lieu reservoir replenishment, service availability may be activated upon notice to the member public agencies and terminated upon 48 hours notice to the member public agencies.~~

~~(d) Certification - Member public agencies may receive Replenishment Service only upon filing of the required certifications specified in Section 4507. All certifications as to the storage of water Replenishment Service must be on forms provided by the District or in electronic format acceptable to the District and provided to the District via the District's electronic certification and billing system by an authorized user. Receipt of a certification shall be considered identical to receipt of a written and signed certification binding on the member public agency for all purposes. The General Manager may make or cause to be made such~~

~~investigations as the General Manager may require in order to determine the quantities of water to which the Replenishment Service rates shall apply. Such investigations may result in revisions either upward or downward in the amount of water actually received in Replenishment Service. No such investigation shall be made unless the member public agency has requested Replenishment Service and submitted the requisite certifications. The General Manager may reject any certification if the certifying agency is unable to furnish sufficient documentation as to the facts of the certification.~~

~~(e) Termination – Replenishment Service will be eliminated after December 31, 2012.~~

~~M.I. 37006 - February 9, 1988; paragraph (a) amended by M.I. 37566 - March 14, 1989; rewritten by M.I. 37764 - July 11, 1989; amended by M.I. 40389 - August 24, 1993; amended by M.I. 41617 - October 10, 1995; ; paragraphs (a) & (c) amended by M.I. 42109 - October 8, 1996; paragraphs (c) and (d) amended by M.I. 42278 - February 11, 1997; paragraphs (a), (b) and (c) amended, sub-paragraph (b) (1) deleted, and sub-paragraph (b) (2) combined with paragraph (b) by M. I. 44812 - March 12, 2002; paragraphs (a)(3), (b), (c), (d) amended by M.I. 45249 - March 11, 2003; paragraph (c) amended by M.I.45943 - October 12, 2004; paragraph (d) amended by M.I. 47998 - August 18, 2009; paragraph (e) added by M.I. 49272 - December 11, 2012.~~

[§ 4515 - M.I. 38295 - June 12, 1990; repealed by M.I. 41468 - June 13, 1995.]

[§ 4516 – M. I. 40969 – August 19, 1994; repealed by M. I.44812 - March 12, 2002.]

§ 4517. Cooperative Storage Program.

(a) The Cooperative Storage Program that provides a means for coordinating storage capacity available to the District's member public agencies, with the District's annual carryover storage needs as those needs are determined under Subsection 4206(c). The purpose of the Program is to place additional amounts of imported water in local storage to improve regional water supply reliability within the District's service area, in a manner that will recognize local costs and risks of participating in the program, but will not adversely impact either the District's finances or the member public agencies' ability to participate in the Replenishment Service Program.

(b) Storage Allocation - The General Manager shall allocate needed storage by reservoir and by groundwater basin to optimize the availability and usefulness of the storage to the District; and shall administer the Program so that, in any fiscal year, Program water in storage shall be accessible to offset demands on the District that year by the participating member public agency pursuant to subsection (h).

(c) Availability of Water for Storage - The General Manager may make water available during the period May 1 through September 30, for storage under the Cooperative Storage Program, upon notice to the respective participating member public agency, subject to a determination that the storage will increase the District's ability to receive imported water supplies.

(d) Application for Participation - Member public agencies may apply for participation in the Cooperative Storage Program by filing a written application containing at least the following:

(1) A verified statement that the member public agency will comply with the requirements of this section.

(2) A water supply and demand estimate based on historical data to ensure that:

(i) The agency's participation in the Program will not offset its firm purchases of water from the District, and

(ii) The agency will store additional imported District water.

(iii)The estimate may be updated if conditions change, provided the updating is first agreed to in writing by the agency and the District.

(3) A proposal for placing water provided by the District under this Program in storage available to the member public agency, and for administering that storage pursuant to this Section.

(4) An estimate of any expected losses of Program water while that water is in the proposed storage, and the method of estimating those losses.

(5) Evidence of compliance with the California Environmental Quality Act prior to delivery of imported water for placement in Program storage.

(6) If more than one member public agency overlies a common groundwater basin, the overlying member public agencies may file a joint application, with each such agency providing a separate water supply and demand estimate for its respective service area pursuant to subsection (d)(2) and any other separate information the General Manager may require.

(e) Approval for Participation - The General Manager shall approve an application for participation in the Program upon determination that it is consistent with the requirements of this section. The General Manager shall approve the application in writing which shall include a monthly estimate of total demand, water purchased from Metropolitan, available local supplies, and the maximum quantity of District water which shall qualify for storage under the Program, and those figures shall be approved by signature of a duly authorized representative of the participating member public agency prior to storage of water under the Program. Any later modification to said figures must be approved by both parties in writing. The application of any modification shall not be effective until approved in writing. The District shall conduct end-of-the-year verifications of stored water.

(f) Storing Process

(1) The District will deliver at its cost, available imported water to the respective participating member public agency at its appropriate District service connection, for Program storage by direct or in-lieu methods, following verbal or electronic acceptance by that agency. This delivery shall be deemed to be a Cooperative Storage Program sale by the

District to the member public agency as defined in Section 4118, subject to the payment requirements of subsection (i) and (j) of this Section.

(2) The agency will, at its cost, cause the water to be placed in storage in a manner that meets all applicable storage requirements; and shall warrant that the stored water shall not be withdrawn or used until after the District releases the stored water pursuant to this Section.

(3) Program water delivered to a member public agency shall not offset a firm water sale of District Water by that agency. If a participating member public agency's firm water purchases from the District on a monthly basis during the May through September period are less than the District's firm water sales on a monthly basis during the same period in any one of the last five years, the agency must clearly demonstrate to the District, in writing, that such reduction occurred due to the availability of unexpected local water supplies. Any resulting change in the baseline established pursuant to Subsection (e) shall be approved in writing by the General Manager prior to becoming effective. Should the agency fail to make the required demonstration, the District shall bill the agency at the firm water rate for that portion of Cooperative Storage water delivered which will bring the firm water sales up to the agreed base amount of firm water for the month(s) in question.

(g) Storage Accounting

(1) Each participating member public agency shall maintain a Program storage account for Program water it stores, which shall account for monthly deliveries, releases, and storage losses approved by the District, if any, and other information which the General Manager shall deem necessary.

(2) The District shall bear reasonable and equitable losses of stored water provided that the General Manager approves the respective member public agency's justification of the loss criteria prior to placement of water into storage and shall consider those losses in allocating Program storage. Otherwise the District shall not bear any loss of stored water.

(3) Water stored under this Program shall be stored by a participating agency in such a manner as to assure that such water can be produced by that agency when released by Metropolitan. Program water delivered to a member public agency for storage shall be considered local water produced in that year for purposes of Replenishment Service.

(h) Release of Stored Water - The General Manager shall release stored Program water to the participating member public agency in which it is stored under the following criteria:

(1) Water Delivered to Storage Prior to 1995

(i) In an fiscal year when Replenishment Service deliveries are available, the General Manager may release, up to half of the Program water stored by the respective member public agency, in place of the agency's request for delivery of Replenishment

Service through the District's distribution system, except for conditions described in provisions (iv) and (v) of this subsection;

(ii) In a fiscal year in which Replenishment Service or Full Service deliveries have been suspended, the General Manager shall release, and the participating member public agency shall accept, up to half of the Program water stored by the respective public agency, to the extent the agency requests that release, except for conditions described in provisions (iv) and (v) of this subsection;

(iii) During an emergency such as an earthquake, when District water service is interrupted, the General Manager shall release up to all stored Program water stored by the respective member public agency, to the extent of the interruption in water service and that the agency requests that release;

(iv) When the Program water stored by the respective member public agency is less that ten percent of the agency's average annual purchase of Replenishment Service, whichever is applicable, deliveries for the prior four years, the General Manager may release all of the Program water stored by the agency;

(v) In any fiscal year during which a participating member public agency's Replenishment Service or Program water release request is less than its average annual purchase of Seasonal Storage Service or Replenishment Service, whichever is applicable, of the prior four years, the General Manager may release the Program water stored by the respective member public agency in combination with Replenishment Service sales up to the agency's four-year average Seasonal Storage Service or Replenishment Service purchase. The District shall not release more than half of the Program water stored by the respective member public agency for this purpose and shall provide the agency with a 90-day advance notice of the release.

(2) Water Delivered to Storage After 1994

(i) The General Manager may release in a fiscal year up to one-third of the total amount of Program water placed in storage by a respective member public agency in place of that agency’s request for delivery of water from the District’s distribution system or for Replenishment Service, in order to fill Diamond Valley Lake, meet operational requirements, or reduce or eliminate shortages. Program water used to reduce or eliminate shortages, or for operational requirements may be released during any ten months selected by the General Manager during a twelve-month period from the time of release. Program Water may be released at any time in place of the agency’s request for Replenishment Service.

(ii) Upon release of Program water by District, the participating member agency shall furnish to District, within 60 days, water supply and demand data based on historical information sufficient to document that it has produced the amount of Program water released to it.

(iii) The General Manager shall release stored Program water to the respective member public agency no later than ten years after delivering it to that agency for storage.

(iv) If a member public agency receives delivery of Program water for storage after 1994, any Program water that agency has stored in previous years shall also be subject to the release provisions of this Subsection (h)(2).

(v) Participating Member Public Agencies may transfer Program water they have placed into storage under the Program into other long-term water storage programs the District may develop as part of its Integrated Resource Plan under mutually agreeable transfer terms, executed in writing by both parties.

(i) Payment

(1) The participating member public agency shall pay the District's incremental costs of delivering Program water for storage plus interest at the average yield on the District's investment portfolio, from the date of delivery to the member public agency to the date of the invoice. Pursuant to the provisions of Section 4507, the District will invoice the member public agency on or about July 10 of the calendar year following the year in which the water is delivered.

(2) At the time the General Manager releases stored Program water to the respective participating member public agency the District shall invoice the respective participating member public agency pursuant to the provisions of Section 4507, at the applicable treated or untreated Replenishment Service rate in effect when the respective Program water was placed in storage, less any previous payment for the incremental costs of delivering the water for storage (but not including credit for the interest required by Subsection (i)(1)).

(3) Water released from storage to the participating member public agency shall be the oldest water then in storage.

(4) Readiness-to-Serve Charge Treatment.

(i) Program water delivered to storage prior to April 12, 1994 shall be exempted from the Readiness-to-Serve charge determination. Those charge determinations shall be applied to water delivered to storage after that date, except as applied in (ii) below, when the stored water is released to the participating member public agency.

(ii) The Readiness-to-Serve charge for Program water delivered for storage in 1995 shall be $36 per acre foot and will be paid monthly as the water is released to the member public agency.

(j) Penalty - A participating member public agency shall pay the applicable treated or untreated Full Service water rates for Program water the District delivers to it for placement in storage, to the extent it fails to comply with all the requirements of this Section.

(k) Indemnification - Participating member public agencies shall indemnify and defend the District, its employees, officers and directors for any injuries or damages that may be caused as a result of placing Program water in storage, storage itself, or storage releases and related withdrawal or use of Program water.

M.I. 40969 - August 19, 1994; paragraphs (a) through (i)(4)(ii) amended and renumbered, paragraph (k) repealed and paragraph (l) renumbered by M.I 41404 - May 9, 1995; paragraphs (h) and (j) amended by M.I. 42278 - February 11, 1997; paragraphs (f) and (h) (i) amended by M.I. 44005 - May 17, 2000; paragraph (i) (1) and (i) (4)(i) (ii) amended by M. I. 44812 - March 12, 2002; paragraphs (a), (g)(3), (h), (h)(i), (iii)-(v), (2)(i), (iv), and (i)(2) amended by M. I. 45249 - March 11, 2003.

§ 4518 Emergency Storage Program.

(a) The Emergency Storage Program is for the purpose of delivering water for emergency storage purposes. A member public agency may request delivery of water under the Emergency Storage Program. The minimum delivery of water for emergency purposes pursuant to any request is 10 acre-feet. Deliveries under the Emergency Storage Program, in the aggregate, are limited to 100,000 acre-feet annually, subject to available surplus and capacity to deliver. Water delivered under the Emergency Storage Program can be used only for Emergency Storage Program purposes. On-going operating losses such as evaporation cannot be replaced through the Emergency Storage Program. Water delivered through the Emergency Storage Program is subject to interruption by Metropolitan due to supply, water quality, or operational conditions. Water delivered pursuant to the Emergency Program may be withdrawn from emergency storage only to the extent that:

(1) The local agency's governing body declares an emergency requiring public notice and extraordinary conservation measures.

(2) The emergency requires use of stored water for a period greater than seven days; and

(3) Operational storage has been completely used.

(b) Applicable rate – Water delivered through the Emergency Storage Program will be billed at the then applicable Tier 1 cost including System Access Rate, System Power Rate, Water Stewardship Rate and Tier 1 Supply Rate. The Treatment Surcharge will apply to treated water deliveries. Water delivered through the Emergency Storage Program is not to be included in the calculation of a member agency's Readiness-to-Serve Charge or Capacity Charge.

(c) Certification

(1) Certification process is subject to the rules specified in Section 4507.

(2) On a monthly basis, a participating member public agency will certify the volume of water delivered for Emergency Storage Program purposes for billing purposes via the District's electronic certification and billing system.

(3) A member public agency that has received water under the Emergency Storage Program shall certify to Metropolitan whether water delivered through the Emergency Storage Program is maintained as emergency storage and/or indicate the emergency for which the storage water was withdrawn. In the event of an emergency where the water is unavailable due to its prior use to meet non-emergency demands, the water will be re-billed to the member agency at the then current Tier 2 cost.

M.I. 45941 – October 12, 2004; paragraph (2) amended by M.I. 47998 - August 18, 2009.

[Chapter 6 - repealed by M.I. 41468 - June 13, 1995]

Chapter 7

SERVICE CONNECTIONS

Sec.

§ 4700. General Authorization.

The General Manager is authorized to construct, or have constructed, any service connection requested by a member public agency, which, in the opinion of the General Manager, should be authorized and which is not specifically precluded by resolution of the Board; subject to such terms and conditions as shall be deemed by him to be reasonable and proper, and which shall, however, include the following:

(a) The District shall cause a service connection to be constructed pursuant to a written request by a member public agency in accordance with plans and specifications approved by the General Manager and by an authorized representative of member public agency. All equipment and materials required for constructing the service connection shall be acquired by the District in its customary manner, or the District may utilize therefor suitable equipment and materials on hand.

(b) The service connection shall include the facilities for diversion of water from the District's system and for delivery of such water into the pipeline distribution system of member public agency or of member public agency's affected distributor. The service connection up to and including the fitting connecting with the pipeline through which member public agency will receive water delivered through the service connection, which shall include metering instruments and a cabinet therefor, shall be the property of the District and shall be operated, maintained and controlled by the District.

(c) The costs of constructing the service connection shall be estimated by the General Manager, who shall inform the member public agency representative regarding the amount of such estimate. The total amount of such estimate shall be deposited by member public agency in advance of any action toward construction of the service connection, including all items peculiar only to a given service connection, or it may be deposited in stages, as follows:

(1) Estimated cost of final design, prior to commencement of final design.

(2) Cost of items of equipment and material requiring long term delivery, six weeks prior to the delivery date for such items, as estimated by General Manager.

(3) All remaining costs, six weeks prior to commencement of field construction; provided, however, that if the field construction period is estimated by the General Manager to exceed 90 calendar days, then payment of the remaining costs may be staged over the construction period, if the member public agency should so choose, by a series of advance deposits in amounts estimated by the General Manager to be sufficient to cover the construction in progress, but the first such advance deposit shall be made six weeks prior to commencement of field construction.

(4) Such deposits shall be held and used to defray the costs of constructing the service connection, and until such deposits have been received, except as provided in Section 4700(c)(3) the District shall not be required to undertake the construction of the service connection.

(d) Upon completion of construction of the service connection, the District shall render to member public agency a statement of all costs, audited and certified in accordance with the customary practice of the District, incurred by the District in constructing the service connection; if such costs shall exceed the sum of money theretofore deposited by member public agency with the District as provided hereinbefore in Section 4700(c) member public agency promptly shall pay to the District the amount by which such costs shall exceed such deposit; and if such costs be less than the said sum of money so deposited, any unexpended balance of such deposit shall be returned by the District to member public agency. Said costs incurred by the District shall include the costs of general administrative service and overhead expense, determined in accordance with the methods of cost accounting customarily employed by the District.

(e) Member public agency shall cause to be granted to the District or the District shall acquire at member public agency's expense, directly from the fee owner of the affected land, such easement as may be necessary in the opinion of the General Manager for the construction, operation, maintenance and repair of the service connection. Said easement and the grant thereof shall be approved by the District's General Counsel; provided, however, that fee title to the property required for such service connection may be acquired in the same manner as an easement and in lieu of an easement if the General Manager and member public agency agree that it would be advantageous to do so. Member public agency shall provide, or the District may obtain, at member public agency's sole cost and expense, a policy of title insurance insuring that clear title to the easement, or fee, is vested in "The Metropolitan Water District of Southern California, a public corporation of the State of California," subject to any encumbrances that have been approved in writing by the General Manger. The amount of title insurance shall be determined by the acquisition cost, unless the acquisition is made without cost or for less than the amount of the coverage which will be provided for the price paid for the title report, in which case the title policy shall be in the amount of such coverage.

(f) Upon completion of the service connection, the District shall be responsible for any subsequent maintenance, alteration, reconstruction or relocation of such service connection

except changes which are requested by a member public agency, which changes shall be handled as a new service connection. However, prior to the release of water by the District into the pipeline distribution system of member public agency or of member public agency's affected distributor, each agency shall install its own flow control device or devices as a means of maintaining uniform flow. Should the service connection be of the type that delivers water into an open channel or basin for groundwater replenishment use, then member public agency shall have the following options for the design, construction, ownership and maintenance of the required flow control device or devices.

(1) The District at the request of member public agency will design, construct, own, operate and maintain such flow control device or devices deemed necessary for the regulation of water deliveries, in which case the District's responsibility shall not extend beyond the ownership of the flow control facility, and any and all liabilities arising from release of water in the quantities agreed upon by member public agency and the District shall be the full responsibility of member public agency. Construction of the aforementioned facility shall be included as an additional feature of the service connection and the related cost shall be included as a part of the total cost of the service connection.

(2) Member public agency may design, construct, own, and maintain the aforementioned flow control facility, in which case the District's responsibility shall not extend beyond ownership of its meter facility, and any and all liabilities arising from release of water in the quantities agreed upon by member public agency and the District shall be the full responsibility of member public agency. However, the quantity of water delivered to member public agency through the flow control facility at any time shall be only as requested by member public agency, subject to the ability of the District to operationally meet such requests.

Section 321.1 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967; paragraph (f) [formerly Section 321.1.6 amended by M.I. 32690 - April 10, 1979 and M.I. 33642 - March 10, 1981. Section 321.1 repealed and Section 4700 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4701. Authority for Execution of Service Connection Agreements.

The General Manager is authorized to execute on behalf of the District any agreement or agreements necessary or proper to be entered into between the District and a member public agency in order to provide for the construction of a service connection in the manner and subject at least in part to the terms and conditions set forth in this Chapter. Each such agreement shall be in form approved by the General Counsel of the District.

Section 321.2 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967; amended by M.I. 32690 - April 10, 1979; amended by M.I. 35992 - March 11, 1986. Section 312.2 repealed and Section 4701 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4702. Special Service Connection Terms and Conditions.

If a service connection is requested by a member public agency to which the terms and conditions, or any portion thereof, whether as required by the General Manager or as required by this Chapter 6, are inappropriate in either the opinion of the General Manager or the member public agency, such request may be presented to the Board for its determination of appropriate terms and conditions, together with the reasons why the required terms and conditions are claimed to be inappropriate.

Section 321.3 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967; amended by M.I. 32690 - April 10, 1979. Section 312.2 repealed and Section 4702 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4703. Appeal of Decisions Regarding Service Connections.

Any affected member public agency may appeal to the Board from any decision or action of the General Manager hereby authorized. The decision of the Board of Directors shall be final. Subject to Sections 4702 and 4703, the General Manager shall make all determinations of fact.

Section 321.4 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967. Section 321.4 repealed and Section 4703 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4704. Compliance with Environmental Obligations for Service Connections.

Member public agencies are responsible for ensuring that the obligations of lead agencies as described in the California Environmental Quality Act and its implementing guidelines are fulfilled. The District shall fulfill all other obligations that may arise from its involvement in construction of the service connections and shall provide such information as it has available which is necessary to insure compliance with the Act and its implementing guidelines.

Section 321.5 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967. Section 321.5 repealed and Section 4704 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4705. Fair Value of Outlet.

The fair value of an outlet installed during pipeline construction will be established by the General Manager at the time a service connection is constructed at the outlet, and the charge to a member public agency for such an outlet will be based on this fair value; provided that any outlet larger than 24 inches or any outlet installed after a pipeline is placed in operation shall be charged for its actual cost.

Section 321.7 - M.I. 27804 - October 14, 1969; amended by M.I. 32690 - April 10, 1979; renumbered 321.6 by M.I. 33596 - February 10, 1981. Section 321.6 repealed and Section 4705 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4706. Effect of Hydroelectric Facilities on Service Connections.

(a) The operation of a hydroelectric generating facility on the District's water distribution system may result in a reduction in the District's minimum design pressure at the downstream service connection through which a member public agency has been receiving water pursuant to Section 4700(f). In that event, the District may, at its own expense, in order to facilitate its water distribution or maintain maximum generation of the hydroelectric power, take reasonable and appropriate measures, either to adjust its own system to continue to supply water to the affected member public agency at such minimum design pressure, or to enable the agency to pump the water on its system to a pressure equal to such minimum design pressure.

(b) For purposes of this section, the minimum design pressure is defined as the lessor of:

(1) The pressure resulting from the design flow hydraulic gradient, as shown on the District's hydraulic profiles or,

(2) The pressure resulting from a low-flow hydraulic gradient in a reach of pipeline which was designed for "falling head."

Section 321.8 - M.I. 33443 - October 14, 1980; renumbered 321.7 by M.I. 33596 - February 10, 1981. Section 321.7 repealed and Section 4706 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4707. Temporary Service Connections.

The General Manager is authorized to enter into and to perform any agreement for the construction and removal of a temporary service connection requested by a member public agency or other governmental agency to serve its needs for a limited time. Notwithstanding the provisions of Section 4700, such agreement may be upon such terms and conditions as the General Manager and the requesting entity may agree upon and may provide for payment of the cost of construction and removal of the temporary service connection based upon an estimate prepared by the General Manager.

Section 321.8 - M.I. 33596 - February 10, 1981. Section 321.8 repealed and Section 4707 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4708. General Manager's Report on Service Connections.

The General Manager shall report quarterly to the Engineering and Operations Committee of the Board new service connections approved by him pursuant to this Chapter with the estimated cost and approximate location of each.

Section 321.6 based on Res. 7489 April 10, 1973 amending Res. 7038 November 14, 1967; amended by M.I. 32690 - April 10, 1979; renumbered 321.9 by M.I. 33596 - February 10, 1981; amended by M.I. 36065 - May 13, 1986. Section 321.9 repealed and Section 4708 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; title and Section amended by M. I. 44582 – August 20, 2001; amended by M. I. 46983 - February 13, 2007; section amended by M.I. 48081 – November 10, 2009.

Chapter 8

SYSTEM INTERCONNECTIONS - HYDRAULIC TRANSIENTS

Sec.

§ 4800. Definitions.

(a) As used in this Chapter 8, "hydraulic transient" means a change in pressure or flow-rate resulting from the sudden stoppage or increase of flow of water in a pipeline.

(b) As used in this Chapter 8, "new construction or modification" means new construction or modification on or affecting any part of a member public agency's or subagency's distribution system which is directly connected to the District's distribution system and which could cause a hydraulic transient affecting or potentially affecting the District's system.

Section 322.5.4.1 - M.I. 34826 - August 17, 1983. Section 322.5.4.1 repealed and Section 4800 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4801. General.

Member public agencies shall avoid, and shall cause their subagencies to avoid, the creation of conditions that could cause hydraulic transients to damage the District's facilities. Where a member public agency or a subagency installs hydroelectric or pumping facilities on a pipeline that is directly connected to the District's system such condition may be avoided by the installation of reliable protective devices including, but not limited to, surge tanks, bypass or feeder tanks, and pressure relief valves.

Section 322.5.4.2 - M.I. 34826 - August 17, 1983. Section 322.5.4.2 repealed and Section 4801 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4802. Notice of New Construction or Alterations.

Each member public agency shall notify the District of any proposed new construction or modification and shall require each subagency to provide such notice to the District with regard to any proposed new construction or modification. Such notice shall be accompanied by project plans and specifications. Within 30 days after receipt of the notice, the District shall notify the member public agency or subagency of its comments on such plans and specifications for the purpose of minimizing the possibility of hydraulic transients that could damage the District's facilities.

Section 322.5.4.3 - M.I. 34826 - August 17, 1983; amended by M.I. 35992 - March 11, 1986. Section 322.5.4.3 repealed and Section 4802 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4803. Reduction or Suspension of Deliveries.

The General Manager is authorized to reduce or suspend deliveries to any member public agency if he determines that a member public agency or subagency has failed to install reliable protective devices to protect the District's facilities from damage from hydraulic transients and that a substantial risk of such damage exists.

Section 322.5.4.4 - M.I. 34826 - August 17, 1983. Section 322.5.4.4 repealed and Section 4803 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

[Chapter 9 - Repealed]

~~INTERIM AGRICULTURAL WATER PROGRAM SERVICE REGULATIONS~~

~~Sec.~~

~~§ 4900. Interim Agricultural Water Program Term.~~

~~The Interim Agricultural Water Program (Program) is an interim program for service of water for agricultural purposes as described in Section 4106 and shall be governed by the Metropolitan Water District Act, this Chapter 9 and other applicable provisions of this Division IV.~~

~~M.I. 40865 – June 14, 1994; amended by M. I. 44005 – May 17, 2000.~~

~~§ 4901. Maximum Amount of Annual Water Deliveries.~~

~~The maximum amount of Program water available for delivery to each member public agency during a calendar year, as of January 1, 2012, is as follows:~~

~~Member Public Agency~~	~~Maximum Annual Amount of Interim Agricultural Water Program Discount Water Member Agency May Purchase (acre-feet)~~
~~Eastern MWD~~	~~1,273.1~~
~~San Diego CWA~~	~~46,924.6~~
~~Western MWD~~	~~26,168.2~~
~~Total~~	~~74,365.9~~

~~These amounts will be revised annually to reflect phase-out of the Program.~~

~~M.I. 40865 – June 14, 1994; amended by M.I. 412140 – January 10, 1995; amended by M.I. 44005 – May 17, 2000; amended by M. I. 44582 – August 20, 2001; amended by M. I. 47259 – October 9, 2007; paragraph and table amended by M.I. 47672 – October 14, 2008; paragraph and table amended by M.I. 48800 – September 13, 2011.~~

§ 4902. Member Public Agency Certifications.

Member Public Agencies shall provide monthly Program certifications in conformance with Section 4507.

Effective as of January 1, 2009, original documentation supporting the use of such water as certified must be submitted no later than June 30 following the end of the calendar year for which an Interim Agricultural Water Program certification was submitted. If the documentation is not submitted by August 31 following the end of the calendar year for which a certification was submitted, it shall be conclusively presumed that:

(1) The water sold by the District for Interim Agricultural Water Program purposes was used for full service, and the District's next monthly billing shall reflect such adjustment; or

(2) If a Program reduction was in effect during the period for which certifications were submitted, the deliveries will be subject to overuse penalties in place under the Interim Agricultural Water Program Reduction, and the Member Agency shall permanently opt-out of the Interim Agricultural Water Program.

M.I. 40865 – June 14, 1994; amended by M.I. 42278 – February 11, 1997; amended by M. I. 44005 – May 17, 2000; paragraphs added by M.I. 47672 – October 14, 2008.

§ 4903. Program Reviews.

Effective January 1, 2009, the Program will be reviewed by Metropolitan at the end of each calendar year. Member public agencies shall provide to Metropolitan the following monthly information for such review by the applicable due date shown below: (1) total water use, (2) Metropolitan deliveries, (3) local water use, (4) Metropolitan deliveries to agriculture for Program purposes, and (5) local deliveries to agriculture for Program purposes and any other information the General Manager deems necessary to complete the review. Metropolitan will complete its annual review within six months from the due date for submission of the original supporting documentation (except that the annual review for Program water delivered during fiscal year 2007-08 shall be completed by December 31, 2009). The schedule for submittal of supporting documentation and completion of the Interim Agricultural Water Program annual review is:

Schedule for Submittal of Supporting Documentation for IAWP Assessments, and IAWP Assessment Completion Dates		
Assessment Year	Supporting Documentation Due Date	Assessment Completion Date
FY 07-08	December 31, 2008	December 31, 2009
CY 2008	June 30, 2009	December 31, 2009
CY 2009	June 30, 2010	December 31, 2010
CY 2010	June 30, 2011	December 31, 2011
CY 2011	June 30, 2012	December 31, 2012
CY 2012	June 30, 2013	December 31, 2013

Reviews may be provided sooner or more frequently if requested by the member public agency or Metropolitan.

(1) Should the District not complete its review within six months of the due date for all source documentation for the calendar year, the review will be considered complete and the certifications final.

(2) When the review is completed, the District will notify the member agency of its initial findings for its comments. The member agency will provide its comments within 60 days. Metropolitan staff and the agency will work together to reconcile any differences.

(3) If the member agency and Metropolitan staff cannot reconcile the differences, Metropolitan's Water System Operations Group Manager has the responsibility to consult with the member agency and make a final ruling, subject to the General Manager's oversight. If the ruling is unsatisfactory to the member agency, it can be appealed to Metropolitan's Finance and Insurance Committee.

(4) If the member agency does not provide further documentation correcting Metropolitan staff findings within the 60-day comment period as specified in subsection (2) above, then it shall be conclusively presumed that the District's findings are correct and the District's next monthly billing shall reflect such adjustment.

M.I. 40865 - June 14, 1994; amended by M.I. 42278 - February 11, 1997; amended by M. I. 44005 - May 17, 2000; paragraph amended and added, table added by M.I. 47672 - October 14, 2008; paragraph (3) amended by M.I. 48534 - January 11, 2011.

§ 4904. Member Public Agency Plan to Meet Mandatory Reductions to the Program.

Each member public agency participating in the Program shall submit a written Reduction Plan to Metropolitan showing how it will meet the mandatory reductions to Program water during a reduction period. The Reduction Plan shall describe the member public agency's drought management strategy and how it plans to reduce Program water use and/or use local resources to supply agricultural demands. The Reduction Plans shall be updated at the request of

Metropolitan. Reduction Plan updates shall occur in accordance with a schedule determined by Metropolitan.

M.I. 40865 – June 14, 1994; amended by M. I. 44005 – May 17, 200; Section title and paragraph amended by M. I. 47259 – October 9, 2007; Section title and paragraph amended by M.I. 47672 – October 14, 2008; paragraph amended by M.I. 48800 – September 13, 2011.

§ 4905. Program Reductions During a Shortage

Should a supply shortage occur, the General Manager may exercise discretion to reduce Interim Agricultural Water Program deliveries up to 30 percent prior to imposing any mandatory allocation under the Water Supply Allocation Plan. Commencing January 1, 2010, this reduction shall be adjusted with each year of the phase-out period as the Program discount is reduced.

As soon as practical after the General Manager makes a determination to reduce or interrupt delivery of water for Program service, the General Manager shall give written notice of such determination to affected member public agencies.

M.I. 40865 – June 14, 1994; amended by M. I. 44005 – May 17, 2000; Section title and paragraph amended by M.I. 47672 – October 14, 2008.

§ 4906. Agencies to Pass Through Entire Program Discount

The member public agency shall pass the entire Program discount through to its sub-agencies, and shall use its best efforts to assure that its subagencies pass the entire discount through to the Program users.

M.I. 40865 – June 14, 1994; amended by M. I. 44005 – May 17, 2000; Section title and paragraph amended by M.I. 47672 – October 14, 2008.

§ 4907. Penalty for Non-Compliance During a Program Reduction Period

During a period when the District has called for a reduction of Program water use, a member public agency will be billed a penalty fee for Program deliveries exceeding reduction requirements. The penalty fee for each acre-foot of Program deliveries exceeding reduction requirements established pursuant to Section 4905 shall be equivalent to the difference between twice Metropolitan's bundled Tier 2 water rate and the applicable Interim Agricultural Water Program rate. The penalty fee for Program deliveries exceeding reduction requirements established pursuant to the Water Supply Allocation Plan shall be as provided in the Water Supply Allocation Plan.

M. I. 47259 - October 9, 2007; Section title and paragraph amended by M.I. 47672 – October 14, 2008.

Division IV

WATER SERVICE POLICIES

Chapter 1

DEFINITIONS

4127. Emergency Storage Program Purposes

§ 4100. General.

The definitions in this Chapter shall govern the meaning of the terms when used in this Division.

Res. 7666 - April 13, 1976; Section 313.2 amended by M.I. 33642 - March 10, 1981. Section 312.2 repealed and Section 4100 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4101. Colorado.

"Colorado" as a source of water shall mean water obtained by the District from the Colorado River through facilities owned by the District.

Res. 7666 - April 13, 1976; Section 312.2.1 amended by M.I. 33642 - March 10, 1981. Section 312.2.1 repealed and Section 4101 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4102. State.

"State" as a source of water shall mean water obtained by the District from facilities of the California State Water Project.

Res. 7666 - April 13, 1976; Section 312.2.2 amended by M.I. 33642 - March 10, 1981. Section 312.2.2 repealed and Section 4102 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4103. Treated Water.

"Treated water" shall mean water that is treated by filtration and disinfection at any District water treatment facility.

Res. 7666 - April 13, 1976; Section 312.2.3 amended by M.I. 33642 - March 10, 1981. Section 312.2.3 repealed and Section 4103 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 40976 - August 19, 1994.

§ 4104. Untreated Water.

"Untreated water" shall mean water that is not treated water.

Res. 7666 - April 13, 1976; Section 312.2.4 amended by M.I. 33642 - March 10, 1981. Section 312.2.4 repealed and Section 4104 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4105. Domestic and Municipal Purposes.

"Domestic and municipal purposes" shall mean, but is not limited to, the use of water for all domestic, municipal, commercial, industrial, and recreational purposes.

Res. 7666 - April 13, 1976; Section 312.2.5 amended by M.I. 33642 - March 10, 1981. Section 312.2.5 repealed and Section 4105 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 44005 - May 17, 2000.

§ 4106. Interim Agricultural Water Program Purposes.

"Interim Agricultural Water Program purposes" shall mean the service of water pursuant to the Interim Agricultural Water Program and this Division IV which is delivered and used for the growing or raising, in conformity with recognized practices of husbandry, for the purposes of commerce, trade, or industry, or for use by public educational or correctional institutions, of agricultural, horticultural, or floricultural products, and produced (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, or (3) for the feeding of fowl or livestock for the purpose of obtaining their products for human consumption or for the market, such products to be grown or raised on a parcel of land having an area of not less than one acre utilized exclusively therefor.

(a)"Interim Agricultural Water Program purposes limited to the growing of field and nursery crops and row crops" shall mean the service of water related to the growing of crops generally planted and harvested annually or more frequently, and other Interim Agricultural Water Program purposes not included in the definitions of Sections 4106(b) and 4106(c).

(b)"Interim Agricultural Water Program purposes limited to the growing of trees and vines" shall mean the service of water limited to the growing of crops which are planted less frequently than annually in the expectation of long-term yield therefrom.

(c)"Interim Agricultural Water Program purposes limited to the feeding of fowl or livestock" shall mean the service of water encompassing the raising of animals for human consumption or for the market or for the purpose of obtaining their products for human consumption or for the market.

(d) The Interim Agricultural Water Program was discontinued after December 31, 2012.

Res. 7666 – April 13, 1976; Section 312.2.6 amended and paragraphs (a), (b) and (c) [formerly Sections 313.2.6.1 - 312.2.6.3] added by M.I. 33642 – March 10, 1981. Section 312.2.6 repealed and Section 4106 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; Section renamed and paragraphs (a)-(c) amended by M. I. 44005 - May 17, 2000; Paragraph amended by M.I. 44812 - March 12, 2002.

§ 4107. Groundwater Replenishment by Spreading.

"Groundwater replenishment by spreading" shall mean the act of spreading or causing to be spread, water for the purpose of replenishing natural groundwater basins, without regard to subsequent use of the water.

Res. 7666 - April 13, 1976; Section 312.2.7 amended and paragraphs (a)and (b) [formerly Sections 313.2.7.1 - 312.2.7.2] added by M.I. 33642 - March 10, 1981. Section 312.2.7 repealed and Section 4107 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended and paragraphs (a) and (b) deleted by M.I. 42608 - September 9, 1997.

§ 4108. Groundwater Replenishment by Injection.

"Groundwater replenishment by injection" shall mean the act of injecting or causing to be injected, water for the purpose of replenishing natural groundwater basins.

(a) "Direct replenishment by injection" shall mean groundwater replenishment that results from the act of injecting without regard to subsequent use of the water.

(b) "Seawater barrier groundwater replenishment" shall mean groundwater replenishment having as a principal purpose the injection of water for the purpose of maintaining groundwater barriers designed and intended to avoid the contamination of groundwater storage basins by the intrusion of seawater.

Former Section 4108 renumbered to Section 4109 and new Section 4108 added by M.I. 42608 - September 9, 1997; paragraph (b) amended by M. I. 44812 - March 12, 2002; paragraph (b) deleted and paragraph (c) renumbered by M. I. 45249 - March 11, 2003.

§ 4109. In-Lieu Groundwater Replenishment.

"In-lieu groundwater replenishment" shall mean maintenance or replenishment of water supplies in groundwater basins by reduction or elimination of extraction therefrom through the substitution of deliveries of water to consumers from surface distribution facilities in lieu of such extraction.

Section 312.2.8 - M.I. 33642 - March 10, 1981. Section 312.2.8 repealed and Section 4108 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41468 - June 13, 1995; Section 4108 renumbered to Section 4109 by M.I. 42608 - September 9, 1997.

§ 4110. Direct Reservoir Replenishment.

"Direct reservoir replenishment" shall mean the act of storing water in surface reservoirs for long-term storage by delivering water directly into a reservoir.

Section 312.2.9 - M.I. 33642 - March 10,1981. Section 312.2.9 repealed and Section 4109 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41617 - October 10, 1995; Section 4109 renumbered to Section 4110 by M.I. 42608 - September 9, 1997; paragraph and title amended by M. I. 45249 - March 11, 2003.

§ 4111. In-Lieu Reservoir Replenishment.

"In-lieu reservoir replenishment" shall mean the act of storing water in surface reservoirs for long-term storage by reducing or eliminating local supply outflow, through substitution of deliveries of water to consumers from surface distribution facilities in lieu of such withdrawals, thus conserving storage acquired from local sources.

Previous Section 4110 renumbered to Section 4111 and new Section 4110 added by M.I. 41617 - October 10, 1995; Section 4110 renumbered to Section 4111 by. M.I. 42608 - September 9, 1997; paragraph and title amended by M. I. 45249 - March 11, 2003.

[§ 4112 repealed by M. I. 45249 - March 11, 2003.]

[§ 4113 repealed by M. I. 44812 - March 12, 2002.]

§ 4114. Replenishment Service.

"Replenishment Service" shall mean delivery of water for long-term storage in either groundwater basins or surface reservoirs by direct or in-lieu means. Direct means shall be either through groundwater spreading or through injection. The Replenishment Service Program was discontinued after December 31, 2012.

M.I. 37006 - February 9, 1988; amended by M.I. 37764 - July 11, 1989; amended by M.I. 41468 - June 13, 1995; amended by M.I. 42109 - October 8, 1996; paragraph and title amended by M. I. 45249 - March 11, 2003.

[§ 4115 repealed by M. I. 44812 - March 12, 2002]

[§ 4116 repealed by M. I. 44812 - March 12, 2002]

§ 4117. Cooperative Storage Program.

"Cooperative Storage Program" shall mean the program that provides a means for coordinating the District's carryover storage needs with storage capacity available to member public agencies, on the basis that the stored water will eventually be released to respective participating member public agencies pursuant to the regulations provided by Section 4517.

M.I. 40976 - August 19, 1994; Original Section 4117 repealed and Section 4118 renumbered 4117 by M.I. 44005 - May 17, 2000.

§ 4118. Cooperative Storage Program Sale.

"Cooperative Storage Program Sale" shall describe the transaction that occurs at the time a water delivery is made by the District under the Cooperative Storage Program. Any such delivery is deemed a sale to the receiving member public agency when delivered to it for storage, with payment to the District deferred as provided in subsection 4517(i). For administrative record keeping purposes, such a transaction will be recorded as an advance delivery until invoiced as a sale by the District at the time of release.

M.I. 40976 - August 19, 1994; amended by M.I. 41404 - May 9, 1995; Original Section 4119 renumbered 4118 by M.I. 44005 - May 17, 2000; amended by M. I. 44812 - March 12, 2002.

§ 4119. Wheeling Service.

"Wheeling Service" shall mean the use of Metropolitan's facilities, including its rights to use State Water Project facilities, to transport water not owned or controlled by Metropolitan to its member public agencies, in transactions entered into by Metropolitan for a period of up to one year.

M.I. 42335- March 11, 1997; Original Section 4120 renumbered 4119 by M. I. 44005 - May 17, 2000.

§ 4120. Purchase Order; Purchase Order Commitment.

"Purchase Order" shall mean a member agency's written commitment to purchase a specified total volume of water from the District during a specified period, as provided in Section 4404. "Purchase Order commitment" shall mean the amount of system water a member agency commits to purchase over the term of the Purchase Order.

M. I. 44812 - March 12, 2002; amended by M. I. 45249 - March 11, 2003; amended by M.I. 49952 - November 18, 2014.

§ 4121. Supply Rates.

"Supply Rate" shall mean (i) the Tier 1 Supply Rate and (ii) the Tier 2 Supply Rate, as applicable to a particular purchase of water pursuant to Section 4404. The Tier 1 and Tier 2 Supply Rate shall be set from time to time by the District to recover the cost of maintaining existing supplies and developing additional supplies of water.

M. I. 44812 - March 12, 2002.

§ 4122. Base Period Demand; Revised Base Firm Demand; Initial Base Firm Demand.

"Base Period Demand" shall mean the amount specified in a member agency's Purchase Order, that is either: a) the member agency's Revised Base Firm Demand, as specified in this Section; or b) the member agency's highest fiscal year purchases from fiscal year 2003 through 2014; provided, however, that if the member agency's five-fiscal year rolling average of purchases of water from the District for the most recent five fiscal year period, excluding water purchased under an interruptible program, exceeds the member agency's Initial Base Period Demand, then the member agency's Base Period Demand for each subsequent calendar year shall be increased to the member agency's five-fiscal year rolling average. "Initial Base Firm Demand" shall mean the member agency's highest annual delivery of water from the District, excluding water delivered under Long-Term Seasonal Storage Service, Interruptible Service, and Interim Agricultural Water Program Service, during any fiscal year from fiscal year 1989/90 through fiscal year 2001/02.

Effective as of January 1, 2013, each member agency's Revised Base Firm Demand is as follows:

Member Agency	**Revised BFD**
Anaheim	27,154
Beverly Hills	14,867
Burbank	18,640
Calleguas	122,498
Central Basin	119,617
Compton	5,620

Eastern	102,694
Foothill	13,081
Fullerton	12,554
Glendale	29,135
Inland Empire	103,648
Las Virgenes	22,999
Long Beach	57,560
Los Angeles	372,959
MWDOC	311,769
Pasadena	23,533
San Diego	655,903
San Fernando	1,049
San Marino	1,998
Santa Ana	21,797
Santa Monica	12,344
Three Valleys	83,248
Torrance	23,297
Upper San Gabriel	74,698
West Basin	175,024
Western	94,567

M. I. 44812 - March 12, 2002; amended by M. I. 45249 - March 11, 2003; added second and third paragraphs by M.I. 49272 - December 11, 2012; amended first and third paragraphs, and deleted second paragraph by M.I. 49952 - November 18, 2014.

§ 4123. System Access Rate.

"System Access Rate" shall mean a dollar per acre-foot water rate imposed by the District to recover a portion of the District's costs associated with the conveyance and distribution system, including capital, operating and maintenance costs.

M. I. 44812 - March 12, 2002.

§ 4124. Water Stewardship Rate.

"Water Stewardship Rate" shall mean a dollar per acre-foot water rate imposed by the District to recover a portion of the costs of the District's financial commitment to conservation, water recycling, groundwater recovery and other water management programs approved by the Board.

§ 4124 Repealed by M. I. 45249 - March 11, 2003; Re-adopted by M.I. 49187 - September 11, 2012.

§ 4125. System Power Rate.

"System Power Rate" shall mean a dollar per acre-foot water rate imposed by the District to recover the melded cost of power necessary to pump water from the State Water Project and Colorado River through the conveyance and distribution system for the District's member public agencies.

M. I. 44812 - March 12, 2002.

§ 4126. Treatment Surcharge.

"Treatment Surcharge" means a dollar per acre-foot water rate imposed by the District to recover the District's costs of providing water treatment capacity and operations.

M. I. 44812 - March 12, 2002.

§ 4127 Emergency Storage Program Purposes.

"Emergency Storage Program purposes" shall mean delivery of water pursuant to the Emergency Storage Program for the purpose of emergency storage in surface water reservoirs and storage tanks. Emergency Storage Program purposes include initially filling a newly constructed reservoir or storage tank and replacing water used during an emergency. Emergency Storage Program service shall be governed by the provisions of Sections 4507 and 4518.

M.I. 45941 – October 12, 2004.

Chapter 2

REGIONAL WATER MANAGEMENT

Sec.

§ 4200. Water Availability.

District water will be available only to cities and areas now or hereafter included within the legal boundaries of the District. This means that District water will not be sold or released under any terms to any area as long as such area is outside the boundaries of the District except as may be approved by the Board.

Section 301.1.1 - Special Water Problems Committee - October 26, 1938. Section 301.1.1 repealed and Section 4200 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 40976 - August 19, 1994.

§ 4201. Mission Statement.

The mission of The Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way.

M.I. 39412 - January 14, 1992.

§ 4202. Avoidance in District Service Area of Overlapping or Paralleling Governmental Authorities (Laguna Declaration).

(a) The District is prepared, with its existing governmental powers and its present and projected distribution facilities, to provide its service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. When and as additional water resources are required to meet increasing needs for domestic, industrial and municipal water, the District will be prepared to deliver such supplies.

(b) Taxpayers and water users residing within the District already have obligated themselves for the construction of an aqueduct supply and distribution system. This system has been designed and constructed in a manner that permits orderly and economic extensions and enlargements to deliver the District's full share of Colorado River water and State Project water as well as water from other sources as required in the years ahead. Establishment of overlapping and paralleling governmental authorities and water distribution facilities to service Southern California areas would place a wasteful and unnecessary financial burden upon all of the people of California, and particularly the residents of Southern California.

Section 301.2 based on M.I. 14727 - December 16, 1952. Section 301.2 repealed and Section 4201 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4201 renumbered Section 4202 by M.I. 39412 - January 14, 1992.

§ 4203. Water Transfer Policy.

To meet its public water supply objectives in the future, Metropolitan will vigorously pursue the development of water transfers, subject to the following considerations:

(a) Water transfers, including water marketing, will be developed only on a voluntary basis with willing partners;

(b) A full-range of water transfer options will be pursued, including arrangements with appropriate state and federal agencies, public and private water entities, and individual water users;

(c) Water transfers will be designed to protect and, where feasible, enhance environmental resources;

(d) Water transfers will be designed to avoid contributing to or creating a condition of long-term groundwater overdraft;

(e) Efforts will continue to develop water transfers in cooperation with the agricultural community, which seek to avoid unreasonable operational and financial impacts; and

(f) Strategies will be developed to appropriately address community impacts of water transfers.

M.I. 39412 - January 14, 1992.

§ 4204. Sale of Water by State in District Boundaries.

The State shall make no other contract to supply project water for use within the boundaries of the District without the consent of the District, and shall not authorize any other contractor to supply project water for use outside such other contractor's boundaries and within the boundaries of the District without the consent of the District.

Section 322.13.1 based on Amendment No. 12 to Metropolitan - State Water Contract dated November 11, 1960 - Article 15(d) thereof; amended by M.I. 33642 - March 10, 1981; Section 322.13.1 repealed and Section 4202 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4202 renumbered Section 4204 by M.I. 39412 - January 14, 1992.

§ 4205. Sale of Water By One Member Public Agency to Another.

The General Manager and General Counsel shall report to the Board any sale of water by one member public agency to another. The District will not deliver water at the request of one member public agency into the territory of another member public agency without written authorization from both affected member public agencies.

Section 322.13.2 based on M.I. 15647 - May 4, l954; amended by M.I. 32690 - April 10, 1979; amended by M.I. 33642 - March 10, 1981. Section 322.13.2 repealed and Section 4203 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4203 renumbered Section 4205 by M.I. 39412 - January 14, 1992; amended by M. I. 45637 - January 13, 2004.

§ 4206. Carryover Storage.

(a) The General Manager is authorized to store District water in any storage facility within any member public agency of the District where storage capacity is available. Further, the General Manager is instructed that no water is to be delivered or supplied under any storage contract until he has determined that sufficient water supplies will be available to fill the District's storage reservoirs.

(b) The General Manager is authorized to modify any arrangements with member public agencies for storage of water to provide for carryover storage, which modification shall be effective only when in writing and executed by the General Manager.

(c) Following the conclusion of each calendar year, the General Manager shall evaluate the District's carryover storage and determine the amount of carryover storage the District is expected to need during the ensuing calendar year.

Section 322.13.3 based on M.I. 25031 - December 14, 1965; paragraph (b) [formerly Section 322.13.3.2] added by M.I. 27396 - March 11, 1969; amended by M.I. 33642 - March 10, 1981; paragraph (a) [formerly Section 322.13.3.1] amended by M.I. 35992 - March 11, 1986. Section 322.13.3 repealed and Section 4204 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; Section 4204 renumbered Section 4206 by M.I. 39412 - January 14, 1992; paragraph (a) amended by M.I. 40976 - August 19, 1994; paragraph (c) added by M.I. 40969 - August 19, 1994; paragraph (b) amended by M.I. 41404 - May 9, 1995.

§ 4207. Exchange of Water.

(a) The District's policy is that any exchange of Colorado River water for State Project water between the District and any state water service contractors shall be based upon such contractor paying all of the costs associated with delivery of State water at such contractor's delivery point, or at such other point as may be mutually agreed upon, which would result in the lowest cost to the District under such exchange.

(b) If two or more member public agencies of the District desire to enter into a water exchange arrangement, the District will cooperate in such an arrangement, subject to available capacity in the District's facilities and subject to availability of water for such exchange purposes, as determined by the District.

(c) The General Manager is authorized to enter into any economically beneficial water exchange agreement, in form approved by the General Counsel, without prior Board approval upon a determination that the exchange provides water quality benefits. The annual total of all exchanges under this subsection authority shall not exceed 50,000 acre-feet. The annual cumulative net exchange cost of exchanges under this subsection shall not exceed $500,000. Water exchanges authorized under this subsection are exempt from competitive bidding requirements under the terms of Administrative Code Section 8103. Such agreement shall be reported to the Board at the next meeting after which it is made.

Section 322.13.4 – paragraph (b) [formerly Section 322.13.4.2] based on M.I. 23612 – February 11, 1964 and paragraph (a) [formerly Section 322.13.4.1] based on M.I. 25756 – December 13, 1966; amended by M.I. 33642 – March 10, 1981. Section 322.13.4 repealed and Section 4205 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; Section 4205 renumbered Section 4207 by M.I. 39412 - January 14, 1992; paragraph (c) added by M. I. 44109 - July 11, 2000.

§ 4208. No Recreational Use of Lake Mathews.

The policy existing since 1939 that Lake Mathews not be used for recreational purposes is reaffirmed.

Section 322.13.6 based on M.I. 16404 – May 10, 1955 and M.I. 31249 – April 24,1961; amended by M.I. 33642 – March 10, 1981; renumbered 322.13.5 by M.I. 34182 – April 13, 1982. Section 322.13.5 repealed and Section 4206 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; [§ 4207 - repealed by M.I. 36806 - September 22, 1987.]; Section 4206 renumbered Section 4208 by M.I. 39412 - January 14, 1992.

§ 4209. Contracts.

The District may join or enter into agreements with member public agencies to make more effective use of water resources, including agreements providing for the wheeling, exchange, or banking of water, so long as such agreements serve a purpose of the District.

Section 322.6.12 - March 10, 1981, effective July 1, 1981; Section 322.6.12 repealed and Section 4208 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; Section 4208 renumbered Section 4209 by M.I. 39412 - January 14, 1992.

§ 4210. Water Conservation.

It shall be the policy of the District to undertake and support water conservation programs. To that end, the District may develop and implement such programs and enter into agreements with member public agencies and other organizations to make more efficient use of water resources through water conservation programs so long as such agreements serve a beneficial purpose of the District.

M.I. 36775 - August 18, 1987; Section 4209 renumbered Section 4210 by M.I. 39412 - January 14, 1992.

§ 4211. Sale of Water to State or Federal Governmental Agencies.

Subject to the provisions of Section 131 of the Metropolitan Water District Act, the General Manager is authorized to enter into contracts for the sale of water for any purpose or use with the United States of America or with any board, department, or agency thereof or with the State of California. Such contracts shall contain at a minimum the following terms:

1. The State or Federal Governmental Agency shall furnish, install, and remove, at no expense to Metropolitan, the facilities required to pump, measure, and transport the water.

2. Metropolitan's option to sell water to a State or Federal Governmental Agency shall be limited to a total quantity of 100 acre-feet per year, per connection, per agency.

3. The price of the water shall be Metropolitan's rate per acre-foot for the class of water in effect at the time of delivery, plus a reasonable capital facility charge and a minimum monthly standby rate if the connection is not used during a billing period.

4. The State or Federal Governmental Agency shall hold Metropolitan harmless from all claims and damages resulting from interruptions in water deliveries and from all damages resulting directly or indirectly from Metropolitan's delivery of water to the State or Federal Governmental Agency.

5. The agreement shall be terminable by either party upon giving written notice to the other party thirty days prior to the effective date of termination.

M.I. 42055 - September 10, 1996.

Chapter 3

WATER SALES REVENUE

Sec.
4300. General
4301. Cost of service and Revenue Requirement
[4302. Repealed]
[4303. Repealed]
4304. Apportionment of Revenues and Setting of Water Rates
4305. Setting of Charges to Raise Fixed Revenue

§ 4300. General.

The amount of revenue to be raised through the sale of water at rates and charges established pursuant to Sections 4400 and 4401 shall be determined in accordance with the provisions of this chapter.

Section 311.1 - M.I. 33007 - November 13, 1979, as clarified by M.I. 33059 - January 15, 1980. Section 311.1 repealed and Section 4300 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M. I. 44812 - March 12, 2002; amended by M.I. 49187 - September 11, 2012.

§ 4301. Cost of Service and Revenue Requirement.

(a) The District shall fix rates for water such that anticipated water sales revenues, together with anticipated revenues from any water standby or availability of service charge (such as the readiness-to-serve charge or capacity charge) or assessment, ad valorem tax revenues, and other revenues pay the expenses of the District, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by the District, and provide for the payment of the interest and principal of the District's outstanding bonded debt. Subject to the foregoing, such rates and charges shall reflect the costs of the District's major service functions, including water supply, conveyance, power, storage, distribution and treatment to the greatest degree practicable.

(b) Notwithstanding the provisions in subsection (a) above, amounts raised by ad valorem property taxation shall not exceed the limitations established by section 124.5 of the Act and, subject to those limitations, shall be not less than the approximate equivalent of the amounts levied for fiscal year 1990-91.

Section 311.2 - M.I. 33007 - November 13, 1979, as clarified by M.I. 33059 - January 15, 1980. Section 311.2 repealed and Section 4301 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended and paragraph (b) added by M.I. 38749 - February 12, 1991; paragraph titled changed and paragraph (a) amended by M. I. 44812 - March 12, 2002; paragraph (a) amended by M. I. 46148 - March 8, 2005; paragraphs (a)-(b) amended by M.I. 49187 - September 11, 2012.

[§ 4302 Repealed by M. I. 44812 - March 12, 2002]

[§ 4303 Repealed by M. I. 44812 – March 12, 2002]

§ 4304. Apportionment of Revenues and Setting of Water Rates.

(a) Not later than at its February meeting the General Manager shall present to the Finance and Insurance Committee of the Board:

(1) Determinations of the revenue requirements and cost of service analysis supporting the rates and charges required during the biennial period beginning the following July 1, as determined by the General Manager in accordance with current Board policies, and,

(2) Recommendations of rates including, but not limited to, the System Access Rate, Water Stewardship Rate, System Power Rate, Treatment Surcharge, and the Supply Rates for the various classes of water service to become effective each January 1 of the biennial period. These recommended rates shall be the General Manager's determination, made in accordance with current Board policies, of the rates necessary to produce substantially the revenues to be derived from water sales during the biennial period beginning the following July 1.

(b) Not later than at its February meeting, the General Manager shall also present to the Finance and Insurance Committee recommendations regarding the continuation of a water standby charge or the imposition of an availability of service charge (such as the readiness-to-serve charge and capacity charge), which shall be the General Manager's determination, made in accordance with current Board policies, of the charge necessary to produce substantially the revenues to be derived from fixed revenue sources, if any, exclusive of taxes, during the biennial period beginning the following July 1 which the Finance and Insurance Committee has determined to be necessary.

(c) Not later than its February meeting the Finance and Insurance Committee shall set a time or times for, and shall thereafter hold, one or more meetings of the Finance and Insurance Committee, to be held prior to its regular April meeting, at which interested parties may present their views regarding the proposed water rates and availability of service charges to said committee. The Finance and Insurance Committee shall direct the General Manager to cause the publication of a notice of such public hearing to be published in newspapers of general circulation within the District’s service area. Such notice shall be published not less than 10 days prior to the public hearing.

(d) Not later than its regular April meeting the Finance and Insurance Committee shall make its determination regarding the revenue requirement to be paid from water rates and the water rates to become effective each January 1 of the biennial period and shall recommend said water rates to the Board no later than the Board's regular April meeting.

(e) Not later than its April meeting, the Board shall establish water rates for deliveries beginning each January 1 of the biennial period.

(f) Proposals for changes in water rates to become effective at times other than on January 1 shall require adequate notice to the public and a hearing before such proposals are acted upon by the Board, unless the Board finds that an immediate change in water rates is urgent.

Section 311.5 - M.I. 32924 – September 18, 1979, as clarified by M.I. 33059 – January 15, 1980; paragraph (g) [formerly Section 311.5.7] amended by M.I. 34867 – September 13, l983. Section 311.5.7 repealed and Section 4304 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended, new paragraphs (d), (f), (i) and (j) added and other paragraphs renumbered by M.I. 39976 - December 8, 1992; paragraphs (b) through (g), (i) and (j) amended by M.I. 41389 - May 9, 1995; paragraphs (a)-(d) amended by M.I. 42193 - December 10, 1996; paragraphs (b) through (g), and (i) and (j) amended by M.I. 43587 - June 8, 1999; paragraphs (a) through (k) amended by M. I. 44582 – August 20, 2001; paragraphs (a) – (g), (i), and (j) amended by M. I. 44812 - March 12, 2002; paragraph (a) amended, (a) (i) & (a) (ii) added, paragraphs (b) & (c) deleted, paragraphs (d) (e) (f) renumbered to (b) (c) (d), paragraph (g) renumbered to (e) and amended, paragraphs (h) (i) renumbered to (f) (g), and paragraphs (j) (k) renumbered to (h) (i), by order of M. I. 45537 - October 14, 2003; paragraphs (a)-(e) and (g)-(h) amended by M. I. 46064 – January 11, 2005; paragraphs (a) through (e), (g) and (h) amended (committee name change) by M. I. 46148 - March 8, 2005; paragraphs (a)-(i) amended by M.I. 46983 February 13, 2007; paragraph(b) and (c) amended, paragraph (d) deleted and renumbered by M.I. 47636 - September 9, 2008; paragraphs (c)-(e) amended by M.I. 48171 - February 9, 2010; paragraphs (a)-(g) amended by M.I. 48534 - January 11, 2011; amended § 4304 title, amended paragraphs (a)-(f), deleted former paragraphs (f) and (g), and renumbered former paragraph (h) by M.I. 49187 - September 11, 2012.

§ 4305. Setting of Charges to Raise Fixed Revenue.

(a) Not later than its regular May meeting each year, the Finance and Insurance Committee shall make its final determination regarding the water standby charge or other fixed revenue charge, if any, for the fiscal year beginning the following July 1, and shall recommend such charge, if any, to the Board at its regular May meeting.

(b) Not later than such May meeting, the Board shall consider and take action upon the recommendations, if any, of the Finance and Insurance Committee regarding a fixed revenue source, exclusive of taxes, to become effective the following January 1 or for the fiscal year beginning the following July 1, as determined by the Board for each fixed revenue source.

M.I. 49187 - September 11, 2012.

Chapter 4

CLASSIFICATION AND RATES

§ 4400. Basic Statement.

The rates and charges set forth herein, so far as practicable, shall result in revenue to meet the obligations set forth in Section 134 of the Metropolitan Water District Act.

Section 312.1 based on Res. 7666 - April 13, 1976; amended by M.I. 33642 - March 10, 1981. Section 312.1 repealed and Section 4400 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41468- June 13, 1995.

§ 4401. Rates.

(a) The rates per acre-foot for water sold and delivered for each class of service on order of any member public agency for use therein shall be as follows:

(1) For all water that does not meet criteria for other classes of service or special programs as defined in this Division, each of the following is applicable:

System Access Rate:

Effective Date:	01/01/2014	**Rate:**	$243.00
	01/01/2015		$257.00
	01/01/2016		$259.00

Water Stewardship Rate:

Effective Date:	01/01/2014	**Rate:**	$ 41.00
	01/01/2015		$ 41.00
	01/01/2016		$ 41.00

System Power Rate:

Effective Date:	01/01/2014	**Rate:**	$161.00
	01/01/2015		$126.00
	01/01/2016		$138.00

Treatment Surcharge (Applicable to treated water):

Effective Date:	01/01/2014	**Rate:**	$297.00
	01/01/2015		$341.00
	01/01/2016		$348.00

Supply Rate:

Tier 1 Supply Rate – The Tier 1 Supply Rate shall apply to water purchases which in the aggregate for any calendar year, are less than or equal to 60 percent of the Revised Base Firm Demand of such member agency as specified in Section 4122, unless that member agency has executed a Purchase Order, as defined in Section 4120, in which case the Tier 1 Supply Rate applies to water purchases as established by the Purchase Order terms.

Effective Date:	01/01/2014	**Rate:**	$148.00
	01/01/2015		$158.00
	01/01/2016		$156.00

Tier 2 Supply Rate –The Tier 2 Supply Rate shall apply when a member agency's cumulative total of water purchases for the calendar year exceeds 60 percent of the member agency's Revised Base Firm Demand as specified in Section 4122, or according to the terms of a Purchase Order for member public agencies that execute a Purchase Order.

Effective Date:	01/01/2014	**Rate:**	$290.00
	01/01/2015		$290.00
	01/01/2016		$290.00

(2) [Reserved]

(b) The rates for water established by Section 4401(a) shall not apply to water sold and delivered by the District to any purchaser other than a member public agency; and said rates for water shall not apply to water sold and delivered by the District for any use outside the District, or to water sold and delivered by the District for any use within the District in substitution for water used outside the District, regardless of whether or not such water be purchased by, or delivered pursuant to the order of, any member public agency; but such water shall be sold and delivered pursuant to such contract and upon such terms and conditions as the Board shall authorize and determine for each such transaction.

(c) For purposes of agreements existing under the Local Resource Program, Local Project Program, Groundwater Recovery Program and other similar programs, references to the "full service water rate," "full service treated water rate," "treated non-interruptible water rate" or "other prevailing rate" or to the "reclaimed water rate" or "recycled service rate" shall be deemed to refer to the sum of the System Access Rate, Water Stewardship Rate, System Power

Rate, the expected weighted average of Tier 1 Supply Rate and Tier 2 Supply Rate (equal to the estimated sales revenues expected from the sale of water at the Tier 1 and Tier 2 Supply Rates divided by the total District sales in acre-feet expected to be made at the Tier 1 and Tier 2 Supply Rates), a Capacity Charge expressed on a dollar per acre-foot basis and Treatment Surcharge.

Section 312.3 based on Res. 7666 - April 13, 1976; paragraphs (a)(1) through (a)(3) [formerly Sections 312.3.1 through 312.3.3] amended by M.I. 31919 – August 19, 1977, M.I. 33644 – March 10, 1981; amended by M.I. 33642 – March 10, 1981; paragraphs (a)(1) through (a)(3) amended by M.I. 34156 – March 9, 1982, effective July 1, l982, M.I.34635 - March 8, 1983 effective July 1, 1983, M.I. 34851 – September 13, 1983 effective January 1, 1984; paragraphs (a)(4) and (a)(5) [formerly Sections 312.3.4 and 312.3.5] added and paragraphs (b) and (c) [formerly Sections 312.3.4 and 312.5] renumbered by M.I. 34867 – September 13, 1983; paragraph (a)(4) amended by M.I. 34930 – November 8, 1983, effective January 1, 1983; paragraphs (a)(1) through(a)(3) amended by M.I. 35064 – March 13, 1984 effective July 1, l984; paragraph (a)(4) amended by M.I. 35482 – January 8, 1985; paragraphs (a)(1) through (a)(3) amended by M.I. 35558 – March 12, 1985 effective July 1, 1985, M.I. 36001 – March 11, 1986. Section 312.3 repealed and Section 4401 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraph (a)(1) through (a)(3) and (a)(5) amended by M.I. 36540 - March 10, 1987, effective July 1, 1987; paragraph (c) deleted by M.I. 36811 - September 22, 1987; paragraph (a)(4) amended by M.I. 37006 - February 9, 1988; paragraphs (a)(1) through (a)(3) and (a)(5) amended by M.I. 37045 - March 8, 1988, effective July 1, 1988; par. (a)(4) amended by M.I. 37566 - March 14, 1989 and pars. (a)(1) through (a)(3) and (a)(5) amended by M.I. 37574 - March 14, 1989, effective July 1, 1989; paragraph (a)(4) amended by M.I. 37764 - July 11, 1989, effective August 1, 1989; paragraphs (a)(1) through (a)(5) amended by M.I. 38196 - April 17, 1990, effective July 1, 1990; paragraph (b) renumbered to (c) and new paragraph (b) added by M.I. 38196 - April 17, 1990; paragraphs (a)(1) through (a)(5) amended by M.I. 38867 - April 9, 1991, effective July 1, 1991; paragraph (b) repealed and paragraph (c) renumbered by M.I. 39370 - December 10, 1991; paragraph (a)(1), and (a)(3) through (a)(5) amended by M.I. 39503 - March 10, 1992, effective July 1, 1992; paragraphs (a)(1), and (a)(3) through (a)(5) amended by M.I. 40142 - March 9, 1993, effective July 1, 1993 and April 1, 1993 respectively; paragraph (a)(5) amended for rate to become effective July 1, 1993 by M.I. 40173 - April 13, 1993; paragraphs (a)(1), (a)(3) through (a)(6) amended by M.I. 40731 - March 8, 1994; paragraphs (a)(1) through (a)(3) and (a)(5) amended and (a)6) added by M.I. 40865 - June 14, 1994; paragraph (a) amended, paragraph (b) added and paragraph (c) amended and renumbered by M.I. 41468 - June 13, 1995; paragraph (a)(3) amended by M.I. 41652 - November 14, 1995; paragraph (a) amended by M.I. 41816 - March 12, 1996 to be effective January 1, 1997; paragraph (a)(1) amended by M.I. 42278 - February 11, 1997; paragraphs (a)(1) through (a)(4) amended and paragraph (a)(5) added by M.I. 42335 and 42336 - March 11, 1997; paragraphs (a)(1) and (a)(2) amended by M.I. 42608 - September 9, 1997; paragraphs (a) (1), (2), (3), (4), and (b) amended by M.I. 42870 - March 10, 1998; paragraphs (a) (1), (2), (3), (4), and (b) amended by M.I. 43354 - January 12, 1999; paragraphs (a) (1), (2), (3), and (4) amended by M.I. 43936 – March 14, 2000; paragraphs (a)(1), (2), (3), (4), and (5) amended by M.I. 44386 – March 13, 2001; paragraph (a) (1) and (2) amended, paragraphs (a) (3), (4), and (5) sub-paragraph (b) deleted, old paragraph (c) renamed (b), and new paragraphs (a) (3) and (c) added by M. I. 44812 - March 12, 2002; paragraph (a) (2) amended by M. I. 45249 - March 11, 2003; paragraph (c) amended by M. I. 45257 - March 11, 2003; paragraphs (a) (1), (2), (3) amended by M.I. 45690 – March 9, 2004; paragraph (c) amended by M. I. 45943 – October 12, 2004; paragraph (a) (1), (2), (3) amended by M. I. 46149 - March 8, 2005; paragraphs (a) (1) (2) (3) amended by M. I. 46593 – March 14, 2006; paragraph (a)(1)-(3) amended by M. I. 47064 – April 10, 2007; paragraph (a)(3) amended by M. I. 47259 – October 9, 2007; paragraphs (a)(1)(2) and (3) amended by M.I. 47422 – March 11, 2008; paragraphs (a)(1)(2) and (3) amended by M.I. 47859 – April 14, 2009; paragraph (a)(1) amended by M.I. 48232 – April 13, 2010; paragraphs (a)(1)-(3) amended by M.I. 49026 – April 10, 2012; paragraph (a)(2) amended by M.I. 49272 - December 11, 2012; paragraph (a)(1) amended, paragraph (a)(2) deleted and reserved, and paragraph (3) deleted by M.I. 49734 – April 8, 2014; amended paragraph (a)(1) sections covering “Tier 1 Supply Rate,” and “Tier 2 Supply Rate” by M.I. 49952 - November 18, 2014.

§ 4402. Readiness-to-Serve Charge.

(a) The readiness-to-serve charge shall be set by the Board from time to time to recover the costs of emergency system storage and the cost of system conveyance capacity for peak and standby use not recovered by property tax revenue. The readiness-to-serve charge will be allocated among the member public agencies beginning January 1, 2003, in proportion to the

average of deliveries (including exchanges and transfers) through Metropolitan's system (in acre feet) to each member public agency during the ten-year period ending June 30, 2001; and thereafter as a ten-year rolling average; provided that Metropolitan sales of reclaimed water under the Local Projects Program, and Local Resources Program, groundwater under the Groundwater Recovery Program and deliveries under Replenishment and Interim Agricultural Water Service shall not be included in the water deliveries calculation.

(b) The readiness-to-serve charge shall be due monthly, quarterly or semiannually, as agreed upon by Metropolitan and the member public agency. If a standby charge is collected on behalf of a member public agency, the member public agency will be credited for the amount of net collections. This charge is subject to the provisions of Sections 4507 and 4508.

(c) The General Manager shall establish and make available to member public agencies procedures for administration of the readiness-to-serve charge, including filing and consideration of applications for reconsideration of their respective readiness-to-serve charge. The General Manager shall review any applications for reconsideration submitted in a timely manner. The General Manager shall also establish reasonable procedures for the filing of appeals from his determination.

M.I. 41468 - June 13, 1995; paragraph (b) amended by Resolution 8492 adopted by M.I. 41816 - March 12, 1996; paragraphs (b) and (e) amended by M. I. 44582 – August 20, 2001; paragraph (a) amended, paragraphs (b) and (c) deleted, paragraphs (d) and (e) renamed (b) and (c) respectively by M. I. 44812 - March 12, 2002; paragraph (a) amended by M. I. 45249 and M. I. 45257 - March 11, 2003; paragraph (a) amended by M. I. 45943 – October 12, 2004.

§ 4403. Capacity Charge.

(a) Beginning January 1, 2004, the capacity charge shall be payable by each member agency for system capacity based on the maximum summer day demand placed on the system between May 1 and September 30 for the three-calendar year period ending December 31, 2002, and thereafter for a rolling three-calendar year period.

(b) The capacity charge shall be due monthly, quarterly or semiannually, as agreed upon by Metropolitan and the member public agency.

M.I. 41468 - June 13, 1995; paragraphs (b) and (f) amended by M. I. 44582 – August 20, 2001; old Section deleted and renamed, new paragraphs (a)-(d) added by M. I. 44812 - March 12, 2002; paragraphs (a) and (b) amended by M. I. 45249 - March 11, 2003 and paragraphs (a) and (b) amended and paragraphs (c) and (d) deleted by M. I. 45257 - March 11, 2003; paragraph (a) amended by M. I. 45943 – October 12, 2004; Section title and paragraph (b) amended by M. I. 46148 - March 8, 2005.

§ 4404. Purchase Orders.

(a) The General Manager shall establish and make available to member public agencies the form of the Purchase Order and procedures for its administration. The General Manager shall establish a deadline by which all Purchase Orders shall be executed by member public agencies that desire to enter into such agreements with the District. Following the deadline

established by the General Manager, no member public agencies will be allowed to execute Purchase Orders.

(b) The term of the Purchase Orders shall be specified in the Purchase Order. All Purchase Orders in effect for the same time period shall be on substantially the same terms. All amendments to Purchase Orders require approval by the Board.

(c) Each member public agency executing a Purchase Order shall commit to purchase at least its Purchase Order Commitment during the term of the Purchase Order.

(d) Purchase Orders shall permit a member public agency to purchase up to 90 percent of its Base Period Demand at the Tier 1 Supply Rate for the term of the Purchase Order.

(e) All water deliveries under a Purchase Order shall be subject to the operational conditions and constraints contained in this Division. In addition, all billings and payments for such water shall be subject to the provisions of this Division in the same manner as other water delivered by Metropolitan.

M.I. 41468 - June 13, 1995; old Section deleted and renamed, new paragraphs (a)-(g) added by M. I. 44812 - March 12, 2002; paragraph (d) amended by M.I. 48800 – September 13, 2011; amended paragraphs (b), (d), and (e), deleted prior paragraphs (e) and (f), and renumbered prior paragraph (g) as paragraph (e) by M.I. 49952 - November 18, 2014.

§ 4405. Wheeling Service.

(a) Subject to the General Manager's determination of available system capacity, Metropolitan will offer wheeling service. The determination whether there is unused capacity in Metropolitan's conveyance system, shall be made by the General Manager on a case-by-case basis in response to particular requests for wheeling.

(b) The rates for wheeling service shall include the System Access Rate, Water Stewardship Rate and, for treated water, the Treatment Surcharge, as set forth in Section 4401. In addition, wheeling parties must pay for their own cost for power (if such power can be scheduled by the District) or pay the District for the actual cost (not system average) of power service utilized for delivery of the wheeled water. Further, wheeling parties shall be assessed an administration fee of not less than $5,000 per transaction.

M.I. 42335 - March 11, 1997; paragraph (a) amended, paragraphs (b) and (c) deleted, and new paragraph (b) added by M. I. 44812 - March 12, 2002.

Chapter 5

WATER SERVICE REGULATIONS - GENERAL

Sec.

§ 4500. Adoption of Regulations.

Subject to all applicable provisions of the Metropolitan Water District Act, as said Act may be amended from time to time, the following regulations shall govern the service of water by the District.

Section 322.1 based on Res. 7260 - May 12, 1970, amending Res. 3896 - August 18, 1950; amended by M.I. 33642 - March 10, 1981. Section 322.1 repealed and Section 4500 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4501. Obligation to Pay for Water Delivered.

(a) All water delivered through any service connection to a member public agency for use within the member public agency shall be supplied in accordance with the provisions of the Metropolitan Water District Act and the rules and regulations of the District governing such service, as set forth in Chapter 5. The District shall bill the member public agency for all water delivered through the service connection, and the member public agency shall pay the District for all water so delivered at the rate or rates and within the period from time to time fixed by the Board.

(b) In the event that any member public agency shall request in writing a delivery of water directly by the District into any distribution system owned by some other agency which serves water within the corporate area of the member public agency, the member public agency

shall be obligated to pay the District for all water so delivered at the rates and under the conditions from time to time fixed by the Board; and such delivery into such other system shall constitute delivery to such member public agency for the purpose of these regulations.

(c) Member public agency system losses of District-supplied water are losses that are inherent in the operation of a water distribution system. These include losses occasioned by evaporation, seepage, spillage, leakage, pipeline failure, or system testing. Such losses shall be charged to a member public agency in direct proportion to the classes of service in which they occur and at the rates prescribed in Section 4401 for water sold and delivered for each such class of service. Such system losses shall not affect a member public agency's obligation to sustain an interruption or reduction in the delivery of water as set forth in this Code.

Section 322.2 based on Res. 7260 – May 12, 1970, amending Res. 3896 – August 18, 1950; amended by M.I. 33642 – March 10, 1981. Section 322.2 repealed and Section 4501 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraphs (a) and (c) amended by M.I. 40865 - June 14, 1994; paragraph (a) amended by M.I. 41468 - June 13, 1995; paragraph (c) amended by M.I. 42278 - February 11, 1997; Paragraph (c) amended by M. I. 44005 - May 17, 2000.

§ 4502. Liability and Indemnification.

Neither the District nor any of its officers, agents, or employees shall be liable for the control, carriage, handling, use, disposal, or distribution of water supplied or delivered by the District to a member public agency after such water has been delivered to such member public agency; nor for claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water beyond the point of such delivery; and the member public agency shall indemnify and hold harmless the District and its officers, agents, and employees from any such damages or claims of damages, and shall reimburse the District for costs of repair of the District's facilities and other damages resulting from the operations of the member public agency. Neither the member public agency nor any of its officers, agents, or employees shall be liable for the control, carriage, handling, use, disposal, or distribution of water prior to such water being delivered to the member public agency; nor for claim of damage of any nature whatsoever, including but not limited to property damage, personal injury or death, arising out of or connected with the control, carriage, handling, use, disposal, or distribution of such water prior to its delivery to such member public agency, excepting, however, claims by the District for costs of repair to the District's facilities and other damages resulting from the operations of the member public agency; and the District shall indemnify and hold harmless the member public agency and its officers, agents, and employees from any such damages or claims of damages, except claims by the District for costs of repair of the District's facilities and other damages resulting from the operations of the member public agency.

Section 322.3 based on Res. 7260 – May 12, 1970, amending Res. 3896 – August 18, 1950; amended by M.I. 33642 – March 10, 1981; amended by M.I. 34826 – August 17, 1983. Section 322.3 repealed and Section 4502 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended by M. I. 44812 - March 12, 2002.

§ 4503. Suspension of Deliveries.

(a) Whenever repairs or maintenance of the District's system, in the opinion of the General Manager of the District, shall require suspension of delivery of water at any point or points, such delivery may be suspended without liability on the part of the District; provided, that except in cases of emergency, as determined by the General Manager, notice of such suspension of service shall be given to the affected member public agency in advance of such suspension. Metropolitan will make a concerted effort to notify and work with member public agencies regarding all scheduled interruptions. The District will schedule non-emergency interruptions for the low demand months of the year, typically October through April, in coordination with the member public agencies.

(b) Each member agency shall have sufficient resources such as local reservoir storage, groundwater production capacity, system interconnections or alternate supply source to sustain:

(1) A seven-day interruption in Metropolitan deliveries from raw and treated water distribution facilities based on average annual demands of the affected facility.

(2) For service connections installed or modified after December 31, 2008 on raw water conveyance facilities, a seven-to twenty-one-day interruption in Metropolitan raw water deliveries based on average annual demand of the affected facility.

If a member public agency has been provided with a sixty (60) day notice of when an interruption in service is to occur, the member public agency shall be responsible for and reimburse direct costs, excluding labor costs, incurred by Metropolitan in the event that a scheduled non-emergency interruption is postponed or cancelled at the request of the member public agency as a result of insufficient local resources, and the District agrees to such cancellation or postponement. Direct costs shall be determined by Metropolitan's General Manager, in consultation with the affected member agency. These direct costs shall be applied to the member public agency's water invoice following cancellation or postponement of the shutdown.

(c) Except in cases of emergency, the District, working with the member agencies, will produce a shutdown schedule each September for the annual shutdown season from October through April. The District will also develop a three-year shutdown schedule, which will give notice of the proposed shutdowns greater than seven days at least one-year in advance.

Section 322.4 based on Res. 7260 – May 12, 1970, amending Res. 3896 – August 18, 1950; amended by M.I. 33642 – March 10, 1981. Section 322.4 repealed and Section 4503 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended by M.I. 42278 - February 11, 1997; paragraph amended by M. I. 44812 - March 12, 2002; paragraph amended by M. I. 45943 – October 12, 2004; paragraphs assigned (a), (b), (c), & (d) designations and amended by M. I. 45988 – November 9, 2004; paragraph (b) amended, (b)(1) and (2) added by M. I. 47730 - December 9, 2008.

§ 4504. Rates of Flow.

(a) Within any 24-hour period, changes in rate of flow through any service connection serving a member public agency will be limited to ten (10) percent above and below the previous 24-hour average rate of flow except when a specific request for a change in rate that would exceed such limitations has been made to the District; such requests (1) shall be made at least 6 hours in advance of the time such change is to be made; (2) shall be approved by the General Manager only if in his judgment the change would not adversely affect the District's ability to apportion available water equitably. The General Manager is hereby authorized to reduce the maximum obtainable rate of flow at any service connection where this regulation is being violated and in the event the capacity of the distribution system is insufficient to accommodate the above mentioned daily fluctuations in delivery rate, the General Manager shall regulate the rates of flow at any or all service connections so as to assure equitable service to all agencies. However, the District will endeavor to meet all reasonable demands for service so long as comparable service can be provided to all member public agencies being served from a related section of the District's distribution system.

(b) When flow through a service connection serving a member public agency is reduced below ten (10) percent of the requested or actual maximum design capacity of the meter, whichever is less, at that connection during a period when the service connection turnout valve is in the open position, the member public agency will be charged as though a flow equaling ten (10) percent of the capacity of such meter were being delivered, as determined by the General Manager, unless the District has been advised by the member public agency that no deliveries are required at that connection for a specified period. This Section 4504(b) shall not apply to those service connections which are not connected to pressure pipelines of the District or to those service connections being operated intermittently in a manner determined by the General Manager to be of benefit to the District under conditions such that when flow does occur at these service connections it exceeds ten (10) percent of the meter capacity. The General Manager shall have the power to waive the requirements of this Section 4504(b), with respect to any meter where the agency served by the meter is doing everything within its capability, as determined by the General Manager, to adjust its facilities and operations so as to be able to take delivery at rates of flow not less than ten (10) percent of the requested or actual maximum design capacity of the meter, whichever is less, at that connection during a period when the service connection turnout valve is in the open position.

(c) When flow through a service connection serving a member public agency is increased above the actual maximum design capacity of the meter, the member public agency will be charged as though a flow equaling one hundred and twenty-five (125) percent of the capacity of such meter were being delivered, as determined by the General Manager.

(d) The General Manager shall have the power to waive the provisions of Sections 4504(a), 4504(b) and 4504(c) for a specified period with respect to any service connection if in his judgment such a waiver will serve to accomplish the current objectives of the District and will not adversely affect the operation of the District's distribution system or impair its ability to provide service to all member public agencies.

Paragraph (b) [formerly Section 322.5.2] based on Res. 7241 - February 10, 1970 and Res. 7260 - May 12,1970; paragraph (a) [formerly Section 322.5.1] based on Res. 7260 - May 12, 1970 amending Res. 3896 - August 18, 1981; paragraph (c) [formerly Section 322.5.3] added by M.I. 31817 - June 14, 1977; section amended by M.I. 33642 - March 10, 1981. Section 322.5 repealed and Section 4504 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; paragraph (a) amended, paragraph (c) added and paragraph (d) renumbered and amended by M.I. 42278 - February 11, 1997.

§ 4505. Estimates of Water Requirements and Schedules of Deliveries.

(a) General. - Before July 1 of each year, each member public agency shall furnish the District, in form provided by the District, with an estimate of the amounts of water to be furnished to such member public agency by the District. These estimates will be used by the District in planning the construction needed to complete the District's ultimate aqueduct and distribution system; in planning the future operation of such system; and in preparing notices for submission to the State Department of Water Resources which will be used by the State to order power for pumping on the State Water Project.

(b) Contents of Estimates

(1) Each estimate furnished by a member public agency pursuant to Section 4505(a) shall contain, as a minimum, for each service connection and for each month of the year beginning with the succeeding July 1, and for the entire member public agency for each month of the succeeding four years, the following information:

(i) The quantity of water to be delivered by Metropolitan to the member public agency in full service.

(ii) With regard to water estimated to be delivered in full service, the quantity of water to be used for seawater barrier groundwater replenishment.

(iii) With regard to water estimated to be delivered in full service, the quantity of water to be used for:

(aa) groundwater replenishment,

(bb) reservoir replenishment

(2) The estimate shall constitute the member public agency's request for deliveries for the first of the five years covered therein.

Section 322.6 based on Res. 7260 – May 12, 1970; amended and paragraph (b) [formerly Section 322.6.2] added by M.I. 33642 – March 10, 1981] effective July 1, 1981; paragraph (a) [formerly Section 322.6.1] amended by M.I. 36374 - November 18, 1986. Sections 322.6.1 and 322.6.2 repealed and Section 4505 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraph (b)(iii) added and previous paragraph (b)(iii) renumbered to (b)(iv) and amended by M.I. 37764 - July 11, 1989; paragraphs (b)(1)(ii) and (iv) amended and subparagraph (cc) repealed by M.I. 40865 - June 14, 1994; paragraph (a) amended by M.I. 41468 - June 13, 1995; paragraphs (a) and (b)(1) amended by M.I. 42278 - February 11, 1997; Paragraphs ((b) (1) (ii), (iii); (aa), and (bb) amended by M I. 44005 - May 17, 2000; sub-paragraph(aa) amended by M. I. 44812 - March 12, 2002; sub-paragraph (iii) deleted and renumbered, sub paragraphs (aa) and (cc) amended, and (dd) added by M. I. 45249 - March 11, 2003.

§ 4506. Metering of Water.

All water delivered by the District shall be metered. Meter readings shall be made on or about the last day of each calendar month for billing purposes. Meters and control valves on water lines of the District shall be owned and operated by the District. Any member public agency may have any meter through which water is served from the District's facilities to any area within such member public agency tested by the District at any time. Any member public agency affected shall have the right to be represented by a qualified observer at and during any such tests. In the event that any such test shall disclose an error exceeding 2 percent, an adjustment shall be made in charges made to the affected member public agency, covering the known or estimated period of duration of such error, but in no event exceeding six months, and the expenses of such test shall be borne by the District; otherwise, such expense shall be borne by the member public agency requesting such test.

Section 322.7 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.7 repealed and Section 4506 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4507. Billing and Payment for Water Deliveries.

(a) **Timeframe for Billing and Payment.** Except as noted herein below, invoices shall be mailed electronically, or, if requested by the member agency, by hardcopy via United States mail, not later than the tenth day of the month following delivery to a member public agency. Each such invoice shall indicate the date of mailing and the date on which the payment thereunder becomes delinquent and shall show the total amount of water delivered for each class of service, the charges for water sold and delivered for each class, the readiness-to-serve and capacity charges, as applicable, and the total amount due and owing, all as determined by the General Manager. Payment of the amount shown on any such invoice shall be due on the last business day of that month and shall be delinquent if not received by the Treasurer of the District before the close of crediting activity on the last business day of the first month following such date of mailing. When making any such payment the member public agency shall specify the invoice or invoices to which the payment shall be credited by the District.

(1) For purposes of Section 4507(a), "business day" shall mean any day other than a Saturday, a Sunday, or a Holiday (as defined in Section 1106).

(2) For purposes of Section 4507(a), "received by the Treasurer of the District" shall mean receipt either (1) in the office of the Treasurer or (2) by crediting pursuant to advance agreement with the Treasurer to the District's general demand account at the District's principal depository bank, in such form that the funds are immediately available for investment or other use or disposal by the District.

(3) For purposes of Section 4507(a), "crediting activity" shall mean either (1) 2:00 p.m. if payment is delivered to the office of the Treasurer, or (2) the cutoff time for crediting by the District's principal depository bank of that day's transactions if payment is

initiated by wire transfer, automated clearinghouse transfer, interbranch transfer, direct deposit, or by other means pursuant to advance agreement with the Treasurer.

If, under advance agreement with the Treasurer, a member agency has authorized payment of any invoice by automated clearinghouse transfer initiated by the Treasurer, the Treasurer shall initiate such transfer for processing two business days prior to the business day on which such payment shall be delinquent. Failure of such transfer shall not relieve such member agency from liability for such payment or charges in the event such payment should become delinquent, except as specifically provided under advance agreement with the Treasurer.

(b) **Full Service and Emergency Storage Program Facility.** In cases where water through a particular facility is delivered during any month for full service or Emergency Storage Program Service, the bill for water delivered in such month will be prepared by applying the rates for water sold and delivered in full service to the total quantity of water delivered. If the member public agency desires to receive credit for water used in Emergency Storage Program Service, the facts concerning the quantities of water so used must be certified to the District via the District's electronic certification and billing system by an authorized user for the member public agency purchasing such water as provided for in Section 4507 (c). The amount of such credits shall be based on the difference in water rates in effect at the time the water is used.

(c) **Late Certifications.** Based on available information, the District will notify a member agency for any certification that it has not received, if known, three months from the end of the month for which the agency would normally certify. No certification received after six months following the end of any month in which such a credit is claimed will be accepted. Certifications must be received by Metropolitan before 3:30 p.m. on the third working day after the end of the month to receive credit for any preceding month on the next bill, subject to the provisions with respect to late certifications in this Section. This Section applies to all cases where a certification is required to receive a credit, whether or not specifically named in this Section, unless otherwise provided by this Code.

(d) **Determination by General Manager as to Type of Delivery.** In the event the respective quantities of water sold and delivered in any month on order of any member public agency for use therein in any water program or contract requiring certification, are not determinable to the satisfaction of the General Manager in time for preparing regular monthly bills, then billing and payment for all water sold and delivered in such month to such member public agency shall be made at the rates prescribed for water used in full service in Section 4401(a)(1) hereof. Upon the determination by the General Manager of the correct quantities of water sold and delivered and used in any water program or contract requiring certification, any adjustment which is necessary to give effect to the applicable credit for the water used in any water program or contract requiring certification, shall be made by application of credits on subsequent purchases of water from the District by such member public agency. Such adjustments shall not be made in cases where a claim for the applicable credit is not submitted within the period provided in Section 4507(c).

(e) **Obligation to Pay for Appropriate Class of Service.** If water has been sold and delivered at the rates prescribed for water sold in any water program or contract, and appropriate

certifications have been submitted for the water so used, but the water has in fact been used in full service or another class of service, the member public agency shall be obligated to pay the difference between the rates prescribed for water sold for the applicable water program or contract and the rates prescribed for the class of service actually used.

(f) **Submission of Documentation by Member Agency.** With respect to water sold and delivered at the rates prescribed for water sold under water programs or contract (unless otherwise specified in an agreement with the District), original documentation supporting the use of such water as certified must be submitted no later than December 31 following the end of the fiscal year for which a certification is submitted, unless otherwise specified in an agreement with the District. If the documentation is not submitted by December 31 following the end of the fiscal year for which a certification was submitted, an agency will receive a late penalty of $2,500. If the agency does not submit documentation by February 28/29 following the end of the fiscal year for which a certification was submitted, it shall be conclusively presumed that:

(1) The water sold from the District was used for full service, and the District's next monthly billing shall reflect such adjustment; or

(2) The yield was not produced as certified and the District's next monthly billing shall reflect such adjustment.

This provision will apply individually to each program or agreement that an agency or sub-agency participates in separately.

(g) **Review Process.** With respect to water sold and delivered at the rates prescribed for water sold under water programs or contract (unless otherwise specified in an agreement with the District) the District will complete its review within twelve months from date of receipt of the original supporting documentation.

(1) Should the District not complete its review within twelve months of the submittal of all source documentation, the review will be considered complete and the certifications final.

(2) When the review is completed, the District will notify the member agency of its initial findings for its comments. The member agency will provide its comments within 60 days. Metropolitan staff and the agency will work together to reconcile any differences.

(3) If the member agency and Metropolitan staff cannot reconcile the differences, Metropolitan's Water System Operations' Group Manager has the responsibility to consult with the member agency and make a final ruling, subject to the General Manager's oversight. If the ruling is unsatisfactory to the agency, it can be appealed to Metropolitan's Finance and Insurance Committee.

(4) If the member agency does not provide further documentation correcting Metropolitan staff findings within the 60 day comment period as specified in (g) (2), then it shall

be conclusively presumed that the District's findings are correct and the District's next monthly billing shall reflect such adjustment.

(h) **Discovery of Mistakes or Errors.** In the event a mistake or error is discovered in a District water sales record, the General Manager shall initiate appropriate corrective action. No mistake or error made more than three years prior to its discovery shall be corrected unless otherwise specified in an agreement with the District. In the event a mistake or error is discovered by a member agency in its water sales record or certifications, no mistake or error made more than three years prior to its discovery shall be corrected unless otherwise specified in an agreement with the District.

(1) A District water sales record shall include a water billing invoice, or district invoice for other water-related charges.

(2) If the District finds the mistake or error, the discovery of the mistake or error shall be documented in writing to the member agency. The date of discovery for corrective action purposes shall be the date notice is sent to the member agency.

(3) If the member agency discovers the mistake or error, the discovery of the mistake or error shall be documented in writing to the District by either a revised certification form or letter, whichever is applicable. The date of discovery for corrective action purposes shall be the date the certification or letter is received by the District.

(4) If an incorrect invoice has been issued to a member public agency, the General Manager shall notify the affected agency of any adjustment and the manner of making any required credit or charge, neither of which shall bear interest.

(5) Mistakes or errors shall also include but are not limited to mistakes or errors in metering or recording deliveries to member agencies, entry or calculation errors in fixed charges, discovery of errors in either a member agency or sub-agency submitted certification(s), or processing of a certification(s) for the Local Projects Program, the Local Resources Program, the Groundwater Recovery Program, Conservation Credit Program, or any other water management program or storage programs or agreements unless specified otherwise in the contract.

(6) Any mistakes or error for a fiscal year period that is less than five acre-feet cumulative by agency or sub-agency, by program or agreement, shall be waived.

(i) **Rate Change.** In the event that deliveries of water are made by the District to member public agencies over a billing period during which the District's water rates change, the General Manager may cause the meters recording deliveries of water during such period to be read at the end of the period and the statement of charges for such deliveries of water may be based on a proration between the previous and new water rates for the periods of time during which each were in effect as determined by the General Manager.

Section 322.8 based on Res. 7291 – October 13,1970; amended, paragraphs (c) through (h) [formerly Sections 322.8.3 through 322.8.8] added, and paragraph (i) [formerly Section 312.9] amended and renumbered by M.I. 33642 – March 10, 1981; paragraphs (c) and (f)(2) amended by M.I. 33691 – April 14, 1981; paragraph (a) [formerly Section 322.8.1] amended and paragraphs (a)(1) through (a)(3) added by M.I. 34215 – May 11, 1982; paragraph (d) amended by M.I. 35430 – December 11, 1984; paragraph (a) amended by M.I. 36374 - November 18, 1986. Section 322.8 repealed and Section 4507 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; paragraph (a) amended by M.I. 37271 - August 23, 1988; amended by M.I. 37764 - July 11, 1989; paragraph (c) amended by M.I. 39082 - July 9, 1991; paragraph (f) amended by M.I. 40389 - August 24, 1993; paragraphs (a), (a)(2) and (3) amended by M.I. 40463 - September 21, 1993; paragraphs (c), (d), (f) through (i)(1) and (2) and (j), (k) and (l) amended by M.I. 40865 - June 14, 1994; paragraph (a) amended by M.I. 41468 - June 13, 1995; paragraphs (e) and (f) amended by M.I.41617 - October 10, 1995; paragraphs (a), (b), (d)-(m) amended by M.I. 42278 - February 11, 1997; Titles added to paragraphs (a)-(n), original paragraphs (b)-(l) renumbered and amended, new paragraphs (k)-(m) (1)-(6) added, and paragraph (m) amended and (m) (1)-(6) added by M. I. 44005 - May 17, 2000; paragraph (l)(3) amended by M.I. 44582 – August 20, 2001; paragraphs (a) and (f) amended and new paragraph (o) added by M. I. 44812 - March 12, 2002; paragraphs (a), (d), (e), (i), (j), (k), (l), (m)(5) amended by M. I. 45249 - March 11, 2003; paragraphs (e), (i), and (j) amended by M.I. 45941 – October 12, 2004; paragraph (a) amended by M. I. 46148 - March 8, 2005; paragraph (l)(3) amended by M. I. 46983 - February 13, 2007; paragraphs (c), (i)(3), (j) amended, paragraph (g) added and renumbered by M. I. 47259 - October 9, 2007; paragraphs (l), (m), (n)(1)-(6), (o), (p) amended by M.I. 47672 – October 14, 2008; paragraphs (c), (e), (i)(3), (j) amended by M.I. 47998 - August 18, 2009; paragraph (3) amended by M.I. 48534 - January 11, 2011; deleted paragraph (p) by M.I. 49952 - November 18, 2014.

§ 4508. Additional Payment and Reporting in the Event of Delinquency in Payment for Water.

In the event any member public agency shall be delinquent in the payment for water delivered and other charges as invoiced by the District, an additional charge equal to two (2) percent of such delinquent payment for each month or portion thereof that such payment remains delinquent shall be assessed, and the member public agency shall pay such charge to the District in addition to the amount of such delinquent payment. Notwithstanding the above, if the total period of delinquency does not exceed five (5) business days, the additional charge shall be equal to one (1) percent of such delinquent payment. Invoices for delinquencies including additional charges shall be mailed not later than the tenth day of each month. In the event any member public agency shall be delinquent for more than thirty (30) days in the payment for water, such delinquency shall be reported by the General Manager to the Board of Directors of the District at its next meeting. The Board, in its discretion and upon such other conditions as it may prescribe after giving the member public agency a reasonable opportunity to be heard, may order the termination of service to such member public agency until all delinquent payments, including additional charges, are made to the District or may authorize such other actions as may be legally available to effectuate collection.

Section 322.9 based on Res. 7291 - October 13, 1970; amended by M.I. 33642 - March 10, 1981; amended by M.I. 34215 - May 11, 1982 effective July 1, 1982. Section 322.9 repealed and Section 4508 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 41468 - June 13, 1995.

§ 4509. Water Restricted to Use Within the District.

In order to insure that water served by the District is not used for the direct or indirect benefit of areas outside the District, the amount of water served by the District's facilities that shall be made available to any member public agency shall be limited to an amount equal to that required for uses within the area of the District lying within, or served by or through, such member public agency. No area lying outside the boundaries of the District shall be served with

water from the District's facilities, except as service to such area may, when found to be such by the Board, be a reasonably unavoidable incident to the service of such water within the District, and under such circumstances the amount of water served by the District that shall be made available to any member public agency shall be limited to an amount equal to that required for uses within the area of the District lying within, or served by or through, such member public agency. Any question of fact involved in the application of this Section 4509 shall be finally determined by the Board, after giving the member public agency concerned adequate opportunity to present pertinent factual evidence and the views of such member public agency.

Section 312.10 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.10 repealed and Section 4509 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4510. Application of Regulations.

The provisions hereof shall not be applicable to service of water to the United States of America, or to any board, department or agency thereof, to the State of California, or to the service of surplus water under contract made in accordance with statute, but such service shall be controlled by the applicable contract.

Section 312.11 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.11 repealed and Section 4510 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4511. Notices.

All notices and communications from member public agencies of the District, relating to the service of water or the administration of these regulations by the District, shall be addressed to the General Manager, Post Office Box 54153, Los Angeles, California 90054.

Section 312.12 based on Res. 7260 - May 12, 1970; amended by M.I. 33642 - March 10, 1981. Section 322.12 repealed and Section 4511 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4512. Sales Subject to System and Water Availability.

The District will endeavor to satisfy all requests for water sales and deliveries made by the member public agencies. Deliveries shall be subject to operational, supply or demand conditions, as determined by the General Manager. The District will develop annual operating plans in coordination with member public agencies. The annual operating plans shall be developed to meet requested deliveries under anticipated conditions. In the event of adjustments to deliveries due to changes in planned operations or in supply or demand conditions, the District and the member public agencies will communicate and coordinate operations.

M.I. 36811 - September 22, 1987; amended by M.I. 40865 - June 14, 1994; amended by M.I. 42278 - February 11, 1997.

§ 4513. Equal Opportunity Requirements.

Pursuant to contract between agencies of the United States and the District, any delivery of water by the District to a member public agency shall be subject to the following provisions.

For the purposes of these provisions only, the member public agency is therein referred to as "Contractor."

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Federal Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without discrimination because of race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the Federal Contracting Officer, advising said labor union or workers' representative of the Contractor's commitments under Section 202 of Executive Order 11246 of September 24, 1965, as amended, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by said amended Executive Order and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the Federal Contracting Officer and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further Federal Government contracts in accordance with procedures authorized in said amended Executive Order, and such other sanctions may be imposed and remedies invoked as provided in said amended Executive Order, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the

Secretary of Labor issued pursuant to Section 204 of said amended Executive Order, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

M.I. 36781 - August 18, 1987.

§ 4514. [Repealed].

[**§** 4515 - M.I. 38295 - June 12, 1990; repealed by M.I. 41468 - June 13, 1995.]

[**§** 4516 – M. I. 40969 – August 19, 1994; repealed by M. I.44812 - March 12, 2002.]

§ 4517. Cooperative Storage Program.

(a) The Cooperative Storage Program that provides a means for coordinating storage capacity available to the District's member public agencies, with the District's annual carryover storage needs as those needs are determined under Subsection 4206(c). The purpose of the Program is to place additional amounts of imported water in local storage to improve regional water supply reliability within the District's service area, in a manner that will recognize local costs and risks of participating in the program, but will not adversely impact either the District's finances or the member public agencies' ability to participate in the Replenishment Service Program.

(b) Storage Allocation - The General Manager shall allocate needed storage by reservoir and by groundwater basin to optimize the availability and usefulness of the storage to the District; and shall administer the Program so that, in any fiscal year, Program water in storage shall be accessible to offset demands on the District that year by the participating member public agency pursuant to subsection (h).

(c) Availability of Water for Storage - The General Manager may make water available during the period May 1 through September 30, for storage under the Cooperative Storage Program, upon notice to the respective participating member public agency, subject to a determination that the storage will increase the District's ability to receive imported water supplies.

(d) Application for Participation - Member public agencies may apply for participation in the Cooperative Storage Program by filing a written application containing at least the following:

(1) A verified statement that the member public agency will comply with the requirements of this section.

(2) A water supply and demand estimate based on historical data to ensure that:

(i) The agency's participation in the Program will not offset its firm purchases of water from the District, and

(ii) The agency will store additional imported District water.

(iii)The estimate may be updated if conditions change, provided the updating is first agreed to in writing by the agency and the District.

(3) A proposal for placing water provided by the District under this Program in storage available to the member public agency, and for administering that storage pursuant to this Section.

(4) An estimate of any expected losses of Program water while that water is in the proposed storage, and the method of estimating those losses.

(5) Evidence of compliance with the California Environmental Quality Act prior to delivery of imported water for placement in Program storage.

(6) If more than one member public agency overlies a common groundwater basin, the overlying member public agencies may file a joint application, with each such agency providing a separate water supply and demand estimate for its respective service area pursuant to subsection (d)(2) and any other separate information the General Manager may require.

(e) Approval for Participation - The General Manager shall approve an application for participation in the Program upon determination that it is consistent with the requirements of this section. The General Manager shall approve the application in writing which shall include a monthly estimate of total demand, water purchased from Metropolitan, available local supplies, and the maximum quantity of District water which shall qualify for storage under the Program, and those figures shall be approved by signature of a duly authorized representative of the participating member public agency prior to storage of water under the Program. Any later modification to said figures must be approved by both parties in writing. The application of any modification shall not be effective until approved in writing. The District shall conduct end-of-the-year verifications of stored water.

(f) Storing Process

(1) The District will deliver at its cost, available imported water to the respective participating member public agency at its appropriate District service connection, for Program storage by direct or in-lieu methods, following verbal or electronic acceptance by that agency. This delivery shall be deemed to be a Cooperative Storage Program sale by the District to the member public agency as defined in Section 4118, subject to the payment requirements of subsection (i) and (j) of this Section.

(2) The agency will, at its cost, cause the water to be placed in storage in a manner that meets all applicable storage requirements; and shall warrant that the stored water shall not be withdrawn or used until after the District releases the stored water pursuant to this Section.

(3) Program water delivered to a member public agency shall not offset a firm water sale of District Water by that agency. If a participating member public agency's firm water purchases from the District on a monthly basis during the May through September period are less than the District's firm water sales on a monthly basis during the same period in any one of the last five years, the agency must clearly demonstrate to the District, in writing, that such reduction occurred due to the availability of unexpected local water supplies. Any resulting change in the baseline established pursuant to Subsection (e) shall be approved in writing by the General Manager prior to becoming effective. Should the agency fail to make the required demonstration, the District shall bill the agency at the firm water rate for that portion of Cooperative Storage water delivered which will bring the firm water sales up to the agreed base amount of firm water for the month(s) in question.

(g) Storage Accounting

(1) Each participating member public agency shall maintain a Program storage account for Program water it stores, which shall account for monthly deliveries, releases, and storage losses approved by the District, if any, and other information which the General Manager shall deem necessary.

(2) The District shall bear reasonable and equitable losses of stored water provided that the General Manager approves the respective member public agency's justification of the loss criteria prior to placement of water into storage and shall consider those losses in allocating Program storage. Otherwise the District shall not bear any loss of stored water.

(3) Water stored under this Program shall be stored by a participating agency in such a manner as to assure that such water can be produced by that agency when released by Metropolitan. Program water delivered to a member public agency for storage shall be considered local water produced in that year for purposes of Replenishment Service.

(h) Release of Stored Water - The General Manager shall release stored Program water to the participating member public agency in which it is stored under the following criteria:

(1) Water Delivered to Storage Prior to 1995

(i) In an fiscal year when Replenishment Service deliveries are available, the General Manager may release, up to half of the Program water stored by the respective member public agency, in place of the agency's request for delivery of Replenishment Service through the District's distribution system, except for conditions described in provisions (iv) and (v) of this subsection;

(ii) In a fiscal year in which Replenishment Service or Full Service deliveries have been suspended, the General Manager shall release, and the participating member public agency shall accept, up to half of the Program water stored by the respective public agency, to the extent the agency requests that release, except for conditions described in provisions (iv) and (v) of this subsection;

(iii) During an emergency such as an earthquake, when District water service is interrupted, the General Manager shall release up to all stored Program water stored by the respective member public agency, to the extent of the interruption in water service and that the agency requests that release;

(iv) When the Program water stored by the respective member public agency is less that ten percent of the agency's average annual purchase of Replenishment Service, whichever is applicable, deliveries for the prior four years, the General Manager may release all of the Program water stored by the agency;

(v) In any fiscal year during which a participating member public agency's Replenishment Service or Program water release request is less than its average annual purchase of Seasonal Storage Service or Replenishment Service, whichever is applicable, of the prior four years, the General Manager may release the Program water stored by the respective member public agency in combination with Replenishment Service sales up to the agency's four-year average Seasonal Storage Service or Replenishment Service purchase. The District shall not release more than half of the Program water stored by the respective member public agency for this purpose and shall provide the agency with a 90-day advance notice of the release.

(2) Water Delivered to Storage After 1994

(i) The General Manager may release in a fiscal year up to one-third of the total amount of Program water placed in storage by a respective member public agency in place of that agency’s request for delivery of water from the District’s distribution system or for Replenishment Service, in order to fill Diamond Valley Lake, meet operational requirements, or reduce or eliminate shortages. Program water used to reduce or eliminate shortages, or for operational requirements may be released during any ten months selected by the General Manager during a twelve-month period from the time of release. Program Water may be released at any time in place of the agency’s request for Replenishment Service.

(ii) Upon release of Program water by District, the participating member agency shall furnish to District, within 60 days, water supply and demand data based on historical information sufficient to document that it has produced the amount of Program water released to it.

(iii) The General Manager shall release stored Program water to the respective member public agency no later than ten years after delivering it to that agency for storage.

(iv) If a member public agency receives delivery of Program water for storage after 1994, any Program water that agency has stored in previous years shall also be subject to the release provisions of this Subsection (h)(2).

(v) Participating Member Public Agencies may transfer Program water they have placed into storage under the Program into other long-term water storage programs the District may develop as part of its Integrated Resource Plan under mutually agreeable transfer terms, executed in writing by both parties.

(i) Payment

(1) The participating member public agency shall pay the District's incremental costs of delivering Program water for storage plus interest at the average yield on the District's investment portfolio, from the date of delivery to the member public agency to the date of the invoice. Pursuant to the provisions of Section 4507, the District will invoice the member public agency on or about July 10 of the calendar year following the year in which the water is delivered.

(2) At the time the General Manager releases stored Program water to the respective participating member public agency the District shall invoice the respective participating member public agency pursuant to the provisions of Section 4507, at the applicable treated or untreated Replenishment Service rate in effect when the respective Program water was placed in storage, less any previous payment for the incremental costs of delivering the water for storage (but not including credit for the interest required by Subsection (i)(1)).

(3) Water released from storage to the participating member public agency shall be the oldest water then in storage.

(4) Readiness-to-Serve Charge Treatment.

(i) Program water delivered to storage prior to April 12, 1994 shall be exempted from the Readiness-to-Serve charge determination. Those charge determinations shall be applied to water delivered to storage after that date, except as applied in (ii) below, when the stored water is released to the participating member public agency.

(ii) The Readiness-to-Serve charge for Program water delivered for storage in 1995 shall be $36 per acre foot and will be paid monthly as the water is released to the member public agency.

(j) Penalty - A participating member public agency shall pay the applicable treated or untreated Full Service water rates for Program water the District delivers to it for placement in storage, to the extent it fails to comply with all the requirements of this Section.

(k) Indemnification - Participating member public agencies shall indemnify and defend the District, its employees, officers and directors for any injuries or damages that may be caused as a result of placing Program water in storage, storage itself, or storage releases and related withdrawal or use of Program water.

M.I. 40969 - August 19, 1994; paragraphs (a) through (i)(4)(ii) amended and renumbered, paragraph (k) repealed and paragraph (l) renumbered by M.I 41404 - May 9, 1995; paragraphs (h) and (j) amended by M.I. 42278 - February 11, 1997; paragraphs (f) and (h) (i) amended by M.I. 44005 - May 17, 2000; paragraph (i) (1) and (i) (4)(i) (ii) amended by M. I. 44812 - March 12, 2002; paragraphs (a), (g)(3), (h), (h)(i), (iii)-(v), (2)(i), (iv), and (i)(2) amended by M. I. 45249 - March 11, 2003.

§ 4518 Emergency Storage Program.

(a) The Emergency Storage Program is for the purpose of delivering water for emergency storage purposes. A member public agency may request delivery of water under the Emergency Storage Program. The minimum delivery of water for emergency purposes pursuant to any request is 10 acre-feet. Deliveries under the Emergency Storage Program, in the aggregate, are limited to 100,000 acre-feet annually, subject to available surplus and capacity to deliver. Water delivered under the Emergency Storage Program can be used only for Emergency Storage Program purposes. On-going operating losses such as evaporation cannot be replaced through the Emergency Storage Program. Water delivered through the Emergency Storage Program is subject to interruption by Metropolitan due to supply, water quality, or operational conditions. Water delivered pursuant to the Emergency Program may be withdrawn from emergency storage only to the extent that:

(1) The local agency's governing body declares an emergency requiring public notice and extraordinary conservation measures.

(2) The emergency requires use of stored water for a period greater than seven days; and

(3) Operational storage has been completely used.

(b) Applicable rate – Water delivered through the Emergency Storage Program will be billed at the then applicable Tier 1 cost including System Access Rate, System Power Rate, Water Stewardship Rate and Tier 1 Supply Rate. The Treatment Surcharge will apply to treated water deliveries. Water delivered through the Emergency Storage Program is not to be included in the calculation of a member agency's Readiness-to-Serve Charge or Capacity Charge.

(c) Certification

(1) Certification process is subject to the rules specified in Section 4507.

(2) On a monthly basis, a participating member public agency will certify the volume of water delivered for Emergency Storage Program purposes for billing purposes via the District's electronic certification and billing system.

(3) A member public agency that has received water under the Emergency Storage Program shall certify to Metropolitan whether water delivered through the Emergency Storage Program is maintained as emergency storage and/or indicate the emergency for which the storage water was withdrawn. In the event of an emergency where the water is unavailable due to its prior use to meet non-emergency demands, the water will be re-billed to the member agency at the then current Tier 2 cost.

M.I. 45941 – October 12, 2004; paragraph (2) amended by M.I. 47998 - August 18, 2009.

[Chapter 6 - repealed by M.I. 41468 - June 13, 1995]

Chapter 7

SERVICE CONNECTIONS

Sec.
4700. General Authorization
4701. Authority for Execution of Service Connection Agreements
4702. Special Service Connection Terms and Conditions
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4704. Compliance with Environmental Obligations for Service Connections
4705. Fair Value of Outlet
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4707. Temporary Service Connections
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§ 4700. General Authorization.

The General Manager is authorized to construct, or have constructed, any service connection requested by a member public agency, which, in the opinion of the General Manager, should be authorized and which is not specifically precluded by resolution of the Board; subject to such terms and conditions as shall be deemed by him to be reasonable and proper, and which shall, however, include the following:

(a) The District shall cause a service connection to be constructed pursuant to a written request by a member public agency in accordance with plans and specifications approved by the General Manager and by an authorized representative of member public agency. All equipment and materials required for constructing the service connection shall be acquired by the District in its customary manner, or the District may utilize therefor suitable equipment and materials on hand.

(b) The service connection shall include the facilities for diversion of water from the District's system and for delivery of such water into the pipeline distribution system of member public agency or of member public agency's affected distributor. The service connection up to and including the fitting connecting with the pipeline through which member public agency will receive water delivered through the service connection, which shall include metering instruments and a cabinet therefor, shall be the property of the District and shall be operated, maintained and controlled by the District.

(c) The costs of constructing the service connection shall be estimated by the General Manager, who shall inform the member public agency representative regarding the amount of such estimate. The total amount of such estimate shall be deposited by member public agency in advance of any action toward construction of the service connection, including all items peculiar only to a given service connection, or it may be deposited in stages, as follows:

(1) Estimated cost of final design, prior to commencement of final design.

(2) Cost of items of equipment and material requiring long term delivery, six weeks prior to the delivery date for such items, as estimated by General Manager.

(3) All remaining costs, six weeks prior to commencement of field construction; provided, however, that if the field construction period is estimated by the General Manager to exceed 90 calendar days, then payment of the remaining costs may be staged over the construction period, if the member public agency should so choose, by a series of advance deposits in amounts estimated by the General Manager to be sufficient to cover the construction in progress, but the first such advance deposit shall be made six weeks prior to commencement of field construction.

(4) Such deposits shall be held and used to defray the costs of constructing the service connection, and until such deposits have been received, except as provided in Section 4700(c)(3) the District shall not be required to undertake the construction of the service connection.

(d) Upon completion of construction of the service connection, the District shall render to member public agency a statement of all costs, audited and certified in accordance with the customary practice of the District, incurred by the District in constructing the service connection; if such costs shall exceed the sum of money theretofore deposited by member public agency with the District as provided hereinbefore in Section 4700(c) member public agency promptly shall pay to the District the amount by which such costs shall exceed such deposit; and if such costs be less than the said sum of money so deposited, any unexpended balance of such deposit shall be returned by the District to member public agency. Said costs incurred by the District shall include the costs of general administrative service and overhead expense, determined in accordance with the methods of cost accounting customarily employed by the District.

(e) Member public agency shall cause to be granted to the District or the District shall acquire at member public agency's expense, directly from the fee owner of the affected land, such easement as may be necessary in the opinion of the General Manager for the construction, operation, maintenance and repair of the service connection. Said easement and the grant thereof shall be approved by the District's General Counsel; provided, however, that fee title to the property required for such service connection may be acquired in the same manner as an easement and in lieu of an easement if the General Manager and member public agency agree that it would be advantageous to do so. Member public agency shall provide, or the District may obtain, at member public agency's sole cost and expense, a policy of title insurance insuring that clear title to the easement, or fee, is vested in "The Metropolitan Water District of Southern California, a public corporation of the State of California," subject to any encumbrances that have been approved in writing by the General Manger. The amount of title insurance shall be determined by the acquisition cost, unless the acquisition is made without cost or for less than the amount of the coverage which will be provided for the price paid for the title report, in which case the title policy shall be in the amount of such coverage.

(f) Upon completion of the service connection, the District shall be responsible for any subsequent maintenance, alteration, reconstruction or relocation of such service connection

except changes which are requested by a member public agency, which changes shall be handled as a new service connection. However, prior to the release of water by the District into the pipeline distribution system of member public agency or of member public agency's affected distributor, each agency shall install its own flow control device or devices as a means of maintaining uniform flow. Should the service connection be of the type that delivers water into an open channel or basin for groundwater replenishment use, then member public agency shall have the following options for the design, construction, ownership and maintenance of the required flow control device or devices.

(1) The District at the request of member public agency will design, construct, own, operate and maintain such flow control device or devices deemed necessary for the regulation of water deliveries, in which case the District's responsibility shall not extend beyond the ownership of the flow control facility, and any and all liabilities arising from release of water in the quantities agreed upon by member public agency and the District shall be the full responsibility of member public agency. Construction of the aforementioned facility shall be included as an additional feature of the service connection and the related cost shall be included as a part of the total cost of the service connection.

(2) Member public agency may design, construct, own, and maintain the aforementioned flow control facility, in which case the District's responsibility shall not extend beyond ownership of its meter facility, and any and all liabilities arising from release of water in the quantities agreed upon by member public agency and the District shall be the full responsibility of member public agency. However, the quantity of water delivered to member public agency through the flow control facility at any time shall be only as requested by member public agency, subject to the ability of the District to operationally meet such requests.

Section 321.1 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967; paragraph (f) [formerly Section 321.1.6 amended by M.I. 32690 - April 10, 1979 and M.I. 33642 - March 10, 1981. Section 321.1 repealed and Section 4700 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4701. Authority for Execution of Service Connection Agreements.

The General Manager is authorized to execute on behalf of the District any agreement or agreements necessary or proper to be entered into between the District and a member public agency in order to provide for the construction of a service connection in the manner and subject at least in part to the terms and conditions set forth in this Chapter. Each such agreement shall be in form approved by the General Counsel of the District.

Section 321.2 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967; amended by M.I. 32690 - April 10, 1979; amended by M.I. 35992 - March 11, 1986. Section 312.2 repealed and Section 4701 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4702. Special Service Connection Terms and Conditions.

If a service connection is requested by a member public agency to which the terms and conditions, or any portion thereof, whether as required by the General Manager or as required by this Chapter 6, are inappropriate in either the opinion of the General Manager or the member public agency, such request may be presented to the Board for its determination of appropriate terms and conditions, together with the reasons why the required terms and conditions are claimed to be inappropriate.

Section 321.3 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967; amended by M.I. 32690 - April 10, 1979. Section 312.2 repealed and Section 4702 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4703. Appeal of Decisions Regarding Service Connections.

Any affected member public agency may appeal to the Board from any decision or action of the General Manager hereby authorized. The decision of the Board of Directors shall be final. Subject to Sections 4702 and 4703, the General Manager shall make all determinations of fact.

Section 321.4 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967. Section 321.4 repealed and Section 4703 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4704. Compliance with Environmental Obligations for Service Connections.

Member public agencies are responsible for ensuring that the obligations of lead agencies as described in the California Environmental Quality Act and its implementing guidelines are fulfilled. The District shall fulfill all other obligations that may arise from its involvement in construction of the service connections and shall provide such information as it has available which is necessary to insure compliance with the Act and its implementing guidelines.

Section 321.5 based on Res. 7489 - April 10, 1973 amending Res. 7038 - November 14, 1967. Section 321.5 repealed and Section 4704 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4705. Fair Value of Outlet.

The fair value of an outlet installed during pipeline construction will be established by the General Manager at the time a service connection is constructed at the outlet, and the charge to a member public agency for such an outlet will be based on this fair value; provided that any outlet larger than 24 inches or any outlet installed after a pipeline is placed in operation shall be charged for its actual cost.

Section 321.7 - M.I. 27804 - October 14, 1969; amended by M.I. 32690 - April 10, 1979; renumbered 321.6 by M.I. 33596 - February 10, 1981. Section 321.6 repealed and Section 4705 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4706. Effect of Hydroelectric Facilities on Service Connections.

(a) The operation of a hydroelectric generating facility on the District's water distribution system may result in a reduction in the District's minimum design pressure at the downstream service connection through which a member public agency has been receiving water pursuant to Section 4700(f). In that event, the District may, at its own expense, in order to facilitate its water distribution or maintain maximum generation of the hydroelectric power, take reasonable and appropriate measures, either to adjust its own system to continue to supply water to the affected member public agency at such minimum design pressure, or to enable the agency to pump the water on its system to a pressure equal to such minimum design pressure.

(b) For purposes of this section, the minimum design pressure is defined as the lessor of:

(1) The pressure resulting from the design flow hydraulic gradient, as shown on the District's hydraulic profiles or,

(2) The pressure resulting from a low-flow hydraulic gradient in a reach of pipeline which was designed for "falling head."

Section 321.8 - M.I. 33443 - October 14, 1980; renumbered 321.7 by M.I. 33596 - February 10, 1981. Section 321.7 repealed and Section 4706 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4707. Temporary Service Connections.

The General Manager is authorized to enter into and to perform any agreement for the construction and removal of a temporary service connection requested by a member public agency or other governmental agency to serve its needs for a limited time. Notwithstanding the provisions of Section 4700, such agreement may be upon such terms and conditions as the General Manager and the requesting entity may agree upon and may provide for payment of the cost of construction and removal of the temporary service connection based upon an estimate prepared by the General Manager.

Section 321.8 - M.I. 33596 - February 10, 1981. Section 321.8 repealed and Section 4707 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4708. General Manager's Report on Service Connections.

The General Manager shall report quarterly to the Engineering and Operations Committee of the Board new service connections approved by him pursuant to this Chapter with the estimated cost and approximate location of each.

Section 321.6 based on Res. 7489 April 10, 1973 amending Res. 7038 November 14, 1967; amended by M.I. 32690 - April 10, 1979; renumbered 321.9 by M.I. 33596 - February 10, 1981; amended by M.I. 36065 - May 13, 1986. Section 321.9 repealed and Section 4708 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; title and Section amended by M. I. 44582 – August 20, 2001; amended by M. I. 46983 - February 13, 2007; section amended by M.I. 48081 – November 10, 2009.

Chapter 8

SYSTEM INTERCONNECTIONS - HYDRAULIC TRANSIENTS

Sec.

§ 4800. Definitions.

(a) As used in this Chapter 8, "hydraulic transient" means a change in pressure or flow-rate resulting from the sudden stoppage or increase of flow of water in a pipeline.

(b) As used in this Chapter 8, "new construction or modification" means new construction or modification on or affecting any part of a member public agency's or subagency's distribution system which is directly connected to the District's distribution system and which could cause a hydraulic transient affecting or potentially affecting the District's system.

Section 322.5.4.1 - M.I. 34826 - August 17, 1983. Section 322.5.4.1 repealed and Section 4800 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4801. General.

Member public agencies shall avoid, and shall cause their subagencies to avoid, the creation of conditions that could cause hydraulic transients to damage the District's facilities. Where a member public agency or a subagency installs hydroelectric or pumping facilities on a pipeline that is directly connected to the District's system such condition may be avoided by the installation of reliable protective devices including, but not limited to, surge tanks, bypass or feeder tanks, and pressure relief valves.

Section 322.5.4.2 - M.I. 34826 - August 17, 1983. Section 322.5.4.2 repealed and Section 4801 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4802. Notice of New Construction or Alterations.

Each member public agency shall notify the District of any proposed new construction or modification and shall require each subagency to provide such notice to the District with regard to any proposed new construction or modification. Such notice shall be accompanied by project plans and specifications. Within 30 days after receipt of the notice, the District shall notify the member public agency or subagency of its comments on such plans and specifications for the purpose of minimizing the possibility of hydraulic transients that could damage the District's facilities.

Section 322.5.4.3 - M.I. 34826 - August 17, 1983; amended by M.I. 35992 - March 11, 1986. Section 322.5.4.3 repealed and Section 4802 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

§ 4803. Reduction or Suspension of Deliveries.

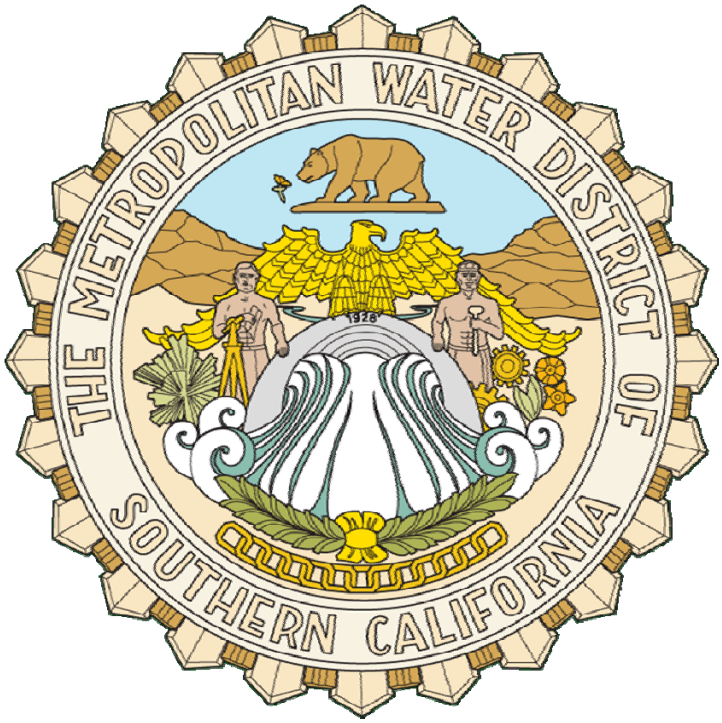
The General Manager is authorized to reduce or suspend deliveries to any member public agency if he determines that a member public agency or subagency has failed to install reliable protective devices to protect the District's facilities from damage from hydraulic transients and that a substantial risk of such damage exists.

Section 322.5.4.4 - M.I. 34826 - August 17, 1983. Section 322.5.4.4 repealed and Section 4803 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987.

[Chapter 9 - Repealed]

2017 Annual Operating Plan

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928

2017 Annual Operating Plan

Prepared by:

WATER SYSTEM OPERATIONS GROUP

February 2017

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Review of 2016:

Drought Recovery and Demand Management

Drought has dominated much of the water headlines from 2013 to 2015. However, in 2016, for the first time in three years, water supplies available to Metropolitan exceeded demands. This change caused a shift in operational priorities from drought management and storage usage to drought recovery and continued demand management. Conservation efforts during the drought were successful in suppressing water demands on Metropolitan. The Metropolitan Board of Directors implemented a Water Supply Allocation Plan (WSAP) beginning in July 2015 and member agencies exceeded the conservation targets set in the WSAP. With the increase in available supplies in early 2016, Metropolitan's Board was able to lift the allocation; however, member agencies continued their conservation and water efficiency campaigns throughout 2016. The combination of the successful conservation campaign and a State Water Project (SWP) allocation of 60 percent led to increased Metropolitan dry-year storage.

Demands on Metropolitan did not change significantly from 2015 to 2016. Metropolitan's member agencies were under a WSAP starting in July 2015 and retail water agencies in Metropolitan's service area were subject to the Governor's Executive Order for mandated conservation during calendar year 2015. Held to these constraints, 2015 consumptive use demands were 1.56 million acre-feet (MAF) and demands for groundwater and reservoir replenishment were 0.19 MAF. This, along with losses and other obligations of 0.05 MAF, brought the total 2015 water demand to 1.80 MAF. The conservation ethic held into 2016, despite the WSAP being lifted and implementation of the Governor's Executive Order shifting to a self certification process. Consumptive use demands in 2016 dropped to 1.45 MAF, with continued conservation and aided by some small increases in local supply. Replenishment demands ended the year at 0.23 MAF. This along with 0.12 MAF of losses and obligations brought the total 2016 water demand to 1.80 MAF, unchanged from 2015.

In 2016, the Department of Water Resources (DWR) issued a 60 percent SWP allocation, or approximately 1.15 MAF for Metropolitan, which was equivalent to the previous 3 years' allocations combined. In addition, Metropolitan purchased 7 thousand acre-feet (TAF) from the SWP multi-year pool and 1 TAF from Dudley Ridge Water District, and took delivery of 1 TAF of Port Hueneme supply. This brought the total SWP supply for 2016 to 1.16 MAF.

The increased SWP supply and lower demands allowed for storage recovery and decreased the need to expand the use of Colorado River water (CRW). In early 2016, Metropolitan discontinued the extraordinary drought operational actions that expanded the use of CRW and successfully minimized SWP use in 2014 and 2015.

TABLE 1-1

2016 Colorado River Base Supply Summary

Category	Supply (TAF)
Basic Apportionment	550
Imperial Irrigation District (IID)/ Metropolitan Conservation Program	89
Palo Verde Irrigation District Land Fallowing	125
Transfer to San Diego County Water Authority (SDCWA) (IID Transfer and Canal Lining)	178
Canal Lining Water to Metropolitan	16
Lower Colorado Water Supply Project	6
Agricultural Adjustment	-28
Total	936

The base supply for CRW remained about the same from 2015 to 2016. In 2015, Metropolitan acquired additional resources to increase CRW supplies over the base supply to meet the water demands that could not be met by SWP supplies. In 2016, with the increased SWP allocation, the need for additional CRW acquisitions and withdrawals on storage diminished. In addition to the CRW base supplies shown in Table 1-1, Metropolitan acquired 50 TAF from Imperial Irrigation District (IID) to bring the total 2016 CRW supplies to 0.99 MAF.

With 0.99 MAF of CRW supply, 1.16 MAF of SWP supply, and 1.80 MAF of demand, Metropolitan increased dry-year storage by 0.35 MAF to 1.27 MAF as shown in Figures 1-1 and 1-2.

Low storage in Diamond Valley Lake (approximately 50 percent capacity), typical of reservoirs throughout California after several consecutive years of drought.

Going into 2016, dry-year storage was low after three years of storage withdrawals. All of the 0.35 MAF of surplus water in 2016 was used to recover surface storage. In addition, 0.22 MAF of groundwater storage was shifted to surface storage to increase reliability and operational flexibility.

Figure 1-3 shows the location and quantity of the 1.27 MAF of dry-year storage at the end of 2016. Total surface storage in Metropolitan's dry-year portfolio ended the year at 875 TAF. This included a 251 TAF gain in Diamond Valley Lake (DVL) to recover close to pre-drought storage levels and a 332 TAF gain in SWP Carryover and Flex Storage on the SWP system, along with other minor changes to surface storage. Year end groundwater storage was 398 TAF. The location of storage at the end of 2016 will help set the stage for operational strategies in 2017.

FIGURE 1-1
2016 Supply and Demand Balance

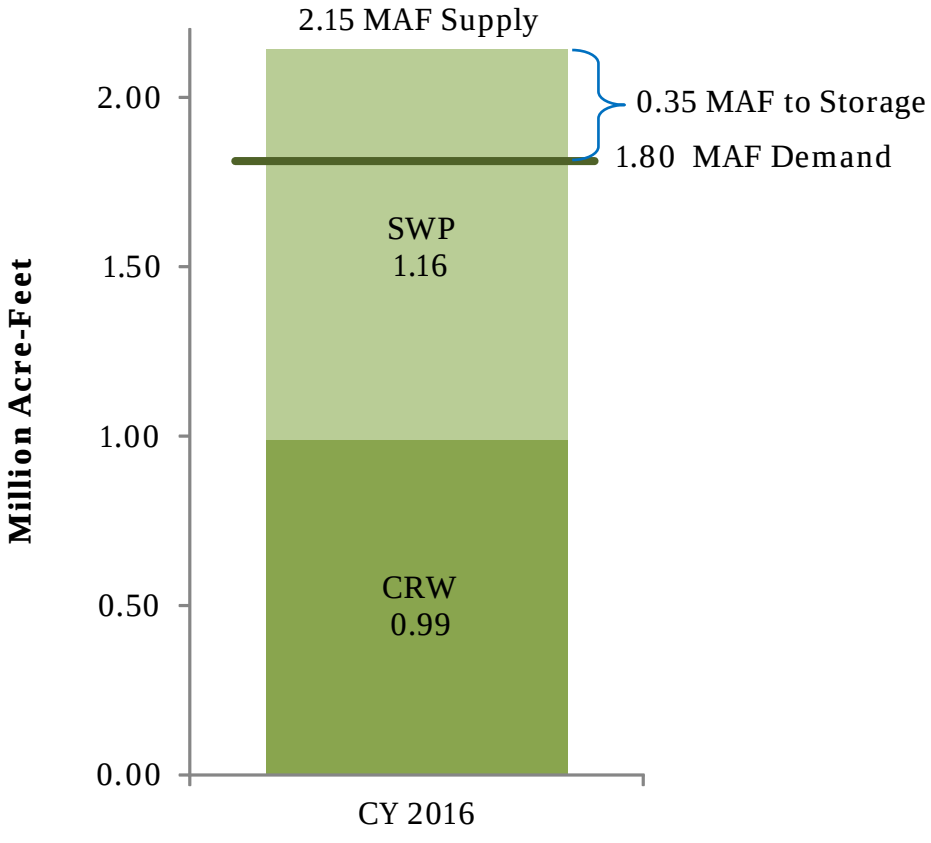


FIGURE 1-2

Ending Storage Balances 2006 - 2016

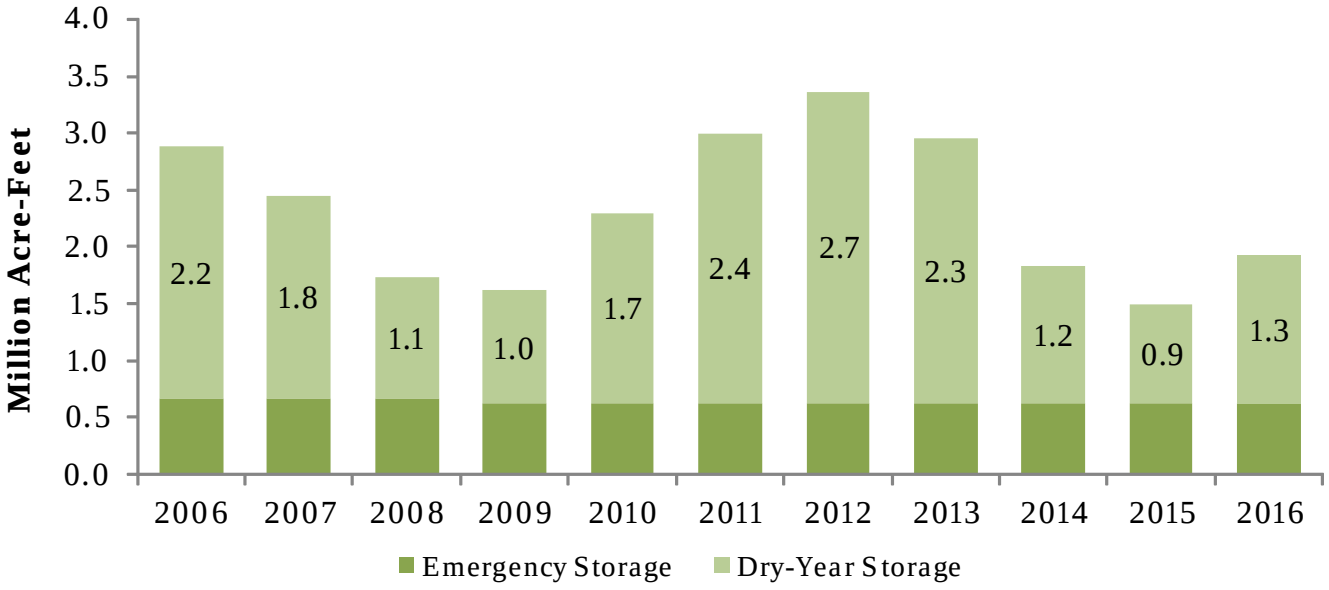
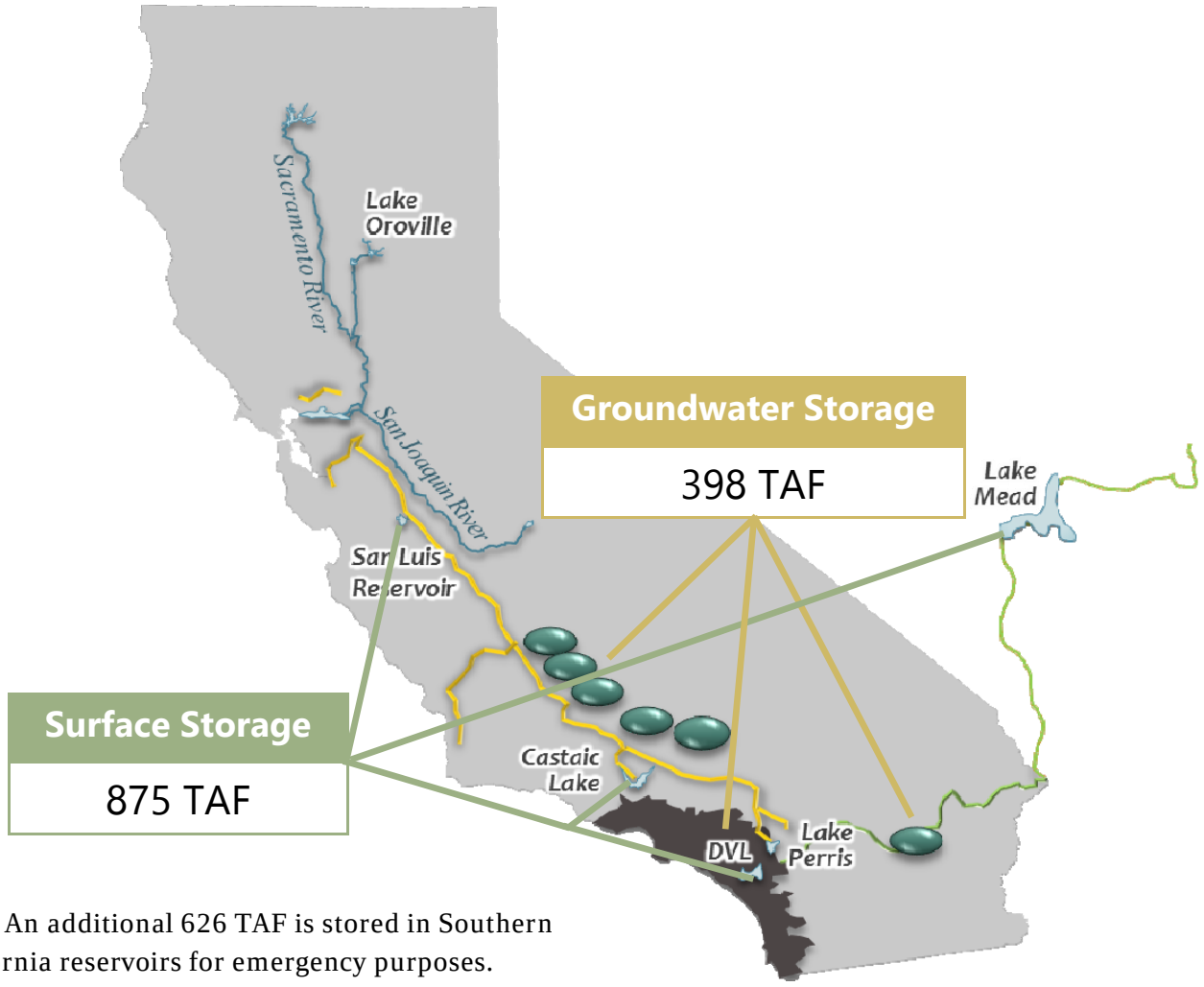


FIGURE 1-3

Location of Dry-Year Storage at the end of 2016



Note: An additional 626 TAF is stored in Southern California reservoirs for emergency purposes.

2.

Plan for 2017:

Prepared to Continue Drought Recovery

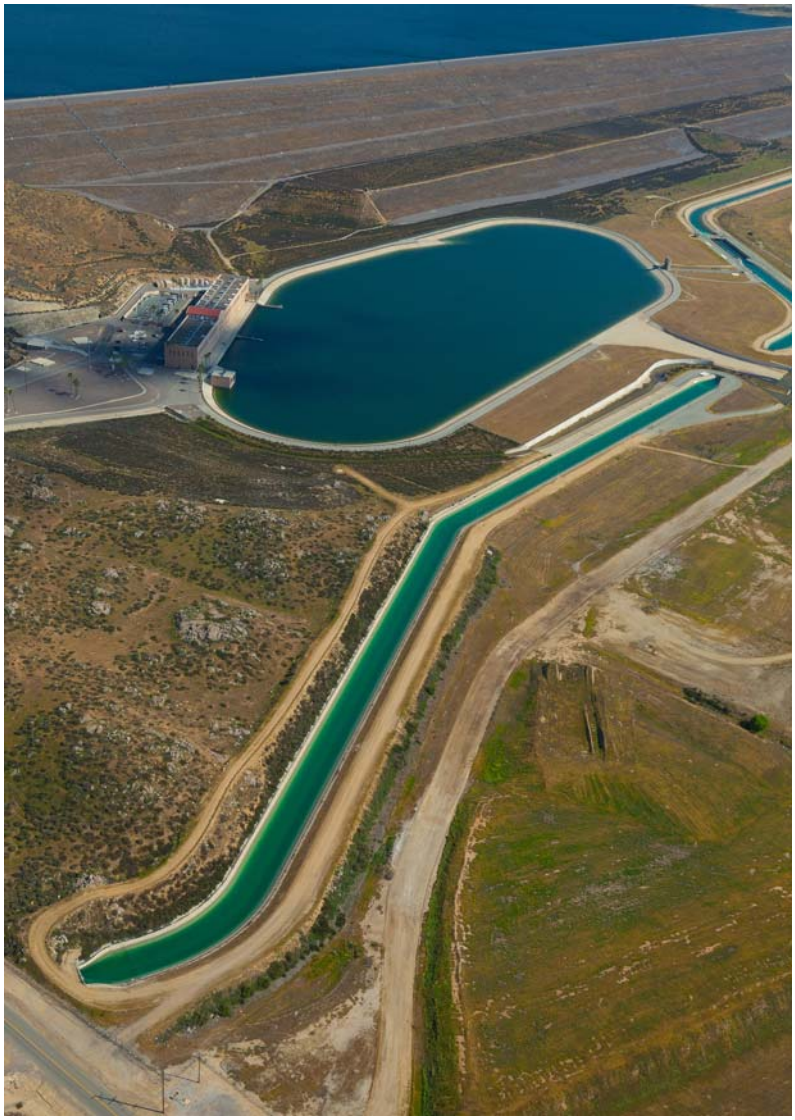
Metropolitan is prepared to continue drought recovery in 2017. As described in the last chapter, as 2016 was coming to a close, Metropolitan was restoring Dry-Year Storage to 1.27 MAF. With storage levels improved, especially surface storage, Metropolitan was ready to operate under drought conditions in 2017, if needed. However, due to wet conditions, DWR announced a 60 percent SWP allocation on January 18, 2017. By February 1, 2017 the SWP watershed hydrology had improved to 197 percent of average to date. Should normal to above normal precipitation continue through the rest of the winter and into the spring, the SWP allocation is anticipated to increase in the months ahead. With ample SWP supply, Metropolitan will operate under surplus conditions again in 2017 and continue the drought recovery it began in 2016. Therefore, this operating plan will focus on surplus conditions and storage refill strategies.

Operating Principles

Metropolitan's operating principles include:

1) Meet member agency demands
2) Meet water quality requirements
3) Manage storage according to Water Surplus and Drought Management Plan principles
4) Manage shutdowns
5) Meet blending objectives
6) Maximize hydroelectric power production

Each of these principles and how they apply to 2017 operations will be described in the remaining sections of this chapter. The section on managing storage will also include a supply outlook to help determine the storage potential and storage refill strategies for 2017.



Diamond Valley Lake Forebay and San Diego Canal

Meet Member Agency Demands

In early 2016, member agency demands were impacted by the Governor's Executive Order and Metropolitan's implementation of a Level 3 WSAP. The Governor's mandate required a 25 percent statewide reduction in retail water use, compared with 2013. The WSAP set a goal for member agencies to reduce their demands by approximately 15 percent. Although the Governor's Executive Order was relaxed and Metropolitan's Water Supply Allocation was lifted by mid-2016, continued conservation and outreach efforts aided in drought recovery. As a result of these efforts, 2016 member agency consumptive and replenishment demands totaled approximately 1.68 MAF, slightly lower than 2015 demands as shown in Table 2-1.

The most recent demand forecasts are shown in Tables 2-2 through 2-5. Table 2-2 shows a summary of member agency demands in 2017, as projected by the member agencies. Each year by September, member agencies submit their demand estimates to Metropolitan. Each member agency provides a five-year outlook on consumptive and replenishment water demands. Consumptive demands include residential, commercial, industrial, seawater barrier, and agricultural water use. Replenishment demands include deliveries to groundwater and surface storage.

The total member agency demand estimate for 2017 is 1.49 MAF, down 0.19 MAF from 2016 demands. Major assumptions in the member agency demand projections are continued conservation, and a return to normal or above normal precipitation conditions in the member agencies' watersheds after relatively dry conditions in 2016. To date, the watersheds have received above normal precipitation. Metropolitan's service area has received about 200 percent of normal precipitation and the Los Angeles Aqueduct watershed has received 244 percent of normal precipitation from October 2016 through January 23, 2017. The above-normal precipitation will increase local supplies for the Los Angeles Aqueduct, member agency groundwater storage, and member agency surface storage compared to recent years. Precipitation also lowers consumptive demands, and may reduce the need for replenishment deliveries. Accordingly, a total demand projection lower than recent years is forecasted.

Consumptive demands for 2016 and member agency projections for 2017 are shown in Table 2-3. Replenishment demands for 2016 and member agency projections for 2017 are shown in Table 2-4. The table includes projections from low to high. "Low" demands assume wet weather conditions for the remainder of the year, "Normal" demands assume normal weather conditions for the remainder of the year, and "High" demands assume dry weather conditions for the remainder of the year.

Metropolitan's Operations Planning staff use the member agency demand projections to develop their own demand forecasts while considering other factors such as current demand trends, historic demand trends, changes in local supply production, weather trends, conservation trends, retail demand estimates, and updated estimates from the member agencies.

Table 2-5 shows Metropolitan's demand forecast summary along with actual 2016 demands. The "Low", "Normal", and "High" scenarios shown are similar to Table 2-4. Also included are losses and obligations. Losses include system losses on Metropolitan's distribution system, such as evaporation. Obligations include deliveries to non-member agencies as required by various

TABLE 2-1
Member Agency Demands
2015 and 2016

Demand Type	2015 Actual (MAF)	2016 Actual (MAF)
Consumptive	1.56	1.45
Replenishment	0.19	0.23
Total Demand	1.75	1.68

TABLE 2-2
2017 Member Agency Demand Projection Summary

Demand Type	2017 Projection (MAF)
Consumptive	1.35
Replenishment	0.14
Total Demand	1.49

TABLE 2-3

2017 Member Agency Consumptive Demand Projections

Member Agency	2016 Actual (TAF)	2017 Projection (TAF)
Anaheim	13	15
Beverly Hills	10	11
Burbank	5	7
Calleguas	87	108
Central Basin	21	27
Compton	0	0
Eastern	86	71
Foothill	7	8
Fullerton	5	8
Glendale	15	19
Inland Empire	40	73
Las Virgenes	18	18
Long Beach	24	24
Los Angeles	318	153
Municipal Water District of Orange County (MWDOC)	139	156
Pasadena	17	17
San Diego County Water Authority (SDCWA)	396	372
San Fernando	0	0
San Marino	1	1
Santa Ana	4	12
Santa Monica	3	2
Three Valleys	50	53
Torrance	16	14
Upper San Gabriel	3	6
West Basin	109	110
Western	63	66
Total	1,450	1,351

TABLE 2-4

2017 Member Agency Replenishment Demand Projections

Member Agency	2016 Actual (TAF)	2017 Low (TAF)	2017 Normal (TAF)	2017 High (TAF)
Burbank	7	0	7	7
Central Basin	40	10	25	30
Eastern	13	8	10	14
Inland Empire	4	2	7	18
Long Beach	4	0	4	5
MWDOC	58	20	50	70
SDCWA	40	0	0	0
Three Valleys	16	5	7	11
Upper San Gabriel	44	25	25	67
Total	226	70	135	222

agreements. The total demand, including losses and obligations, represents the total water requirement to be met with Metropolitan supplies.

The total demand forecast by Metropolitan under normal weather conditions for the remainder of the year is 1.52 MAF. This is 0.06 MAF lower than the total forecast by the member agencies shown to the right of Table 2-5. In general, Metropolitan is forecasting more recovery of local supplies due to wet weather conditions experienced so far this water year compared to forecasts from the member agencies.

Metropolitan plans to meet all member agency demands in 2017. Though not anticipated this year, there may be conditions where timing of deliveries to member agencies might need to be adjusted to meet pipeline capacity or other operational constraints. These adjustments will be coordinated with the member agencies in the unlikely event that they are needed.

TABLE 2-5

2017 Metropolitan Forecasted Demand Summary

Demand Type	2016 Actual (MAF)	2017 Low (MAF)	2017 Normal (MAF)	2017 High (MAF)	2017 Member Agency Forecast (MAF)
Consumptive	1.45	1.22	1.29	1.41	1.35
Replenishment	0.23	0.07	0.14	0.17	0.14
Losses and Obligations	0.12	0.09	0.09	0.09	0.09
Total	1.80	1.38	1.52	1.67	1.58

Meet Water Quality Requirements

Since the early 2,000s, Metropolitan has substantially improved the water treatment processes of its five water treatment plants. Ozone treatment is now on-line at four water treatment plants and in the final construction phases at the Weymouth plant. Major investments in ozone, solids handling, and chlorine feed reliability provide the flexibility to treat any blend of SWP and CRW supplies. Furthermore, Metropolitan supports and invests in watershed protection programs to provide the highest quality water prior to treatment. Source and finished water are frequently monitored for a variety of constituents that provide information on source water quality and ensure compliance for the finished water. The 2016 Annual Drinking Water Quality Report is available at www.mwdh2o.com under the section "About Your Water". Depending on source water blends and real-time water quality monitoring, changes in chemical dosages are made at the water treatment plants to maximize quality and control chemical costs. Through these investments and programs, Metropolitan is prepared to meet water quality challenges and treat various blends of SWP water in order to provide reliable and high-quality water to all member agencies.

Manage Storage According to Water Surplus and Drought Management Plan Principles

The Water Surplus and Drought Management (WSDM) Plan guides Metropolitan's resource operations to maximize future reliability. Adopted in 1999, the WSDM Plan provides flexible guidelines to prioritize the use of storage in shortage conditions and the replenishment of storage in surplus conditions.

2017 Surplus Action Priorities

The 1999 WSDM Plan surplus action priorities are shown below in Table 2-6.

Table 2-6

1999 WSDM Plan - Surplus Action Priorities

Priority	Surplus Action (Fill)		
1	DVL	In-Region	Surface
2	Flex Storage		
3	Conjunctive Use / Cyclic Storage		Groundwater
4	SWP Carryover	Out-of-Region	Surface
5	Lake Mead ICS		
6	Banking Programs		Groundwater

The table illustrates that in general, to maximize reliability, in-region storage is favored because it is easily accessible and surface storage is favored because it generally has higher fill and withdrawal capacities. These are general guidelines however, and the priorities are flexible. Other factors such as starting storage levels, cost, program terms, and timing of storage throughout the year are considered when setting priorities. For example, in 2016, a modified approach to the WSDM Plan priority was implemented to refill nearly empty SWP surface storage after two of the lowest SWP allocations in history. This modified approach placed Flex Storage and SWP Carryover first and second on the priority list to refill in 2016, unlike what is shown in the 1999 WSDM Plan. Next, other surface storage, such as DVL, was refilled. Some groundwater storage reserves were actually withdrawn and repositioned to surface storage to rebalance Metropolitan's storage portfolio and to increase reliability under potential drought conditions in 2017.

Although surface storage reservoirs had a modest recovery in 2016, the first priority in 2017 will be to continue filling surface reservoirs furthering the drought recovery that began in 2016. If possible, some capacity will be left in the surface reservoirs to make sure space is available to quickly capture supplies in high surplus conditions in future years. Therefore, surface reservoirs may not be completely filled before moving on to the next priority, groundwater storage.

Groundwater storage has not had a chance to recover due to large withdrawals of groundwater storage during the shortage conditions of 2014 and 2015, and the repositioning of groundwater storage to surface storage in 2016. In addition, filling groundwater is a slower process compared to filling surface reservoirs. For these two reasons, filling groundwater storage will be the next priority in 2017.

Table 2-7 illustrates this change in priorities. In-region reservoirs, DVL and Flex Storage, still require additional recovery from the drought. Therefore, they are the first and second priorities. Lake Mead Intentionally Created Surplus (ICS) and SWP Carryover also require additional recovery from the drought, but are out-of-region. Therefore, they have roughly equal priority in the third position. Groundwater has not recovered from the drought so Banking Programs, Conjunctive Use, and Cyclic Storage have roughly equal priority in the fourth position. Again, these surplus action priorities are flexible guidelines and may be adjusted during the year.

TABLE 2-7

2017 WSDM Plan - Surplus Action Priorities

Priority	Surplus Action (Fill)
1	DVL
2	Flex Storage
3	Lake Mead ICS
	SWP Carryover
4	Banking Programs
	Conjunctive Use / Cyclic Storage

Castaic Lake in February 2016 at approximately 30 percent capacity

Supply Outlook

State Water Project Supplies

The SWP allocation in 2016 was 60 percent or 1.15 MAF for Metropolitan, which is close to normal conditions. The most recent SWP allocation for 2017 is also 60 percent as set by DWR on January 18, 2017. Conditions on the SWP, as measured by the 8-station index, have been significantly above normal so far and reached 197 percent of average on February 1, 2017. Conditions from this point forward could turn dry and the allocation may remain at 60 percent. Conversely, continued wet winter conditions could push the final SWP allocation to 80 percent or higher. Normal conditions from this point forward are estimated to yield a 70 percent SWP allocation.

Colorado River Supplies

On September 15, 2016 Metropolitan provided the United States Bureau of Reclamation (USBR) a best estimate for a 2017 net Colorado River Aqueduct (CRA) diversion of 960 TAF. A breakdown of this supply is shown in Table 2-8. Based on recent wet conditions, Metropolitan's 2017 CRA diversions are now estimated to be between 560 TAF and 760 TAF. With ample SWP supplies and lower demands, it is anticipated that 200 to 400 TAF of CRW supply may not be diverted and stored in Lake Mead ICS.

Purchases, Exchanges, and Surplus Supplies

With ample supplies, there is little to no need for purchases or exchanges in 2017. However, the current high flow conditions on the SWP system are creating opportunities for additional surplus supplies on the SWP known as Article 21 supplies. The SWP is currently pumping at or near capacity, sending water to contractors, and filling San Luis Reservoir. Once San Luis Reservoir is full, Article 21 surplus supplies may be available to SWP Contractors who have additional demands. This creates a potential opportunity for Metropolitan to capture surplus supplies under the right conditions. Article 21 supplies of up to 200 TAF may be available.

Penstocks at Gene Pumping Plant delivering Colorado River Water Supplies

TABLE 2-8

2017 Colorado River Supply Summary

Category	Supply (TAF)
Basic Apportionment	550
IID/Metropolitan Conservation Program	85
Palo Verde Irrigation District and Bard Water District Land Fallowing	125
Transfer to SDCWA (IID Transfer and Canal Lining)	178
Canal Lining Water to Metropolitan	16
Lower Colorado Water Supply Project	6
Agricultural Adjustment	0
Total	960

Storage Management Strategy

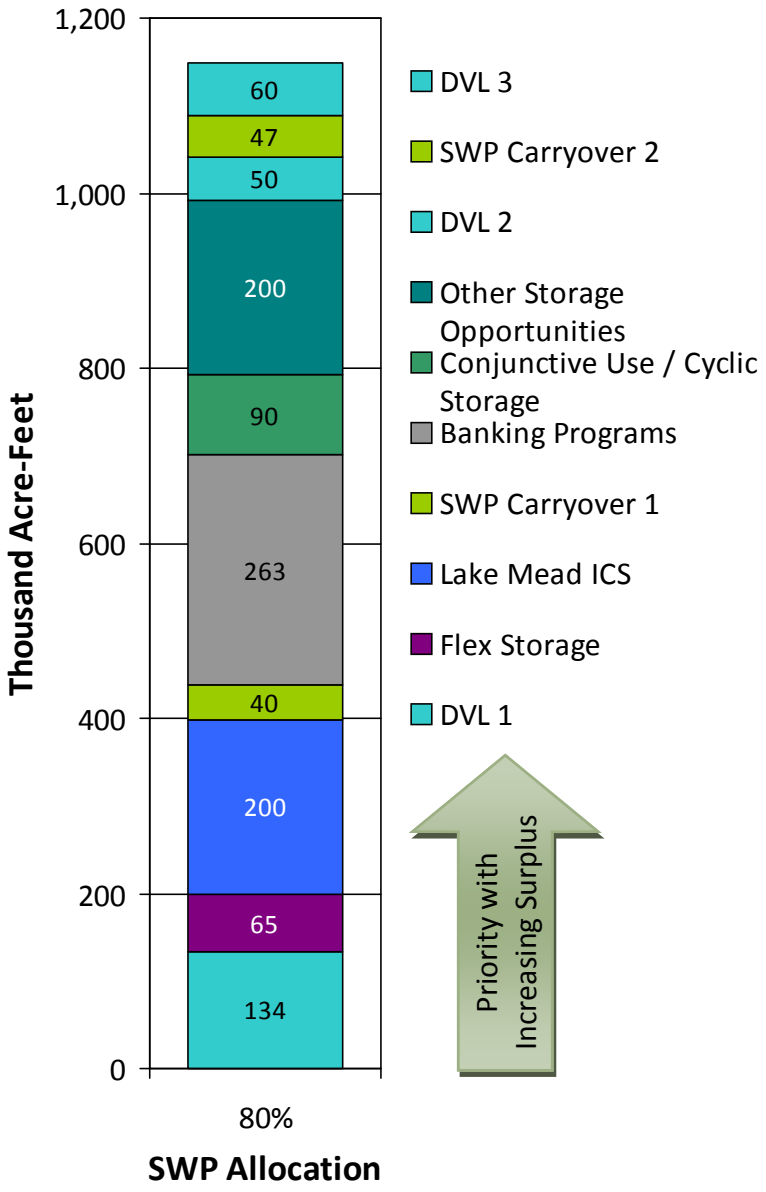
The 2017 storage management strategy will be guided by the WSDM Plan principles described earlier in this chapter. The range of potential supply and demand balances yields the range of possible storage operations in 2017, from storing about 0.44 MAF under dry conditions for the remainder of the year, to adding about 1.19 MAF to storage under wet conditions for the remainder of the year.

Fill Strategy

Following the priorities listed previously in Table 2-7, Figure 2-1 illustrates details of the fill priority and capacity under surplus conditions in 2017. For illustrative purposes, an 80 percent SWP allocation is assumed. Fill capacities for SWP Carryover and Banking Programs vary by SWP allocation. The chart shows which storage accounts will be filled first and to what level as the surplus in 2017 increases from 0 to 1,200 TAF.

The fill amount for each storage account is set based on starting storage conditions and the 2017 fill capacity. Methodology for placement of surplus supplies is as follows:

FIGURE 2-1
2017 Storage Fill Priority and Capacity
Under an 80 Percent SWP Allocation



DVL 1—Filling DVL under the first priority by 134 TAF will bring the lake to 700 TAF, leaving roughly 100 TAF to capture surplus supplies later this year or in a future year.

Flex Storage— Moving 65 TAF to Flex Storage will fill Flex Storage accounts in Castaic and Perris Lakes.

Lake Mead ICS — Lake Mead ICS is filled by Metropolitan intentionally creating surplus water through conservation and other programs. Metropolitan has already notified USBR of its creation of up to 200 TAF of surplus water in 2017.

SWP Carryover 1— SWP Carryover in San Luis Reservoir ended 2016 at 210 TAF. Adding 40 TAF will bring SWP Carryover to 250 TAF. This level provides significant coverage under future drought conditions but also leaves capacity for future surplus supplies.

Banking Programs — The estimate of maximum fill capacity for Banking Programs is 263 TAF in 2017 at an 80 percent SWP allocation. Banking Programs include the Desert Water / Coachella Valley (DWCV) Advanced Delivery Account, and groundwater storage programs with Arvin-Edison Water Storage District, Semitropic Water Storage District, Kern Delta Water District, Mojave Water Agency, and Antelope Valley East Kern Water Agency. The actual delivery to Banking Programs will depend on the condition of the groundwater storage facilities and the ability for the banking partners to take delivery of the water.

■ Conjunctive Use / Cyclic Storage — The estimate of maximum fill capacity for groundwater in Conjunctive Use and Cyclic Storage is 90 TAF in 2017. This is also dependent on groundwater storage conditions and the ability to deliver water.

■ Other Storage Opportunities — Metropolitan is currently working on a number of additional storage opportunities to increase surface storage on the Colorado River system, and groundwater storage in Conjunctive Use / Cyclic Storage accounts and Banking Programs. An additional 200 TAF of storage is currently estimated for 2017.

■ DVL 2 — If conditions support, another 50 TAF will be added to DVL, again leaving some space for additional surplus supplies.

■ SWP Carryover 2 — Next, SWP Carryover will be topped off with an additional 47 TAF, bringing it to the contractual limit under an 80 percent allocation of 297 TAF.

■ DVL 3 — Finally, if surplus supplies are still available after deliveries to all other storage accounts have been maximized, DVL will be completely filled with an additional 60 TAF to bring it to 810 TAF.

Putting it All Together

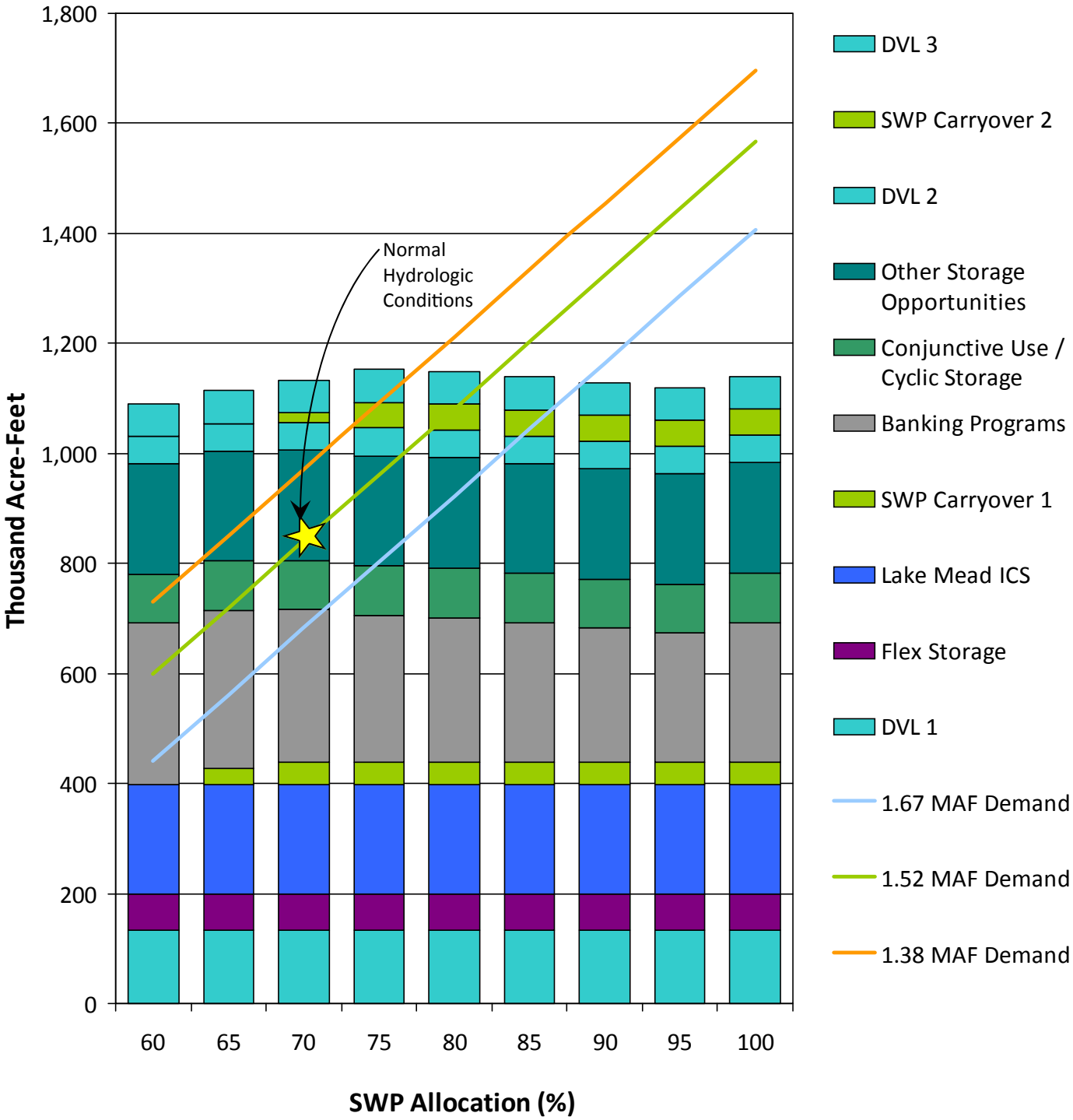
Figure 2-2 illustrates the results of the topics that have been addressed; operating principles, WSDM Plan principles, demand ranges, supply ranges, and fill capacities. Figure 2-2 simplifies the uncertainty of 2017 into two main variables, demands and SWP supplies. The figure assumes that CRW supplies will be 960 TAF for the year. There will be no purchases for the year, but Article 21 surplus supplies will range from zero to 200 TAF for the year. The star (★) on the chart represents normal conditions for the remainder of the year and helps illustrate how to read the chart. Following the 1.52 MAF demand line, with a 70 percent SWP allocation, shows that this condition would allow just under 900 TAF of storage fill. This would meet the first priority fill targets for DVL, Flex Storage, Lake Mead ICS, and SWP Carryover. Deliveries to groundwater would also be maximized, including Banking Programs and Conjunctive Use / Cyclic Storage, and some water would be left over to begin storing in the account called Other Storage Opportunities. If a higher SWP allocation occurs, moving right on the chart along the 1.52 MAF demand line to the 80 percent SWP Allocation, water available for storage will increase and the rest of the Other Storage Opportunities, DVL, and SWP Carryover fill priorities may be achieved. Conversely, if the SWP allocation remains at 60 percent, with a 1.52 MAF demand, the chart illustrates that the first priority surface storage fill targets may be met, but only about 200 TAF would remain for Banking Program storage.

The fill priorities shown in Figures 2-1 and 2-2 are intended to give a general idea of storage management strategies and may be adjusted, or taken in slightly different quantities in 2017 to meet other operational objectives. Timing of operations throughout the year, conditions of groundwater spreading facilities, conveyance capacity constraints, and other variables may affect the ability to meet the storage fill priorities or even change the priorities.

Figure 2-2 illustrates that a wide range of storage opportunities exist in 2017, from storing just over 400 TAF to a maximum of about 1.15 MAF. Regardless of what weather, supply, and demand conditions materialize in 2017, Metropolitan's operational and WSDM Plan priorities are in place to maximize reliability. Example supply, demand, and storage scenarios are shown in the Appendix.

DVL Inlet/Outlet Tower during filling operations.

FIGURE 2-2
2017 Storage Management Strategy
Fill Potential



Manage Shutdowns

Another operational objective for 2017 is to manage scheduled and unscheduled shutdowns in an effort to minimize impacts to member agency imported supplies. Metropolitan publishes an annual shutdown plan each September. The major shutdowns in the 2016/17 Shutdown Plan are highlighted below and shown in Table 2-9.

- The Diemer plant began a reduced flow on March 10, 2016 and it will continue until June 30, 2017. The available capacity will be approximately 390 MGD. The reduced flow allows Metropolitan's contractor to perform seismic retrofit work, replace filter valves, and install basin inlet gates on the east side of the plant. This work is not expected to impact operations.

- The Weymouth plant began a reduced flow on August 1, 2015 and it will continue until October 31, 2017. The reduced flow allows Metropolitan's contractor to perform filter rehabilitation work. The available capacity will be between 455-477 MGD. This work is not expected to impact operations.

- The Etiwanda Pipeline was shutdown for the Lining Repair Project on February 5, 2016 and it will continue until February 28, 2017. This shutdown allows Metropolitan's contractor to replace the damaged mortar lining with polyurethane coating to resist corrosion.

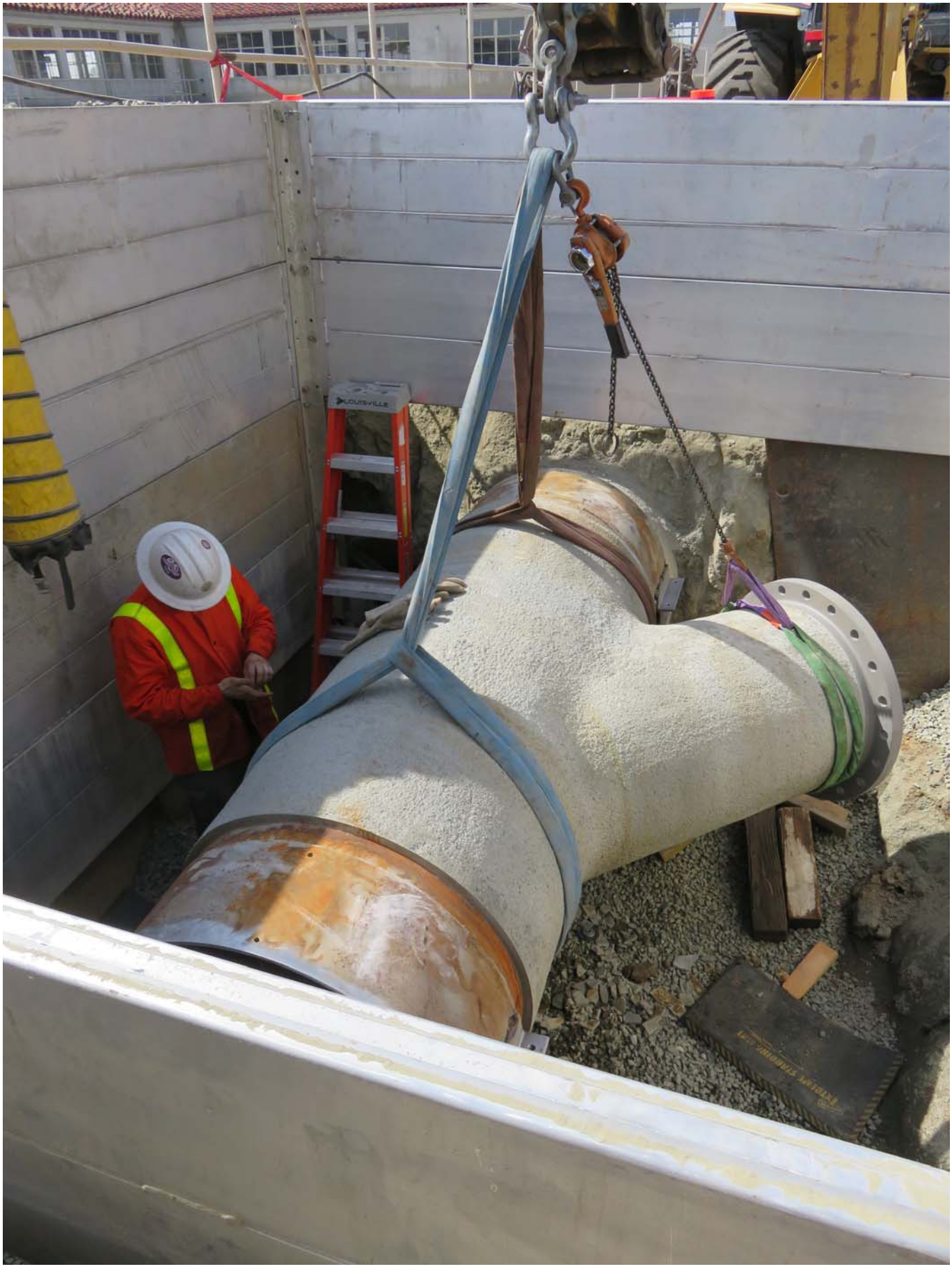
- The Palos Verdes Feeder is scheduled for a nine-day shutdown to begin on January 30, 2017. This will allow Metropolitan to replace the sectionalizing and by-pass valves at Collis Avenue.

- A portion of the Orange County Feeder, near Service Connection SA-01 to the Willits Street Pressure Control Structure, will be relined. The shutdown will begin on February 6, 2017 and is scheduled to be completed on May 25, 2017.

- The Colorado River Aqueduct (CRA) is scheduled for a 24-day shutdown that will begin on February 14, 2016. The purpose of the shutdown is to allow Metropolitan's contractor to perform sand trap and electrical upgrades. Additionally, Metropolitan personnel will perform other maintenance work along the aqueduct and perform electrical testing at the pumping plants.

CRA sand trap rehabilitation work at Hinds Pumping Plant during 2016 CRA shutdown.

- The Foothill Feeder is scheduled for an eight-day shutdown that will begin on March 27, 2017. This shutdown will allow Metropolitan personnel to repair two isolation valves. Additionally, Metropolitan's contractor will perform electrical upgrades at the Jensen plant.



Pipe-tee installation at Weymouth Plant as part of the Ozone Retrofit Project.

TABLE 2-9

2016/2017 Shutdown Schedule

Feeder/Pipeline	Dates	Purpose
Etiwanda Pipeline	February 5, 2016 - February 28, 2017	Lining repair project.
Diemer Treatment Plant	March 10, 2016 - June 30, 2017	1. Perform seismic retrofit work and replace filter valves on the east side of the plant. 2. Install basin inlet gates. 3. Perform electrical upgrade work.
Sepulveda Feeder	April 5 - August 23, 2016	Pipeline inspection and repair.
Weymouth Treatment Plant	August 1 2016 - October 31, 2017	Filter rehabilitation.
Second Lower Feeder, Palos Verdes Reservoir	August 22-29, 2016	Install two bulkheads and a bypass pipeline around Palos Verdes Reservoir needed for the new reservoir cover project.
Santiago Lateral	October 4-6, 2016	Meter maintenance.
Middle Feeder	October 24-28, 2016	Replace two 12-inch plug valves.
San Diego Pipeline 3	November 6-10, 2016	Inspection and bulkhead installation.
Lakeview Pipeline	November 7, 2016	Inspection of Service Connection EM-14.
Rialto Pipeline	November 14-19, 2016	Pre-stressed Concrete Cylinder Pipe (PCCP) inspection and maintenance work.
Second Lower Feeder	November 28- December 4, 2016	PCCP inspection.
San Diego Pipeline 5	January 8-17, 2017	Inspection and bulkhead installation.
Palos Verdes Feeder	January 30- February 7, 2017	Replace sectionalizing and by-pass valves at Collis Ave.
Orange County Feeder	February 6- May 25, 2017	Replace interior lining of pipeline and repair a sectionalizing valve.
Colorado River Aqueduct	February 14- March 9, 2017	1. Sand trap rehabilitation. 2. Switch House Seismic upgrades. 3. Maintenance work and electrical testing at the pumping plants.
Lower Feeder (Untreated)	March 6-12, 2017	Remove a valve from an inactive service connection.
Foothill Feeder, Jensen Treatment Plant, West Valley Feeder No. 2, and Calabasas Feeder	March 27- April 3, 2017	1. Repair two valves on the Foothill Feeder. 2. Perform electrical upgrades at the Jensen plant. 3. Perform PCCP inspections on WVF#2 and Calabasas Feeder.

Meet Blending Objectives

Another one of Metropolitan's operating principles is to blend SWP and CRW supplies at the Weymouth, Diemer, and Skinner plants whenever feasible, and in consideration of other important objectives such as meeting demands and maintaining long-term supply reliability. Blending operations seek to control the level of Total Dissolved Solids (TDS) in water delivered to the member agencies. During the drought in 2014 and 2015, SWP supplies were limited and there were no additional supplies for blending. In 2016, although the SWP allocation climbed to 60 percent, much of the SWP supplies were used to refill storage to recover from the drought which limited supplies available for blending. In 2017 however, with the SWP allocation already at 60 percent and likely to increase, there are sufficient SWP supplies for blending. Blending levels are anticipated to be about 50 percent on average over the year under the current SWP allocation and potentially increasing to 60 percent on average in the event of higher SWP allocations. At times, blends may be increased to 100 percent to help capture potential Article 21 supplies described in the Supply Outlook section of this document. Potential blending percentages under different water supply and demand scenarios are shown in Tables A-1 through A-3 in the Appendix.

Maximize Hydroelectric Power Production

Metropolitan operates 16 hydroelectric plants throughout the distribution system that are capable of generating up to 131 megawatts of power. Whenever possible, flow rates through the plants are set in the optimal range to maximize generation and revenues. At times however, other operating principles like demand and storage management place flow rates through the plants outside the optimal range. In these instances, hydroelectric plant production is reduced or the plants are taken off-line. For example, Metropolitan is currently maximizing the delivery of SWP supplies and minimizing the use of CRW supplies. Under this operating condition, flows on the Rialto Feeder increase and allow the San Dimas Hydroelectric Plant to be put in service. Conversely, the Temescal and Corona Hydroelectric Plants are taken off-line due to low flows of CRW on the Lower Feeder. In all operating conditions in 2017, Metropolitan will seek to generate as much hydroelectric power as possible.

Appendix - Example 2017 Scenarios

With the wide range in potential operational outcomes for 2017, three example scenarios are shown below to give more specifics to annual operations. Three conditions are illustrated; dry, normal, and wet for the remainder of 2017. Please note, Tables A-1, A-2, and A-3 are for illustration purposes only. Numerous conditions may arise that are not included in these illustrations. All three scenarios are subject to change based on actual conditions in 2017.

TABLE A-1
2017 Dry for the Remainder of the Year Scenario
Example Only—all numbers in TAF

Supply	
SWP Allocation	60%
SWP Supply	1,147
Port Hueneme	1
Article 21	0
Other SWP Supply	0
CRW Base Supply	960
CRW Purchases	0
CRW Agricultural Adjustment	0
Total Supply	**2,108**
Demand	
LAA Supply (Average is 230 TAF)	280
Consumptive	1,408
Replenishment	174
Total Deliveries to Member Agencies	1,582
Coachella Valley Water District Purchase	35
Losses	50
Total Demand	**1,667**

Storage	**Beginning**	**Change**	**Ending**	**Total Storage Capacity**
In-Region Surface Storage				
Lake Mathews	135	0	135	182
Lake Skinner	37	0	37	44
DVL	566	134	700	810
Castaic Flex	154	0	154	154
Perris Flex	0	65	65	65
Out-of-Region Surface Storage				
Lake Mead ICS	71	200	271	1,571
MWD SWP Carryover	168	-28	140	140
DWCV SWP Carryover	42	26	68	68
Banking Programs				
Arvin-Edison	108	30	138	389
Semitropic	125	52	177	350
Kern-Delta	99	0	99	250
Mojave	27	0	27	330
Antelope Valley - East Kern	0	0	0	30
DWCV Account	38	-38	0	800
Conjunctive Use / Cyclic Storage				
Conjunctive Use	1	0	1	213
Cyclic Storage	0	0	0	140
Other Storage Opportunities	0	0	0	0
Other Emergency Storage	328	0	328	328
Remaining Water to Store		**0**		
Total Storage	**1,899**	**441**	**2,340**	**5,864**
Total WSDM Storage	**1,273**	**441**	**1,714**	**5,238**

Average Blending at the Weymouth, Diemer, and Skinner Treatment Plants	
January - March	50%
April - June	50%
July - September	50%
October - December	40%

TABLE A-2

2017 Normal for the Remainder of the Year Scenario

Example Only - all numbers in TAF

Supply	
SWP Allocation	70%
SWP Supply	1,338
Port Hueneme	1
Article 21	50
Other SWP Supply	0
CRW Base Supply	960
CRW Purchases	0
CRW Agricultural Adjustment	0
Total Supply	**2,349**
Demand	
LAA Supply (Average is 230 TAF)	330
Consumptive	1,295
Replenishment	135
Total Deliveries to Member Agencies	1,430
Coachella Valley Water District Purchase	35
Losses	50
Total Demand	**1,515**

Storage	**Beginning**	**Change**	**Ending**	**Total Storage Capacity**
In-Region Surface Storage				
Lake Mathews	135	0	135	182
Lake Skinner	37	0	37	44
DVL	566	134	700	810
Castaic Flex	154	0	154	154
Perris Flex	0	65	65	65
Out-of-Region Surface Storage				
Lake Mead ICS	71	200	271	1,571
MWD SWP Carryover	168	12	180	180
DWCV SWP Carryover	42	28	70	87
Banking Programs				
Arvin-Edison	108	45	153	389
Semitropic	125	68	193	350
Kern-Delta	99	35	134	250
Mojave	27	0	27	330
Antelope Valley - East Kern	0	10	10	30
DWCV Account	38	119	157	800
Conjunctive Use / Cyclic Storage				
Conjunctive Use	1	30	31	213
Cyclic Storage	0	60	60	140
Other Storage Opportunities	0	28	28	0
Other Emergency Storage	328	0	328	328
Remaining Water to Store		**0**		
Total Storage	**1,899**	**834**	**2,733**	**5,923**
Total WSDM Storage	**1,273**	**834**	**2,107**	**5,297**

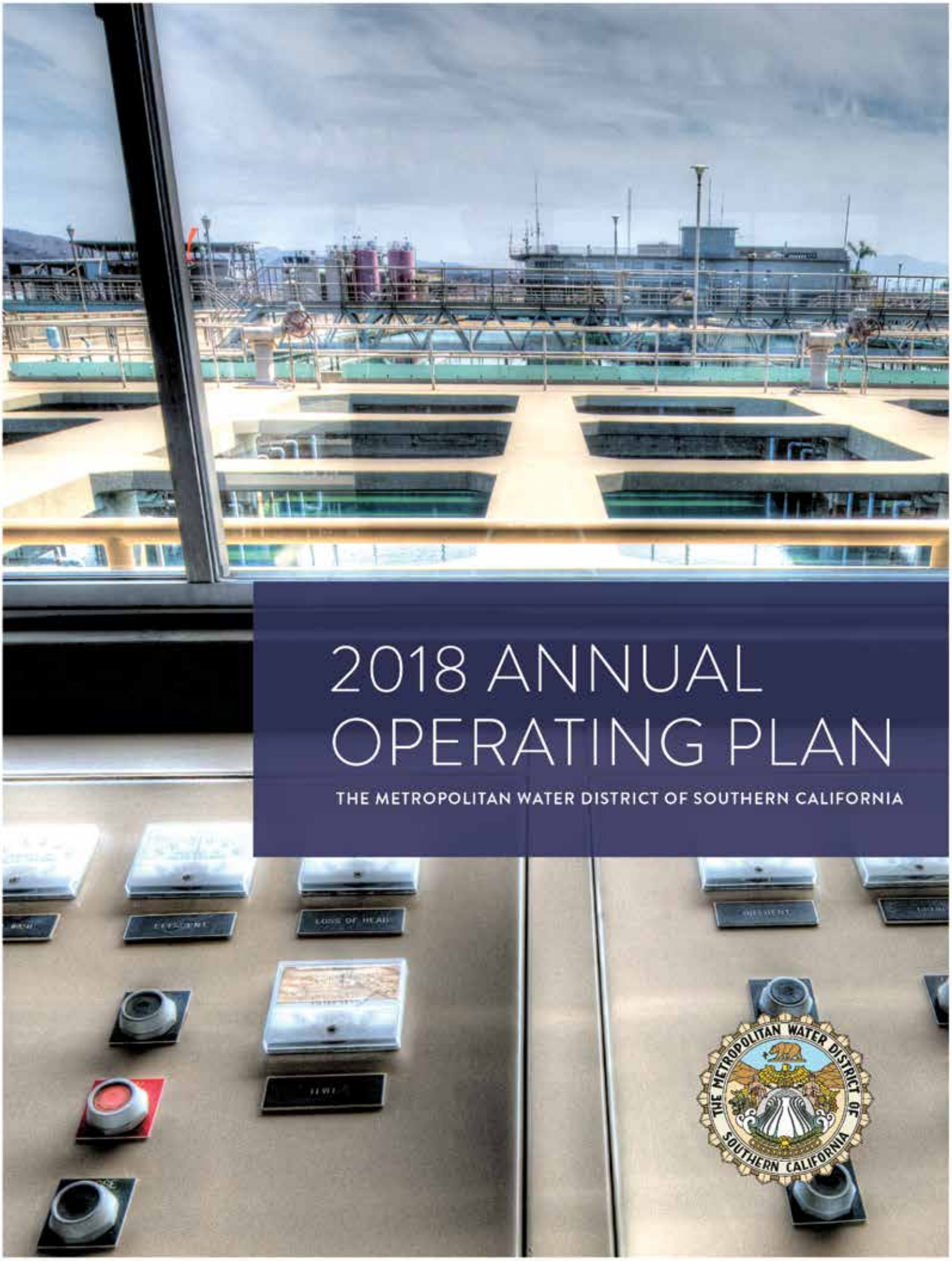
Average Blending at the Weymouth, Diemer, and Skinner Treatment Plants	
January - March	55%
April - June	55%
July - September	55%
October - December	55%

TABLE A-3
2017 Wet for the Remainder of the Year Scenario
Example Only - all numbers in TAF

Supply	
SWP Allocation	80%
SWP Supply	1,529
Port Hueneme	1
Article 21	100
Other SWP Supply	0
CRW Base Supply	960
CRW Purchases	0
CRW Agricultural Adjustment	0
Total Supply	**2,590**
Demand	
LAA Supply (Average is 230 TAF)	460
Consumptive	1,223
Replenishment	70
Total Deliveries to Member Agencies	1,293
Coachella Valley Water District Purchase	35
Losses	50
Total Demand	**1,378**

Storage	**Beginning**	**Change**	**Ending**	**Total Storage Capacity**
In-Region Surface Storage				
Lake Mathews	135	0	135	182
Lake Skinner	37	0	37	44
DVL	566	244	810	810
Castaic Flex	154	0	154	154
Perris Flex	0	65	65	65
Out-of-Region Surface Storage				
Lake Mead ICS	71	200	271	1,571
MWD SWP Carryover	168	32	200	200
DWCV SWP Carryover	42	55	97	97
Banking Programs				
Arvin-Edison	108	45	153	389
Semitropic	125	68	193	350
Kern-Delta	99	40	139	250
Mojave	27	0	27	330
Antelope Valley - East Kern	0	10	10	30
DWCV Account	38	100	138	800
Conjunctive Use / Cyclic Storage				
Conjunctive Use	1	30	31	213
Cyclic Storage	0	60	60	140
Other Storage Opportunities	0	200	200	0
Other Emergency Storage	328	0	328	328
Remaining Water to Store		**63**		
Total Storage	**1,899**	**1,149**	**3,048**	**5,953**
Total WSDM Storage	**1,273**	**1,149**	**2,422**	**5,327**

Average Blending at the Weymouth, Diemer, and Skinner Plants	
January - March	60%
April - June	60%
July - September	60%
October - December	60%

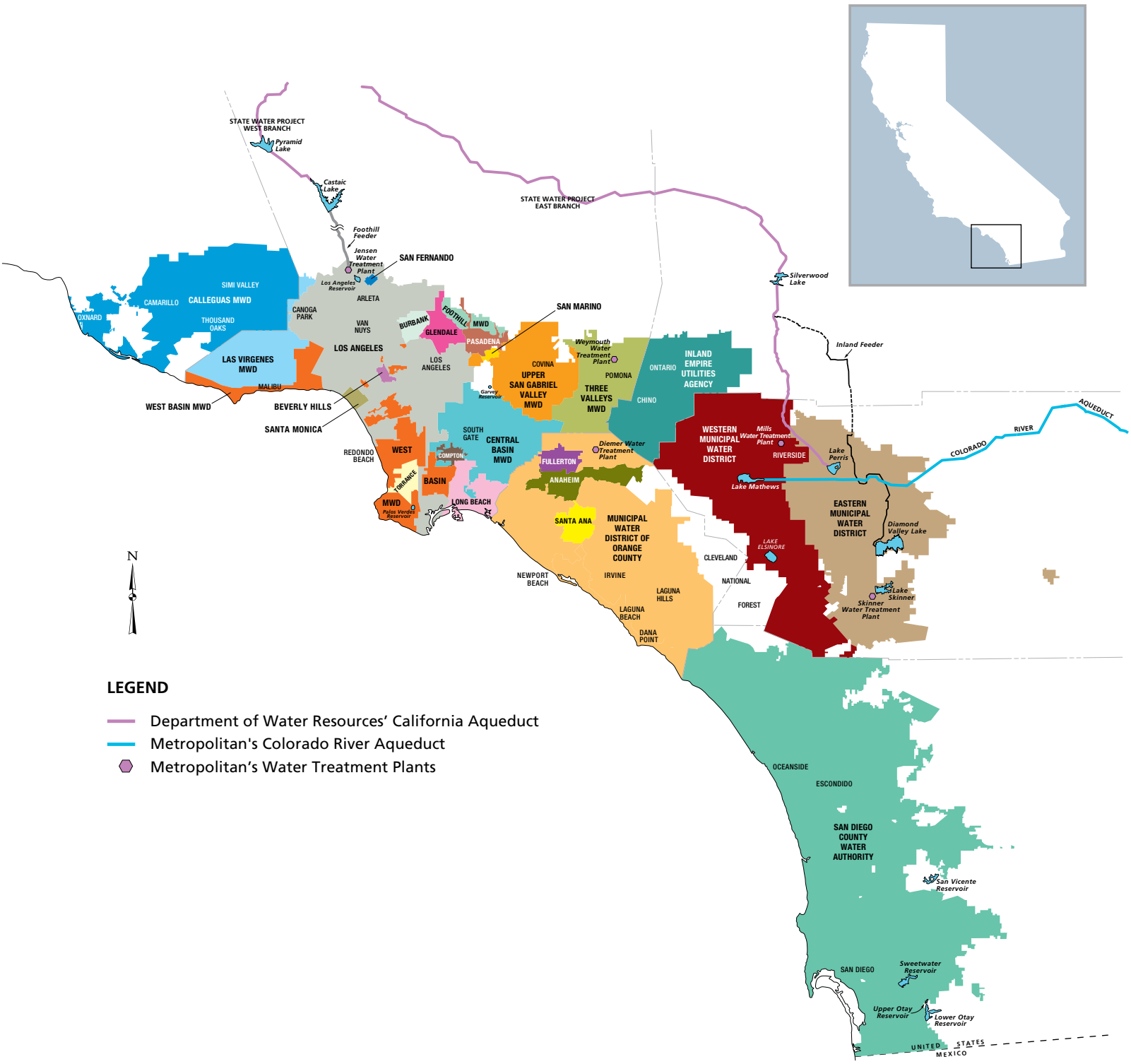


2018 ANNUAL OPERATING PLAN

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Agency Map



LEGEND

- Department of Water Resources' California Aqueduct
- Metropolitan's Colorado River Aqueduct
- Metropolitan's Water Treatment Plants

2018 ANNUAL OPERATING PLAN

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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Los Angeles, California 90012
(213) 217-6000
mwdh2o.com

WATER SYSTEM OPERATIONS GROUP

February 2018

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Effective Operations for Continued Reliability

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way. Effective planning, operations, resource management, monitoring, and maintenance are critical to meeting this mission. The Annual Operating Plan provides a framework for strategic operations and continued reliability. It is also a tool to communicate expected future operations to help Metropolitan's member agencies and partners better prepare for the upcoming year.

The 2018 Annual Operating Plan steps through the outcomes of 2017. The Plan then provides an outlook for 2018, including forecasts of demands, supplies, and resulting water balances; strategies for water surplus and drought management; and additional actions to ensure continued delivery of high-quality water to serve the region's needs.

F.E. Weymouth Water Treatment Plant

CHAPTER 2

2017 in Review: A Record-Breaking Surplus Year

ADAPTING TO CHANGING CONDITIONS

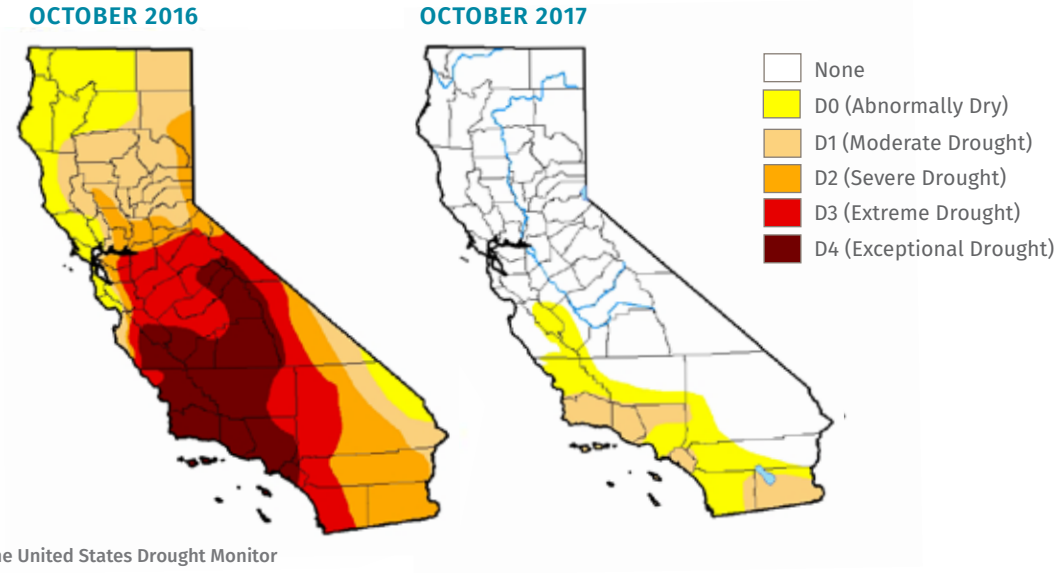
Over the past few years, the region has experienced dramatic swings in hydrologic conditions, from the driest to the wettest periods in California's recorded history. As conditions shifted, so did Metropolitan's operations, from implementing extraordinary drought actions to maximizing storage of surplus supplies. All of these actions helped to ensure continued water supply reliability for the region.

San Luis Reservoir 2016 (top) and 2017 (bottom)
Photographs courtesy of DWR

Breaking Precipitation Records in Northern California

At the start of the water year (October 2016), the entire state of California was under historic drought conditions, with nearly half of the state facing severe to exceptional drought. By February 2017, California experienced a dramatic shift in weather with a series of atmospheric rivers that brought significant precipitation, ending the drought for a majority of the state (see Figure 2-1).

FIGURE 2-1
Drought Comparison 2016-2017



Images from the United States Drought Monitor

By mid-April 2017, Northern California had already experienced its wettest water year on record. By the end of the water year, the Northern Sierra 8-Station Index registered 94.7 inches of precipitation (183 percent of the long-term average), breaking the previous 1983 record of 88.5 inches.

Snowfall also makes up a large part of the water supply, and the snowpack measurement at Phillips Snowcourse in 2015 as compared to 2017 further illustrates the dramatic variability of snowfall within the last few years.

APRIL 2015

Photograph courtesy of DWR

APRIL 2017

Photograph courtesy of DWR

Operating Through Extreme Conditions

Faced with extreme drought in California and reduced State Water Project supplies in 2014 and 2015, Metropolitan implemented extraordinary drought actions. These actions included maximizing Colorado River deliveries and operating Metropolitan's distribution system to push Colorado River water into areas that historically could only receive supplies conveyed through the SWP. In 2017, with abundant SWP supplies, Metropolitan reversed this operation and instead maximized SWP water deliveries and storage. This was accomplished primarily through maximizing storage of Colorado River water upstream of Metropolitan's service area, which freed up capacity in the service area to deliver additional water from the SWP. Deliveries of Colorado River water into the service area were reduced to about 280,000 acre-feet, the lowest delivery to the service area since the early 1950s. To do this, Metropolitan strategically adjusted operations of Colorado River Aqueduct pumping, balancing a variety of factors such as leaving Colorado River supplies in Metropolitan's Intentionally Created Surplus account in Lake Mead and maximizing deliveries to groundwater storage in the Desert Water Agency and Coachella Valley Water District Advanced Delivery Account. See Figure 2-2 for examples of system operations.

FIGURE 2-2
Example System Operations

Extraordinary Surplus Operations (Early 2017)

Typical System Operations

To maximize deliveries of Colorado River water into the DWCV Advanced Delivery Account, Metropolitan expedited design and construction of a new weir gate in the CRA downstream of the Whitewater River west of Palm Springs. This innovation enabled increased deliveries of Colorado River water into the DWCV Advanced Delivery Account at reduced CRA flows. Deliveries of over 395,000 acre-feet to DWCV were the highest ever in a single calendar year, far exceeding the prior record of 298,000 acre-feet in 1986. This resulted in an increase of 189,000 acre-feet into the DWCV Advanced Delivery Account after meeting the annual exchange contract amounts.

New weir gate near DWCV connection

Deliveries at Whitewater River

Installation of a new weir gate allowed for record deliveries of Colorado River water into the DWCV Advanced Delivery Account

Beyond extreme hydrologic conditions in California, the SWP experienced other significant events in 2017 that impacted water operations. One of those events was the Oroville spillways incident. In February 2017, both the main spillway and the area immediately downstream of the emergency spillway of Lake Oroville, a key SWP reservoir, experienced significant damage. Once it was safe to do so, the State of California Department of Water Resources quickly moved forward with reconstruction of the spillways, implementing a two-phased construction strategy. DWR successfully met the major phase 1 milestone by November 1, 2017, which was an operational main spillway. The ultimate goal of phase 2 is a fully-restored main spillway that can handle flows of up to 270,000 cubic feet per second, and an improved, fully-functional emergency spillway by early 2019. This incident did not impact 2017 SWP supplies because of high San Joaquin River flows that allowed for a high level of Delta exports throughout the summer of 2017. However, the lower storage levels at Lake Oroville at the end of 2017, along with DWR's revised 2018 planned operations of Lake Oroville, may impact water supply conditions in 2018. Metropolitan will continue to monitor progress and adapt accordingly.

Oroville Main Spillway Incident and Reconstruction Progress

Other constraints were placed on SWP facilities in 2017 that, at times, restricted exports and deliveries to Metropolitan. Despite these constraints, the SWP delivered the second highest volume in history. During much of the year, the East Branch was operating at full capacity as SWP contractors took delivery of their SWP supplies, leaving limited excess capacity for Metropolitan to use to further maximize SWP deliveries. At times, DWR maintenance activities on the East Branch also limited the amount of supply that Metropolitan could take on the East Branch. Other limitations, such as the Delta smelt biological opinion, affected export levels. Despite these operational constraints, Metropolitan, in collaboration with its partners and DWR, was able to take advantage of surplus conditions and maximize deliveries and storage of SWP supplies. This included a nearly record amount of water received by Metropolitan on the East Branch.

MEETING DEMANDS AND MANAGING SUPPLIES

Water supplies available to Metropolitan in 2017 exceeded demands for the second year in a row. The surplus supplies in 2017, however, were much greater than in 2016. Operational priorities to store water were accelerated while continuing to meet member agency demands.

Consumptive and Replenishment Demands

Continued conservation, along with significantly higher-than-normal local supplies due to the wet conditions, suppressed consumptive water demands on Metropolitan to 1.27 million acre-feet. This level of consumptive demands is significantly below the 10-year annual average of 1.77 million acre-feet. In addition to consumptive demands, Metropolitan also met demands for groundwater and reservoir replenishment of 96,000 acre-feet (this does not include Metropolitan's local groundwater programs, such as the Conjunctive Use or Cyclic Storage programs). In total, the 2017 water demand was 1.49 million acre-feet (including 0.12 million acre-feet of losses and obligations), which was an extraordinarily low level not seen since the mid-1980s.

State Water Project Supplies

Record precipitation and runoff in Northern California led to a SWP allocation of 85 percent, or approximately 1.625 million acre-feet for Metropolitan, the highest since 2006. Metropolitan was also able to secure 124,000 acre-feet of surplus Article 21 supplies, which were in addition to the regularly allocated Table A supplies and have not been available since 2011. The two combined, along with Port Hueneme supplies, brought the total available SWP base supply for 2017 to 1.75 million acre-feet.

Colorado River Supplies

Above normal hydrologic conditions in the Upper Colorado River Basin, combined with demand management actions by California, Nevada, and Arizona, resulted in storage gains in both Lake Powell and Lake Mead in 2017. These events helped improve conditions on the Colorado River system, which has been experiencing long-term drought. Metropolitan's base supply for Colorado River water also increased compared to 2016, primarily due to reductions in demand by agricultural contractors with higher Colorado River priorities. Additionally, Coachella Valley Water District did not take delivery of the water available to it under the Imperial Irrigation District/Metropolitan Conservation Program; therefore, the entire yield of the conservation program was available to Metropolitan. As shown in Table 2-1, the total base Colorado River supply for 2017 was 1,034,000 acre-feet.

TABLE 2-1
2017 Colorado River Base Supply Summary

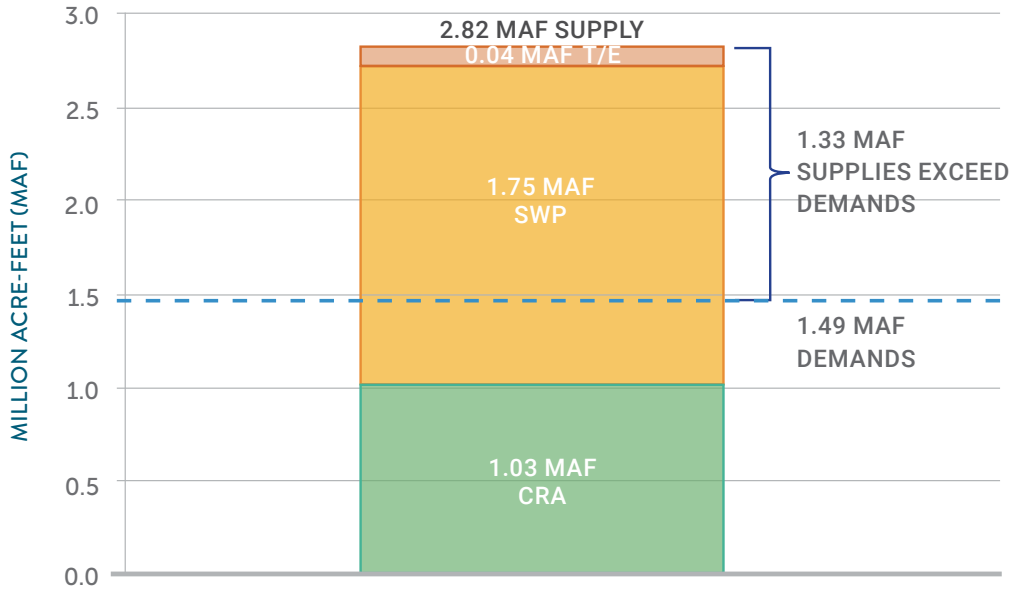
CATEGORY	SUPPLY (acre-feet)
Basic Apportionment	550,000
IID/Metropolitan Conservation Program	105,000
Palo Verde Irrigation District Land Fallowing	125,000
Exchange with San Diego County Water Authority (IID Transfer and Canal Lining)	179,000
Canal Lining Water to Metropolitan	16,000
Lower Colorado Water Supply Project	6,000
Bard Pilot Seasonal Fallowing Program	2,000
Agricultural Adjustment and ICS Agreement with IID	51,000
TOTAL	**1,034,000**

Additional information on the supply programs can be found in Appendix A.

Resulting Surplus Supplies

In total, with an additional 0.04 million acre-feet of transfers and exchanges (T/E, see Appendix A), 2.82 million acre-feet of supplies were available in 2017. With a total demand on Metropolitan of 1.49 million acre-feet, the resulting supply and demand balance indicates approximately 1.33 million acre-feet of surplus supplies, as shown in Figure 2-3.

FIGURE 2-3
2017 Surplus Supplies

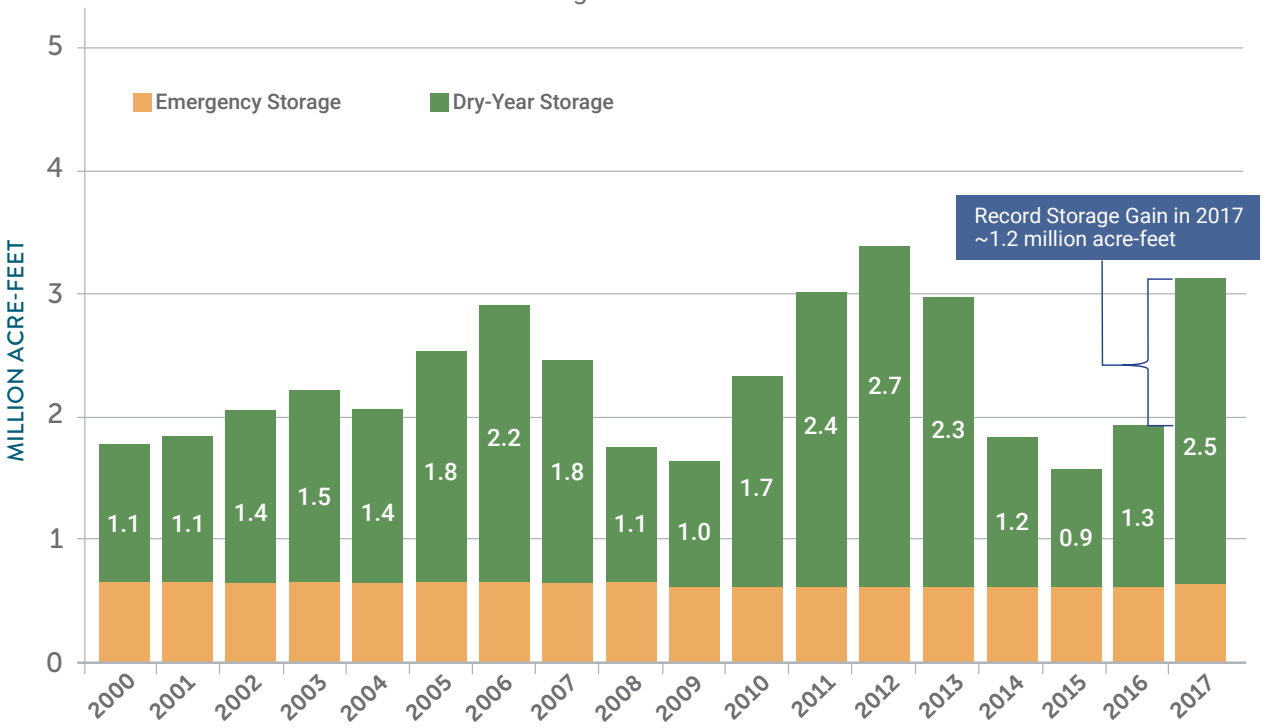


INCREASING STORAGE TO MANAGE FUTURE DROUGHTS

The combination of high supplies, low demands, and strategic operations resulted in record-breaking increases to storage. Guided by strategies outlined in the 2017 Annual Operating Plan, Metropolitan began implementing storage actions early in the year to manage available supplies and continue rebuilding its dry-year storage reserves that were drawn down during the drought. Metropolitan stored roughly 1.2 million acre-feet of water in 2017, surpassing the previous record of approximately 0.7 million acre-feet added to storage in 2011 as shown in Figure 2-4. The total storage at the end of 2017 represents the second highest end-of-year dry-year storage balance in Metropolitan's history, only behind 2012 levels.

FIGURE 2-4

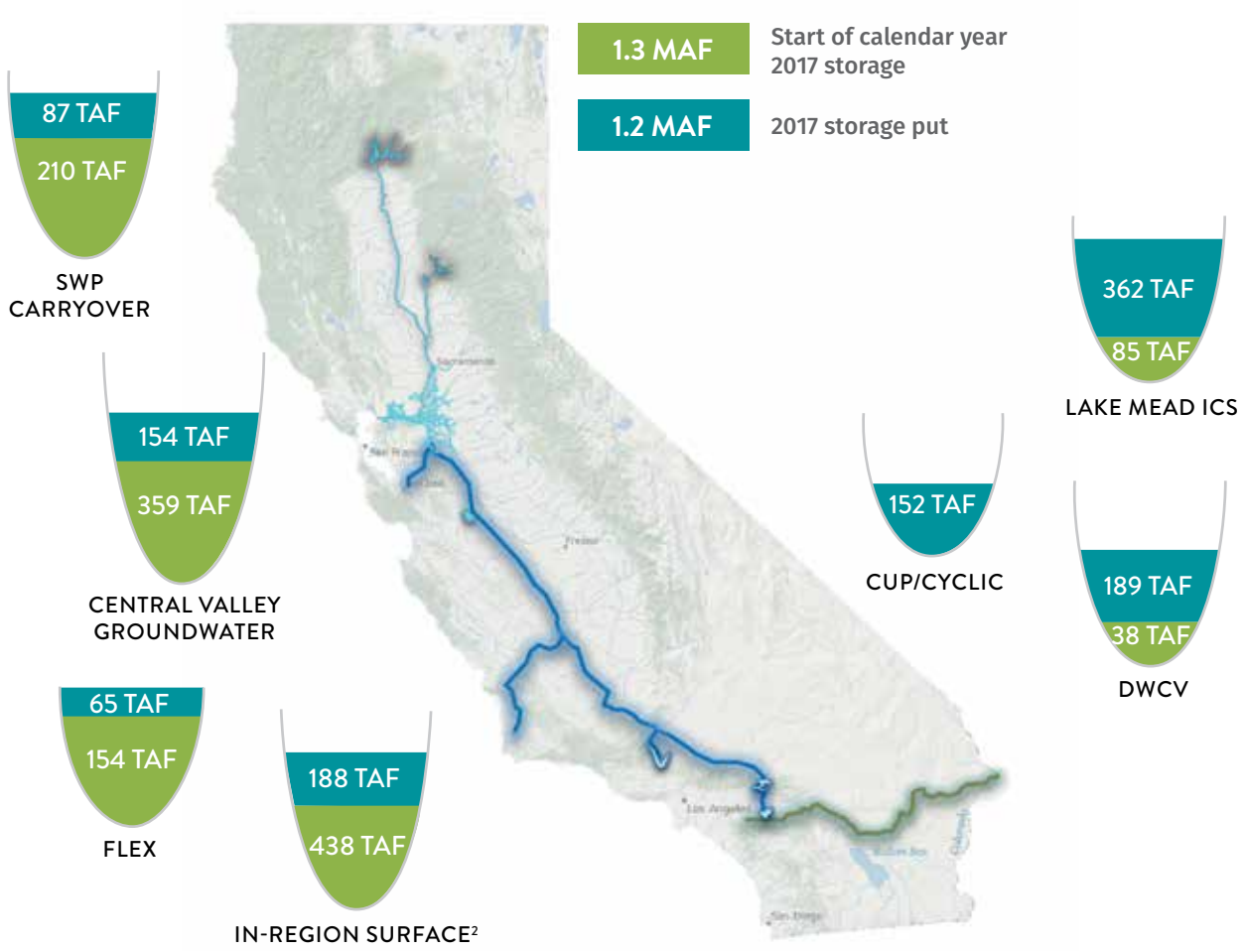
Storage End-of-Year Balances



Metropolitan successfully maximized deliveries into every available storage account in 2017 by operating the system to expand deliveries of SWP water to the service area, working closely with partners to find innovative solutions to store more water and overcome operational constraints.

By the end of 2017, total dry-year storage reached approximately 2.5 million acre-feet, which includes a single-year record combined delivery of 152,000 acre-feet to the Conjunctive Use and Cyclic Storage Programs, and a nearly full Diamond Valley Lake. Figure 2-5 shows the quantity of dry-year storage in each storage account at the end of 2017. Additional information on the storage programs can be found in Appendix B.

FIGURE 2-5
Dry-Year Storage at the End of 2017[1]



[1]Amounts subject to change based on final accounting in 2018

[2]In-Region Surface Storage includes DVL, Lake Mathews, and Lake Skinner; does not include emergency storage

TAF: Thousand Acre-Feet

Additionally, Metropolitan tracked its East Branch deliveries when DWR placed capacity constraints due to shutdowns or other outages, enabling Metropolitan to request approximately 38,000 acre-feet of Article 14(b) supplies. This water can be rescheduled in 2018.

PROVIDING HIGH QUALITY WATER

The quality of water, meeting public health requirements as well as aesthetic expectations, is a critical aspect of treating and supplying drinking water. Metropolitan took proactive steps in 2017 to protect and manage source waters, optimize treatment operations, and ultimately deliver water that meets drinking water regulations and consumer expectations.

Protecting the Source

Metropolitan continued its oversight and coordination on water quality issues with key Colorado River stakeholders. Staff also collaborated with DWR and SWP contractors on Delta and SWP water quality monitoring and forecasting programs. Metropolitan completed the 2015 Update of the Colorado River Watershed Sanitary Survey, receiving approval from the California Division of Drinking Water. Additionally, Metropolitan and other SWP contractors completed the 2016 Update of the SWP Watershed Sanitary Survey. These surveys provide detailed assessments of watersheds and water quality, and include strategies for continued protection of Metropolitan's source waters.

Metropolitan continued to monitor its system in 2017 for taste-and-odor compounds in source waters. DWR conducted several treatments in SWP reservoirs to manage T&O. Metropolitan treated Lake Skinner three times in 2017 with copper sulfate. Treatments were not necessary for Lake Mathews or DVL. Metropolitan's intensive monitoring and lake management strategies helped to ensure the quality of Metropolitan's source supplies.

Optimizing Water Treatment

A major milestone was reached at the Weymouth plant in La Verne with the startup of ozone in October 2017. As the last of Metropolitan's five treatment plants to convert to ozone, this marked the end of the $1.1 billion ozone retrofit program. When compared to chlorine, ozone produces fewer disinfection byproducts, destroys a wider range of microorganisms, and more effectively removes unpleasant tastes and odors. With ozone at all of Metropolitan's plants, higher blends of SWP water with Colorado River supplies can be reliably treated, ensuring a high degree of system flexibility and reliability when faced with changing water supplies.

Ozone facilities at the Weymouth plant


OZONE GAS
O3

Managing Blends

Salinity of Colorado River water supplies is higher than SWP water, largely due to natural mineral salt deposits within the geology of the Colorado River watershed. However, salinity changes occur much more rapidly in the SWP system due to hydrologic fluctuations in the Delta and less storage to dampen these fluctuations when compared to the Colorado River system. Metropolitan operates its system and manages the blending of these two sources to meet its Board-adopted salinity goal of 500 milligrams per liter, when possible.

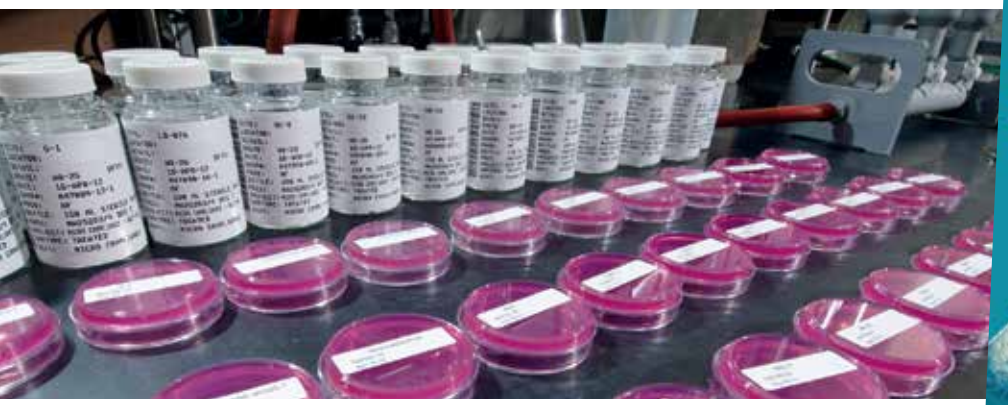
During the recent drought between 2012 and 2015, SWP supplies were limited and blending opportunities were reduced. Although the SWP allocation climbed to 60 percent in 2016, much of the SWP supplies were used to rebuild drought-depleted storage. In 2017, rainfall and snowpack in Northern California provided sufficient supplies for blending. Metropolitan's Weymouth, Diemer, and Skinner plants experienced blends above 70 percent of SWP supplies for most of the year, allowing Metropolitan to achieve its salinity goal for 2017.

A unique challenge Metropolitan faced in 2017 involved alkalinity in SWP supplies. As a result of the significant precipitation last year and resulting snowmelt, alkalinity in SWP water dropped to record low levels, particularly influenced by San Joaquin River flows. Metropolitan employed various strategies, such as raising pH at treatment plant effluents and managing blends throughout the system, to successfully handle this source water change and ensure continued reliable deliveries.

Safeguarding our Water Supplies

Metropolitan's treated water supplies met all regulatory requirements during 2017. The 2017 Annual Drinking Water Quality Report is available at:

www.mwdh2o.com/PDF_About_Your_Water/2.3.1_Annual_Water_Quality_Report.pdf



MANAGING POWER SUPPLIES AND PRODUCTION

Importing water into Southern California requires energy resources and also provides the opportunity for hydroelectric power generation. As power markets continued to evolve, Metropolitan took innovative steps in 2017 to manage its power system and maximize power generation.

Transitioning CRA Power Operations

2017 was a year of major transition for Metropolitan's CRA power operations. The 30-year Service and Interchange Agreement between Metropolitan and Southern California Edison expired, triggering a change in long-standing operating practices of the integrated electrical systems of the CRA and Edison.

Metropolitan established a new contractual relationship with the Arizona Electric Power Cooperative in 2017. AEPCO is a non-profit membership-based generation and transmission cooperative that provides power transmission, scheduling, and trading services to Metropolitan. Agreements between Metropolitan and AEPCO commenced on October 1, 2017. These new agreements will continue to allow Metropolitan the ability to buy and sell energy directly with third party entities in the open energy market, while optimizing Hoover and Parker energy resources to meet Metropolitan's energy requirements.

Historically, approximately 60 to 70 percent of CRA pumping needs were supplied by Hoover Dam and Parker Dam energy resources. The remaining 30 to 40 percent were met by energy from Edison (Benefit Energy) and purchases on the third-party energy market. In 2017, Hoover and Parker supplied over 90 percent of the CRA pumping needs.

Optimizing Power Generation

Metropolitan operates 16 hydroelectric plants throughout the distribution system that are capable of generating up to 131 megawatts of power. Hydroelectric generation is dependent on the volume of water deliveries and the source of Metropolitan's supplies. Several of Metropolitan's largest hydroelectric plants are within portions of Metropolitan's system that convey SWP water. Metropolitan seeks to maximize generation and revenue where possible. In 2016, drought conditions resulted in minimal delivery of SWP supplies, and Metropolitan maximized the use of Colorado River supplies. In 2017, operations reversed with wet supply conditions in Northern California. Power production increased from 2016 to 2017 due to the higher SWP allocation in 2017. Appendix C shows Metropolitan's hydroelectric power production at each of its hydroelectric plants over the past two years.

MAINTAINING RELIABLE WATER DELIVERIES

Delivering reliable water supplies to the region is a cornerstone of Metropolitan's mission. Doing so requires coordinated actions that involve monitoring Metropolitan's system, and making system repairs and improvements where needed.

Controlling Invasive Species

Removing quagga mussels from trash racks at Whitsett Intake

Metropolitan's program for monitoring and controlling invasive quagga mussels has been ongoing since their detection in the lower Colorado River in 2007. Quagga mussel control strategies in the CRA system include chlorination at strategic sites, along with desiccation and physical removal of mussels during shutdowns. In December 2016, a few adult quagga mussels were found in the Angeles Tunnel connecting Pyramid and Castaic Lakes on the West Branch of the SWP. A few weeks later, suspect but unconfirmed quagga mussel larvae (veligers) were found in the East Branch of the SWP, downstream of Silverwood Lake. As the larvae were not confirmed, the state's regulation on control of invasive mussels (Fish and Game Code 2301) was not triggered. There are currently no regulatory restrictions on moving or using raw water from the East or West Branch of the SWP. Metropolitan continues to intensify its quagga mussel monitoring program and has proactively developed control strategies for SWP facilities, if and when needed, to ensure continued reliable water deliveries.

Ensuring Reliable Infrastructure and Managing Shutdowns

Capital Investment Plan projects completed in 2017 will further enhance Metropolitan's ability to deliver safe and reliable water supplies. Throughout each year, Metropolitan also performs preventive and corrective maintenance of its facilities. Metropolitan plans and performs shutdowns to inspect pipelines and facilities, perform repairs, and support CIP projects. These shutdowns involve a high level of planning and coordination within Metropolitan, as well as with member agencies, other affected organizations, contractors, and the community. In fiscal year 2016/17, Metropolitan successfully completed numerous shutdowns of its conveyance and distribution system throughout the service area. Operational flexibility within Metropolitan's system and the cooperation of member agencies allowed these shutdowns to be completed while continuing to meet system demands. In addition to refurbishment and repairs of Metropolitan's water system, Metropolitan's manufacturing and fabrication shops supported DWR on several infrastructure reliability projects.


CAT

SETTING THE STAGE FOR 2018

Metropolitan made significant achievements over the past year. With abundant water supplies through a record-breaking wet year, Metropolitan was able to manage its system and capitalize on opportunities. The strategic actions taken in 2017 to maximize increases to storage, ensure high quality water supplies, and maintain reliable power and water deliveries position the region to be better prepared to face the challenges of 2018 and beyond.

Diamond Valley Lake January 2018

CHAPTER 3

2018 Plan: Prepared for a Range of Future Conditions

Just as the 2017 Annual Operating Plan prepared the region for a successful year, the current plan provides a strategy for continued effective operations under a wide range of potential 2018 conditions. This strategy is firmly grounded in Metropolitan's core operating principles to 1) meet member agency demands, 2) meet water quality requirements, 3) manage storage according to Water Surplus and Drought Management Plan principles, 4) manage maintenance and shutdowns, 5) meet blending objectives, and 6) maximize hydroelectric power production.

This chapter presents an outlook of supplies and demands for 2018, a range of shortage and surplus strategies, and an operating plan for Metropolitan to ensure continued reliable water deliveries for the region.

Hiram W. Wadsworth Pumping/Hydro-generating Facility

MEETING MEMBER AGENCY DEMANDS

Forecasting water demands is essential for evaluating the need for resources and managing system operations. Many factors influence the demands on Metropolitan, including weather, water-use efficiency efforts and availability of local supplies.

There are two general types of demands on Metropolitan: consumptive and replenishment. Consumptive demands include residential, commercial, industrial, seawater barrier, and agricultural water use. Replenishment demands include full-service deliveries to groundwater and surface storage (this does not include Metropolitan's local groundwater programs, such as the Conjunctive Use or Cyclic Storage programs).

Forecasting Demands: A Collaborative Process

To forecast demands for 2018, Metropolitan begins by gathering data from its member agencies. In July of each year, member agencies submit their five-year demand forecast to Metropolitan. Metropolitan uses this information as the foundation for forecasting demands. As the year progresses, the member agency forecasts are compared to the current demand trend. This comparison allows Metropolitan to adjust member agency forecasts to current conditions, while coordinating with member agencies as needed.

For 2018, member agencies forecasted a consumptive demand of 1.31 million acre-feet. This demand is very similar to the 2017 consumptive demand of 1.27 million acre-feet. This indicates that member agencies had anticipated generally similar levels of local supplies, water-use efficiency and precipitation.

After years of drought, many groundwater basins have only just now begun to recover. It will take years of normal precipitation combined with imported water deliveries for a number of basins to fully recover. Member agencies are forecasting a total replenishment demand of 140,000 acre-feet, which is greater than the 10-year annual average replenishment demand of 90,000 acre-feet.

A detailed summary of member agency demands in 2018, as projected by the member agencies, is shown in Table 3-1. Replenishment demands for 2017 and member agency projections for 2018 are shown in Table 3-2. Low demands assume wet weather conditions in 2018; normal demands assume normal weather conditions in 2018; and high demands assume dry weather conditions in 2018.

TABLE 3-1

2018 Member Agency Consumptive Demand Projections

MEMBER AGENCY	2017 ACTUAL (TAF)	2018 PROJECTION (TAF)
Anaheim	16	15
Beverly Hills	10	12
Burbank	6	5
Calleguas	92	101
Central Basin	18	19
Compton	0	0
Eastern	89	74
Foothill	9	8
Fullerton	8	8
Glendale	15	19
Inland Empire	59	56
Las Virgenes	18	20
Long Beach	24	27
Los Angeles	115	130
Municipal Water District of Orange County	138	123
Pasadena	18	17
San Diego County Water Authority	358	393
San Fernando	0	0
San Marino	1	1
Santa Ana	11	8
Santa Monica	4	3
Three Valleys	54	46
Torrance	16	13
Upper San Gabriel	3	6
West Basin	113	114
Western	70	87
TOTAL	1,265	1,305

TAF: Thousand Acre-Feet

TABLE 3-2

2018 Member Agency Replenishment Demand Projections

MEMBER AGENCY	2017 ACTUAL (TAF)	2018		
		LOW (TAF)	NORMAL (TAF)	HIGH (TAF)
Burbank	7	0	7	7
Central Basin	6	0	5	5
Eastern	20	10	23	24
Inland Empire	3	0	9	10
Long Beach	0	0	0	0
MWDOC	57	55	65	70
Three Valleys	3	1	6	10
Upper San Gabriel	0	10	25	30
TOTAL	96	76	140	156

2018 Demands on Metropolitan

Metropolitan builds upon member agency demand projections to develop its own forecast. This forecast considers other factors, such as historical demand trends, current demand trends, changes in local supply production, weather trends, water-use efficiency trends, retail demand estimates, and updated estimates from member agencies. Based on these adjustments and further coordination with member agencies, Metropolitan's consumptive demand forecast for 2018 under normal weather conditions is 1.41 million acre-feet, which is approximately 0.10 million acre-feet higher than the total forecast submitted by the member agencies earlier in 2017. Metropolitan's replenishment demand forecasts for 2018 match the range of member agency projections of approximately 80,000 acre-feet to 160,000 acre-feet.

Table 3-3 shows Metropolitan's 2018 demand forecast summary, along with actual 2017 demands. The table includes projections from low to high (as described previously). Also included are losses and obligations. Losses include system losses on Metropolitan's distribution system, such as evaporation. Obligations include deliveries to non-member agencies as required by various agreements. The total demand, including losses and obligations, represents the total water requirement to be met with Metropolitan supplies.

TABLE 3-3
2018 Metropolitan Forecasted Demand Summary

DEMAND TYPE	2017 ACTUAL (MAF)	2018		
		LOW (MAF)	NORMAL (MAF)	HIGH (MAF)
Consumptive	1.27	1.33	1.41	1.66
Replenishment	0.10	0.08	0.14	0.16
Losses and Obligations	0.12	0.13	0.11	0.10
TOTAL	1.49	1.54	1.66	1.92

Metropolitan plans to meet all member agency demands in 2018. Conditions where timing of deliveries to member agencies need to be adjusted to meet pipeline capacity or other operational constraints will be coordinated with the member agencies.

IMPORTED SUPPLY FORECAST

Imported supplies serve not only as supplies for Metropolitan's member agencies to meet 2018 demands, but also to replenish storage when available. This section describes the forecasts of supplies available from the SWP and Colorado River in 2018.

Colorado River Supplies

In September 2017, Metropolitan provided the United States Bureau of Reclamation an initial estimate of its 2018 net CRA diversion of 945,000 acre-feet. A breakdown of this supply is shown in Table 3-4. In 2018, under a low SWP supply and a high demand condition, Metropolitan may increase diversions by withdrawing from storage. However, if supply conditions on the SWP end high, Metropolitan may reduce diversions and has requested to store up to 374,000 acre-feet of its Colorado River supply in Lake Mead as Intentionally Created Surplus.

TABLE 3-4

2018 Colorado River Supply Forecast

CATEGORY	SUPPLY (ACRE-FEET)
Basic Apportionment	550,000
IID/Metropolitan Conservation Program	85,000
Palo Verde Irrigation District Land Fallowing	76,000
Exchange with SDCWA (IID Transfer and Canal Lining)	209,000
Exchange with USBR (San Luis Rey Settlement Agreement; Canal Lining)	16,000
Lower Colorado Water Supply Project	9,000
Agricultural Adjustment	0
TOTAL	**945,000**

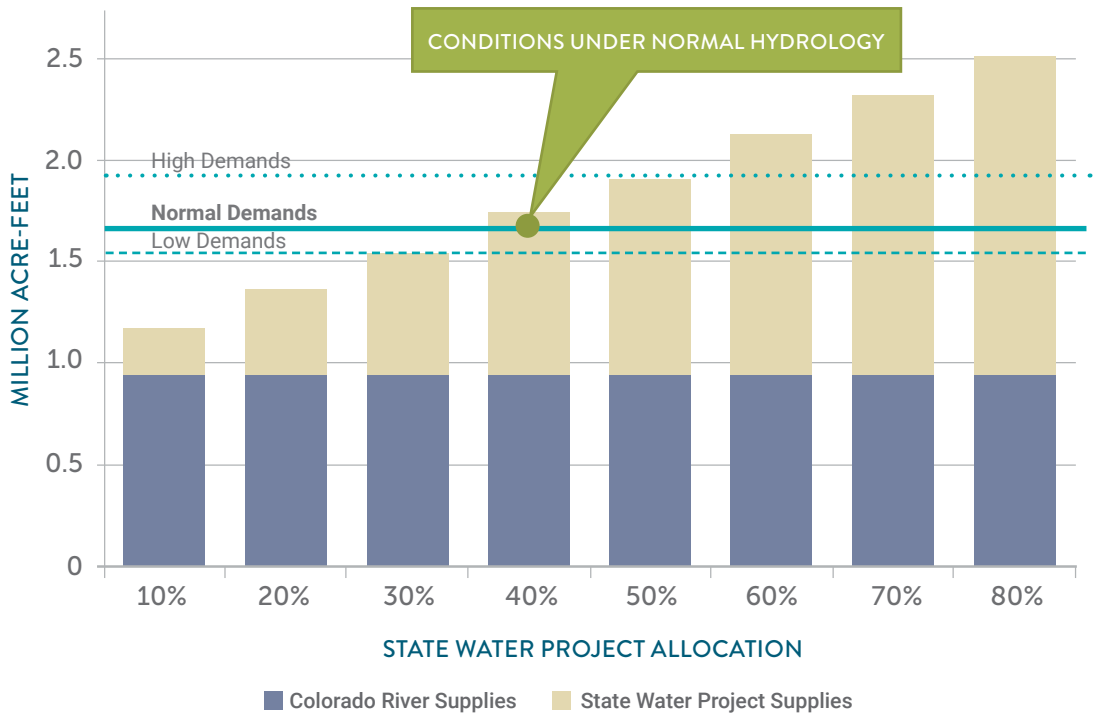
State Water Project Supply Outlook: A Wide Range

The initial SWP allocation for 2018 was 15 percent, as set by DWR on November 30, 2017. This relatively low initial SWP allocation following a record wet year can be attributed to reduced storage in Lake Oroville in 2017 (see previous discussion on the Oroville spillways incident) and impacts from the Delta smelt biological opinion. Also, initial SWP allocations are typically conservative early in the season and are likely to change depending on rain and snowfall received in the winter. On January 29, 2018, DWR announced an increase of the SWP allocation to 20 percent. This 20 percent SWP allocation is based on a dry forecast. It is estimated that median hydrologic conditions in 2018 would yield about a 40 percent final SWP allocation. The 2018 SWP final allocation will greatly depend on the San Joaquin River watershed's conditions, similar to the high SWP allocation in 2017. If the San Joaquin River watershed is wet, the final SWP allocation could increase. For drier conditions and more stringent Delta water quality and flow constraints, the final allocation could potentially be reduced. DWR typically announces the final SWP allocation in April of each year.

2018 WATER BALANCE

The 2018 water balance brings together the forecasted supplies and demands to provide a picture of resource and operational needs, including the use or replenishment of storage. Figure 3-1 illustrates the balance of supplies against demands under a wide range of potential 2018 conditions.

FIGURE 3-1
2018 Supply and Demand Balance



As shown in Figure 3-1, conditions in 2018 can vary greatly from shortage to surplus depending on demands and primarily the SWP allocation. In a 10 percent SWP allocation and a high demand scenario, Metropolitan would need to use approximately 750,000 acre-feet of storage. In an 80 percent SWP allocation and a low demand scenario, there would be an estimated surplus of over 970,000 acre-feet of supplies. Under median hydrologic conditions (estimated 40 percent SWP final allocation) and normal demands (1.66 million acre-feet), the projected 2018 supply and demand balance indicates supplies exceeding demands by about 90,000 acre-feet (this does not include additional water transfers).

Overall, the region needs to be prepared to manage both drought and surplus conditions in 2018. The storage gained in 2017 positions Metropolitan well to respond to a range of conditions.

2018 WATER SURPLUS AND DROUGHT MANAGEMENT STRATEGY

The Water Surplus and Drought Management Plan guides Metropolitan's resource operations to maximize future reliability. The WSDM Plan provides guidelines to prioritize the use of storage in shortage conditions and the replenishment of storage in surplus conditions. The WSDM Plan generally favors in-region storage because it is easily accessible and favors surface storage because it generally has higher fill and withdrawal capacities. Figure 3-2 and Figure 3-3 outline the surplus (supplies greater than demands) action priorities and drought (supplies less than demands) action priorities, respectively, based on the general principles of the 1999 WSDM Plan.

FIGURE 3-2

1999 WSDM Plan Surplus Action Priorities

PRIORITY	SURPLUS ACTION (FILL)		
1	DVL	IN-REGION	SURFACE
2	Flex Storage		
3	Conjunctive Use/Cyclic		GROUNDWATER
4	SWP Carryover	OUT-OF-REGION	SURFACE
5	Lake Mead ICS		
6	Banking Programs		GROUNDWATER

FIGURE 3-3

1999 WSDM Plan Drought Action Priorities

PRIORITY	DROUGHT ACTION (WITHDRAW)		
1	DVL*		
2	Banking Programs	OUT-OF-REGION	GROUNDWATER
3	Lake Mead ICS		SURFACE
4	SWP Carryover		
5	Conjunctive Use/Cyclic	IN-REGION	GROUNDWATER
6	Flex Storage		SURFACE

*DVL is a flexible supply for meeting a shortage. The amount drawn in this first step will depend on the severity of the shortage and the overall condition of other resources.

Additional information on storage programs can be found in Appendix B.

The WSDM Plan also allows for flexible implementation as other factors must be considered when making storage decisions to maximize future reliability. These factors include starting storage balances, program terms, costs, and the timing, volumes, and location of supplies that can be unique to each year.

The WSDM plan also includes other actions, such as additional water transfers. In 2018, it is estimated that up to 100,000 acre-feet of additional SWP supplies from the Yuba Dry-Year Water Purchase Program and the State Water Contractors Buyers Group would be transferred to Metropolitan at SWP allocations lower than 50 percent. Additional information on these transfer programs can be found in Appendix A.

Through strategic operations and effective resource management in 2017, calendar year 2018 benefits from a starting dry-year storage balance of approximately 2.5 million acre-feet, which is the second highest storage level in Metropolitan's history. Calendar year 2018, along with future years, also benefits from lessons learned in the 2017 record surplus year and from previous extreme drought years. These include an increased understanding of CRA operations at high and low flow extremes, the effectiveness of extraordinary drought actions to preserve supplies for areas that can only receive water from one source, and strategies to quickly capture supplies to maximize storage. Also, with the potential for multi-year drought and multi-year surplus, the strategies outlined in this plan not only consider the needs of 2018, but also potential needs of the years following. Collectively, these factors help inform the 2018 WSDM prioritization.

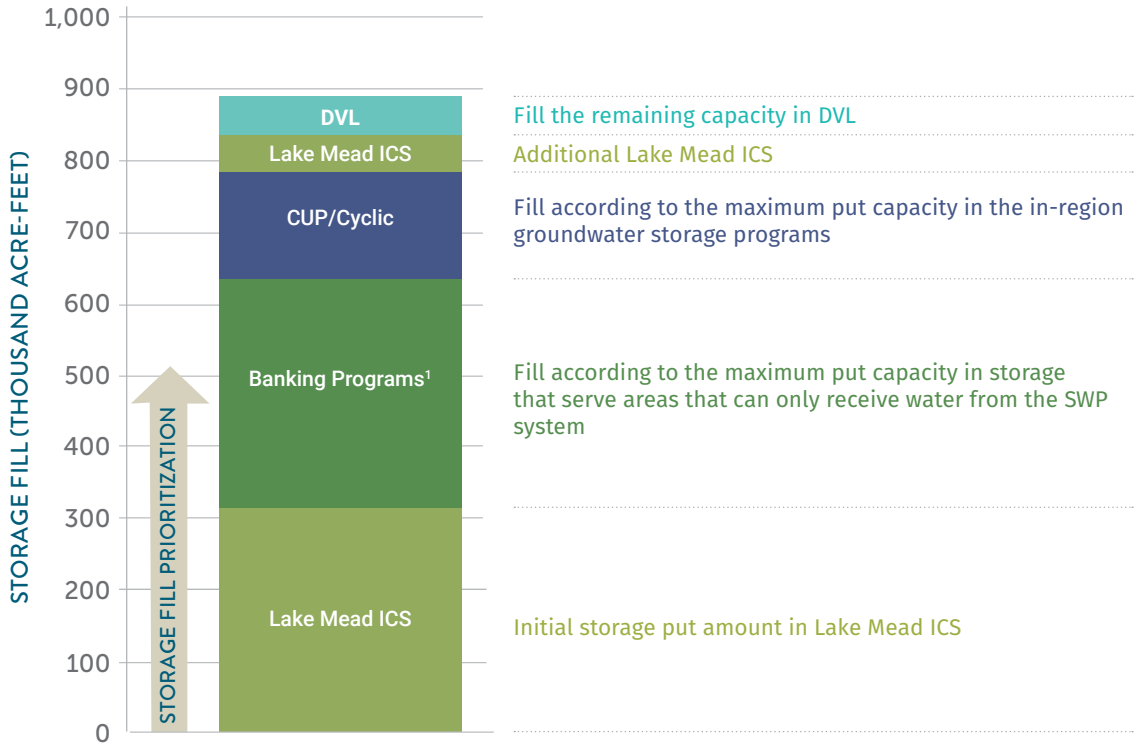
Colorado River Aqueduct

Surplus Management

As shown in the 2018 water balance (Figure 3-1), the region may experience surplus conditions with SWP allocations over 35 percent, based on normal demands. The general surplus management strategy is to store water for the most effective use in the next drought. Based on current conditions, the 2018 WSDM principles for surplus follow a modified approach to the 1999 WSDM Plan. For example, since Flex Storage and SWP Carryover are essentially at capacity, these storage programs are not included in the 2018 surplus storage strategy as an available option. Also, as DVL is near capacity at the start of 2018, it is beneficial to preserve space in the reservoir for operational flexibility throughout the year. Due to greater flexibility to fill/withdraw Lake Mead ICS, and to serve a larger demand area (e.g., areas largely dependent on SWP supplies) with Banking Programs, these programs place higher in the 2018 fill priority than in-region groundwater programs. Figure 3-4 illustrates the 2018 storage fill strategy under surplus conditions based on these modified WSDM surplus action priorities. This chart shows which storage accounts will be considered for filling first, and to what level, as a potential surplus in calendar year 2018 increases up to the remaining storage put capacity of approximately 900,000 acre-feet.

FIGURE 3-4

2018 Storage Fill Strategy under Surplus Conditions



[1] Fill capacities vary by SWP allocation. For the purposes of this surplus strategy illustration, the fill capacities are based on an 80 percent SWP allocation.

Note that the storage fill strategy may follow an iterative process and does not require a complete fill of one resource before filling the next level priority resource. The fill amount for each storage account is based on starting storage conditions and the 2018 fill capacity.

This strategy to fill storage in potential surplus conditions in 2018 provides a general framework and guide, and is not meant to be prescriptive. In fact, several actions are likely to be taken concurrently. For example, in January 2018, Metropolitan continued adding to Banking Programs and CUP/Cyclic storage as a transition from the surplus water condition in 2017. Metropolitan may also strategically reposition storage in 2018 to allow for increased flexibility in the future. For example, SWP Carryover storage, which is currently full and therefore not included in Figure 3-4 as a storage fill option, may be taken early in the year to avoid spilling, then refilled later in the year to build storage for 2019.

As exemplified in 2017, Metropolitan, in coordination with its member agencies and regional partners, will continue to strategically maximize storage under surplus conditions to help meet the future needs of the region.

Drought Management

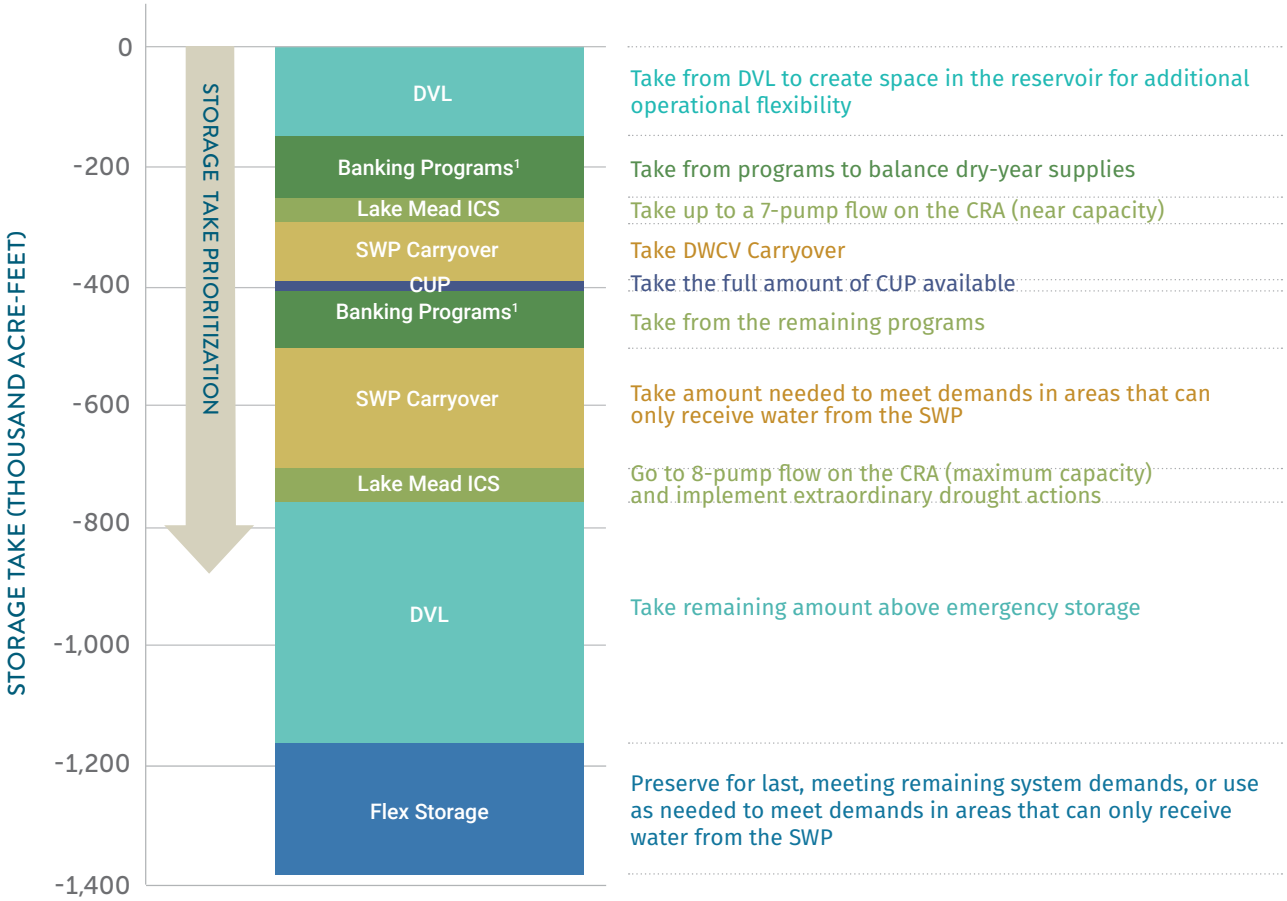
Storage reserves built in surplus years are essential for ensuring reliability for the region in times of drought. The record increases to storage in 2017 provided a significant advantage to managing potential 2018 shortage conditions under low SWP allocations. Additionally, the 2018 water balance indicates that a deep shortage is unlikely. These favorable conditions, along with strategic resource management and operations, will help protect the region in 2018 and during a potential future extended drought.

The 2018 WSDM principles under drought conditions follow similar principles outlined in the 1999 WSDM Plan. Figure 3-5 illustrates the prioritization and level of storage withdrawals under shortage conditions in 2018. Again, the prioritization is not prescriptive and may be adjusted based on resource and operational conditions throughout the year.

Groundwater Banking in the Central Valley

FIGURE 3-5

2018 Storage Take Strategy under Shortage Conditions



[1]Take capacities vary by SWP allocation. For the purposes of this drought strategy illustration, the take capacities are based on a 20 percent SWP allocation.

In the scenario of a 20 percent SWP allocation, additional SWP transfers, and normal demands, approximately 250,000 acre-feet of storage would need to be withdrawn. Following the 2018 WSDM drought action priorities, this storage would be met by withdrawing about 150,000 acre-feet from DVL and 100,000 acre-feet from Banking Programs. The amount remaining in storage would be available to meet the needs of a potential multi-year drought. These drought action priorities provide a general guideline and may be adjusted according to the actual conditions in 2018. For example, in a 10 percent SWP allocation, SWP Carryover may be withdrawn prior to Lake Mead ICS storage in order to meet demands in areas that can only receive water from the SWP. In other scenarios, Lake Mead ICS may be withdrawn concurrently with earlier storage take actions based on Colorado River watershed conditions and agricultural adjustments. Also, the storage strategy may follow an iterative process and does not require a complete withdrawal of one resource before withdrawing from the next level priority resource.

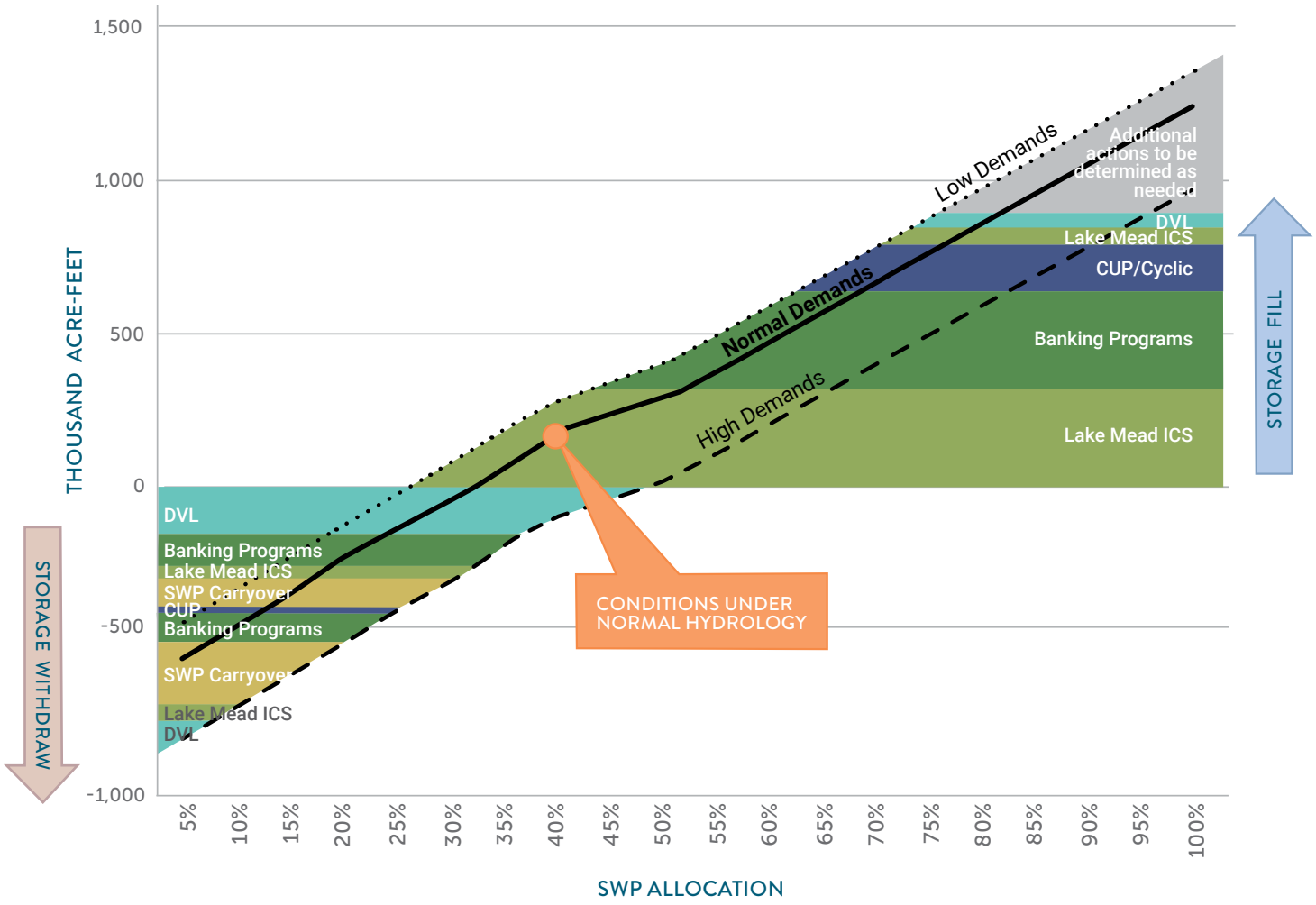
Putting It All Together

The wide range of potential supply and demand balances yield an equally wide range of possible storage operations in 2018. The extent of potential operating scenarios include withdrawing from storage reserves under SWP allocations lower than 35 percent, to completely filling the remaining storage put capacity under wet conditions.

Figure 3-6 combines the 2018 water balance and WSDM priorities to illustrate the overall 2018 WSDM strategy implementation across various supply and demand ranges.

FIGURE 3-6

2018 WSDM Strategy Implementation



The demand lines shown in Figure 3-6 illustrate the water supply (including transfers) and demand balance for each demand scenario across a range of SWP allocations. As the demand line crosses below zero on the y-axis, this indicates shortage. Conversely, as the demand line rises above zero on the y-axis, this indicates surplus. Points along the demand line indicate which resources will be withdrawn or filled and to what amounts.

For example, following the normal demand scenario line to where it intersects with the 40 percent SWP allocation, Figure 3-6 shows that the potential operations in these conditions would be to increase Lake Mead ICS storage by approximately 160,000 acre-feet. Following that same demand line to where it intersects with the 20 percent SWP allocation, potential operations would be to withdraw from DVL and Banking Programs by a total of approximately 250,000 acre-feet.

More detailed examples of storage operations under a range of SWP allocations are included in Appendix D.

Metropolitan took advantage of a wet 2017 to increase storage reserves and place the region in a favorable position to respond to uncertain supply conditions while continuing to meet demands. The 2018 WSDM strategies provide a framework for effective storage management and may be adjusted, or taken in slightly different quantities, to meet other operational objectives. In addition to supply and demand uncertainties, other variables may impact actual storage operations in 2018, such as shutdowns and system maintenance, availability of groundwater recharge facilities, and conveyance capacity constraints. With the 2018 WSDM strategy serving as a solid baseline, Metropolitan is well positioned to manage its resources, operate the system, and adapt to changing conditions.

Lake Mead October 2017

CONTINUED RELIABILITY: MANAGING THE SYSTEM

Metropolitan will take proactive steps in 2018 to ensure the necessary infrastructure is in place with staff ready to respond to any range of supply and demand conditions. Managing Metropolitan's system to meet member agency needs is a top priority and will be accomplished by ensuring a continued reliable and sustainable delivery of high quality water.

Power Systems

Moving into 2018, Metropolitan will continue to optimize available energy resources with economic energy transactions. Metropolitan will manage new CRA power contracts while analyzing impacts to the CRA electrical system. Metropolitan will continue working with Edison for the possible acquisition of circuit breakers at the Eagle Mountain and Gene Pumping Plants. The acquisition of the circuit breakers will contribute to the increased flexibility and reliability of the CRA electrical system.

Considering a 2018 final SWP allocation under median hydrologic conditions to be about 40 percent, Metropolitan estimates generating approximately 266 million kWh of hydroelectric power in 2018. Overall, operational variables like system demand and storage management, minimum and maximum operational envelopes for each hydroelectric plant, and hydroelectric plant refurbishment or maintenance, will affect hydroelectric power production. Metropolitan will continue to maximize hydroelectric power, while managing operational requirements and system conditions.

Electrical transmission lines along the CRA

Water Quality and Treatment

Metropolitan will continue its efforts to treat and deliver water to its customers, meeting all applicable regulations. With a range of potential final SWP allocations, as well as a number of large shutdowns for system maintenance and improvements (as discussed in the following section), Metropolitan anticipates treating a variety of source water blends in 2018. Under median hydrologic conditions (40 percent SWP allocation) and normal demands, blends at the Weymouth, Diemer, and Skinner plants are anticipated to be 70 percent during the first quarter of 2018, 35 percent during the second quarter, and 30 percent during the third and fourth quarters. Blends may increase or decrease during the year based on supply, demand, and operational conditions. Investments made at Metropolitan's treatment plants, ozone in particular, allow Metropolitan to reliably treat a wide range of blends, from 100 percent SWP water to 100 percent Colorado River water. Metropolitan will also seek to meet its TDS goal of 500 mg/L (as a running annual average) at its blend plants, when system conditions allow. Metropolitan will continue to work closely with member agencies when making blend changes and on other water quality issues that may affect downstream use of the delivered water. In addition, Metropolitan will continue its comprehensive source water monitoring program, including managing T&O and quagga mussels in the system.

Maintenance and System Shutdowns

Metropolitan will continue to ensure its water system is adequately maintained and will implement projects that will enhance the reliability of Metropolitan's delivered supplies. Metropolitan will manage shutdowns to minimize impacts to member agency deliveries. Metropolitan's fiscal year 2017/18 shutdown season is underway, and Metropolitan continues to work closely with member agencies to schedule and successfully implement shutdowns for vital work within the system. The 2017/18 shutdown schedule was published in September 2017 and distributed to member agency managers. These schedules may change over the course of the season, and Metropolitan staff will communicate these changes with affected member agencies.

Construction upgrades at the Weymouth plant

Major shutdowns planned for the 2017/18 season are highlighted below.

- A portion of the Second Lower Feeder in the City of Long Beach will be out of service from November 2017 through June 2018. This shutdown will allow Metropolitan to reline a portion of the feeder as part of Metropolitan's Prestressed Concrete Cylinder Pipe Program. The overall PCCP rehabilitation of the Second Lower Feeder will be completed in phases over a period of 8 to 10 years. Metropolitan provides up-to-date information on the construction status of this major project at the following webpage:

www.mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Second_Lower_Feeder.aspx

- The Upper Feeder (untreated) was shut down for 15 days in early January 2018. This shutdown allowed Metropolitan to replace the feeder's expansion joint along the Santa Ana River Bridge crossing.

- The CRA is scheduled for a 25-day shutdown in February and early March 2018. This shutdown will allow Metropolitan to perform annual maintenance, electrical testing, and seismic upgrades to support facilities.

- During the CRA shutdown, a nine-day shutdown of the San Diego Canal will begin in February 2018. This shutdown will allow Metropolitan to inspect and clean a portion of the canal.

- The Jensen plant and associated feeders are scheduled for a 12-day shutdown in early March 2018. This shutdown will allow Metropolitan to perform maintenance work and perform electrical testing at the Jensen plant.

The 2017/18 shutdown schedule is included in Appendix E.

Relining work along the Second Lower Feeder as part of Metropolitan's PCCP Program

CHAPTER 4

Conclusions

The strategic actions of 2017 to maximize storage of surplus supplies provided optimal starting conditions for 2018. How 2018 ultimately unfolds may result in needing to pull hundreds of thousands of acre-feet from storage reserves in drought conditions, to adding water to storage in surplus conditions. The final 2018 water balance will be largely driven by the SWP allocation and member agency demands, which will in turn govern the operations of the system. In low SWP allocation conditions, Metropolitan will operate the system to strategically utilize SWP supplies, while maximizing Colorado River water deliveries. These operations would shift in high SWP allocation conditions to maximizing deliveries and storage of supplies.

Calendar year 2018 is off to a relatively dry start and the SWP allocation as of January 29, 2018, is 20 percent. However, it is early in the year and there are opportunities for improvement in conditions. The current forecast estimates a 40 percent SWP allocation in median hydrologic conditions, which, including additional transfers, results in a surplus condition for the region of about 160,000 acre-feet under normal demands (estimated at 1.66 million acre-feet for calendar year 2018). Also, under normal demands, Metropolitan expects to store water if the SWP allocation exceeds 35 percent, and pull from storage if the SWP allocation is below 35 percent.

Regardless of the conditions that may materialize in 2018, this Annual Operating Plan, built upon Metropolitan's core operating principles, provides strategies for optimal capture of surplus amounts of water in normal to wet conditions, and effective use of stored water in shortage conditions. Metropolitan will continue to work in close coordination with its member agencies and regional partners to adapt to the needs of 2018, manage the power system and optimize power generation, and proactively perform preventive and corrective maintenance.

Overall, through a range of forecasted conditions in 2018, Metropolitan will continue delivering high-quality water to meet its member agency demands, strategically operate and manage its portfolio of resources, and maintain a robust water system for continued reliability. Metropolitan's effective planning, operations, and investments ensure the region is ready for 2018 and beyond.

CRA Tunnel

APPENDIX A: IMPORTED SUPPLIES

State Water Project Supplies

TABLE A CONTRACT AMOUNT: Metropolitan's basic contract amount is for 1,911,500 acre-feet. This represents the amount of water supply that would be available to Metropolitan in years where there is sufficient water supply for the SWP to deliver 100 percent of its total contract amounts. The amount of supply available, which depends on hydrologic conditions, operating constraints, and high priority water user demands, is allocated to the SWP contractors based on their proportionate Table A amounts on an annual basis. As a percentage of total contract amounts, annual SWP allocations have ranged from 5 to 100 percent of the Table A contract amounts.

ARTICLE 21 INTERRUPTIBLE SUPPLIES: Metropolitan has a contract right to water supplies that are made available on an intermittent basis. Storm flows can occasionally make water supplies available that are in excess to the Table A allocation. SWP contractors can take delivery of these supplies, with their rights being based on their proportional Table A contract amounts. Historically, Article 21 interruptible supplies have ranged from 0 to 240,000 acre-feet annually.

ARTICLE 14(B): DWR may deliver, at Metropolitan's request, allocated water that was curtailed due to necessary investigation, inspection, maintenance, repair, or replacement of SWP facilities to the extent that such water is then available and deliverable.

PORT HUENEME AGREEMENT: Metropolitan has a long-term lease for up to 1,850 acre-feet per year of Table A supplies from Ventura County Watershed Protection District for the Port Hueneme Water Agency.

Colorado River Supplies

BASIC APPORTIONMENT: The State of California holds a 4.4 million acre-feet normal apportionment to Colorado River water. Within the state's amount, Metropolitan has the Fourth Priority right to a normal apportionment of 550,000 acre-feet per year. Metropolitan also holds the Fifth Priority right for up to an additional 662,000 acre-feet per year, but this amount is outside of California's 4.4 million acre-feet per year normal apportionment and is only available when surpluses are declared or when unused supplies from other Colorado River users are available.

IMPERIAL IRRIGATION DISTRICT/METROPOLITAN CONSERVATION PROGRAM: Since 1988, Metropolitan has funded water conservation programs within IID's service area. The conserved water from these programs is then transferred to Metropolitan. Conservation approaches include both structural and non-structural measures, including concrete lining of existing canals, construction of local reservoirs and spill-interceptor canals, the installation of non-leak irrigation gates, and delivering water to farmers on a 12-hour rather than a 24-hour basis. This program generates 105,000 acre-feet of conserved water; Coachella Valley Water District has the right to call up to 20,000 acre-feet of that amount.

PALO VERDE LAND MANAGEMENT & CROP ROTATION PROGRAM: In 2005, Metropolitan entered into a 35-year program with the Palo Verde Irrigation District. Under the program, participating farmers in PVID are paid to reduce their water use by leaving up to 25,947 acres unirrigated. The conserved water from this program converts to ICS, which can be delivered to Metropolitan or stored in Lake Mead.

IMPERIAL IRRIGATION DISTRICT EXCHANGE WITH SAN DIEGO COUNTY WATER AUTHORITY: On April 29, 1998, SDCWA executed an agreement with IID to purchase conserved water. In order to deliver that water to SDCWA, Metropolitan and SDCWA entered into an exchange contract under which SDCWA makes the conserved water available to Metropolitan at Lake Havasu and Metropolitan delivers an equal amount of water to SDCWA.

ALL-AMERICAN CANAL AND COACHELLA CANAL LINING PROJECTS: The State of California, along with support from Metropolitan and SDCWA, funded the lining of portions of the All-American and Coachella canals. The lining conserves about 96,000 acre-feet of water annually that was being lost through the formerly unlined canals. Prior to 2017, Metropolitan purchased 16,000 acre-feet of the conserved water from the San Luis Rey Indian Tribe. A water rights settlement regarding this water was finalized in 2017, and now Metropolitan exchanges the water with the United States for use by the parties to the settlement agreement, which includes the San Luis Rey tribe. The remaining conserved water, approximately 80,000 acre-feet, is delivered to SDCWA via exchange with Metropolitan.

LOWER COLORADO WATER SUPPLY PROJECT: In March 2007, Metropolitan, the City of Needles, and the United States Bureau of Reclamation executed the Lower Colorado Water Supply Project contract. Under the contract, Metropolitan purchases water that is unused by the project participants.

BARD SEASONAL FALLOWING PILOT PROGRAM: Up to 2,000 acres of farmland could participate in the program during 2016 and 2017. Land was idled from farming from April 1 through July 31. Metropolitan paid $400 per participating acre per year. Approximately two acre-feet of water could be conserved by every acre seasonally fallowed. Water conserved by Bard would be diverted into the CRA by Metropolitan. The pilot program provides an opportunity for Metropolitan to investigate the potential for a water management program with a new, flexible and affordable water supply. Payments to Bard and the participating farmers will allow for Bard system improvements as well as providing a stable income for local farmers. Although a participating farmer can get paid to use less water, under the program the water rights remain with the local community.

EXTRAORDINARY CONSERVATION INTENTIONALLY CREATED SURPLUS AGREEMENT WITH IMPERIAL IRRIGATION DISTRICT: This Agreement was executed in 2007 and later amended in 2015 to expand volumes, and allows Metropolitan to store conserved IID water in excess of its Quantification Settlement Agreement conservation commitments. The water may be returned at IID's request.

AGRICULTURAL ADJUSTMENT: Other users along the Colorado River have rights that allow their water use to increase as their demands for water increase. Since Metropolitan holds the lowest priority Colorado River rights in California, any increase in these Present Perfected Rights will reduce supply available to Metropolitan. In comparison, reduction in demand by agricultural contractors with higher Colorado River priorities results in an increase in supply available to Metropolitan.

Transfers and Exchanges

2017

BINATIONAL INTENTIONALLY CREATED SURPLUS: Water can be stored in Lake Mead as Intentionally Created Surplus through extraordinary conservation measures. Binational ICS is water stored in Lake Mead through implementation of pilot conservation projects in Mexico. Under the provisions of the related domestic agreements, Metropolitan, Central Arizona Water Conservation District, Southern Nevada Water Authority, and IID contribute capital to the pilot program in exchange for Binational ICS.

LOS ANGELES AQUEDUCT EMERGENCY SUPPLY: Metropolitan entered into a short-term agreement with the City of Los Angeles in 2017 to provide emergency assistance because of the high Eastern Sierra snowpack conditions. The City of Los Angeles had declared an emergency and projected that runoff, if unmanaged, could cause significant infrastructure and environmental damage. Metropolitan demonstrated that existing facilities could be used to accept Los Angeles Aqueduct supplies at the Jensen plant in 2017. The demonstration included around 700 acre-feet.

UNBALANCED EXCHANGES WITH SWP CONTRACTORS: In 2017, Metropolitan had unbalanced exchange agreements with Castaic Lake Water Agency and Central Coast Water Authority to help manage roughly 46,000 acre-feet of their SWP supplies that were at risk of spilling as DWR filled San Luis Reservoir. Through this unbalanced exchange, Metropolitan yielded approximately 18,000 acre-feet.

2018

STATE WATER CONTRACTORS BUYERS GROUP: Each year, Metropolitan can enter into agreements with the State Water Contractors Buyers Group for water transfer supplies acquired from north of the Delta. Under these agreements, members of the State Water Contractors Buyers Group can coordinate discussions with potential transfer sellers to identify supplies that may be available. These transfers provide additional resources to either mitigate potential dry-year conditions or to increase storage.

YUBA DRY-YEAR WATER PURCHASE PROGRAM: In December 2007, Metropolitan entered into an agreement with DWR for participation in the Yuba Dry-year Water Purchase Program. Under this program, water is made available for transfer. There are four components to this water purchase program, with differing transfer amounts and prices.

APPENDIX B: STORAGE PROGRAMS

In-Region

DIAMOND VALLEY LAKE: Diamond Valley Lake is Metropolitan's largest surface storage reservoir and is located within Metropolitan's service area near the City of Hemet in Riverside County. Diamond Valley Lake has a total storage capacity of 810,000 acre-feet.

FLEXIBLE STORAGE: Metropolitan has SWP contract rights to withdraw up to 65,000 acre-feet of water in Lake Perris (East Branch terminal reservoir) and 153,940 acre-feet of water in Castaic Lake (West Branch terminal reservoir). These accounts provide Metropolitan with dry-year supply that is independent of the Table A allocation. Metropolitan can withdraw water from these reservoirs in addition to its allocated supply in any year on an as-needed basis. Withdrawn water must be replaced from supplies available to Metropolitan within five years of each withdrawal.

CONJUNCTIVE USE/CYCLIC STORAGE PROGRAMS: Metropolitan has worked with local agencies to develop programs to increase local groundwater storage in the region. The Conjunctive Use and Cyclic Storage programs involve specific agreements for the storage of imported water with member agencies. Through these programs, Metropolitan can deliver water into groundwater basins in advance of agency demands and enhance groundwater recharge. In the case of the Conjunctive Use program, Metropolitan can call on these supplies when needed. In the case of the Cyclic Storage programs, the water is pre-delivered and paid for over time, based on an agreed-upon schedule.

Out-of-Region

ARTICLE 56 CARRYOVER: SWP contractors have the flexibility to store water in SWP conservation facilities and carry over those supplies from one year to the next. The annual amount that can be added to storage in a given year is dependent on the SWP allocation. There is a risk, however, of losing some of these stored supplies should San Luis Reservoir fill.

LAKE MEAD INTENTIONALLY CREATED SURPLUS PROGRAM: Under this program, Metropolitan may store conserved water in Lake Mead. Only water that has been conserved through pre-approved extraordinary conservation measures, such as land fallowing, is eligible for storage in Lake Mead. Conservation programs approved to create conserved water that can be saved in Lake Mead include the following Metropolitan funded projects and programs: fallowing in the Palo Verde Valley, the Imperial Irrigation District Water Conservation program, groundwater desalination, and the Lower Colorado River Water Supply Project. The current storage account also includes water conserved from the Warren H. Brock Reservoir Project and the Yuma Desalting Plant pilot run; however, those amounts are fixed.

GROUNDWATER BANKING PROGRAMS: Metropolitan has developed long-term storage agreements to utilize storage capacity in various groundwater storage basins in the San Joaquin Valley and Mojave Valley, collectively referred to as the SWP Groundwater Banking programs. The put and take capacities are subject to percolation and pumping rates and in some cases tied to the SWP allocation. Metropolitan can expedite takes from many of these programs through Table A exchanges when those stored supplies are called upon in dry years.

Metropolitan also has an Advanced Delivery Account with the Desert Water Agency/Coachella Valley Water District. The Desert Water Agency and Coachella Valley Water District are both SWP contractors with no physical connection to SWP facilities. Both agencies are, however, adjacent to the CRA and are connected via the Whitewater River and the Mission Springs drainage basin. To enable DWCV to obtain their SWP supplies, Metropolitan entered into a long-term exchange contract in 1967, agreeing to take delivery of their SWP supplies and exchange an equal quantity of Colorado River water at the DWCV connections. In 1983, Metropolitan executed an Advanced Delivery Agreement with DWCV, allowing Metropolitan to supply them with Colorado River water in advance of DWCV developing their SWP supplies. Metropolitan can recover this water or satisfy their annual exchange contract obligation by reducing its Colorado River water deliveries to DWCV and deducting from the Advanced Delivery Account in any given year.

APPENDIX C:
METROPOLITAN HYDROELECTRIC POWER PRODUCTION: 2016-2017

POWER PLANT	NAMEPLATE CAPACITY (MEGAWATTS)	2016 PRODUCTION (kWh)	2017 PRODUCTION (kWh)
Greg Ave.	1	0	2,200,000
Lake Mathews	5	32,800,000	1,700,000
Foothill Feeder	9	27,400,000	52,700,000
San Dimas	10	38,600,000	54,100,000
Yorba Linda	5	8,300,000	12,400,000
Sepulveda Canyon	9	4,300,000	21,800,000
Venice	10	0	2,200,000
Temescal	3	16,300,000	1,200,000
Corona	3	20,200,000	1,100,000
Perris	8	4,500,000	31,900,000
Rio Hondo	2	1,700,000	0
Coyote Creek	3	5,900,000	0
Red Mountain	6	25,600,000	33,500,000
Valley View	4	11,800,000	0
Etiwanda	24	0	82,400,000
Wadsworth (DVL)	30	1,700,000	23,700,000
TOTAL	**131**	**199,100,000**	**320,900,000**

APPENDIX D: **EXAMPLE 2018 STORAGE SCENARIOS**

TABLE D-1

2018 20% SWP Allocation and High Demand Scenario
Example Only - all numbers in TAF

SUPPLY	
SWP Allocation	20%
SWP Supply	382
Port Hueneme	0
Article 21	0
Article 14(b)	38
SWP Transfers and Exchanges	45
CRW Base Supply	945
CRW Exchanges	0
CRW Agricultural Adjustment	0
TOTAL SUPPLY	**1,410**
DEMAND	
Consumptive	1,660
Replenishment	160
Total Deliveries to Member Agencies	1,820
Coachella Valley Water District Purchase	35
Losses	65
TOTAL DEMAND	**1,920**

STORAGE	BEGINNING	CHANGE	ENDING	TOTAL STORAGE CAPACITY
IN-REGION SURFACE STORAGE				
Lake Mathews	139	0	139	182
Lake Skinner	37	0	37	44
DVL	748	-148	600	810
Castaic Flex	154	0	154	154
Perris Flex	65	0	65	65
OUT-OF-REGION SURFACE STORAGE				
Lake Mead ICS	447	-41	406	1,571
MWD SWP Carryover	200	-2	198	300
DWCV SWP Carryover	97	-97	0	49
BANKING PROGRAMS				
Arvin-Edison	149	-40	109	389
Semitropic	188	-54	134	350
Kern-Delta	139	-45	94	250
Mojave	27	-9	18	330
Antelope Valley - East Kern	10	0	10	30
DWCV Account	227	-73	154	800
CONJUNCTIVE USE/CYCLIC STORAGE				
Conjunctive Use	42	-17	25	213
Cyclic Storage[1]	110	16	126	140
OTHER EMERGENCY STORAGE	328	0	328	328
TOTAL STORAGE	**3,107**	**-510**	**2,597**	**6,005**
TOTAL WSDM STORAGE	**2,481**	**-510**	**1,971**	**5,379**

AVERAGE BLENDING AT THE WEYMOUTH, DIEMER, AND SKINNER TREATMENT PLANTS	
January - March	70%
April - June	20%
July - September	0%
October - December	0%

[1]Cyclic Storage balances reflect deliveries in 2017 (Cyclic Storage sales in December 2017 are not included)

TABLE D-2

2018 40% SWP Allocation and Normal Demand Scenario
Example Only - all numbers in TAF

SUPPLY	
SWP Allocation	40%
SWP Supply	765
Port Hueneme	1
Article 21	0
Article 14(b)	38
SWP Transfers and Exchanges	75
CRW Base Supply	945
CRW Exchanges	0
CRW Agricultural Adjustment	0
TOTAL SUPPLY	**1,824**
DEMAND	
Consumptive	1,410
Replenishment	140
Total Deliveries to Member Agencies	1,550
Coachella Valley Water District Purchase	35
Losses	75
TOTAL DEMAND	**1,660**

STORAGE	BEGINNING	CHANGE	ENDING	TOTAL STORAGE CAPACITY
IN-REGION SURFACE STORAGE				
Lake Mathews	139	0	139	182
Lake Skinner	37	0	37	44
DVL	748	0	748	810
Castaic Flex	154	0	154	154
Perris Flex	65	0	65	65
OUT-OF-REGION SURFACE STORAGE				
Lake Mead ICS	447	186	633	1,571
MWD SWP Carryover	200	50	250	300
DWCV SWP Carryover	97	-97	0	49
BANKING PROGRAMS				
Arvin-Edison	149	5	154	389
Semitropic	188	0	188	350
Kern-Delta	139	0	139	250
Mojave	27	0	27	330
Antelope Valley - East Kern	10	0	10	30
DWCV Account	227	0	227	800
CONJUNCTIVE USE/CYCLIC STORAGE				
Conjunctive Use	42	4	46	213
Cyclic Storage[1]	110	16	126	140
OTHER EMERGENCY STORAGE	328	0	328	328
TOTAL STORAGE	**3,107**	**164**	**3,271**	**6,005**
TOTAL WSDM STORAGE	**2,481**	**164**	**2,645**	**5,379**

AVERAGE BLENDING AT THE WEYMOUTH, DIEMER, AND SKINNER TREATMENT PLANTS	
January - March	70%
April - June	35%
July - September	30%
October - December	30%

[1]Cyclic Storage balances reflect deliveries in 2017 (Cyclic Storage sales in December 2017 are not included)

TABLE D-3

2018 60% SWP Allocation and Low Demand Scenario
Example Only - all numbers in TAF

SUPPLY	
SWP Allocation	60%
SWP Supply	1,147
Port Hueneme	1
Article 21	0
Article 14(b)	38
SWP Transfers and Exchanges	0
CRW Base Supply	945
CRW Exchanges	0
CRW Agricultural Adjustment	0
TOTAL SUPPLY	**2,131**
DEMAND	
Consumptive	1,334
Replenishment	80
Total Deliveries to Member Agencies	1,414
Coachella Valley Water District Purchase	35
Losses	97
TOTAL DEMAND	**1,546**

STORAGE	BEGINNING	CHANGE	ENDING	TOTAL STORAGE CAPACITY
IN-REGION SURFACE STORAGE				
Lake Mathews	139	0	139	182
Lake Skinner	37	0	37	44
DVL	748	0	748	810
Castaic Flex	154	0	154	154
Perris Flex	65	0	65	65
OUT-OF-REGION SURFACE STORAGE				
Lake Mead ICS	447	293	740	1,571
MWD SWP Carryover	200	97	297	340
DWCV SWP Carryover	97	-97	0	68
BANKING PROGRAMS				
Arvin-Edison	149	62	211	389
Semitropic	188	54	242	350
Kern-Delta	139	27	166	250
Mojave	27	0	27	330
Antelope Valley - East Kern	10	0	10	30
DWCV Account	227	129	356	800
CONJUNCTIVE USE/CYCLIC STORAGE				
Conjunctive Use	42	4	46	213
Cyclic Storage[1]	110	16	126	140
OTHER EMERGENCY STORAGE	328	0	328	328
TOTAL STORAGE	**3,107**	**585**	**3,692**	**6,064**
TOTAL WSDM STORAGE	**2,481**	**585**	**3,066**	**5,438**

AVERAGE BLENDING AT THE WEYMOUTH, DIEMER, AND SKINNER TREATMENT PLANTS	
January - March	70%
April - June	50%
July - September	50%
October - December	50%

[1]Cyclic Storage balances reflect deliveries in 2017 (Cyclic Storage sales in December 2017 are not included)

APPENDIX E:
FISCAL YEAR 2017/2018 SHUTDOWN SCHEDULE

PIPELINE/FACILITY	DATES	PURPOSE
West Coast Feeder	August 2-3, 2017	Replace 4-inch air release valve
Diamond Valley Lake Facility	August 27-31, 2017	Inspect yard piping corrosion for upcoming relining project
Inland Feeder Intertie	October 2–31, 2017	Install two valves at PC-1 between Inland Feeder and Lakeview Pipeline
San Diego Pipeline 4	November 5-14, 2017	Shutdown to allow SDCWA to perform inspection and maintenance within their jurisdiction
Lower Feeder (Untreated)	November 6–8, 2017	Removal of nonfunctional equipment in the Corona Tower
Second Lower Feeder	November 13, 2017 – June 26, 2018	Prepare pipeline for relining project, perform PCCP inspection and reline portions of the Second Lower Feeder
Lower Feeder (Treated)	December 4–8, 2017	Abandon 4-inch underdrain at Deodara Interconnection Structure
Upper Feeder (Untreated)	January 6–20, 2018	Replace the bellows-type expansion joint at Santa Ana River bridge
Orange County Feeder	January 22–27, 2018	Rebuild the controlling globe valves at Fairplex PCS and Walnut PCS, and perform PCCP inspection
Lower Feeder (untreated)	February 12–18, 2018	Repair turnout valve
Middle Feeder (South)	February 12–23, 2018	Tie in a relocated portion of the feeder
Colorado River Aqueduct	February 13 – March 9, 2018	Perform CRA Switch House seismic upgrade, install surge chamber bypass cover, and perform tunnel cleaning and electrical testing
San Diego Canal	February 16–24, 2018	Inspect and clean the canal

PIPELINE/FACILITY	DATES	PURPOSE
Foothill Feeder and Jensen Plant	March 4-15, 2018	• Perform electrical upgrades at the Jensen plant • Perform maintenance and repair at the Jensen plant inlet channel • DWR to repair valves at Castaic Lake
Allen McColloch Pipeline	March 5–12, 2018	Relocate OC-76 turnout valve and perform PCCP inspection
Mills Plant	March 20, 2018	Perform electrical upgrades at the Mills plant
Palos Verdes Feeder	April 9–13, 2018	Install a butterfly valve and master meter
Second Lower Feeder	April 9–13, 2018	Perform inspection in support of PCCP rehabilitation program
Box Springs Feeder and Mills Plant	April 19, May 14, & May 17, 2018	DWR to conduct a PCCP inspection of the Santa Ana Valley Pipeline using remote technologies
Rialto Pipeline	April 23–30, 2018	DWR to perform leak repair at Devil Canyon Facility
La Verne Pipeline	April 23–30, 2018	Perform PCCP electromagnetic and visual inspections, and valve repair
Yorba Linda Feeder	April 23–30, 2018	Perform PCCP electromagnetic and visual inspections
Lakeview Pipeline	May 28 – June 8, 2018	Install three 60-inch diameter valves in Lakeview Intertie valve structures and Perris Pumpback Facility bypass valve structure
Second Lower Feeder	June 20–29, 2018	• Perform inspection at sectionalizing valve in support of PCCP rehabilitation program • Disinfect section of Second Lower Feeder near PCCP rehabilitation and return pipeline to service

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2019 Annual Operating Plan

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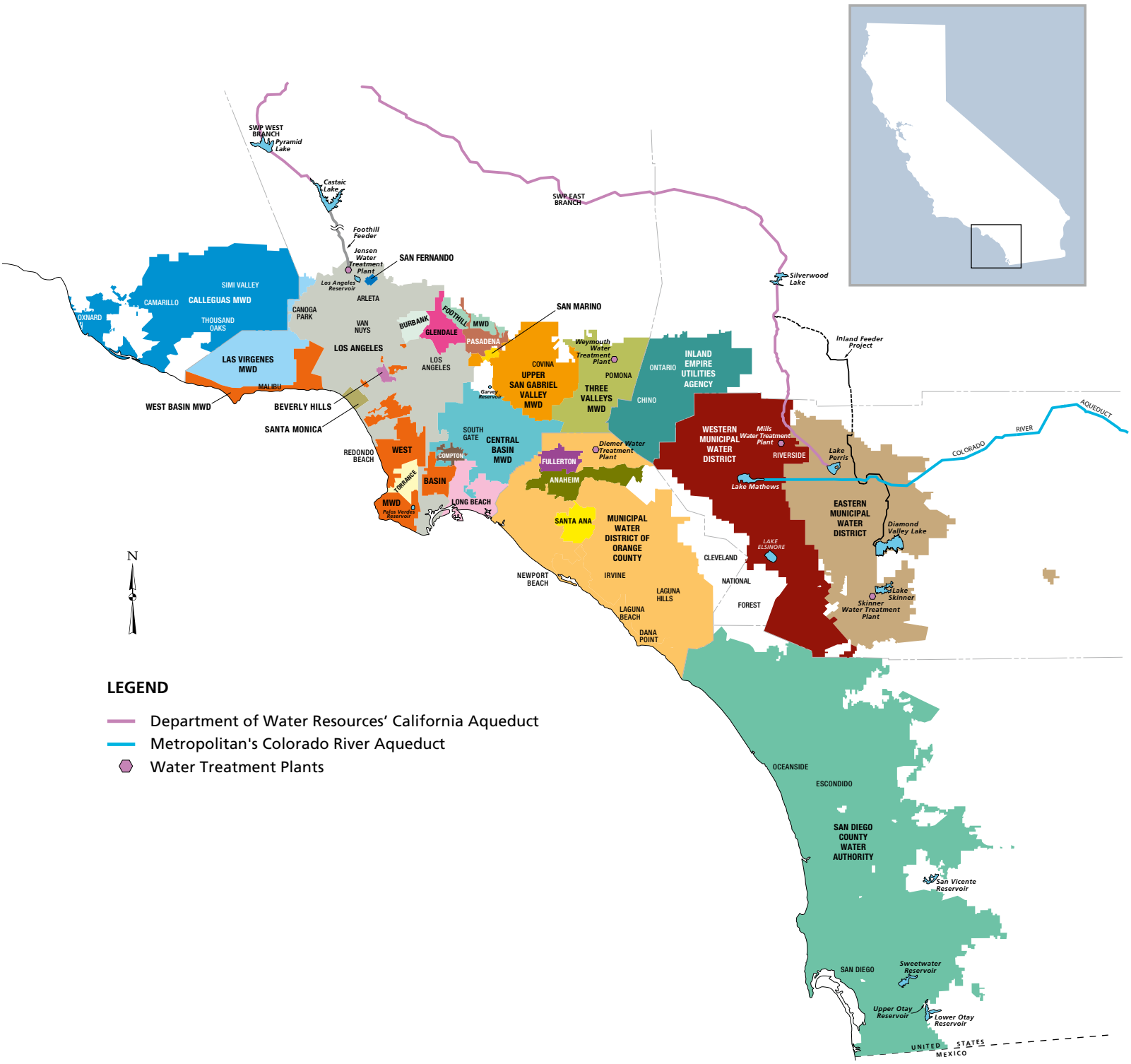
Member Agency Map



LEGEND

- Department of Water Resources' California Aqueduct
- Metropolitan's Colorado River Aqueduct
- Water Treatment Plants

Pictured on the cover:
F.E. Weymouth Water Treatment Plant

2019 ANNUAL OPERATING PLAN

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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Los Angeles, California 90012
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WATER SYSTEM OPERATIONS GROUP

February 2019

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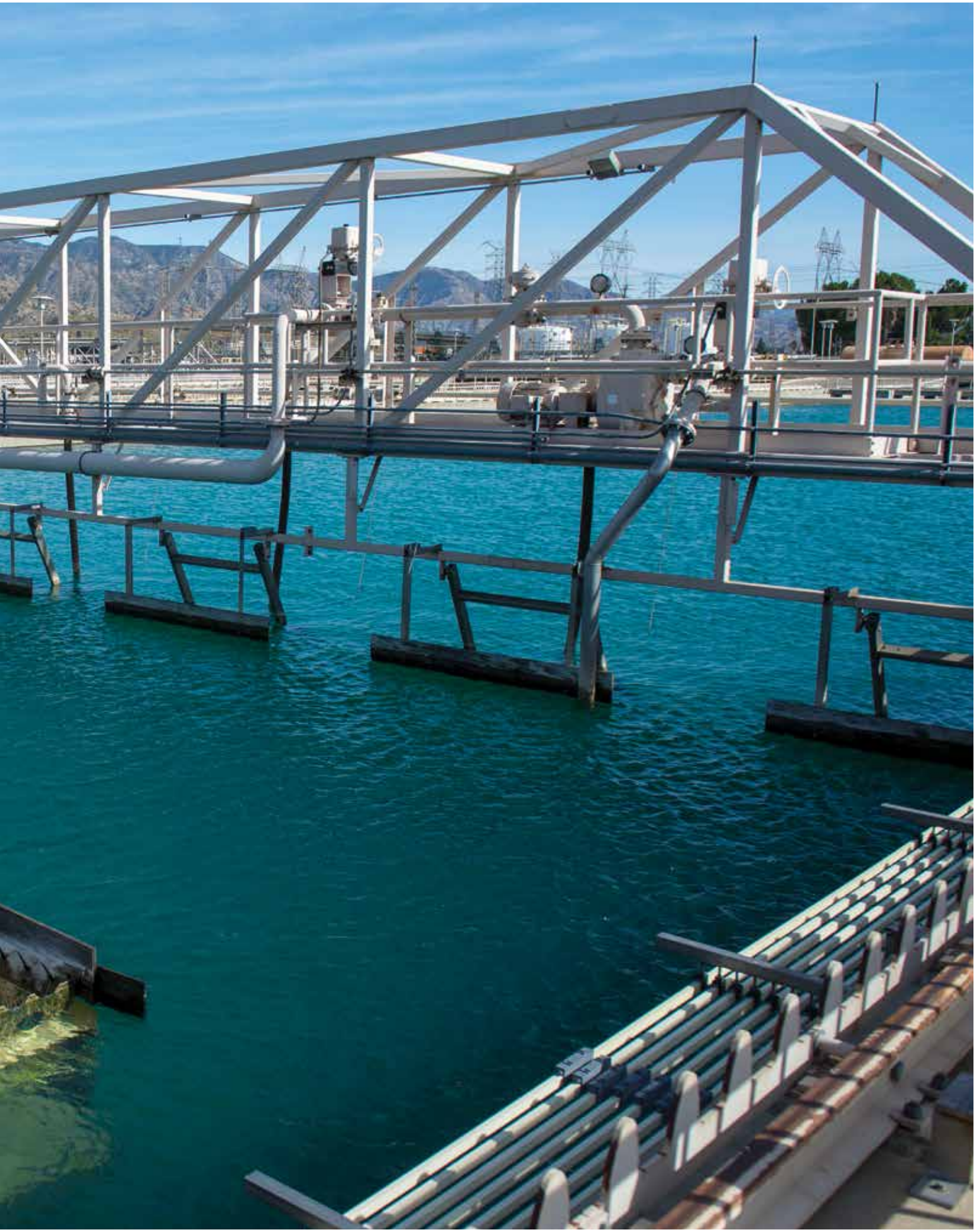
Effective Operations for Continued Reliability

The Metropolitan Water District of Southern California continues to adhere to its mission to "provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way." Effective planning, operations, resource management, monitoring, and maintenance are critical to meeting this mission. The Annual Operating Plan provides a framework for strategic operations and continued reliability. It is also a tool to communicate expected future operations to help Metropolitan's member agencies and partners better prepare for the upcoming year.

The 2019 Annual Operating Plan steps through the outcomes of 2018. The Plan then provides an outlook for 2019, including forecasts of demands, supplies, and resulting water balances; strategies for water surplus and drought management; and additional actions to ensure continued delivery of high-quality water to serve the region's needs.

Joseph Jensen Water Treatment Plant



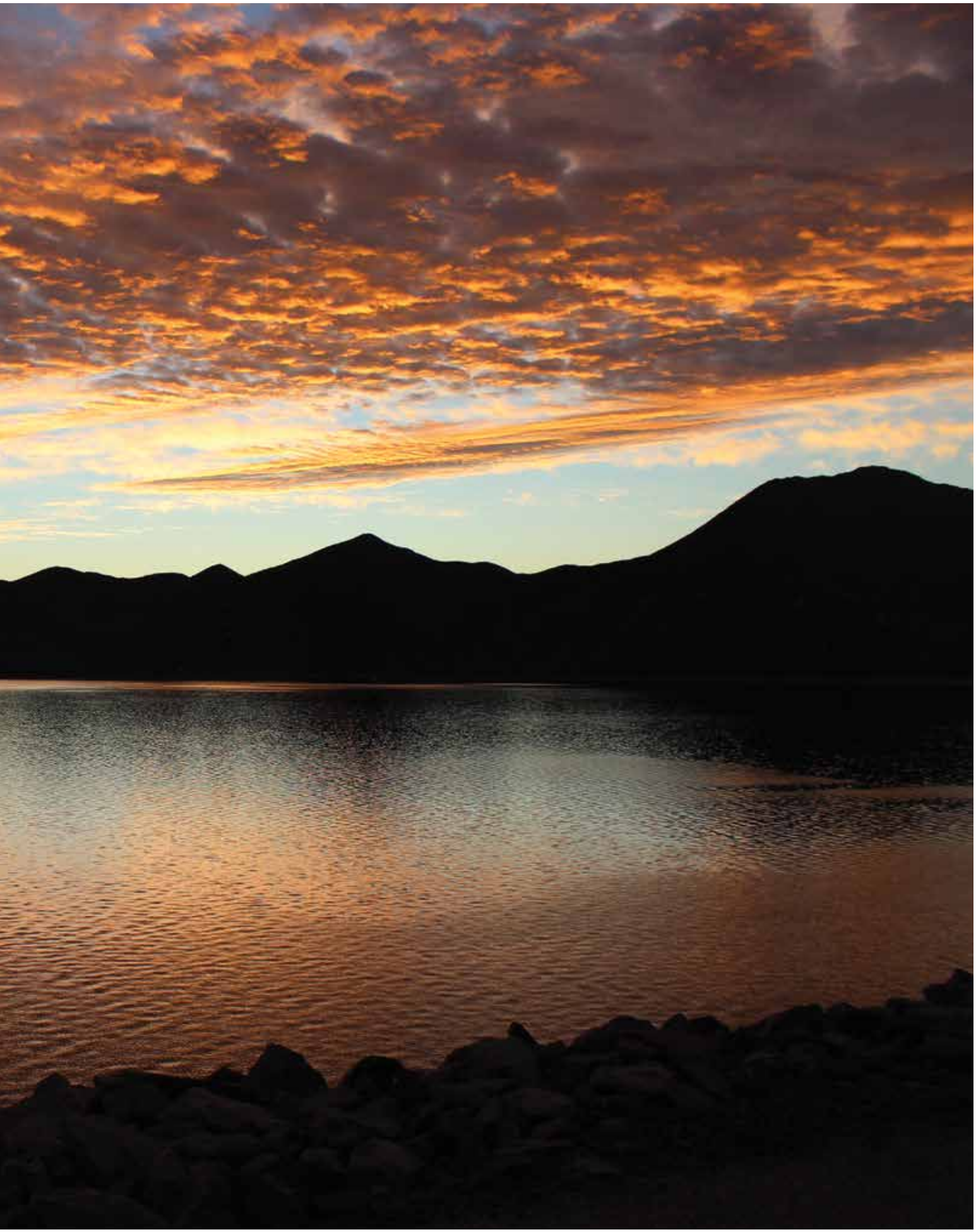
CHAPTER 2

2018 in Review: Balanced Supplies and Demands

Adapting to Changing Conditions

Although overall water supplies and demands were nearly balanced in 2018, the transition from 2017 to 2018 reflected a big swing from very wet to drier conditions. Through proactive planning and operations, Metropolitan responded to these rapidly changing conditions to ensure continued water supply reliability for the region.

Diamond Valley Lake
Photo taken by Greg Widman



Below Normal and Highly Variable Precipitation in Northern California

Over the past few years, the source watershed for State Water Project (SWP) supplies experienced a range of the driest to the wettest periods in California's recorded history. In 2018, the region experienced this variable weather from month to month. Water year 2017 was the wettest water year on record. However, by the end of calendar year 2017, and for the first two months of 2018, conditions in Northern California began to turn dry, and the region faced a strong potential for an overall dry year. Then a near "Miracle March" with precipitation of 166 percent of average, along with an above average April, provided a much needed boost to the water year.

Despite the late season storms, water year 2018 ended with below normal precipitation in the Northern Sierra watershed, and abnormally dry to extreme drought conditions returned across the state (see Figure 2-1). Snowpack accumulation for the year was well below average (50 percent of the April 1 average), as warm temperatures brought more rain than snow in the Northern Sierra. The resulting runoff was only 71 percent of normal.

Snow survey at Phillips Snow Course, January 3, 2018

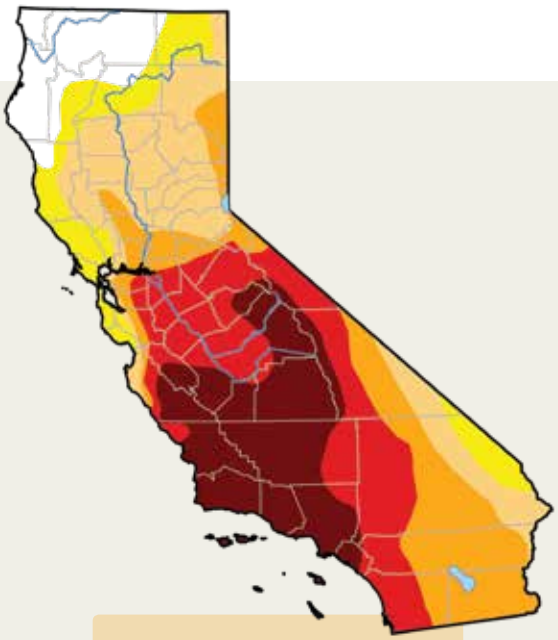


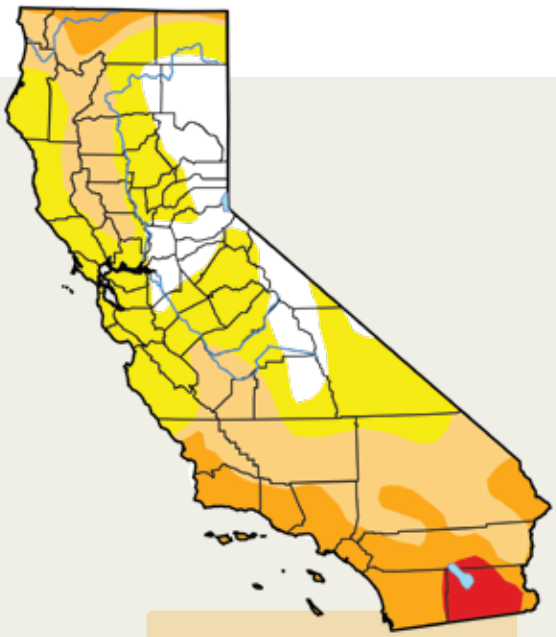
FIGURE 2-1: Drought Comparison 2016-2018

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

Images from the United States Drought Monitor

Snow survey at Phillips Snow Course, April 2, 2018
Both photos courtesy of DWR

October 2017

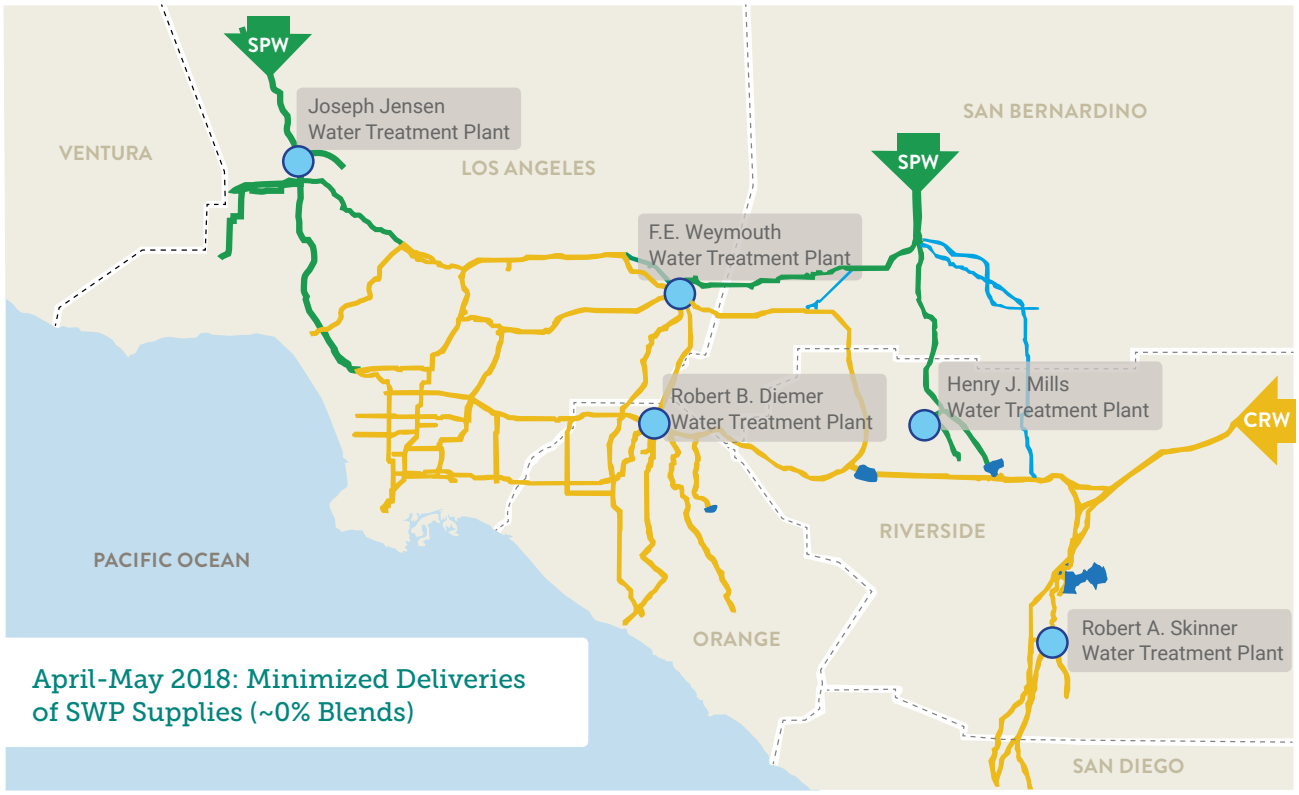


October 2018

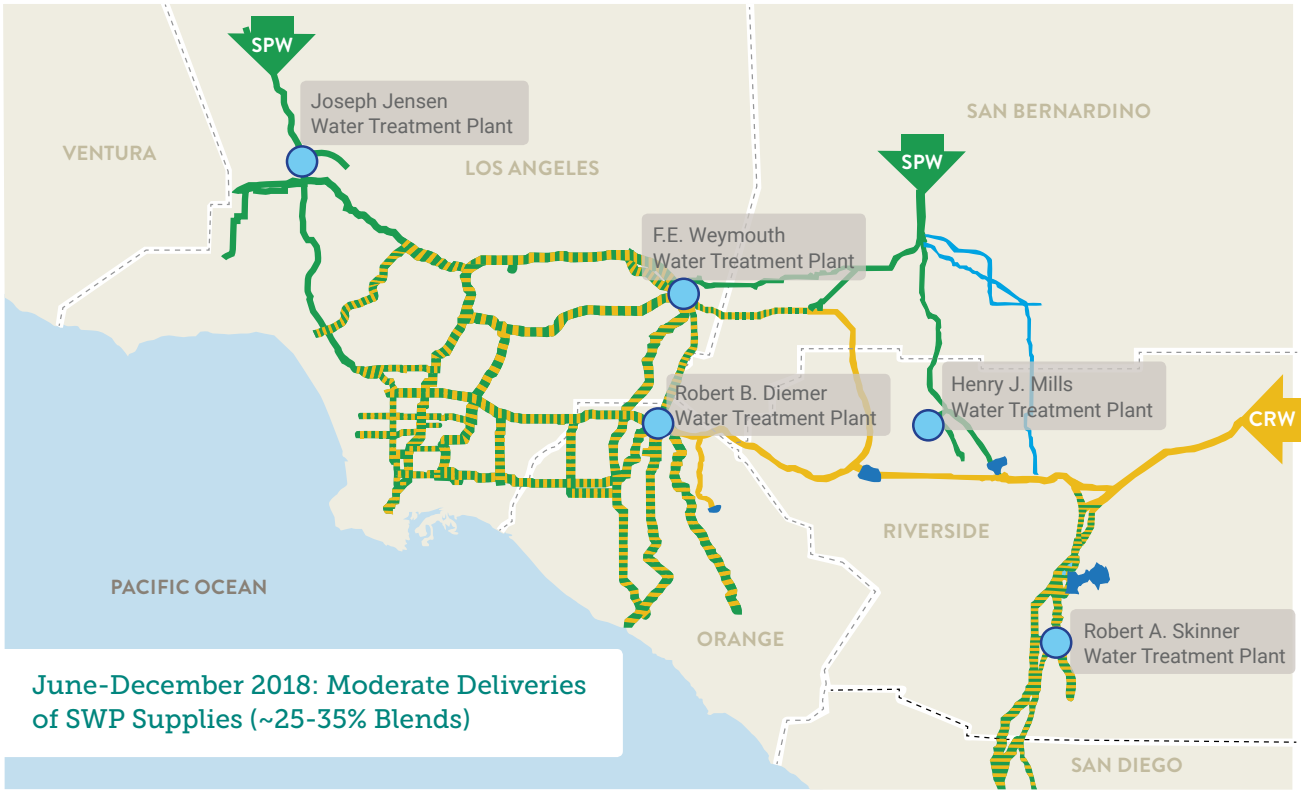
Balancing Operations Through Varying Conditions

As water conditions shifted throughout the year, so did Metropolitan's operations to ensure continued water supply reliability. In the beginning of 2018, operations was transitioning from maximizing deliveries into every available storage account in the extraordinary surplus year of 2017. Metropolitan then began minimizing deliveries of SWP supplies by the spring of 2018 and prepared for potential drought actions as conditions turned dry early in the year. As the water supply outlook stabilized, Metropolitan moderately increased blend targets by the summer of 2018. Delivery strategies also incorporated managing shutdowns for critical system maintenance, such as the Colorado River Aqueduct (CRA) shutdown from mid-February to mid-March and work on the Lake Mathews Forebay early in the year. See Figure 2.2 for example system operations.

FIGURE 2-2
EXAMPLE SNAPSHOTS OF SYSTEM OPERATIONS



April-May 2018: Minimized Deliveries of SWP Supplies (~0% Blends)



June-December 2018: Moderate Deliveries of SWP Supplies (~25-35% Blends)

Metropolitan further optimized resources by repositioning storage. For example, Metropolitan took delivery of Desert Water Agency and Coachella Valley Water District carryover supplies stored in San Luis Reservoir early in calendar year 2018 to reduce the risk of spilling stored carryover. Also, levels in Diamond Valley Lake (DVL) were reduced to slightly above 700,000 acre-feet to create space in the reservoir for additional operational flexibility.

The SWP had periods of capacity limitations due to outages that reduced Metropolitan's ability to maximize deliveries in 2017 under the 85% SWP allocation. Staff worked with the California Department of Water Resources (DWR) to quantify these lost opportunities and used Article 14(b) of the SWP contract to carry over approximately 28,000 acre-feet for delivery in 2018, so these supplies were not lost. This amount is in addition to Metropolitan's SWP Article 56 Carryover.

New variables introduced in 2018 may additionally influence the future balance of system operations. According to the U.S. Bureau of Reclamation, based on 2018 conditions, there is a more than 50 percent chance of Lake Mead reaching shortage levels by 2020. A shortage declaration will trigger cuts in water deliveries to Arizona and Nevada. Metropolitan would not lose any of it base supplies in an initial shortage, but could lose access to Intentionally Created Surplus (ICS) water stored in Lake Mead. However, if Lake Mead were to decline to critically low levels, all Colorado River water users would be at risk. To reduce that risk, Metropolitan and other water rights holders in the Colorado River Basin States are developing a collection of agreements known as the

San Luis Reservoir, July 2018
Photo courtesy of DWR

Drought Contingency Plan (DCP). The DCP reduces the risk of reservoirs reaching critical levels and would also allow Metropolitan access to its conserved water stored in Lake Mead at elevations below shortage levels. Operational strategies for Colorado River diversions may be influenced by the risk of a shortage declaration and the approval and implementation of the DCP.

Other operational impacts include a new addendum to the Coordinated Operation Agreement that defines how the state and federal water projects within California share water quality and environmental flow obligations. It is estimated that supplies from the SWP could be reduced. Metropolitan will continue to monitor impacts and incorporate them into future planning.

Oroville Dam's main spillway was fully reconstructed by November 1, 2018. With the main spillway returned to its original design capacity of 270,000 cubic feet per second, the updated operations plan for the 2018/19 flood season that will guide reservoir operations is estimated to have minimal water supply impacts in 2019. Construction of the emergency spillway is expected to be completed in early 2019.

Overall, Metropolitan will continue to track these changing conditions for future forecasting, planning, and operations to adapt accordingly for continued reliability.

Lake Oroville main spillway, October 2018
Photo courtesy of DWR

Meeting Demands and Managing Supplies

Despite the below average hydrologic conditions, water supplies and demands in 2018 were balanced. This allowed operational flexibility to further balance and optimize water storage resources.

Consumptive and Replenishment Demands

Even with record-breaking heat waves hitting Southern California in the summer, consumptive water demands on Metropolitan remained low at about 1.42 million acre-feet in 2018. This may be attributed to continued water-use efficiency practices, along with higher local supplies carried over from the prior year wet conditions. This level of consumptive demands is significantly below the 10-year annual average of 1.67 million acre-feet. Metropolitan also met demands for groundwater and reservoir replenishment of 130,000 acre-feet (which does not include deliveries to Metropolitan's local groundwater programs, such as the Conjunctive Use or Cyclic Storage programs). In total, the 2018 water demand was 1.70 million acre-feet (which includes 130,000 acre-feet of losses and obligations, and 20,000 acre-feet of Cyclic Storage Program agreement purchases). This is the second lowest demand level in the last 20 years, only behind the extraordinarily low level in 2017.

State Water Project Supplies

Below normal conditions returned to the Northern Sierra watershed, leading to a 35 percent SWP allocation, or approximately 670,000 acre-feet for Metropolitan. This includes about 1,000 acre-feet of Port Hueneme supplies, as described in Appendix A. With an additional 14,000 acre-feet of transfers from the Yuba Dry-Year Water Purchase Program (see Appendix A), total supplies from the SWP were approximately 684,000 acre-feet.

Colorado River Supplies

The Upper Colorado River Basin also experienced below normal hydrologic conditions and increased temperatures, which resulted in decreased storage levels in both Lake Powell and Lake Mead in 2018. Although these dry conditions did not impact Metropolitan's base supply in 2018, decreasing storage levels in these lakes increases the likelihood of future shortage conditions in the Colorado River system.

Demands by agricultural contractors with higher Colorado River priorities fluctuated greatly throughout the year. In August, these demand forecasts were showing very high water demands, indicating a high likelihood of a reduced supply to Metropolitan. By the end of the year, however, these trends reversed with late fall storms, increasing the amount of Colorado River water that had been anticipated. As a result, Metropolitan increased the amount of water it stored in Lake Mead, and it is estimated that 2018 ended up with a positive net overall storage for Metropolitan.

As shown in Table 2-1, Metropolitan's total base CRA supply for 2018 was approximately 1.02 million acre-feet. Additional information on the supply programs can be found in Appendix A.

TABLE 2-1

2018 COLORADO RIVER BASE SUPPLY SUMMARY*

CATEGORY	SUPPLY (acre-feet)
Basic Apportionment	550,000
IID/Metropolitan Conservation Program	105,000
Palo Verde Irrigation District Land Fallowing	76,000
Exchange with San Diego County Water Authority (IID Transfer and Canal Lining)	208,000
Exchange with USBR (San Luis Rey Settlement Agreement; Canal Lining)	16,000
Lower Colorado Water Supply Project	9,000
Agricultural Adjustment and CVWD/IID Unused/Stored in Metropolitan System	58,000
TOTAL	**1,022,000**

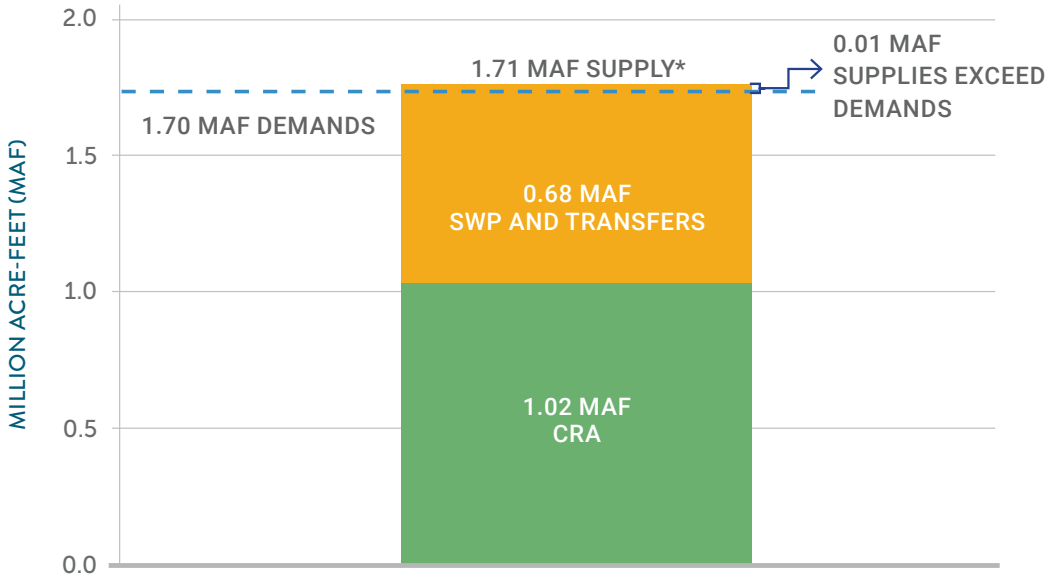
* Subject to change based on accounting adjustments

Result: Supplies Nearly Equaled Demands

Total supplies in 2018 from the SWP, Colorado River, and transfers were 1.71 million acre-feet. With a total demand on Metropolitan of 1.70 million acre-feet, the resulting supply and demand balance indicates a slight surplus of supplies of approximately 10,000 acre-feet, as shown in Figure 2-3.

FIGURE 2-3

2018: BALANCED SUPPLIES AND DEMANDS

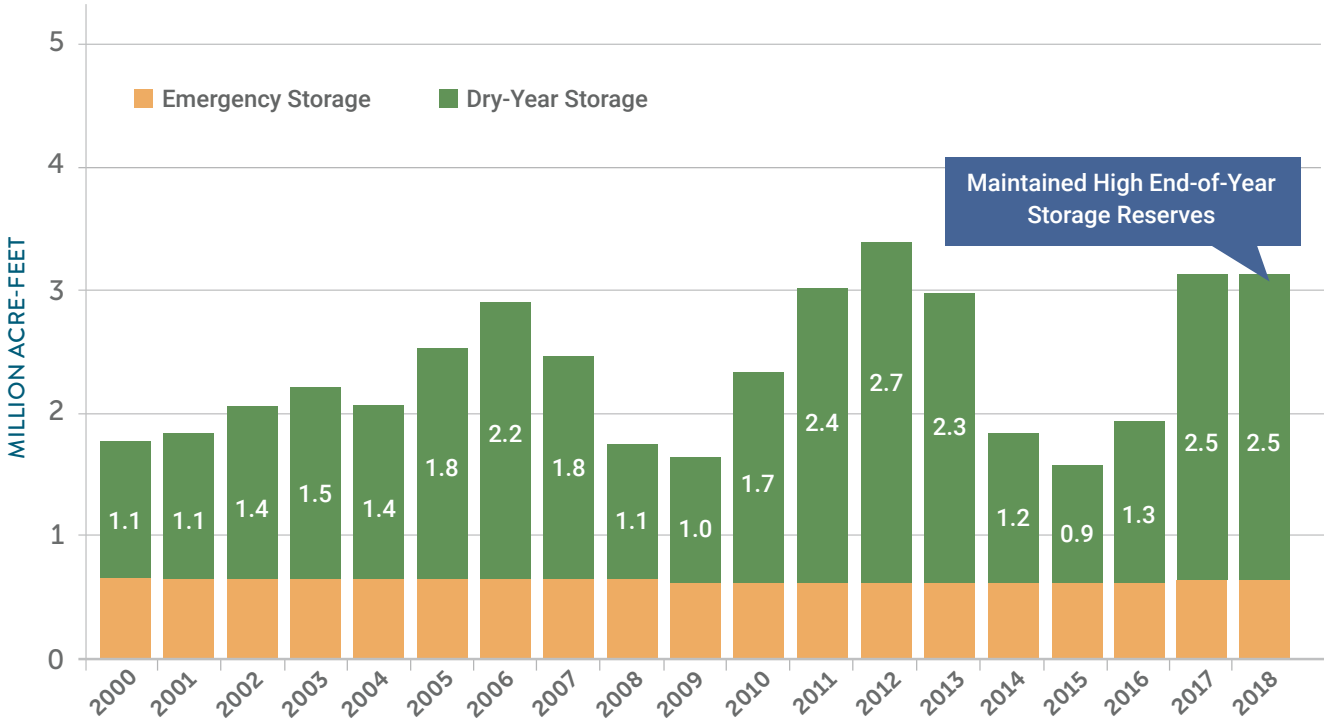


*Totals may differ due to rounding

Balancing Storage to Manage Future Droughts

The strategic actions taken to maximize increases to storage in the surplus year of 2017 allowed for a starting dry-year storage balance in 2018 of approximately 2.5 million acre-feet, which is the second highest storage level in Metropolitan's history. With balanced supplies and demands in 2018, the ending dry-year storage amount is nearly identical to the year before, with just a minor increase to storage reserves (rounded to the nearest hundred thousand acre-foot) as shown in Figure 2-4: Storage End-of-Year Balances.

FIGURE 2-4
STORAGE END-OF-YEAR BALANCES

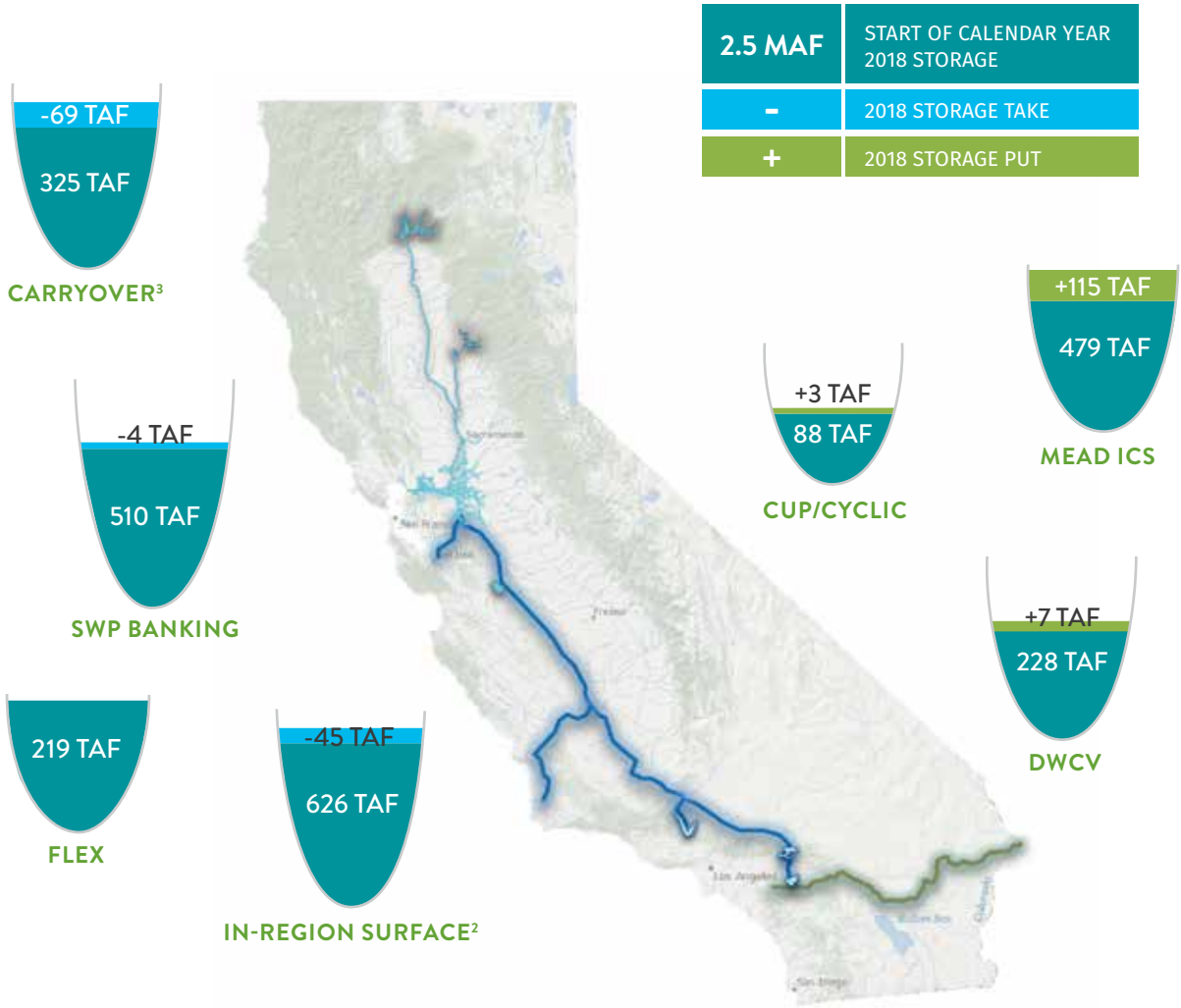


Guided by strategies outlined in the 2018 Annual Operating Plan, Metropolitan implemented storage actions, including repositioning storage, to optimally manage resources and maximize opportunities for future reliability. Figure 2-5 shows the initial 2018 dry-year storage in each storage account, along with the increases and withdrawals from storage in 2018. Additional information on storage programs can be found in Appendix B. It is important to note that this report includes preliminary figures that are subject to restatement. For example, the final accounting of 2018 Colorado River supplies and storage volumes will not be completed by U.S. Bureau of Reclamation until May 2019.

Figure 2-5 also shows just over 600,000 acre-feet of emergency storage set aside for use after a major earthquake or other emergency that could isolate Southern California from imported supplies. Metropolitan and member agency staff met throughout 2018 to determine the need to update the emergency storage reserve amount. An updated emergency storage reserve amount may be implemented in 2019.

FIGURE 2-5

MAP OF DRY-YEAR STORAGE AT THE START AND END OF 2018[1]



[1]Amounts subject to change based on final accounting in 2019

[2]In-Region Surface Storage includes DVL, Lake Mathews, and Lake Skinner; does not include emergency storage

[3]Article 14(b) included in carryover

TAF: Thousand Acre-Feet

Figure not drawn to scale

Providing High Quality Water

Metropolitan has been a national leader in providing safe drinking water, complying with increasingly stringent federal and state standards. Metropolitan took proactive steps in 2018 to protect and manage source waters, optimize treatment operations, and ultimately deliver water that meets drinking water regulations and consumer expectations.

Protecting the Source

Metropolitan continued its oversight and coordination on water quality issues with key Colorado River stakeholders. Staff also collaborated with DWR and SWP contractors on Delta and SWP water quality monitoring and forecasting programs. Metropolitan continued to monitor its system in 2018, including taste-and-odor compounds in source waters. DWR conducted several treatments in SWP reservoirs to manage taste-and-odor. Metropolitan treated Lake Skinner two times in 2018 with copper sulfate. No copper sulfate treatments were needed at DVL or Lake Mathews.

Metropolitan closely monitored cyanotoxins in source waters and quickly responded to cyanotoxin events at Metropolitan reservoirs. Based on the state's voluntary guidelines for managing cyanotoxins in recreational water, Metropolitan closed DVL to public access for several weeks in summer 2018 due to detection of cyanotoxins on the surface of the lake. As Metropolitan can implement multiple strategies to ensure delivery of high quality water, including withdrawal of water from lower levels of the lake, withdrawals of water from DVL were possible during this event. However, demands at that time did not require supplies from DVL, so no water was withdrawn.

Metropolitan also diligently tracks and continues to be proactively engaged with industry partners in drinking water regulatory developments. On December 14, 2017, the State Water Resources Control Board established a drinking water standard for 1,2,3-trichloropropane (TCP) at 0.005 micrograms per liter. TCP is a manufactured chemical used as a cleaning and degreasing solvent. It is also associated with pesticide products used in agricultural practices. There have been no detections of this chemical in Metropolitan's system; however, TCP has been detected in many locations throughout the Central and San Joaquin Valleys. Metropolitan is evaluating the potential impact of the new drinking water standard for TCP on its SWP Banking Programs.

Copper sulfate treatment at Lake Skinner

Monitoring for cyanotoxins

Optimizing Water Treatment

Metropolitan's water treatment plants are operated to optimize performance, especially when experiencing extreme changes in source water quality. This requires frequent adjustments to chemical feed, maintaining functionality of all mechanical processes, and also ensuring that adequate chemicals are available. In 2017, Hurricane Harvey caused a shortage in ferric chloride supplies, threatening the supply of ferric chloride to the Skinner plant. As a result, in 2018 Metropolitan began evaluating the treatment plant performance at the Skinner plant using aluminum sulfate (alum) as its primary coagulant, since alum is more readily available and used at Metropolitan's other treatment plants. In 2019, Metropolitan will continue evaluating the effectiveness of switching to alum use at the Skinner plant, while ensuring regulatory compliance and meeting Metropolitan's internal water quality goals.

Managing Blends

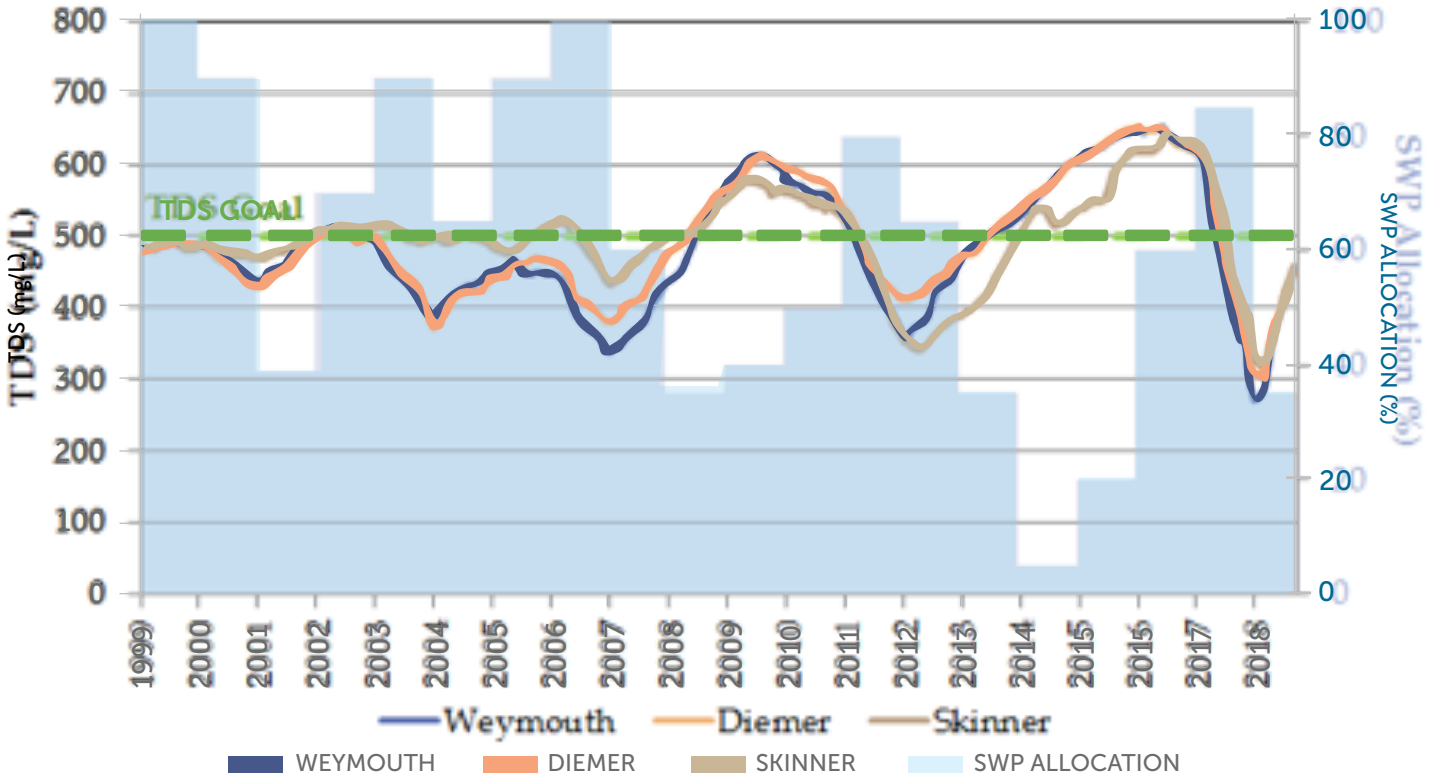
Salinity of Colorado River water supplies is higher than that of SWP water, largely due to natural mineral salt deposits within the geology of the Colorado River watershed. However, salinity changes occur much more rapidly in the SWP system due to hydrologic fluctuations in the Delta and less storage to dampen these fluctuations when compared to the Colorado River system. Metropolitan operates its system and manages the blending of these two sources to meet its Board-adopted salinity goal of 500 milligrams per liter, when possible.

Aerial view of Robert A. Skinner Water Treatment Plant and solar farm

As the SWP supplies decreased significantly from 2017 to 2018, SWP blends also decreased significantly at Weymouth, Diemer, and Skinner plants from 75 percent target blends in early 2018 to 25-35 percent target blends at the end of the year. Metropolitan adjusted deliveries and treatment processes to manage these blend changes and, although SWP supplies were limited and blending opportunities were reduced, Metropolitan achieved its salinity goal for 2018. Figure 2-6 illustrates the TDS trends from 1999 and the inverse relationship with the SWP allocation.

Figure 2-6
TDS Trends at Blend Plants*

FIGURE 2-6
TDS TRENDS AT BLEND PLANTS*

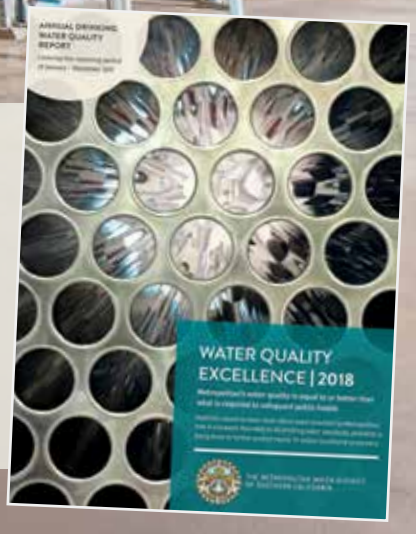


* Flows based on running annual average

Safeguarding our Water Supplies

Metropolitan's treated water supplies met all regulatory requirements during 2018. The 2018 Annual Drinking Water Quality Report is available at:

www.mwdh2o.com/PDF_About_Your_Water/2.3.1_Annual_Water_Quality_Report.pdf



Ozone generation building at F.E. Weymouth Water Treatment Plant

Managing Power Supplies and Production

Importing water into Southern California requires energy resources and also provides the opportunity for hydroelectric power generation. As power markets continued to evolve in 2018, Metropolitan consolidated its first year of operations with a new transmission operator and a new power scheduling agent, and continued to refurbish a number of its hydroelectric power plant facilities to enhance reliability.

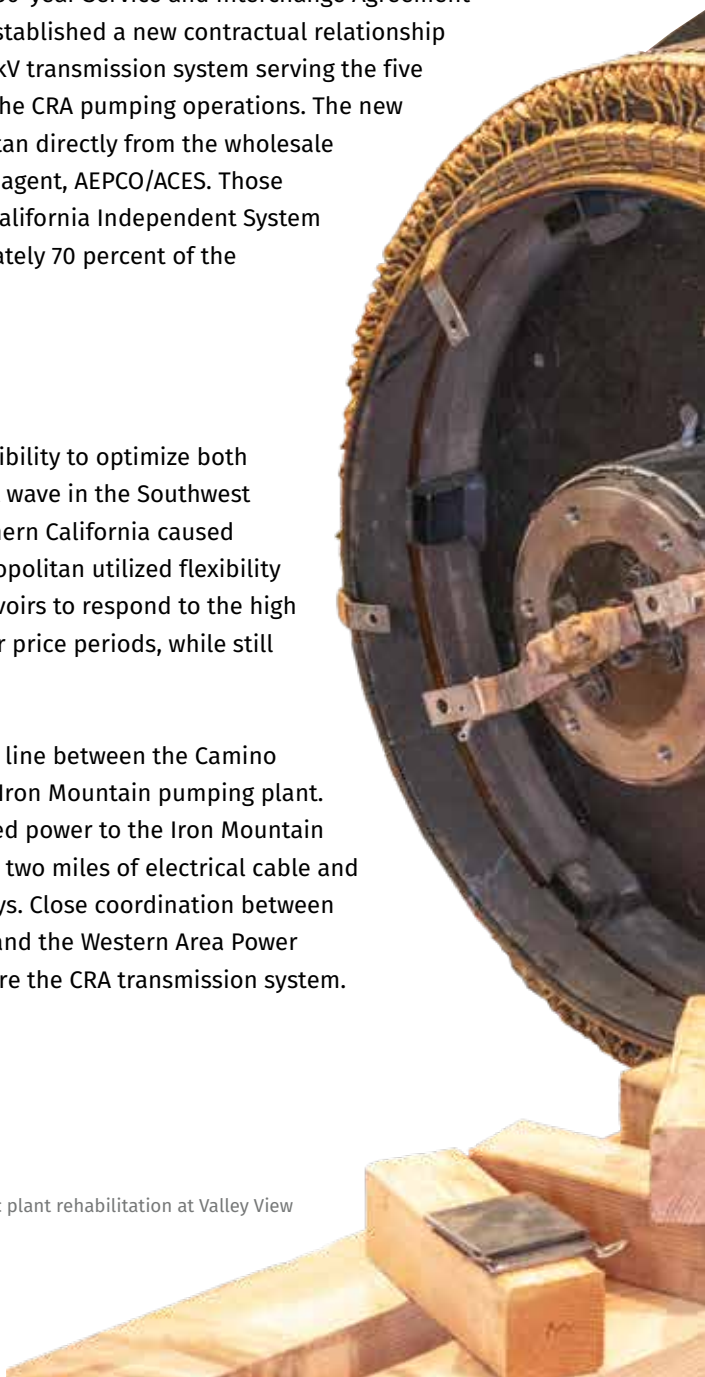
New Era of CRA Power Operations

2018 was the first year of operation following termination of the prior 30-year Service and Interchange Agreement between Metropolitan and Southern California Edison. Metropolitan established a new contractual relationship with the Arizona Electric Power Cooperative (AEPCO) to operate its 230kV transmission system serving the five CRA pumping plants, and ACES Power Marketing to procure power for the CRA pumping operations. The new arrangement replaces power purchases previously made by Metropolitan directly from the wholesale energy market. Purchases are now made by Metropolitan's scheduling agent, AEPCO/ACES. Those purchases are optimized between third party suppliers and from the California Independent System Operator spot markets. In 2018, Hoover and Parker supplied approximately 70 percent of the CRA pumping needs.

Responding to Dynamic Operating Conditions

Storage reservoirs on the CRA system provide a valuable source of flexibility to optimize both pumping operation and energy use. During the summer of 2018, a heat wave in the Southwest coupled with fuel constraints affecting gas-fired power plants in Southern California caused power prices in the Southwest to spike far beyond normal levels. Metropolitan utilized flexibility provided by the CRA storage facilities at Gene and Copper Basin Reservoirs to respond to the high prices by adjusting pumping schedules and shifting purchases to lower price periods, while still maintaining consistent CRA water flow.

In October 2018, a helicopter struck Metropolitan's 230kV transmission line between the Camino and Gene substations. The impact resulted in the loss of power to the Iron Mountain pumping plant. Metropolitan and AEPCO operators responded to the event and restored power to the Iron Mountain pumps in approximately two hours. Metropolitan also replaced almost two miles of electrical cable and completed minor repairs to several transmission towers within five days. Close coordination between AEPCO and the interconnected systems of Southern California Edison and the Western Area Power Administration was required to respond to the event and quickly restore the CRA transmission system.



Hydroelectric plant rehabilitation at Valley View

Optimizing Power Generation

Metropolitan operates 16 hydroelectric plants throughout the distribution system that are capable of generating up to 131 megawatts of power. Hydroelectric generation is dependent on the volume of water deliveries and the source of Metropolitan's water supplies. Several of Metropolitan's largest hydroelectric plants are within portions of Metropolitan's system that convey water from the SWP. Power production decreased from 2017 to 2018 due to the lower SWP allocation in 2018. Metropolitan's hydroelectric power production at each of its hydroelectric plants over the past two years is shown in Appendix C.

Metropolitan also operates a total of 5.4 megawatts of solar photovoltaic generation which serve on-site power loads at the Skinner, Weymouth, and Jensen plants, as well as the DVL Visitor's Center. With the addition of the one-megawatt Jensen solar facility in January 2018, these facilities generated approximately 10,400 MWh for the year, up from about 8,900 MWh in 2017.

Maintaining Reliable Water Deliveries

Delivering reliable water supplies to the region is a cornerstone of Metropolitan's mission. Doing so requires coordinated actions that involve comprehensive planning, continuous monitoring of Metropolitan's system, and making system repairs and improvements where needed.

Controlling Invasive Species

Metropolitan's program for monitoring and controlling invasive quagga mussels has been ongoing since their detection in the lower Colorado River in 2007. Quagga mussel control measures in the CRA system include chlorination at strategic sites, along with desiccation and physical removal of mussels during shutdowns. Although a few quagga mussels were found in the West Branch of the SWP in 2016, there is no evidence of infestation and there are currently no regulatory restrictions on moving or using raw water from the East or West Branch of the SWP. Metropolitan has submitted an updated Quagga Mussel Control Plan to the California Department of Fish and Wildlife, effective starting in 2019. The plan describes Metropolitan's continued monitoring and control program and potential control strategies for SWP facilities, if and when needed, to ensure continued reliable water deliveries.

Monitoring for invasive quagga mussels

Ensuring Reliable Infrastructure and Managing Shutdowns

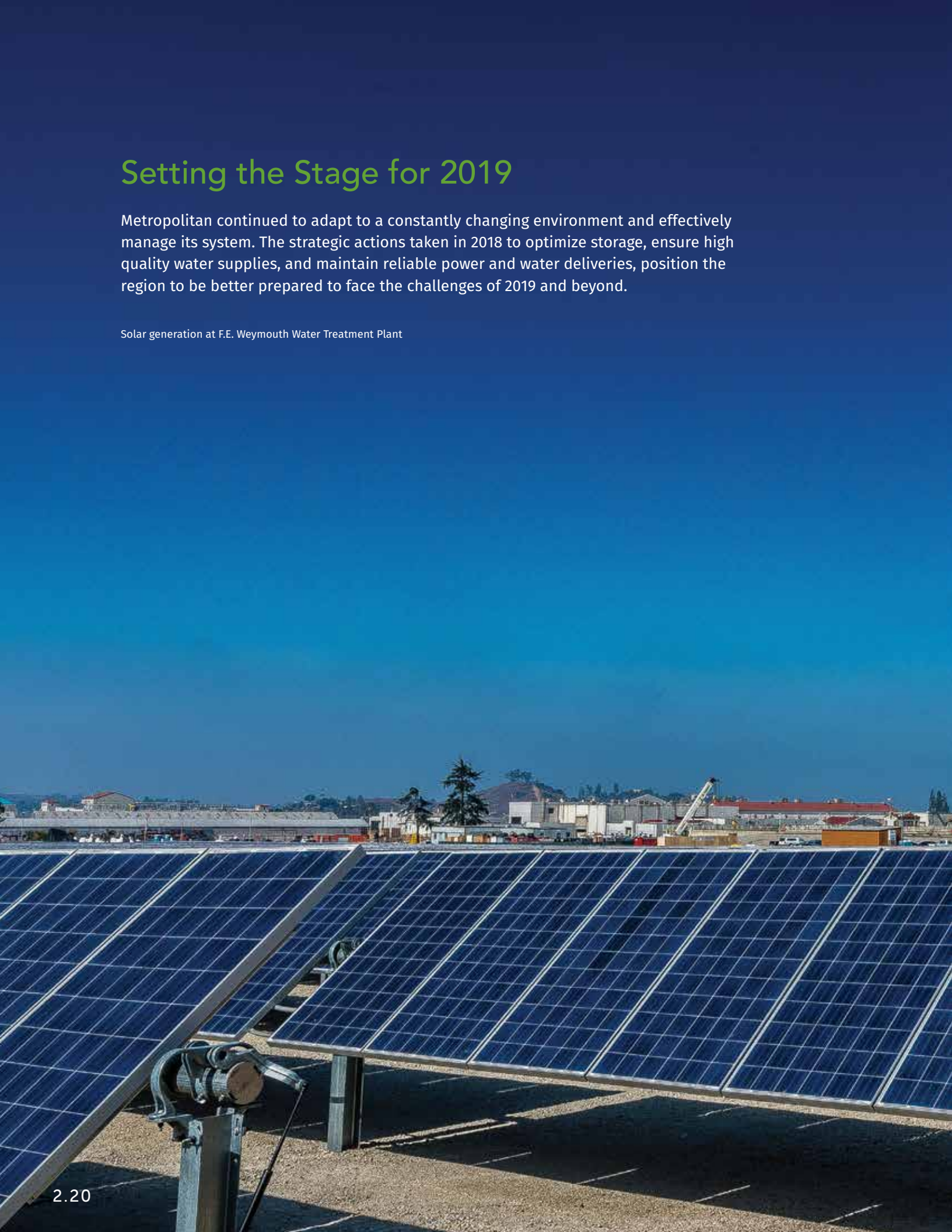
The Capital Investment Plan (CIP) projects completed in 2018 will further enhance Metropolitan's ability to deliver safe and reliable water supplies. Throughout each year, Metropolitan also performs preventive and corrective maintenance of its facilities. Metropolitan plans and performs shutdowns to inspect and repair pipelines and facilities and support CIP projects. These shutdowns involve a high level of planning and coordination within Metropolitan, as well as with member agencies, other affected organizations, contractors, and the community. In fiscal year 2017/18, Metropolitan successfully completed numerous shutdowns of its conveyance and distribution system throughout the service area. Operational flexibility within Metropolitan's system and the cooperation of member agencies allowed these shutdowns to be successfully completed while continuing to meet system demands. In addition to supporting refurbishment and repairs of Metropolitan's water system, Metropolitan's manufacturing and fabrication shops supported DWR on several infrastructure reliability projects.

Cement mortar lining machine on the Second Lower Feeder

Setting the Stage for 2019

Metropolitan continued to adapt to a constantly changing environment and effectively manage its system. The strategic actions taken in 2018 to optimize storage, ensure high quality water supplies, and maintain reliable power and water deliveries, position the region to be better prepared to face the challenges of 2019 and beyond.

Solar generation at F.E. Weymouth Water Treatment Plant



CHAPTER 3

2019 Plan: Prepared for a Range of Future Conditions

Just as the 2018 Annual Operating Plan prepared the region for a successful year, the current plan provides a strategy for continued effective operations under a wide range of potential 2019 conditions. This strategy is firmly grounded in Metropolitan's core operating principles to 1) meet member agency demands, 2) meet water quality requirements, 3) manage storage according to Water Surplus and Drought Management Plan principles, 4) manage maintenance and shutdowns, 5) meet blending objectives, and 6) maximize hydroelectric power production.

This chapter presents an outlook of demands and supplies for 2019, a range of shortage and surplus strategies, and an operating plan for Metropolitan to ensure continued reliable water deliveries for the region.

Lake Mead, February 2018
Photo courtesy of U.S. Bureau of Reclamation, Photographer: Alexander Stephens

Meeting Member Agency Demands

Forecasting water demands is essential for evaluating the need for resources and managing system operations. Many factors influence the demands on Metropolitan, including weather, water-use efficiency efforts, and availability of local supplies.

There are two general types of demands on Metropolitan: consumptive and replenishment. Consumptive demands include residential, commercial, industrial, seawater barrier, and agricultural water use. Replenishment demands include full-service deliveries to groundwater and surface storage (does not include deliveries to Metropolitan's local groundwater programs, such as the Conjunctive Use or Cyclic Storage programs).

Forecasting Near-Term Demands: A Collaborative Process

To forecast near-term demands, Metropolitan begins by gathering data from its member agencies. In July of each year, member agencies submit their five-year demand forecast to Metropolitan. Metropolitan uses this information as the foundation for forecasting demands. As the year progresses, the member agency forecasts are compared to the current demand trend. This comparison allows Metropolitan to adjust member agency forecasts to current conditions, while collaborating with member agencies as needed.

For 2019, member agencies forecasted a consumptive demand of 1.35 million acre-feet. This demand is slightly less than the 2018 consumptive demand of 1.42 million acre-feet. This indicates that member agencies are anticipating generally slightly higher levels of local supplies, water-use efficiency, and precipitation.

After years of drought, it will take years of normal precipitation combined with imported water deliveries for a number of groundwater basins to fully recover. Member agencies forecasted a total replenishment demand of approximately 140,000 acre-feet, which is greater than the 10-year annual average replenishment demand of 100,000 acre-feet.

A detailed summary of member agency demands in 2019, as projected by the member agencies, is shown in Table 3-1. Replenishment demands for 2018 and member agency projections for 2019 are shown in Table 3-2. Low demands assume wet weather conditions in 2019; normal demands assume normal weather conditions in 2019; and high demands assume dry weather conditions in 2019.

TABLE 3-1

2019 Member Agency Consumptive Demand Projections

MEMBER AGENCY	2018 ACTUAL (TAF)	2019 PROJECTION (TAF)
Anaheim	14	17
Beverly Hills	10	11
Burbank	6	5
Calleguas	93	103
Central Basin	16	14
Compton	0	0
Eastern	94	77
Foothill	8	9
Fullerton	6	6
Glendale	16	16
Inland Empire	66	74
Las Virgenes	20	21
Long Beach	26	25
Los Angeles	218	180
Municipal Water District of Orange County	143	133
Pasadena	19	19
San Diego County Water Authority	374	351
San Fernando	0	0
San Marino	1	1
Santa Ana	8	9
Santa Monica	4	3
Three Valleys	61	47
Torrance	15	14
Upper San Gabriel	6	7
West Basin	117	113
Western	72	90
TOTAL*	**1,413**	**1,345**

* Totals may differ due to rounding

TAF: Thousand Acre-Feet

TABLE 3-2

2019 Member Agency Replenishment Demand Projections

MEMBER AGENCY	2018 ACTUAL (TAF)	2019 PROJECTION LOW (TAF)	2019 PROJECTION NORMAL (TAF)	2019 PROJECTION HIGH (TAF)
Burbank	6	1	8	8
Central Basin	8	4	12	12
Eastern	5	0	8	20
Inland Empire	0	0	7	18
Long Beach	0	0	0	0
MWDOC	64	60	65	70
Three Valleys	6	2	6	8
Upper San Gabriel	39	21	31	41
TOTAL	128	88	137	177

2019 Demands on Metropolitan

Metropolitan builds upon member agency demand projections to develop its own forecast. This forecast considers other factors, such as historical demand trends, current demand trends, changes in local supply production, weather trends, water-use efficiency trends, retail demand estimates, and updated estimates from member agencies. Based on these adjustments and further coordination with member agencies, Metropolitan's consumptive demand forecast for 2019 under normal weather conditions is 1.51 million acre-feet, which is approximately 160,000 acre-feet higher than the total forecast submitted by the member agencies earlier in 2018. Metropolitan's replenishment demand forecasts for 2019 match the range of member agency projections of approximately 90,000 acre-feet to 180,000 acre-feet.

Table 3-3 shows Metropolitan's 2019 demand forecast summary, along with actual 2018 demands. The table includes projections from low to high (as described previously). Also included are losses and obligations. Losses include system losses on Metropolitan's distribution system, such as evaporation. Obligations include deliveries to non-member agencies as required by various agreements, such as purchase of water by Coachella Valley Water District. The total demand, including losses and obligations, represents the total water requirement to be met with Metropolitan supplies.

TABLE 3-3

2019 Metropolitan Forecasted Demand Summary

DEMAND TYPE	2018 ACTUAL (MAF)	2019 PROJECTION LOW (MAF)	2019 PROJECTION NORMAL (MAF)	2019 PROJECTION HIGH (MAF)
Consumptive	1.42	1.32	1.51	1.67
Replenishment	0.13	0.09	0.14	0.18
Losses and Obligations[1]	0.15[2]	0.14	0.12	0.11
TOTAL	1.70	1.55	1.77	1.96

[1]Losses vary across scenarios as increased storage amounts incur increased losses. It is estimated that lower demands would allow for increased storage, and therefore increased losses.

[2]Includes 2018 Cyclic Storage Program agreement purchases

Metropolitan plans to meet all member agency demands in 2019. Deliveries that may need to be adjusted to meet pipeline capacity or other operational constraints will be coordinated with the member agencies.

Imported Supply Forecast

Imported supplies serve not only as supplies for Metropolitan's member agencies to meet 2019 demands, but also to replenish storage when available. This section describes the forecasts of supplies available from the SWP and Colorado River in 2019.

Colorado River Supplies

Metropolitan's 2019 initial water order provided to the U.S. Bureau of Reclamation was for 949,000 acre-feet. A breakdown of this supply is shown in Table 3-4. In 2019, under a low SWP supply and a high demand condition, Metropolitan may increase diversions by withdrawing storage from Lake Mead. However, if supply conditions on the SWP end high, Metropolitan may reduce diversions and store up to 300,000 to 400,000 acre-feet of its Colorado River supply in Lake Mead as Intentionally Created Surplus. Approval of the Colorado River DCP may also impact CRA diversions.

TABLE 3-4
2019 Colorado River Supply Forecast

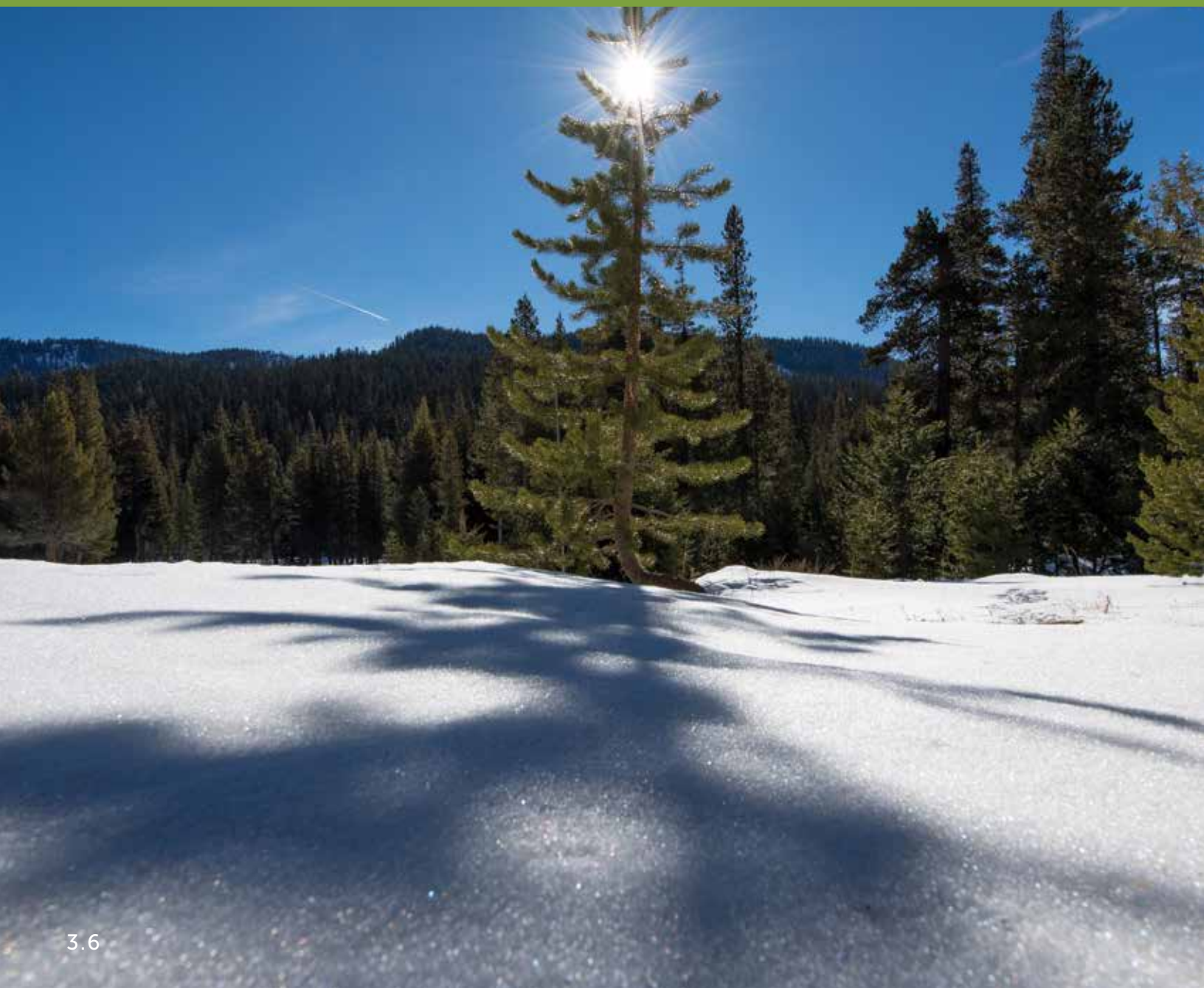
CATEGORY	SUPPLY (ACRE-FEET)
Basic Apportionment	550,000
IID/Metropolitan Conservation Program	85,000
Palo Verde Irrigation District Land Fallowing	49,000
Exchange with SDCWA (IID Transfer and Canal Lining)	239,000
Exchange with USBR (San Luis Rey Settlement Agreement; Canal Lining)	16,000
Lower Colorado Water Supply Project	10,000
Agricultural Adjustment*	0
TOTAL	**949,000**

* This figure could range by plus or minus 100,000 acre-feet

State Water Project Supply Outlook: A Wide Range

The initial SWP allocation for 2019 was 10 percent, as set by DWR on November 30, 2018. This relatively low initial allocation can partly be attributed to reduced storage in Lake Oroville and other major reservoirs. However, initial SWP allocations are typically conservative early in the season and are likely to change depending on rain and snowfall received in the winter. On January 25, 2019, DWR announced an increase of the SWP allocation to 15 percent, which is based on a dry forecast. It is estimated that median hydrologic conditions in 2019 would yield about a 40 percent final SWP allocation. The 2019 SWP final allocation will greatly depend on the San Joaquin River watershed's conditions, similar to the high SWP allocation in 2017. If the San Joaquin River watershed is wet, the final allocation could increase. For drier conditions and more stringent Delta water quality and flow constraints, the final allocation could potentially remain the same or be reduced. DWR typically announces the final SWP allocation in April of each year.

First snow survey of 2019 season at Phillips Snow Course, January 3, 2019
Photo courtesy of DWR

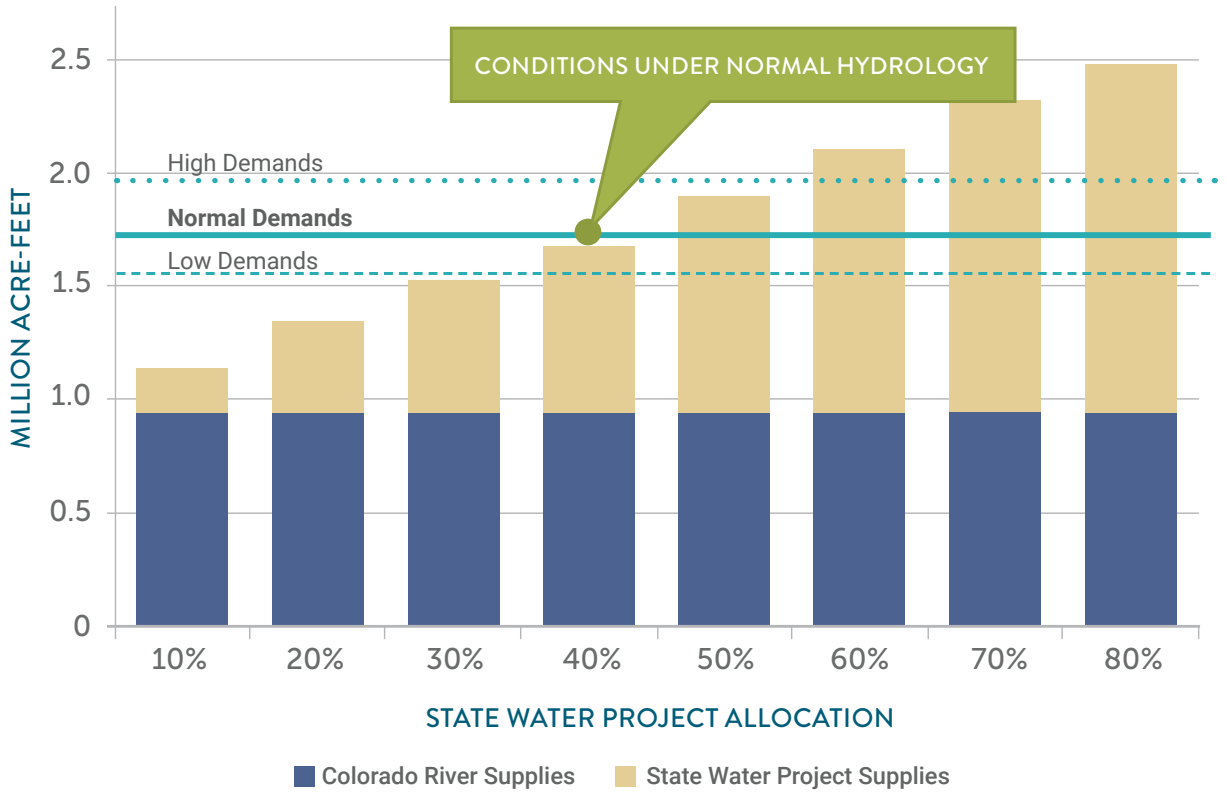


2019 Water Balance

The 2019 water balance brings together the forecasted supplies and demands to provide a picture of resource and operational needs, including the use or replenishment of storage. Figure 3-1 illustrates the balance of supplies (without additional water transfers) against demands under a wide range of potential 2019 conditions.

FIGURE 3-1

2019 Supply and Demand Balance



As shown in Figure 3-1, conditions in 2019 can vary greatly from shortage to surplus depending on the hydrology and primarily the SWP allocation. In a 10-percent SWP allocation and a high demand scenario, Metropolitan would need to use nearly 820,000 acre-feet of storage. In an 80-percent SWP allocation and a low demand scenario, there would be an estimated surplus of over 930,000 acre-feet of supplies. Under median hydrologic conditions (estimated 40 percent SWP final allocation) and normal demands (1.77 million acre-feet), the projected 2019 supply and demand balance indicates a supply gap of about 50,000 acre-feet (this does not include additional water transfers).

Overall, the region needs to be prepared to manage both drought and surplus conditions in 2019. The high Metropolitan storage levels at the end of 2018 position Metropolitan well to respond to a range of conditions.

2019 Water Surplus and Drought Management Strategy

The Water Surplus and Drought Management (WSDM) Plan guides Metropolitan's resource operations to maximize future reliability. The WSDM Plan provides guidelines to prioritize the use of storage in shortage conditions and the replenishment of storage in surplus conditions. The WSDM Plan generally favors in-region storage because it is easily accessible and favors surface storage because it generally has higher fill and withdrawal capacities. Based on the general principles of the WSDM Plan, Figure 3-2 outlines the surplus (supplies greater than demands) action priorities, and Figure 3-3 outlines the drought (supplies less than demands) action priorities. Additional information on storage programs can be found in Appendix B.

FIGURE 3-2

WSDM Plan Surplus Action Priorities

PRIORITY	SURPLUS ACTION (FILL)		
1	DVL	IN-REGION	SURFACE
2	Flex Storage		
3	Conjunctive Use/Cyclic		GROUNDWATER
4	SWP Carryover	OUT-OF-REGION	SURFACE
5	Lake Mead ICS		
6	Banking Programs		GROUNDWATER

FIGURE 3-3

WSDM Plan Drought Action Priorities

PRIORITY	DROUGHT ACTION (WITHDRAW)		
1	DVL*		
2	Banking Programs	OUT-OF-REGION	GROUNDWATER
3	Lake Mead ICS		SURFACE
4	SWP Carryover		
5	Conjunctive Use/Cyclic	IN-REGION	GROUNDWATER
6	Flex Storage		SURFACE

* DVL is a flexible supply for meeting a shortage. The amount drawn in this first step will depend on the severity of the shortage and the overall condition of other resources.

The WSDM Plan also allows for flexible implementation as other factors must be considered when making storage decisions to maximize future reliability. These factors include starting storage balances, program terms, costs, and the timing, volumes, and location of supplies that can be unique to each year.

The WSDM Plan also includes other actions, such as acquiring additional water transfers. In 2019, it is estimated that up to 80,000 acre-feet of additional SWP supplies from the Yuba Dry-Year Water Purchase Program and the State Water Contractors Buyers Group could be transferred to Metropolitan at SWP allocations lower than 50 percent. Additional information on these transfer programs can be found in Appendix A.

Through strategic operations and effective resource management in previous years, calendar year 2019 benefits from a starting dry-year storage balance of approximately 2.5 million acre-feet. Calendar year 2019, along with future years, also benefit from lessons learned in previous extreme hydrologic years. These include understanding CRA operations at high and low flow extremes, the effectiveness of extraordinary drought actions to preserve supplies for areas that can only receive water from one source, strategies to quickly capture supplies to maximize storage, and strategies to balance the threat of spilling supplies with the threat of drought. Also, with the potential for multi-year drought and multi-year surplus, the strategies outlined in this plan consider not only the needs of 2019, but also potential needs of the years following. Collectively, these factors help inform the 2019 WSDM prioritization.

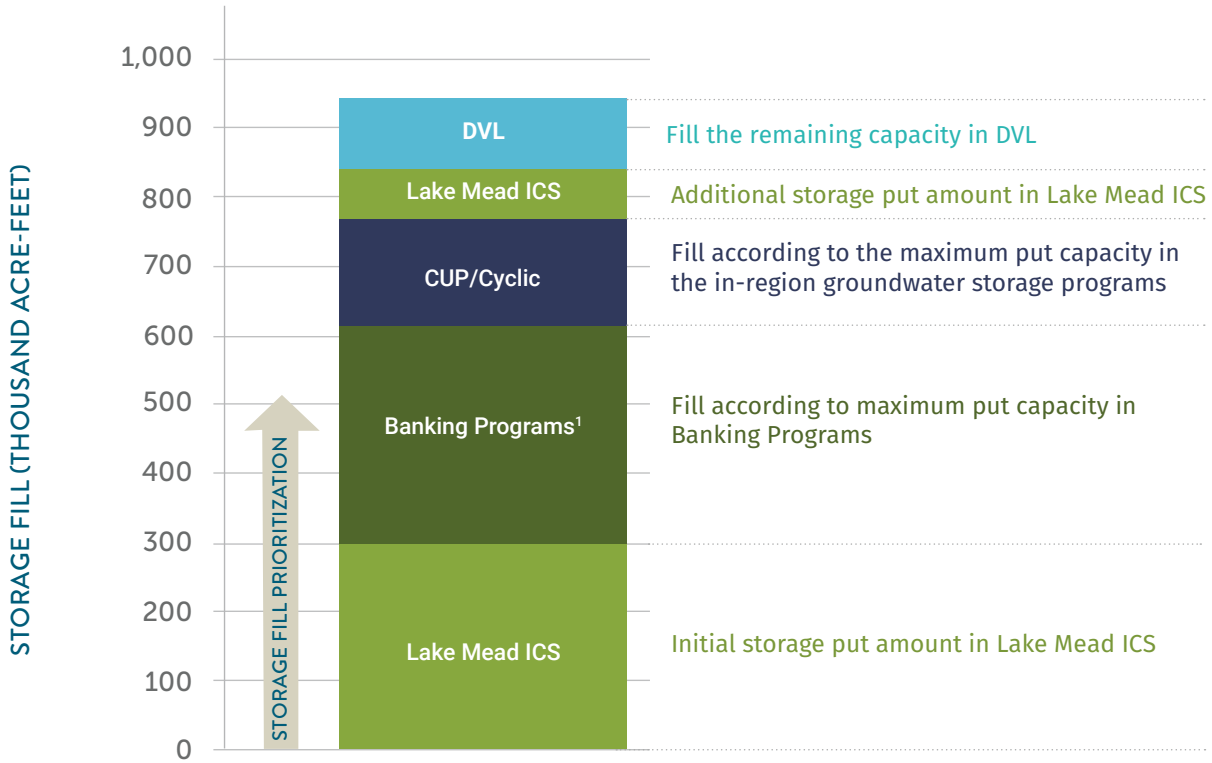
Metropolitan's Colorado River Aqueduct

Surplus Management

As shown in the 2019 water balance (Figure 3-1), the region may experience surplus conditions with SWP allocations over 45 percent, based on normal demands and without water transfers. The general surplus management strategy is to store water for the most effective use in the next drought. Based on current conditions, the 2019 WSDM principles for surplus follow a modified approach to the WSDM Plan. For example, since Flex Storage and SWP Carryover are essentially at capacity, these storage programs are not included in the 2019 surplus storage strategy as an available option. Also, as DVL is at a relatively high level at the start of 2019, it is beneficial to preserve space in the reservoir for operational flexibility throughout the year. Due to greater flexibility to fill/withdraw Lake Mead ICS, and to serve a larger demand area (e.g., areas largely dependent on SWP supplies) with Banking Programs, these programs place higher in the 2019 fill priority than in-region groundwater programs. Figure 3-4 illustrates the 2019 storage fill strategy under surplus conditions based on these modified WSDM surplus action priorities. This chart shows which storage accounts will be considered for filling first, and to what level, as a potential surplus in calendar year 2019 increases up to the remaining storage put capacity of over 900,000 acre-feet.

FIGURE 3-4

2019 Storage Fill Strategy Under Surplus Conditions



[1] Fill capacities vary by SWP allocation. For the purposes of this surplus strategy illustration, the fill capacities are based on an 80 percent SWP allocation.

Note that the storage fill strategy may follow an iterative process and does not require a complete fill of one resource before filling the next level priority resource. The fill amount for each storage account is based on starting storage conditions and the 2019 fill capacity. The order shown in Figure 3-4 also assumes successful implementation of the DCP that allows access to Lake Mead storage in shortage conditions. Without the DCP, the priority of storing water in Lake Mead would be lower.

This strategy to fill storage in potential surplus conditions in 2019 provides a general framework and guide, and is not meant to be prescriptive. In fact, several actions are likely to be taken concurrently. For example, in January 2018, Metropolitan continued adding to Banking Programs and CUP/Cyclic storage as a transition from the surplus water condition in 2017. Metropolitan may also strategically reposition storage in 2019 to allow for increased flexibility in the future. For example, SWP Carryover storage, which is currently relatively full and therefore not included in Figure 3-4 as a storage fill option, may be taken early in the year to avoid spilling, then refilled later in the year to build storage for 2020.

As exemplified in previous wet years like 2017, Metropolitan in coordination with its member agencies and regional partners, will continue to strategically maximize storage under surplus conditions to help meet the future needs of the region.

Deliveries at Whitewater River near the 10 Freeway

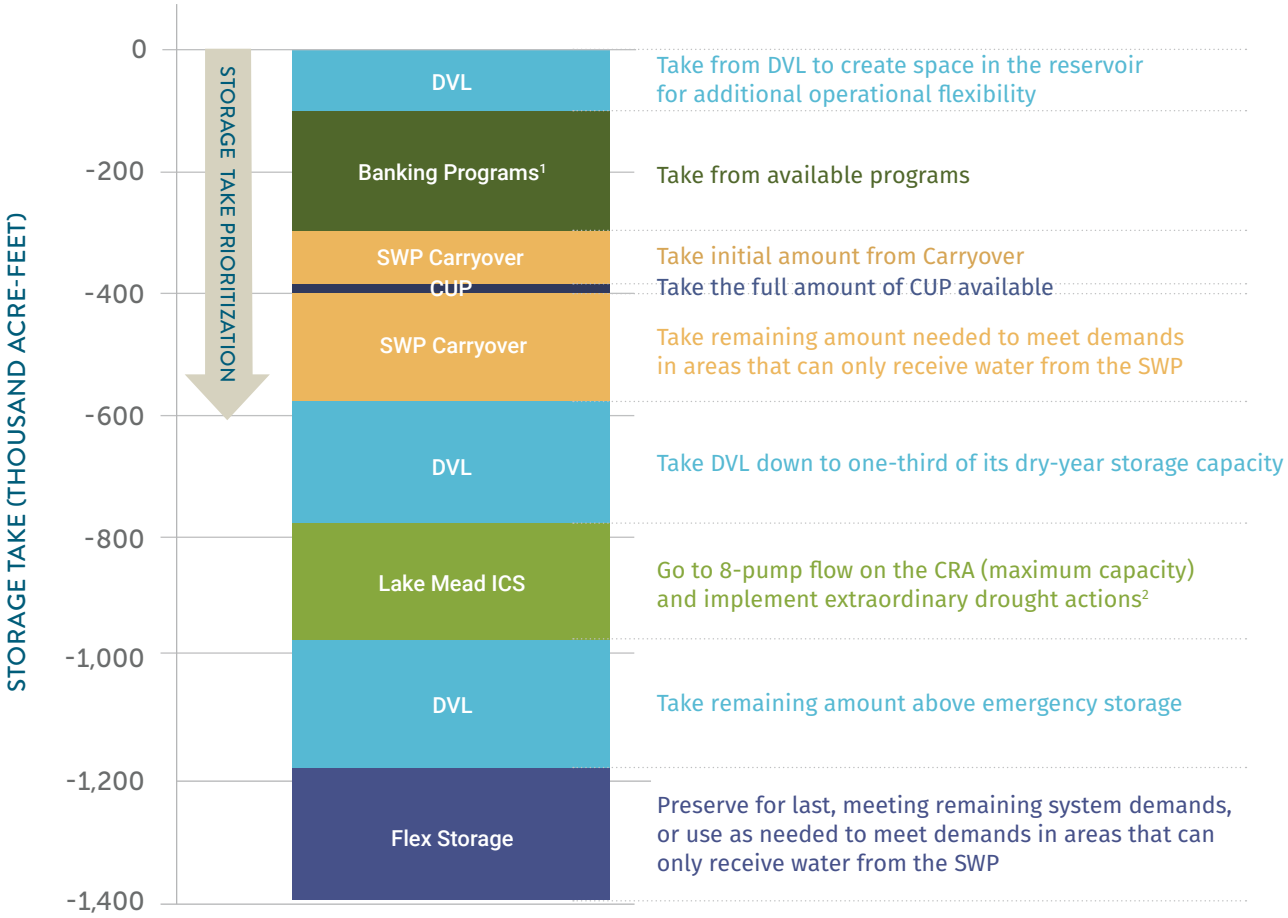
Drought Management

Storage reserves built in surplus years are essential for ensuring reliability for the region in times of drought. Metropolitan's high storage level maintained in 2018 provides a significant advantage to managing potential 2019 shortage conditions under low SWP allocations. Additionally, the 2019 water balance and early winter conditions in the Northern Sierra watershed indicate that a deep shortage is unlikely. These favorable conditions, along with strategic resource management and operations, will help protect the region in 2019 and during a potential future extended drought.

The 2019 WSDM principles under drought conditions follow similar principles outlined in the WSDM Plan. Figure 3-5 illustrates the prioritization and level of storage withdrawals under shortage conditions in 2019. Again, the prioritization is not prescriptive and may be adjusted based on resource and operational conditions throughout the year.

FIGURE 3-5

2019 Storage Take Strategy Under Shortage Conditions



[1] Take capacities vary by SWP allocation. For the purposes of this drought strategy illustration, the take capacities are based on a 20 percent SWP allocation.

[2] Extraordinary drought actions may include postponing currently scheduled CRA maintenance.

In the scenario of a 20 percent allocation, with additional SWP transfers, and normal demands, approximately 400,000 acre-feet of storage would need to be withdrawn. Following the 2019 WSDM drought action priorities, this would be met by withdrawing about 100,000 acre-feet from DVL, 200,000 acre-feet from Banking Programs, 80,000 acre-feet from SWP Carryover, and 20,000 acre-feet from CUP. The amount remaining in storage would be available to meet the needs of a potential multi-year drought. These drought action priorities provide a general guideline and may be adjusted according to the actual conditions in 2019. For example, in a 10 percent SWP allocation and high demand scenario, Flex Storage may be withdrawn prior to Lake Mead ICS storage in order to meet demands in areas that can only receive water from the SWP. In other scenarios, Lake Mead ICS may be withdrawn concurrently with earlier storage take actions based on Colorado River watershed conditions and agricultural adjustments. Additionally, the storage strategy may follow an iterative process and does not require a complete withdrawal of one resource before withdrawing from the next level priority resource. Metropolitan may also reposition storage, including repositioning Lake Mead ICS storage, depending on the outcome of the DCP.

San Luis Reservoir, *Photo courtesy of DWR*

Diamond Valley Lake

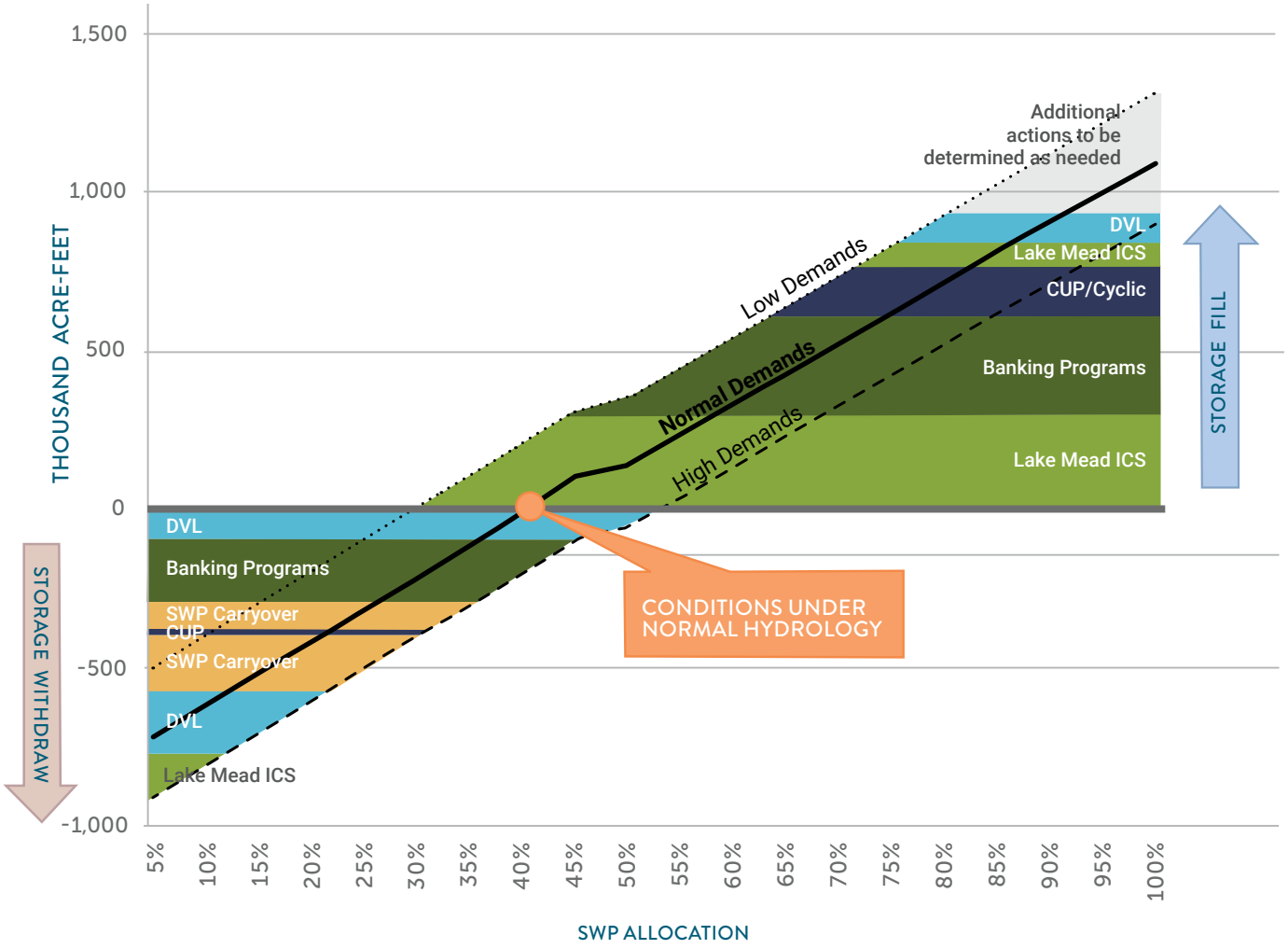
Putting it All Together

The wide range of potential supply and demand balances yield an equally wide range of possible storage operations in 2019. The extent of potential operating scenarios include withdrawing from storage reserves under SWP allocations lower than 40 percent (this includes transfers, which are not included in Figure 3-1), to completely filling the remaining storage put capacity under wet conditions.

Figure 3-6 combines the 2019 water balance and WSDM priorities to illustrate the overall 2019 WSDM strategy implementation across various demand and supply ranges.

FIGURE 3-6

2019 WSDM Strategy Implementation



The demand lines shown in Figure 3-6 illustrate the water supply (including transfers) and demand balance for each demand scenario across a range of SWP allocations. As the demand line crosses below zero on the y-axis, this indicates shortage. Conversely, as the demand line rises above zero on the y-axis, this indicates surplus. Points along the demand line indicate which resources will be withdrawn or filled and to what amounts.

For example, following the normal demand scenario line to where it intersects with the 40 percent SWP allocation, Figure 3-6 shows that supplies would nearly equal demands with potentially a very slight put to Lake Mead ICS.

More detailed examples of storage operations under a range of SWP allocations are in Appendix D.

Metropolitan maintained relatively high storage reserves in 2018 and strategically placed the region in a favorable position to respond to uncertain supply conditions while continuing to meet demands. The 2019 WSDM strategies provide a framework for effective storage management and may be adjusted, or taken in slightly different quantities, to meet other operational objectives. In addition to supply and demand uncertainties, other variables may impact actual storage operations in 2019, such as shutdowns and system maintenance, availability of groundwater recharge facilities, and conveyance capacity constraints. With the 2019 WSDM strategy serving as a solid baseline, Metropolitan is well positioned to manage its resources, operate the system, and adapt to changing conditions.

Continued Reliability: Managing the System

Metropolitan will continue to take proactive steps in 2019 to ensure the necessary infrastructure is in place with staff ready to respond to any range of supply and demand conditions. Managing Metropolitan's system to meet member agency needs is a top priority and will be accomplished by ensuring a continued reliable and sustainable delivery of high quality water.

Power Systems Outlook

Moving into 2019, Metropolitan will continue to optimize the available energy from its contracts for power from the Hoover and Parker Hydroelectric Power Plants, along with other economic energy transactions, to meet CRA pumping needs.

Metropolitan currently estimates hydroelectric generation to be lower in 2019, as the Etiwanda Hydroelectric Power Plant, one Metropolitan's largest hydroelectric power plants, will be out of service for a large part of the year during the Etiwanda Pipeline Relining Project. Overall, operational variables such as system demand, storage management, minimum and maximum operating envelopes, and hydroelectric plant maintenance will affect hydroelectric power production. Metropolitan will continue to maximize hydroelectric power, while managing operational requirements and system conditions.

Water Quality and Treatment

Metropolitan will continue to treat and deliver water to its customers, meeting all applicable regulations. With an uncertain final SWP allocation, as well as a number of large shutdowns for system maintenance and improvements (to be discussed in the following section), Metropolitan anticipates treating a variety of source water blends in 2019. Under median hydrologic conditions (40 percent SWP allocation) and normal demands, blends at the Weymouth, Diemer, and Skinner plants are anticipated to be zero percent during the first quarter of 2019 and 25-60 percent for the remainder of the year. Blends may increase or decrease during the year based on supply, demand, and operational conditions. With ozone as the primary disinfectant at all of Metropolitan's treatment plants, a wide range of source water blends can be reliably treated, from 100 percent SWP water to 100 percent Colorado River water. Metropolitan will also seek to meet its TDS goal of 500 mg/L (as a running annual average) at its blend plants, when system conditions allow. Metropolitan will continue to work closely with member agencies when making blend changes and on other water quality issues that may affect downstream use of the delivered water. In addition, Metropolitan will continue its comprehensive source water monitoring program, including managing taste-and-odor and quagga mussels in the system.

Maintenance and System Shutdowns

Metropolitan will continue to ensure its water distribution system is adequately maintained and will implement projects that will enhance the reliability of Metropolitan's delivered supplies. Metropolitan staff will manage shutdowns to minimize impacts to member agency deliveries. Metropolitan's fiscal year 2018/19 shutdown season is underway, and Metropolitan staff continues to work closely with member agencies to schedule and successfully implement shutdowns for vital work within the system. The 2018/19 Shutdown Schedule was published in September 2018 and distributed to member agency managers. These schedules may change over the course of the season, and Metropolitan staff will communicate these changes with affected member agencies. Major shutdowns planned for the 2018/19 season are highlighted below.

- As part of Metropolitan's Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program, a portion of the Sepulveda Feeder was inspected during an eight-day shutdown in August 2018. As a result of that inspection, urgent repairs were made on that portion of the feeder during a 16-day shutdown in January 2019.
- Following the rehabilitation of the Palos Verdes Reservoir, preparations began in November 2018 to return the reservoir back in service. In January 2019, the Second Lower Feeder was shut down for seven days to remove bulkheads so that disinfection of the reservoir can begin. The reservoir is expected to be back in service in March 2019.
- The Foothill Feeder will be shut down for 21 days in February 2019 to perform a PCCP inspection. During this shutdown, downstream facilities will have no flow, including the Jensen plant and the Sepulveda Feeder. The Greg Avenue Pumping Facility will be utilized to supply water to several agencies downstream of the Jensen plant.
- The lower portion of the Orange County Feeder will be shut down for relining from February through August 2019.
- The Etiwanda Pipeline will be out of service for relining from August 2019 to September 2020.
- The CRA will be shut down in March 2019 for 25 days to perform repairs, maintenance, and tunnel cleaning.
- Beginning in March and continuing through September 2019, a portion of the Second Lower Feeder, as part of Metropolitan PCCP Rehabilitation Program, will be out of service for relining and inspection. The overall PPCP rehabilitation of the Second Lower Feeder will be completed in phases over a period of 8 to 10 years. Metropolitan provides up-to-date information on the construction status of this major project at the following webpage:

  http://www.mwdh2o.com/AboutYourWater/CapitalProjects/Pages/Second_Lower_Feeder.aspx

The 2018/19 Shutdown Schedule is included in Appendix E.

Starting 2019 with repairs on the Sepulveda Feeder, January 4, 2019
Photo taken by Salvador Vazquez

CHAPTER 4

Conclusions

Looking Back

Strategic operations in 2018 allowed Metropolitan to maintain a high level of storage reserves and optimal starting conditions for 2019. How 2019 ultimately unfolds may bring the need to pull hundreds of thousands of acre-feet from storage reserves in drought conditions, or add water to storage in surplus conditions. The final 2019 water balance will be largely driven by the SWP allocation and member agency demands, which will in turn govern the operations of the system. In low SWP allocation conditions, Metropolitan will operate the system to strategically utilize SWP supplies, while maximizing Colorado River water deliveries. These operations would shift in high SWP allocation conditions to maximizing deliveries and storage of supplies.

Looking Forward

Although the SWP allocation as of January 25, 2019 is 15 percent, which is five percent lower than the previous year's allocation at this time, the January 2019 snow survey results are more promising than last year and there are opportunities for further improvement in conditions as the year progresses. The current forecast estimates a 40 percent SWP allocation in median hydrologic conditions, which, including additional transfers, results in nearly balanced supply and demand conditions under normal demands (estimated at 1.77 million acre-feet for calendar year 2019). Under normal demands, Metropolitan expects to store water if the SWP allocation exceeds 40 percent, and to pull from storage if the SWP allocation is below 40 percent.

Continued Reliability

Regardless of the conditions that may materialize in 2019, this Annual Operating Plan, built upon Metropolitan's core operating principles, provides strategies for optimal capture of surplus amounts of water in normal to wet conditions, and effective use of stored water in shortage conditions. Metropolitan will continue to work in close coordination with its member agencies and regional partners to adapt to the needs of 2019, manage the power system and optimize power generation, and proactively perform preventive and corrective maintenance.

Overall, through a range of forecasted conditions in 2019, Metropolitan will continue delivering high-quality water to meet its member agency demands, strategically operate and manage its portfolio of resources, and maintain a robust water system for continued reliability. Metropolitan's effective planning, operations, and investments ensure the region is ready for 2019 and beyond.

Sepulveda Feeder repairs
Photo taken by Salvador Vazquez

City of Anaheim

City of Beverly Hills

City of Burbank

City of Compton

City of Fullerton

City of Glendale

City of Long Beach

City of Los Angeles

City of Pasadena

City of San Fernando

City of San Marino

City of Santa Ana

City of Santa Monica

City of Torrance

Calleguas Municipal Water District

Central Basin Municipal Water District

Eastern Municipal Water District

Foothill Municipal Water District

Inland Empire Utilities Agency

Las Virgenes Municipal Water District

Municipal Water District of Orange County

San Diego County Water Authority

Three Valley Municipal Water District

Upper San Gabriel Valley Municipal Water District

West Basin Municipal Water District

Western Municipal Water District of Riverside County

Metropolitan is a voluntary cooperative of 26 member agencies with a 38-member Board of Directors. Metropolitan board and committee meetings are open to the public and broadcast live through mwdh2o.com.

APPENDIX A: IMPORTED SUPPLIES

State Water Project Supplies

Table A Contract Amount: Metropolitan's basic contract amount is for 1,911,500 acre-feet. This represents the amount of water supply that would be available to Metropolitan in years where there is sufficient water supply for the SWP to deliver 100 percent of its total contract amounts. The amount of supply available, which depends on hydrologic conditions, operating constraints, and high priority water user demands, is allocated to the SWP contractors based on their proportionate Table A amounts on an annual basis. As a percentage of total contract amounts, annual SWP allocations have ranged from 5 to 100 percent of the Table A contract amounts.

Article 21 Interruptible Supplies: Metropolitan has a contract right to water supplies that are made available on an intermittent basis. Storm flows can occasionally make water supplies available that are in excess to the Table A allocation. SWP contractors can take delivery of these supplies, with their rights being based on their proportional Table A contract amounts. Historically, Article 21 interruptible supplies have ranged from 0 to 240,000 acre-feet annually.

Port Hueneme Agreement: Metropolitan has a long-term lease for up to 1,850 acre-feet per year of Table A supplies from Ventura County Watershed Protection District for the Port Hueneme Water Agency.

Colorado River Supplies

Basic Apportionment: The State of California holds a 4.4 million acre-feet normal apportionment to Colorado River water. Within the state's amount, Metropolitan has the Fourth Priority right to a normal apportionment of 550,000 acre-feet per year. Metropolitan also holds the Fifth Priority right for up to an additional 662,000 acre-feet per year, but this amount is outside of California's 4.4 million acre-feet per year normal apportionment and is only available when surpluses are declared or when unused supplies from other Colorado River users are available.

Imperial Irrigation District/Metropolitan Conservation Program: Since 1988, Metropolitan has funded water conservation programs within IID's service area. The conserved water from these programs is then transferred to Metropolitan. Conservation approaches include both structural and non-structural measures, including concrete lining of existing canals, construction of local reservoirs and spill-interceptor canals, the installation of non-leak irrigation gates, and delivering water to farmers on a 12-hour rather than a 24-hour basis. This program generates 105,000 acre-feet of conserved water; Coachella Valley Water District has the right to call up to 20,000 acre-feet of that amount.

Palo Verde Land Management and Crop Rotation Program: In 2005, Metropolitan entered into a 35-year program with the Palo Verde Irrigation District. Under the program, participating farmers in PVID are paid to reduce their water use by leaving up to 25,947 acres unirrigated. The conserved water from this program converts to ICS, which can be delivered to Metropolitan or stored in Lake Mead.

Imperial Irrigation District Exchange with San Diego County Water Authority: On April 29, 1998, SDCWA executed an agreement with IID to purchase conserved water. In order to deliver that water to SDCWA, Metropolitan and SDCWA entered into an exchange contract under which SDCWA makes the conserved water available to Metropolitan at Lake Havasu and Metropolitan delivers an equal amount of water from its own sources of supply through portions of its delivery system to SDCWA.

All-American Canal and Coachella Canal Lining Projects: The state of California, along with support from Metropolitan and SDCWA, funded the lining of portions of the All-American and Coachella canals. The lining conserves about 96,000 acre-feet of water annually that was being lost through the formerly unlined canals. Prior to 2017, Metropolitan purchased 16,000 acre-feet of the conserved water from the San Luis Rey Indian Tribe. A water rights settlement regarding this water was finalized in 2017, and now Metropolitan exchanges the water with the United States for use by the parties to the settlement agreement, which includes the San Luis Rey tribe. The remaining conserved water, approximately 80,000 acre-feet, is delivered to SDCWA via exchange with Metropolitan.

Lower Colorado Water Supply Project: In March 2007, Metropolitan, the City of Needles, and the United States Bureau of Reclamation executed the Lower Colorado Water Supply Project contract. Under the contract, Metropolitan purchases water that is unused by the project participants.

Intentionally Created Surplus Program: Under this program, Metropolitan may store conserved water in Lake Mead. Only water that has been conserved through extraordinary conservation measures, such as land fallowing, is eligible for storage in Lake Mead. These storage accounts are made up of water conserved by fallowing in the Palo Verde Valley, projects implemented with IID in its service area, groundwater desalination, the Warren H. Brock Reservoir Project and the Yuma Desalting Plant pilot run.

Agricultural Adjustment: Other users along the Colorado River have rights that allow their water use to increase as their demands for water increase. Since Metropolitan holds the lowest priority Colorado River rights in California, any increase in these Present Perfected Rights will reduce supply available to Metropolitan. In comparison, reduction in demand by agricultural contractors with higher Colorado River priorities results in an increase in supply available to Metropolitan.

Transfers and Exchanges

State Water Contractors Buyers Group: Each year, Metropolitan can enter into agreements with the State Water Contractors Buyers Group for water transfer supplies acquired from north of the Delta. Under these agreements, members of the State Water Contractors Buyers Group can coordinate discussions with potential transfer sellers to identify supplies that may be available. These transfers provide additional resources to either mitigate potential dry-year conditions or to increase storage.

Yuba Dry-Year Water Purchase Program: In December 2007, Metropolitan entered into an agreement with DWR for participation in the Yuba Dry-year Water Purchase Program. Under this program, water is made available for transfer. There are four components to this water purchase program, with differing transfer amounts and prices.

APPENDIX B: STORAGE PROGRAMS

IN-REGION

Diamond Valley Lake: Diamond Valley Lake is Metropolitan's largest surface storage reservoir and is located within Metropolitan's service area near the City of Hemet in Riverside County. Diamond Valley Lake has a total storage capacity of 810,000 acre-feet.

Flexible Storage: Metropolitan has SWP contract rights to withdraw up to 65,000 acre-feet of water in Lake Perris (East Branch terminal reservoir) and 153,940 acre-feet of water in Castaic Lake (West Branch terminal reservoir). These accounts provide Metropolitan with dry-year supply that is independent of the Table A allocation. Metropolitan can withdraw water from these reservoirs in addition to its allocated supply in any year on an as-needed basis. Withdrawn water must be replaced from supplies available to Metropolitan within five years of each withdrawal.

Conjunctive Use/Cyclic Storage Programs: Metropolitan has worked with local agencies to develop programs to increase local groundwater storage in the region. The Conjunctive Use and Cyclic Storage programs involve specific agreements for the storage of imported water with member agencies. Through these programs, Metropolitan can deliver water into groundwater basins in advance of agency demands and enhance groundwater recharge. In the case of the Conjunctive Use program, Metropolitan can call on these supplies when needed. In the case of the Cyclic Storage programs, the water is pre-delivered and paid for over time, based on an agreed-upon schedule.

OUT-OF-REGION

Article 14(B): DWR may deliver, at Metropolitan's request, allocated water that was curtailed due to necessary investigation, inspection, maintenance, repair, or replacement of SWP facilities to the extent that such water is then available and deliverable.

Article 56 Carryover: SWP contractors have the flexibility to store water in SWP conservation facilities and carry over those supplies from one year to the next. The annual amount that can be added to storage in a given year is dependent on the SWP allocation. There is a risk, however, of losing some of these stored supplies should San Luis Reservoir fill.

Lake Mead Intentionally Created Surplus Program: Under this program, Metropolitan may store conserved water in Lake Mead. Only water that has been conserved through pre-approved extraordinary conservation measures, such as land fallowing, is eligible for storage in Lake Mead. Conservation programs approved to create conserved water that can be saved in Lake Mead include the following Metropolitan funded projects and programs: fallowing in the Palo Verde Valley, the Imperial Irrigation District Water Conservation program, groundwater desalination, and the Lower Colorado River Water Supply Project. The current storage account also includes water conserved from the Warren H. Brock Reservoir Project and the Yuma Desalting Plant pilot run; however, those amounts are fixed.

Banking Programs: Metropolitan has developed long-term storage agreements to utilize storage capacity in various groundwater storage basins in the San Joaquin Valley and Mojave Valley, collectively referred to as the SWP Banking programs. The put and take capacities are subject to percolation and pumping rates and in some cases tied to the SWP allocation. Metropolitan can expedite takes from many of these programs through Table A exchanges when those stored supplies are called upon in dry years.

Metropolitan also has an Advanced Delivery Account with the Desert Water Agency/Coachella Valley Water District. The Desert Water Agency and Coachella Valley Water District are both SWP contractors with no physical connection to SWP facilities. Both agencies are, however, adjacent to the CRA and are connected via the Whitewater River and the Mission Springs drainage basin. To enable DWCV to obtain their SWP supplies, Metropolitan entered into a long-term exchange contract in 1967, agreeing to take delivery of their SWP supplies and exchange an equal quantity of Colorado River water at the DWCV connections. In 1983, Metropolitan executed an Advanced Delivery Agreement with DWCV, allowing Metropolitan to supply them with Colorado River water in advance of DWCV developing their SWP supplies. Metropolitan can recover this water or satisfy their annual exchange contract obligation by reducing its Colorado River water deliveries to DWCV and deducting from the Advanced Delivery Account in any given year.

APPENDIX C: METROPOLITAN HYDROELECTRIC POWER PRODUCTION: 2017 AND 2018

POWER PLANT	NAMEPLATE CAPACITY (MEGAWATTS)	2017 PRODUCTION (kWh)	2018 PRODUCTION (kWh)
Greg Ave.	1	2,200,000	0
Lake Mathews	5	1,700,000	24,300,000
Foothill Feeder	9	52,700,000	53,800,000
San Dimas	10	54,100,000	29,600,000
Yorba Linda	5	12,400,000	23,400,000
Sepulveda Canyon	9	21,800,000	12,300,000
Venice	10	2,200,000	0
Temescal	3	1,200,000	5,000,000
Corona	3	1,100,000	6,500,000
Perris	8	31,900,000	18,600,000
Rio Hondo	2	0	3,100,000
Coyote Creek	3	0	0
Red Mountain	6	33,500,000	23,200,000
Valley View	4	0	0
Etiwanda	24	82,400,000	70,700,000
Wadsworth (DVL)	30	23,700,000	3,700,000
TOTAL	**131**	**320,900,000**	**274,200,000**

APPENDIX D: EXAMPLE 2019 STORAGE SCENARIOS

TABLE D-1

2019 20% SWP ALLOCATION AND HIGH DEMAND SCENARIO[1]

Example Only - All numbers in TAF

SUPPLY	
SWP Allocation	20%
SWP Supply	382
Port Hueneme	0
Article 21	0
SWP Transfers	25
CRW Base Supply	949
CRW Exchanges	0
CRW Agricultural Adjustment	0
TOTAL SUPPLY	**1,356**

DEMAND	
Consumptive	1,669
Replenishment	177
Total Deliveries to Member Agencies	1,846
Obligations	51
Losses	65
TOTAL DEMAND	**1,962**

STORAGE	BEGINNING	CHANGE	ENDING	TOTAL STORAGE CAPACITY
IN-REGION SURFACE STORAGE				
Lake Mathews	141	0	141	182
Lake Skinner	37	0	37	44
DVL	702	-139	563	810
Castaic Flex	154	0	154	154
Perris Flex	65	0	65	65
OUT-OF-REGION SURFACE STORAGE				
Lake Mead ICS	594	0	594	1,571
MWD SWP Carryover	256	-256	0	300
DWCV SWP Carryover	0	0	0	49
BANKING PROGRAMS				
Arvin-Edison	154	0	154	389
Semitropic	187	-54	133	350
Kern-Delta	138	-40	98	250
Mojave	18	-9	9	330
Antelope Valley - East Kern	9	-9	0	30
DWCV Account	235	-84	151	800
CONJUNCTIVE USE/CYCLIC STORAGE				
Conjunctive Use	48	-15	33	213
Cyclic Storage	43	0	43	140
OTHER EMERGENCY STORAGE	328	0	328	328
TOTAL STORAGE	**3,109**	**-606**	**2,503**	**6,005**
TOTAL WSDM STORAGE	**2,483**	**-606**	**1,877**	**5,379**

AVERAGE BLENDING AT THE WEYMOUTH, DIEMER, AND SKINNER TREATMENT PLANTS	
January - March	0%
April - June	5%
July - September	15%
October - December[2]	35%

[1]Totals may differ due to rounding

[2]Fourth quarter blends high due to Fall shutdown work

TABLE D-2

2019 40% SWP ALLOCATION AND NORMAL DEMAND SCENARIO[1]

Example Only - All numbers in TAF

SUPPLY	
SWP Allocation	40%
SWP Supply	765
Port Hueneme	1
Article 21	0
SWP Transfers	49
CRW Base Supply	949
CRW Exchanges	0
CRW Agricultural Adjustment	0
TOTAL SUPPLY	**1,764**
DEMAND	
Consumptive	1,507
Replenishment	137
Total Deliveries to Member Agencies	1,644
Obligations	51
Losses	66
TOTAL DEMAND	**1,760**

STORAGE	BEGINNING	CHANGE	ENDING	TOTAL STORAGE CAPACITY
IN-REGION SURFACE STORAGE				
Lake Mathews	141	0	141	182
Lake Skinner	37	0	37	44
DVL	702	0	702	810
Castaic Flex	154	0	154	154
Perris Flex	65	0	65	65
OUT-OF-REGION SURFACE STORAGE				
Lake Mead ICS	594	4	598	1,571
MWD SWP Carryover	256	0	256	300
DWCV SWP Carryover	0	0	0	49
BANKING PROGRAMS				
Arvin-Edison	154	0	154	389
Semitropic	187	0	187	350
Kern-Delta	138	0	138	250
Mojave	18	0	18	330
Antelope Valley - East Kern	9	0	9	30
DWCV Account	235	0	235	800
CONJUNCTIVE USE/CYCLIC STORAGE				
Conjunctive Use	48	0	48	213
Cyclic Storage	43	0	43	140
OTHER EMERGENCY STORAGE	328	0	328	328
TOTAL STORAGE	**3,109**	**4**	**3,113**	**6,005**
TOTAL WSDM STORAGE	**2,483**	**4**	**2,487**	**5,379**

AVERAGE BLENDING AT THE WEYMOUTH, DIEMER, AND SKINNER TREATMENT PLANTS	
January - March	10%
April - June	25%
July - September	25%
October - December[2]	60%

[1]Totals may differ due to rounding

[2]Fourth quarter blends high due to Fall shutdown work

TABLE D-3

2019 60% SWP ALLOCATION AND LOW DEMAND SCENARIO[1]

Example Only - All numbers in TAF

SUPPLY	
SWP Allocation	60%
SWP Supply	1,147
Port Hueneme	1
Article 21	0
SWP Transfers	0
CRW Base Supply	949
CRW Exchanges	0
CRW Agricultural Adjustment	0
TOTAL SUPPLY	**2,097**

DEMAND	
Consumptive	1,322
Replenishment	88
Total Deliveries to Member Agencies	1,410
Obligations	51
Losses	90
TOTAL DEMAND	**1,551**

STORAGE	BEGINNING	CHANGE	ENDING	TOTAL STORAGE CAPACITY
IN-REGION SURFACE STORAGE				
Lake Mathews	141	0	141	182
Lake Skinner	37	0	37	44
DVL	702	0	702	810
Castaic Flex	154	0	154	154
Perris Flex	65	0	65	65
OUT-OF-REGION SURFACE STORAGE				
Lake Mead ICS	594	270	864	1,571
MWD SWP Carryover	256	0	256	300
DWCV SWP Carryover	0	0	0	49
BANKING PROGRAMS				
Arvin-Edison	154	0	154	389
Semitropic	187	54	241	350
Kern-Delta	138	27	165	250
Mojave	18	0	18	330
Antelope Valley - East Kern	9	9	18	30
DWCV Account	235	186	421	800
CONJUNCTIVE USE/CYCLIC STORAGE				
Conjunctive Use	48	0	48	213
Cyclic Storage	43	0	43	140
OTHER EMERGENCY STORAGE	328	0	328	328
TOTAL STORAGE	**3,109**	**546**	**3,655**	**6,005**
TOTAL WSDM STORAGE	**2,483**	**546**	**3,029**	**5,379**

AVERAGE BLENDING AT THE WEYMOUTH, DIEMER, AND SKINNER TREATMENT PLANTS	
January - March	25%
April - June	75%
July - September	75%
October - December	75%

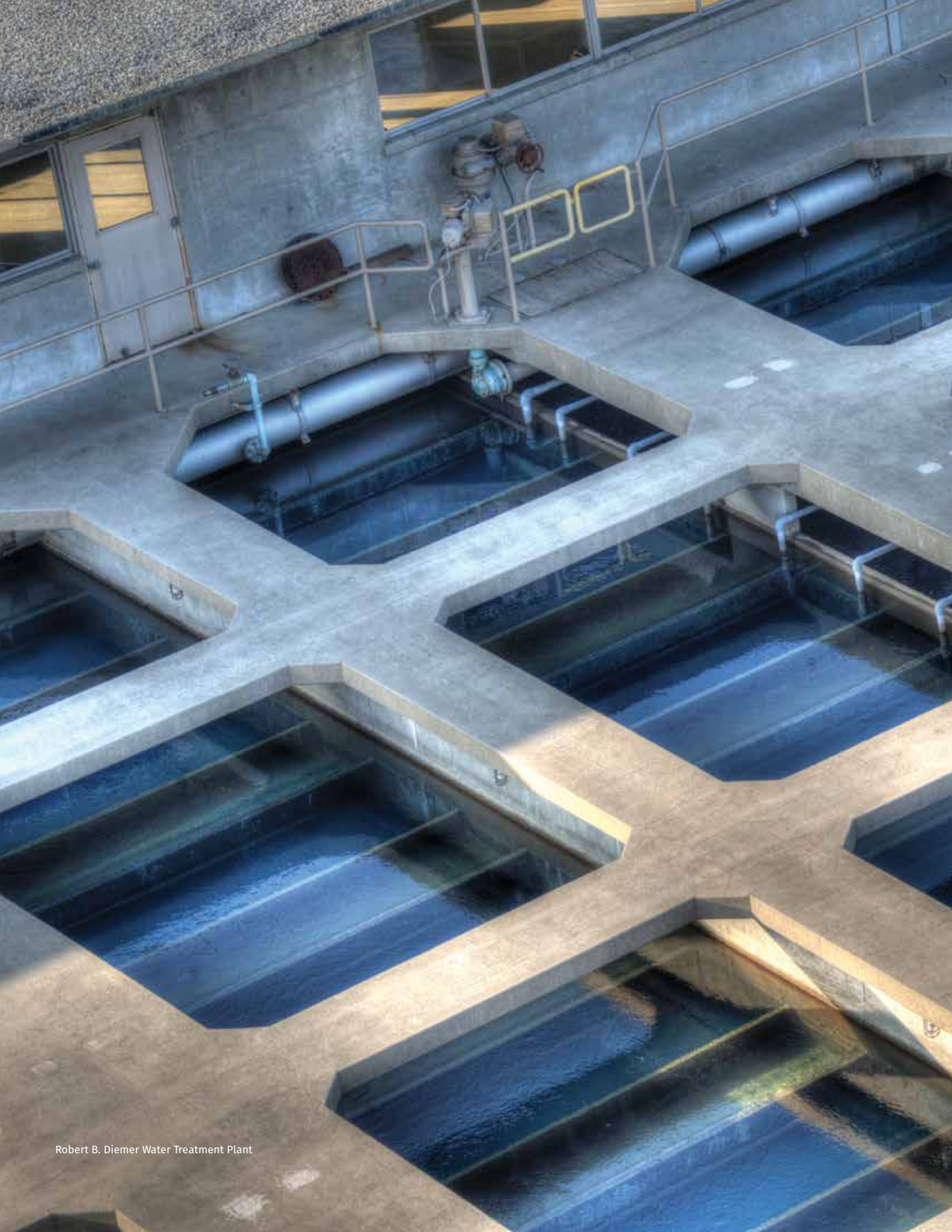
[1]Totals may differ due to rounding

APPENDIX E: FISCAL YEAR 2018/2019 SHUTDOWN SCHEDULE

PIPELINE/FACILITY	DATES	PURPOSE
Wadsworth Pumping/Power Plant	July 16 - December 24, 2018	Upgrade pumps and hydroelectric power units control systems
Middle Feeder	July 18-22, 2018	Inspect and repair pipelines inside Rio Hondo Pressure Control Structure
Sepulveda Feeder	July 30 - August 6, 2018	Perform PCCP inspection
Santa Monica Feeder	August 19-22, 2018	Replace two pipeline flanges for insertion and extraction points for the SmartBall inspection device
Etiwanda Pipeline	September 9-23, 2018	Inspect lining and influent meters
Box Springs Feeder **Mills Water Treatment Plant** **Perris Valley Pipeline**	October 3-4, 2018	Repair pipeline #2 and #6 in the Rio Hondo PCS
Middle Feeder	October 8-14, 2018	Abandon 4-inch underdrain at Deodara Interconnection Structure
San Diego Pipeline 5	November 4-13, 2018	• Install bulkheads for SDCWA's Pipeline 5 relining project • Perform PCCP inspections
Palos Verdes Feeder	November 5-10, 2018	Install new meter and valve
Palos Verdes Reservoir	November 5, 2018 - February 16, 2019	Perform return to service work including disinfection and startup procedures
Box Springs Feeder **Mills Water Treatment Plant** **Perris Valley Pipeline**	November 6-7, 2018	Support DWR SAVPL Pipe Diver inspection
Diamond Valley Lake Facility	November 27, 2018 - January 31, 2019	Remove the existing epoxy lining and apply polyuerthane lining to pumphouse conduits, pumphouse manifold and pressure control conduits
Rialto Pipeline	December 3-12, 2018	• Replace valves at Service Connections CB-12 and CB-16 • Perform PCCP inspections

PIPELINE/FACILITY	DATES	PURPOSE
Box Springs Feeder Mills Water Treatment Plant Perris Valley Pipeline	December 4-6, 2018	Support DWR SAVPL repair
Santa Monica Feeder	December 16-22, 2018	Perform urgent leak repairs
Sepulveda Feeder	January 3-18, 2019	PCCP relining urgent repair
Palos Verdes Feeder	January 7-8, 2019	Install new 36-inch BFV
Second Lower Feeder	January 28-February 3, 2019	Remove bulkheads and disinfect piping prior to Palos Verdes Reservoir disinfection
Perris Bypass Pipeline	January 22-29, 2019	Perform PCCP inspection
Box Springs Feeder Mills Water Treatment Plant Perris Valley Pipeline	January 23- 28, 2019	Perform PCCP inspection
Foothill Feeder San Fernando Tunnel Jensen Water Treatment Plant Sepulveda Feeder East Valley Feeder West Valley Feeder 1 West Valley Feeder 2 Calabasas Feeder	February 2-22, 2019	Perform PCCP inspection
Orange County Feeder	February 18-August 9, 2019	Perform lining repairs
San Diego Pipeline 1 San Diego Pipeline 2	February 24-March 5, 2019	SDCWA to install bulkheads and perform internal assessment
Colorado River Aqueduct	March 5-29, 2019	• Install surge chamber bypass covers • Replace liner at Iron Mountain Reservoir and canal • Perform tunnel cleaning

PIPELINE/FACILITY	DATES	PURPOSE
San Diego Canal	March 8- 15, 2019	Perform cleaning of siphons along the canal
Second Lower Feeder	March 11-September 13, 2019	• Perform PCCP rehab on Reach 4 • PCCP inspection of Reach 5
San Diego Pipeline 5	March 24-April 1, 2019	Remove bulkheads, reactivate SDCWA Pipeline 5 and bring SDCWA's Crossover Pipeline back to normal operation
Box Springs Feeder **Mills Water Treatment Plant** **Perris Valley Pipeline**	March 25-28, 2019	Perform electrical upgrades at the Mills plant
San Diego Pipeline 1	April 2-May 2, 2019	• Inspect of Reinforced Concrete and Metallic Pipe • Perform coating repairs to open vent structures
Santa Monica Feeder	April 15-18, 2019	Install internal bands to repair leaks
San Marino Lateral	April 21-25, 2019	• Replace plugs on meter components within SMR-01 structure • Relocate sample tap
San Diego Pipeline 2	May 6-June 7, 2019	• Inspect Reinforced Concrete and Metallic Pipe • Perform coating repairs to open vent structures



Robert B. Diemer Water Treatment Plant

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

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