



*The Metropolitan Water District of Southern California*

The Regional Urban Water Management Plan  
for  
The Metropolitan Water District  
of Southern California

Executive Summary

July 1985

THE REGIONAL URBAN WATER MANAGEMENT PLAN

FOR

THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA

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## EXECUTIVE SUMMARY

of

The Metropolitan Water District  
of Southern California

### THE REGIONAL URBAN WATER MANAGEMENT PLAN

This report consists of 12 chapters and two appendices. Each of these is briefly described in this executive summary.

#### CHAPTER I: INTRODUCTION

This chapter explains the need for Metropolitan's Regional Urban Water Management Plan and provides a format for the remainder of the report. The report has been prepared as a result of the Urban Water Management Planning Act (Act), Water Code Sections 10610 through 10656, Statute 1983, Chapter 1009, and became effective on January 1, 1984. The Act was known as AB 797 while pending before the Legislature.

Although Metropolitan is not required to prepare an urban water management plan, it has prepared the regional plan at the request of its member agencies under the discretion granted in Section 10620 (c). The plan includes a description of those water conservation and water management activities that Metropolitan currently conducts or may conduct within the next five years on a regional basis in cooperation with its member agencies, and potential programs to increase the dependable supply of water available to Metropolitan. It does not include a discussion of the activities being conducted by

Metropolitan's member agencies or subagencies. Local activities will be included in plans prepared by those agencies. It is anticipated that many of the urban water suppliers in Metropolitan's service area will use the information in this plan in developing their local plans. However, participation in any regional planning activity is voluntary.

CHAPTER II: SECTION 10631(a): PAST, CURRENT, AND PROJECTED WATER USE

This chapter begins by explaining that The Metropolitan Water District of Southern California was created for the purpose of meeting the supplemental water demands of its member agencies. Supplemental water demands are that portion of the agencies' total water demands which cannot be met from local water supplies available to the member agencies. The three primary uses of supplemental water supplied by Metropolitan are domestic and municipal (or urban), agricultural, and groundwater replenishment. These three types of uses are expected to be the same in the future, although the amounts of water sold for each type of use, and the relative proportions of such uses, will probably change.

The remainder of Chapter II concerns water demands and supplies. The four major sources of water supply used to meet demands are local groundwater and surface supplies, water imported via the Los Angeles Aqueducts, the Colorado River Aqueduct, and the State Water Project. The following two tables show the major sources of water supply for

Metropolitan's member agencies. The figures in Table 1 are in acre-feet; whereas, percentages of major sources are presented in Table 2.

To ensure that Metropolitan's member agencies water needs are met in the future, it will be necessary to increase the dependable supply of water available to Metropolitan.

The existing and potential supplies available for use in Metropolitan's service area after allowance for system losses are summarized in Table 4. Each of the four sources of supplies is faced with potential or known reductions. The local supplies could be reduced as a result of contamination of groundwater basins. The Los Angeles Aqueducts supplies could be reduced as a result of litigation. The firm Colorado River supply will soon be reduced as a result of the U.S. Supreme Court decision. The State water supply will be reduced as a result of increased use of water in areas of origin.

As a result of these potential and impending reductions, Metropolitan's water supply will be much less dependable in the future than in the past, and the supply could vary significantly from year to year. Furthermore, future water supplies will be subject to uncertainty because of four factors: (1) annual variations in precipitation and runoff; (2) the timing and implementation of measures to obtain additional Colorado River water and additional State project water; (3) the effects of litigation, legislation, and administrative policies on changing rights to water; and (4) the need to construct additional

Table 1

Major Sources of Water Supply for Metropolitan's Member Agencies  
(Ten-year Average, 1974-75 Through 1983-84)  
(in acre-feet)

<u>Member Agencies</u>	<u>Local Water Supplies</u>	<u>Metropolitan's Deliveries 1/</u>	<u>Los Angeles Aqueducts</u>	<u>Total Water Supply</u>
Beverly Hills	517	13,124	0	13,641
Burbank	4,120	18,185	0	22,305
Central Basin MWD	151,350	100,192	0	239,787
Compton	4,667	3,004	0	7,671
Foothill MWD	6,210	8,300	0	14,510
Glendale	5,514	20,319	0	25,833
Las Virgenes MWD	289	10,953	0	11,242
Long Beach	28,090	40,004	0	68,094
Los Angeles	81,293	38,305	462,700	582,298
Pasadena	17,727	16,656	0	34,383
San Fernando	3,260	48	0	3,308
San Marino	4,667	12	0	4,679
Santa Monica	5,517	10,885	0	16,402
Three Valleys MWD	52,037	37,823	0	89,860
Torrance	10,880	17,506	0	28,386
Upper San Gabriel Valley MWD	141,603	32,926	0	154,529
West Basin MWD	43,491	163,329	0	174,291
Los Angeles County	496,948	531,571	462,700	1,491,219
Anaheim	32,986	24,273	0	57,259
Coastal MWD	886	32,847	0	33,733
Fullerton	12,265	17,865	0	30,130
MWD of Orange County	122,794	201,214	0	324,008
Santa Ana	26,322	12,447	0	38,769
Orange County	195,253	288,646	0	483,899
Eastern MWD	90,460	34,974	0	125,434
Western MWD of Riverside County	169,493	41,371	0	210,864
Riverside County	259,953	76,345	0	336,298
Chino Basin MWD	141,292	23,120	0	164,412
Calleguas MWD	23,330	65,532	0	88,862
San Diego CWA	99,477	358,816	0	458,293
Total	1,280,538	1,344,030	462,700	3,022,983

1/ Includes all deliveries by Metropolitan.

Table 2

Major Sources of Water Supply for Metropolitan's Member Agencies  
(Ten-year Average, 1974-75 Through 1983-84 in percent)

<u>Member Agencies</u>	<u>Local Water Supplies</u>	<u>Metropolitan's Deliveries 1/</u>	<u>Los Angeles Aqueducts</u>	<u>Total Water Supply</u>
Beverly Hills	4	96		100
Burbank	18	82		100
Central Basin MWD	60	40		100
Compton	61	39		100
Foothill MWD	43	57		100
Glendale	21	79		100
Las Virgenes MWD	3	97		100
Long Beach	41	59		100
Los Angeles	8	7	85	100
Pasadena	52	48		100
San Fernando	99	1		100
San Marino	100	0		100
Santa Monica	34	66		100
Three Valleys MWD	58	42		100
Torrance	38	62		100
Upper San Gabriel Valley MWD	79	21		100
West Basin MWD	20	80		100
Los Angeles County	33	36	31	100
Anaheim	58	42		100
Coastal MWD	3	97		100
Fullerton	41	59		100
MWD of Orange County	38	62		100
Santa Ana	68	32		100
Orange County	40	60	0	100
Eastern MWD	72	28		100
Western MWD of Riverside County	80	20		100
Riverside County	77	23	0	100
Chino Basin MWD	86	14		100
Calleguas MWD	26	74		100
San Diego CWA	22	78		100
Total	40	45	15	100

1/ Includes all deliveries by Metropolitan.

Table 4

Projected Water Supplies in Metropolitan's Service Area  
(in million acre-feet a year)

	<u>Year</u>		
	<u>1990</u>	<u>1995</u>	<u>2000</u>
<u>Dependable Water Supply</u>			
<u>Existing Facilities</u>			
Local Production	1.11	1.11	1.12
Los Angeles Aqueducts	0.47	0.47	0.47
Colorado River	0.45	0.45	0.45
State Water Project	<u>1.08</u>	<u>1.03</u>	<u>0.99</u>
Subtotal	3.11	3.06	3.03
<u>Potential Measures and Facilities</u> <u>to Increase Dependable Supply</u>			
Additional Colorado River Water	0.10	0.25	0.25
Additional Local Supply Developed Within Metropolitan	0.02	0.04	0.08
Coordination of State Water Project With Central Valley Project and Interim Purchase of Water from CVP	0.30	0.25	0.20
Facilities in the North, South, and Western Delta	0.00	0.16	0.25
Subtotal	<u>0.45</u>	<u>0.73</u>	<u>0.71</u>
Total	3.53	3.76	3.81
"Normal" Projection of Demand	3.35	3.48	3.61
"Extra" water for conjunctive use programs in groundwater basins, and implementation of Colorado River Banking Program	0.18	0.28	0.20



facilities to obtain and distribute additional amounts of State project water throughout Metropolitan's service area.

CHAPTER III: SECTION 10631(b): CURRENT WATER CONSERVATION MEASURES

The third chapter consists of a detailed discussion of Metropolitan's water conservation programs currently being conducted in its service area. These programs include in-school education, public information, and various promotional measures. The programs involve public participation and are coordinated with Metropolitan's member agencies and other organizations. In addition, many programs have been implemented which also contribute to the efficient use of water in Metropolitan's service area, but do not require direct public participation. Some of these programs, hereinafter called distribution system management or water management programs, include operational policies and procedures, (water audits of Metropolitan's distribution system, metering of deliveries at all service connections, valve exercising, leak detection, cathodic protection, and preventative maintenance), water reclamation (local projects), replenishment programs, and pricing to encourage efficient use of water. Each of the water conservation, distribution system management, and water management programs are presented in summary form in Table 5.

CHAPTER IV: SECTION 10631(c) and (d): ALTERNATIVE CONSERVATION MEASURES AND IMPLEMENTATION SCHEDULE

This chapter contains a description of Metropolitan's

Table 5

CURRENT WATER CONSERVATION MEASURES

<u>Activity</u>	<u>Description</u>
I Education and Public Information	
A. Elementary Schools	In-school education program for fourth and sixth grades to teach pupils to use water wisely. Other programs as requested.
B. High Schools and Colleges	Oral presentations and literature designed to promote water conservation.
C. Public Information	Nine separate activities to disseminate water conservation information.
II Promotional Measures	
A. Landscaping	
1. Literature, Films, and Speakers Bureau	Dissemination of information concerning low-water-use plants.
2. Demonstration Garden	Low-water-using demonstration gardens at Metropolitan's facilities.
3. Work with Nurseries	Distribution of literature to encourage low-water-using landscapes.
4. Urban Landscape Water Conservation Studies	Studies to provide data on potential savings in urban landscaping.
B. Water Saving Devices	Distribution of low-water-use devices to retrofit existing plumbing fixtures.
C. Work With Large Water Users	Work with large water users to encourage the use of low-water-using equipment.

Table 5 (Continued)

CURRENT WATER CONSERVATION MEASURES

Activity	Description
D. Work With Other Agencies	
1. State Agencies	Work with the Department of Water Resources to develop and coordinate programs.
2. Member Agencies	Coordinate water conservation activities with those of its member agencies.
3. Other Organizations	Coordinate water conservation activities with those of other organizations.
4. Conferences and Forums	Participation in conferences and forums which promote water conservation.
III Distribution System Management	
A. Water Audit	Perform weekly and monthly detailed water audits on entire distribution system.
B. Metering	Meter all water entering and leaving distribution system.
C. Meter Maintenance and Calibration	Meters checked, lubricated and calibrated every three months; complete maintenance and calibration every 12 months.
D. Corrosion Control	Extensive on-going corrosion control program to protect facilities and test chemicals and materials to determine their resistance to corrosion.
E. Valve Exercising	Valves maintained and exercised every six or 12 months depending on size.

Table 5 (Continued)

CURRENT WATER CONSERVATION MEASURES

<u>Activity</u>	<u>Description</u>
F. Leak Detection	Part of routine maintenance. Also consultants are hired periodically to detect and repair leaks throughout distribution system.
IV. Water Management	
A. Local Projects	Local projects program to assist in financing local projects to reclaim waste water.
B. Replenishment Programs	Direct and indirect replenishment program to optimize use of groundwater basins.
C. Pricing	Interruptible water service to encourage maximum use of existing supplies during shortages.

alternative conservation measures that could improve the efficiency of water use. An evaluation of their significant impacts is included in Chapter XII. Metropolitan has implemented many programs to encourage the efficient use of water. In addition, its member agencies and subagencies have implemented many water conservation programs which complement and enhance the regional water conservation programs. Metropolitan coordinates its programs with those of its member agencies and subagencies to assure maximum effectiveness and to help avoid duplication of effort. Table 6 shows programs that will be evaluated and possibly implemented within the next five years. Implementation of some of the alternative conservation measures may require approval by Metropolitan's Board of Directors.

CHAPTER V: SECTION 10631(e): FREQUENCY AND MAGNITUDE  
OF SUPPLY DEFICIENCIES, AND ABILITY TO MEET  
SHORT-TERM DEFICIENCIES

Chapter V consists of a description of the frequency and magnitude of Metropolitan's supply deficiencies, including conditions of drought and emergency, and the ability to meet short-term deficiencies. Since Metropolitan started delivering supplemental water to its member agencies, it has never experienced a supply deficiency and has had only one incident in which a voluntary cutback in supplemental demands was recommended. This cutback occurred to help mitigate the severe effects of the 1976-77 drought in other areas of the State.

However, the firm supply of water available to Metropolitan will not be as reliable in the future as it has

Table 6

ALTERNATIVE URBAN WATER CONSERVATION MEASURES

<u>Activity</u>	<u>Status</u>	<u>Description</u>
I. Education and Public Information		
A. Local Water Conservation Advisory Committees and Consultant	#	Future activities evaluated by consultant and additional committees formed as appropriate.
B. Conservation Literature		
1. General Water Conservation Brochure	#	Existing brochures and methods of distribution evaluated.
2. Landscape Brochure with Plant list	+	Additional brochures prepared as information from existing and future studies becomes available.
C. Promotional Measures		
1. Demonstration Low-Water-Using Landscapes	+	Encourage development of such landscapes and review Metropolitan's facilities.
2. Promotional Campaign with Nurseries	+	Increase efforts as information from existing and future studies becomes available.
3. Awards for Conservation Developments	+	Assist member agencies in developing local programs.
4. Device Distribution	+	May provide kits for retrofitting existing plumbing fixtures under annual program.
D. Work with Large Water Users	X	Will assist in developing programs to encourage efficient use by large water users such as turf-grass irrigators and industry.

Table 6 (Continued)

ALTERNATIVE URBAN WATER CONSERVATION MEASURES

<u>Activity</u>	<u>Status</u>	<u>Description</u>
E. Information on Federal and State Laws and Programs		Will be included in information made available through clearinghouse.
II. Water Management Programs		
A. Leak-Detection Program	+	May provide consultant services for member agencies.
B. Reclamation Program	+	May continue local projects programs. Projects will be reviewed on a case-by-case basis.
III. Other Alternative Water Conservation Measures		
A. Environmental Impact Reports and Statements	+	Will include discussion and recommendations on water conservation in review of environmental documentation.
B. Work With Other Agencies	+	Will continue to encourage efficient water use.
C. Water Emergency Plan	X	Will develop a water conservation plan which could be implemented during shortages or emergencies.

Key: X = will be implemented  
+ = Will increase effort  
# = Evaluate current efforts

been in the past, because the existing and potential additional supplies from each of the four sources of water available in Metropolitan's service area--local supply, Los Angeles Aqueducts, Colorado River, State Water Project--are faced with uncertainty. It should be noted that a dependable water supply is required to support the economy and the needs of the people of Southern California. Frequent or severe shortages would cause serious problems and are not acceptable. Tables 7 and 8 show a comparison of existing and potential water supplies available within Metropolitan's service area under three hydrologic conditions. The three conditions are: (1) years of average water supply conditions, in which an additional supply is available on an intermittent basis; (2) years during sustained dry periods (hydrologic conditions similar to those from 1928 to 1934), in which a reduced "dependable supply" is available; and (3) years of short-term severe drought (hydrologic conditions similar to the 1976-77 drought), in which the "probable minimum supply" is available. These three levels of supplies are compared to Metropolitan's projections of "normal" demand. Table 7 shows the existing water supplies under each of these conditions, and the shortages that could occur. Table 8 shows several potential additional water supplies, and how such supplies could reduce the shortages.

CHAPTER VI: SECTION 10632(a): WASTE WATER RECLAMATION

This chapter contains an explanation and evaluation of the additional water supplies which could be produced from



TABLE 7

Comparison of Existing Water Supply with Normal Projection of Demand  
in million acre-feet per year

	<u>Average Year Supply</u>			<u>Dependable Supply Repeat of 1928-34 Long-term Dry Period</u>			<u>Probable Minimum Supply Repeat of 1976-77 Short-term Drought</u>		
	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
<u>Water Supply</u>									
Local	1.11	1.11	1.12	1.11	1.11	1.12	1.11	1.11	1.12
Los Angeles Aqueducts	0.47	0.47	0.47	0.47	0.47	0.47	0.30	0.30	0.30
Colorado River*	0.39	0.42	0.45	0.45	0.45	0.45	0.45	0.45	0.45
State Project**	<u>1.51#</u>	<u>1.48#</u>	<u>1.48#</u>	<u>1.08</u>	<u>1.03</u>	<u>0.99</u>	<u>0.65</u>	<u>0.64</u>	<u>0.59</u>
Total	3.48	3.48	3.52	3.11	3.06	3.03	2.51	2.50	2.46
Normal Projection of Demand	<u>3.35</u>	<u>3.48</u>	<u>3.61</u>	<u>3.35</u>	<u>3.48</u>	<u>3.61</u>	<u>3.35</u>	<u>3.48</u>	<u>3.61</u>
Shortages	None	None	0.09	0.24	0.42	0.58	0.84	0.98	1.15
"Extra Water" Available for Exchange Agreements and Groundwater Storage	0.13	None	None	None	None	None	None	None	None

\* Colorado River water supply reduced in average year supply in 1990 and 1995 to reflect water delivered under the Desert and Coachella Exchange Agreements.

\*\* State Water Project supply includes entitlements of Desert and Coachella to be furnished under exchange agreements, as adjusted for each hydrologic condition.

# Assumes completion of Metropolitan facilities to distribute State project water. 1.20 million acre-feet is the maximum delivery capacity without construction of these facilities.

TABLE 8

Comparison of Existing and Potential Water Supply with Normal Projection of Demand  
in million acre-feet per year

	<u>Average Year Supply</u>			<u>Dependable Supply Repeat of 1928-34 Dry Period</u>			<u>Probable Minimum Supply Repeat of 1976-77 Drought</u>		
	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>	<u>1990</u>	<u>1995</u>	<u>2000</u>
<u>Water Supply</u>									
Existing	3.48	3.48	3.52	3.11	3.06	3.03	2.51	2.50	2.46
Potential									
Local Projects Developed within Metropolitan's Service Area	0.02	0.04	0.08	0.02	0.04	0.08	0.02	0.04	0.08
Chino Basin Groundwater Storage Program	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	0.07
Additional Colorado River Water	0.10	0.25	0.25	0.10	0.25	0.25	0.10	0.25	0.25
Additional State Project Water:									
Coordinated Operation Agreement	-0-	-0-	-0-	0.10	0.10	0.10	-0-	-0-	-0-
Interim CVP Water	0.20	0.15	0.10	0.20	0.15	0.10	0.20	0.15	0.10
Additional State Project Facilities in the Delta (Stage 1 and 2 for water supply, and water quality and environmental protections)	-0-	0.16	0.25 *	-0-	0.16	0.25*	-0-	-0-	-0-
Total	3.80	4.08	4.20	3.53	3.76	3.81	2.83	2.94	2.96
Normal Projection of Demand**	3.35	3.48	3.61	3.35	3.48	3.61	3.35	3.48	3.61
Shortages	None	None	None	None	None	None	0.52#	0.54#	0.65#
*Extra Water* Available for Exchange Agreements, Groundwater Storage, and Colorado River Banking	0.45	0.60	0.59	0.18	0.28	0.20	None	None	None

\* Up to 250,000 acre-feet depending upon which facilities are constructed and the timing of construction.

\*\* Demands may be lower during severe droughts due to implementation of short-term water conservation measures and increased public awareness.

# Shortages could be substantially reduced by implementation of short-term water management and water conservation measures. Short-term measures cannot be considered in long-term dependable supply.

increased waste water reclamation. Most of the chapter is devoted to Metropolitan's Local Projects Program. In order to encourage the construction of a greater number of reuse projects, Metropolitan in 1982 initiated a demonstration program entitled the "Local Projects Program" for joint-funding of the construction and operation of new waste water reclamation projects. However, because of fiscal uncertainties, no new funding is being provided at this time. Under this program, Metropolitan provides a portion of the capital local agencies require to finance a project. In return for its contribution, Metropolitan acquires ownership of the water supply yield of the project for some specified period of time. The water is then sold by Metropolitan, and for this purpose, Metropolitan charges a reclaimed water rate to the agency in the same manner as is charged for the delivery of fresh water. In order to encourage the use of reclaimed water, and because of its more limited use, the rate for reclaimed water is lower than the rate charged for potable water.

Having established the criteria for the local projects program Metropolitan then contacted its member agencies and invited them to submit projects for consideration in Metropolitan's program. Many proposals were received. After a review of these proposals, they were divided into three phases based on technical development, cost, and project yield. The Phase I projects are those in which the unit cost to Metropolitan is less than \$300 per acre-foot, the current or

near-term water use is greater than 100 acre-feet per year, and technical development is complete. The Phase II projects are those that do not meet one or more of the above three criteria. The Phase III projects are those that require development of a special policy or a nontypical financing arrangement. When initiated in 1982, there were 25 Phase I projects, 14 Phase II projects, and 6 Phase III projects. Many of these projects are very expensive with total capital costs including the cost to the member agency, ranging from \$180 to more than \$900 per acre-foot. These amounts do not include energy or operation and maintenance costs. This program is currently under review and future projects will be considered on a case by case basis. The Phase I projects as submitted by the local agencies in 1982 are included in Table 10.

CHAPTER VII: SECTION 10632(b): EXCHANGES OR TRANSFERS OF WATER

Chapter VII contains a discussion of past, existing, and potential exchanges or transfers of water on a short-term or long-term basis.

Currently, Metropolitan has several active exchange agreements and also has been involved with temporary exchanges in the past, including some carried out during the 1976-77 drought period. Metropolitan is also considering several proposals for future exchange agreements. Six proposals are discussed as well as some potential factors which could limit the amount of exchange.

Table 10

METROPOLITAN'S LOCAL PROJECTS PROGRAM

<u>Project Name</u>	<u>Phase I Proposed Project Yield (AF/Yr)</u>	<u>MWD Capital Contribution (\$1,000) (1982)</u>	<u>Total Capital Cost (\$1,000) (1982)</u>
Arlington Basin Desalter	5,600	0 <sup>1/</sup>	7,202
Bellflower Greenbelt	173	331	661
Cerritos Greenbelt	2,800	4,002	4,600
Gafner Greenbelt	520	404	807
Glendale Greenbelt	1,760	3,700	3,700
Green Acres	3,950	5,724	7,632
Hyperion/Chevron Industrial Demo.	1,130	654	654
Irvine Greenbelt	3,670	0 <sup>1/</sup>	4,400
Laguna Niguel Greenbelt	852	1,830	1,830
Las Virgenes Greenbelt (Phase I & II)	2,700	6,192	7,740
Los Robles/Conejo Creek Groundwater	235	300	400
Los Serranos Greenbelt	650	563	563
Lux Canyon Greenbelt	165	192	192
meadowlark Greenbelt	1,680	990	990
Pico Rivera Greenbelt	130	243	243
Pomerado Greenbelt	830	2,036	2,036
Rubidoux Greenbelt	500	650	750
San Juan Desalination	4,000	545	2,726
Santa Margarita Greenbelt	2,000	5,100	6,000
Sepulveda/Forest Lawn Greenbelt	1,050	1,362	1,678
Shadowridge Greenbelt	1,036	669	933
Simi Valley Greenbelt	3,300	6,200	6,200
South Laguna Greenbelt	859	2,555	7,130
Southeast Long Beach Greenbelt	130	330	330
Walnut Valley Greenbelt	2,000	2,376	8,371
Total	41,720	46,948	77,768

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<sup>1/</sup>Water Purchase Only.

CHAPTER VIII: SECTION 10632(c): MANAGEMENT OF WATER SYSTEM  
PRESSURE AND PEAK DEMANDS

In this chapter an explanation and evaluation of the management of Metropolitan's water system pressures and peak demands is discussed. These are two distinct subjects, and relate to two different aspects of the design of Metropolitan's distribution system. Pressure is one of the factors considered in determining the location to construct new distribution facilities, while peaking is considered when determining the size of the facility. Each of these topics is discussed separately in Chapter VIII.

CHAPTER IX: SECTION 10632 (d): INCENTIVES TO ALTER  
WATER USE PRACTICES

This chapter includes a discussion of incentives to alter water use practices, including fixture and appliance retrofit programs. As a wholesale water agency, Metropolitan does not normally work directly with retail water users. However, its promotional programs have included providing information to its member agencies and directly to the public on ways in which conservation can be achieved. The five principal methods which Metropolitan has used in order to alter water use practices include providing retrofit kits, distributing water conservation literature, establishing a speakers bureau, utilizing advertising, and by adopting price incentives through a special water rate structure.

CHAPTER X: SECTION 10632(e): PUBLIC INFORMATION  
AND EDUCATIONAL PROGRAMS

Chapter X includes a discussion of the public information and educational programs currently implemented and designed to promote water conservation awareness. Metropolitan has developed and implemented a broad range of public information and educational water conservation programs in its service area which are discussed briefly in this chapter. These programs are discussed in more detail in Chapter III.

CHAPTER XI: SECTION 10632(f): CHANGES IN PRICING, RATE  
STRUCTURES, AND REGULATIONS

The major topic of this chapter concerns Metropolitan's water rate structures and how the application of these structures have encouraged the efficient use of water. Metropolitan's current rate structures and future water rate structures that will be affected by recent legislation are presented.

In discussing Metropolitan's water rates, it is necessary to put them in context with the other elements of Metropolitan's income. As a public agency, Metropolitan does not operate to earn a profit. Also, it is exempt from many types of taxes. However, it has certain costs that must be paid each year, and consequently it must receive sufficient income to cover its costs. Metropolitan's primary source of income is revenue from the sale of water. Other sources include property taxes, annexation charges, power revenues, interest earnings, and miscellaneous income such as rent for land.

Water revenues and tax revenues are the two most important sources of income. Currently Metropolitan's water rates and tax rates are based on a "proportionate-use formula" that was adopted in 1979. The purpose of this formula is to provide an equitable method of allocating capital costs between water users and taxpayers. The basic concept of the proportionate-use formula is that funds collected through water rates cover all delivery costs, operations and maintenance, and a portion of capital costs representing the "used" capacity of Metropolitan's delivery system. Funds collected through tax levies cover the remaining capital costs which represent the "unused" capacity of the delivery system. The proportionate-use formula will remain in effect until fiscal year 1990-91 when a new rate structure will become effective. Under the new rate structure, Metropolitan will reduce its reliance on property taxes.

The supply of water to Metropolitan in the future will be less reliable than it has been historically. To encourage better utilization of existing local supplies, Metropolitan adopted an Interruptible Water Service Program, which became effective in July 1981. The program changed Metropolitan's water rates and the classification of water service. Previously, types of service were classified as domestic and municipal, groundwater replenishment, and agricultural. Under the new program, types of services are noninterruptible, interruptible, and emergency.



Noninterruptible water service consists of water delivered for domestic and municipal purposes that requires continuity of service. Interruptible service includes water delivered for agricultural purposes and the portion of water delivered for domestic and municipal purposes that could be interrupted or reduced for a short term, such as some of that for groundwater replenishment, in-lieu replenishment, surface storage, or seawater barrier projects. Emergency service is available only in the event a member agency cannot sustain the interruption which it had agreed to sustain and thus requires uninterrupted water deliveries to see it through the emergency.

The interruptible service program encourages member agencies with extra storage capacity in surface reservoirs or groundwater supplies to "bank" water which could be drawn upon when Metropolitan's imported supplies are deficient or when Metropolitan is faced with unusual operating conditions. Water that those member agencies would otherwise demand could then be delivered to member agencies that lack alternative supplies. By sharing local water resources, Metropolitan can better manage a short-term shortage.

CHAPTER XII: SECTION 10633: EVALUATION AND COST COMPARISON OF ALTERNATIVE WATER MANAGEMENT PRACTICES

The final chapter includes an evaluation of the "alternative water management practices" identified in this report. Included is an evaluation of economic as well as noneconomic factors including environmental, social, health,

customer, and technological impacts. Since no environmental documentation is required for preparation of this report, only a general discussion of potential impacts of each of the factors is included. In the discussion, social factors are those that refer to impacts on the populace in general in Metropolitan's service area, customer impacts are those related primarily to Metropolitan's member agencies, health factors are those which could affect the public health of the populace within Metropolitan's service area, and the technological factors refer to any constraints or limitations due to technology which could hinder implementation or reduce the efficiency of the program.

Two principal forms of alternative water management practices are discussed in Chapter XII. The first form includes nonstructural activities designed to reduce per-capita consumption in Metropolitan's service area. These activities include: (1) local water conservation advisory committees, (2) conservation literature, (3) promotional measures, (4) work with large water users, (5) information on federal and State laws and programs, (6) water loss reduction techniques, (7) water conservation studies, (8) environmental impact reports and statements, (9) work with other agencies, and (10) a water emergency plan. Environmental, social, health, customer, and technical impacts are discussed; however, cost comparisons or estimates of water savings for the individual activities are not included because it is not possible to

accurately determine the cost of, or water savings from each proposed program at this time. It is anticipated that the details of these programs will be developed with assistance from consultants and advisory committees; and therefore, only a general discussion of each program is included because specific details are not now available. The advisory committees will include representatives from Metropolitan's member agencies and others with special expertise or interests.

The second form of alternative water management practices are possible structural measures designed to either reduce water demands or to improve the efficiency of the use of existing water supplies. The possible structural measures consist of: (1) local projects, (2) retrofit kits, (3) agricultural water conservation measures in the Imperial Valley, and (4) All American Canal lining. The cost as well as the five noneconomic factors are included in the discussion.

Also included in the discussion of structural measures is a description of two major programs which could be implemented by others, including the State and federal governments. These programs include an agreement for improved coordination of the State Water Project and the Federal Central Valley Project (CVP) and the use of interim CVP water. An explanation of these two measures is included in this chapter, but no evaluation is presented because the programs must be implemented by others.

APPENDIX A

Appendix A includes the comments received at the public hearing held by a subcommittee of Metropolitan's Water Problems Committee. Also included are Metropolitan's responses to the comments received. The public hearing was held on June 13, 1985.

APPENDIX B: STATUTES OF 1983, CHAPTER 1009

Appendix B consists of Assembly Bill 797 (Water Code 1009, Statute 1983) which was passed by the California Legislature and approved by the Governor on September 21, 1983. Passage of this bill created the Urban Water Management Planning Act which led to the preparation of this report.

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