

**Appendix G:
Water Shortage and Drought Response Plan &
Implementing Resolution**



Drought Management Plan



Prepared by
Water Resources Department

With Assistance from
Public Affairs Department

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DROUGHT MANAGEMENT PLAN

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Section 1 - Introduction

The primary purpose of the Drought Management Plan (DMP) is to provide the Water Authority and its member agencies with a series of potential actions to take when faced with a shortage of imported water supplies from Metropolitan due to drought conditions. The actions will help the region minimize the impacts of shortages and ensure an equitable allocation of supplies. Different from a treated water shortage allocation plan, the DMP focuses on issues associated with shortages due to supply cutbacks, not shortages due to facility constraints.

1.1 Reliability

The Water Authority and its member agencies have made substantial investments in new diversified supplies and facilities to improve water reliability in the San Diego region. As mentioned in the Water Authority's 2005 Urban Water Management Plan, if the Water Authority and member agency supplies are developed as planned and Metropolitan's Integrated Resource Plan is fully implemented, no shortages are anticipated within the Water Authority's service area through 2030. **Table 1-1**, below, shows the mix of resources identified to meet future demands in a single dry-year period.

**TABLE 1-1
SAN DIEGO COUNTY WATER AUTHORITY
SINGLE DRY WATER YEAR SUPPLY AND DEMAND ASSESSMENT
(AF/YR)**

	2010	2015	2020	2025	2030
Water Authority Supplies					
Regional Seawater Desalination at Encina	0	56,000	56,000	56,000	56,000
IID Water Transfer	70,000	100,000	190,000	200,000	200,000
ACC and CC Lining Projects	77,700	77,700	77,700	77,700	77,700
Sub-Total	147,700	233,700	323,700	333,700	333,700
Member Agency Supplies					
Surface Water	22,284	22,284	22,284	22,284	22,284
Water Recycling	33,668	40,662	45,548	46,492	47,584
Groundwater	10,838	10,838	10,838	10,838	10,838
Groundwater Recovery	11,400	11,400	11,400	11,400	11,400
Sub-Total	78,190	85,184	90,070	91,014	92,106
Metropolitan Water District Supplies	541,760	477,086	411,790	423,896	457,224
TOTAL PROJECTED SUPPLIES	767,650	795,970	825,560	848,610	883,030
TOTAL ESTIMATED DEMANDS w/ Conservation	767,650	795,970	825,560	848,610	883,030

Source: Water Authority's 2005 Urban Water Management Plan

Water conservation plays a critical role in long-term supply reliability for the region. The Water Authority and its member agencies are considered leaders in California in the implementation of an aggressive conservation program to use water more efficiently. The total reduction in water demand attributable to projected conservation savings over the next 25 years is identified in **Table 1-2**.

**TABLE 1-2
PROJECTED CONSERVATION SAVINGS
WATER AUTHORITY SERVICE AREA
(Normal Year - AF/YR)**

2010	2015	2020	2025	2030
79,960	87,306	94,174	101,954	108,396

Source: Water Authority's 2005 Urban Water Management Plan

With the objective to obtain a reliable supply as outlined in the agencies' planning documents - with no anticipated shortages - Metropolitan, Water Authority and its member agencies will need to make investments in development of projects and programs along with gaining support from the local community for implementation.

While the region has plans to provide a high level of water reliability, there will always be some level of uncertainty associated with maintaining and developing local and imported supplies. Therefore, as a prudent measure, the Water Authority and its member agencies have developed a comprehensive DMP in the event that the region faces supply shortages due to drought conditions.

1.2 Defining a Drought

The question is often asked as to what defines a drought. As stated on the California Department of Water Resources (DWR) drought preparedness website:

“Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users having a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.”

Defining when supply conditions signify a drought in the San Diego region is a combination of the condition of Metropolitan's supplies and storage levels and local supply production in San Diego, both groundwater and surface water. One of the actions that may trigger initial drought conditions is when Metropolitan must take water from storage to meet demands. With the storage and supplies developed by the Water Authority, its member agencies, and Metropolitan since the last drought in 1987-1992, the region has significantly improved its ability to respond to drought conditions. As further stated on DWR's website:

“Droughts occur slowly, over a multiyear period. There is no universal definition of when a drought begins or ends. Impacts of drought are typically felt first by those most reliant on annual rainfall – ranchers engaged in dryland grazing, rural residents relying on wells in low-yield rock formations, or small water systems lacking a reliable source. Criteria used to identify statewide drought conditions do not address these localized impacts. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.”

1.3 Plan Summary

This first section of the report highlights the region's plans for providing a reliable supply for the next 25 years, with no anticipated shortages. It also describes the need for a DMP due to uncertainties in development and management of both imported and local supplies. This section also looks at defining a drought and the DMP report format.

The next section, Section 2 – DMP Preparation, discusses preparation of the DMP. This section includes a discussion of the formation of the member agency Technical Advisory Committee (TAC), along with the results from a questionnaire completed by the TAC members. This section also includes the principles that provided guidance in preparation of the DMP.

Section 3, Review of Historic Plans and Implementation, contains a summary of the past drought response plans and ordinances prepared by the Metropolitan Water District and the Water Authority. The section concludes with a discussion on the lessons learned from preparation and implementation of these previous plans.

The following section, Section 4 – Drought Response Matrix, includes a description of the stages and actions contained in the drought response matrix. The matrix provides guidance to the Water Authority in selecting potential regional actions that can be taken to lessen the severity of shortage conditions. This includes such items as purchasing spot transfers and utilizing carryover storage.

Section 5, Supply Allocation Methodology, provides a detailed description of the supply allocation methodology. The methodology provides the Water Authority a means to allocate its supplies to its member agencies in a shortage situation. To help describe and demonstrate the calculation procedure, an example is included for illustrative purposes.

Section 6, Water Authority/Member Agency Coordination, outlines the coordination to occur between the Water Authority and its member agencies in implementation of the DMP. A communication strategy is included that describes actions for the Water Authority to take to ensure clear communication with its member agencies, the public, and elected officials prior to and during shortage conditions.

The final section, Section 7 – Summary, summarizes the accomplishments of the DMP. There are also a series of appendices containing detailed supporting documentation.

1.4 Member Agency Coordination

The challenge in preparing the DMP was to meet the needs of the Water Authority's member agencies in a fair and equitable manner. Each of the agencies has a unique supply portfolio and customer-base. Some agencies have abundant local supplies, while others are 100 percent reliant on water supplies purchased from the Water Authority. There are member agencies that serve primarily agricultural customers, while others serve only municipal and industrial customers. Through the yearlong process of developing the DMP, these challenges were addressed and the Water Authority appreciated the involvement of the member agencies.

Section 2 – DMP Preparation

In February 1991, as a result of the 1987-1992 drought, the Water Authority prepared and adopted a Drought Response Plan that outlined the actions for the Water Authority and its member agencies to take during the supply shortage situation. In accordance with California Water Code, the Water Authority prepared an Urban Water Shortage Contingency Plan in January 1992 that included the ordinances and other procedures adopted during the 1987-1992 drought. The current DMP was prepared to identify the actions that the Water Authority and its member agencies will now take if faced with drought conditions, and specifically, how supplies will be allocated.

2.1 Member Agency Technical Advisory Committee

Preparation and implementation of a drought plan for the San Diego region must have input and support from the Water Authority's member agencies. Recognizing the importance of member agency involvement, the Water Authority formed a TAC – Technical Advisory Committee – to provide input on development of the DMP. The TAC included a representative from each of the member agencies. Key to the successful preparation of the plan was full involvement from all member agencies to ensure effective communication and understanding of member agencies' issues and concerns. To assist in this effort, a consultant team was hired to facilitate the TAC meetings and assist with technical details such as the historic context of drought plans in Southern California and the development of the allocation model. The TAC members are to be commended for their efforts to work together to develop the elements of this regional DMP.

2.2 Drought Management Plan Questionnaire

To gain an initial understanding of the TAC members' position on the DMP elements, a five-page questionnaire was distributed to the member agencies. The questionnaire consisted of eighteen questions, as well as a section for general comments. The questions were divided into the following five areas: 1) what is important in the overall design of a drought management plan; 2) what are the issues related to water transfers; 3) what role should the Emergency Storage Project play during a drought; 4) how should water be allocated in a drought; and 5) what role should a public communication strategy play during a drought. **Appendix B** contains the questionnaire results. Each of the TAC members completed the questionnaire, which was helpful to ensure that all member agency perspectives were heard. The results also provided valuable information used to develop a set of DMP Principles.

2.3 Principles

To provide guidance to the Water Authority and its member agencies in developing and implementing the DMP, twenty-three principles were developed. The principles were initially drafted based on results from the questionnaire that was completed by the TAC members (**Appendix B**). They were then revised and finalized based upon input received during a series of TAC meetings.

The principles are grouped below under the following categories: a) Overall Plan; b) Communication Strategy; c) Drought Supply Enhancement; d) Drought Response Stages; and e) Allocation Methodology.

Overall Plan

- 1. The DMP will be developed in cooperation with the member agencies and include all aspects of drought planning – including steps to avoid rationing, drought response stages, allocation methodology, pricing, and communication strategy.*

Communication Strategy

- 2. An on-going, coordinated and regional public outreach program shall be developed by the Water Authority that provides a clear and consistent message to the public regarding water supplies and specific conservation measures. The outreach program will also recognize and support member agency communication efforts that address specific retail level allocations.*
- 3. A Drought Coordination Team, made up of one representative from each member agency, will be established to assist the Water Authority in implementation of the DMP. This includes items such as formulation and implementation of the public outreach program, timing of drought stages, selection of drought supply actions, and addressing potential issues surrounding implementation of the shortage allocation methodology.*
- 4. The drought management plan should specify actions and timing of communications.*

Drought Supply Enhancement

- 5. The Water Authority and its member agencies will work cooperatively to avoid and/or minimize rationing during droughts through supply enhancement and voluntary demand reduction measures.*
- 6. Future Water Authority carryover storage supplies will be managed and utilized to assist in meeting demands during drought periods. Member agencies will be encouraged to develop carryover storage.*
- 7. The Water Authority will consider securing option and/or spot water transfers to meet the reliability goal set by the Board. The cost of this regional supply will be melded into the Water Authority's supply costs for all classes of service that benefit.*

8. *Subject to the Water Authority's wheeling policy, if a member agency purchases transfer water from a source other than the Water Authority, the full cost of the transfer, including, but not limited to, purchase costs, wheeling costs, and administrative costs, will be borne by said member agency.*
9. *ESP supplies may be available when any member agency's non-interruptible firm demands drop below a 75 percent service level.*
10. *The quantities of supplies from the ESP to be removed from storage will be based on a minimum amount necessary to meet essential health, safety, and firefighting needs, and maximum amount based on the need to ensure adequate supplies remain for a catastrophic event (e.g. earthquake).*

Drought Response Stages

11. *Develop drought response stages, which at a minimum, accomplish the following:*
 - *Can be easily communicated to the public;*
 - *Flexible to handle unexpected changes in demand and supply conditions;*
 - *Includes percent reduction (voluntary or mandatory) per stage; and*
 - *Includes both supply enhancement and emergency demand reduction methods.*
12. *Targets for achieving the emergency demand reduction measures should take into account the region's already aggressive long-term water conservation program.*
13. *The decision on when, and in which sequence drought enhancement supplies will be utilized during different stages will include consideration of the following factors:*
 - *Location – Out-of-region supplies will be utilized in the earlier stages, prior to in-county storage, because these supplies are more vulnerable to implementation risks such as seismic events;*
 - *Cost – Priority will be given to maximizing supply reliability and at the same time using the most cost-effective supplies; and*
 - *Limitations – Potential restrictions on the use of drought enhancement supplies is a factor in determining supply availability (e.g. potential restrictions on ESP supplies).*

Allocation Methodology

14. *The allocation methodology will be equitable, easy to administer, contain financial penalties and pricing signals, and a communication strategy to ensure member agencies and the public are informed and understand the need to conserve.*

15. *In order to protect the economic health of the entire region, it is very important for the allocation methodology to avoid large, uneven retail impacts across the region. The methodology should include a minimum level of retail agency reliability to ensure equitable allocation among the member agencies.*
16. *With the exception of allocating water from the ESP, the Water Authority shall make no distinction among customers paying the same M&I rate (e.g. non-Interim Agricultural Water Program (IAWP) agriculture, residential, commercial, and industrial).*
17. *Additional IAWP cutbacks beyond the initial 30 percent faced by IAWP customers should be equally applied to both IAWP and M&I customers.*
18. *A member agency that has developed local projects and instituted conservation measures should not be penalized in the computation of allocations.*
19. *To help balance out the financial costs and risks associated with development of local resources, the shortage allocation methodology should provide an incentive to those member agencies that have developed local supplies.*
20. *The base-year, upon which allocations will be derived, will be based on historic demands. Adjustments to the base-year will be made for demographic changes, growth, local supplies, demand hardening, and supplies allocated under interruptible service programs.*
21. *A member agency's base-year will be adjusted to reflect the regional financial contribution from the Water Authority for development of local projects. The adjustment will take into account the risks associated with developing the local projects.*
22. *A member agency will not be able to market its unused allocation to other agencies within the Water Authority's service area at a cost higher than the Water Authority's charges for those supplies.*
23. *Penalty rates, along with other demand reduction measures, will be used by the Water Authority to encourage conservation during a drought.*

2.4 Report Preparation and Approval

Water Authority staff, with consultant assistance, prepared an initial draft of the DMP based on results from the TAC member discussions on DMP elements. TAC members reviewed the draft report and their comments were incorporated. On February 14, 2006, the TAC supported forwarding the report to the Water Authority's Board of Director's Water Planning Committee for their consideration. The DMP elements were presented to Water Authority's Board of Directors through a series of meetings and workshops, with final approval of the DMP on May 25, 2006.

Section 3 – Review of Historic Plans and Implementation

“Experience is not always the kindest of teachers, but it is surely the best.”¹ Thus, it was important to review the historical context of drought plans in Southern California and examine how those drought plans were implemented, and what impact they had on the Water Authority. Historically, due to the dependence on deliveries from Metropolitan, the Water Authority’s guidelines for drought management actions have paralleled Metropolitan’s adopted plans for supply management in drought situations. Lessons learned from the creation and implementation of these plans were used when preparing the DMP. This section summarizes those historical drought plans and lessons learned. Detailed information regarding the historical drought plans can be found in **Appendix C** (Water Authority) and **Appendix D** (Metropolitan).

Metropolitan began delivering water in 1941 and had been able to meet demands through system expansion through much of its history. However, during the drought of 1976-1977, Metropolitan first experienced demands that were greater than supplies. During the 1976-77 drought, Metropolitan asked for and received voluntary reductions in deliveries of 10 percent. It was then, that Metropolitan began considering how to deal with future supply shortages. The sections below describe the four drought plans that Metropolitan has had since that time, along with the Water Authority’s actions to implement those plans.

3.1 Metropolitan’s 1981 Interruptible Water Service Program

The first drought plan that Metropolitan’s Board of Directors adopted was the Interruptible Water Service Program in 1981. This program combined a rate structure and drought plan. The Interruptible Water Service Program was intended to deliver water at a discounted rate in return for the ability to interrupt the deliveries as required. Water that did not receive a discount was deemed to be “noninterruptible.”

Deliveries for groundwater or reservoir storage, agricultural purposes, and seawater barrier injection were considered to be interruptible water. An agency had an obligation to take a reduction or interruption in deliveries for three years after taking interruptible water deliveries.

When the 1987-1992 drought occurred, many member agencies that had purchased the interruptible water were not able to manage an interruption in deliveries. Some agencies did not have the facilities in place to produce stored water, others did not have the water in storage, while others preferred to have customers conserve rather than produce from storage.² Additionally, there was concern expressed by some farmers that trees and vines

¹ Spanish Proverb, *The Columbia World of Quotations*, 1996.

² Memorandums dated June 4, 1990, and July 19, 1990, to Chief of Operations, and September 10, 1990, Water Problems Committee Public Hearing minutes, pgs. 1-6, and attachments.

and livestock would be permanently destroyed by interrupting their water service.³ In response and as the drought deepened, Metropolitan's Board of Directors adopted the Incremental Interruption and Conservation Plan.

3.2 Metropolitan's 1990 Incremental Interruption and Conservation Plan

The Incremental Interruption and Conservation Plan (IICP) was devised to reduce both noninterruptible and interruptible deliveries. Metropolitan's Board of Directors attempted to rectify the inequity of agencies receiving past discounts for interruptible water service by reducing water taken as interruptible water at a greater percentage than water taken as noninterruptible water. Stages of reductions in deliveries for "firm" and "nonfirm" water deliveries were created based on the amount of supply available to Metropolitan and projected demands. This reduction in deliveries occurred for 14 months starting in February 1991.

The IICP used fiscal year 1989-90 sales as the basis of its allocation. These sales were broken down into monthly targets. The targets were adjusted for loss of local supply, growth, conservation, and reclamation. The percentage reduction in deliveries was then applied. For part of the allocation period, agencies that took less water than their IICP target received an incentive of \$99 per acre-foot. These incentives were eliminated as the combined revenue impacts of reduced sales and large incentive payments affected Metropolitan. Agencies that took more than their target paid a disincentive of two times the untreated noninterruptible rate in addition to paying the noninterruptible rate for delivery of the water. Monthly overages and underages were allowed to offset one another over the course of the year through an annual reconciliation. At the beginning of the allocation, billing for disincentives occurred monthly. This was later changed to a quarterly basis. Additionally, a time limit was placed on applying for adjustments.

3.3 Water Authority's 1991 Drought Response Plan

In response to the continuing drought and Metropolitan's adoption of the IICP, the Water Authority adopted its own Drought Response Plan in 1991. The Board Letter and Drought Response Plan are included in **Appendix C**. The Drought Response Plan had four components as summarized below.

1. Drought Response Program

The Water Authority tied its response stages to the IICP. However, reductions were not broken down between "firm" and "nonfirm" deliveries in the base year. Rather, it reduced deliveries to its agencies uniformly based on fiscal year 1989-90 sales. Incentive and disincentive payments were assessed using the same formula as Metropolitan. Additionally, a Response Stage Activities matrix was developed for the member agencies. This matrix arranged water management techniques, such as

³ Metropolitan Water District of Southern California, *Draft Paper on Events Leading Up to and Chronology of the 1990-92 Drought Years and Supply Reliability Improvements Achieved as a Result of the Drought*.

no outside irrigation except with water reclaimed from indoor use, to the reduction levels corresponding to the stage of the IICP. Through its member agency response to the public information program and prohibitions of water use, the Water Authority, overall, was able to stay within its allocation of water from Metropolitan.

2. Conservation Program

The Water Authority had long-term conservation programs in place prior to the allocation of water. Once the allocation of water began, additional short-term conservation programs, such as assistance to public institutions for conserving water, were added.

3. Member Agency Assistance Activities

Beyond the Response Stage Activities matrix, the Water Authority provided other assistance to member agencies, such as a member agency workshop on penalty pricing methods.

4. Public Information Activities

There were two objectives to the activities. The first was to highlight the drought situation and the need for immediate cutbacks in water usage. The second was to develop continuing methods to assist member agencies and educate the public on water supplies.

3.4 Department of Water Resources Drought Water Bank

Supplies from a Drought Water Bank were made available by DWR for one year, in 1991, to State Water Contractors. Metropolitan was able to obtain 215,000 acre-feet of the bank water. It sold some water directly to member agencies and melded the remainder with the rest of its supplies. Water sold directly to agencies was sold at DWR's melded rate of \$175 per acre-foot plus Metropolitan's noninterruptible rate. The Water Authority contracted for 21,600 acre-feet of bank water, and took delivery of 20,100 acre-feet of bank water. The Water Authority melded the bank water into its other supplies.

3.5 Metropolitan's 1995 Drought Management Plan

The 1995 Drought Management Plan (1995 Plan) was the first time that Metropolitan formalized a plan which addressed the actions to take during a drought prior to reducing or interrupting deliveries of water. These actions included calling on water from various storage programs and participating in water bank and transfer options.

The 1995 Plan included a modified IICP. The modifications to the IICP included using an average of three fiscal years rather than one fiscal year for the base period and the

establishment of an Interagency Advisory Committee to assist Metropolitan's General Manager during an allocation.

The 1995 Plan was adopted for only one year. As part of Metropolitan's integrated water resources planning process, it was intended that a more permanent drought management plan, which also incorporated surplus conditions, be prepared to create a general policy direction on the basic sequence of water resource management steps to take under surplus or shortage conditions. This plan, adopted in 1999, became known as the Water Surplus and Drought Management Plan (**Section 3.7**).

3.6 1994 Ordinance of the San Diego County Water Authority Establishing Contingency Plans, Rules, Regulations, and Restrictions so that Available Water Supplies are Allocated among Member Agencies for the Greatest Public Interest and Benefit

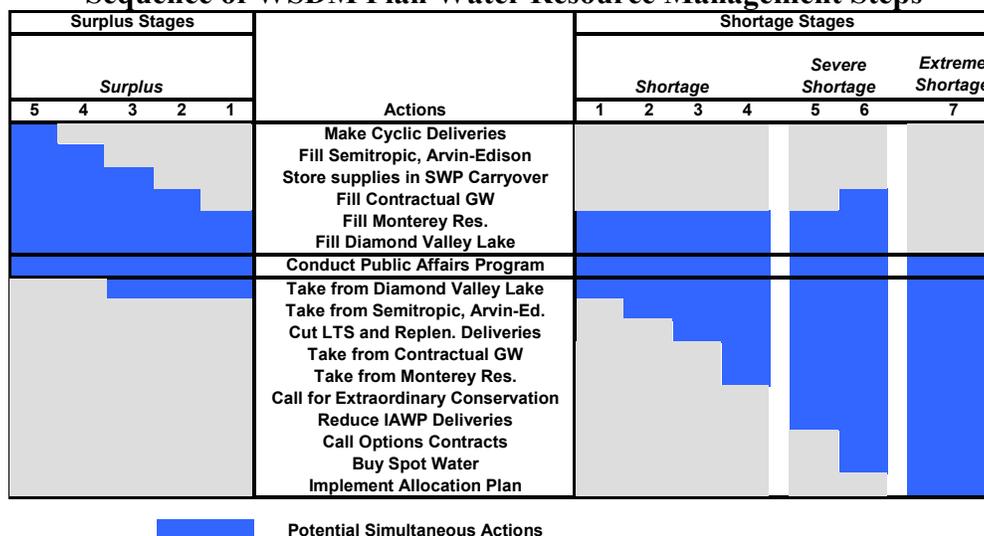
The Water Authority, in response to Metropolitan adopting its 1995 Plan (in October 1994), adopted its own water shortage contingency ordinance (**Appendix C**) a month later, in November 1994. The water resource portion of the ordinance included two basic components. First, if Metropolitan had to implement the IICP, the Water Authority would act to minimize shortages to its service area by making available stored water that it owned and securing other water supplies. And second, if the Water Authority continued to have a supply shortage it would allocate water supplies using Metropolitan's 1995 Plan-modified IICP as a template. This allocation included having separate cutback percentages for IAWP deliveries and firm deliveries, using the same three-year base period as the basis for the firm allocation, and passing through any penalties on a pro-rata basis to those agencies that received deliveries in excess of their allocation. If a member agency was not able to reduce its deliveries to within 5 percent of its monthly allocation, then its daily deliveries could be reduced by the Water Authority in a manner to ensure compliance. In addition to the basic concepts listed above, an appeals board was established to review actions taken by the Water Authority's General Manager if a member agency did not agree with the actions. The appeals board consisted of five Water Authority Board members.

3.7 Metropolitan's Water Surplus and Drought Management Plan

The Water Surplus and Drought Management Plan (WSDM) is the drought management plan that Metropolitan currently operates under. Based on water supplies and projected demands, varying actions may be taken by Metropolitan. These actions are shown in **Figure 3-1**.⁴ The matrix acts as a "framework." Actual responses would be based on conditions at the time of need.

⁴ Metropolitan Water District of Southern California, *Water Surplus and Drought Management Plan*, 1999, page 28.

**Figure 3-1
Sequence of WSDM Plan Water Resource Management Steps**



A water allocation methodology in the event “rationing” becomes necessary is not included in the WSDM Plan. A draft methodology was devised and specific concepts of an allocation are laid out in the WSDM Plan. These concepts include the goal that overall retail demands would be used to minimize uneven impacts to agencies within Metropolitan’s service area. The final allocation plan was not adopted, in part, due to this concept. Agencies that had invested heavily to develop local supplies or for conservation felt that they were being treated unfairly and that there was no incentive to continue with these local investments since overall retail demands were used as the starting point for the drought allocation.

3.8 Interim Agricultural Water Program Reduction Guidelines

Metropolitan converted the “Interruptible Program” for agricultural users into the Interim Agricultural Water Program (IAWP) in May 1994. The IAWP provides for the delivery of surplus water for agricultural purposes at a discounted rate in exchange for up to a 30 percent reduction in demand by participating agricultural water users prior to implementation of municipal and industrial water use rationing. This reduction enables Metropolitan to better conserve limited supplies during shortages.

For the past several years and until the fall of 2004, Metropolitan’s service area experienced dry conditions combined with high demands. Metropolitan and its member agencies began preparing a plan to reduce IAWP deliveries in the 2004-2005 water year (October through April) in the event that a reduction was necessary. This plan, although not finalized, is included in **Appendix E**.

3.9 Lessons Learned

As review of the historical plans occurred, it became apparent that certain lessons could be learned from them about both what to do and not to do before and during an allocation. These lessons include:

Effective Communications

It is important that Directors, agency staff, governmental officials, the news media, and the public understand the water supply situation, how the Water Authority is prepared to meet demands, and ultimately if required, how an allocation plan would be implemented. Permanent outreach activities that educate the public about the region's water supplies are vital. Additionally, a communication team that has a plan that it can work during a drought in a proactive, rather than reactive mode, will help in the implementation of the drought plan. A proactive approach will also help manage rapidly changing conditions during a shortage. In response to these observations, a communication strategy has included in the DMP that establishes a drought communication team. Please refer to **Section 6** for a more complete discussion of the communication plan.

Advance Supply and Facility Planning

Agencies should have supply and facility plans in place ahead of time to avoid supply shortage situations. The planning should include storing surplus supplies when and where possible, having the facilities in place to withdraw these supplies, and being prepared with a staged plan on how to deal with shortages. The Water Authority and its member agencies have accomplished this through development of urban water management plans, facility master plans, and the DMP.

Avoid Rationing as much as Possible

This avoidance includes entering into option contracts, voluntary conservation, and encouraging the development of local supplies. Although all of these methods have some cost associated with them, they are likely not as high as the economic impacts of water supply shortages to the region. This DMP, through its Drought Response Matrix and possible supply enhancement actions, provides a plan to potentially avoid rationing when feasible. The Drought Response Matrix is discussed further in **Section 4**.

Develop an Allocation Methodology that Encourages Local Supply Development

By developing local supplies, the reliability of both the individual member agency that developed the supply, as well as the region, is improved. Thus, any drought plan should encourage the development of local supplies, not hinder them. The allocation

methodology in this DMP encourages local supply development in two ways. First, it uses historic Water Authority demands, not retail demands, as the basis for allocating water. Second, an adjustment for the development of local projects (recycled water, groundwater recovery, and seawater desalination) is provided in the allocation methodology. This adjustment provides a 30 percent credit on the yield of locally developed reliable supplies in the base period (discussed in **Section 5**).

Review and Remind Agencies of DMP Annually

This review educates staff members who are new to the Water Authority or its member agencies on how the DMP works. One of the problems with the 1981 Interruptible Water Service Program was that the reason for Metropolitan providing the discount was lost with the departure of staff members who had worked on the program. Thus, implementation of the plan could not occur and a new plan, the IICP, had to be formulated at the last minute. An annual review and reminder of the DMP will help reduce any last minute confusion.

Make Adjustments in Allocation Methodology Simple to Administer

By having a fairly simple preset formula that uses historic information for adjustments and a three-year average base period, administering adjustments in the DMP allocation methodology will be easier and less time consuming.

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Section 4 – Drought Response Matrix

4.1 Introduction

The Water Authority exists to provide, as far as practicable, each of its member agencies with adequate supplies of water to meet their expanding and increasing needs. In times of extreme drought, where the San Diego region could experience shortages of supply from Metropolitan, the Water Authority needs to take actions to try to both reduce and eliminate shortages. A Drought Response Matrix was developed to provide guidance to the Water Authority and its member agencies to select potential regional actions to lessen the severity of shortage conditions. The matrix is shown below in **Table 4-1**.

**Table 4-1
Drought Response Matrix – Firm Demands**

POTENTIAL SDCWA DROUGHT ACTIONS	STAGES		
	Voluntary	SDCWA Supply Enhancement	Mandatory Cutbacks
Ongoing BMP implementation	X	X	X
Communication strategy	X	X	X
Monitoring supply conditions and storage levels	X	X	X
Call for voluntary conservation	X	X	X
Draw from SDCWA Carryover Storage	X	X	X
Secure transfer option contracts	X	X	X
Buy phase 1 spot transfers (cost at or below Tier 2 rate)		X	X
Call transfer options		X	X
Buy phase 2 spot transfers (cost at or above Tier 2 rate)		X	X
Implement allocation methodology			X
Utilize ESP Supplies			X

The matrix includes a list of potential actions available to the Water Authority at each of the three main stages. To determine the specific actions that should be taken at each stage, the Water Authority and its member agencies will evaluate conditions specific to the timing, supply availability, and cost, along with other pertinent variables. Numerous variables can influence the supply reduction levels during a drought. These variables include, but are not limited to, State Water Project allocation, conditions on the Colorado River, Water Authority supplies, local storage, local demands, and timing. Member agencies will independently adopt retail-level actions to manage potential shortages.

4.2 Drought Response Matrix Stages

The potential actions are grouped into the following three stages:

Voluntary

The first stage of the drought response matrix is considered voluntary. The voluntary stage would likely occur when Metropolitan has been experiencing shortages in its imported water supply (from either the Colorado River or the State Water Project, or both) and is withdrawing water from storage due to the drought conditions to meet normal demands.

Water Authority Supply Enhancement

This stage could occur in year three or four of a dry period and represents that point in time when Metropolitan reduces water deliveries to its member agencies. The Water Authority's Board of Directors will then consider the potential actions in this stage, or others that may surface, to eliminate any cutbacks to the member agencies from the reduction in Metropolitan supplies.

Mandatory Cutbacks

The final stage follows once both Metropolitan and the Water Authority Board have exhausted all supply enhancement options due to lack of supplies and/or increasing costs, and mandatory cutbacks are required. The actions taken at this stage include implementation of the allocation methodology and potential utilization of ESP supplies. It should be noted that members of the DMP TAC expressed strong opinions that the ESP supplies only be used during a hydrologic drought as a last resort, if at all. Should the dry weather continue and the region enter a sixth year of drought, some communities may begin facing health and safety issues.

4.3 Potential Water Authority Drought Actions

The following is a brief description of each of the potential Water Authority actions that may be taken in a drought situation.

Ongoing Best Management Practices Implementation

The Water Authority and its member agencies continue to implement the California Urban Water Conservation Council's comprehensive water conservation Best Management Practices.

Communication Strategy

A Communication Strategy will be in place prior to the drought and continue through all stages. The strategy is a coordinated effort between the Water Authority and its member agencies. It includes phases of response and corresponding activities to take during each phase. Refer to **Section 6** for additional information.

Monitoring Supply Conditions and Storage Levels

Water Authority staff monitors State Water Project and Colorado River supplies, along with supply levels in Metropolitan's storage facilities and programs. Reports will be made to the member agencies and the Water Authority's Board of Directors on the status of the supply conditions. This action is also an important element of the Communication Strategy.

Call for Voluntary Conservation

The Water Authority and its member agencies will ask the public to implement voluntary water conservation practices. The voluntary water conservation measures are in addition to the region's ongoing implementation of the BMPs. Voluntary water conservation measures may focus on outdoor water conservation, elimination of run-off, and leak detection. The shift from indoor water conservation to outdoor water conservation is due to demand hardening that is the result of 15 years worth of indoor water conservation efforts that targeted homes and businesses. The specifics of the voluntary water conservation measures will be determined by member agencies, with the Water Authority providing regional messages and assistance. The action will be closely coordinated through the Communication Strategy.

Draw from Water Authority Carryover Storage

The Water Authority will draw from its non-ESP storage in order to meet member agency demands. This could include supplies available through the Water Authority's proposed carryover storage project that is scheduled for completion in 2011.

Secure Transfer Option Contracts

The Water Authority secures transfer option contracts for supplies from outside of the region. Transfer options are multi-year contracts that allow the Water Authority to obtain a specified quantity of water at some future date. The amount secured will depend on supply need and cost. A minimum payment for water is usually required in order to secure the transfer. This payment must be made even if the water is not needed.

Buy Phase 1 Spot Transfers

The Water Authority buys Phase 1 spot transfers from outside of the region. Spot transfers make water available for a limited duration (typically one year or less) through a contract entered into in the same year that the water is delivered. The cost for this block of water would be at or below the Tier 2 water rate. Purchase of spot transfers are categorized into two phases to provide the Board the ability to determine action based on cost. The cost includes purchase and conveyance. Examples of a spot transfer are supplies purchased through DWR's Drought Water Bank during the 1987-1992 drought (See Section 3.4). The transfer water will be melded in with the remaining supplies available to the Water Authority.

Call Transfer Options

The Water Authority buys the previously secured transfer options. In addition to the cost to purchase the transfer water, the Water Authority needs to pay for conveyance between the location

of the sale and the San Diego region. Additional costs could include storage, treatment, and seepage losses depending upon the origin of the transfer water. The transfer water will be melded in with the remaining supplies available to the Water Authority.

Buy Phase 2 Spot Transfers

The Water Authority buys Phase 2 spot transfers from outside of the region. The transfer water will be melded in with the remaining supplies available to the Water Authority.

Implement Allocation Methodology

The Water Authority's Board of Directors determines that all potential actions have been taken to avoid shortages and the remaining action is to implement the allocation methodology outlined in **Section 5**.

Utilize Emergency Storage Project Supplies

The Water Authority draws from its ESP supplies when any member agency's non-interruptible firm demands drop below a 75% service level. The quantities of supplies drawn from storage are based on the minimum amount necessary to meet essential health, safety, and firefighting needs. It is also based on the maximum amount needed to ensure adequate supplies remain for a catastrophic event.

The drought response matrix provides guidance to the Board on potential actions that the Water Authority could take at certain stages of drought. There are variables, unknown at this time, which may influence the options available to the Water Authority's Board of Directors. This will need to be taken account when it is time to implement the matrix.

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Section 5 - Supply Allocation Methodology

5.1 Introduction

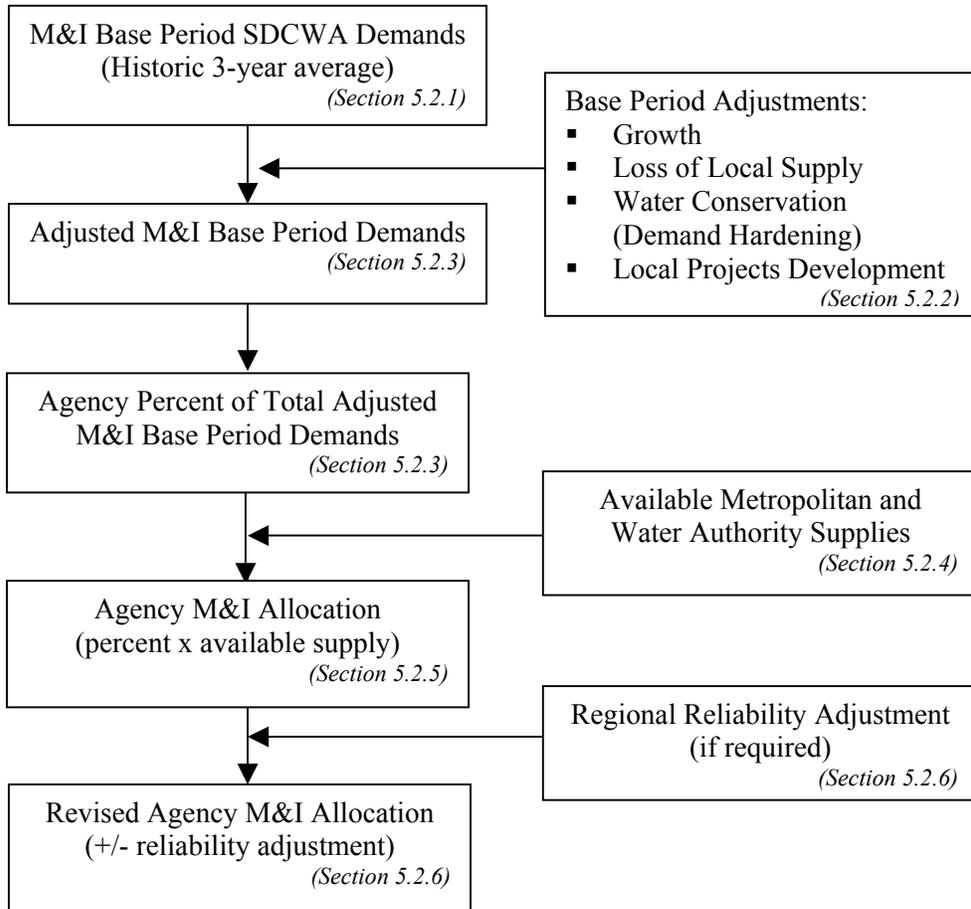
As outlined in the Drought Response Matrix discussed in **Section 4**, after the Water Authority's Board of Directors has exhausted available supply enhancement options and can no longer avoid cutbacks, implementation of an allocation methodology will occur. The challenge in developing the methodology was to meet the diverse needs of the member agencies in a fair and equitable manner. Each of the Water Authority's member agencies has a different demand profile and unique supply portfolio. Some agencies have abundant local supplies, while others are 100 percent reliant on water supplies purchased from the Water Authority. There are member agencies that serve primarily agricultural customers, while others serve only municipal and industrial customers.

This section includes a description of the supply allocation methodology developed through a collaborative effort between the Water Authority and its member agencies. The goal of the methodology is to provide an equitable means of apportioning the Water Authority's municipal and industrial (M&I) supplies during periods of supply shortages consistent with the TAC approved principles discussed in **Section 2.3**. Through the TAC meetings, Water Authority staff and designated member agency representatives have collectively agreed to the allocation methodology described in this section.

The methodology distinguishes between Metropolitan's two distinct classes of service – "Full Service" and surplus water. Full Service water has the highest supply reliability and is priced at Metropolitan's total cost of service. Typically, Full Service water is used to meet the Water Authority's M&I sector demands. In contrast, Metropolitan's surplus water supplies are subject to first cutback during supply shortage conditions. Regional surplus supplies are primarily obtained through Metropolitan's IAWP program. IAWP water is subject to up to a 30 percent cutback in any one year during a shortage before any reductions in Full Service water are implemented. To account for this lower reliability level, surplus water supplies are priced below the Metropolitan Full Service rate. A further discussion on the reduction of the IAWP class of service can be found in **Section 3.8**.

To provide an overview of the allocation methodology for M&I customers, a schematic has been prepared that includes the principal steps in the process. As shown in **Figure 5-1**, the methodology begins with a determination of each agency's base period demands. From this base, adjustments are added to account for each agency's local supply conditions and their individual demand characteristics. This calculation results in an adjusted base period demand for each member agency. Next, the amount of M&I supplies available from the Water Authority is determined. This includes the Water Authority's own supplies along with supplies available from Metropolitan. The individual member agency's percent share of the total regional M&I adjusted base period demand is calculated. This percentage is then multiplied by the total Water Authority M&I supplies available to derive an allocation for each member agency. In the rare circumstance of severe imported supply shortages, a regional reliability adjustment will be applied to avoid large uneven retail impacts. Each box shown in **Figure 5-1** contains a reference number to the corresponding subsection that describes the step in detail.

**Figure 5-1
M&I Supply Allocation Methodology**



5.2 Description of Allocation Methodology

To help describe the allocation methodology and demonstrate the calculation procedures, the following example was developed. The example was prepared for illustration purposes only. For this sample analysis, demand and local supply data for five representative agencies was established to approximate a cross-section of urban and agricultural characteristics unique to the region. Other agency attributes such as demand, estimated growth, conservation, and local supply availability were also based on local agency characteristics.

The first step in determining the severity of necessary cutbacks during any water supply shortage event is an assessment of available supply compared to estimated demands. Because the majority of the region’s water supply originates from outside the San Diego area, the severity of regional drought cutbacks is driven by the availability of imported supplies. However, imported supplies developed by the Water Authority are less vulnerable to reductions due to their higher priority water

right. The high reliability of the IID transfer water and conserved water resulting from the lining of the All-American Canal and Coachella Canals assures that these supplies will be available to the Water Authority during extreme hydrologic events. As a result, imported Metropolitan supplies and local surface water would be most susceptible to a reduction during a drought. Additionally, in the absence of adopted Metropolitan supply allocation guidelines, there is a degree of uncertainty as to the Water Authority’s share of Metropolitan’s supplies during a shortage. Therefore, an estimated percent cutback in Metropolitan supplies to the Water Authority was assumed to illustrate the allocation methodology.

In the example, agricultural purchases under Metropolitan’s IAWP program are cutback by 30 percent – the maximum allowable in any one year before reductions in Full Service water are imposed. The example further assumes that a 20 percent reduction in the remaining Metropolitan supplies occurs.

5.2.1 Historic Base Period Demands on the Water Authority (Unadjusted)

A historic base period demand is required to establish each agency’s pre-allocation demands on the Water Authority. Base period M&I demands are calculated using data from the three most recently completed fiscal years immediately preceding the year in which an allocation process is needed due to supply shortages. Each agency’s base period M&I demand is established by calculating their three-year average of demand.

Base period demands for agriculture are certified through Metropolitan’s IAWP program and are calculated using a different approach. For IAWP demands, only the most recently completed single fiscal year prior to the imposition of an allocation is considered. This calculation is required by Metropolitan’s Draft IAWP Reduction Guidelines.

For illustrative purposes, **Table 5-1** contains historic base period demands for the sample agencies. In the event that consecutive multi-year allocations are required, base period demands (based on the three years prior to the first year of allocations) are to remain fixed for the duration of the allocation.

**Table 5-1
Example
Historic Base Period Demands on Water Authority**

	Agency A	Agency B	Agency C	Agency D	Agency E
SDCWA M&I Demand (three-year average)	2,200	6,500	181,000	43,100	25,000
IAWP Demand (previous year)	0	19,000	200	100	0

5.2.2 Adjustments

M&I adjustments to be applied to the base period were developed to equitably account for relevant factors in calculating each agency’s allocation. Such factors include growth, demand hardening levels due to conservation, local supply availability from groundwater and surface reservoirs, and

efforts taken by local agencies to develop reliable local projects such as recycled water, groundwater recovery, and seawater desalination. The adjustments are intended to acknowledge unique agency characteristics and provide an incentive for agencies to decrease their reliance on imported supplies over the long-term. Consistent with the Draft IAWP Reduction Guidelines, no adjustments are made to the IAWP base demand.

The following is a summary of each M&I adjustment:

Growth

Because the base period is fixed, a growth adjustment is applied that estimates the increase in demand due to growth from the base period to the allocation year. This adjustment is calculated using the average number of new meters purchased by each agency over the three-year base period. New meter data is derived from annual Water Authority Capacity Charge records. Water demands associated with these meters are calculated using an annual equivalent demand per meter estimate. For meters under one inch, demand is estimated at 0.5 acre-feet per year, consistent with average residential water use. The adjustment is based on the annual demand increase associated with the average annual meter purchases over the three-year period. Due to the two-year difference between the base period and allocation year, the calculated growth adjustment is doubled. The growth adjustment calculation is expressed as:

$$= (Average\ Number\ of\ Meters\ by\ Size) \times (Equivalent\ Demand\ per\ Meter\ by\ Size)$$

Table 5-2 illustrates the growth adjustment calculations for each sample agency.

**Table 5-2
Growth Adjustment**

Three-Year Average of New Meters by Size

Meter Size	Agency A (new meters)	Agency B (new meters)	Agency C (new meters)	Agency D (new meters)	Agency E (new meters)
5/8"	14	49	1,467	2,000	70
1"	4	38	800	41	25
1.5	0	1	123	35	10
2	0	1	93	21	0

Estimated Demand per Meter

Meter Size	Demand per Meter (AF/YR)
5/8"	0.5
1"	0.8
1.5	1.5
2	2.6

Total Annual Meter Demand

Meter Size	Agency A (AF)	Agency B (AF)	Agency C (AF)	Agency D (AF)	Agency E (AF)
5/8"	7	25	733	1,000	35
1"	3	31	640	33	20
1.5	0	2	185	52	15
2	0	2	242	55	0
Total	10	60	1,800	1,140	70

2-Year Growth 20 120 3,600 2,280 140

Water Conservation (Demand Hardening)

On-going water conservation programs are an effective method of reducing reliance on imported supplies. However, these savings curtail an agency’s ability to further reduce their demands during supply shortages (demand hardening). To avoid penalizing agencies that have undertaken such conservation activities for the long-term, an adjustment for these savings is applied. The conservation adjustment is calculated using an average of active conservation program savings, as tracked by the Water Authority, over the most recently completed three fiscal years - similar to the base period calculation. Inclusion of only active conservation measures such as the installation of high-efficiency clothes washers ensures that legislatively mandated conservation savings (attributable to growth) are excluded. The adjustment added to the base period is the three-year average conservation savings. Estimated annual savings and resulting conservation adjustments for the sample agencies are shown below in **Table 5-3**.

**Table 5-3
Conservation Adjustment (AF)**

Year	Agency A	Agency B	Agency C	Agency D	Agency E
1	25	20	17,650	1,475	995
2	30	25	18,000	1,500	1,000
3	35	15	18,350	1,525	1,005
Average	30	20	18,000	1,500	1,000

Loss of Local Supply

Some agencies have invested heavily in surface and groundwater supplies, thereby reducing their reliance on imported water and providing other regional benefits such as surface water treatment

capacity. Typically, these supplies are based on the amount of local runoff from annual rainfall. Because local rainfall is subject to drought cycles, a Loss of Local Supply Adjustment was developed to recognize the benefit of these historic supplies and not penalize agencies for diminished local supplies during shortage conditions. The adjustment is calculated as the difference between the average local supply use over the most recently completed three fiscal years and the estimated allocation-year local supply use. The adjustment is 50 percent of the local supply difference. An agency that has developed recycled water supplies, brackish groundwater recovery, or desalinated ocean water may apply for this adjustment if it deems necessary; however, this will preclude that agency from applying for the Local Projects Development Adjustment described in the next sub-section.

The Loss of Local Supply Adjustment for the sample agencies is shown in **Table 5-4**. For purposes of the sample calculation, it was assumed that a 25 percent loss of local supply volume occurs during the allocation year.

**Table 5-4
Loss of Local Supply Adjustment (AF)**

Year	Agency A	Agency B	Agency C	Agency D	Agency E
1	0	0	39,500	0	6,500
2	0	0	34,400	0	5,700
3	0	0	22,100	0	4,600
Average	0	0	32,000	0	5,600
Assumed 25% Reduction	0	0	8,000	0	1,400
50% of Difference	0	0	4,000	0	700

Local Projects Development

The development of highly reliable in-region supplies, such as brackish groundwater recovery, recycled water, and seawater desalination result in a dual benefit. They add to the region’s supply diversity and are a dependable source during shortages of imported water. An adjustment is made for the regional benefit of these annually reliable supplies. The adjustment recognizes both the investment made by the local agency and the regional financial contribution made by the Water Authority. Similar to the base period calculation time frame, a three-year average of beneficial use from these reliable supplies is employed to calculate the adjustment. The Local Projects Development adjustment is 30 percent of the three-year average. In addition to the incentive from the adjustment, the member agency will be able to utilize 100% of their local project’s supply that is available during a drought. **Table 5-5** on the following page shows the Local Projects Adjustment.

**Table 5-5
Local Projects Development Adjustment (AF)**

Year	Agency A	Agency B	Agency C	Agency D	Agency E
1	65	0	4,900	1,310	1,850
2	64	0	4,950	1,350	2,100
3	66	0	5,150	1,340	2,050
Average	65	0	5,000	1,333	2,000
30% Credit	20	0	1,500	400	600

5.2.3 Adjusted Base Period Demands and Supply Allocation Percentages

An agency’s adjusted base period M&I demand is calculated by adding the applicable adjustments to their initial base period M&I demand. The adjusted base period M&I demand amount is then used to generate an agency’s pro-rata percent share of the total adjusted base period M&I demand. It is this percentage that is used to calculate an agency’s imported M&I supply allocation volume. **Table 5-6** illustrates the calculation for the sample agencies.

**Table 5-6
Adjusted Base Period M&I Demand and
Imported M&I Supply Allocation Percentages (AF)**

Agency	Base Period M&I Demand on SDCWA	Growth Adjustment	Loss of Local Supply Adjustment	Conservation Adjustment	Local Projects Development Adjustment	Adjusted Base Period M&I Demand	Pro-rata Share of Adjusted Base Period M&I Demand
A	2,200	20	0	30	20	2,270	0.8%
B	6,500	120	0	20	0	6,640	2.3%
C	181,000	3,600	4,000	18,000	1,500	208,100	71.3%
D	43,100	2,280	0	1,500	400	47,280	16.2%
E	25,000	140	700	1,000	600	27,440	9.4%
Total						291,730	

IAWP allocation percentages are also calculated based on an agency’s pro-rata share of demand. However, the based period IAWP demand used for this calculation is not adjusted as described in **Section 5.2.2**. **Table 5-7** shows the pro-rata percent share of IAWP demands for the sample agencies.

**Table 5-7
Base Period IAWP Demand and
IAWP Supply Allocation Percentages (AF)**

Agency	Base Period IAWP Demand on SDCWA	Pro-rata Share of Base Period IAWP Demand
A	0	0.0%
B	19,000	98.5%
C	200	1.0%
D	100	0.5%
E	0	0.0%
Total:	19,300	

5.2.4 Water Authority Supply Availability and Net Cutback Percentages

The next step in the allocation methodology is to identify the total supplies available to meet member agency demands during shortage events. M&I supplies are equal to the sum of non-IAWP water from Metropolitan, the Water Authority’s existing Imperial Irrigation District transfer water, conserved water from planned canal lining programs, and projected supplies from future seawater desalination project(s). These additional supplies developed by the Water Authority help to reduce demands on Metropolitan, and therefore decrease the impact from reductions in Metropolitan’s supplies. This is demonstrated in the calculations shown in **Table 5-8**.

As discussed in **Section 5.2**, Metropolitan has yet to adopt drought allocation procedures. Lacking any definitive methodology, a simplifying assumption was made to estimate the Water Authority’s share of Metropolitan’s drought supplies. For this example, it is assumed that Metropolitan’s allocation process results in a drought supply allotment equal to 80 percent of the Water Authority’s M&I demand on Metropolitan. In the example, Water Authority supplies are set at 20,000 acre-feet per year. Total M&I supply availability is computed by combining Water Authority supplies and Metropolitan M&I drought supplies (**Table 5-8**).

As noted in **Section 5.1**, IAWP supply is subject to up to a 30 percent reduction prior to cutbacks in imported M&I supplies (Full Service water) from Metropolitan. In this example the 30 percent cutback has occurred, resulting in an initial imported IAWP supply of 13,642 acre-feet. At this time, Metropolitan has not made clear what will occur if further IAWP reductions are needed beyond the initial 30 percent cut. However, the Water Authority, as agreed to by the TAC, has applied any further cutback to the remaining IAWP demands at an equal level as M&I demand reduction. Thus, an additional 20 percent cutback (the M&I cutback) on the remaining IAWP supply is taken. This results in a net 44 percent reduction to IAWP supply availability (**Table 5-8**).

**Table 5-8
Supply Availability (AF)**

M&I Supply Availability

Allocation-Year M&I Demand	273,360
SDCWA Supply	20,000
M&I Demand on Metropolitan	253,360
Metropolitan Cutback to M&I Supplies	20%
Net Metropolitan M&I Supply Availability	202,688
Total SDCWA M&I Supply Availability	222,688
Net Cutback to Imported M&I Supply	18%

IAWP Supply Availability

Allocation-Year IAWP Demand	19,300
Metropolitan Cutback to IAWP Supply	30%
Initial IAWP Supply	13,510
Additional Cutback to Initial IAWP Supply (based on Metropolitan M&I Cutback level)	20%
Additional Cutback Volume	2,702
Total IAWP Supply Availability	10,808
Net Cutback to IAWP Supply	44%

5.2.5 Member Agency Allocation of Water Authority Supplies

One of the final steps in the allocation methodology is to determine the agency level allocation of available M&I and IAWP supplies. This is calculated by multiplying total available supplies by each agency's percent share of the adjusted base period demand (base period for IAWP), as shown in the following equation:

$$= (\text{Available Regional Imported Supply Type}) \times (\text{Agency's Pro-rata Share of Demand Type})$$

For the example, data from **Tables 5-6, 5-7, and 5-8** are used to calculate M&I and IAWP allocations for the sample agencies. The results are shown in **Table 5-9**.

**Table 5-9
Supply Allocation Volumes**

Agency	Pro-rata Share of Adjusted Base Period SDCWA M&I Demands	SDCWA M&I Allocation Volume	Pro-rata Share of Base Period IAWP Demands	IAWP Allocation Volume
A	0.8%	1,781	0.0%	0
B	2.3%	5,122	98.5%	10,646
C	71.3%	158,777	1.0%	108
D	16.2%	36,075	0.5%	54
E	9.4%	20,933	0.0%	0
Total	100.0%	222,687	100.0%	10,808

Unless Water Authority supply cutbacks are severe, at or exceeding 30%, the calculation is now complete and each agency knows their allocated volume of Water Authority supplies. If the cutback is severe, the methodology includes a regional reliability adjustment, which is discussed in the next section.

5.2.6 M&I Regional Reliability Adjustment (if needed)

In accordance with Principle 15, which states, *“In order to protect the economic health of the entire region, it is very important for the allocation methodology to avoid large, uneven retail impacts across the region. The methodology should include a minimum level of retail agency reliability to ensure equitable allocation among the member agencies,”* a regional M&I reliability floor was established. The floor, if needed, is set at 5% below the region’s total M&I level of service and is triggered when the net cutback to total Water Authority supplies reaches or exceeds 30 percent. Taking into account the supply development by the Water Authority, its member agencies, and Metropolitan, this level of cutback is very unlikely. The first step in determining the adjustment is calculation of the M&I level of service for each member agency and region, which is shown below.

Level of Service

The level of service value is computed as the ratio of total supplies available to an agency, including allocated imported supplies and local resources, to projected M&I demand during that same period. Thus, in order to calculate Level of Service estimates, projected member agency allocation-year demand and supply projections are necessary.

Table 5-10 contains estimated allocation-year M&I demands and supplies used for this example. The second column titled, M&I Demand on SDCWA, has been computed for this example by adding the demand increase associated with the growth adjustment and the estimated loss of local potable supply volume to the base period M&I demand. Included in the next column are projected allocation-year local potable supplies used to offset imported demand. These supplies are calculated by subtracting the assumed volumetric loss of local potable supply from the base period average of local potable supplies. Finally, brackish groundwater and recycled water use projections are based on member agency estimates of allocation-year facility operations.

**Table 5-10
Allocation-Year Demand and Supply (AF)**

Agency	M&I Demand on SDCWA	Local Potable Supplies	Recycled & Brk GW Supplies	Total M&I Demands
A	2,220	0	80	2,300
B	6,620	0	0	6,620
C	192,600	24,000	4,500	221,100
D	45,380	0	3,800	49,180
E	26,540	4,200	6,000	36,740
Total	273,360	28,200	14,380	315,940

Summing an agency's M&I allocation volume (**Table 5-9**) and projected allocation-year total local supplies (**Table 5-10**) results in their total M&I supply during a cutback. This value is then divided by the projected total M&I demand (**Table 5-10**) to generate the agency's estimated M&I level of service. A summary of agency level allocations and resulting levels of service is shown in **Table 5-11**. The M&I level of service of the agencies' and region are utilized in severe cutback levels to calculate the regional reliability adjustment.

**Table 5-11
Allocation and Resulting Level of Service (AF)
20% Cutback to Metropolitan M&I Supply**

Available Supply

M&I 222,688

Agency	Pro-rata Share of Adjusted Base Period SDCWA M&I Demand	SDCWA M&I Allocation Volume	Estimated Local Potable Supplies	Estimated Recycled & Brk GW Supplies	Total M&I Supply	Projected Total M&I Demand	M&I Level of Service
A	0.8%	1,782	0	80	1,862	2,300	80.9%
B	2.3%	5,122	0	0	5,122	6,620	77.4%
C	71.3%	158,777	24,000	4,500	187,277	221,100	84.7%
D	16.2%	36,075	0	3,800	39,875	49,180	81.1%
E	9.4%	20,933	4,200	6,000	31,133	36,740	84.7%
Total	100.0%	222,688	28,200	14,380	265,268	315,940	

Total Regional M&I Level of Service - (265,268 / 315,940) = 84%

Net 44% cutback to IAWP demand results in 56% IAWP level of service for IAWP program participants

M&I Regional Reliability Adjustment Calculation

The regional M&I reliability floor effectively reallocates a portion of the Water Authority's M&I supplies necessary to bring all agencies up to the minimum M&I level of service. This floor is set at five percent below the region's total M&I level of service and is triggered when the net cutback to total Water Authority M&I supplies reaches or exceeds 30 percent. The volume of imported supplies required to meet this shortfall is provided by those agencies with a total M&I level of service exceeding the region's total M&I level of service. An agency's contribution is calculated by multiplying its pro-rata percent share of the aggregated exceedance volumes by the total M&I level of service shortfall. However, an agency's contribution cannot exceed quantities that would lower its total M&I level of service below the regional M&I level of service.

Data from the previous example is used to illustrate the regional M&I reliability floor adjustment procedure. In this scenario the reduction in Metropolitan's M&I supply is elevated to 40 percent. As a result, the net cutback in Water Authority total M&I supplies increases to 37 percent, which triggers the reliability adjustment. A detailed summary of the regional M&I reliability floor calculation is shown in **Table 5-12**.

5.2.7 Data Reconciliation

Since allocations are based on estimated values, an assessment of each agency's actual demand and supply utilization during a cutback is necessary. Through this process, a final accounting of appropriate allocation volumes will be calculated. The reconciliation of certified and actual data will occur at the end of the allocation period or at the end of twelve months, whichever comes first. Agencies are required to certify the following information: number of new meters, M&I and IAWP demands, and local use from potable and recycled sources.

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Table 5-12
Regional Reliability Floor (AF)
 40% Cutback to Metropolitan M&I Supply

Available Supply

M&I 172,016
 IAWP 8,106

Regional Reliability

Regional M&I Level of Service(214,596/315,940)= 68%
 Regional M&I Reliability Floor (-5%) 63%

Level of Service

Agency	Pro-rata Share of Adjusted Base Period SDCWA M&I Demand	SDCWA M&I Allocation Volume	Pro-rata Share of IAWP Demand	IAWP Allocation Volume	Estimated Local Potable Supplies	Estimated Recycled & Brk GW Supplies	Total M&I Supply	Projected Total M&I Demand	M&I Level of Service
A	0.8%	1,376	0.0%	0	0	80	1,456	2,300	63.3%
B	2.3%	3,956	98.5%	7,984	0	0	3,956	6,620	59.8%
C	71.3%	122,647	1.0%	81	24,000	4,500	151,147	221,100	68.4%
D	16.2%	27,867	0.5%	41	0	3,800	31,667	49,180	64.4%
E	9.4%	16,170	0.0%	0	4,200	6,000	26,370	36,740	71.8%
Total	100.0%	172,016	100.0%	8,106	28,200	14,380	214,596	315,940	

Regional M&I Reliability Floor Reallocation

Agency	Total M&I Floor Check	Total M&I Shortfall	Pro-rata Share of Total M&I Shortfall	Exceedance of Regional Reliability Average	Exceedance Volume	Pro-rata Share of Exceedance	Exceedance Agency Contribution	Revised SDCWA M&I Allocation	Revised M&I Level of Service	Total Level of Service
A	0%	0	0%	0.0%	0	0.0%	0	1,376	63.3%	63.3%
B	-3.2%	215	100%	0.0%	0	0.0%	0	4,171	63.0%	47.4%
C	0.0%	0	0.0%	0.4%	799	31.0%	67	122,580	68.3%	68.3%
D	0.0%	0	0.0%	0.0%	0	0.0%	0	27,867	64.4%	64.3%
E	0.0%	0	0.0%	3.8%	1,775	69.0%	148	16,022	71.4%	71.4%

Shortfall Calculation

Exceedance Calculation

M&I Reallocation

5.3 Member Agency Transfers Secured Following Allocation Methodology

The Water Authority's member agencies have the option of purchasing water from an entity and using, among other facilities, the State Water Project, the Colorado River Aqueduct, Metropolitan's distribution system, and the Water Authority's distribution system to wheel the water. In addition to the cost of the transfer water, the member agency would pay the applicable wheeling rate to utilize these facilities. This transfer water would not be considered a Water Authority supply or local supply when allocating Water Authority supplies under the methodology included in the DMP. Rather, the transfer water would be "on top" of the allocation, and thus, not factored into the allocation methodology base period or be eligible for the local project development adjustment.

Water Authority staff will assist member agencies in entering into agreements with the wheeling entities. Additionally, the Water Authority may need to be a signatory to some of the wheeling agreements, such as an agreement with Metropolitan. However, it will be the member agency's responsibility to find the transfer water, enter into an agreement with the selling entity, and comply with any other requirements (e.g. CEQA, NEPA). Any transfer water identified by the Water Authority during its search that it chooses not to purchase will also be available for purchase by its member agencies.

Section 6 - Water Authority/Member Agency Coordination

6.1 Introduction

Communication and coordination between agencies, the public, and public officials are vital for the successful implementation of the DMP elements. To facilitate this effort, two member agency groups will be formed to handle coordination of activities and communication. The first group is the Member Agency Advisory Team (advisory team) that will assist the Water Authority's General Manager with issues that arise during the implementation of the DMP. This will include actions related to implementation of the Drought Response Matrix (**Section 4**) and the Allocation Methodology (**Section 5**). The second group is a Drought Communication Team (communication team) that will aid in the coordination of communications with the press and public. The existing Joint Public Information Council (JPIC) can sit as the communication team.

Please note that while the communication team will only need to convene once a drought has begun, as with the advisory team, communications about water supplies and conservation are an on-going activity by the Water Authority and its member agencies. These activities currently occur through the JPIC, making that body the logical group to assume the responsibilities of the communication team. During a supply shortage, communication activities will increase and closer coordination will be necessary. This section describes the advisory team and the communications strategy.

6.2 Member Agency Advisory Team

The advisory team will be made up of the general managers of the Water Authority's member agencies or their representatives. The advisory team will focus on decisions related to actions included in the Drought Response Matrix, including the Allocation Methodology. The intensity of the drought will determine how often the advisory team meets. It may meet infrequently if water is only being withdrawn from storage, or the meetings may be scheduled monthly and possibly more often if the allocation of water begins. Also, during the implementation of the Drought Response Matrix actions, policy issues may arise where the Water Authority's General Manager may desire input from the member agencies before making a recommendation to the Water Authority's Board of Directors. The advisory team could be convened at this time to provide input. The policy decisions related to implementation of the matrix actions could include recommendations on:

1. What drought response action(s) to take to avoid rationing;
2. How much to spend to avoid rationing;
3. Adding a new rule to adjust the base period for an exception; and
4. Modifying a portion of the DMP that is not working as expected.

The advisory team will also be the body to which a member agency may appeal should the Water Authority's General Manager deny an adjustment during rationing. Should the

member agency want to appeal the advisory team's recommendation, it may then ask the Water Authority's Board of Directors for a review.

Additionally, the Water Authority's General Manager may wish to convene the advisory team to provide an update on supply conditions or conservation performance during a drought. This meeting may simply be for communication purposes or for further input to develop new programs to help avert the impacts of a drought.

6.3 Communication Strategy

During drought periods, it is necessary for any responsible water agency to activate an established drought communication strategy. The purposes of such a strategy are manifold, but all activities need to result in the reduced consumption of water during the drought period.

Given that priority, the remaining purposes include:

1. To ensure that all constituents believe they are being treated fairly in relationship to all other constituents;
2. To satisfy the political community that the agencies have done a good job managing the drought;
3. To cause constituents to understand that all reasonable steps have been taken to avoid the need to restrict water consumption during a drought;
4. To avoid the confusion of different jurisdictions asking their constituents to react substantially differently from other, proximate jurisdictions; and
5. To emerge from the drought period having demonstrated an agency's ability to provide leadership, good planning, equality and to have minimized the impacts of water shortages on its constituents.

For our purposes, communications is defined as the following:

“A two-way flow of information contrasted to the one-way dictates of a person or entity in power.”

Communication involves making plans, discussing those plans with those who are impacted, taking suggestions from those impacted and modifying the plan to respond to those needs. Issuing a press release that states, “everyone must reduce their water consumption by 10 percent,” is not sufficient communication. Thus, any communications strategy must include a process for feedback and plan modification. By the very nature of drought, the impacts can range from slight (during the early years of a drought period) to dramatic or onerous (during the latter years of a drought period). A communications strategy must account for the level of alarm to avoid later non-compliance due to the “cry-wolf” syndrome and to maintain credibility in the media.

A communication team has been established as part of the DMP to address this two-way flow of information on a Water Authority and member agency level. Additionally, the communication team will be able to coordinate information flow to/from the media, public officials, and the general public when needed. As part of the communication strategy, the Water Authority should also make an effort to coordinate communications with water agencies in Riverside County that share the same source of water from Metropolitan.

6.4 Five Phases of Drought Response

The Communications Strategy has five phases with respect to drought conditions, including a normal period. While the correlation between events (available water supply) and the duration of the drought is imperfect, experience indicates that Southern California, in general, can manage through three years of drought without great inconvenience to consumers. Historically, year four and beyond of a drought have resulted in calls for serious reductions in water use. A drought continuing beyond year four could result in mandatory reductions of deliveries to member agencies of Metropolitan and corresponding reductions in deliveries to sub-agencies of Metropolitan's member agencies, including reductions to, and by, the Water Authority.

Since the Water Authority is dependent on Metropolitan for water imported from other hydrologic basins, a drought period localized to San Diego County may not result in water shortages if adequate imported water is available. At the same time, heavy rainfall in San Diego County occurring during a lengthy dry period on the watersheds of the Colorado River and the California State Water Project could result in water-use restrictions during a local deluge. These anomalies are likely not well understood by most consumers in San Diego County (or any other county, for that matter) and will need to be part of a consumer education process.

Each of the five phases of drought response is described below, along with suggested activities to take.

6.4.1 Normal Periods

A normal period is the condition where available water supplies more or less match demand with little water left over for storage for use in some future year. This occurs prior to the stages included in the Drought Response Matrix, which are shown in **Section 4**. This condition is permanent in Southern California. Without regard to calendar year 2005, and in all probability, 2006, Metropolitan and its member agencies tend to be in water balance give or take a few hundred thousand acre-feet of water. While demand remains somewhat constant, supply hits peaks and valleys over any running period of time. On average, water supply and demand tend to be close to one another. Averages only work, however, when there is adequate storage to hold water made available by the peak wet years in order to deliver that water during the dry years. Absent such storage, the ability to meet consumer demands year in and year out would be seriously hampered.

Southern California water agencies would be oscillating from drought to abundance on a regular basis.

Actions taken by the Water Authority and its member agencies during normal periods to diversify supplies include implementation of Best Management Practices, development of brackish groundwater and seawater desalination projects, increasing the use of recycled water, and increasing the amount of local storage. The Water Authority and its member agencies will continue the effort to educate consumers about the need for, and the cost of, these types of projects.

Urging people to conserve water as part of a daily routine is a continuous process. Such lifestyle conservation often causes a “hardening of demands.” Demand hardening makes it more difficult to conserve additional supplies during a drought. This is taken into account in the Communication Strategy and accommodated during drought planning. Activities during this phase are considered part of “normal” business activities, the communication team does not need to convene for normal periods other than to continue its work as the JPIC.

Normal Period Activities

Normal period communication represents essentially what the Water Authority and its member agencies currently do – offer a high quality, multifaceted public outreach and education program in the form of news releases, publications, brochures, participation in special events, tours, and the remainder of its comprehensive program. As part of this DMP, the following steps will be added to the “everyday” communication tasks:

1. A current list of all people who have attended tours of Water Authority facilities will be maintained. Communications with these people will be held from time to time by way of letters or broadsides addressed to this special group of community leaders who have some inside information and may be viewed by their peers as a “water expert”.
2. An e-mail list of drought coordinators at all member agencies, cities, and the county will be created and maintained. The coordinators for member agencies would include the agency’s general manager or representative and communication team member. The list will be updated on a continuous basis. This list will be used to communicate how the Water Authority and its member agencies need to react to whatever drought stage is current. Suggestions from these people will be encouraged. The people on this list will be contacted before a program or drought event goes public. Such a list may already exist as the JPIC. Special efforts should be made to keep this list current.
3. A separate list of contacts at the offices of all municipal, county, state and federal elected officials will be created and maintained. During a drought emergency, a quick message to them about what the Water Authority’s message will be to the general public will be distributed.

4. E-mail lists will be kept current by sending a message to each list once every three months with the following message: “The Water Authority is attempting to keep this list current in the event of a drought emergency. If there is change in your organization, please respond to this message with the name of the new person.” If e-mails are returned as undeliverable, staff will need to research the reason.

6.4.2 Phase One

Phase One of the Communication Strategy occurs when Metropolitan experiences shortages in its imported water supply (from either the Colorado River or the State Water Project, or both) and must remove water from storage to meet normal demand. In all likelihood, during Phase One, the Water Authority will be in the “Voluntary” column of its Drought Response Matrix. This could be the first year of a multi-year dry period, but that cannot be known in advance. What is known is that Metropolitan will likely begin the following year with less water in storage than it had at the beginning of the year. If year two is a wet year and Metropolitan is able to restore its storage while meeting all normal demands, the period has passed with little notice or concern by most consumers. Nonetheless, as part of the communications process, consumers will need to be made aware that the water agencies are dipping into their savings account to meet demand. Consumers will also need to be reminded that conserving water now leaves more water for the future. The communication team will convene to discuss the supply situation, review any new communication messages that the Water Authority is formulating as a result of the supply situation and provide feedback. The Water Authority’s obligation is to take into account comments received from the member agencies through the communication team and make modifications as appropriate. Because the communication team is, by its nature, a large group, team members have an obligation to ensure that comments are on point and additive to the communication process.

Phase One Activities

Phase One communications will include monthly updates to the drought coordinators list that might coincide with a meeting of the board of directors where a similar update might be provided. An advisory will also be prepared for the media – print and electronic – that explains what the current drought means to the state and region and how the Water Authority has prepared to cope with it. This advisory is, in effect, a status report to the media that is not intended for publication, but rather for the media’s edification. If it does get published, that’s acceptable, but it is important for the Water Authority to continue maintaining personal relationships with members of the media by making them insiders to what is going on. Thus, if the drought should worsen, the media is not surprised as events unfold and also does not need a crash education course on water supplies. Media outlets in Riverside County that may be outside the Water Authority’s usual media program should be included in drought news. Contact with media that primarily serve consumers outside of the Water Authority’s service area should, as a courtesy, be coordinated with the local Metropolitan Water District member agency or agencies. The

communication team will be able to review and provide feedback to the Water Authority on advisories, as well as other messages to be distributed to the public.

The media's help will be sought to urge people to be conscious of how they are using water and advising them that reducing use now will help everyone in the future if the drought continues. This will be used as an opportunity to help ensure people understand how well the Water Authority and Metropolitan have positioned themselves to deal with the early stages of drought. The elected officials' e-mail list will also be employed. Hearing news from the Water Authority first, before being read in or heard on the media will establish the Water Authority as the primary message carrier on drought. Brief messages on a monthly basis to this list should be adequate unless conditions approach very serious levels of water shortages.

6.4.3 Phase Two

Phase Two could occur in year three or four of a dry period and represents that point in time when Metropolitan may restrict water deliveries to its member agencies through one means or another, but the Water Authority has adequate water either in storage or purchased from outside the region to avoid rationing to its member agencies. In all likelihood, the Water Authority would be in the "SDCWA Supply Enhancement" column of its Drought Response Matrix under Phase Two.

Phase Two communications require that people substantially reduce their use of water to retain water in storage for the following year. Phase Two should communicate the importance of water-use reductions without implying a sense of dire urgency. Consumers should be told that the more they conserve during Phase Two, the less would be the impact in the event of a Phase Three. The communication team will continue to convene to discuss the supply situation, review any new communication messages that the Water Authority is formulating as a result of the supply situation and provide feedback.

Phase Two Activities

Phase Two communications are essentially the same as in Phase One, except the communication is more frequent and the communication team is drawn into the message-building activities. This is an even more important opportunity to explain the Authority's preparedness in relation to other parts of the drought-stricken area that may not be as well prepared and that the Water Authority and its member agencies have anticipated this problem and are dealing with it. The communication team e-mail list will be used in making sure that messages are reasonably consistent throughout the service area. Coordination with Metropolitan's drought team will also be a priority, because they will have materials and easy access to data and to media contacts that may be of use to the Water Authority. Because of the joint reliance on the Skinner Treatment Plant by multiple agencies, coordination with other Metropolitan member agencies is important. During Phase Two it would be appropriate to begin preparing print and broadcast advertising that can be placed very quickly, if needed, in Phase Three.

6.4.4 Phase Three

Phase Three could occur in year four or five of an ongoing drought. It represents the period when Metropolitan is unable to meet all member agency demands and locally supplied or purchased and wheeled water is inadequate to make up the difference. In all likelihood, the Water Authority will be in the “Mandatory Cutbacks” column of its Drought Response Matrix under Phase Three.

Phase Three Activities

In this phase, the communications strategy needs to have solid results in terms of reducing demand, and a sense of urgency must be communicated to consumers. At the same time, consumers must understand the nature of the matter – that this is the fourth or fifth year of an on-going drought; that the Water Authority and its member agencies have been managing their resources well; that the duration of the drought cannot be known and that every gallon saved this year is a gallon that will be available next year should the drought continue. Communication during this period will likely result in the most contentiousness as member agencies and consumers are asked to make significant sacrifices. Because of differing levels of local supplies and local political philosophies, member agencies may perceive different levels of concern and want to protect their customers from more urgent messages. The communication team should be sensitive to this potential. Differences in localized responses to a drought emergency should be discussed openly within the communication team in order to avoid conflicting messages in media that transcends political borders and tends to confuse consumers.

One of the possible consequences of calls for urgent conservation is that after such sacrifices it could start raining during the winter months negating the effects of the drought and allowing some people to be critical of the agencies because they seemingly sacrificed for nothing. Because water sales are reduced, sales revenue to that agency is reduced. That, in turn, raises the water rate to cover fixed costs. Nearly every staff member and board member has heard consumers complain that “I reduced my water use and they raised my rates. Maybe I should have used more.” These are potential outcomes that must be addressed in any communications strategy.

Most agencies established a separate fund made available to stabilize rates during such periods. The DMP TAC endorsed the use of rate stabilization funds during this period. In this phase, communication with the communication team and the elected officials list is critical. The Water Authority must determine how all of its member agencies will be impacted; are there opportunities outside of what has been identified to supplement supplies?; can elected officials help spread the message? The communication team will involve the media in weekly briefings either in person or via e-mail. High demand water users, such as the California Landscape Contractors Association, Biotech Trade Assoc., agriculture, and hotel/motels, will be contacted by the Water Authority or the member agencies as appropriate to determine to what degree, if any, they can reduce water use. Paid advertising on radio, television, and newspapers will be considered if it is determined necessary to supplement media outreach through news contacts, interviews,

reporter briefings, and news releases. The tour guest list should be considered as a source of information within local neighborhoods where community leaders are regarded by some as water experts. To the extent that their peers approach them for information about the drought or how well the Water Authority and its member agencies are responding, the better informed they are, the better will be the information they pass along to their peer group.

Before the DMP allocation methodology is implemented, the elected officials e-mail list should be used to explain to them what is about to happen. The Water Authority should post a graphic on its website showing reservoir capacities and levels and the media should be advised that they are welcome to pull that graphic off the website for use as often as they can use it. Trained people will be assigned to take media calls at all hours. These people must be available and they must know how to respond.

6.4.5 Phase Four

Phase Four is a situation where water must be reserved for health and safety purposes. The Water Authority would be in the “Mandatory Cutbacks” column of its Drought Response Matrix under Phase Four. This is the unlikeliest of events, but plans must be made to address it. In this phase, Metropolitan is drastically restricting deliveries through one means or another and the Water Authority, although enhancing Metropolitan’s supplies with its own, is passing a large portion of the shortage through to its member agencies. The drought event will be major news within the region and the communication team will likely be in reactive mode rather than a proactive mode. If the steps noted below in the first four phases are taken, the Water Authority and member agencies will be well positioned to be viewed as having acted proactively during the first four phases and are responding honestly and competently to the drought.

Phase Four Activities

In Phase Four, the media will be covering this story on a daily basis and severe water restrictions will be in place. The communication team will be prepared to receive numerous complaints of inequities and the wasting of water. Additionally, water sensitive businesses (nurseries, car washes, etc.) will be seeking relief and it is possible that the state will have declared a drought emergency. Communications during this phase will be largely reactive. Nonetheless, the e-mail lists noted above, as well as the steps the Water Authority and its member agencies took prior to this phase will provide the perception in the media that the agencies are drought experts. If Sacramento has ordered certain severe conservation measures, as Metropolitan will have done already, the Water Authority will be chasing the story rather than managing it. A program of paid advertising specific to water conservation activities should be developed as part of the Phase Two activities and discussed with the communication team so they can be distributed in short order. While the Water Authority would likely be the primary “spokesagency” in the *San Diego Union-Tribune* for the region, member agencies will be encouraged to play the same role with local newspapers as well as with local politicians to explain their own situation since local supplies may vary. Because of Metropolitan’s

size and significance in supplying water, it is possible that the media will turn to that organization for drought information. The Water Authority will ask Metropolitan, should the local media contact them, to refer the media to the Water Authority for information specific to the region.

Table 6-1, on the following page, provides a summary of the phases of the General Communication Strategy discussed above. The Drought Response Matrix stage anticipated under each phase is also identified in the table. Please refer to **Section 4** for details on Drought Response Matrix stages.

6.5 Conclusion

The Communication Strategy presented in this section serves as a guidebook for the Water Authority if the San Diego region is ever faced with a prolonged drought situation. The phases and corresponding activities may vary because each drought situation is unique, but with a strategy available, the Water Authority and its member agencies will be able to be proactive if a long-term drought scenario occurs. The advisory team is also a critical element in implementation of the Drought Response Matrix and Allocation Methodology of the DMP. Successful implementation of these two elements will only occur through coordination with the member agencies.

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**Table 6-1
General Communication Strategy**

<u>Normal Period</u>	<u>Phase One (Response Matrix Stage: Voluntary)¹</u>	<u>Phase Two (Response Matrix Stage: Supply Enhancement)</u>	<u>Phase Three (Response Matrix Stage: Mandatory Cutbacks)</u>	<u>Phase Four (Response Matrix Stage: Mandatory Cutbacks)</u>
Supplies and Demands Balance	Metropolitan Withdraws Water From Storage to Meet Demands	Metropolitan Supplies Short, Water Authority Total Supplies Meet Demands	Metropolitan Supplies Restricted, Water Authority Supplies Restricted	Supplies at Health and Safety Level
Current Outreach	Convene communication team as needed	Communication team meets monthly	Communication team meets at a minimum weekly	Communication team meets daily
Create and maintain list of tour attendees, drought coordinators, elected officials	Monthly updates to drought coordinators	Same activities as Phase One	Weekly media briefings	Continue media briefings
Check e-mail lists every three months	Prepare, review, and distribute media advisory	Coordinate with Metropolitan's Drought Team	Weekly elected officials briefing	Continue elected official briefings
Utilize Public Access Television	E-mail elected officials on monthly basis		Drought speakers bureau implemented	Paid Advertising
			Advertising if possible	Continue other steps taken previously
			Graphics on website	
			Utilize trained phone personnel to respond to drought-related inquiries	

¹ Refer to **Section 4** for details on the Drought Response Matrix stages shown.

Section 7– Summary

The Water Authority anticipates that through implementation of member agency and Water Authority planned projects and successful implementation of Metropolitan’s Integrated Water Resources Plan, a higher degree of reliability will be attained in the region to avoid rationing levels experienced during the 1987-1992 drought. While the region has plans to provide a high level of reliability, there will always be some level of uncertainty associated with maintaining and developing local and imported supplies. The DMP encompasses not only a way to allocate water when supplies fall short of demands, but it addresses ways to avoid rationing through supply enhancement. The DMP also contains a strategy to communicate with the Water Authority’s stakeholders regarding water supplies. The DMP, combined with the Water Authority’s Urban Water Management Plan and Regional Facilities Master Plan, serve as excellent planning tools to provide guidance to the Water Authority and its member agencies on maintaining and planning for water supply reliability within the San Diego region.

Working collaboratively with the member agencies, the Water Authority was able to prepare a comprehensive DMP that contains the following elements:

1. *Initial principles that helped frame the issues and guide discussions at the TAC meetings in development of the DMP elements, including the supply allocation methodology included in **Section 2**.*
2. *A Drought Response Matrix that identifies potential actions that the Water Authority can take to avoid an allocation of water supplies to the member agencies. The Drought Response Matrix is described in **Section 4**.*
3. *A methodology for the allocation of Water Authority supplies (**Section 5**) that achieves the following:*
 - a. *Encourages local supply development and increased regional reliability through the use of the local supply development adjustment, conservation credits, and tying an allocation of water to Water Authority demands rather than total retail demands;*
 - b. *Achieves equity among member agencies by adjusting for local supply development, growth, loss of local supplies, and demand hardening; and*
 - c. *Avoids large uneven retail impacts to the region during the deepest stage of a drought by implementing the regional reliability adjustment which brings agencies up to a minimum allocation floor.*
4. *A communication strategy that identifies a phased approach to coordinating with member agencies, public, and media in response to drought conditions. (**Section 6**)*

The DMP serves as guidance to the Water Authority and its member agencies. With the many unknown conditions associated with any potential long-term drought, the Water Authority understands that elements of this plan may need to be modified to meet the needs at that time. With the DMP in place, the Water Authority and its member agencies will be better prepared to work with the public to minimize the effects of a prolonged drought.

APPENDICES

**The appendices for the Drought Management Plan can be viewed
online via the Water Authority's website at:**

<http://www.sdcwa.org/water-shortage-and-drought-response-plan>

RESOLUTION NO. 2008-11

A RESOLUTION OF THE SAN DIEGO COUNTY WATER AUTHORITY
ESTABLISHING PROCEDURES AND POLICIES FOR ADMINISTRATION OF THE
DROUGHT MANAGEMENT PLAN WATER SUPPLY ALLOCATION METHODOLOGY

WHEREAS, pursuant to the County Water Authority Act, the San Diego County Water Authority exists to provide, as far as practicable, each of its member agencies with reliable and adequate supplies of water to meet their needs, and to establish reasonable rules, regulations and restrictions for the allocation of available supplies for the greatest public interest and benefit; and

WHEREAS, the water supply needs of Water Authority member agencies includes supplies to serve current demands and reasonably anticipated future demands; and

WHEREAS, providing a reliable water supply includes the obligation to manage water and use of water; and

WHEREAS, on May 25, 2006, the Water Authority Board of Directors adopted Resolution No. 2006-16, approving and adopting a comprehensive Drought Management Plan of specific actions to be taken by the Water Authority and its member agencies during anticipated or actual water supply shortages; and

WHEREAS, the Drought Management Plan establishes the methodology by which with the Water Authority will allocate supplies under various supply reduction scenarios; and

WHEREAS, the Water Authority Board of Directors desires to establish administrative procedures and policies for implementation of the allocation methodology established by the Drought Management Plan;

NOW, THEREFORE, the Board of Directors of the San Diego County Water Authority resolves as follows:

Section 1. Municipal and Industrial Water Supply Allocations\

The provisions of this section shall govern the establishment and adoption of a water supply allocation whenever the Water Authority Board of Directors determines it is necessary to allocate water as provided in the Drought Management Plan. This section applies to allocation of water for all uses except Interim Agricultural Water Program uses which are subject to Section 7 of this resolution.

a. Water Supply Allocation Period

An allocation period shall be for 12 months, from July 1 of a given year through the following June 30, unless otherwise specifically determined by the Board. It is the intention of the Board of Directors that the Water Authority's allocation period be consistent, to the extent feasible, with the Metropolitan Water District of Southern California February 2008 Water Supply Allocation Plan, or later update of such plan, adopted by the Metropolitan Water District of Southern California.

b. Establish Water Supply Allocation

The General Manager shall establish the supply allocation for each member agency based on the Supply Allocation Methodology included in the Water Authority's Drought Management Plan. The three-year base period described in the Drought Management Plan shall be determined prior to commencement of the water allocation period and shall include the three most recent consecutive non-allocation years. The General Manager shall coordinate with member agencies to obtain and analyze historic data such as, but not limited to, total water use, local water use, new meters assessed a capacity charge, conservation savings and projected local supply, in order to finalize the allocation data to be utilized by the Water Authority in calculating the supply allocation. This coordination shall occur during January through April of a year in which the General Manager determines an allocation may be necessary beginning July 1. During this coordination period, member agencies will have

an opportunity to provide updated projections for local supply based upon changes in local supply conditions caused by winter runoff. Member agencies shall provide water use and other information upon request of the General Manager. The Integrated Contingency Plan, Emergency Storage Project or Treated Water Shortage Plan shall govern allocations in response to an unanticipated or catastrophic event.

c. Adoption Supply Allocation

The General Managers recommendation for allocation shall be submitted to the Water Planning Committee for recommendation to the Board of Directors. The determination by the Board of Directors of the allocation for each member agency shall be final, subject only to modification by the Board because of significant changes in Water Authority supply conditions or pursuant to Section 3.

Section 2. Monthly Reporting

The General Manager shall provide monthly reports of each member agency's actual imported and local water use data compared to their allocation to the Water Planning Committee, Member Agency Advisory Team, member agencies, and the Board of Directors. In order to provide an accurate accounting of member agencies' performance, member agencies shall provide monthly total water use data and other information in a timely manner upon request of the General Manager.

Section 3. Modifications to Supply Allocations Due to Changes in Local Conditions

A member agency may request a modification to its approved allocation based upon new information justifying a recalculation of the allocation because of significant changes in local circumstances, e.g. surface water or local supply changes. Information shall not be considered new if it reasonably could have been made available before the initial establishment of the allocation. The General Manager may initiate a modification to a member agency's allocation at any time if the General Manager determines that information provided by the member agency was inaccurate or incomplete. Requests for modification

that, alone or in the aggregate, total more than 10 percent of the requesting agency's allocation or greater than 500 acre feet within a single allocation period must be approved by the Board of Directors. All other modification requests are considered minor and may be approved by the General Manager after consultation with the Member Agency Advisory Team.

A member agency may initiate a request for modification by providing written notice and supporting documentation to the General Manager no later than December 30 within an allocation period running from July 1 to June 30. The General Manager shall review the request and provide a written response supporting or opposing the modification, and the reasons for support or opposition, within 30 days of the member agency request.

The Member Agency Advisory Team shall review the Member agency request and the General Manager's written response prior to making a recommendation regarding the modification. The Member Agency Advisory Team shall consider all circumstances surrounding the request, including the period of time impacted by the changed local circumstances. If the Member Agency Advisory Team recommends approval or modified approval of the determination, the General Manager shall forward the modification to the Board of Directors for final action, with the exception of minor modifications which become effective upon approval by the General Manager.

If the Member Agency Advisory Team denies a request for modification, the member agency may request, within five days, an appeal of the Member Agency Advisory Team decision to the Board of Directors at the next regular Board Meeting that is not less than 20 days from the date of the Member Agency Advisory Team recommendation. The decision of the Board of Directors is final.

Section 4. Reconciliation

Within six months of the end of an allocation period, the General Manager shall conduct a final accounting of member agency deliveries during the allocation period

compared with the member agency supply allocations, including any modifications provided in Section 3 of this resolution. As part of the reconciliation, member agencies shall provide actual local water use for the allocation period and other information upon request of the General Manager. Upon completion of the reconciliation, the General Manager shall notify each member agency of their performance in meeting their supply allocation.

Section 5. Monetary Penalties from MWD

The Water Authority is subject to monetary penalties imposed by Metropolitan Water District of Southern California in the event it exceeds its annual water allocation from Metropolitan Water District of Southern California. Upon the Water Authority's reconciliation of its own water supply allocation as described in Section 4, any Metropolitan Water District of Southern California penalties levied upon the Water Authority shall in turn be assessed on a pro rata basis to the Water Authority member agencies that exceeded their Water Authority allocation.

Section 6. Exemption for Participants in the Interim Agricultural Water Program

Supply allocations to Interim Agricultural Water Program customers shall be established, monitored, and enforced based on Metropolitan Water District of Southern California's Interim Agricultural Water Program reduction guidelines and the Water Authority's Interim Agricultural Water Program Regional Reduction Plan and are not subject to the provisions of this resolution. If the Interim Agricultural Water Program is terminated, the Board of Directors may allocate water for agriculture according to the methodology provided in the Drought Management Plan.

Section 7. Reserved Discretion

The Water Authority Board of Directors reserves its discretion to amend any of the provisions of this resolution as changed circumstances warrant. Nothing in this resolution shall limit the discretion or powers of the Board of Directors under Water Code section 350.

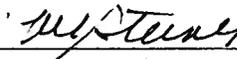
PASSED, APPROVED AND ADOPTED this 24th day of July, 2008.

AYES: Unless otherwise noted all Directors present voted aye.

NOES:

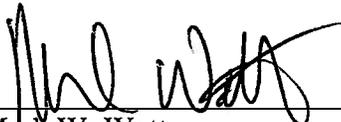
ABSTAIN:

ABSENT: Arant, Bond, (p), Johnson, Knutson, Lewinger, Lewis (p) and Tu



Fern M. Steiner
Chair

ATTEST:



Mark W. Watton
Secretary

I, Doria F. Lore, Clerk of the Board of the San Diego County Water Authority, certify that the vote shown above is correct and this Resolution No. 2008-11 was duly adopted at the meeting of the Board of Directors on the date stated above.



Doria F. Lore
Clerk of the Board