



- Board of Directors

4/26/2011 Special Board Meeting

5-1

Subject

Approve calendar year 2011 approach for purchases of water for local storage

Description

Summary

In order to optimize the reliability of water supply in to the service area, Metropolitan provides water supplies to member and local agencies for the replenishment and management of groundwater and other local storage under the Replenishment Service Program, groundwater conjunctive use programs, and cyclic storage accounts. Providing replenishment supplies has the potential to achieve greater conjunctive use of imported and local supplies, to encourage construction of additional local production facilities, and to provide dry-year supplies to meet water needs of the member agencies. In the past, Metropolitan has offered water for local storage at a discounted water rate under the Replenishment Service Program. However, as California entered into drought, the General Manager discontinued discounted sales in 2007. During the past year, while the region was under mandatory water allocations under the Water Supply Allocation Plan, Metropolitan approved a Water Management Program that did not offer a discounted replenishment water rate but facilitated storage purchases by shielding water management actions from higher penalty rates.

There are concerns about the performance and equity of the existing Replenishment Service Program and its associated discounted water rate and its performance during a period of constrained State Water Project deliveries. Metropolitan is currently engaged in a process with the member agencies to develop potential refinements to the Replenishment Service Program. The intention of this process, which should be completed by the end of this year, is to develop options for Board consideration that would address concerns with the existing program and better achieve the goal of increasing regional water supplies. **Attachment 1** shows Section 4514 of the Administrative Code (Code) pertaining to the goals and aspects of the Replenishment Service Program.

At this time, Metropolitan faces the unexpected challenge of managing and storing large amounts of supply in 2011. Due to a combination of low demands and favorable water supply conditions, Metropolitan will likely have at least 790 TAF of supplies to store this year under supplies currently allocated to Metropolitan which total 2.5 MAF. Under this scenario, net additions to storage could increase dry-year storage reserves to more than 2.3 MAF by the end of 2011, the highest end-of-year total reserves in Metropolitan's history. Additionally, there are a number of factors that could result in even higher levels of water supplies being available. Any additional water supplies beyond the current 2.5 MAF would be challenging to manage using available storage. An interim program to facilitate local storage would help to manage additional supplies should they become available.

This letter offers four options to help in managing these potentially excess water supplies for CY 2011.

- Option 1 - Manage additional water supplies using Metropolitan's dry-year storage portfolio.
- Option 2 - Amend the existing Water Management Program to allow agencies to purchase and store additional supplies with an exemption from Tier 2 supply rates and Capacity Charges through the end of CY 2011.
- Option 3 - Offer water under the existing Replenishment Service Program and the associated discounted water rate, in an amount limited to additional increases beyond current water supplies.

- Option 4 - Offer water under the existing Replenishment Service Program and the associated discounted water rate on an ongoing basis with no pre-set limits as to the amount of water offered.

The options are intended to put an interim approach in place to address the immediate water management needs for CY 2011 only. These options do not replace the need for the ongoing long-term Replenishment Service Program development process.

Issues with the Current Replenishment Service Program

The Code authorizes the General Manager to offer replenishment water deliveries under the Replenishment Service Program. This program is currently in place but deliveries under the program have not been made available to the member agencies since 2007 due to water supply concerns. The goal of the Replenishment Service Program is to provide a regional water management benefit. However, the Replenishment Service Program, in its current state, has generated concerns about its effectiveness. During the Groundwater Workgroup process, which was a facilitated process with member agencies and groundwater managers that met between July 2008 and February 2009, discussions on replenishment indicated that there are a number of concerns with the current program. These issues included questionable and unquantifiable performance and expectations, the potential of shifting water sales within a year as opposed to generating true longer-term storage, the potential offset of full service sales, unequal distribution of costs and benefits among participating and non-participating agencies, questions on whether water was being stored for future use as opposed to being purchased to refill overdraft, difficulties in measuring and verifying in-lieu deliveries to storage, and cash-flow and budgeting issues associated with the frequency under which replenishment supplies are available.

In March 2011, Metropolitan and its member agencies kicked off a Replenishment Workgroup Process to address issues with the current Replenishment Service Program and develop a new approach for facilitating the replenishment of local storage in the future. The Replenishment Workgroup Process is working towards having recommendations for a refined program in place by 2012.

Water Supply and Demand Conditions

Based on currently allocated water supplies and continuing low levels of demands, Metropolitan projects utilizing about 790 TAF of capacity to store water in its storage programs during CY 2011. A detailed discussion of the current supply conditions is included in the April 2011 Water Surplus and Drought Management report, which is included as [Attachment 2](#). Additionally, there are a number of factors that could provide additional water supplies beyond this amount. These factors include additional SWP Table A increases beyond the current 70 percent allocation, additional SWP Article 21 supplies, potential unused agricultural supplies on the CRA system, and even lower demands. These increases could be substantial, for example: A five-percent increase in the SWP Table A allocation alone, would result in approximately 100 TAF of additional supplies. Unused agricultural supplies on the CRA system, while not predictable, can also be substantial in quantity.

Metropolitan has available storage put capacity of 1.05 MAF to manage supplies if needed. This storage put capacity is being used to store the approximately 790 TAF of supplies currently available. However, some of the storage programs and locations with additional capacity beyond this amount are less desirable choices for storage management. This is because there are increased risks of future losses from those programs, potential cost implications, and concerns about future dry-year performance. When the amount of water available for storage exceeds the current estimated amount of 790 TAF, Metropolitan will be less able to effectively manage additional supplies.

Options for Managing Additional Water Supplies in Calendar Year 2011

(1) Manage Supplies with Metropolitan's Dry-Year Storage Portfolio

Under this option, Metropolitan would manage water supplies with available storage programs. Discount rate Replenishment Service Program deliveries would not be made available and the 2010/2011 Water Management Program would not be modified and would expire June 30, 2011. Should additional supply increases occur, some amount of water may not be able to be stored for future delivery and sales.

(2) Amend 2010/2011 Water Management Program

In August 2010, the Board approved the 2010/11 Water Management Program to facilitate local storage actions by providing some protection from WSAP penalties. In December 2010, the Board approved modifications that enabled member agencies to further utilize available supplies in Southern California while being consistent with the message of efficient water use. Given the backdrop of dramatically improved supply conditions and forecasts for substantial gains in Metropolitan's regional reserves in 2011, additional discussions with the member agency managers since March 2011 have highlighted new considerations and additional modifications to the water management program.

Under this option, the following refinements to the Water Management Program would be made:

- Modify the term of the program to end on December 31, 2011, instead of June 30, 2011. This is to allow additional time for deliveries under the program.
- Charge Tier 1 full service rates for water delivered under this program between May 1, 2011 and December 31, 2011, and do not include this water in the computation of the Tier 1 annual limit for CY 2011 for each participating agency.
- Require that Metropolitan and the participating member agency agree to an acre-foot purchase amount and prepare an operating plan to estimate the monthly schedule of deliveries in advance. Deliveries will be made as system capacity and operational objectives allow, which then allows for the waiving of Capacity Charges for deliveries under the program.

A detailed description of the proposed changes to the Term Sheet of the Water Management Program is shown in [Attachment 3](#).

Making water supplies available under the modified terms of the Water Management Program also provides agencies with the opportunity to purchase water supplies at a price that avoids Tier 2 and capacity charges but is not as attractive as the price offered under the discounted Replenishment Rate. Given the same budgetary or other financial constraints that the member agencies have, these changes are not likely to significantly increase the demand for replenishment water. However, the fact that the water is being sold at the Full-Service Tier 1 Rate helps to mitigate the concern that discounted replenishment water is simply replacing a Full-Service water purchase.

(3) Replenishment Service Program at a Discount Limited by Supply Increases

According to the Code, deliveries of discounted rate water for replenishment purposes may be made at the General Manager's discretion whenever both water and system capacity are available. Purchases under the Replenishment Service Program could be offered with limits under the following terms:

- Replenishment supplies must be purchased according to the terms and with the certifications outlined in the Code.
- Discount replenishment sales would be limited to increases beyond currently allocated water supplies.

Currently allocated supplies were detailed in the April 2011 Water Surplus and Drought Management Report, which is also provided as [Attachment 2](#) to this report. The following table shows a summary of the currently allocated supplies for 2011. Increases beyond these supplies would be the basis for available deliveries under the Replenishment Service Program under this option.

Currently Allocated Supplies Available to Service Area for 2011	
Colorado River Aqueduct	768,000
State Water Project (70% Table A Allocation)	1,739,000
Total	2,507,000

This discounted program would maximize the amount of water that can be taken, given any budgetary or other financial constraints that the agencies might have. The certification process outlined in the Code would provide verification that the water is being put into storage. Some of the issues that have been identified with the Replenishment Service Program will still exist but will be minimized as a result of the program being offered for a limited quantity of water supply.

(4) Replenishment Service Program Offered on an Ongoing Basis

Under this option, discount rate replenishment supplies would be offered similar to Option 3 above, but with no limit as to the amount or end-date. It should be noted that some of the issues that surround the current Replenishment Service Program, particularly those regarding performance and the imbalance between costs and benefits, will remain. These issues would need to be addressed in the development of a long-term Replenishment Service Program.

Cost and Revenue Discussion

The analysis of costs and benefits across options is not straightforward because it is impossible to know how much water will be purchased or moved under any of the programs. However, a calculation can be made assuming that 200,000 acre-feet of supply is made available and/or purchased under each of the options. In Option 1 where Metropolitan stores the additional supply in the dry-year storage portfolio, transportation and storage fees will be incurred but revenues will not be collected until the water is sold in the future. In the other options where water is sold to the member agencies, the primary difference between the approaches is the rate being charged for the water delivery. Under the approach to amend the Water Management Program, the rate charged would be the 2011 Tier 1 rate of \$527/AF for untreated deliveries. Under the Replenishment Service Program, the discounted rate in 2011 is \$409/AF for untreated deliveries. Each of the options requires that additional State Water Project water be moved and thus Metropolitan would incur the variable cost for State Water Project transportation, which is approximately \$120 per acre-foot in 2011. It should also be noted that additional State Water Project deliveries will also increase Metropolitan's share of Off-Aqueduct power costs for the year. The following calculations show the Net Revenue that would result from 200,000 acre-feet of deliveries under each of the options where water is sold in this year.

Option 2 Water Management Program

SWP Cost: $\$120/\text{AF} \times 200,000 = \$24,000,000$

Revenue: $\$527/\text{AF} \times 200,000 = \$105,400,000$

Net Revenue: $\$105,400,000 - \$24,000,000 = \$81,400,000$

Net Revenue per Acre-Foot: $\$527 - \$120 = \$407$

Options 3 and 4 Replenishment Service Program

SWP Cost: $\$120/\text{AF} \times 200,000 = \$24,000,000$

Revenue: $\$409/\text{AF} \times 200,000 = \$81,800,000$

Net Revenue: $\$81,800,000 - \$24,000,000 = \$57,800,000$

Net Revenue per Acre-Foot: $\$409 - \$120 = \$289$

This analysis shows that options 2, 3, and 4 provide an avenue for moving additional water into the service area with a positive Net Revenue. The total revenue impact will be dependent on the actual quantity of acre-feet sold, but each acre-foot would provide revenues exceeding variable costs. These positive Net Revenues would go toward paying down a portion of Metropolitan's fixed costs. It is probably reasonable to assume that less water will be moved under the Water Management Program option since the cost to the agencies is higher. It should also be noted that water may be delivered in either of these options through In-Lieu means, which are generally treated water deliveries. As such, the rates charged would include the Treatment Surcharge, which includes higher revenues than the incremental variable treatment cost and would increase the positive Net Revenues shown above.

Recommendation

Staff recommends that the Board provide direction to the General Manager to offer water deliveries under the Replenishment Service Program in an amount limited to increases beyond current water supplies for this year (Option 3). This option provides an approach for managing additional amounts of water supply for CY 2011 at a water rate that should facilitate and maximize member agency local storage actions. Furthermore, the existing Replenishment Rate would collect revenues above the estimated cost of moving State Water Project supplies.

Policy

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

Metropolitan Water District Administrative Code Section 4514: Replenishment Service

By Minute Item 48375, dated August 17, 2010, the Board authorized the General Manager to execute Water Management Agreements.

By Minute Item 48507, dated December 14, 2010, the Board amended the terms of the Water Management Program.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

None required

CEQA determination for Options #2, #3 and #4:

The overall project was previously determined by the Board to be exempt under the provisions of CEQA (Sections 15301, 15378(b)(2), 15378(b)(4), and 15061(b)(3) of the State CEQA Guidelines) on August 17, 2010 and December 14, 2010. A Notice of Exemption (NOE) was filed on the project at that time and the statute of limitations has ended. With the current board action, there is no substantial change proposed to the project since the previous NOEs were filed. Hence, the previous environmental documentation in conjunction with the project fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act with regards to the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the August 17, 2010 and December 14, 2010 NOE (Sections 15301, 15378(b)(2), 15378(b)(4), and 15061(b)(3) of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

Board Options

Option #1

Do not approve any additional approach for delivering water to the member agencies for local storage replenishment.

Fiscal Impact: Additional water supplies that become available this year would be stored in the Metropolitan dry-year storage portfolio and incur transportation costs and storage fees with revenue or sales to occur in the future; if all supplies are able to be stored.

Business Analysis: This action provides maximum storage in Metropolitan facilities for future dry-year use but also has the highest risk of lost supplies in 2011.

Option #2

Adopt the CEQA determination and

- a. Modify the 2010/11 Water Management Program Terms to extend the program through December 31, 2011.
- b. Change the purchase price of Water Management Program delivered from May 1, 2011 through December 31, 2011 to the full service Tier 1 rate, and do not count these deliveries against the Tier 1 annual limit of the member agency.
- c. Beginning May 1, 2011, limit deliveries certified under the Water Management Program to those related to improving local storage conditions by direct or in-lieu means of delivery. As such, procedures used for the Replenishment Service Program will be used to administer and assess program participation and performance.

Fiscal Impact: Likely increase in sales estimated to be up to 50,000 acre-feet due to program water being billed at the full service Tier 1 rates and charges (except the Capacity Charge). Water moved under this option would provide positive net revenue of \$407 per acre-foot sold. To the extent that treated water is sold under this program, the Treatment Surcharge would apply and thus collect revenues to cover variable treatment cost.

Business Analysis: This action provides an avenue for local agencies to improve their local storage conditions at Tier 1 rates.

Option #3

Adopt the CEQA determination and provide direction to the General Manager to exercise his discretion to offer discounted replenishment in an amount limited to increases in supply above currently allocated supplies.

Fiscal Impact: Greater increase in sales, estimated above 100,000 acre-feet due to program water being billed at the Water Replenishment Program discounted rate. Water moved under this option would provide positive net revenue of \$289 per acre-foot sold. To the extent that treated water is sold under this program, the Treatment Surcharge would apply and thus collect revenues to cover variable treatment cost.

Business Analysis: This action provides an avenue for local agencies to improve their local storage conditions at Water Replenishment Program rates. Total deliveries would be limited to increases in the current water supplies for CY 2011.

Option #4

Adopt the CEQA determination and provide direction to the General Manager to exercise his discretion to offer discounted replenishment on an ongoing basis.

Fiscal Impact: Likely increase in sales due to program water being billed at the Water Replenishment Program discounted rate. Water moved under this option would provide positive net revenue of \$289 per acre-foot sold. To the extent that treated water is sold under this program, the Treatment Surcharge would apply and thus collect revenues to cover variable treatment cost.

Business Analysis: This action provides an avenue for local agencies to improve their local storage conditions at Water Replenishment Program rates.

Staff Recommendation

Option #3



Deven N. Upadhyay
Manager, Water Resource Management

4/20/2011
Date



Jeffrey Kightlinger
General Manager

4/20/2011
Date

Attachment 1 – Administrative Code Section 4514

Attachment 2 – Water Surplus and Drought Management Plan Report (Attachment 1 of April 12, 2011 Board Letter 8-6: Determine implementation status of Water Supply Allocation Plan 2011/12; terminate 2010/11 implementation of Water Supply Allocation Plan; and reaffirm Baseline Water Use Efficiency Condition)

Attachment 3 – Proposed Water Management Program Term Sheet

Ref# wrm12611612

Administrative Code Section 4514

Section 4514. Replenishment Service.

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

1. Achieve greater conjunctive use of imported and local supplies.
2. Encourage construction of additional local production facilities.
3. Reduce member agencies' dependence on deliveries from Metropolitan during periods of shortage.

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

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

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

(c) Normal Period of Availability – Replenishment Service water service shall be available between July 1 through June 30 whenever and so long as the General Manager determines that water and system capacity are available. If required for Metropolitan's system regulation, groundwater replenishment by spreading or injecting or water deliveries/sales pursuant to any storage or operating agreement, may be offered to specific member public

agencies during any time of the year at the Replenishment Service rate at the General Manager's discretion. If an agency should take Replenishment Service water when it is deemed not available by the General Manager then it shall pay the rates for that water set forth in Section 4401(a)(1). With respect to service for direct reservoir replenishment and for groundwater replenishment by spreading or injecting, service availability may be activated or terminated immediately upon notice by the General Manager to affected member public agencies. With respect to service for in-lieu groundwater replenishment or in-lieu reservoir replenishment, service availability may be activated upon notice to the member public agencies and terminated upon 48 hours notice to the member public agencies.

(d) Certification - Member public agencies may receive Replenishment Service only upon filing of the required certifications specified in Section 4507. All certifications as to the storage of water Replenishment Service must be on forms provided by the District or in electronic format acceptable to the District and provided to the District via the District's electronic certification and billing system by an authorized user. Receipt of a certification shall be considered identical to receipt of a written and signed certification binding on the member public agency for all purposes. The General Manager may make or cause to be made such investigations as the General Manager may require in order to determine the quantities of water to which the Replenishment Service rates shall apply. Such investigations may result in revisions either upward or downward in the amount of water actually received in Replenishment Service. No such investigation shall be made unless the member public agency has requested Replenishment Service and submitted the requisite certifications. The General Manager may reject any certification if the certifying agency is unable to furnish sufficient documentation as to the facts of the certification.



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Report

Water Resource Management

- Water Surplus and Drought Management Plan

Summary

This is a monthly report on developing demand and supply conditions for calendar year (CY) 2011.

On March 15, 2011, the California Department of Water Resources (DWR) increased the State Water Project (SWP) Table A allocation by another 10 percent, raising the current allocation to 70 percent. This increase is the second this calendar year following a relatively wet February and March. The 10 percent increase of SWP Table A boosted Metropolitan's SWP Table A supplies by 191 TAF. In addition, DWR also made Article 21 interruptible water available to the SWP contractors for the first time since 2007, and Metropolitan has taken delivery of about 150 TAF through the end of March 2011. Article 21 supplies are surplus flows that are periodically available in addition to the allocated Table A amounts and increases the total SWP water supplies for the year. DWR also made available the Turn-Back Water Pool for purchase. The Turn-Back Water Pool allows SWP contractors to sell and buy allocated SWP Table A water outside of their service area. Metropolitan is purchasing 8 TAF of the Pool A water. Furthermore, to prevent spilling carryover-water from CY 2010, Metropolitan took delivery of 104 TAF of SWP Non-Project Carryover water and 56 TAF of Article 14b Carryover water. Non-Project Carryover water is stored on behalf of Westlands Water District in CY 2010. Article 14b Carryover water is water that Metropolitan was not able to move in CY 2010 due to DWR system outages. In total, Metropolitan currently has a total of 2.51 MAF of supplies available to the service area from the SWP and the Colorado River Aqueduct (CRA).

In-region demands, obligations, and system losses are estimated to range between 1.72 MAF and 2.23 MAF. On the lower end of the range, the estimated demands are equivalent to CY 2010 actual demand. On the higher end, the estimated demands are based on actual January through March 2011 deliveries, full use of WSAP Level 2 member agency allocations for April through June and WSAP Baseline (no WSAP allocation) demands for July through December plus obligations to return or deliver water supply to other agencies and total system losses. For the third consecutive month, actual demands are tracking lower than WSAP levels.

Based on current water supplies and demands (WSAP allocations and 2010 actual demands), there is a range of outcomes for CY 2011. With demands at a higher end of 2.23 MAF Metropolitan will have a surplus of 280 TAF available for storage. With demands at a lower end of 1.72 MAF, Metropolitan could expect to store up to 790 TAF. Metropolitan has available storage put capacity of 1.05 MAF to manage surplus supply if needed. Although this total storage put capacity is available, some storage locations may be less desirable due to increased risk of future losses and potential cost implications. As the amount of available water to store approaches the maximum put capacity, storage management decisions may be made that reduces the effective storage put capacity for the year.

Although the year has reached a point where supplies have traditionally been stable, supply and demand conditions may continue to be variable through the year. Staff will provide updates to keep the Board apprised of any significantly changed conditions.

Supply & Demand Balance	Demand at Full WSAP Use	With 2010 Demand
Colorado River Aqueduct Available To Service Area	768,000	768,000
State Water Project Available to Service Area	1,739,000	1,739,000
Supplies Available to Service Area	2,507,000	2,507,000
In-Region Demands, Obligations, and Total System Losses	2,227,000	1,717,000
Water Balance	280,000	790,000
Storage Put Capacity	1,051,000	1,051,000

Attachments

[Attachment A: WSDM Supplies for CY 2011](#)

Board Report (<Water Surplus and Drought Management Plan>)

Detailed Report

This report appraises the Board of anticipated supply and demand conditions, and identifies potential actions that may be required to ensure reliability. The imported supplies shown in this report are organized to highlight the supplies and demands, obligations, and losses on the CRA and SWP. This allows for a full view of the available sources of supply anticipated for use within the service area. The balance between these supplies and the demands, obligations, and losses within the service area shows in the case of a shortage, the additional supplies or storage that would be needed. In the case of a surplus, the balance shows the amount of water that can potentially be stored. The section on storage highlights the available capacities of Metropolitan's storage portfolio.

Colorado River Aqueduct System

The table below shows the current estimate of anticipated CRA supplies for CY 2011 is 0.94 MAF. This figure is 60 TAF less than the estimate provided in last month's report. The 60 TAF of the Southern Nevada Water Authority Agreement (SNWA) water is not needed and has been removed from the list of anticipated CRA supplies since there are sufficient SWP supplies this year. CRA supplies consists of Metropolitan's Basic Apportionment (550 TAF) and all other Colorado River supplies developed to date, including water transfers that are diverted at Metropolitan's intake at Lake Havasu.

Anticipated Supplies	
Basic Apportionment	550,000
Canal Lining Water to MWD	16,000
Lower Colorado Water Supply Project	4,000
IID/MWD Conservation Program	85,000
PVID Land Fallowing	120,000
Water Exchanged with SDCWA (IID Transfer and Canal Lining)	161,000
Yuma Desalter	7,000
Total	943,000

Demands and obligations on the CRA system increased from 155 TAF to 175 TAF since last month's report. The 20 TAF increase of obligation reflects the increase of SWP Table A allocation for SWP contractors Desert Water Agency and Coachella Valley Water District (DWCV), which in turn increased Metropolitan's obligation to deliver water through the SWP exchange and delivery agreement with these two agencies. Other obligations comprised of delivery obligations to the Coachella Valley Water District (CVWD) as part of the Quantification Settlement Agreement, the 2008 exchange agreement with DWA and the Miscellaneous and Indian present perfected rights use. The table below lists the obligations and their corresponding quantities.

Demands and Obligations	
CVWD QSA Obligation	35,000
DWCV Table A (70 percent allocation)	136,000
DWA Exchange Agreement	1,000
Misc and Indian PPR Use	2,000
Total	175,000

The table below shows the total supplies and demands on the CRA System. This table reflects the obligations as mentioned above. The resulting figure of 768 TAF is the amount of water available to Metropolitan's service area without using storage.

Colorado River Aqueduct Available to Service Area	
Anticipated Supplies	943,000
Demands and Obligations	175,000
Net Storage to Service Area	0
Total	768,000

State Water Project System

On March 15, 2011, DWR increased the SWP Table A allocation by 10 percent, raising the current allocation to 70 percent. This increase is the second this calendar year and follows a relatively wet February and March. The 10 percent increase of SWP Table A boosted Metropolitan’s SWP Table A supplies by 191 TAF. In addition, DWR also made Article 21 interruptible water available to the SWP contractors for the first time since 2007 and Metropolitan has taken delivery of about 150 TAF of the additional supply through the end of March 2011. Article 21 water is surplus flows that are periodically available in addition to the allocated Table A amounts and increases the total SWP water supplies for the year. DWR also made available Turn-Back Water Pool for purchase. The Turn-Back Water Pool allows SWP contractors to sell and buy allocated SWP Table A water outside of their service area. Metropolitan is purchasing 8 TAF of the Turn-Back Pool A water. Furthermore, to prevent spilling carryover-water from CY 2010, Metropolitan took delivery of 104 TAF of SWP Non-Project Carryover water and 56 TAF of Article 14b Carryover water. Non-Project Carryover water is stored on behalf of Westlands Water District in CY 2010. Article 14b Carryover water is water that Metropolitan was not able to move in CY 2010 due to DWR system outages.

The table below shows Metropolitan’s anticipated supplies from the SWP system. Note that Yuba Component 3 Water has been removed from the table. Under this agreement, when SWP Table A allocation is above 60 percent Yuba County Water Agency is not obligated to provide Component 3 Water. The net increase from last month’s report is 519 TAF. It should also be noted that the recent hydrologic conditions have improved the chances for further increases in the SWP Table A allocation.

Anticipated Supplies	
Metropolitan	
Table A (70 percent allocation)	1,338,000
Port Hueneme Agreement	1,000
SBVMWD Transfer	20,000
Article 21	150,000
MWD Turn-Back Water Pool A	8,000
SWP Non-Project Carryover	104,000
Article 14b Carryover	56,000
DWCV	
Table A	136,000
Total	1,813,000

Demands and obligations on the SWP totaling 74 TAF are shown below. At the current time, this is comprised of a return obligation to the Westlands Water District as part of the transfer and exchange program Metropolitan entered with them in CY 2010. The program was for a total of 111 TAF, with two-thirds of the program amount (74 TAF) due to be returned in CY 2011.

Demands and Obligations	
Westlands WD Exchange	74,000
Total	74,000

The table below shows the total supplies and demands from the SWP System. The resulting figure of 1.74 MAF is the amount of water available to Metropolitan’s service area.

State Water Project Available to Service Area	
Anticipated Supplies	1,813,000
Demands, Obligations & Losses	74,000
Total	1,739,000

Board Report (<Water Surplus and Drought Management Plan>)

Storage Balances and Availability

Metropolitan has developed significant storage programs within its service area as well as on the CRA and SWP systems. Water stored in these programs can be used to augment water supplies when needed. At times when supplies exceed demands, water can be stored for future use. Metropolitan's dry-year storage totaled 1.69 MAF at the beginning of 2011, not including emergency storage of 626 TAF. Under current conditions Metropolitan does not anticipate needing to withdraw water from storage. The estimated put capacity to storage is 1.05 MAF. With the increase in SWP Table A allocation to 70 percent, Metropolitan is able to store up to 180 TAF in the SWP Carryover, a 40 TAF increase from when the SWP Table A allocation was at 60 percent. There was also a decrease in expected put capacity for several programs, including the removal of the Las Posas Program and a revision to the capacities for the Central Valley storage programs with Arvin-Edison and Semitropic. For a detailed breakdown of storage see [Attachment A](#).

Dry-Year Storage Capacities	
Storage Level	1,690,000
Take Capacity	1,529,000
Put Capacity	1,051,000

In-Region Demands, Obligations, and Total System Losses

In the Metropolitan service area, total water demand is comprised of member agency demands, obligations to deliver supplies (i.e. SDCWA/IID Transfer and Canal Lining), and total system losses including those from the CRA.

Since the first implementation of the WSAP in 2009, staff has been providing water demand estimates assuming member agencies make full use of their current WSAP allocations for the first half of the calendar year, combined with an unallocated "WSAP Baseline" demand for the second half of the calendar year. This method allows for transparent adjustments on a monthly basis as actual monthly water use figures replace previously estimated figures. The method provides for a clearly defined figure that is useful when the Board is considering potential WSAP implementation for the following year. Based on this method, the estimated in-region demands, obligations, and total system losses as of the end of March are 2.23 MAF. This includes estimated demands for January through March based on actual delivery to date, WSAP Level 2 demands for April through June and WSAP Baseline demands for July through December. This figure is about 106 TAF lower than previously reported as the actual deliveries for January through March were low. Demands in CY 2010 were significantly below the allocated WSAP Level 2, and this lower level of demand may continue through CY 2011. After final accounting, the actual in-region demands, obligations and total system losses for CY 2010 were estimated at approximately 1.72 MAF.

The table below shows a range of demands from calculated WSAP allocations to last year's actual demands.

In-Region Demands, Obligations, and Total System Losses	Demand at Full WSAP Use	With 2010 Demand
Member Agency Demand	2,009,000	1,508,000
Water Exchanged with SDCWA (IID Transfer and Canal Lining)	161,000	152,000
System Losses	57,000	57,000
Total	2,227,000	1,717,000

Water Balance

Based on the current anticipated supplies from the CRA and SWP, there is a sufficient amount of water to meet and exceed both demand scenarios described above. If demand is at full WSAP use of 2.23 MAF, Metropolitan will have a surplus of 280 TAF for storage. If 2011 demands are similar to the CY 2010 demands of 1.72 MAF, there will be 790 TAF of surplus water for storage.

Board Report (<Water Surplus and Drought Management Plan>)

The table below shows that there is sufficient storage put capacity to manage the potential range of supplies available for storage. Although this total storage put capacity is available, some storage locations may be less

desirable due to increased risk of future losses and potential cost implications. As the amount of available water to store approaches the maximum put capacity, storage management decisions may be made that reduces the effective storage put capacity for the year.

Based on the supply and demand assumptions outlined in this report, the estimated end-of-year storage balance will range between 1.97 MAF and 2.48 MAF, and may increase to higher levels if additional supplies from the CRA and SWP become available and demands continue to be low.

Supply & Demand Balance	Demand at Full WSAP Use	With 2010 Demand
Colorado River Aqueduct Supplies		
Anticipated Supplies	943,000	943,000
Demands and Obligations	175,000	175,000
<i>Colorado River Aqueduct Available To Service Area</i>	<i>768,000</i>	<i>768,000</i>
State Water Project Supplies		
Anticipated Supplies	1,813,000	1,813,000
Demands and Obligations	74,000	74,000
<i>State Water Project Available to Service Area</i>	<i>1,739,000</i>	<i>1,739,000</i>
Supplies Available to Service Area	2,507,000	2,507,000
In-Region Demands, Obligations, and Total System Losses	2,227,000	1,717,000
Water Balance	280,000	790,000
Storage Put Capacity	1,051,000	1,051,000
Estimated End-of-Year Storage	1,970,000	2,480,000

Attachment A

Board Report (Water Surplus and Drought Management Plan on water supply and demand)

Projected WSDM Storage Use and Balances for CY2011 by Delivery System

2011 WSDM Storage	1/1/2011 Storage Levels	CY 2011 Take Capacity	CY 2011 Put Capacity
Colorado River Aqueduct Delivery System	244,000	244,000	207,000
Lake Mead ICS Account	227,000	227,000	200,000
Yuma Desalting Plant	17,000	17,000	7,000
State Water Project System	681,000	561,000	457,000
MWD SWP Carryover	0	0	180,000
DWCV SWP Carryover	0	0	87,000
SWP Non-Project Carryover	104,000	104,000	0
Article 14b Carryover	56,000	56,000	0
Castaic Lake (DWR Flex Storage)	154,000	154,000	0
Lake Perris (DWR Flex Storage)	65,000	65,000	0
Arvin Edison Storage Program	109,000	75,000	60,000
Semitropic Storage Program	111,000	57,000	74,000
Kern Delta Storage Program	82,000	50,000	56,000
Mojave Storage Program	0	0	0
In-Region Supplies and WSDM Actions	879,000	588,000	273,000
Diamond Valley Lake	638,000	459,000	172,000
Lake Mathews	139,000	61,000	43,000
Lake Skinner	40,000	6,000	4,000
IEUA/TVMWD (Chino Basin)	2,000	2,000	25,000
Long Beach (Cent. Basin)	6,000	6,000	3,000
Long Beach (Lakewood)	1,000	1,000	1,000
Foothill (Raymond and Monkhill)	1,000	1,000	2,000
Calleguas (Las Posas)	35,000	35,000	0
MWDOC (Orange County Basin)	15,000	15,000	17,000
Three Valleys (Live Oak)	1,000	1,000	1,000
Three Valleys (Upper Claremont)	1,000	1,000	1,000
Compton	0	0	1,000
Western	0	0	3,000
Cyclic - USG	0	0	0
Cyclic - PM (Three Valleys)	0	0	0
Cyclic - IEUA (Chino Basin)	0	0	0
Supplemental Storage Program (Los Angeles)	0	0	0
Other Programs	512,000	136,000	114,000
Other Emergency Storage	334,000	0	0
Advance Delivery Account (DWCV)	178,000	136,000	114,000
Total	2,316,000	1,529,000	1,051,000
Emergency	626,000	0	0
Total WSDM Storage	1,690,000	1,529,000	1,051,000

Term Sheet

Proposed Water Management Program ~~during 2010/11 Allocation~~ for 2011

1. **Term of Program** - Water will be available for purchase and delivery under the Water Management Program (Program) during the period from May 1, 2011 through ~~June 30~~, December 31, 2011. All water delivered prior to May 1, 2011, under the December 2010 Water Management Program (December Program) will be subject to the terms and conditions of the Program in effect as approved by the Board on December 14, 2010.
2. **Purchase Price** - The water will be billed at the time of delivery at the full service bundled Tier 1 rate and charges (i.e., readiness-to-serve charge) in effect during the month the water is delivered. Deliveries under this Program will not be applied to the participating agency's Tier 1 limit for CY 2011. Program deliveries will also not be included in the computation of the capacity charge ~~will not apply to these deliveries~~, since deliveries under the Program are interruptible.
3. **Deliveries** - Metropolitan and the participating member agency will agree to an acre-foot purchase amount and will prepare an operating plan in advance to estimate the monthly schedule for deliveries. The operating plan will be updated as needed by Metropolitan and the participating member agency to accommodate changing conditions.
4. **Administration** – Procedures used for the Replenishment Program will be used to administer and assess Program participation, unless stated otherwise in the Program terms. For the purpose of verifying in-lieu Program deliveries, a fiscal year (July 1, 2011 through June 30, 2012) assessment period will be used, even though this Program ends December 31, 2011. For in-lieu deliveries taking place under this Program during May and June 2011, an alternative assessment methodology will be developed jointly by Metropolitan and the participating member agency.
5. **Effect on Water Supply Allocation** - The water will not count toward the participating member agency's allocation when it is delivered.
5. **Certification** – Member agencies must certify deliveries under the Water Management Program. Certifications must be complete within six months of the month in the which water is delivered.