



- Board of Directors
Water Planning and Stewardship Committee

12/13/2011 Board Meeting

9-1

Subject

Review options for updated Replenishment Program

Description

Summary

The existing Replenishment Service Program provides a discounted water rate to agencies to increase purchase and delivery of water into local storage during periods of favorable supply. Under the program, Metropolitan has the ability to interrupt deliveries when needed. In May 2011, the Board directed staff to develop options for a new replenishment program for board consideration by the end of the year to achieve regional benefits. Metropolitan staff has engaged in a workgroup process with the member agencies to develop program alternatives. In October 2011, Metropolitan staff provided the Board with a report that gave an overview of the current program along with draft policy principles for a new program. The Board adopted a set of policy principles in November 2011. This letter presents concepts for an alternative replenishment program for board review. If adopted by the Board, the new replenishment program would replace the existing Replenishment Service Program and the existing Replenishment Program Rate would be discontinued.

For the purpose of this board letter, the word “basin” is used in general reference to both groundwater and surface storage facilities.

Background

At its May 2011 meeting, the Board provided direction to the General Manager to exercise his discretion to make about 225,000 acre-feet of deliveries available under the existing Replenishment Service Program based on the supplies projected to be available at the time. Additionally, the Board directed staff by December 2011 to recommend options to modify the Replenishment Service Program in a manner that ensures regional reliability benefits. Staff has worked with member agencies and basin managers to develop new program options. Through workgroup discussion, several factors were identified that should be considered in the development of these options, including:

- The potential for the program to provide regional water management benefits in dry years
- The frequency and magnitude of surplus conditions in the future
- The increased size and diversification of Metropolitan’s regional storage portfolio
- The potential operational benefits of the program (e.g., interruptibility and system capacity benefits)
- The linkage between the level of regional water management benefits and any related financial incentives

Policy Principles for a New Program

Taking these factors into consideration, staff drafted a set of policy principles for a new program that would replace the current Replenishment Service Program. At its October 2011 meeting, the Water Planning and Stewardship Committee provided feedback on the draft policy principles. Staff incorporated these comments into policy principles for board consideration in November 2011.

In November 2011, the Board adopted the following set of policy principles to guide policy development of a new program:

Regional Water Management Benefits: The program shall provide regional water management benefits, including: (1) dry-year supplies at Metropolitan's call, (2) flexibility to manage delivery of available supplies in a way that would provide additional storage beyond Metropolitan's regional storage capability, and (3) delivery of supplies available to Metropolitan that are otherwise at risk of spill or loss.

Equity for Member Agencies: The program shall be available to all member agencies and provide quantifiable regional benefits.

Financial Integrity: The program options shall support the stability of Metropolitan's revenues and coverage of costs. Program incentives shall be based on sound economic principles and be proportional to the regional water management benefits provided.

Operational Flexibility: The program shall enhance opportunities for Metropolitan to effectively manage water supplies under varied water supply conditions.

Complementary with Other Storage Programs: Features of the program shall be complementary with existing storage programs, so that past investments in local and regional groundwater and surface water storage continue to yield reliability benefits.

These policy principles were used to guide staff as it participated in the member agency workgroup to develop and refine program options.

Proposal for a Multi-Level Replenishment Program

Consistent with the board-approved policy principles, staff proposes a three-level program to replace the existing Replenishment Service Program. The three levels correspond to different degrees of regional benefits, availability, and performance requirements. Metropolitan would no longer offer the current replenishment rate in the existing Replenishment Service Program; instead, incentives offered under the new three-level program would be proportionate to regional water management benefits. Metropolitan would determine when and how much water would be available under each level.

- Level 1 – to be offered when Metropolitan has supplies available to put into regional storage
- Level 2 – to be offered only when supplies available for storage exceed the regional storage put capacity
- Level 3 – to be offered when regional storage capacity is maximized on a short-term basis

Together, the three program levels would allow Metropolitan operational flexibility to effectively manage water supplies under different ranges of water supply conditions. They are explicitly designed to enhance regional water management benefits as defined in the policy principles shown above, as well as maintaining financial integrity for Metropolitan and ensuring equity for member agencies and compatibility with existing local and regional storage investments. Levels 1, 2, and 3 replenishment program water would be considered as alternatives to Metropolitan's other available regional storage portfolio options.

Incentives Based on the Avoided Cost of Other Storage Programs

To have regional benefit and financial integrity, program incentives would be based on avoided costs with Metropolitan's existing regional portfolio. Use of local storage can offset these costs. Metropolitan would consider offering water incentivized for local storage to the extent that the cost to Metropolitan would not exceed comparable costs for using its regional storage portfolio alternatives. Metropolitan's State Water Project (SWP) storage program costs are representative of marginal regional storage costs. A bundle of Metropolitan's SWP storage program put and take costs would be used as a proxy for quantifying Metropolitan's potential avoided marginal costs. Proportions of these costs are appropriate incentives for local storage in Level 1 and Level 2, depending on storage terms and duration.

The following table shows the 2011 put and take costs for the basket of Metropolitan's SWP Storage Programs. The actual costs would be recalculated annually to include escalation in contract costs as well as any renegotiated terms. The recalculated costs would apply to program supplies on a go-forward basis.

Selected SWP Storage Program Put and Take Costs (2011)

SWP Storage Program	2011 Put Cost ¹	2011 Take Cost	Total Cycle Cost ²
Semitropic	\$82	\$159	\$241
Arvin-Edison	\$115	\$162	\$277
Kern Delta	\$119 ³	\$113	\$232
Mojave	\$0	\$115	\$115
Average	\$79	\$137	\$216

Level 1 General Description

The Level 1 Program would provide for storage of imported water supplies in the local groundwater basins and surface reservoirs as regional supplies for dry year needs and operational flexibility at Metropolitan's call. As part of a three-level program, Level 1 would provide for the explicit use of local storage, similar to other storage programs in Metropolitan's regional storage portfolio. The Level 1 Program would require a written agreement between the participating agency and Metropolitan with clear terms and expectations of storage. A contract between Metropolitan and the participating agency would specify:

- Baseline basin information to be used for certifications
- Put and Take terms
- Incentive rate terms
- Basin losses
- Protection for Metropolitan against water quality or other basin impacts
- Acknowledgement that Metropolitan is not responsible for basin management

Metropolitan would determine when water is available to store under Level 1. The participating agency would take delivery of water and undergo a certification process to ensure that water was actually stored and not used consumptively. Timing of water deliveries would be based upon mutual agreement between Metropolitan and the agency. The participating agency would store water until the water is called by Metropolitan, or until the end of the storage term. Agencies could choose between 5- or 10-year storage terms.

Level 1 Call Provisions

The agreement would allow Metropolitan to call for withdrawal of the water from storage during the storage term. When Metropolitan calls for a withdrawal of water, the participating agency would undergo certification to ensure that the water was made available. Water called under Level 1 would be considered Metropolitan deliveries and would count toward the participating agency's allocation under Metropolitan's Water Supply Allocation Plan if the call is made during an allocation year. If the agency is not able to certify that the water is withdrawn, then the water would be repriced at a penalty rate that makes the cost for the water equivalent to two times the Tier 2 Full Service rate in effect at the time the water is called.

Level 1 Prorated Incentive Based on Avoided Costs

The agency would receive a financial incentive for its participation, based upon Metropolitan's avoided marginal costs of its SWP storage programs. The total average put-take cycle cost of Metropolitan's SWP storage programs would be prorated by the estimated probability of use, based on modeling by Metropolitan staff. The proration would differ depending on the length of the program term, with a higher prorated incentive offered for a 10-year program than a 5-year program. Avoided costs for the basket of Metropolitan's SWP storage programs will be recalculated annually to account for inflation of costs and any renegotiation of terms in the SWP storage

¹ Includes program loss factors to equal 1 acre-foot of water produced

² Totals may not foot due to rounding

³ Actual 2011 put costs are significantly reduced (\$40) because of an upfront capital payment. The \$119 is representative of the 2011 put cost absent the capital payment and more closely matches the estimated put cost from 2012 and forward.

programs. The total average put-take cycle cost of Metropolitan’s SWP storage programs would be prorated by the estimated probability of use.

Two potential options for applying the prorated incentive based on avoided costs would be to

1. apply the entire incentive upfront during the put into local storage, or
2. apply an incentive split between the puts and takes.

Option 1, with the entire incentive being provided upfront, carries a higher risk that the water stored would not be called before the end of the storage term. In order to properly adjust for this risk, the total average put-take cycle cost of Metropolitan’s SWP storage programs would be adjusted based on the estimated probability of use.

Option 2 would split the incentive into a put component and take component. Only the incentive associated with the put component would carry the risk that the water stored would not be called before the end of the storage term. Therefore, only the amount of the incentive being provided upfront would be adjusted based on the probability of use. The take incentive would be equal to the full avoided cost of taking water from the SWP storage programs.

The two options would result in different total incentive levels for the participating agencies. The incentive under Option 1 would be lower, which is reflective of the higher risk associated with an upfront incentive.

Level 1 Specific Program Terms

Proposed terms for a Level 1 Program are shown in the following table.

Program Terms for Level 1			
Puts to Storage	<ul style="list-style-type: none"> • Determination of Available Supplies: Metropolitan’s discretion to ensure dry-year supplies and operational flexibility, but considered on par with regional storage portfolio • Certification of Puts: Based on Metropolitan guidelines to ensure storage of water • Storage Term: 5 or 10 Years following a put to the program, at the participating agency’s option • Agency Payment for Water: Full Service Tier 1 rate • Capacity Charge: Exempt • Readiness-to-Serve Charge: Exempt <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> Option 1: Prorated Incentive – Put Only <ul style="list-style-type: none"> • Incentive Rate: Prorated SWP storage program put/take cycle cost <ul style="list-style-type: none"> ○ Total Option 1 incentive would be less than combined Option 2 incentive </td> <td style="width: 50%; vertical-align: top;"> Option 2: Split Put/Take Incentive <ul style="list-style-type: none"> • Incentive Rate: Prorated SWP storage program put cost </td> </tr> </table>	Option 1: Prorated Incentive – Put Only <ul style="list-style-type: none"> • Incentive Rate: Prorated SWP storage program put/take cycle cost <ul style="list-style-type: none"> ○ Total Option 1 incentive would be less than combined Option 2 incentive 	Option 2: Split Put/Take Incentive <ul style="list-style-type: none"> • Incentive Rate: Prorated SWP storage program put cost
Option 1: Prorated Incentive – Put Only <ul style="list-style-type: none"> • Incentive Rate: Prorated SWP storage program put/take cycle cost <ul style="list-style-type: none"> ○ Total Option 1 incentive would be less than combined Option 2 incentive 	Option 2: Split Put/Take Incentive <ul style="list-style-type: none"> • Incentive Rate: Prorated SWP storage program put cost 		
Takes from Storage	<ul style="list-style-type: none"> • Determination of Call: Metropolitan’s discretion • Certification of Takes: Based on Metropolitan guidelines to ensure production of stored water • Call limits (Annual): <ul style="list-style-type: none"> ○ 5-year term: 100% of stored water in any year ○ 10-year term: 50% of stored water in any year • Agency Payment for Water: Differential between Tier 1 and 2 supply charge applied as appropriate • Capacity Charge: Exempt • Tier 2 Charge: Eligible 		

	<ul style="list-style-type: none"> • Readiness-to-Serve Charge: Added to Readiness-to-Serve Charge baseline when water is called • Penalty for non-performance: 2 x Tier 2 (a credit would be given for payments already made) • Water remaining in storage at the end of the performance period would belong to the storing agency without further encumbrance from Metropolitan 		
	<table border="1"> <tr> <td data-bbox="428 436 961 590"> <p>Option 1: Prorated Incentive – Put Only</p> <ul style="list-style-type: none"> • All incentives provided upfront, when water is stored. No additional incentive given when water is called. </td> <td data-bbox="961 436 1494 590"> <p>Option 2: Split Put/Take Incentive</p> <ul style="list-style-type: none"> • Incentive Rate: SWP storage program take cost </td> </tr> </table>	<p>Option 1: Prorated Incentive – Put Only</p> <ul style="list-style-type: none"> • All incentives provided upfront, when water is stored. No additional incentive given when water is called. 	<p>Option 2: Split Put/Take Incentive</p> <ul style="list-style-type: none"> • Incentive Rate: SWP storage program take cost
<p>Option 1: Prorated Incentive – Put Only</p> <ul style="list-style-type: none"> • All incentives provided upfront, when water is stored. No additional incentive given when water is called. 	<p>Option 2: Split Put/Take Incentive</p> <ul style="list-style-type: none"> • Incentive Rate: SWP storage program take cost 		

Level 2 General Description

The Level 2 Program would also provide for storage of imported water supplies in local groundwater basins and surface reservoirs. As part of a three-level program, Level 2 would provide increased operational flexibility and increased delivery of surplus supplies into the region during years when Metropolitan’s conveyance capacity into regional storage is fully subscribed and projected to be at capacity for a given year. The Level 2 Program would be available less frequently than the Level 1 Program, only when supplies exceed regional storage capacity.

Level 2 program water would be offered as a 2-year program term, with the expectation that the water be stored and then produced in the subsequent two years. An agency would take delivery of water and undergo certification to ensure that water was stored rather than used consumptively in the year. Unlike Level 1, water delivered under the Level 2 Program would not be subject to a call by Metropolitan and would not require a contract.

Under Level 2, a member agency would receive a financial incentive for its participation. Similar to Level 1, the agency would be offered a prorated incentive based on Metropolitan’s avoided costs of its SWP storage programs. However, because Level 2 water would not be subject to a specific call by Metropolitan, it would have a lesser prorated incentive than Level 1. As an option, invoicing for these supplies could be partially deferred over one year to assist member agencies with budget planning. The financial value of the deferred payment could be combined with a reduced incentive so that the total value does not exceed the estimated regional value represented by the full incentive.

Level 2 Specific Program Terms

Proposed terms for a Level 2 Program are shown in the following table.

	Program Terms for Level 2
Puts to Storage	<ul style="list-style-type: none"> • Determination of Available Supplies: Metropolitan’s discretion, but when supplies exceed put capacity to store in regional programs, including Level 1 • Certification of Puts: Based on Metropolitan guidelines to ensure storage over a baseline • Agency Payment for Water: Full Service Tier 1 Rate • Incentive Rate: Prorated SWP storage program cycle cost • Cash flow assistance option: Half of payment due upon delivery and half one year after delivery; equivalent cost savings from cash flow assistance would be deducted from the incentive • Capacity Charge: Exempt • Tier 2 Charge: Exempt • Readiness-to-Serve Charge: Applied over 2 years

Takes from Storage	<ul style="list-style-type: none"> • Determination of Call: No call or production certification; incentive is based on the expectation that the agency will produce the water within 2 years
---------------------------	--

Level 3 General Description

The Level 3 Program would provide for increased delivery of surplus supplies into the region in periods when regional storage capacity is fully utilized on a short-term basis (i.e., within a given year). Metropolitan would determine when, and for how long, water is available under Level 3. The Level 3 Program would be available infrequently – only when supplies exceed short-term capacity into regional storage, such as when SWP Article 21 supplies are available in large quantities and on relatively short notice. Under the Level 3 Program, water would be available to all agencies above a set baseline water demand; the water would have no call or production certification. The agency would receive a financial incentive for its participation by avoiding Capacity Charges and the Tier 2 supply rate. Unlike Level 1 and Level 2, water offered under Level 3 would not have an incentive based on Metropolitan’s SWP storage program costs because it will not require certified storage of water.

Level 3 Specific Program Terms

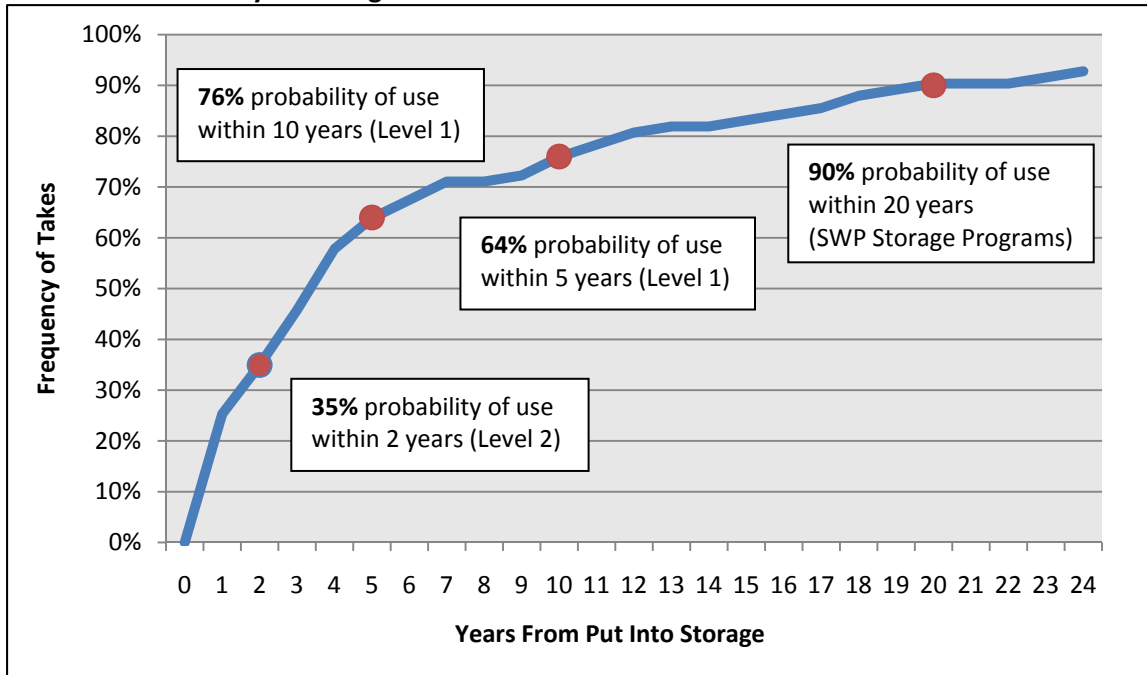
Proposed terms for a Level 3 Program are shown in the following table.

Program Terms for Level 3	
Puts to Storage	<ul style="list-style-type: none"> • Determination of Available Supplies: Metropolitan’s discretion to avoid risk of spilled or loss of available supplies • Certification of Eligibility: Available to all Member Agencies based on Metropolitan guidelines to ensure demands are above a set baseline • Agency Payment for Water: Full Service Rate • Capacity Charge: Exempt • Tier 2 Charge: Exempt • Readiness-to-Serve Charge: Eligible
Takes from Storage	<ul style="list-style-type: none"> • Determination of Call: No call or production certification

Estimated Probability Analysis for Prorating Level 1 and 2 Incentives

For the purposes of prorating financial incentives for Level 1 and Level 2, it is necessary to estimate the probabilities of the use of stored water. Metropolitan staff modeled the estimated probability of the use of stored water, shown in the graph below. The blue line on the graph shows the cumulative probability of the use of stored water for a 25-year period. The red circles on the graph show the estimated probabilities of the use of stored water at periods of 2, 5, 10 and 20 years. These estimated probabilities will be used to prorate incentive levels to correctly reflect the proportional value of shorter storage term lengths to that of the basket of SWP storage programs (approximately 20 years).

Estimated Probability of Storage Use



Summary and Next Steps

The program concepts described in this board letter offer a comprehensive approach for local storage and water management that adheres to the policy principles that were adopted by the Board in November 2011. In working closely with the member agencies and basin managers, Metropolitan staff designed a program recognizing that Metropolitan and local storing agencies operate under a range of different water management situations and conditions. The three levels of the program are designed to provide regional water management benefits identified by the Board, including dry-year supplies at Metropolitan's call, operational flexibility to manage delivery of available supplies to provide additional storage beyond Metropolitan's regional storage capability, and ability to manage short-term supplies available to Metropolitan that would otherwise be at risk of spill or loss. Because pricing would be scaled to reflect avoided costs of Metropolitan's existing regional storage portfolio and/or short-term interruptibility benefits, the program would support Metropolitan's financial integrity and member agency equity by providing quantifiable regional benefits based on economic principle and be complementary with other existing local and regional storage investments. The program would be available for both local groundwater and surface storage in Levels 1 and 2, and to all qualifying member agencies in Level 3.

Options and recommendations for a new replenishment program will be presented for board consideration in January 2012.

Policy

Metropolitan Water District Administrative Code Section 4514: Replenishment Service

By Minute Item 48680, dated May 10, 2011, the Board provided 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 and directed staff to make recommendations by December 2011 for options to reform the replenishment services program in a manner that assures regional reliability benefits.

By Minute Item 48887, dated November 8, 2011, the Board adopted the amended policy principles for a replenishment program.

Fiscal Impact

The total revenue impact for this new replenishment program would depend on several factors, including the availability of Levels 1, 2, and 3 water, the actual quantity of acre-feet sold under each program level, and the specific terms and calls made under Level 1 agreements between Metropolitan and individual member agencies. The new replenishment program would replace the existing Replenishment Service Program and discontinue the replenishment water rate.

Because Level 1 Program water would be priced using a proration of average marginal costs of Metropolitan's SWP storage programs, Metropolitan would benefit from Level 1 and Level 2 agreements with member agencies by avoiding costs it would have otherwise incurred to store water in its regional water portfolio. Water called under Level 1 would be considered Metropolitan deliveries and would count toward the participating agency's allocation under the Water Supply Allocation Plan if the call is made during an allocation year.

Under Level 2, a potential fiscal impact to Metropolitan would be opportunity cost of deferred cash flow due to the 2-year payment option made available to participating agencies. However, if an agency chooses to use this cash flow assistance, Metropolitan would deduct the Level 2 prorated price incentive by an amount equivalent to Metropolitan's costs and/or revenue impact associated with the payment deferment. Because Level 2 involves capture of water supplies that Metropolitan might otherwise have been unable to store, there would be potential for increased revenue.

Under Level 3, there would be no adverse fiscal impact to Metropolitan because it would be offered only in situations where regional storage capacity is exceeded on a short-term basis and supplies available to Metropolitan are otherwise at risk of spill or loss. Because Level 3 involves capture of water supplies that Metropolitan might otherwise have been unable to store, there would be potential for increased revenue.



Deven N. Upadhyay
Manager, Water Resource Management

11/30/2011

Date



Jeffrey Kightlinger
General Manager

12/5/2011

Date