

• **Board of Directors**
Water Planning, Quality and Resources Committee

August 15, 2006 Board Meeting

7-5

Subject

Authorize refinements for Metropolitan's Water Conservation Program

Description

Authorization is requested to (1) provide incentives for a combination of new cost-effective water-saving devices; (2) establish a landscape survey program; and (3) implement program administration improvements for Metropolitan's conservation program. This request is consistent with Metropolitan's Five-Year Conservation Strategy Plan to achieve the conservation targets of the Integrated Water Resources Plan. The recommended changes would improve regional supply reliability by instituting new conservation measures. Continued success in conservation is a part of Metropolitan's role as a responsible steward of water resources.

One goal of the Five-Year Conservation Strategy Plan is the periodic review of new water-conserving devices and program options/improvements for inclusion in Metropolitan's conservation incentives. These reviews, particularly in the landscape and commercial arenas, are needed to continue the progress made in our long-standing residential ultra-low flush toilet (ULFT) program that is now approaching saturation.

Summary of Recommendations

During the last year, a Project Advisory Committee (PAC) comprised of representatives from nine member and retail agencies and Metropolitan considered data on new devices and program experience. The PAC proposed that the following recommendations advance:

Device Incentives

1. Steam sterilizer retrofits (new incentive) – medical field device for existing and new construction, commercial sector
2. Zero water and high-efficiency urinals (upgraded incentive) – new construction, commercial sector
3. Rotating nozzle retrofits for pop-up spray heads (new incentive) – landscape irrigation systems for existing and new construction, residential and commercial sectors

Large Landscape

4. Landscape Survey Program (new incentive) - commercial sector
5. Choice of contracting options – irrigation system retrofits (program administration upgrade)
6. Streamlined payment process – surveys and irrigation system retrofits (program administration upgrade)

Items 1, 3, and 4, in the above list, represent new incentives for installation of water-conserving devices that are additions to the Metropolitan conservation program. Item 2 is an upgraded incentive for existing conservation program devices: zero water urinals and high-efficiency urinals. Under the existing program these devices would receive an incentive based on the replacement of a non-conserving urinal. This upgrade provides an incentive for incremental savings these devices achieve when replacing less efficient models that flush at building code standards. Items 5 and 6 are program administrative upgrades for the large landscape program. These upgrades will simplify contracting and streamline payments to make the program more attractive to participants.

The PAC reviewed data on 16 potential water-saving alternatives. Ten alternatives were postponed for future consideration due to the need for additional data. Key criteria used to identify the most promising alternatives were broad applicability, quantified water savings, and stable cost data supported by independent studies. These recommendations are expected to promote cost-effective savings. The proposed incentives comply with the recent board-approved conservation incentive rate of \$195/AF of conserved water up to the full purchase price of an approved conservation device or up to one-half of program cost for process improvement programs.

Detailed justifications for each device incentive and program refinement are in [Attachment 1](#). A full menu of conservation devices and programs, including the proposed incentives, are in [Attachment 2](#).

Savings and Cost - Device and program Recommendations 1 through 4 above are projected to add approximately 8,200 AF of savings over their useful lives. The average cost of this saved water is expected to be \$131/AF. Based on experience, it may take several years before customer response ramps up to a projected annual \$1 million of incentive payments.

Next Review - The next annual review of new water-saving alternatives will be initiated in January 2007. This effort by Metropolitan and member agencies staff will seek to identify new devices and strategies to fulfill the water conservation goals of the Integrated Water Resources Plan. The combination of conservation opportunities identified by these annual reviews, coupled with new pilot studies funded by the Enhanced Conservation Program and an upcoming multi-agency study headed by the Bureau of Reclamation on industrial recirculation opportunities, are expected to identify new water-saving opportunities for future applications in Metropolitan's service area.

Policy

By Minute Item 46472, dated Dec. 13, 2005, the Board set the incentive amount at \$195/AF of water conserved not to exceed 100 percent of product cost or one-half of a program cost.

By Minute Item 45904, dated Sept. 14, 2004, the Board authorized upgrades to the commercial and institutional landscape water efficiency program.

By Minute Item 45828, dated July 13, 2004, the Board adopted the Integrated Water Resources Plan Update.

By Minute Item 37324, dated Sept. 13, 1988, the Board adopted the Conservation Credits Program.

California Environmental Quality Act (CEQA)

CEQA determination for Options #1 and #2:

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions involve new or upgraded conservation incentives, conservation program refinements, and funding of studies and minor modifications, reconstructions or replacements, along with the construction of minor appurtenant structures to existing public or private facilities involving negligible or no expansion of use and no possibility of significantly impacting the physical environment. The proposed actions may involve minor modifications in the condition of land, water, and/or vegetation, which does not involve removal of healthy, mature, scenic trees. In addition, the proposed actions consist of basic data collection and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action, which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed actions qualify for Classes 1, 2, 3, 4, and 6 Categorical Exemptions (Sections 15301, 15302, 15303, 15304, and 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed actions qualify under five Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; Class 4, Section 15304; and Class 6, Section 15306 of the State CEQA Guidelines).

Board Options

Option #1

Adopt the CEQA determination and

- a. Authorize incentives for (1) steam sterilizers, (2) zero water and high-efficiency urinal upgrades, (3) rotating nozzle retrofits for pop-up spray heads, and (4) large landscape surveys; and
- b. Authorize the following program changes: (5) choice of contracting options for landscape irrigation equipment retrofit projects, and (6) streamline payment process for landscape surveys and irrigation equipment retrofit projects.

Fiscal Impact: The proposed new device incentives and program changes are estimated to cost \$1 million per year after several years of program ramp-up.

Business Analysis: Metropolitan would benefit from the six items above by being more likely to meet its conservation targets in the Integrated Water Resources Plan.

Option #2

Adopt the CEQA determination and authorize one or more of the six items in Option #1.

Fiscal Impact: Less than \$1 million per year, depending on recommendations adopted

Business Analysis: Metropolitan would be less likely to meet its conservation targets in the Integrated Water Resources Plan.

Option #3

Do not authorize proposed refinements for Metropolitan's Water Conservation Program.

Fiscal Impact: None

Business Analysis: Metropolitan would be less likely to meet its conservation targets in the Integrated Water Resources Plan.

Staff Recommendation

Option #1


Stephen N. Arakawa
Manager, Water Resource Management

7/28/2006

Date


Jeffrey Kightlinger
General Manager

7/28/2006

Date

Attachment 1 – Conservation Product and Program Refinements

Attachment 2 – Core Conservation Program

BLA #4304

Conservation Product and Program Refinements

1. **Steam Sterilizer Retrofits. (New incentive)** Steam sterilizers are commonly used in hospitals and research laboratories to clean and disinfect surgical equipment, tools and supplies. Most sterilizers are used only intermittently; however, potable water is used continuously to flush sterilizer equipment whether or not the unit is in use. New retrofit devices are capable of mixing potable water with heated condensate discharge only when the sterilizer is in use, thereby saving significant amounts of water. Based on data obtained from several medical facility installations, water savings for a steam sterilizer retrofit are about 1.3 AF per year per unit. There are an estimated 4,200 sterilizers in Southern California. The retrofit devices have a life expectancy of 15 years and cost \$1,900. The water savings value exceeds the device cost ($1.3 \text{ AF/yr} \times 15 \text{ years} \times \$195/\text{AF} = \$3,800$). The recommended incentive is \$1,900 (100 percent of device cost).
2. **Zero Water and High-Efficiency Urinal Upgrades. (Upgraded incentive)** Incentives for zero water urinals (ZWU) and high-efficiency urinals (HEU) were previously approved for the retrofit of high volume urinals (3.5 gallons per flush or more). These highly efficient urinals also exceed the one-gallon per flush efficiency standards in current plumbing codes for new construction. The proposed incentives will encourage existing retrofits and builders of new construction to upgrade their product choices to these more efficient ZWUs and HEUs.

Compared to one-gallon per flush urinals, ZWUs and HEUs save 200,000 and 100,000 gallons, respectively, over their expected 20-year lives. The proposed incentive for ZWUs is:
 $(200,000 \text{ gallons}/325,900 \text{ gallons per AF}) \times (\$195/\text{AF}) = \$120$. HEUs, which save one-half of ZWUs, have a recommended incentive of \$60. ZWUs and HEUs cost between \$300 and \$400. The proposed incentives are less than 100 percent of the device cost.
3. **Rotating Nozzles for Pop-Up Spray Head Retrofits. (New incentive)** Pop-up spray heads with multi-stream, multi-trajectory rotating nozzles represent a new alternative to the irrigation of landscapes. Field tests demonstrate these devices apply water more evenly than traditional nozzles with fixed conical spray patterns, offering the potential for significant water savings. The new nozzles improve water distribution by about 23 percent on average and reduce irrigation run times by 22 percent, resulting in water savings of 6,600 gallons (0.02 AF) per nozzle over a five-year period. Low precipitation rates associated with these nozzles can reduce run-off and related pollution, thereby offering a significant value-added benefit when irrigating sloping landscapes.

The proposed incentive is \$4.00 per nozzle ($0.02 \text{ AF} \times \$195/\text{AF}$), which is less than 100% of the nozzle cost (\$7.50 - \$8.00, depending on type). The incentives would be available for both retrofit and new construction in both residential and commercial sectors. Only specialized irrigation equipment supply outlets sell these nozzles. Staff is exploring options to provide the incentive through these supply outlets to directly influence professional irrigation contractors' purchase decisions.
4. **Landscape Survey Program.* (New incentive)** Landscape surveys have been performed by local agencies for many years, but until recently there has been little data to verify water savings and persistence. Landscape surveys typically include an irrigation system evaluation (system performance measurement, identification of needed repairs, recommended upgrades, etc.), development of water budgets and irrigation schedules, and survey report. A water budget is the calculated amount of water a landscape should require to efficiently maintain its health.

Staff proposes that Metropolitan also provide incentives for surveys of commercial landscapes with dedicated landscape meters. Based on data from about 450 commercial sites with dedicated meters in

* Programs 4 and 6 are mutually exclusive, unless otherwise pre-approved, and no single project or metered parcel can participate in both programs.

San Diego County, 180,000 gallons (0.55 AF) were saved per acre per year with a two-year period of persistency, resulting in a lifetime savings of 360,000 gallons (1.1 AF). The incentive would be \$215 per acre surveyed (1.1 AF x \$195/AF) up to one-half program cost. Program participants will be required to provide actual pre- and post-survey water use data. Staff will periodically analyze this data to recommend adjustments to the incentive level of the program based on ongoing performance.

5. Choice of Contracting Options – Irrigation System Retrofit Projects. (Program administration)

Staff recommends that member agencies be provided two choices of contracting methods for their end-use customers who desire to retrofit their irrigation systems. These contracting choices will allow for streamlined contracting with large landscape owners that have significant water-saving potential in individual projects and may have land holdings across multiple member or retail agencies. The choices are:

- a. If requested, Metropolitan would contract directly with large landscape customers to issue incentive payments. This is similar to the regional Commercial/Industrial/Institutional rebate program and the Industrial Process Improvement Program that member agencies support.
- b. If the retail or member agency prefers to work directly with its large landscape customers, Metropolitan would enter into multi-party agreements, with incentive payments being issued by Metropolitan as a credit on the member agency's water bill. This is the current contracting method.

6. Streamlined Payment Process – Surveys and Irrigation System Retrofits. (Program

administration) Payments would be provided in two steps: (a) a partial incentive payment at the beginning of the survey year or once equipment retrofits have been installed and verified; and (b) a final incentive would be paid after a monitoring period of one year or longer.

Project incentive payments would be based, consistent with the Industrial Process Improvement Program, on the lesser of:

- Water savings: \$195 per acre-foot over two years of projected savings for landscape surveys and over five years of projected savings for irrigation system retrofits;
- Project cost: up to one-half of survey program cost and up to one-half of irrigation equipment system retrofit water-related capital cost; or
- Simple payback: program cost or capital equipment cost minus twice the financial savings on annual water changes.

CORE CONSERVATION PROGRAM
\$195/AF up to 100 Percent of the Cost of a Device

Device/Program	Incentive
Residential Indoor	
High-Efficiency Toilet (HET)	\$165
HET Upgrade/New Construction	\$30
Ultra Low Flush Toilet (ULFT)	\$60 ¹
High-Efficiency Clothes Washer	\$75
Single-family Survey	\$12.50 ²
Commercial	
High-Efficiency Toilet (HET)	\$165
HET Upgrade/New Construction	\$30
Ultra Low Flush Toilet (ULFT)	\$135
High-Efficiency Urinal (HEU)	\$200
HEU Upgrade/New Construction (Upgraded incentive)	\$60
Zero Water Urinal (ZWU)	\$400
ZWU Upgrade/New Construction (Upgraded incentive)	\$120
High-Efficiency Clothes Washer	\$130
Pre-Rinse Spray Valves	\$60
Water Brooms	\$150
Connectionless Food Steamers	\$485/per compartment
Cooling Tower Controllers	\$625
PH Cooling Tower Controllers	\$1,900
Steam Sterilizer (New Incentive)	\$1,900
X-Ray Recirculation	\$3,120
Industrial process Improvements	\$195/acre-foot ³
Landscape	
Residential 12-Station Weather-Based Irrigation Controllers (WBIC)	\$80
Residential 12+ Station WBIC	\$6.50 per station
Commercial & Large Residential (1+ acre) WBIC	\$630/acre
Rotating Nozzles for Pop-up Spray Heads (New incentive)	\$4
Water Use Accountability (WUA), MWD pays for Professional Protector Del Agua (PPDA) training	\$2.50/acre ⁴
WUA, agency provides PPDA training	\$3.50/acre ⁴
Measured Water Savings (MWS), MWD pays PPDA training	\$156/acre-foot ⁵
MWS, agency provides PPDA training	\$195/acre-foot ⁵
Irrigation Evaluation (w/o irrigation timer)	\$8 ¹
Irrigation Evaluation (with irrigation timer)	\$18 ¹
Landscape Survey Program (New Incentive)	\$215/acre

¹ ULFT incentive remains unchanged and will expire in December 2008.

² Survey programs remain unchanged pending a review of estimated savings.

³ This process water program is limited to one-half the project cost based on individual project costs.

⁴ This process water is limited to one-half program cost based on prior study.

⁵ For irrigation system equipment retrofits, maximum of five years of projected savings up to one half of equipment cost.

Note: New proposed items are in **bold print**.