

- **Board of Directors**
Water Planning and Stewardship Committee

July 10, 2007 Board Meeting

8-4

Subject

Authorize enhancements for Metropolitan's Water Conservation Program

Description

Staff recommends several conservation program enhancements and upgrades to Metropolitan's current water conservation program to advance regional water-use efficiency over the long term. One significant upgrade is a proposed new regional residential incentive program for installation of water-conserving devices.

Recommendations are also made to add five new incentives to Metropolitan's conservation program, improve incentives and administration for pay-for-performance incentive programs, and institute a large water user audit program. Most of the recommendations are the result of a cooperative process with the member agencies to perform an annual update to Metropolitan's conservation program. All final recommendations have been reviewed with representatives of the member agencies.

Additional conservation actions are being developed to maximize conservation savings over the immediate next three years while the state faces uncertainties in State Water Project deliveries resulting from the Delta smelt crisis. The conservation actions will be coordinated with member agencies and provided to the Board for consideration.

Annual Update Process

In accordance with Metropolitan's Five-Year Conservation Plan, a Project Advisory Committee (PAC), comprised of staff from member agencies, retail agencies, and Metropolitan, was convened to develop recommendations for updating Metropolitan's conservation program. Over the last six months, the PAC reviewed approximately 30 potential conservation program updates and enhancements. The PAC used three criteria to identify the most promising recommendations: cost effectiveness, regional applicability, and reliable estimates of water savings. A detailed description for each recommendation is summarized in [Attachment 1](#). A full listing of Metropolitan device incentives and programs, including the proposed changes, is in [Attachment 2](#). The proposed updates comply with the board-approved incentive rate of \$195 per acre-foot (AF) of conserved water. The incentives are limited to the purchase of the conservation device or one-half of the project cost for pay-for-performance programs.

New Regional Residential Device Incentive Program

One significant recommendation from the member agency process is the creation of a region-wide residential device incentive program. This program, fashioned after the highly successful Commercial, Industrial, and Institutional Program (CII Program), would create a one-stop shop throughout the region for residential customers and contractors working in the residential landscape sector to get rebates and participate in regional water conservation programs. This Program would be implemented using one or more vendors contracted by Metropolitan. Member agencies would have the option to participate in this regional program or maintain their own independent programs. Staff would return to the Board for approval of vendor contracts.

Device Incentives for Retrofit and New Construction

The member agencies recommended five new water-savings incentives for the landscape and CII programs. These recommendations are:

1. Synthetic turf – commercial and residential applications – \$0.30 per square foot
2. Dry vacuum pumps – commonly used in dental offices – \$125 per 0.5 horsepower pump
3. Commercial clothes washers – laundromats and multi-family residential – \$210 per model
4. Urinals – \$60 to \$400 per device for a range of water savings and installation conditions
5. High efficiency sprinkler nozzles – large landscapes – \$13 per nozzle set

Based on estimated lifetime water savings, each incentive will cost no more than \$195 per acre-foot of conserved water.

Flat Rate Device Incentives

Staff recommends that all Metropolitan device incentives be established as flat rate incentives. Currently, incentives are recommended based on \$195 per acre-foot, up to 100 percent of the device cost. The incentives are administered by checking the cost of each and every device submitted for a rebate to assure that the device cost is not lower than the rebate. The most likely device to cost less than the rebate is the High Efficiency Toilet (HET). However, only six percent of HETs invoiced to Metropolitan in the last year cost less than our rebate. Staff estimates that across all devices, less than one percent receives less than a full rebate. This results in a very labor-intensive process for both Metropolitan and the member agencies, and rarely results in cost savings to Metropolitan. The proposed flat rate policy would streamline program administration and save significant staff processing time without comprising water savings or cost-effectiveness of the program.

Improvements to Metropolitan's Measured Water Savings Program

To improve administration of Metropolitan's pay-for-performance conservation programs, staff will combine the Large Landscape Measured Water Savings Program and the Industrial Process Improvement Program (IPI Program) into one Measured Water Savings Program. In order to improve these programs, staff recommends the programs be updated to: (1) remove limits on Metropolitan incentives that are based on customer utility bill savings and partial project costs, (2) allow mixed use metered properties, (3) expand the definition of eligible project costs, and (4) simplify the payment schedule for the large landscape program.

In addition, staff recommends establishing a new audit program to serve as a gateway to the Measured Water Savings Program. Audits in this program would identify major landscape and industrial water-savings opportunities and recommend efficiency measures to encourage large water users to improve the efficiency of their systems and consider the use of recycled water.

Audits are expected to increase participation in Metropolitan's Measured Water Savings Program and ease administrative requirements, while maintaining water-savings reliability.

Additional Administrative Improvements

Consistent with Metropolitan's outreach message and program branding, staff is changing the name of the existing landscape irrigation efficiency classes offered through Metropolitan's landscape conservation program to California Friendly Landscape Training (CLFT).

In order to encourage better water efficiency in the public sector, staff will use existing programs to focus on public agencies and governments throughout its service area. This new emphasis will encourage public agencies and governments to be leaders in water-use efficiency by upgrading their systems, establishing and enforcing community ordinances, and promoting public messages appropriate to Southern California's climate and water supply conditions. Initial steps include offering customized California Friendly Landscape Training to public officials and staff. These training courses will open up new opportunities for Metropolitan's Measured Water Savings and Recycled Water programs.

Staff will continue to perform outreach through: the California Friendly Builder Programs, support new and revised landscape ordinances, California Urban Water Conservation Council programs, watershed programs and organizations, and other partnership opportunities. Metropolitan's existing Innovative Conservation Program, Enhanced Conservation Program, and Community Partnering Program will also continue as outreach vehicles for promoting California's efficiency ethic.

Savings and Cost of Proposed Changes

The device and program recommendations above are projected to produce savings of 22,500 AF per year over their useful lives for each year of the program savings will accrue, depending on the device, over a 5- to 20-year period. The average cost of this saved water is expected to be approximately \$180 per AF. Based on experience, it may take several years before customer response ramps up to the projected \$6 million of annual incentives for the described programs. Some of the costs have been authorized in prior board actions. All of these costs fall within the projected \$24 million annual program cost included in the December 2005 board action authorizing increases to Metropolitan's conservation incentive rates.

Next Steps

Staff will continue to work with the member agencies to implement all the approved program enhancements and work to bring new initiatives to the Board for consideration. Toward that end, staff will begin establishing a task force to conduct the 2007/08 annual program review. Staff will also be issuing grants under the Innovative Conservation Program and the Enhanced Conservation Program, which will be a source for new water-conserving devices and approaches.

Policy

By Minute Item 46733, dated Aug. 15, 2006, the Board authorized upgrades to the commercial and landscape water efficiency programs.

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 45828, dated Jul. 13, 2004, the Board adopted the Integrated Water Resources Plan Update.

By Minute Item 45208, dated Feb. 11, 2003, the Board adopted policy principles regarding water conservation activities

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 projects involve the funding; final design; and minor alterations, reconstruction or replacement of existing public or private facilities with no possibility of significantly impacting the physical environment. In addition, the proposed projects involve minor modifications in the condition of land, water, and/or vegetation which does not involve removal of healthy, mature, scenic trees. Accordingly, the proposed actions qualify under Class 1, Class 2, and Class 4 Categorical Exemptions (Sections 15301, 15302, and 15304 of the State CEQA Guidelines).

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

CEQA determination for Option #3:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Authorize the Regional Residential Device Incentive Program;
- b. Authorize five new incentives for new construction and retrofits;
- c. Authorize flat rate device incentives; and

d. Authorize improvements to Metropolitan’s Measured Water Savings Program;

Fiscal Impact: The proposed new device incentives, new program and program changes are estimated to cost \$6 million per year after several years of program ramp-up.

Business Analysis: The programs described in this letter are the best cost-effective methods identified by the member agencies and staff for reaching the goals set by the Board for conservation in the 2004 Integrated Water Resources Plan Update.

Option #2

Adopt the CEQA determination and authorize one or more of the proposed enhancements for Metropolitan’s Conservation Program in Option #1.

Fiscal Impact: Less than \$6 million per year depending on the recommendations adopted

Business Analysis: Metropolitan would need additional actions to meet its conservation targets in the 2004 Integrated Water Resources Plan Update.

Option #3

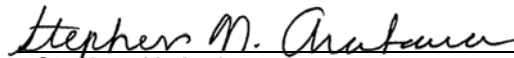
Do not authorize proposed enhancements for Metropolitan’s Conservation Program

Fiscal Impact: None

Business Analysis: Metropolitan would need additional actions to meet its conservation targets in the 2004 Integrated Water Resources Plan Update.

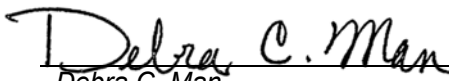
Staff Recommendation

Option #1



Stephen N. Arakawa
Manager, Water Resource Management

6/21/2007
Date



Debra C. Man
for Jeffrey Kightlinger
General Manager

6/21/2007
Date

Attachment 1 – Conservation Program and Device Enhancements

Attachment 2 – Core Conservation Program

CONSERVATION PROGRAM AND DEVICE ENHANCEMENTS

Regional Residential Device Incentive Program (For retrofit and new construction)

Based on input from the Project Advisory Committee, staff recommends a Regional Residential Device Incentive Program (Program), modeled after Metropolitan's highly successful regional commercial program, Save Water – Save A Buck.

Administering a comprehensive residential conservation program can be difficult and is not feasible for many agencies that lack staff, have limited financial resources, have limited landscape expertise, and are dealing with a complex market sector that continuously changes. The member agencies prefer to accommodate customer requests for Metropolitan rebates by referring them to a regional program.

The Program will increase residential conservation by allowing end users to use a one-step stop to secure incentives and program eligibility requirements and by allowing rebates to be paid directly either to end-users or contractors, whoever buys the product. Eligible applications would be processed through one or more program vendors to issue rebates. Based on the regional Save Water – Save A Buck model, the Program's would cost approximately \$5,000,000 annually. Approximately 15 percent of this cost would go to Program administration and 85 percent to incentives.

The proposed regional residential device incentives Program would also provide the following benefits:

- Reduce local agency and aggregate regional administrative overhead for program
- Allow local agency resources to be shifted to program development, targeting, marketing, installation verification, surveying and data analysis
- Allow local and member agencies to add to Metropolitan's base incentives
- Permit regional advertising and promotion by Metropolitan and avoid uncertainty of customer eligibility
- Allow consistent product implementation and easy program analysis

Savings for each year of the program will be approximately 22,000 AF. This is based on \$5,000,000 per year of program expenditures, with 15 percent going to administration overhead and rebates valued at \$195 per AF [(\$5,000,000 * 0.85) / \$195 per AF]

New Device Incentives (for Retrofit and New Construction)

Metropolitan's policy for setting device incentives is based on independent study information that provides water savings and device cost. The incentive for devices is based on the lesser of: (1) the value of the water saved over the useful life of the product (calculated at \$195 per acre-foot of savings), or (2) the cost of the device.

1. Synthetic Turf (For commercial and residential, retrofit and new construction).

Synthetic turf is becoming increasingly popular for sports fields, parks and residential applications. In June 2005 Metropolitan, with financial assistance from the U. S. Bureau of Reclamation, initiated a synthetic turf pilot project. The final report is expected by fall 2007. Results from this pilot indicate that synthetic turf saves an average of six acre-feet per acre year on athletic fields. Based on an expected life of 10 years, staff recommends an incentive of \$0.30 per square foot, or about \$13,000 per acre.

Although Metropolitan's incentive represents only two to three percent of total project cost, the incentive creates numerous ancillary benefits:

1. Provides a positive public signal that synthetic turf is a valid conservation choice
2. Provides a funding source that can be leveraged to secure more funding from other sources
3. Eliminates irrigation runoff from small sloping sites and overspray on small, irregularly shaped sites
4. Reduces street damage caused by irrigation overspray
5. Reduces green waste

It is unclear what the program participation and cumulative water savings will be because the incentive is small compared to the total project cost.

2. Dry Vacuum Pumps (For retrofit and new construction).

Vacuum pumps are used in a wide variety of petrochemical, pharmaceutical, food manufacturing, and health applications for drying, distilling, evaporating, degasifying, freezing, suction, and laboratory analysis. Many of these pumps use water as a liquid seal to create the vacuum. The water is usually used once and then dumped to the drain. Dry vacuum pumps create vacuum and avoid the use of water as a sealant by using parts machined with extremely close tolerances. The City of Austin¹ has retrofitted 38 liquid sealed pumps with dry vacuum pumps in dental offices. Measured savings averaged 0.25 gallons per minute per one-half horsepower (HP). Expected pump life is six to eight years. Pump prices range from \$5,000 - \$8,000 per unit. The recommended incentive is \$125 per 0.5 HP ((0.25 gpm * 60 min/hr * 8 hrs/day * 5 days/wk * 50 wks/yr * 7 yrs)/325,900 gal/AF) * \$195/AF = \$125 per 0.5 HP. Maximum pump size is set at 2 HP.

The retrofit of larger and/or more complex liquid sealed vacuum pumps would be referred to the pay-for-performance Industrial Process Improvement Program to assess water savings and incentives.

It is unclear what program participation and annual water savings this incentive will generate. Although market saturation of dry vacuum pumps is estimated (by manufacturers that make both liquid ring and dry vacuum pumps) at only 10 to 15 percent, the much higher cost of dry vacuum pumps versus liquid ring pumps (\$5,000 - \$8,000 versus \$1,400 - \$2,000) poses a significant barrier to marketing this product with an incentive of \$125 per 0.5 HP.

3. Commercial Clothes Washers (For retrofit and new construction).

The San Diego County Water Authority studied the efficiency of commercial clothes washers² to determine potential water and energy savings achievable by replacing less efficient single-load top-load washers (STL) with more efficient front-load multi-load washers (ML). STL washers typically wash about 12 pounds of laundry per load. ML washers have capacities ranging from 18 to 55 pounds per load. The study indicates that replacing STL washers with ML washers saves an average of about 16 gallons per load. Due to the heavy use of commercial washers (an average of six loads per day) and an expected life 10 years, an incentive of \$210 is recommended for commercial clothes washers ((16 gallons per load * 6 loads/day * 365 days/year * 10 years) / 325,900 gal/AF) * \$195 per AF = \$210 (with a water factor of 7.5 or less).

Based on current rebate activity of about 4,000 units per year, annual water savings is estimated at 430 acre-feet (16 gallons per load * 6 loads/day * 365 days/year * 4000 units/year) / 325,900 gallons per acre-foot).

4. Urinals Using less than 0.5 Gallon per Flush (For retrofit and new construction).

The current plumbing standard for urinals is 1.0 gallon per flush (gpf). Incentives were previously approved for High Efficiency Urinals (HEU) using 0.5 gpf and zero flush urinals using no water. Since approving these incentives³, a number of HEUs' with intermediate flush volumes have become available, flushing between zero and 0.5 gallons. Staff recommends the existing incentives be applied to a range of flush volumes to address these new HEUs. These standardized incentives will aid in accommodating current and future flush volume water. Staff recommends the following flush volume ranges:

1) Zero to 0.25 gpf (retrofitting existing urinals of 1.5 gpf or greater)	\$400
2) 0.26 to 0.50 gpf (retrofitting existing urinals of 1.5 gpf or greater)	\$200
3) Zero to 0.25 gpf (installing HEUs in new construction)	\$120
4) 0.26 to 0.50 gpf (installing HEUs in new construction)	\$60

¹ Communication with Bill Hoffman, Austin Water Utility, Water Conservation Program.

² "Monitoring and Assessment of Water Savings from Coin-Operated Multi-Load Clothes Washers Voucher Program", Water Management Inc., Western Policy Research & Koeller and Co., August 2006.

³ Existing board-approved incentive, Board Letter 7-5, dated August 15, 2006.

It is unclear what the program participation and cumulative water savings will be because of insufficient historical data.

5. High Efficiency Nozzles for Large Rotary Sprinklers (retrofit and new construction).

Many large rotary sprinklers used on golf courses and other large, open landscapes are fitted with dual plastic nozzles for long range and close-in watering. Age, high operating pressure, high flow rates and abrasives in the water cause these plastic nozzles to wear and become distorted. This leads to decreased uniformity of water distribution and increased run times to compensate for the lower uniformity. Increased run times equate to lower water use efficiency.

Replacement nozzle sets are available that overcome these problems. Made of durable metal that is very resistant to wear, they provide high distribution uniformity for many years. A study of five golf courses retrofitted with these nozzle sets⁴ demonstrated an annual water savings of 6.5 percent. Based on a 10-year expected life, each nozzle set saves 0.18 acre-feet of water. At \$195/AF of water saved, the savings are worth \$35 (0.18 AF * \$195 = \$35). The cost of a nozzle set is \$13. The recommended incentive is \$13. Water savings are estimated at 24,000 AF over a 10-year product life.

Staff also recommends a flat rate for each device. Board policy established December 13, 2005, specified rebates would be paid up to 100 percent of device cost. Subsequent experience processing rebates has identified this policy is extremely time-consuming when dealing with hundreds of rebates per month for devices with varying costs within each device category. It is estimated the proposed policy revision would save the equivalent of 0.25 full-time staff. Incentives listed in Attachment 2, based on savings valued at \$195 per acre-foot, would remain unchanged.

Improve Metropolitan's Measured Water Savings Programs

Participation in Metropolitan's pay-for-performance conservation programs has not achieved expectations. Review of this program's implementation criteria revealed several changes that should accelerate customer participation. The changes are discussed below. Also, for improved program administration, staff will combine the Large Landscape Measured Water Savings Program and the Industrial Process Improvement Program (IPI Program) into one Measured Water Savings Program.

- **Eliminating an incentive option based on customer utility bill savings and partial project costs**

As currently authorized, incentives in the MWS Program are calculated based on \$195 per acre-foot and only up to one-half project costs minus customer utility bill savings. This often results in little or no incentive. Staff proposes the incentive be calculated based on \$195 per projected acre-foot of water saved for five years, up to 100 percent of eligible project costs. This would encourage end users to participate in the MWS program by increasing the incentive, simplifying the program and streamlining administration.

- **Including mixed-use meters**

The second change adds mixed-use meters (meters that read both indoor and outdoor water use, without differentiating between the two uses). It would open the program to many more sites. Eligibility of sites with mixed-use meters would be determined on a case-by-case basis, depending on the ability to reasonably estimate non-irrigation and non-industrial process water use. This change would particularly increase program participation among older homeowner association systems that often have a single large master meter.

- **Expanding the definition of project cost**

Project Cost, currently limited to equipment cost, would be expanded to also include installation and first year water management fees. This change should increase program participation by increasing the maximum

⁴ "Improving Golf Course Irrigation Uniformity: A California Case Study" D.F. Zoldaske, Center for Irrigation Technology, California State University, Fresno, September 2003

incentive available to program participants. Metropolitan's cost exposure would not increase since the incentive would still be based on \$195 per acre-foot of verified water savings.

- **Simplifying the payment schedule for the large landscape programs**

For the landscape portion of the MWS Program and the Water Use Accountability (WUA) Program, program implementation would be simplified by eliminating the option where Metropolitan pays for the landscape water use training. Currently the member agency implementing the WUA program has opted to provide this training, and the MWS program activity has been too low for this to be an issue.

- **Establishing an audit program for high water users**

The program would provide assessments of large landscape and industrial water use customers to identify major water use efficiency opportunities and recommend efficiency measures and incentive information to encourage them to improve the efficiency of their systems and consider the use of recycled water. The assessments would be performed by one or more vendors selected by Metropolitan through an open, competitive process. Staff would return to the Board for its approval of the vendor contracts.

CORE CONSERVATION PROGRAM
Flat Rate per Device, or
up to 50 Percent of Process Water Project Cost,
all incentives based on \$195 per acre-foot of conserved water

Device/Program	Incentive (per unit)
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 ²	\$12.50
Commercial	
High-Efficiency Toilet (HET)	\$165
HET Upgrade/New Construction	\$30
Ultra Low Flush Toilet (ULFT)	\$135
Zero and Ultra Low Water Urinal (0 – 0.25 gal/flush)	\$400
ZWU Upgrade/New Construction (0 – 0.25 gal/flush)	\$120
High-Efficiency Urinal (HEU) (0.26 – 0.5 gal/flush)	\$200
HEU Upgrade/New Construction (0.26 – 0.5 gal/flush)	\$60
Pre-Rinse Spray Valves	\$60
Commercial High Efficiency Clothes Washers (all load capacities)	\$210
Water Brooms	\$150
Connectionless Food Steamers	\$485/ compartment
Dry Vacuum Pumps	\$125/0.5 HP
Cooling Tower Controllers	\$625
PH Cooling Tower Controllers	\$1,900
Steam Sterilizers	\$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/station
Commercial & Large Residential (1+ acre) WBIC*	\$630/acre
Rotating Nozzles Pop-up Spray Heads	\$4
High Efficiency Nozzles for Large Rotary Sprinklers Upgrade/New Construction	\$13/set
Synthetic Turf for Commercial and Residential Applications Upgrade/New Construction	\$0.30 sq. ft
WUA, agency provides PPDA training	\$3.50/acre ⁴
MWS	\$195/acre-foot ⁵
Irrigation Evaluation (w/o irrigation timer)	\$8
Irrigation Evaluation (with irrigation timer)	\$18

* For retrofits and new irrigation systems

Note: Items in bold are proposed new incentives.

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 100 of eligible project cost based on individual project costs.

⁴ This process water is limited to cost based on prior study.

⁵ For equipment retrofits, maximum of five years of equivalent verified savings up to one-half total approved project cost. For landscape surveys, maximum of two years of verified saving up to one-half total program cost.