

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

October 14, 2008 Board Meeting

---

**8-6**

---

**Subject**

---

Authorize refinements and additions to Metropolitan's Conservation Program

---

**Description**

---

In consultation with member agency representatives, staff identified improvements to Metropolitan's long-term conservation incentive program through the annual review process. New retrofit devices and administrative refinements are proposed for board consideration. Potential benefits include increased conservation savings and reduced administrative steps. In light of the recently encountered challenges to meeting the region's water supply needs, staff will address other near-term conservation actions to help balance demand with limited supplies in a separate board communication.

**Long-term Water Conservation**

Over the last two decades, Metropolitan developed a comprehensive and dynamic approach to advancing water conservation to meet long-term goals. The long-term efforts consist of: (1) research and development, (2) incentives and (3) consumer behavior. New technologies are identified and assessed in the research and development category. Metropolitan and the member agencies promote promising technologies and practices through financial incentives with the goal of gaining customer acceptance. As reliability is proven and customer acceptance is achieved, incentives are phased out in favor of other motivators such as product standards, building codes and market forces. **Attachment 1** is a table summarizing Metropolitan's role in the three implementation categories.

This letter brings forth proposals expected to increase progress, improve implementation, and retire actions that have run their course. Achieving the Integrated Resource Plan supply reliability goal of 1.1 million acre-feet conserved in 2025 requires that Metropolitan's incentive programs create about 10,000 acre-feet per year from new retrofit installations each year. **Attachment 2** shows that Metropolitan needs to develop more new conservation savings in the near-term to overcome years where less than 10,000 acre-feet were achieved. The 760 acre-feet of new annual savings that would accrue over the next five years from implementing the refinements proposed in this letter would help the region reach the annual goal. Metropolitan's corresponding incentive costs would be about \$1.7 million for 7,600 acre-feet of lifetime savings.

**Near-term Efforts to Enhance Water Conservation**

Metropolitan's Board recently adopted a "Water Supply Alert" resolution calling upon local retail water providers, cities and counties to implement extraordinary conservation through drought ordinances and other measures to mitigate use of regional storage reserves. Additional steps in conservation should target the urgent short-term need to reduce regional demand in concert with long-term objectives.

Staff is working with the member agencies to formulate near-term actions linked to retail agencies implementing drought ordinances. We are evaluating extending the temporary Public Sector Program with new conditions and introducing a pilot turf replacement program using State financial assistance. These items may be brought to the Board for its consideration as part of the five-year supply strategy process.

**Annual Program Review Process**

Staff convened a Project Advisory Committee (PAC) that included member agency and retail agency conservation coordinators to develop recommendations for updating Metropolitan's conservation programs.

The PAC met regularly over five months and reviewed more than 20 potential new devices and program refinements using the following criteria:

- Reliable estimates of water savings
- Cost-effectiveness of the potential incentive
- Regional supply potential

Based on these criteria, the new device incentive and program refinements cited below and described further in [Attachment 3](#) are recommended. The recommendations reflect additional input received from member agencies and the Water Planning and Stewardship Committee at its July 2008 meeting. [Attachment 4](#) is an updated list of conservation incentives with the proposed changes.

### **New Device Incentive**

Ice-making machines – A \$300 per device incentive is proposed for installation of high-efficiency, air-cooled commercial ice-making machines with average lifetime savings of 1.5 acre-feet per machine.

### **Program Refinements**

The following program refinements are recommended:

Research and development programs – Combine the timing and process for participation in the existing Enhanced Conservation Program (ECP) and Innovative Conservation Program (ICP) into a single annual request for proposals. The ECP provides funding for research into new implementation approaches and is limited to participation by member agencies. The ICP provides funding to assess the savings potential of new devices and is open to all applicants. The change would help reduce confusion over the timing and purposes of the two programs, while increasing Metropolitan's responsiveness to member agency and third party requests to consider new ideas. Annual funding amounts would remain unchanged.

High-efficiency toilet incentives – Metropolitan currently offers high efficiency toilet (HET) incentives of \$30 per unit for replacing ultra-low-flush toilets (ULFT) that use 1.6 gallons per flush and \$165 for replacing non-conserving toilets that use 3.5 gallons or more per flush. Because residential customers that participate in Metropolitan's regional residential program are frequently unable to distinguish between the type of toilet they are replacing, the potential for issuing \$165 incentives for retrofits that only qualify for the \$30 upgrade is high. To remove this possibility, Metropolitan would offer a single melded incentive of \$100 per HET to residential customers through its regional residential program. The \$100 incentive is based on the average savings rate for HETs, consistent with existing board policy of \$195 per acre-foot saved. Commercial and large multi-family customers would still be able to receive \$165 for HET retrofits (and \$30 for upgrades) through Metropolitan's regional commercial rebate program, where Metropolitan pre-inspects customers on a sample basis. Staff also would shift small multi-family customers from the commercial to the residential program because it is a better administrative fit.

Metropolitan would limit its incentives to only high-efficiency toilets that meet EPA WaterSense performance standards and discontinue commercial ultra-low-flush toilet rebates of \$60 per device. Relying on WaterSense-certified high-efficiency toilet lists ensures Metropolitan's incentive goes towards reliable, high-performing toilets. Discontinuing the incentives for commercial ULFTs that use 1.6 gallons per flush would shift Metropolitan's focus to the greater water savings achieved from HETs that use 1.28 gallons or less per flush.

General authorization for smart irrigation controllers and related devices – Metropolitan currently offers incentives for certain weather-based irrigation controllers (WBICs). However, this smart controller technology is dynamic, with new products and implementation approaches rapidly changing the market. Staff is requesting authority to administer all smart controller incentives, based on documented savings and existing board policy of \$195 per acre-foot saved. Current studies indicate savings of 3.2 acre-feet per irrigated acre over the 10-year functional life of a smart controller.

Included under this authorization would be providing incentives for commercial central computer irrigation controllers and soil moisture sensors that comply with the savings criteria. Central controllers are specially designed for large landscapes and were addressed under the PAC review. Soil moisture sensors are expected to provide equivalent savings to WBICs, and would have to pass performance tests set by the Irrigation Association.

Staff anticipates implementing this authority based on representative savings linked to the number of stations in the controller or other parameters to eliminate the need to measure landscape acreage, which can be cumbersome. This authority would enable staff to design incentives that are responsive to the dynamic marketplace and customer needs.

Rain shut-off sensors – Staff requests general authorization for rain shut-off and related sensors that improve the performance of standard controllers and complement certain types of smart controllers. Inexpensive rain shut-off sensors interrupt landscape irrigation during rainfall events, reducing applied winter irrigation by about two inches per year on a long-term average basis. Staff would develop and offer incentives for these and related devices that pass Irrigation Association performance tests and are backed by third-party studies that document savings and reliability. Staff would quantify incentive amounts for these devices on a case-by-case basis at \$195 per acre-foot saved and not to exceed the device cost.

Landscape survey incentives – Metropolitan currently offers commercial landscape survey incentives of \$215 per acre based on two years of savings resulting from the surveys. Survey recipients are ineligible from receiving WBIC incentives for two years to avoid double payment of the same savings. Based on input received from the PAC, staff proposes removing the two-year wait requirement to be eligible for WBIC incentives. The revised incentive is based on the actual cost of performing landscape surveys estimated at \$200 per acre. Since part of the survey involves estimating irrigated acreage, there is a practical basis for establishing the incentive on a per-acre basis. However, staff is also asking for the flexibility to adjust the incentive using surrogate criteria such as the number of irrigation stations if experience deems that to be a superior approach. These changes should resolve constraints in participation expressed by our member and retail agencies.

X-ray water recirculation device incentives – Staff proposes discontinuing the X-ray water recirculation device incentive of \$3,120 per unit. Because most medical facilities are now converting to digital X-ray machines that do not require potable water, requests for the recirculation incentive that we offer have nearly stopped.

### **Next Year's Review Process**

Staff will schedule the next annual review process to focus on new opportunities, including irrigation pressure control devices that may help save water by improving sprinkler performance. A new Project Advisory Committee of interested member and retail agencies will be constituted later this calendar year.

### **Policy**

---

By Minute Item 47165, dated July 10, 2007, the Board authorized refinements to Metropolitan's water use efficiency programs.

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

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

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

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

By Minute Item 37324, dated September 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 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).

CEQA determination for Option #3:

None required

## Board Options

---

### Option #1

Adopt the CEQA determination and, as described above and in [Attachment 3](#):

- a. Authorize the ice machine incentive; and
- b. Authorize six program refinements.

**Fiscal Impact:** \$1.7 million over five years

**Business Analysis:** The new ice machine incentive and program refinements would increase water savings and improve program administration.

### Option #2

Adopt the CEQA determination and authorize one or more of the proposed additions and program refinements described in Option #1.

**Fiscal Impact:** Equal or less than \$1.7 million over five years dependent upon which recommendations are approved

**Business Analysis:** Authorized additions and refinements would improve Metropolitan's water conservation efforts. Staff would revisit the remaining items that are not authorized with the member agencies in the upcoming year.

### Option #3

Do not authorize proposed addition and program refinements for Metropolitan's Conservation Program

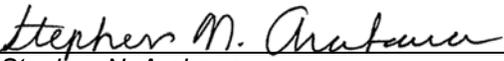
**Fiscal Impact:** None

**Business Analysis:** Metropolitan would delay advances to its water conservation efforts.

**Staff Recommendation**

---

Option #1

  
\_\_\_\_\_  
Stephen N. Arakawa  
Manager, Water Resource Management

9/22/2008  
Date

  
\_\_\_\_\_  
Jeffrey Knightlinger  
General Manager

9/27/2008  
Date

**Attachment 1 – Summary of Metropolitan’s Existing Water Use Efficiency Approach**

**Attachment 2 – New Incentive-Based Annual Water Savings Achieved Each Year**

**Attachment 3 – Conservation Program and Device Enhancements**

**Attachment 4 – Core Conservation Program Incentives**

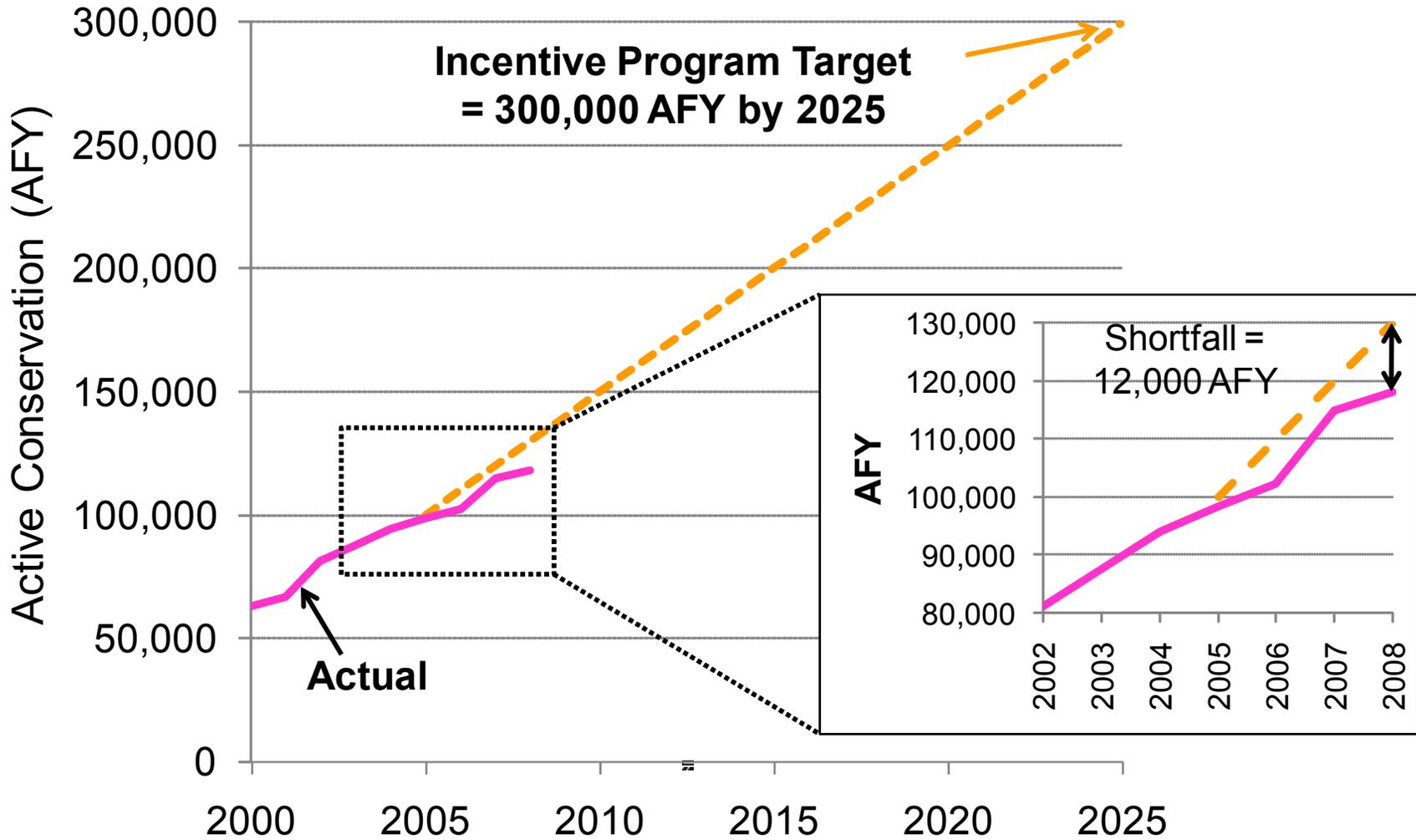
BLA #5939

### Summary of Metropolitan’s Existing Water Use Efficiency Approach

Metropolitan and member agency water use efficiency efforts fall into three comprehensive categories: (1) research and development programs; (2) incentive programs; and (3) consumer behavior. The following table summarizes Metropolitan’s current water use efficiency programs within this framework.

Component	Description & Goal	Ongoing Programs & Activities
Research & Development	Evaluate and pilot new water use efficiency technologies and updated practices for future implementation	1) Innovative Conservation Program 2) Enhanced Conservation Program 3) Studies & Database 4) Annual Program Review 5) California Urban Water Conservation Council Steering Member 6) WateReuse Foundation Board Member
Incentives	Encourage the installation and use of proven cost-effective water use efficiency technologies or practices with the ultimate goal of creating market transformation  Discontinue incentives as market transformation is achieved	1) Residential Conservation a) Regional Administered Incentives b) Member Agency Administered (Phasing Out) 2) Commercial, Industrial, & Institutional Conservation a) Regional Administered Incentives b) California Friendly® Builder Program c) Water Savings Performance Program d) Accelerated Public Sector Program (includes recycling) 3) Local Resources Program a) Recycled Water Incentives b) Groundwater Recovery Incentives 4) Seawater Desalination Program
Consumer Behavior, Code Compliance, and Price Response	Multi-pronged approach to create ongoing water savings from new plumbing codes, behavioral changes, industry standards, local ordinances, and retail water pricing to encourage water conservation and use of recycled water	1) State & Federal Legislation a) Plumbing Code b) Model Landscape and Drought Ordinances c) Appliance Standards 2) Communication Plan a) Media and outreach campaign 3) School Education Program 4) Community Partnering Program 5) California Friendly® Landscape Training 6) WateReuse Legislative & Regulatory Committee Member

### New Incentive-Based Annual Water Savings Achieved Each Year



## CONSERVATION PROGRAM AND DEVICE ENHANCEMENTS

Through the annual review process, a Project Advisory Committee (PAC) of member agency and Metropolitan staff met regularly to refine Metropolitan's conservation programs and incentives. The following recommendations reflect additional input received from member agencies and the Water Planning and Stewardship Committee at the July 2008 committee meeting.

### **New Device Incentives**

#### Ice-Making Machines (For retrofit and new construction)

Commercial ice-making machines are used extensively in the food service industry, hotels, hospitals, and for other commercial and industrial applications. Ice-making machines use either air or water to remove heat generated during the refrigeration process. Water-cooled, ice-making machines are typically single-pass and use significant amounts of potable water, but older air-cooled machines may also inefficiently use water in the ice-making process. Metropolitan would offer \$300 for the installation of new air-cooled machines that meet the Consortium for Energy Efficiency (CEE) Tier III standard. The Tier III standard will ensure the machines reliably save water as well as energy. Ice-making machines can cost between up to \$5,000 or more depending on the size and type of machine. Metropolitan's incentive would complement energy industry incentives for Tier III ice machines of between \$100 and \$500 per unit.

#### **Ice-Making Machine Rationale**

**Water Savings Study:** The PAC relied on research studies and data from the Food Service Technology Center, the Air-Conditioning and Refrigeration Institute and the California Urban Water Conservation Council.

**Cost-Effectiveness of Incentive:** Metropolitan's incentive, combined with energy incentives of \$100 to \$500, would pay up to 33 percent or more of the cost of a new machine.

**Regional Savings Potential:** According to a recent study, the existing number of ice machines in the service area is approximately 90,000 distributed among commercial establishments.

#### **Incentive Calculation**

Average savings for CEE Tier III ice machines: 50,300 gallons per year = 0.154 AF per year

Average device life = 10 years

Average lifetime savings = 1.54 AF

Calculated incentive at \$195 per AF = 1.54 AF \* \$195 = \$301= Round to \$300 per machine

#### **Savings Calculation**

Assume 150 machines per year over 5 years = 750 machines

Annual savings = 750 x 0.154 AF = 116 AFY (after five years)

Lifetime savings = 750 x 1.54 AF = 1,155 AF

#### **Effective upon Board approval**

### **Program Refinements**

The PAC also recommends the following refinements to Metropolitan's incentives:

#### Research and Development Programs

Metropolitan would combine the timing and solicitation for participation in the existing Enhanced Conservation Program (ECP) and Innovative Conservation Program (ICP) into a single annual process. The ECP provides

funding to research new implementation approaches and is limited to participation by member agencies. The ICP provides funding to assess the savings potential of new devices and is open to all applicants. The proposed change would help reduce confusion over timing and differences between the two programs while increasing Metropolitan’s responsiveness to member agency and third party requests to consider new ideas. Annual funding amounts would remain unchanged.

**Research and Development Program Rationale**

**Water Savings Study:** Combining the ECP and ICP could increase the research available for evaluating new technologies and conservation approaches.

**Cost-Effectiveness of Refinement:** Managing the programs together could increase the efficiency and reduce confusion over the programs. The current programs are offered in alternate years under the following guidelines:

- Innovative Conservation Program: \$0.25 million every two years; open to all entities
- Enhanced Conservation Program: \$4 million every two years; open to member agencies

**Regional Savings Potential:** Offering the programs annually could help identify more potential devices for Metropolitan’s existing programs.

**Effective upon Board approval**

High-Efficiency Toilet Incentive Modifications

Metropolitan currently offers high efficiency toilet (HET) incentives of \$30 per unit for replacing ultra-low-flush toilets (ULFT) that use 1.6 gallons per flush and \$165 for replacing non-conserving toilets that use 3.5 gallons or more per flush. Because residential customers that participate in Metropolitan’s regional residential program are frequently unable to distinguish between different types of toilets, the potential for issuing \$165 incentives for toilets that only qualify for the \$30 upgrade is high. To remove this possibility Metropolitan would offer a single melded incentive of \$100 per unit through its regional residential program. The \$100 incentive is consistent with existing board policy of \$195 per acre-foot saved. Commercial and multi-family customers would still be able to receive \$165 for HET retrofits (and \$30 for upgrades) through Metropolitan’s commercial rebate program, where Metropolitan pre-inspects customers on a sample basis. Metropolitan would restructure and add controls for HET incentives for both the regional residential and commercial programs, while creating options for member agency-run programs:

- |   |
|---|
| <p>1. <i>WaterSmart: regional residential program:</i></p> <ul style="list-style-type: none"> <li>a. Melded incentive of \$100 per HET</li> <li>b. Equivalent to \$195 per acre-foot</li> <li>c. Melded rate eliminates need for pre-inspections</li> </ul>   |
| <p>2. <i>Save-A-Buck: regional CII and multi-family program:</i></p> <ul style="list-style-type: none"> <li>a. \$165 for replacing non-conserving toilets, \$30 for replacing conserving toilets</li> <li>b. Equivalent to \$195 per acre-foot</li> <li>c. Pre- and post-inspections performed by Metropolitan on a sample basis</li> </ul> |
| <p>3. <i>New construction</i></p> <ul style="list-style-type: none"> <li>a. \$30 per HET</li> <li>b. Equivalent to \$195 per acre-foot</li> </ul>   |

The melded rate of \$100 per unit in the residential program reflects the average savings based on staff estimates of residential ultra-low-flush toilet saturation. Staff will continue to perform pre- and post-inspections on a

sample basis to help ensure proper incentives are being applied in the commercial sector. Staff also plans to shift small multi-family customers from the commercial to the residential program because it is a better administrative fit. New construction will continue to be eligible for \$30 per unit. Member or retail agencies performing direct installation programs and distribution events would be eligible for the \$165/\$30 incentives within this framework.

### **High-Efficiency Toilet Incentive Modifications**

**Water Savings Study:** Water savings studies on toilet replacement programs performed in the 1990s showed that ULFTs save an average of 31 gallons per day. In comparison, HETs save 38 gallons per day.

**Cost-Effectiveness of Refinement:** Offering a \$100 melded incentive to residential customers will help ensure Metropolitan's rebate is consistent with existing board policy of \$195 per acre-foot saved. In the CII and multifamily buildings, Metropolitan will continue to randomly pre-inspect customers on a sample basis to ensure appropriate incentives are applied in those sectors.

**Regional Savings Potential:** Active programs and plumbing codes have led to just over 50 percent saturation of ULFTs, but there is still savings potential region-wide in the commercial and multi-family sectors.

**Effective Date: November 1, 2008**

#### EPA WaterSense list for high-efficiency toilets

EPA's WaterSense program tests water-conserving devices for reliability and performance. Metropolitan would only provide incentives for high-efficiency toilets that pass the EPA's WaterSense performance criteria. This will ensure that Metropolitan's incentives go towards reliable, high-performing toilets.

### **EPA WaterSense List for High-Efficiency Toilet Rationale**

**Water Savings Study:** Metropolitan would only offer rebates on EPA WaterSense-qualified toilets, ensuring the devices perform well and save 7 gallons per day over ultra-low-flush toilets and 38 gallons per day over non-conserving toilets.

**Cost-Effectiveness of Refinement:** Using EPA WaterSense list enables Metropolitan to benefit from third-party performance testing and labeling.

**Regional Savings Potential:** This refinement will help ensure Metropolitan's high-efficiency toilet incentive is provided for products that meet performance standards, ensure customer satisfaction, and have a high savings potential across the region and in different water use sectors.

**Effective upon Board approval**

#### Discontinue commercial ultra-low-flush toilet retrofit incentives

Metropolitan's incentives for residential ultra-low-flush toilets (1.6 gallons per flush) will sunset in December 2008. Most large water agencies across the state and member agencies within Metropolitan's service area have discontinued rebates for ULFT devices. Discontinuing this incentive would allow Metropolitan to focus efforts on high-efficiency toilets. This refinement would establish a sunset date of July 1, 2009 for offering commercial ultra-low-flush toilet incentives. The extra time allows for member agencies and retail agencies to transition ongoing programs.

### **Discontinue Commercial Ultra-Low-flush Toilet Incentive Rationale**

**Water Savings Study:** Based on reported activity, most member agencies have stopped rebating on ultra-low-flush toilets (31 gallons per day) with less than 4,000 retrofitted over the past year.

**Cost-Effectiveness of Refinement:** Phasing out the incentive will allow Metropolitan and the member agencies to focus marketing efforts on high-efficiency toilets (1.3 gallons per flush or less).

**Regional Savings Potential:** This refinement will have minimal impacts to regional savings while streamlining Metropolitan's incentive programs.

**Effective Date: July 1, 2009**

General authorization for smart irrigation controllers and related devices – Metropolitan currently offers weather-based irrigation controller (WBIC) incentives of \$630 per acre for landscapes greater than an acre, equivalent to \$195 per acre-foot. However, smart controller technology is dynamic, with new products and implementation approaches rapidly changing the market. Staff is requesting general authority for administering smart controllers and related devices, including weather-based and central computer irrigation controllers, founded on documented savings and \$195 per acre-foot, without having to obtain board approval for every new product or approach.

Under the authorization, staff would have the authority to structure incentives based on the number of stations in the controller, on the number of active valves, or other parameters to eliminate the need to measure landscape acreage. This would enable staff to design incentives more responsive to the dynamic marketplace and customer needs. Staff would be authorized to add soil moisture sensors and other products that are equivalent to WBICs, after the devices pass performance tests set by the Irrigation Association.

### **General Authorization for Smart Irrigation Controllers Rationale**

**Water Savings Study:** Savings data for weather-based controllers are derived from studies performed in San Diego and Orange Counties. The study showed savings of 3.2 acre-feet per acre over the 10-year controller life.

**Cost-Effectiveness of Refinement:** The incentives in this refinement are based on \$195 per acre-foot.

**Regional Savings Potential:** Weather-based irrigation controllers, central computer irrigation controllers, soil-moisture sensors, and other controller related devices are essential tools for achieving landscape irrigation conservation savings.

**Effective upon Board approval:** Staff will have the authority to add soil-moisture sensors administratively once approved product lists are available through the Irrigation Association's Smart Water Application Technology testing process.

#### Central Computer Irrigation Controllers (For retrofit and new construction)

Central irrigation controllers are used for managing water use at very large commercial landscapes such as golf courses. They incorporate the benefits of weather-based irrigation controllers and other advanced control features. Central controllers can cost more than \$50,000 depending on the size and type of installation. Metropolitan's incentive would be consistent with \$195 per acre-foot, and cover various components including the controller, software, communication devices, weather stations, sensors, enclosures, and other equipment.

### **Central Computer Irrigation Controller Rationale**

**Water Savings Study:** The PAC relied on prior evaluations of commercial irrigation controllers based on data from the Municipal Water District of Orange County, Los Angeles Department of Water and Power, and the Irvine Ranch Water District.

**Cost-Effectiveness of Incentive:** At \$630 per acre, Metropolitan's incentive could pay between 15 percent to 40 percent+ depending on the cost of the controller and landscape area. Under the general authorization, Metropolitan may change the basis of the incentive from acres to number of stations, for example.

**Regional Savings Potential:** Central computer irrigation controllers are used at golf courses, parks, home owner associations and other large landscape or multiple-site applications across the service area.

#### **Incentive Calculation**

Average annual savings = 0.323 acre-feet per acre per year

Average device life = 10 years

Average lifetime savings = 3.23 acre-feet per acre

Calculated incentive at \$195 per AF =  $3.23 * \$195 = \$630$  per acre

#### **Savings Calculation**

Assume 2 controllers per year over 5 years = 10 units

Assume average acre per controller = 100 acres x 10 units = 1,000 acres (after five years)

Annual savings = 1,000 acres x 0.323 AFY = 323 AFY (after five years)

Lifetime savings (10 year life) = 10 years x 323 AF = 3,230 AF

#### **Effective upon Board approval**

#### Rain Shut-Off Sensors

Staff is also requesting general authorization for rain shut-off and related sensors which improve the performance of standard controllers and complement certain types of smart controllers. Inexpensive rain shut-off sensors interrupt landscape irrigation during rainfall events, reducing applied winter irrigation by about two inches per year. Staff would have the authority to administratively add incentives for these and related devices that pass Irrigation Association performance tests and are backed by third-party studies that document savings. Staff would develop incentives for these devices on a case-by-case basis at \$195 per acre-foot saved.

### **Rain Shut-Off Devices Rationale**

**Water Savings Study:** Metropolitan will derive savings estimates for rain shut-off devices based on a third-party study performed by the University of Florida and other studies as available.

**Cost-Effectiveness of Refinement:** The incentives for rain shut-off devices will be based on \$195 per acre-foot and set appropriate precedents for water stewardship.

**Regional Savings Potential:** Rain shut-off devices have the potential to reduce both residential and commercial winter irrigation use throughout service area by interrupting landscape irrigation during rainfall events.

**Effective upon Board approval:** Staff will have the authority to add rain shut-off sensors and related devices administratively once approved product lists are available through the Irrigation Association performance testing process.

#### Landscape Survey Incentives

Metropolitan currently offers commercial landscape survey incentives of \$215 per acre, based on \$195 per acre-foot saved for two years of savings resulting from the surveys. Survey recipients are subsequently ineligible from receiving device incentives for two years to avoid double payment of the same savings. Based on input

received from the PAC, staff proposes removing the two-year wait requirement for WBIC incentives and base the incentive on the actual cost of performing landscape surveys (\$200 per acre). Staff is also asking for authority to base the incentive on alternative criteria, such as the number of stations, to improve management of this program.

The landscape survey program would have the following features:

- \$200 per acre up to the full cost of the survey. Staff may also base the incentive on alternative criteria, such as number of stations, equivalent to \$200 per acre
- No wait for customers to receive device incentives
- Member agencies are encouraged to market Metropolitan conservation and water recycling incentives through the surveys
- Retroactive to July 2006

**Landscape Survey Incentive Rationale**

**Water Savings Study:** Based on a study performed in San Diego County, landscape surveys save over an acre-foot of water over two years, and improve the savings potential of water-conserving landscape technology. The savings are related to reprogramming controllers, identifying leaks, and recommendations on system improvements.

**Cost-Effectiveness of Refinement:** Landscape surveys save water and act as a gateway to Metropolitan’s incentive and performance programs. The \$200 per acre incentive represents the actual cost of performing an outdoor survey.

**Regional Savings Potential:** Large landscapes with significant savings potential such as golf courses, schools, and cemeteries are located throughout Metropolitan’s service area.

**Effective upon Board approval**

**Increased Installation of Smart Controllers Prompted by the Surveys**

**Incentive Calculation**

Average annual savings = 0.323 acre-feet per acre per year

Average device life = 10 years

Average lifetime savings = 3.23 acre-feet per acre

Calculated incentive at \$195 per AF = 3.23 \* \$195 = \$630 per acre

**Savings Calculation**

Assume 200 surveys per year lead to 200 controllers per year over 5 years = 10,000 units

Assume average acre per controller = 1 acres x 1,000 units = 1,000 acres (after five years)

Annual savings = 1,000 acres x 0.323 AFY = 323 AFY (after five years)

Lifetime savings (10 year life) = 10 years x 323 AF = 3,230 AF

**Effective upon Board approval**

Under a 2007 board authorization, Metropolitan may conduct audits (surveys) of complex industrial processes and large landscapes under the Water Savings Performance Program. Member agencies have the option of implementing their own landscape surveys and receiving the incentives described above, or requesting that Metropolitan perform surveys of large landscape through the Water Savings Performance program.

Discontinue X-ray recirculation devices

Digital X-ray machines are replacing film-based X-ray machines in the marketplace, leading to low participation in this incentive. The current \$3,120 incentive per device, based on 16 acre-feet of lifetime savings, would not be a meaningful incentive for digital X-ray machines, which typically cost more than \$200,000. Metropolitan would

discontinue the incentive on July 1, 2009 to allow member agencies and retail agencies time to adjust their conservation plans.

**Discontinue X-Ray Recirculation Device Rationale**

**Water Savings Study:** X-ray recirculation devices save 16 acre-feet of lifetime water savings. Over the past two fiscal years, there has been no activity for this incentive due to digital machines replacing film-based machines.

**Cost-Effectiveness of Refinement:** Discontinuing the incentive will allow Metropolitan and the member agencies to focus marketing efforts on other commercial incentives.

**Regional Savings Potential:** X-ray technology is evolving from film-based technology to digital technology, generating additional savings automatically.

**Effective Date: July 1, 2009**

**CORE CONSERVATION PROGRAM INCENTIVES**

<b>Device/Program</b>	<b>Incentive (per unit)</b>
<b>Residential Indoor</b>	
<b>High-Efficiency Toilet (HET)</b>	<b>\$165<sup>1</sup></b>
<b>HET Upgrade/New Construction</b>	<b>\$30<sup>1</sup></b>
<b>Single-Family / Homeowner HET – Effective Nov. 1 2008</b>	<b>\$100<sup>2</sup></b>
Ultra Low Flush Toilet (ULFT) expires December 31, 2008	\$60 <sup>3</sup>
High-Efficiency Clothes Washer	\$85
Single-family survey	\$12.50
<b>Commercial</b>	
High-Efficiency Toilet (HET)	\$165
HET Upgrade/New Construction	\$30
<b>Ultra Low Flush Toilet (ULFT) expires June 30, 2009</b>	<b>\$135</b>
Zero and Ultra Low Water Urinal (ZWU) (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
<b>Ice-Making Machines (Tier III)</b>	<b>\$300</b>
PH Cooling Tower Controllers	\$1,900
Steam Sterilizers	\$1,900
<b>X-Ray Recirculation (Phase-out July-2009)</b>	<b>\$3,120</b>
Water Savings Performance Program	\$195/acre-foot <sup>4</sup>
<b>Landscape</b>	
<b>Residential &amp; Commercial 12 Station Weather Based Irrigation Controllers (WBIC)</b>	<b>\$80<sup>5</sup></b>
<b>Residential &amp; Commercial 12+ Station WBIC</b>	<b>\$6.50/each Additional Station<sup>5</sup></b>
<b>Commercial &amp; Large Residential (1+ acre) WBIC</b>	<b>\$630/acre<sup>5</sup></b>
<b>Central Computer Irrigation Controllers</b>	<b>\$630/acre<sup>5</sup></b>
<b>Commercial Landscape Surveys</b>	<b>\$200/acre<sup>6</sup></b>
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
Water Use Accountability, agency provides PPDA training	\$3.50/acre <sup>7</sup>
Water Savings Performance Program	\$195/acre-foot <sup>8</sup>
Irrigation Evaluation (w/o irrigation timer)	\$8

Device/Program	Incentive (per unit)
<b>Landscape (continued)</b>	
Irrigation Evaluation (with irrigation timer)	\$18
<b>Soil Moisture Sensors and Other Controller Technologies</b>	<b>TBD<sup>9</sup></b>
<b>Rain Shut-Off Sensors And Other Shut-Off Technologies</b>	<b>TBD<sup>10</sup></b>

**Note: Items in bold are proposed new incentives.**

- <sup>1</sup> Will expire November 1, 2008 – replaced by the \$100 melded incentive rate for the regional residential program.
- <sup>2</sup> Effective November 1, 2008 through the regional residential program.
- <sup>3</sup> ULFT incentive will expire in December 2008.
- <sup>4</sup> This process water program is limited to 100 percent of eligible project costs based on individual project costs.
- <sup>5</sup> **Under the general authorization for irrigation controllers, these incentives may be changed to an alternative payment structure, such as per station, equivalent to \$195 per acre-foot.**
- <sup>6</sup> **Up to the full cost of the survey with no wait for device incentives. Staff may also offer the incentive using yet to be determined equivalent criteria, such as per station, equivalent to \$200 per acre.**
- <sup>7</sup> This process water is limited to cost based on prior study.
- <sup>8</sup> For specialized equipment and landscape retrofits, maximum of five years of equivalent verified savings up to one-half total approved project cost.
- <sup>9</sup> **Staff would have the authority to add soil moisture sensors under the general authority for irrigation controllers. Incentives would only be developed for devices that pass the Irrigation Association’s Smart Water Application Technology testing protocols.**
- <sup>10</sup> **Staff would have the ability to add rain shut-off devices under a general authority. Incentives would only be developed for devices that pass Irrigation Association testing protocols.**