

- Board of Directors
Water Planning and Stewardship Committee

May 13, 2008 Board Meeting

9-4

Subject

Proposed Implementation of Extraordinary Conservation Measures

Description

As discussed at the April Board meeting, staff does not recommend implementing of Supply Allocation Plan reductions in 2008, despite ongoing dry conditions and restrictions in State Water Project pumping. Instead, staff recommends that, pursuant to Metropolitan's Water Surplus and Drought Management (WSDM) Plan, Metropolitan and its member agencies implement extraordinary conservation measures for the remainder of calendar year 2008. Implementing these measures will be aimed at reducing demands throughout Metropolitan's service area in order to preserve the region's dry-year supply reserves. Actions taken in 2008 that preserve reserve supplies could avoid or reduce the magnitudes of potential supply allocations in 2009 or 2010 if the current water supply conditions persist.

The proposed extraordinary conservation measures include a broad set of potential near- and long-term water use efficiency actions that build upon the Water Use Efficiency White Paper (White Paper) reviewed with the Water Planning and Stewardship Committee at its March meeting. These actions address the need for the general public to significantly increase water use efficiency practices in the short term to adapt to Southern California's current supply challenges. Additionally, the long-term water use efficiency actions will be aimed at permanently increasing Southern California's water use efficiency in step with the Governor's call for a 20 percent reduction in use by 2020.

As part of the extraordinary conservation measures, staff has developed a draft resolution calling for extraordinary conservation for the Committee and Board's review this month, and consideration and action in June. The proposed Water Supply Alert Resolution ([Attachment 1](#)) would call upon Southern California's cities, counties, member agencies and retail water agencies to take immediate steps to reduce near-term water use. The resolution is also intended to draw public attention to the urgent need for conservation, consistent with Metropolitan's conservation outreach program.

Background

Recent hydrologic and regulatory constraints have significantly reduced the reliability of Southern California's imported supplies and depleted regional supply reserves. Metropolitan is implementing board-adopted water use efficiency programs designed to be part of a long-term supply reliability strategy. In 2007, the Board approved additional programs that focus on public agency and residential sector water conservation. These programs include a \$55 million commitment by Metropolitan over the next five years, in addition to existing long-term programs to encourage water recycling and conservation. In addition to these efforts, further near-term water efficiency improvements are needed. This letter outlines potential actions for the Board to consider.

Water Supply Alert Resolution

The WSDM Plan guides Metropolitan's supply actions under both wet and dry conditions to ensure supply reliability. Staff is proposing the following system of "conditions" to effectively communicate the serious water supply situation and urge stronger water conservation practices:

Baseline Water Use Efficiency	Ongoing conservation, outreach, and recycling programs to achieve permanent reductions in water use and build storage reserves.
Condition 1: Water Supply Watch	Local agency voluntary dry-year conservation measures and use of regional storage reserves.
Condition 2: Water Supply Alert	Regional call for cities, counties, member agencies and retail water agencies to implement extraordinary conservation through drought ordinances and other measures to mitigate use of storage reserves.
Condition 3: Water Supply Allocation	Implement Metropolitan’s Supply Allocation Plan.

Under the proposed resolution, the Board would declare a regional Water Supply Alert urging cities, counties, member agencies and retail water agencies to pursue extraordinary conservation measures, including adopting and implementing local drought ordinances. The purpose of instituting the Water Supply Alert Resolution is to preserve regional storage reserves and avoid invoking Metropolitan’s Allocation Plan, which would allocate Metropolitan supplies to the member agencies in the case of shortage.

The draft Water Supply Alert Resolution is designed to increase awareness about the region’s challenging water supply conditions by calling for immediate actions. While some cities and water agencies in Southern California have implemented local drought or water use ordinances, the resolution urges the remaining cities and agencies to enforce their existing ordinances, or develop and enact new ordinances if they do not have them. Metropolitan would provide assistance, as requested, to member and retail water agencies (e.g., Metropolitan would provide sample ordinances and conservation program suggestions). The region would benefit by all entities in the service area implementing drought ordinances by the beginning of 2009.

Ultimately, the goal of calling for extraordinary conservation is to reduce demand to a preferred Metropolitan-demand level. The preferred demand would be calculated on a year-by-year basis, incorporating projections of water supplies and the status of regional storage. The preferred demand would be set at a level that would protect regional storage and reduce the risk of entering a water supply allocation. Progress towards achieving the preferred demand level would be clearly communicated to the public by comparing the preferred demand to actual metered deliveries accumulating throughout the year.

Additional Water Use Efficiency Opportunities

The White Paper reviewed by the Board in March proposed new opportunities for increasing water use efficiency in the region. Staff analyzed the opportunities and classified them as either short-term or long-term actions based on implementation time frames. Many of the short-term opportunities are included in the Water Supply Alert Resolution as actions local agencies could take to achieve extraordinary conservation. The potential actions described in the White Paper are summarized in [Attachment 2](#). A complete copy of the White Paper is included as [Attachment 3](#).

Next Steps

Per the Board’s review and direction, staff would revise the draft Water Supply Alert Resolution for possible action at the June Board meeting. In addition, the Board will also have the opportunity in July to consider authorizing additions and refinements to Metropolitan’s existing conservation programs, which are being developed in conjunction with the member agencies.

During the remainder of the year, staff will present policy issues for the Board’s consideration, including status reports on the Best Management Practices revision process by the California Urban Water Conservation Council and how water use efficiency initiatives integrate with the upcoming Integrated Resources Plan development. Further, staff will report on a joint Member Agency Manager/Metropolitan staff collaboration to develop a five-year action plan to improve supply reliability. Staff will also work with the member agencies and local stakeholders to develop other measures identified in the White Paper.

Policy

By Minute Item 37324, dated September 1988, the Board established financial incentives for water conservation and authorized funding new and emerging technologies.

By Minute Item 43514, dated April 13, 1999, the Board adopted the Water Surplus and Drought Management Plan.

By Minute Item 43747, dated October 12, 1999, the Board authorized partnerships with state and federal agencies under Metropolitan's Conservation Credits Program.

By Minute Item 43021, dated June 9, 1998, the Board adopted the Local Resources Program.

By Minute Item 47049, dated April 10, 2007, the Board authorized open program alternative approach for the Local Resources Program.

Fiscal Impact

Upon adoption of the Water Supply Alert Resolution, costs related to staff resources and expenditures in Metropolitan's Conservation Credit programs will likely increase as customers respond to the call for extraordinary conservation.

Stephen N. Arakawa *Date*
Manager, Water Resource Management

Jeffrey Kightlinger *Date*
General Manager

[Attachment 1 – Draft Board Water Supply Alert Resolution](#)

[Attachment 2 – New Water Use Efficiency Opportunities](#)

[Attachment 3 – White Paper on Future Water Use Efficiency](#)

DRAFT
RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA
CALLING FOR A WATER SUPPLY ALERT

WHEREAS, Metropolitan's main sources of imported supplies are facing unprecedented challenges because of record dry conditions for eight of the last nine years along the Colorado River and deteriorating environmental conditions in the Sacramento-San Joaquin Delta; and

WHEREAS, since 2003 Metropolitan's Colorado River supplies have been significantly diminished because California reduced its use of River water due to drought conditions and in accordance with a series of intra-California and multi-state agreements on the Colorado River; and

WHEREAS, Metropolitan's State Water Project supplies from the Delta will be reduced by nearly 30 percent this year due to court-ordered pumping restrictions to protect endangered species; and

WHEREAS, Metropolitan and its member agencies are withdrawing water from surface and groundwater storage reserves to meet current water demands, leaving the region's supplies vulnerable; and

WHEREAS, Metropolitan must maintain a prudent level of reserve supplies in the case of a supply disruption from an earthquake, catastrophe or other event; and

WHEREAS, Metropolitan has already curtailed the delivery of water for agricultural and groundwater replenishment use throughout its six-county service area; and

WHEREAS, Metropolitan's 1999 Water Surplus and Drought Management plan guides Metropolitan's water supply management actions and includes provisions for implementing extraordinary conservation under dry conditions; and

WHEREAS, Metropolitan and the member agencies have taken major actions this year to accelerate conservation and recycling implementation as well as increasing public messaging to create a heightened awareness of the Region's supply challenges; and

WHEREAS, Metropolitan relies on the actions of its 26 member agencies and other retailers to enact and implement local conservation measures;

NOW THEREFORE BE IT RESOLVED that the Board of Directors of The Metropolitan Water District of Southern California, under its Water Surplus and Drought Management Plan, declares that Southern California in Metropolitan's service area is in a Water Supply Alert condition; and

BE IT FURTHER RESOLVED that Metropolitan urges all cities, counties, member agencies and retail water agencies to implement extraordinary conservation measures to preserve regional storage reserves; and

BE IT FURTHER RESOLVED that Metropolitan urges all cities, counties, member agencies and retail water agencies in the region to immediately activate and enforce existing conservation and drought ordinances; and

BE IT FURTHER RESOLVED that all cities, counties, member agencies and retail water agencies who have not adopted drought ordinances, are urged to immediately adopt and enforce conservation and drought ordinances that include measures such as: tiered rate structures that promote conservation; restrictions on the hours of outdoor watering; prohibitions on landscape irrigation runoff; provisions for water efficient landscapes in new construction and landscape retrofits; mandatory retrofits to install low-flow toilets during the resale of properties; hotlines or other mechanisms for the public to report inefficient or prohibited water use; restrictions on use of potable water for street cleaning; new or enhanced rebate programs for water saving devices; new or enhanced incentives to maximize the use of recycled water; and

BE IT FURTHER RESOLVED that Metropolitan urges all member agencies and retail water agencies participating in its Local Resources Program to accelerate completion and optimize operations of water recycling and groundwater recovery projects; and

BE IT FURTHER RESOLVED that Metropolitan intends to work with and assist its member agencies, and the region's cities, counties and retail water agencies to help ensure a reliable near-term and long-term water supply, to adopt and implement appropriate conservation ordinances and measures, and to inform retail water users of the Water Supply Alert conditions and the need for immediate and sustained water use efficiency practices.

I HEREBY CERTIFY that the foregoing is a full, true, and correct copy of a resolution adopted by the Board of Directors of the Metropolitan Water District of Southern California at its meeting held June 10, 2008.

Board Executive Secretary
The Metropolitan Water District
of Southern California

DRAFT

New Water Use Efficiency Opportunities

This Table assesses opportunities for increasing water use efficiency in the region as described in the Water Use Efficiency White Paper. The opportunities were reported to the Water Planning and Stewardship Committee in March 2008, and include actions for accelerating both conservation and recycling. Short-term actions are included in the proposed Water Supply Alert resolution.

Opportunity	Short-Term	Long-Term
Local Ordinances and State Legislation		
Develop water rate structure ordinances	Local ordinances would take 3 to 12 months to develop and would require local adoption; High immediate savings potential, which would also accrue over long-term	
Develop retrofit-on-resale ordinances		
Develop new construction landscape ordinances		
Promote new State plumbing codes		Similar to ordinances – large savings accrue over time
Promote legislation requiring recycled water use	Building codes could accelerate recycled use in new construction	Large recycling projects develop incrementally over 5 to 10 years
Improved and Leveraged Incentives		
Expand Metropolitan’s existing conservation programs	Existing programs can be expanded in 3 to 6 months	
Temporarily increase incentives for conservation and recycling	Could be implemented in 3 to 6 months; rate impacts	
Alternative and Partnered Funding		
Fund regional conservation with property assessment revenue		2 to 3 years to develop and implement
Reward incentives on a matching basis to member agencies	Time frame: 3 to 6 months; rate impacts	
Increased Local and Alternative Supplies		
Pursue Seawater Desalination		Time frame for current local projects is 3 to 10 years
Expand use of local storm water		5 to 15 years to develop new institutional arrangements and infrastructure
Improved Public Communications and Education Campaigns		
Expand regional advertising campaign	Could ramp-up campaign in 3 to 6 months for increased savings	
Expand stakeholder outreach and school education programs		2 to 5 years to expand programs; benefits accrue over time

Metropolitan Water District of Southern California White Paper on Future Water Use Efficiency

Overview

In 1990, Southern Californians used an average of 205 gallons of water a day at home and on the job. Today the region's per-capita water use is closer to 185 gallons a day. Various conservation strategies by the Metropolitan Water District, local water districts and plumbing code reforms are the reason for the reduction. The water that is not consumed because of conservation is roughly equal to what Southern Californians consume annually from the Colorado River, Metropolitan's second largest imported supply.

Conservation is indispensable to keeping demand in balance with supplies. Conservation's role will increasingly come into public focus in the face of mounting challenges to Metropolitan's imported water supplies. Worsening environmental conditions, new pumping restrictions and climate change are among the threats to maintaining the imported supplies from the Colorado River and the Sacramento-San Joaquin Delta. Lowering local demands and increasing local supplies will continue to emerge as important water management tools. Yet the "easy" conservation reforms are largely enacted. Future steps to lower demand and increase local supplies are achievable. But they will face obstacles because they will be expensive, test the limits of public acceptance or require the cooperation of other governments or the private sector. An overall strategy of short-, mid- and long-term actions is necessary to create the appropriate portfolio of conservation and local supply measures. Some initiatives may be stand-alone actions. Others may be part of Metropolitan's long-term blueprint for water reliability, the Integrated Resources Plan (IRP). This White Paper represents an overview of the various options.

For Metropolitan, conservation incentives began on an episodic basis due to dry weather in the 1970s and evolved into ongoing efforts in the 1990s. Conservation became a core water resource in a long-term strategy document, the 1996 Integrated Resources Plan. This plan marked a historic milestone for Metropolitan. Lowering local demand and increasing local supplies were officially recognized as essential to maintain reliable water supplies. Importing water from the Colorado River and Northern California's Sacramento-San Joaquin Delta, while vital baseline supplies, were viewed as insufficient by themselves to meet future demands. In 2004 Metropolitan revised its IRP and took a further step. The plan assumed that local conservation/supply efforts would provide the water necessary for future growth. And to ensure that imported supplies would be available during drought cycles, Metropolitan invested in an array of new storage projects. The largest was its new reservoir, Diamond Valley Lake. But programs were also created in the San Joaquin Valley and within Metropolitan's service area to store water underground. All told, Metropolitan's storage capabilities increased 14-fold since the drought cycle of the early 1990s. This storage network has allowed Metropolitan to take advantage of wet years on the Colorado River and the Delta in some previous seasons. At the moment Metropolitan maintains less than a year's supply of water in storage (excluding emergency supplies).

This storage is sufficient to prevent a sudden disruption to the Southern California economy due to changing water conditions. But the water reserves act as a temporary cushion rather than a permanent solution to changing circumstances for Metropolitan. The IRP called for Metropolitan to analyze its success and assumptions over time. Given all the challenges now facing Metropolitan, now is an appropriate time for such a review.

The IRP assumed that Metropolitan would be able to maintain imported supplies from the Delta by storing more water in wet years and relying less on the Delta in dry years. While Metropolitan lost some supplies from the Colorado River when California in 2003 was required to lower its total river diversions, the plan was to rebuild these supplies over time. Since the 2004 IRP, however, the following dramatic changes have taken place:

- The Delta ecosystem has headed on a downward path rather than one of recovery. Population indices of key in-Delta fish species are at or near historic lows.
- New pumping restrictions in the Delta have fundamentally shifted Metropolitan's water planning. No longer can Delta supplies be expected to help replenish Metropolitan reserves in an average rainfall year. New conservation is necessary in an average year, among other actions, merely to stay in balance.

- Pacific Ocean conditions appear to be shifting in ways that are lowering food supplies and diminishing fish populations up and down the coast. The fall run of Chinook salmon through the Delta, once regarded as a stable fishery, has decreased to levels below the minimum target range.
- The Colorado River, meanwhile, has experienced a drought longer than the IRP and Metropolitan's water forecasts anticipated.
- The emerging consensus among scientists tracking climate change is that precipitation in the Colorado basin will likely diminish further, in the decades ahead.
- The emergence of invasive quagga mussels in sections of Metropolitan's water delivery system reflects a new threat to importing and distributing water supplies.

The emerging trend is clear. Metropolitan's imported supplies, while they remain important baseline sources for our service area, face threats of reduction.

Efforts to lower demand and increase local supplies, meanwhile, have also faced new challenges as these programs have matured:

- **Desalination.** The permitting process for seawater desalination has proven more difficult than originally anticipated. Concerns have increased for desalination projects when they propose to use existing ocean water intakes at electrical power plants. New and future regulations to address climate change and reduce carbon dioxide emissions will also affect desalination facilities because of their considerable use of electricity.
- **Recycling/Reuse.** Metropolitan has faced unexpected customer resistance to utilize available recycled water due to hookup/re-piping costs and quality misperceptions. Regional water quality boards have demonstrated a mixed record in providing an achievable pathway to storing recycled water in groundwater basins or apply it for overlying irrigation. Local acceptance to recycled water has been mixed as well.
- **Conservation.** New technologies exist to lower water use, such as irrigation controllers that adjust to weather conditions, but customer interest is not widespread. Some consumer resistance is due to the complex nature of the devices themselves. Some is financial. Some is due to a lack of availability at retail outlets of water-saving irrigation controllers, low-water-use native plants, and new higher efficiency bathroom fixtures. From a pure cost-benefit perspective, purchasing water-saving technologies are not always offset because of the comparatively low price of water.

The emerging trends are decidedly mixed. Surveys by Metropolitan find widespread awareness of Southern California's water challenges. But the path to increased regional self-sufficiency reveals a variety of obstacle that must be overcome. The following discussion examines various options:

A: Local Ordinances and Regional Partnerships. Metropolitan does not sell water directly to any Southern Californian. That is the job of 300-some public water districts, local governments and private companies. Metropolitan can draft, for example, model ordinances for tiered water rate structures that have proven to result in conservation, or model ordinances to replace higher-water-using toilets at the time an existing home is resold, or ordinances to require California Friendly landscapes and irrigation for new residential and commercial construction. But local agencies or water purveyors would have to adopt these ordinances. Metropolitan has potential tools to motivate local action on these ordinances. Future long-term water plans, for example, could assume their implementation for Metropolitan to maintain overall supplies and demands to be reliably in balance. Regardless, Metropolitan-local partnerships will have to expand in the coming revision of Metropolitan's IRP.

B: State Legislation. Improvements to building and plumbing codes over the years have provided the largest and most reliable source of water conservation for Metropolitan. They are particularly valuable in how they lead to savings that Metropolitan can quantify and accurately predict in long-term water plans. It is important to remember past successes in looking for future progress. Building and plumbing code changes, once enacted, provide water savings without Metropolitan needing to take or fund any further actions.

C: Existing Metropolitan Programs. Metropolitan has developed over the years an array of residential, commercial and industrial programs. They provide a solid foundation for expanding conservation activities. While commercial, industrial and institutional programs have largely focused on activities inside their facilities, the programs could potentially broaden to emphasize outdoor water use efficiency. Existing programs with member agencies, for example, could be reevaluated. Demand reductions could potentially be accelerated by rewarding incentive funds on a matching basis rather than as stand-alone subsidies.

D: New Funding Mechanisms. Metropolitan has a finite ability to underwrite conservation projects based on its existing revenues. New sources of revenue, however, could lead to new ways to lower demand and increase supplies. A potential source of new revenue is to examine the small assessment that is currently charged to property owners annually throughout Metropolitan's service area. This assessment, dating back to the creation of Metropolitan, has been retiring specific debts relating to the State Water Project and Colorado River aqueduct. The assessment rate has declined over time as the debts have been retired and as property values have increased. If the assessment rate were to remain stable, however, a new source of revenue could flow to Metropolitan. Likewise, if property owners were to voluntarily accept an increase in the Metropolitan property assessment, Metropolitan could potentially provide up-front funds for those property owners so they can permanently lower water demands through irrigation and landscaping changes. Other governments are beginning to explore this same funding mechanism.

E: Recycled Water. Opportunities for recycled water exist for large, small and medium scales, yet there are obstacles at each level to reach that potential. On a large scale, more wastewater plants could be treating the water to Title 22 drinking water standards so that the supply could be stored either above or below ground, or used directly to offset potable demand for large irrigation or industrial use. But new partnerships would have to be forged with sanitation agencies. And regional boards would have to implement (or be required to implement via state legislation) consistent, achievable regulations to allow the capturing of this water resource. At a medium scale, technology is emerging for treatment plants in new neighborhoods (on sites the size of a gasoline station) to recycle water for local landscape and non-potable uses. Development standards, however, do not yet require these kinds of facilities. Technology to retrofit existing homes or yards to capture gray water has not yet achieved practical application in California, although some overseas projects are claiming success. New products on the market and additional incentives may be necessary.

F: Outreach. A key to lowering demand is changing the personal behavior of millions of Southern Californians, particularly behaviors that would not pose undue hardship to adjust. Up to 70 percent of residential water use occurs outdoors, irrigating lawns and landscapes, sometimes excessively. In a Metropolitan survey last year, 77 percent of residents agreed that the overuse of sprinklers is a problem. Outreach was once an episodic event by water districts when conditions were dry. Outreach is evolving into a permanent campaign to educate residents about water's new reality. Metropolitan has sought to reinforce this message by dramatically increasing its outreach spending in 2007 and with plans to continue additional outreach efforts indefinitely. But the future need will go beyond broad outreach efforts through mass-market advertising. Local governments, the building industry, environmental groups and community organizations will need to engage in Metropolitan's long-term water planning efforts and to realize their increasing roles to maintaining a reliable water future for the region. And an enhanced role for science must be identified. Changing precipitation patterns and environmental conditions in the Delta and Colorado River are predicted to influence the size of available supplies. A strong education program for the next generation would contribute toward acceptance of recycled water and native landscape.

G: Seawater Desalination. To date Metropolitan has committed to provide incentive funds for local water districts to pursue seawater desalination projects. While this strategy has demonstrated some success, the ocean is largely an untapped potential resource. Metropolitan may have to play a more active role in desalination if the policy choice is to increase its role in the overall water portfolio. The obstacles have proven significant. The permitting process has proven to be time-consuming and politically challenging. In the future, mitigation to reduce seawater desalination's "carbon footprint" and its use of electricity may be necessary. Individual member agencies may not have the financial resources, even if interested, to bring new plants on-line. The question that looms is whether Metropolitan in any circumstances should directly pursue a desalination project on its own or with local partners.

H: Storm water. For more than 100 years, storm water has been captured by flood control dams and then released downstream over time as a way to recharge groundwater basins. However, substantial amounts of storm water still end up in the Pacific Ocean or evaporate because there is not the infrastructure to capture and store all of this supply. Like recycling, this is a potential water resource that Metropolitan is unable to manage on its own. New partnerships would be necessary with flood control districts, sanitation agencies, groundwater basin entities and public works agencies. There are many physical, logistical and institutional barriers to expand a storm water banking opportunities on a medium or large scale. But these obstacles are surmountable, particularly as other government agencies, through successful outreach, begin to better appreciate their role in maintaining a reliable water system.

Next Steps

The Metropolitan Board of Directors reviewed in December 2007 an action plan to update its long-term water strategy, the IRP, in light of the changing water circumstances facing Southern California. The goal is to identify an achievable, sustainable water plan – possibly through 2030 in order to comply with state laws that require long-term blueprints. Targets to lower local demand and increase local supplies will be closely examined. They could very well increase. Regional forums will take place this year for initial discussions with follow-up efforts with stakeholders to review specific proposals next year.

In addition, Metropolitan can take stand-alone actions separate from its long-term planning process. The need for progress may warrant new actions before a new IRP is scheduled to be adopted in mid-2009. Uncertainties relating to Metropolitan's Delta supplies could continue and require an action plan on local conservation for near- and mid-term steps. This action plan could act as a bridge to the new long-term plan.