



- Board of Directors
Water Planning and Stewardship Committee

8/16/2011 Board Meeting

8-7

Subject

Adopt the Long-Term Conservation Plan and revised policy principles on water conservation

Description

In February, staff reported on development of a conservation plan to help achieve the water use efficiency target in the 2010 Integrated Water Resources Plan Update (IRP Update). The IRP Update targets reflect a 20 percent reduction in regional per capita water use by 2020 through increased conservation and water recycling. Reducing average per capita potable water use from 177 gallons per capita per day (GPCD)¹ to 141 GPCD within a ten-year time period will require multiple strategies that transform markets by changing consumer values, behaviors, and water use technology preferences. Staff recommends adoption of the Long-Term Conservation Plan (Plan) ([Attachment 1](#)), which identifies goals, strategies, and implementation approaches to help achieve the IRP Update target through market transformation. The focus of the Plan is to create lasting and accelerated water savings through outreach, education, training, collaboration, incentives, and regulations, while managing within Metropolitan's budget constraints.

Along with the Plan, staff proposes adoption of updated conservation policy principles. Water conservation policy principles guide conservation program development, evaluation of legislation, and administrative actions related to conservation. The proposed revisions would update the principles consistent with the Plan and recently enacted legislation. [Attachment 2](#) presents the proposed changes and [Attachment 3](#) shows the proposed final version.

IRP Update Target and Per Capita Water Use

The IRP Update sets water use efficiency targets consistent with the 2009 Water Conservation Act, which calls for a 20 percent reduction in urban per capita water use by the year 2020 ("20x2020"). These reductions can be achieved through water use efficiency, including conservation and water recycling. To achieve the IRP Update target for 2020, the region's potable per capita water use will need to decline from a historical average of 177 GPCD to 141 GPCD.

Plan Summary

The Plan focuses on goals, strategies, and actions to help reduce per capita potable water use in support of the 2010 IRP Update. The Plan was developed over the last 18 months through a collaborative process with member and retail agencies. Multiple workshops were held with the member agencies to discuss opportunities and seek consensus on how to move toward the IRP Update goal.

¹ Regional average GPCD from 1996 to 2005

The proposed Plan identifies three goals:

1. **Achieve the 2010 IRP Update conservation target.** New conservation and recycled water projects are needed to meet the water savings target.
2. **Pursue innovation that will advance water conservation.** Expanding consumer use of advanced technologies and new implementation approaches could lead to widespread efficiency gains.
3. **Transform the public's perception of the value of water within this region.** A higher value on water could further develop a conservation ethic that leads to permanent change in water use behavior, earlier adoption of new technologies, and transition towards climate-appropriate landscapes.

Five strategies would guide program development and implementation, and leverage the region's strengths and potential for broad collaboration:

1. **Use catalysts for market transformation.** Metropolitan and the member agencies can drive innovation and affect consumer decision-making through catalysts, such as entrepreneurial opportunities, strategic alliances, outreach and education, codes and standards, retail rate structures, and device and performance-based incentives.
2. **Encourage action through outreach and education.** Metropolitan and the member agencies can provide public outreach, education, and training through a range of media and formats, which are essential to changing perceptions of the value of water.
3. **Develop regional technical capacity.** Metropolitan and the member agencies can conduct or sponsor research, facilitate information sharing, and provide technical assistance to support local conservation efforts.
4. **Build strategic alliances.** Metropolitan and the member agencies can form strategic alliances to leverage resources, opportunities, and program momentum. Potential opportunities include trade and industry associations, energy utilities, and public interest groups.
5. **Advance water efficiency standards.** Metropolitan and the member agencies can work to advance water efficiency codes and standards and support the adoption of regulations and local ordinances to increase efficiency and reduce water waste.

Implementation

Market transformation requires long-term efforts and adaptive implementation approaches that respond to changing social and market conditions. A traditional program would still be implemented with incentives, outreach, education, and training for a broad range of water use behaviors and technologies. The Plan would provide a foundation of market acceptance for new and existing products and services. New pilot programs that have greater water savings potential would be tested. In addition, a single area of water use would be targeted to increase market share of efficient technologies and cause long-lasting change in consumer preferences and behavior. This strategically focused program would include coordinated public messaging and outreach, education, collaboration with professional organizations and manufacturers, product promotions, and incentives. Staff would conduct research and evaluate progress annually; implementation strategies would be adjusted accordingly. These combined efforts will increase the water savings potential to meet IRP Update targets.

Benefits

The strategies and adaptive implementation approaches would provide several benefits including:

- Support for achieving the IRP Update target with a 20 percent reduction in per capita water use by 2020;
- The ability to leverage regional and local agency efforts;
- Focus on strategies to affect consumer preferences and behaviors;
- Targeted research to guide program development and implementation;

- Maintaining successful regional incentive programs while pursuing additional water savings in targeted areas; and
- Flexibility to adjust programs based on levels of success, cost, and opportunities.

Policy Principles on Water Conservation

Water conservation policy principles provide a framework for conservation program development, evaluation of legislation, and administrative actions related to conservation. Since the principles were last adopted in 2003, new laws have been enacted and regulations, technologies, and water use behaviors have changed. The proposed revisions would update the principles consistent with recent legislation and the strategies and approaches contained in the Plan, and encourage increased water use efficiency.

Consistency with Laws and Regulations: The revised principles would support the state's achievement of 20x2020 and replacement of inefficient fixtures as required by law. The principles would also support the use of water efficient landscapes and enforcement of local ordinances. Metropolitan cosponsored 20x2020 and the retrofit legislation, and assisted in the development of the state's Model Water Efficient Landscape Ordinance that became effective in 2010.

Consistency with the Plan: The revised principles would support implementation of the Plan through a range of strategies to achieve market transformation. The strategies encourage retrofits and permanent behavior changes through the use of outreach, education, training, local ordinances, conservation-based retail rate structures, and financial incentives. They also encourage collaboration with industry associations and public interest groups, research, technology development, and advancing water use efficiency standards.

Other Policies to Encourage Water Use Efficiency: The revised policy principles would support Metropolitan's annexation policies regarding water use efficiency. They would also recognize conservation programs for full service agricultural water customers. Finally, the principles would recognize the potential to encourage water use efficiency through other policies like Metropolitan's Rate structure or the Water Supply Allocation Plan.

The principles would support achieving the water use efficiency target in the IRP Update.

Next Steps

Staff will work with member and retail agencies to implement the Plan, which is consistent with the fiscal year 2011/12 program approved by the Board in May 2011. Metropolitan will continue to work with the member agencies to refine and evaluate specific actions consistent with the Plan and policy principles on an annual basis.

Policy

By Minute Item 48661, dated May 10, 2011, the Board authorized changes to Metropolitan's Water Conservation Program for FY 2011/12.

By Minute Item 48449, dated October 12, 2010, the Board adopted the 2010 Integrated Water Resources Plan Update.

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

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Adoption of the Long-Term Conservation Plan (Plan) is not subject to CEQA because the Plan is a voluntary, nonbinding, planning document that does not involve any commitment to any specific project. (Sections 15262, 15378(b)(2), and 15378(b)(5) of the State CEQA Guidelines). As a result, the Plan itself is not a “project” for purposes of CEQA, as adoption of the document by the Metropolitan Board of Directors will not result in any direct or reasonably foreseeable indirect adverse change in the physical environment. (See CEQA Guidelines Section 15378(a)). In the event that, despite the nonbinding nature of the Plan, Metropolitan considers approving any specific individual projects in the future, CEQA documentation will be prepared and processed in accordance with CEQA and the State CEQA Guidelines. In addition, the activities associated with this proposed action are not subject to CEQA as they involve planning and feasibility efforts, data/information collecting, inspections of facilities, and educational training and outreach. (Section 15306 of the State CEQA Guidelines). Furthermore, to the extent this Plan serves as the basis for the urban water shortage contingency analysis required under Sections 10631, et seq., of the Water Code and is incorporated into Metropolitan’s Regional Urban Water Management Plan, the preparation, adoption, and subsequent planning activities associated with these aspects of the Plan are statutorily exempt from CEQA, as set forth in Section 10652 of the Water Code. Finally, board adoption of the Plan is subject to the “general exemption” from CEQA as, in light of the nonbinding character of the document, it can be seen with certainty that there is no possibility that the proposed action may have a significant effect on the environment, the proposed action is not subject to CEQA (Section 15061(b)(3) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is not subject to CEQA pursuant to Sections 15061(b)(3), 15306, 15262, 15378(b)(2), and 15378(b)(5) of the State CEQA Guidelines and Section 10652 of the Water Code.

CEQA determination for Option #2:

None required

Board Options

Option #1

- Adopt the CEQA determination and
- the Long-Term Conservation Plan; and
 - revisions to the water conservation policy principles.

Fiscal Impact: No immediate impact; FY 2011-12 minimal, included in FY 2011-12 O&M budget. Metropolitan’s long-term costs will depend upon Board authorization of future conservation budgets.

Business Analysis: The proposed Long-Term Conservation Plan is consistent with the 2010 IRP Update and would help achieve regional water supply reliability. Updated policy principles would provide a framework for conservation program development, evaluation of legislation, and administrative actions related to conservation. Future actions will be managed within Metropolitan’s annual budget limits.

Option #2

Take no action.

Fiscal Impact: The cost of conservation programs to achieve the regional target may increase as a result of short-term planning and limited ability to leverage opportunities to reduce costs.

Business Analysis: This option may reduce support for the 2010 IRP Update. Staff would consider legislative proposals and legislative action only under existing policy principles.

Staff Recommendation

Option #1



Deven N. Upadhyay
Manager, Water Resource Management

8/1/2011
Date



Jeffrey Wightlinger
General Manager

8/3/2011
Date

Attachment 1 – Long-Term Conservation Plan

Attachment 2 – Revisions to Policy Principle on Water Conservation (strikeover version)

Attachment 3 – Revisions to Policy Principle on Water Conservation (proposed final version)

Ref# wrm12607161

Metropolitan Water District of Southern California

Long-Term Conservation Plan

**Final Draft
July 2011**

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ES EXECUTIVE SUMMARY

The Metropolitan Water District of Southern California's (Metropolitan) 2010 Integrated Water Resources Plan Update (IRP Update) identifies the resource targets to achieve regional water supply reliability through 2035.¹ The IRP Update water use efficiency target includes water savings from existing conservation and recycled water plus new water conservation and recycled water projects. The target for new annual water savings is 580 thousand acre feet (TAF) by 2020. Based on the region's historical average per capita water use and the IRP's population and demand projections, this target is expected to lower regional per capita potable water use to 159 gallons per capita per day (GPCD) in 2015 and 141 GPCD in 2020.

Plan Overview

The Long-Term Conservation Plan (LTCP), developed in collaboration with the member agencies, retailers, and other stakeholders, provides a framework of goals and strategies to reduce per capita water use through conservation and water use efficiency. The plan recognizes the challenges and uncertainties to achieving the IRP target. As a result, the LTCP uses adaptive management and strategies to adjust implementation approaches.

Goals

The LTCP goals are:

- 1) Achieve the conservation target in the 2010 IRP;
- 2) Pursue innovation that will advance water use efficiency and conservation; and
- 3) Transform the public's perception of the value of water within the region.

Market Transformation Strategies

The LTCP uses market transformation as an overarching strategy. Market transformation is the process of strategically influencing the market to create long-lasting sustainable changes in market behavior, structure or function. This is achieved by reducing barriers or maximizing opportunities to accelerate the adoption of efficiency measures to the point where continuation of the same publicly funded intervention is no longer needed in that specific market. Market transformation includes promoting one set of efficient technologies, processes, services or building design approaches until they are adopted into codes and standards (or otherwise substantially adopted by the market), while also moving forward to bring the next generation of

¹ By Minute Item 48449, dated October 12, 2010, the Board adopted the 2010 Integrated Water Resources Plan Update.

even more efficient technologies to market.² Targets and benchmarks are used to determine when the use of publicly funded interventions (such as incentives) should change or cease. Metropolitan is seeking continued incremental change through this strategy to ensure that implementation is financially sustainable.

Five integrated strategies will be used:

- Use catalysts for market transformation;
- Encourage action through outreach and education;
- Develop regional technical capability;
- Build strategic alliances; and
- Advance water efficiency standards.

Research

Research efforts will be broadened to better understand per capita water use and the opportunities for water savings through conservation and improved water efficiency. Three categories of research will be used: (1) measurement and assessment of impacts to per capita water use; (2) baseline studies of market conditions; and (3) evaluation studies of technologies and progress in market transformation.

Implementation

Implementation will occur through parallel programs that seek lasting changes in consumer values, behaviors, and preferences for water-efficient technologies, processes, services, and design approaches. The **traditional program** of incentives, education and broad outreach provides a foundation of water savings and information to help assess opportunities for strategically focused efforts. The **strategic focus program** involves a focused effort of strategic alliances, collaboration, outreach and incentives to meet benchmarks that indicate earlier and/or broader adoption of a technology or service by consumers. A Program Advisory Committee (PAC) of the member agencies will assist in identifying research and legislation priorities, evaluating programs and technologies, identifying potential collaborators, and providing input on potential actions.

Metropolitan will review progress of the LTCP periodically and use adaptive strategies and management to adjust implementation approaches. Adaptive management is needed to achieve the IRP Update target, rebalance the conservation and recycled water targets, and adjust programs based on levels of success, cost, and opportunity.

Evaluation

Evaluating progress will require both quantitative and qualitative assessments. Metropolitan will periodically estimate water savings and per capita water use to determine progress towards the IRP Update targets for 2015 and 2020. Metropolitan will continue its research efforts to

² This definition of market transformation is derived from the definitions adopted by the California Public Utilities Commission (Decision 09-09-047 dated September 24, 2009) and the Northwest Energy Efficiency Alliance (www.nwalliance.org).

collect and analyze data to guide implementation. Protocols for evaluation, measurement, and verification will be used to ensure data quality and consistency.

Need for a New Approach

With less than ten years to achieve the IRP Update's 2020 target, a new approach to water use efficiency and conservation is needed. In the past, Metropolitan's conservation incentive programs have produced approximately 11 TAF of new water savings per year. To reach the IRP Update conservation target, the region will need to create substantially more water savings each year through new conservation and water use efficiency. The LTCP seeks to achieve the targeted water savings through market transformation, which is expected to accelerate the adoption of water efficient practices and technologies. Although challenging, market transformation will leverage the region's assets. New opportunities for increased water savings are created through:

- Conservation and outreach that have been achieved to date;
- The established foundation of a conservation ethic;
- The size of the Southern California market for water efficiency;
- The development and increasing market demand for sustainable approaches and technologies;
- The work of the member agencies; and
- The collaborative efforts with other utilities, industry organizations, and environmental interests.

The new strategic focus program is the key to this new approach. Each year integrated strategies will be selected to overcome market barriers for supply-side and demand-side market participants. The objective is to accelerate market transformation in a particular market sector, causing earlier and broader adoption of efficient technologies, processes, services, and design approaches. This creates an earlier opportunity for standards, regulations, and codes to be adopted, which then encourages development of the next generation of technologies.

The strategic focus program complements the traditional program that has been the basis of Metropolitan's efforts thus far. The traditional program continues market transformation across all markets. Incentive and non-incentive based efforts are used to assist consumers in improving water efficiency and conserving water. These efforts are broad in nature rather than targeted to overcome specific market barriers.

Both the traditional and strategic focus programs contribute to market transformation. The traditional program achieves water savings in areas not yet targeted for focused efforts through broad participation. The strategic focus program pursues opportunities to achieve greater water savings by targeting markets primed for transformation.

1 INTRODUCTION

The Metropolitan Water District of Southern California's (Metropolitan) 2010 Integrated Water Resources Plan Update (IRP Update) identifies the resource targets to achieve regional water supply reliability through 2035.³ Under the IRP, two of the resources, conservation and recycled water, are expected to provide approximately one-third of this region's water supply by 2035. This ambitious goal calls for a new vision for conservation that includes a transformation in the way the public values water and embraces efficiency within individual residences, businesses, institutions, and landscapes. Achieving this vision requires a long-term coordinated effort on the part of Metropolitan, its member agencies, and other stakeholders.

Metropolitan's commitment to conservation and water use efficiency has increased over the past 30 years as demonstrated through conservation programs and long-term recycled water agreements; policies for annexation, tiered rates, and others; support for legislation, local ordinances and improved efficiency standards; encouragement of new technologies and approaches; and improved per capita water use. The unified voice of Metropolitan and its member agencies has helped set new standards and led to long lasting, non-incentive based conservation resulting from changed behavior and compliance with new legislation, codes, and regulations. However, despite considerable progress, the region still faces water supply uncertainties and significant challenges to attain its water use efficiency goals.

The water use efficiency target in the 2010 IRP Update is one element of Metropolitan's adaptive, integrated resources strategy. The target is 580 thousand acre feet (TAF) of new annual water savings, which is expected to lower the region's per capita potable water use 20 percent by 2020. Metropolitan's efforts to achieve the IRP Update target will be guided by this Long-Term Conservation Plan (LTCP) and other plans relating to recycled water. The LTCP builds on the district's strengths and opportunities as a large regional wholesale water supplier. It recognizes the challenges and uncertainties to achieving the IRP Update target, using adaptive management and strategies to adjust implementation approaches as necessary.

Plan Overview

The LTCP, developed in collaboration with the member agencies, retailers, and other stakeholders, has three goals:

GOALS:

- (1) Achieve the conservation target in the 2010 IRP Update***
- (2) Pursue innovation that will advance water use efficiency and conservation***
- (3) Transform the public's perception of the value of water within the region***

³ By Minute Item 48449, dated October 12, 2010, the Board adopted the 2010 Integrated Water Resources Plan Update.

- (1) Achieve the conservation target in the 2010 IRP Update;
- (2) Pursue innovation that will advance water use efficiency and conservation; and
- (3) Transform the public's perception of the value of water within the region.

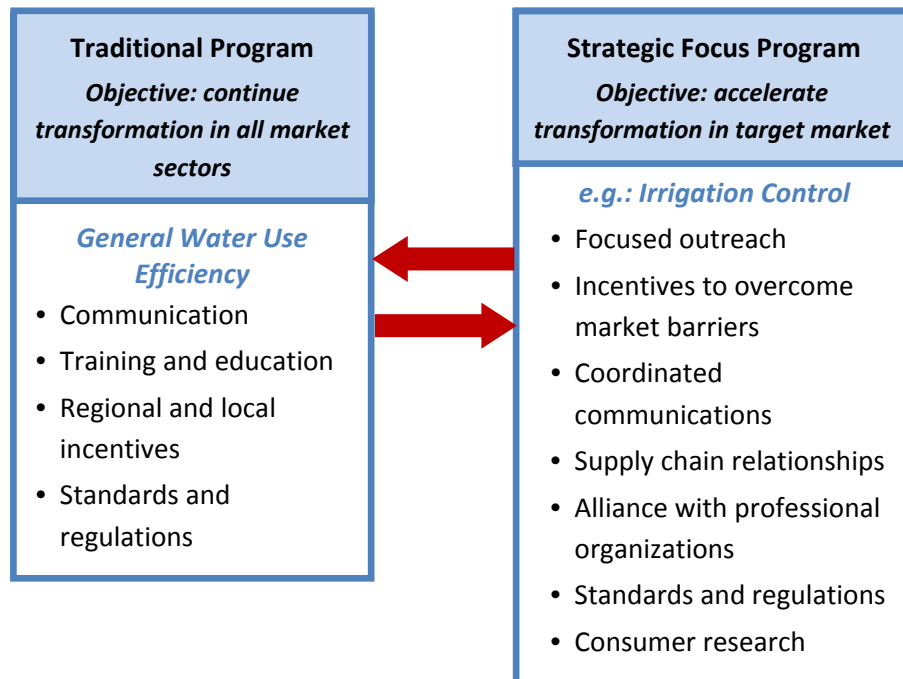
These goals will be achieved through coordinated, integrated strategies that leverage the assets of the region. New opportunities for increased water savings are created through:

- Conservation and outreach that have been achieved to date;
- The established foundation of a conservation ethic;
- The size of the Southern California market for water efficiency;
- The development and increasing market demand for sustainable approaches and technologies;
- The work of the member agencies; and
- The collaborative efforts with other utilities, industry organizations, and environmental interests.

The strategies seek to transform markets to increase water savings and provide a greater return on the region's investment in conservation and water use efficiency. This approach is necessary to achieve the conservation and water use efficiency target in the IRP Update.

The strategies will be implemented through parallel programs as shown in **Figure 1.1**. The **traditional program** of incentives, education and broad outreach provides a foundation of water savings and information to help assess opportunities for strategically focused efforts. The **strategic focus program** involves a focused effort to engage trade associations, public interest groups, and consumers. Strategic collaboration, outreach, incentives, and other tactics are used to overcome supply-side and demand-side market barriers and achieve earlier and/or broader adoption of a technology or service. Both programs seek lasting changes in consumer values, behaviors, and preferences for water-efficient technologies, processes, services, and design approaches.

Figure 1.1
Traditional and Strategic Focus Programs



The five strategies are as follows:

- Use catalysts for market transformation.** Metropolitan will continue to pursue market transformation to affect supply-side and demand-side preferences for water-efficient devices and services. Successful market transformation results in positive lasting change in the market for water-efficient technologies and services, such that these technologies and services are produced, recommended, and purchased in increasing quantity. Metropolitan will work to drive innovation, evolve markets, and affect consumer decision-making through the use of catalysts, such as outreach and education, new technologies, codes and standards, strategic alliances, entrepreneurial opportunities, retail rate structures, and incentives. These efforts will help achieve the IRP Update conservation target.
- Encourage action through outreach and education.** Metropolitan will provide outreach, educational workshops, and training classes through a range of media and formats. These efforts will help achieve the IRP conservation target and change perceptions of the value of water.
- Develop regional technical capability.** Metropolitan will conduct research, facilitate information sharing, and/or provide technical assistance to member agencies and retail agencies. These efforts will help develop technical capabilities for water budgeting,

STRATEGIES:

- (1) Use catalysts for market transformation*
- (2) Encourage action through outreach and education*
- (3) Develop regional technical capability*
- (4) Build strategic alliances*
- (5) Advance water efficiency standards*

advanced metering infrastructure, conservation ordinances, retail rate structures, and other conservation measures. This will advance water conservation and water use efficiency, and increase the water savings potential of local efforts.

- **Build strategic alliances.** Metropolitan will form strategic alliances to leverage resources, opportunities and market momentum. These alliances can be mutually beneficial and support the interests of other groups, including energy utilities, industry organizations, environmental and watershed groups, federal and state agencies, wastewater agencies, and water organizations. Alliances will help transform markets to increase water savings, advance water use efficiency, and change perceptions of the value of water.
- **Advance water efficiency standards.** Metropolitan will work to advance water efficiency codes and standards. Metropolitan will encourage industry standards and support adoption and enforcement of local ordinances and regulations, such as building codes. Water efficiency standards codify accepted efficiency levels and practices, ensuring a baseline standard of conservation.

Research is fundamental to the success of Metropolitan’s conservation programs. Research will lead to a better understanding of how GPCD is influenced by various factors, trends in current market conditions, and the cost-effectiveness and water savings potential of programs and technologies. Metropolitan will conduct research activities to provide the data and support the analyses necessary to make informed decisions for implementation.

Metropolitan will convene a Program Advisory Committee (PAC) of the member agencies to assist in identifying research and legislation priorities, evaluating programs and technologies, identifying opportunities and potential collaborators, and providing input on potential actions.

Implementation of the LTCP requires coordination with other Metropolitan efforts, particularly for recycled water. Metropolitan will periodically review progress of the LTCP and use adaptive management and strategies to adjust implementation approaches. Adaptive management is needed to rebalance the conservation and recycled water targets that comprise the IRP Update water use efficiency target. Programs will be adjusted based on levels of success, cost, changed conditions, and opportunities. As part of adaptive management, staff may provide the Board with recommendations on actions or modifications to improve results.

Background

Metropolitan’s commitment to conservation has increased over the past 30 years. Early programs provided public information and assistance to local agencies and large water users. In 1987, a formal water conservation policy was added to Metropolitan’s Administrative Code, integrating conservation into the District’s core functions. In 1991, Metropolitan became one of the first signatories to the California Urban Water Conservation Council’s Memorandum of Understanding Regarding Urban Water Conservation in California. In 1999, the Metropolitan

Metropolitan Water District Act §130.5(2).

It is the intent of the Legislature that the Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts.

Water District Act was amended to require “increased emphasis on sustainable, environmentally sound, and cost-effective water conservation...” (MWD Act Section 130.5). In 2004, Metropolitan strengthened water use efficiency requirements for annexations. Over the years Metropolitan has adopted policy principles on water conservation, water recycling, and water use efficiency. Conservation is fundamental to Metropolitan’s mission to provide regional water supply reliability and to demonstrate stewardship of both local and imported water supplies.

Metropolitan continues to demonstrate its commitment to water conservation through authorization of a broad range of conservation programs and geographically diverse long-term recycled water agreements; support for legislation, local ordinances and improved efficiency standards; and encouragement for development and testing of new technologies and approaches. Since 1990, Metropolitan has invested more than \$223 million in conservation incentives, saving about 120,000 acre-feet annually, for total water savings of over 1.4 million acre-feet.

The unified influence of Metropolitan and its member agencies has helped set standards for high efficiency clothes washers, high efficiency toilets, and pre-rinse spray valves used in restaurants prior to dishwashing. Pilot studies and incentive programs at Metropolitan played a significant role in setting water efficiency standards contained in California’s Model Water Efficient Landscape Ordinance. They have also driven product manufacturers to undergo product testing and certification under the U.S. Environmental Protection Agency’s (EPA) WaterSense Program. Over time, water use efficiency improvements promoted in Metropolitan’s regional conservation programs have led to long lasting, non-incentive based conservation through improved codes, national industry standards, increased public awareness, and broader availability of water-efficient devices in retail stores.

Past Conservation Programs

Over the past three decades, Metropolitan has implemented conservation programs that use both incentive-based and non-incentive based strategies. These strategies increased the use of water efficient devices, heightened the public’s awareness of the need to conserve, and increased resources and support for ordinances and retail rate structures to motivate conservation and increase water use efficiency. The efforts included:

- Regional incentive programs for residential, commercial, and agricultural customers;
- Research and development programs to encourage new technologies and approaches;
- New construction programs to encourage water-efficient homes;
- Financial assistance for locally administered programs;
- Legislation, regulation, and code advocacy;
- Support for development of local water conservation ordinances;
- Advertising, education, and community outreach campaigns;
- California Friendly landscape training; and

- Support for Metropolitan’s policies through tiered wholesale water rates, annexation water use efficiency standards, and water supply allocations.

The LTCP continues to use these types of fundamental approaches to conservation and water use efficiency.

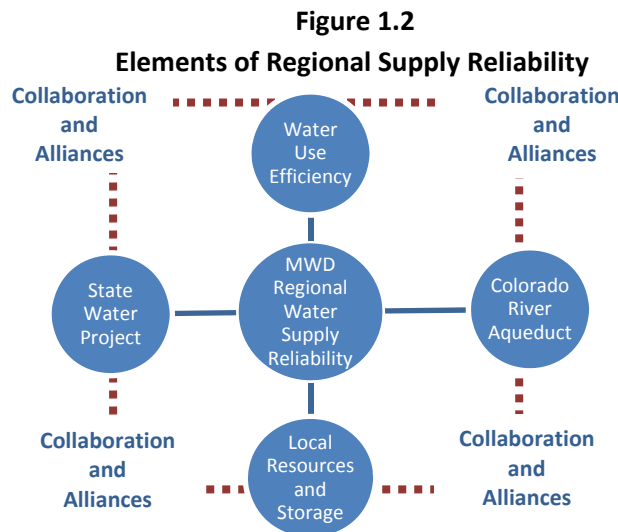
Planning Process

The LTCP was developed collaboratively with the member agencies, water retailers, and other stakeholders. Multiple workshops were held with member agencies and retail agencies to discuss elements of the plan and provide input during plan development. Agency roles, opportunities, priorities, and strategies were explored with an effort to achieve consensus on key priorities and strategies. Comments received throughout the process were considered, and agencies were provided the opportunity to review and comment on successive draft versions.

Purpose of Long-Term Conservation Plan

The LTCP supports the adopted 2010 IRP Update and future updates. The LTCP sets out a general policy framework with actions but does not constitute approval of any specific authorization or funding by Metropolitan. The LTCP provides a flexible planning direction, subject to periodic adjustments and updates. Specific actions or initiatives are representative only and subject to future approval.

Water use efficiency is one of the multiple and interdependent water supply targets in the 2010 IRP Update. Metropolitan’s success in achieving long-term regional water supply reliability is dependent on successfully leveraging resource opportunities. As shown in **Figure 1.2**, resources include imported water through the State Water Project and the Colorado River Aqueduct; water use efficiency, including conservation and recycled water; and other local resources such as groundwater, desalination, and storage. Collaboration with other stakeholders increases the potential of these resources. Stakeholders include water agencies, energy utilities, wastewater and stormwater agencies, watershed and environmental groups, industry and professional associations, and others.



The LTCP recognizes the value of these resources to the region's 19 million residents and \$1 trillion economy. It supports retail agency compliance with the Water Conservation Bill of 2009 that seeks a statewide 20 percent reduction in per capita potable water use by 2020 (known as "20x2020").⁴ It continues Metropolitan's long-standing relationship with the federal Bureau of Reclamation on research and efficiency programs. It supports the increased use of recycled water to offset potable demand, and it encourages collaboration with a wide range of public and private interests.

The LTCP works in concert with many Metropolitan policies and practices that also encourage water use efficiency. These include:

- Annexation water use efficiency policy;
- Water supply allocation policy;
- Recycled water policy;
- Wholesale tiered water rates; and
- Public messaging and education.

Financial Impact

The water use efficiency target of 580 TAF is set by Metropolitan Board policy in the 2010 IRP Update. The estimated water rate impacts of the IRP Update's adaptive strategy are discussed in the IRP Update. Implementation of water use efficiency programs and projects will occur through funding authorized in Metropolitan's annual budgeting process. Staff will work to maximize cost-effectiveness using coordinated, integrated strategies and adaptive management. The overall cost-effectiveness of Metropolitan's efforts to achieve the water use efficiency target will be assessed in the adaptive management framework of the IRP Update.

Terminology

The LTCP uses the terms "water conservation" and "water use efficiency" in a manner similar to the 2010 IRP Update and the State's administrative 20x2020 Water Conservation Plan. Water conservation indicates a reduction in water loss, waste, or use while still maintaining the benefits of use.⁵ Water use efficiency means that water-related tasks are accomplished with less potable water. This may be accomplished through conservation, recycled water, or other ways of extending water supplies, such as use of graywater and rainwater. The IRP Update water use efficiency target includes conservation and recycling. The LTCP focuses on the conservation component of the IRP Update water use efficiency target. The LTCP also complements other planning efforts to promote water use efficiency through recycled water.

⁴ SBX7-7 (Steinberg, 2009). Water Code Section 10608 et seq.

⁵ This is contrasted with water conservation resulting from short-term rationing, which does not guarantee similar long-term benefits or utility.

Summary

The LTCP provides goals and strategies for water savings to help achieve the 2010 IRP Update water use efficiency resource target. The IRP targets 580 TAF of new annual water savings by 2020, which is expected to lower regional per capita potable water use 20 percent. The goals include achieving the IRP Update conservation target, pursuing innovation, and transforming the public's perception of the value of water. Five coordinated, integrated strategies are used to continue market transformation across all market sectors and accelerate transformation within selected market sectors. The LTCP was developed in collaboration with the member agencies, water retailers, and other stakeholders. It provides a flexible planning direction, subject to periodic adjustments and updates.

2 GOALS

The LTCP supports a new vision for water use efficiency in Metropolitan's service area with conservation and water recycling efforts comprising approximately one-third of the region's water supplies by 2035. To achieve this, the IRP Update sets a 2020 water use efficiency target of 580 TAF of new annual water savings, which is expected to result in a 20 percent reduction in regional per capita potable water use. Achieving this target requires the development of a water use efficiency ethic within this region, an ethic that results in permanent change in water use behavior, earlier adoption of new water saving technologies, increased use of recycled water, and transition towards climate-appropriate landscapes. The foundation for this ethic has been established through the efforts of Metropolitan and member agencies over the past two decades. The LTCP identifies three goals that will further develop this ethic: water savings, innovation, and transforming the public's perception of the value of water.

2010 IRP Update Target:
By 2035, conservation and recycled water are expected to meet one-third of the region's water supply needs.

Goals

The three goals of the LTCP are as follows:

Goal 1: Achieve the 2010 IRP Update conservation target

The 2010 IRP Update water use efficiency target includes water savings from existing conservation and recycled water plus new water conservation and recycled water projects. The target for new annual water savings through conservation and water recycling is 580 TAF by 2020. Based on the region's historical average per capita water use and the IRP Update's population and demand projections, this target is expected to lower regional per capita potable water use to 159 gallons per capita per day (GPCD) in 2015 and 141 GPCD in 2020. As additional planning information for recycled water becomes available, the targets for conservation and recycled water will be adjusted based on program performance, cost, and opportunities.

Goal 2: Pursue innovation that will advance water use efficiency and conservation

Recent advancements in policy, technology and communications have created new opportunities for innovation. Entrepreneurs will be encouraged to develop new technologies and methods for achieving verifiable and reliable water savings. New technologies will be tested and pilot programs evaluated for their potential. New implementation approaches that increase water savings and reduce costs will be explored. Evolving communication platforms,

such as social media and online education tools, will be used to engage customer groups and begin a dialogue on water use efficiency.

Goal 3: Transform the public’s perception of the value of water within the region

Increased consumer value for water can lead to permanent change in water use behavior, earlier adoption of new water saving technologies, and transition towards climate-appropriate landscapes. Metropolitan’s programs will recognize the value of water and the importance of water supply reliability for this region’s economic growth and quality of life.

2010 IRP Update Conservation Target

The 2010 IRP Update water use efficiency target, summarized in **Table 2.1**, includes water savings from both existing conservation and recycled water programs and new water conservation and recycled water projects. To achieve the target for 2020, average per capita potable water use within the region will need to decline from a ten-year historical estimated average of 177 GPCD to an estimated 141 GPCD.⁶ These GPCD estimates depend on estimates of population, water use data from member and retail agencies, and effectiveness of programs to lower per capita water use.

Per capita water use – historical or projected, actual or targeted – may change based on revisions to population or water use estimates. However, the 580 TAF target is set by Metropolitan board policy in the 2010 IRP Update. In the past, Metropolitan’s conservation incentive programs have produced approximately 11 TAF of new conservation per year. To reach the apportioned IRP Update conservation target, the region will need to create substantially more water savings each year through new conservation and water efficiency.

Table 2.1
2010 IRP Update Water Use Efficiency Target (Dry Year)
(TAF/Yr)

	2015	2020	2025	2030	2035
Water Use Efficiency Target	1,573	1,932	2,025	2,099	2,168
Existing Conservation	930	965	1,032	1,097	1,158
Existing Recycled Water	353	387	413	422	430
New Conservation and Recycled Water	290	580	580	580	580
Expected Regional GPCD Target	159	141	141	141	141

Source: Integrated Water Resources Plan 2010 Update, Table 4.2 Dry Year Resource Goals

⁶ The methodology used to calculate daily per capita water use is consistent with SBX7-7 (Steinberg, 2009), the legislation requiring a 20 percent reduction in per capita water use by 2020. This legislation is codified in California Water Code Sections 10608 et seq.

The projection of existing conservation in Table 2.1 is expected to continue accruing from past incentive-based conservation; existing codes, standards, and ordinances; natural replacement of water using devices under new plumbing codes; and changes in retail water rates.

The projection of existing recycled water in Table 2.1 is based on information developed for the IRP Update.

Conservation and Recycled Water

The IRP Update water use efficiency target is a combined savings target for conservation and recycled water. The LTCP supports the conservation component of the IRP Update water use efficiency target. Because existing conservation is already in place and is expected to occur without additional agency action, the LTCP focuses on new conservation needed to meet the IRP Update target.

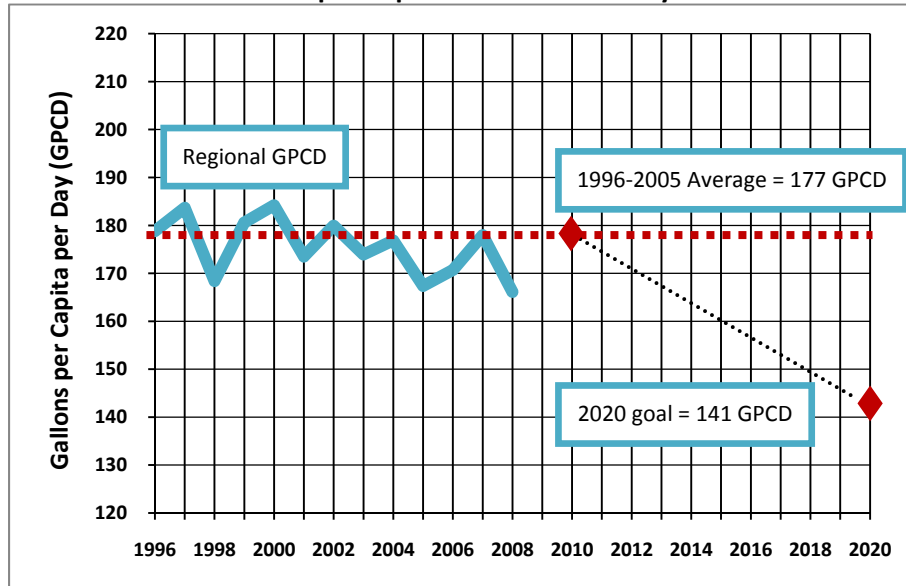
Recycled water goals and strategies are being addressed in a separate planning process. Demand for recycled water is projected to steadily increase for the foreseeable future. However, recycled water projects are capital intensive and may not have the same opportunities for adaptive management as water use efficiency programs that pursue market transformation.

The combined savings target in the 2010 IRP Update creates a dynamic relationship for these two resources in meeting the regional goals. Both market transformation and recycled water development require sustained effort over a longer timeframe to achieve success, and costs and opportunities will change in the interim. Conservation and recycled water targets will be set with an initial range based on opportunity, cost, and resource projections. The targets will be periodically adjusted based on progress towards the IRP water use efficiency target.

Historical Per Capita Water Use

Historical per capita water use for Metropolitan's service area is shown in **Figure 2.1**. Looking back over the past two decades, a reduction in per capita use due to short-term or cyclical conditions has typically been followed by an increase. Rebounding can be attributed to a number of factors, such as an increase in economic productivity, lifting of water use restrictions, return of normal weather patterns, and public perception of improved water supply conditions. The reductions in per capita use that began in 2007 may be attributed to the economic recession, conservation ordinances, watering restrictions, cooler weather, and increased cost of water. Public education and outreach is also a likely factor. If per capita use increases as some of these conditions change, the LTCP implementation approach will be adapted as needed.

Figure 2.1
Metropolitan Service Area
M&I per Capita Water Use History



Note: M&I per capita water use for Metropolitan's service area is based on weighted average by agency, excluding recycled water.

Advancing Water Use Efficiency and Conservation

Water use efficiency and conservation strategies have changed dramatically over the past few years. This is due to state and local policies that require increased conservation and improved efficiency, technological advancements that increase water savings potential, and advancements in methods of communication that provide new opportunities to engage the public. These changes continually strengthen the foundation for water use efficiency and conservation efforts, allowing higher levels of efficiency to be pursued.

Policy Changes

Recent policy changes support increased conservation and water use efficiency. Many state and local policy changes are the result of efforts by Metropolitan and its member agencies working in collaboration with other stakeholders. Together these changes increase the baseline expectation of code-based water savings. Policy changes include:

- SBX7-7 (Steinberg, 2009) requiring a statewide 20 percent reduction in urban per capita water use by 2020
- Updated local conservation ordinances
- AB 1881 (Laird, 2006) requiring the State to update the model water-efficient landscape ordinance (completed in 2009), and requiring local agencies to adopt and enforce local water-efficient landscape ordinances by January 2010
- AB 1061 (Lieu, 2009) requiring common interest developments to allow property owners to comply with local water-efficient landscape ordinances

- AB 715 (Laird, 2007) allowing only high-efficiency toilets and urinals to be sold and installed as of January 2014
- SB 407 (Padilla, 2009) requiring replacement of inefficient plumbing fixtures
- Adoption of CALGreen (2010), the state's mandated green building code (California Code of Regulations Title 24, Part 11)
- Plumbing code updates requiring high efficiency toilets and urinals in new construction and requiring new toilets installed after July 2011 to meet US EPA WaterSense performance standards (California Code of Regulations Title 24, Part 5)
- Adoption of plumbing code standards for dual plumbing (California Code of Regulations Title 24, Part 5) allowing the use of recycled water for waste flushing in commercial, retail, and office buildings, hotels, condominiums, apartments, schools and other occupancies
- Adoption of the General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water (State Water Resources Control Board Water Quality Order No. 2009-0006-DWQ) facilitating increased use of recycled water for landscape irrigation
- Authorization for water-energy pilot projects and evaluation of embedded energy savings (California Public Utilities Commission Decision 12-07-050, 2007)

Technology Advancements

Technology advancements increase the potential for water savings in the future. Advancements include improved irrigation equipment, high efficiency clothes washers, waterless urinals, advanced metering infrastructure, new cooling systems, expanded applications of recirculated water, and increased use of wireless technology to operate and monitor equipment. EPA WaterSense standards for fixtures and equipment recognize many of these changes. WaterSense is a voluntary national program that has increased significantly over the past five years as the counterpart to ENERGYSTAR. WaterSense products and programs receive third-party certification; products are 20 percent more efficient than other products on the market.

Communication Methods

Communication strategies have taken a major step forward over the past five years in response to rapid changes in the ways individuals access, absorb, and share information. These changes present opportunities for broad spectrum messaging to reach the region's diverse customer base. This region has a customer base that spans five generations. Each group has its own set of unique traits and communication preferences. Communication platforms are continuously changing and evolving in response to these generational differences, with implications for the future.

Value of Water

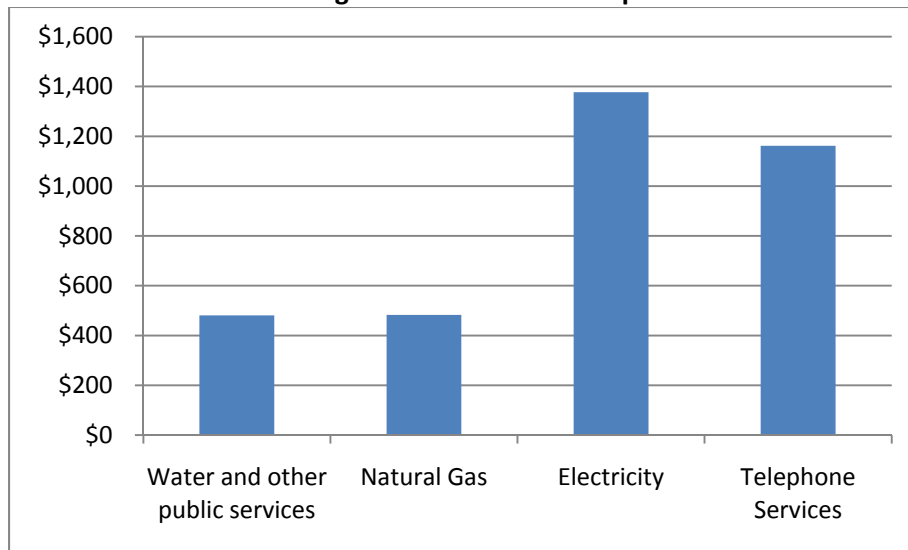
Over the past century Southern California has invested in developing water resources and water infrastructure systems to ensure reliable water supplies for a semi-arid region. This reliability contributes to the welfare of communities, businesses, agriculture, and the environment. Water resource management challenges will increase in the future, with uncertainties related to climate change, growth, environmental regulations, and natural disasters. Political realities and

societal choices will drive decisions regarding needs of the economy and the environment. The future is reflected in the 2010 IRP Update water supply targets that achieve regional water supply reliability through development of local resources such as conservation and recycled water.

Water has historically been relatively inexpensive to consumers when compared to other utilities. **Figure 2.2** depicts average annual consumer expenditures for utility services. The relatively low cost of water and its high levels of reliability diminish the public’s perception of the value of this resource and the need for efficiency. The cost also affects the analysis that drives commercial and industrial decisions for water efficiency improvements.

The 2010 IRP Update water use efficiency target signals the need for a continued change in the public’s perception of the value of this resource. This trend has already begun through the efforts of water agencies throughout the region to build the foundation of a water use efficiency ethic. Public awareness of water supply issues has heightened over the past few years due to drought messaging, water use restrictions, retail water rate increases, and the general sustainability movement in the marketplace. In some areas, retail water rate structures have already caused a significant change in the customer’s value of this resource. This momentum can be continued so that the public’s perceived value of this resource reflects the importance of water supply reliability to this region for quality of life, economic growth, and environmental sustainability.

Figure 2.2
Average Annual Consumer Expenditures



Source: 2009 National Consumer Expenditure Survey, Bureau of Labor Statistics, United States Department of Labor

Summary

The LTCP goals include: (1) achieving the 2010 IRP Update conservation target (a component of the IRP Update water use efficiency target); (2) pursuing innovation in water use efficiency and conservation; and (3) transforming the public’s perception of the value of water within the

region. The IRP Update water use efficiency target of 580 TAF of new annual water savings by 2020 includes conservation and recycled water. With the IRP Update's population and demand projections, this is expected to result in regional potable water use of 141 gallons per capita per day (GPCD) in 2020. The targets for conservation and recycled water will be adjusted based on program success, cost, and opportunities. Recent changes in state and local policies, technology advancements, and evolving communication platforms provide opportunities for innovation and to pursue higher levels of efficiency. The region's foundation of a water use efficiency ethic creates an opportunity to change the public's perceived value of water supply reliability.

3 STRATEGIES

The LTCP is a comprehensive, multi-year program that seeks to transform the market for water-efficient technologies, processes, services, and design approaches. Coordinated, integrated strategies will be used to leverage the opportunities within this region, such as the existing water use efficiency ethic, market size, and existing manufacturer and customer momentum toward water-efficient devices. These strategies will be adapted to respond to costs, opportunities, and water use trends.

Metropolitan will pursue market transformation as the overarching strategy for conservation and water use efficiency through the use of several catalysts including: public outreach and education; research and local assistance; strategic alliances; incentives; and implementation of legislation, codes, standards, and ordinances. Progress will be measured through several metrics, including: projected water savings for devices and compliance with regulations, codes, and ordinances; the reduction in regional per capita use of potable water; and changes in the market share of water-efficient technologies and services.

Metropolitan's efforts will focus on its strengths and opportunities as a large regional wholesale water agency. With a population of approximately 19 million people, Metropolitan's service area includes 1 in 2 Californians and 1 in 20 United States residents. This creates a unique opportunity to influence standards, regulations, and markets not possible in a smaller service area. It allows for significant market influence for water-efficient products, services, and standards, and broad communication programs and strategic alliances that can increase market penetration. Equally important, it encourages innovation by providing a large potential market for entrepreneurs to pursue technology advancements and new approaches to conservation and water efficiency. Combined, these opportunities create the potential for market transformation within the region.

Implementation Strategies

Metropolitan will use coordinated, integrated strategies to leverage the opportunities within this region. New opportunities for increased water savings are created through:

- Conservation and outreach that have been achieved to date;
- The established foundation of a water use efficiency ethic;
- The size of the Southern California market for water efficiency;
- The development and increasing market demand for sustainable approaches and technologies;
- The work of the member agencies; and

- The collaborative efforts with other utilities, trade associations, industry organizations, and environmental interests.

The strategies seek to leverage these assets to increase water savings and provide a greater return on the region's investment in conservation and water use efficiency. This approach is necessary given the need for financially sustainable programs to achieve the 2010 IRP Update conservation target and the expected target of 141 GPCD by 2020.

Over the past two decades, Metropolitan delivered traditional conservation programs designed to encourage consumers to use water-efficient devices and behaviors. Financial incentives were offered on a broad range of devices, accompanied by outreach, education, and training. Legislation and regulations were pursued to establish water efficiency standards. From FY 2005/06 through FY 2009/10, Metropolitan funded an average of \$22.7 million per year in incentives for approximately 11 TAF of new annual water savings each year.⁷ To achieve the IRP's much larger conservation target through incentives alone would be infeasible. Therefore, the LTCP continues to leverage incentive-based conservation to encourage broader savings through non-incentive based strategies. By doing this, Metropolitan aims to maximize the value of budgeted funds to yield long-term savings. Annual budget requests will be determined based on success in the program over time.

Market transformation is the overarching strategy of the LTCP. Successful market transformation results in positive lasting change in the market for water-efficient technologies and services, such that these technologies and services are produced, recommended, and purchased in increasing quantity. The strategies for market transformation are interrelated: outreach and education provide a foundation for all efforts; advancing water efficiency standards requires outreach, alliances with other interests, and market acceptance; and effective strategic alliances may require shared education programs and complementary incentives. A positive, lasting change in the market will support achieving the goals for water savings, innovation, and a change in the public's perception of the value of water.

The LTCP will be implemented through both a traditional program and a strategic focus program to maximize opportunities and cost-effectiveness. The traditional program continues Metropolitan's existing conservation programs. Incentives, education and broad outreach will provide a foundation of water savings and information to help assess opportunities for strategically focused efforts. The strategic focus program, which is a new approach, will use strategic outreach, collaboration, and incentives to cause earlier and broader adoption of a technology or service within a specific market sector. Both programs help transform markets.

Strategy 1: Use catalysts for market transformation

Catalysts will be used to drive innovation, evolve markets, and affect consumer decision-making so that efficient technologies reach broad market acceptance sooner. Catalysts include outreach

⁷ Incentives are based on lifetime water savings of 125 TAF.

and education, new technologies, codes and standards, strategic alliances, entrepreneurial opportunities, retail rate structures, and incentives.

Incentives are one example of a catalyst that can influence long-term water savings. In 2010, the region's water demand was lower by approximately 894 TAF due to the cumulative effect of two decades of conservation efforts. Only 17 percent of that savings is directly attributable to incentive-based efforts. However, past incentives have eased the path for better industry standards, water-efficient plumbing codes, and effective local ordinances. They have also encouraged retailers to increase availability of water-efficient devices. Therefore, incentives played a significant indirect role in helping achieve a large portion of the non-incentive based savings.

Implementation. This strategy may be implemented through actions that cause change in markets and consumer decisions, such as:

- 1.1 Encouraging development of new technologies and approaches
- 1.2 Working with manufacturers, retailers, and contractors to increase market share of water-efficient devices and services
- 1.3 Considering various incentive programs including performance-based, whole-site, bundled, point-of-purchase, and individual devices
- 1.4 Exploring potential for new implementation approaches
- 1.5 Supporting use of conservation-based retail rate structures that reflect the value of water, efficient levels of use, and/or water budgets
- 1.6 Advocating for federal and state financial assistance to expand local and regional water conservation and efficiency programs
- 1.7 Advocating for federal and state financial assistance to expand recycled water delivery systems and retrofit sites for recycled water use
- 1.8 Continuing to use Metropolitan's rates, annexation policies, and allocation methods to encourage and acknowledge member agencies' water use efficiency efforts

Strategy 2: Encourage action through outreach and education

Metropolitan will conduct public outreach, educational workshops and training classes to increase public understanding of water issues and encourage voluntary change in water use behavior. A range of media and formats will be used, including social media and marketing. Education and training will supplement outreach programs and be offered to a wide variety of audiences including elementary through college-age students as well as property owners, industry leaders, professionals and/or other groups responsible for water use efficiency decisions and standards. Outreach and education efforts are essential to market transformation and changing public perceptions on the value of water.

Bewaterwise.com is a primary means to carry out these efforts. In December 2010, the website's homepage had nearly 22,000 visitors. After the spring 2010 outreach campaign, the site had nearly 40,000 visitors. The website will be maintained with expanded resources for

homeowners and commercial interests. New online tools will assist property owners to improve water use efficiency both indoors and in the landscape. Metropolitan and the member agencies will collaborate to develop common messages.

Implementation. This strategy may be implemented through actions that will increase awareness and educate the public, such as:

- 2.1 Providing a research-based outreach campaign that communicates the value of water
- 2.2 Working with stakeholders on common themes and shared communication programs
- 2.3 Using a variety of communication platforms
- 2.4 Educating the general public on how to save water and efficient levels of water use
- 2.5 Promoting efforts to increase brand-name awareness of the EPA WaterSense label
- 2.6 Providing coordination meetings for water agencies to encourage unified conservation efforts and information sharing
- 2.7 Coordinating with water quality and stormwater agencies on education and outreach programs for landscape runoff
- 2.8 Providing inspection trips for political, business, and environmental leaders

Strategy 3: Develop regional technical capability

Metropolitan will conduct research, facilitate information sharing, and/or provide technical assistance to support local conservation efforts. Focus areas include program evaluation, water budgeting, advanced metering infrastructure, landscape strategies, conservation ordinances, and retail rate structures. This region's long-standing involvement in conservation and water use efficiency has resulted in considerable expertise and program knowledge that is a valuable resource. Enhancing technical capability within the region will advance water conservation and increase the water savings potential of local efforts.

For example, Metropolitan will seek to provide workshops on technical issues for conservation managers and develop an online library for exchange of research studies and reports. In addition, Metropolitan will continue to host a quarterly meeting for members of the California Urban Water Conservation Council to encourage dialogue between agencies throughout the state.

Implementation. This strategy may be implemented through actions that will further develop technical capacity, such as:

- 3.1 Facilitating information sharing between water agencies on program implementation, water pricing and rate structures, advanced metering infrastructure, landscape strategies, ordinances, water budgeting, and other topics
- 3.2 Providing technical assistance to member and retail agencies within the scope of Metropolitan's expertise
- 3.3 Participating in collaborative water conservation initiatives at the national and state level
- 3.4 Encouraging active participation in the California Urban Water Conservation Council for water agencies within Metropolitan's service area

- 3.5 Collaborating with the Water Research Foundation on studies related to conservation and water use efficiency

Strategy 4: Build strategic alliances

Metropolitan will form strategic alliances to leverage resources, opportunities, and existing program or market momentum. Water resource issues are cross-cutting with other environmental and economic concerns. Metropolitan will work to align programs with the interests of other groups that support water conservation and efficient resource use. Potential collaborators include energy utilities, industry organizations, environmental and watershed groups, federal and state agencies, wastewater agencies, and organizations such as the California Urban Water Conservation Council, Alliance for Water Efficiency, California Urban Water Agencies, Water Research Foundation, and WaterReuse Association.

For example, Metropolitan will seek to expand its current collaboration with energy utilities to promote water and energy efficiency in the commercial sector. Similarly, Metropolitan will work to establish relationships with relevant trade and industry associations and organizations to increase product availability and affect consumer decision-making. These types of alliances can provide benefits of broader coverage and greater market penetration; reduced implementation costs; broader support for legislation, codes and standards; and increased water savings. They can improve message consistency and expand regional messaging and education. They also offer potential for increased funding for programs and projects based on the mutual benefits.

Implementation. This strategy may be implemented through actions that will encourage collaboration, such as:

- 4.1 Developing alliances with stakeholders such as energy utilities, business and industry, agricultural interests, environmental and watershed groups, federal and state agencies, wastewater agencies, and water organizations
- 4.2 Exploring opportunities to link mutually beneficial programs for marketing, outreach, education, training, and incentives
- 4.3 Publicly recognizing stakeholder commitments to water efficiency

Strategy 5: Advance water efficiency standards

Metropolitan will continue to support the advancement of water efficiency codes and standards, adoption and enforcement of federal and state legislation and regulations, and encourage local ordinances that increase efficiency and reduce water waste. Water efficiency standards set the benchmark for water savings that automatically accrue to the region as inefficient devices and fixtures are replaced. Standards also encourage the development of new, more-conserving technologies. Performance standards ensure that the water-efficient devices work well, which improves customer acceptance. Standards, codes, and ordinances that require a minimum level of efficiency and prevent water waste ensure that consumers are subject to a common baseline standard of conservation. They also encourage manufacturers to invest in new water-efficient technologies by creating market stability.

The increasing efficiency standards for toilets are one example of this strategy. Prior to 1983, toilets used up to six gallons per flush (gpf). In 1983, California state code was updated to require installation of 3.5 gpf toilets. In 1992, the efficiency standard was further increased to 1.6 gpf. Federal standards followed. In 2007, AB 715 (Laird) was enacted, requiring that, by 2014, all toilets sold and installed in California meet an efficiency standard of 1.28 gpf. This is now the efficiency standard for EPA WaterSense. Metropolitan and many other water agencies throughout the U.S. use EPA WaterSense standards to determine device incentive eligibility. This in turn amplifies market transformation and faster adoption of national standards.

Implementation. This strategy may be implemented through actions that will support legislation, codes, standards, and ordinances, such as:

- 5.1 Working with industry-based organizations at the national and state levels to develop minimum efficiency standards for equipment and fixtures sold and installed in California
- 5.2 Working with EPA WaterSense on development of voluntary performance standards and labeling of equipment and fixtures that exceed mandatory standards
- 5.3 Working with state agencies responsible for developing and adopting water use efficiency standards for new construction and structure rehabilitation
- 5.4 Supporting legislation that advances conservation, establishes minimum water use efficiency and performance standards, and includes reasonable enforcement mechanisms
- 5.5 Supporting information sharing on best practices for development, implementation, and enforcement of local water conservation and water-efficient landscape ordinances
- 5.6 Working with the water industry to encourage further development of standards for water loss control, leak detection, and repair
- 5.7 Continuing to apply strict water use efficiency standards to annexation requests

Market Transformation

With less than ten years to achieve the IRP Update's 2020 water use efficiency target, a strategic approach is needed to increase water savings. The approach should leverage the region's assets and opportunities, maximize cost-effectiveness, and be sustainable. Research indicates that market transformation is an effective means to fulfill these objectives.

Definition of Market Transformation

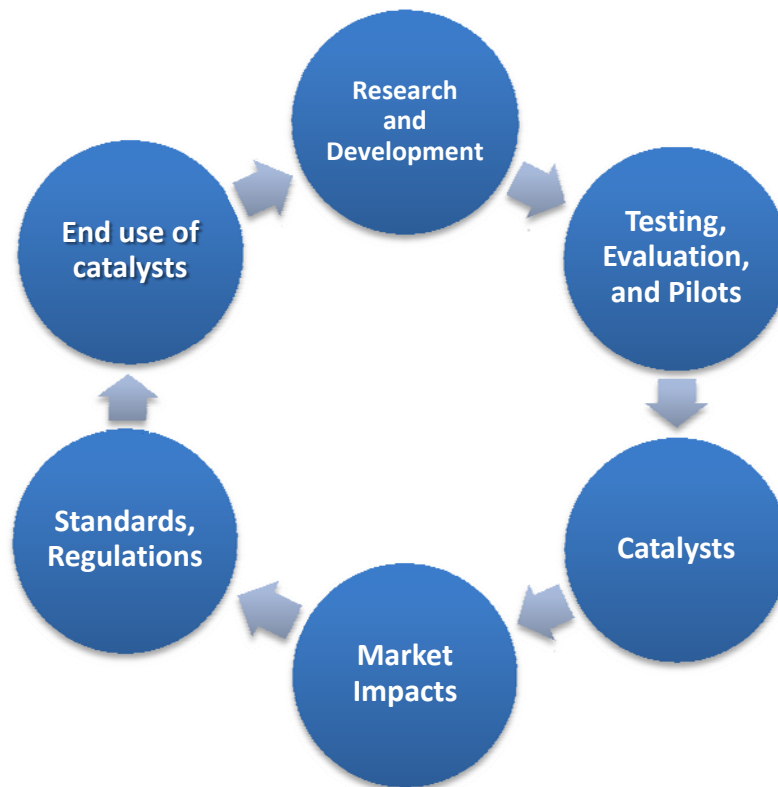
The LTCP defines market transformation as the process of strategically influencing the market to create sustainable changes in market demand, behavior, structure or function. This is achieved by reducing barriers and maximizing opportunities to accelerate the adoption of efficiency measures. Once change occurs, publicly funded intervention is no longer needed in that specific market sector. Market transformation includes promoting efficient technologies, processes, services or building design approaches until they are adopted into codes and standards (or otherwise substantially adopted by the market). At the same time, Metropolitan will work to

move the next generation of even more efficient technologies to market.⁸ Targets and benchmarks are used to determine when publicly funded interventions should change or cease. Metropolitan will seek incremental change through this strategy to ensure that implementation is financially sustainable.

Market Transformation Process

Market transformation is encouraged through the use of catalysts, such as education, outreach, incentives, and retail water rates. Not all catalysts are needed for every market change. In some areas, increasing retail water rates are causing behavioral change and accelerated adoption of water efficient technologies. In other areas, manufacturers are leveraging the size of the Southern California market and its conservation ethic to advance new products without incentives. And in some areas, Metropolitan’s regional incentives are increasing product availability and customer acceptance of new or more expensive devices. Incentives also can be used to increase demand and drive down production cost, as occurred when high efficiency clothes washers were first introduced. **Figure 3.1** depicts the market transformation process.

Figure 3.1
Market Transformation Process



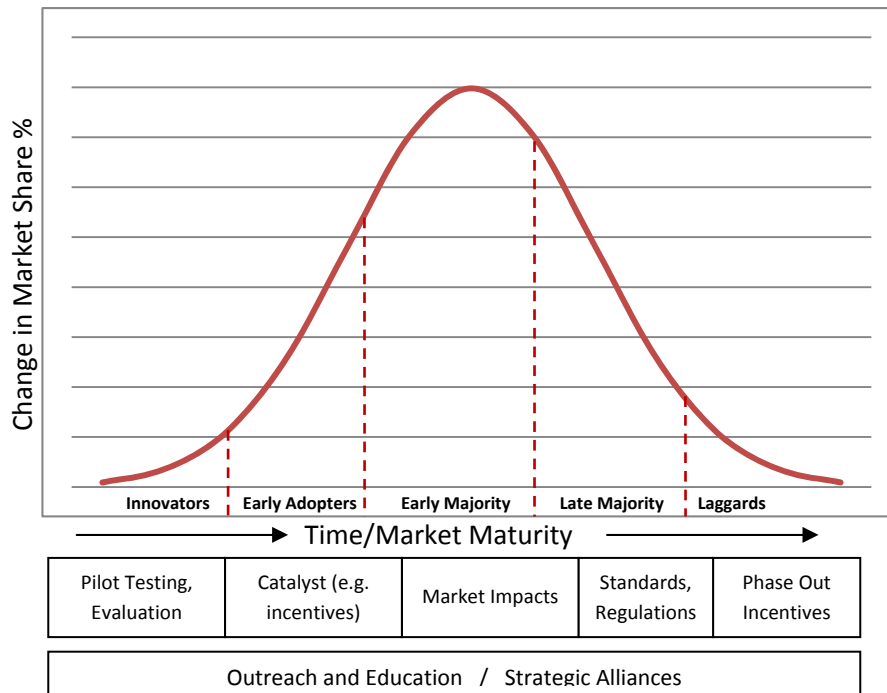
There are opportunities for market intervention at each phase of the process:

⁸ This definition of market transformation is derived from the definitions adopted by the California Public Utilities Commission (Decision 09-09-047 dated September 24, 2009) and the Northwest Energy Efficiency Alliance (www.nwalliance.org).

- Research and Development: Increased demand for water-efficient technologies and processes drive manufacturers to develop new products
- Testing, Evaluation and Pilots: Public/private collaboration allows cost-effective testing and reduces research and development costs
- Catalysts: Education, outreach, retail water rates, incentives, or other catalysts accelerate and increase market adoption, helping to lower per-unit production costs and other demand-side costs
- Market Impacts: Other strategies, such as education, norms, and public commitments are used to increase and accelerate adoption and change demand criteria
- Standards and Regulations: Efficiency standards are incorporated into codes, regulations, and market standards that will yield sustained water savings and encourage research and development of the next generation of technologies, processes, services and design approaches
- End Use of Catalysts: Publicly funded catalysts, such as incentives, are phased out once natural market dynamics can sustain the change

Market transformation is intended to shorten the timeframe for adoption of efficient technologies, processes, services, and design approaches. A typical product adoption process is shown in **Figure 3.2**, with the adoption of a water saving technology changing over time as the market matures. Innovators are willing to try unproven products. The early majority waits until the product has been tested by the innovators. The late majority waits until the product is commonplace, and laggards wait until they are required to make a change.

Figure 3.2
Adoption of Water Saving Technologies



Catalysts are selected to accelerate or increase market adoption based on market conditions. For example, education and outreach might be the appropriate catalysts under the following conditions:

- A large number of consumers would use the product
- The efficient product is widely available in the market
- There are limited substitutes
- There is little cost difference between the efficient and non-efficient products

However, incentives might be the primary catalyst if:

- The efficient product has limited distribution
- There are few efficient products
- There is a large cost difference between the efficient and non-efficient products

Challenges

Market transformation is challenging. Metropolitan has been pursuing market transformation since the early 1990s, and complete market transformations may not occur for all uses of water by 2020. However, significant incremental progress can be made over the next ten years. It will require accurately assessing supply-side and demand-side market barriers and providing effective programs to overcome those barriers. A long-term commitment to coordinated, integrated strategies is needed along with research to measure progress. In order to sustain incremental progress, legislation and regulations are needed to ensure new products and services meet minimum efficiency standards. At the same time, government or industry should

establish performance levels for products. Standards assure manufacturers that invest in new technologies of a long-lasting demand for their products. Metropolitan will track progress and adapt implementation based on changes in the levels of success, cost, and opportunities.

An independent review of market transformation for water use efficiency prepared by A&N Technical Services indicates that it is still a valid strategy.⁹ Principles of market transformation taken from field experience in energy efficiency can be applied to water efficiency. As an example, early market transformation efforts for compact fluorescent lights (CFLs) had minimal success because the CFLs were of low quality and public perception was negative. More progress has been made since 2000 with the ENERGY STAR initiative and the federal Energy Independence and Security Act of 2007 that will lower wattage for incandescent bulbs in the future. There are many lessons to be learned from this example.

Successful market transformation requires: studying the efficient products and practices, existing market and market actors; identifying market barriers; documenting outcomes; taking actions to match the maturation of the market; and monitoring results with an exit strategy in mind. The specifics of strategy implementation depend critically on the product. The design of market transformation programs must be done on a product-by-product basis, as one size does not fit all.

Implementation Approach

The LTCP will be implemented through two complementary programs that will help transform markets: a traditional program and a strategic focus program. Both programs are multi-year efforts, and ongoing funding for individual program elements may be needed in order to achieve the water savings potential. Data will be collected and analyzed to determine the level of success and guide implementation of future programs. Metropolitan will consider the recommendations of the Program Advisory Committee on how to apportion budgeted funds between the programs. The objectives and implementation approaches for the two programs are described below.

Traditional Program: The objectives of the Traditional Program are:

- Continue market transformation within all market sectors through existing outreach and incentive programs;
- Provide quantifiable water savings through incentives established according to the funding guidelines in Section 5; and
- Provide data to help assess opportunities for the Strategic Focus Program.

Implementation may include efforts such as regional incentive programs, pilot programs, and regional outreach for a variety of devices and services.

⁹A&N Technical Services, Inc. and Maureen Erbeznik & Associates. Case Studies of Market Transformation as a Means for Delivering Regional Conservation Results – A White Paper. April 2011.

Strategic Focus Program: The objectives of the Strategic Focus Program are:

- Develop collaborative programs with supply-side and demand-side market decision makers, member and retail agencies, and other stakeholders;
- Cause earlier and broader adoption of water saving technologies by influencing a specific market sector;
- Increase potential water savings through earlier adoption of standards, codes, and regulations; and
- Encourage the development and introduction of new technologies.

Implementation tactics will address market barriers and may include testing, pilot programs, incentives, training, targeted outreach, and others. The metrics to measure progress will be determined, and may include product availability, market saturation, consumer awareness, and product cost relative to less efficient alternatives. Intermediate benchmarks will be established to help determine when use of a catalyst, such as incentives, should change or be discontinued.

Legislation and Regulation

Legislation and regulation are important tools and often the primary means for ensuring future water savings from devices and services. Regulation, ordinances, and codes establish conditions that will ensure a minimum level of water efficiency for a particular device or service in the future. For example, legislation has been passed requiring that only efficient toilets (1.28 gallons per flush) may be sold or installed within California beginning in 2014. The U.S. Department of Energy is considering increasing the efficiency standards for residential clothes washers, which would phase out less efficient models from the market.

Markets are dynamic, and the influences on manufacturers, retailers, and consumers are constantly changing. Progress made on changing consumer preferences and market share of efficient products is protected through legislation and regulations requiring a minimum efficiency standard. This benefits both water agencies and manufacturers who invest in bringing water-efficient technologies to the market.

Legislation and regulation are also effective exit strategies to discontinue Metropolitan's financial support for certain devices or services so that resources can be directed to new technologies. In the example above, incentives may no longer be necessary on a regional basis once high efficiency toilets are the only product available in the market. The effectiveness of regulations in achieving water savings is dependent on industry support and enforcement. It requires working with manufacturers, retailers, and service providers to establish the appropriate standard and mechanism for enforcement. It also requires outreach and education to increase awareness.

Metropolitan's efforts in legislation and regulation for water-efficient technologies, processes, services, and design approaches will be integral to market transformation. These efforts may include sponsoring or supporting legislation, working with state agencies to develop regulations,

and providing workshops to assist local agencies with developing best practices for enforcement.

Metropolitan will work with a Program Advisory Committee to identify legislative and regulatory opportunities as well as the exit strategies for incentives and other catalysts used in both the traditional program and strategic focus program. When legislation or regulation is determined to be the appropriate strategy, Metropolitan will work with the member agencies, industry, and other stakeholders to develop recommendations for board consideration. Legislative and regulatory efforts have a long lead time so they will be part of the initial planning for implementation of the LTCP.

Summary

Market transformation is the overarching strategy of the LTCP. It is a process of strategically influencing the market to create long-lasting sustainable changes in market behavior. Five coordinated, integrated strategies will be used: using catalysts, encouraging action through outreach and education, developing regional technical capability, building strategic alliances, and advancing water efficiency standards. Implementation will occur through a traditional program and a strategic focus program. They are complementary and use the same tools; however, their objectives are different. The traditional program seeks to continue market transformation within all market sectors using existing outreach and incentive programs. The strategic focus program seeks to accelerate market transformation within a given market sector by overcoming supply side and demand side market barriers through strategic alliances, outreach, education, and incentives. Legislation and regulation will be pursued under both programs.

4 RESEARCH

Research is a fundamental component of the LTCP. Over the past two decades, Metropolitan has been involved in research to better understand the demand for water, the water used with various technologies and practices, and the potential savings of water efficiency. Past efforts include device-based studies, the effect of retail water rate structures on customer demand, and the effect of messaging on consumer attitudes and awareness of water-related issues.

For the LTCP, research efforts will be expanded to better understand per capita water use and the opportunities for water savings through conservation and improved water efficiency. Three categories of research will be used: (1) measurement and assessment of per capita water use; (2) baseline studies of market conditions; and (3) evaluation studies of technologies and progress in market transformation.

Measurement of Per Capita Water Use

The primary goal of the LTCP is to achieve the IRP Update conservation target and the expected regional per capita use of 141 gallons per day by 2020. Although the concept of per capita use is straightforward, there are a number of conditions that affect the outcome in any given period. Regional population is derived from US Census and California Department of Finance data, which are estimated and periodically revised by federal and state agencies. Water demands are affected by economic conditions and weather as well as intentional market interventions. Consumptive use is also a calculation that accounts for changes in storage and nets out recycled water use. As a result, changes in consumptive use estimates may cause changes to GPCD estimates. To accurately evaluate progress towards the IRP Update target, Metropolitan will need to better understand how per capita use is influenced by these and other factors. Metropolitan will also need to evaluate how the efforts to increase water use efficiency are reducing per capita use.

Normalizing Data for Weather and Economic Conditions

One of the challenges of evaluating change in per capita water use over time is the influence of weather and the economy on water demand. For example, cooler weather in the base period followed by warmer weather in the reporting period could result in increased per capita use even though landscape irrigation efficiency within the region had improved. To accurately estimate the real change in per capita use, the data must be normalized to allow evaluation based on similar conditions in the base and reporting periods. Metropolitan will use a

normalization methodology consistent with the state's 20x2020 methodology so that the change in per capita water use estimates over time can be accurately reported.¹⁰

Measuring Effects

Another critical element of understanding change in per capita use is assessing and estimating the impact of market catalysts, such as codes and standards, incentives, retail water rates, education and training, and others. Metropolitan estimates water savings from various device and non-device based efforts. Because of the wide range of potential influences on demand, studies are needed to evaluate the actual impacts on per capita demand. The results of these studies will guide decision-making for program strategies.

Baseline Conditions

A comprehensive assessment of baseline conditions for water use sectors and markets is also essential for implementation of the LTCP. Baseline studies help identify and prioritize the opportunities for conservation and increased water efficiency. These studies assess quantifiable conditions, such as number and types of efficient devices and their less efficient substitutes, number and types of suppliers and buyers, market saturation levels, and water savings potential. They also assess non-quantifiable conditions, such as consumer attitudes and awareness, supply-side market barriers and support for transformation, and the status of codes, standards, and regulations. These studies will provide the basis of opportunities analyses for market transformation.

Evaluation Studies

Evaluation studies are needed for devices, market catalysts, behaviors, and consumer attitudes and awareness.

Devices

Device-based studies help determine market saturation (the number of efficient products in the market) and device saturation (the percentage of efficient to non-efficient devices in use). Both factors are considered when determining the water savings and costs of potential future programs.

Market Catalysts

Evaluation of various market catalysts helps determine the effectiveness of their use under different market conditions and for different market barriers. Catalysts include outreach and education, financial and other incentives, codes and standards, retail rate structures, and others.

To date, incentives have been used as a catalyst in all market conditions. Both financial and non-financial incentives can be effective in overcoming market barriers; however, timing and

¹⁰ The Department of Water Resources (DWR) plans to prepare guidelines for weather and economic normalization for compliance with 20x2020. Metropolitan will participate in the State's process through the Urban Stakeholder Committee.

the value of the incentive is critical. Customer response to financial incentives has been theoretically linked to the amount of the incentive versus the cost of the device. In order to better understand consumer decision-making and the need for incentives, research is needed on the relationship between the retail cost of a device and the incentive provided. Larger rebate amounts appear to lead to greater participation in incentive programs, but additional research is needed on determining the timing of offering a financial incentive and the appropriate incentive amount. Similarly, research is needed on non-financial incentives to determine what types might spur the desired volume of activity. A study of Metropolitan's avoided costs is also needed to update the basis for incentive amounts.

Behaviors

Empirical evidence of how water is currently used in the residential and commercial sectors is limited. End use studies for these sectors are being conducted. Metropolitan will use the methodologies and results of these research efforts to better understand water use behaviors and what strategies may be effective for change.

Attitudes and Awareness

Evaluating changes in consumer attitudes and awareness of water resource issues over time is an important barometer of progress. Metropolitan has conducted awareness studies in the past on various water-related topics, including water conservation. Continuing these studies is integral to recognizing the development of social norms and new opportunities for conservation and efficiency. These studies also provide important information on the effectiveness of outreach programs and public messaging.

Collaborating on Research

Metropolitan collaborates on research with member agencies, the California Urban Water Conservation Council, federal Bureau of Reclamation, Alliance for Water Efficiency, other water agencies, energy utilities, industry groups, environmental interests, and academia. Metropolitan will continue to support independent product testing programs such as those implemented through EPA WaterSense and the various industry groups. In addition, Metropolitan will continue to participate in evaluating and refining testing protocols for water savings, customer satisfaction, and performance. Metropolitan will also continue to participate in the California Urban Water Conservation Council's program committees to gain from the knowledge and expertise of professionals throughout the state.

Summary

Research is a fundamental element of the LTCP as it provides the information needed for decision-making. Three categories of research will be used: (1) measurement and assessment of per capita water use; (2) baseline studies of market conditions; and (3) evaluation studies of technologies and progress in market transformation. With per capita use being a key metric for measuring progress, Metropolitan needs to better understand how market catalysts (such as outreach, education, incentives, and retail water rates) affect demand. A comprehensive

assessment of baseline conditions is needed to help identify and prioritize opportunities for water savings through efficiency and conservation. Evaluation studies are needed for devices, market catalysts, behaviors, and consumer attitudes and awareness.

5 IMPLEMENTATION

Implementation of the LTCP will be dynamic, requiring adaptive management and strategies to achieve the IRP Update conservation target. Periodic evaluations of progress, cost and opportunities will be used to rebalance the conservation and recycled water targets. Adaptive management is needed to adjust implementation approaches as necessary.

Metropolitan will convene the Program Advisory Committee (PAC) to develop research and program priorities, identify opportunities and collaborators, and evaluate programs. Staff will prepare workplans and seek board authorization through the budgeting process. In addition, staff expects LTCP changes or program modifications and enhancements to periodically come to the Board for consideration.

Program Advisory Committee

Metropolitan will convene a PAC of the member agencies to provide input on implementation of the LTCP. The PAC will have an advisory role and assist Metropolitan with the following:

- Identify opportunities and actions to improve water savings, regional benefits, and cost-effectiveness
- Develop research priorities and conduct research activities
- Evaluate potential technologies, programs, and implementation approaches
- Identify and analyze opportunities, determine which devices or services should be considered for the strategic focus program
- Evaluate performance of existing programs, including verification of water savings
- Identify opportunities for legislation and regulation to advance water use efficiency
- Develop protocols for evaluation, measurement and verification
- Develop general criteria that can be used to determine incentive amounts
- Develop recommendations on reasonable saturation levels for various devices
- Develop general criteria for sunset provisions for incentives
- Conduct periodic evaluations of progress towards the LTCP goals

Metropolitan will convene a Program Advisory Committee (PAC) of the member agencies to provide input on implementation of the Plan.

Metropolitan will consider the PAC's input when preparing program plans and recommendations for program changes.

Communication Coordination

Successful communications will depend heavily on coordination between Metropolitan, its member agencies and retail or subagencies. Communications priorities and goals must be agreed upon and widely understood by both the External Affairs or Public Affairs function at each agency and the Water Use Efficiency staff to ensure that their messages are consistent. Whenever possible, communications campaigns should be executed within a short, defined time frame in order to increase effectiveness and reach. Existing channels of communication, such as water agency websites, brochures, bill statements and inserts, news releases, newsletters and social media should be utilized to disseminate the agreed-upon messages.

One means of coordination is through the Public Information Officer's Working Group which meets regularly and as needed to discuss priorities, messaging and outreach activities. Another means is through Metropolitan's Member Agency Education Coordinators, a group that convenes regularly to coordinate K-12 education efforts.

Five Year Implementation Plan

To achieve the IRP Update water use efficiency target for 2020, Metropolitan will build from the region's achievements in conservation over the past two decades. The LTCP will continue to leverage the region's strengths and opportunities to affect consumer values, behaviors, and preferences for water-efficient technologies. Coordinated actions will be implemented for the traditional program and strategic focus program based on available funding. Metropolitan's conservation funding will be used to implement the LTCP, including incentives, research, outreach, education, and training. Metropolitan's funding for incentives and member agency program support will be provided in accordance with the Guidelines for Metropolitan Funding described in this section.

Examples of near-term implementation actions for the traditional program and strategic focus program include:

Traditional Program:

Objectives:

- Continue market transformation within all market sectors through outreach and incentive programs;
- Provide quantifiable water savings through incentives established according to the funding guidelines; and
- Provide data to help assess opportunities for the Strategic Focus Program.

Market Catalysts

- Continue to implement a device-based, regional incentive program for residential, commercial, institutional, and industrial customers

- Implement a performance-based incentive program for commercial, industrial, and large landscape customers
- Conduct pilot programs to evaluate ways to improve program delivery
- Implement an MWD-funded/Member Agency Administered program to leverage Metropolitan and member agency funding
- Implement an agriculture water efficiency program
- Conduct evaluation, measurement and verification studies
- Work with the irrigation industry to increase product availability in home improvement stores and garden centers
- Work with appliance manufacturers association to increase market share of high efficiency clothes washers in advance of change to efficiency standard
- Conduct research on device saturation levels
- Conduct a study to review Metropolitan's avoided cost for incentives
- Conduct economic analyses on the effectiveness of various water conservation approaches
- Implement the Innovative Conservation Program; seek federal and/or state co-funding

Outreach

- Develop and implement a research-based general outreach program that communicates the value of water and educates the public on how to save water
- Coordinate with member and retail agencies on common themes and communication programs to encourage consistency throughout the region
- Update BeWaterWise.com to improve usability and information value
- Provide updated California Friendly Landscape Training
- Use social media to create a dialogue on water use efficiency
- Conduct research on effectiveness of various outreach and education strategies

Regional Technical Capability

- Continue to collaborate with federal and state agencies on research studies and projects
- Develop an online resource library of research studies and reports for member agency and retailer use
- Provide workshops on technical issues to improve knowledge and share information; priorities are the development and implementation of water budget-based rate structures, advanced metering infrastructure, landscape strategies, and community-based social marketing

Strategic Alliances

- Work with trade associations, industry groups, and other stakeholders to promote advanced technologies for management of water-efficient equipment and systems
- Work with planning agencies, developers, and builders to promote water efficiency in new development

- Collaborate with energy utilities on water/energy efficiency programs
- Promote business-directed symposiums to encourage innovation and adoption of new and existing efficiency technology
- Promote watershed symposiums on landscape issues
- Continue involvement with the CUWCC
- Publicly recognize stakeholder commitments to water efficiency

Water Efficiency Standards

- Monitor progress and support adoption of updated standards for high efficiency clothes washers
- Participate in development of water use efficiency, performance, and labeling standards for plumbing, irrigation equipment, and other equipment and devices
- Provide workshops on new regulations for municipal planners and code enforcement
- Develop resource materials on CALGreen and universal retrofit requirements (SB 407) for local agency use
- Monitor and review state and federal legislative proposals on water use efficiency and EPA WaterSense funding
- Pursue opportunities for legislation and regulation of water-efficient devices and practices

Strategic Focus Program:

Objectives:

- Develop collaborative programs with supply-side and demand-side market decision makers, member and retail agencies, and other stakeholders;
- Cause earlier and broader adoption of water saving technologies by influencing a specific market;
- Increase potential water savings through earlier adoption of standards, codes, and regulations; and
- Encourage the development and introduction of new technologies.

A portion of the overall conservation budget will be used for incentives, outreach, education, training, and research to overcome the identified market barriers in the focus area that is identified annually.

Market Catalysts for the Focus Area

- Conduct research to (1) identify the market barriers to adopting the technology, process, service, or design approach; and (2) identify the perceived benefits for supply-side and demand-side market participants
- Work with manufacturers, distributors, and retailers to reduce supply-side market barriers and increase product availability through such actions as pilot testing new technologies; collaborating on marketing; and sharing in the cost of an enhanced incentive program

- Implement an incentive program if it overcomes a market barrier and creates benefits that will affect consumer choice

Outreach

- Develop and implement a coordinated outreach campaign with member agencies and retailers; the campaign will target a focus area and be based on the barriers and benefits research
- Encourage other agencies in the state to incorporate the same focus in their programs

Regional Technical Capability

- Provide training as needed for member agencies, retailers, and municipal staff on the focus area technology
- Evaluate the process and implementation of the strategic focus program; develop recommendations for future programs

Strategic Alliances

- Engage other stakeholders that may benefit from the outcome, including energy utilities, wastewater agencies, or watershed groups; seek their support and participation

Water Efficiency Standards

- Identify and help establish water efficiency standards, regulations or legislation, once the focus area technology and/or behavior have achieved a determined benchmark for market acceptance

Workplan and Budget

A workplan will be prepared in conjunction with Metropolitan's budgeting process to ensure that implementation can be managed within budget. Staff will prepare recommendations for board consideration for modifications to the LTCP and changes to programs or incentives that require board approval. The proposed workplan will consider the recommendations of the PAC and the results of the periodic review described in Section 6.

Guidelines for Metropolitan Funding

Metropolitan funding will be used to implement the LTCP based on the following guidelines and as approved by the Board:

Traditional Program

1. Metropolitan's avoided cost will be used as the basis for incentives. This method establishes incentive levels that are cost neutral to Metropolitan rate payers by offsetting avoided costs. With board approval, higher incentive amounts may be offered for pilot projects, special projects, and research.

2. Standard incentives may be limited to the avoided cost of water saved and will be established in consideration of cost and life of the device. Incentives will be set to encourage the customer's shared investment in the device or project and to encourage manufacturers to work toward lower product cost.
3. Incentive amounts must be sufficient to affect consumer purchasing decisions. The PAC will help develop general criteria that can be used to determine incentive amounts.
4. Incentives may be offered through regional programs for devices that have not achieved reasonable regional saturation either in the number installed or product availability. Metropolitan will conduct research to determine regional saturation levels for devices. The PAC will make recommendations on reasonable saturation levels for specific devices based on several criteria. The criteria include, but are not limited to, regional saturation, market availability, cost compared to less efficient alternatives, market share, and surveyed customer acceptance.
5. Sunset provisions that identify the conditions for ending Metropolitan's financial support will be considered for each incentive. The PAC will help develop general criteria for sunset provisions.
6. Programs or devices that have the potential to lead to market transformation or regulation will have funding priority.
7. Metropolitan funding may be used to collaborate with member agencies on pilot programs that address research priorities for the region.
8. Metropolitan funding may be used to match state and federal grants awarded to Metropolitan, subject to all other funding guidelines. In addition, Metropolitan funding may be used as a portion of match funding for grants awarded to member agencies provided that Metropolitan is not obligated to maintain or provide funding for the desired match.
9. Metropolitan funding will be used only for programs that promote water savings that exceed what is required by reasonably enforceable regulations and that promote water-efficient fixtures and equipment that are not required by current law. New regulations and codes may require that devices or technologies be phased out over time.

Strategic Focus Program

Funding guidelines for the strategic focus program may differ from the traditional program guidelines. Funding may be used for outreach, education, higher incentives, and/or research as approved by the Board. Specific board approval will be sought if proposed incentives or implementation approaches in the strategic focus program exceed authorization currently in effect.

Maximizing Cost-Effectiveness and Water Savings

Metropolitan will manage implementation of the LTCP within approved budgets, maximizing cost-effectiveness and water savings. Four primary factors affect cost-effectiveness of device incentives and water savings: incentive amount and efficiency, device cost and life, length of time an incentive is provided, and administrative costs. Metropolitan will periodically evaluate

program results and adjust implementation to maximize cost-effectiveness and leverage opportunities.

Incentive Amount and Efficiency. Metropolitan bases its incentive level on (1) avoided costs; and (2) expected water savings. The expected water savings is based on the useful life of the device, which may be determined through pilot tests, industry standard, or regulatory requirement. Incentive levels are balanced between the lowest incentive level possible to affect customer purchasing decisions given the funding guidelines above and enabling the maximum number of incentives within a budget year.

Device Cost and Life. The types of devices eligible for incentives affect program results. Lower cost devices with higher lifetime water savings improve cost-effectiveness.

Time Period for Incentives. Once an efficiency standard is codified, water savings is assured through replacement of less efficient devices. Actions that shorten the timeframe when incentives are typically offered from technology introduction to codified efficiency standard will improve water savings and cost-effectiveness.

Administrative Costs. Metropolitan controls the administrative costs for regional programs through negotiated fees with the rebate processing vendors. As part of the administrative cost, Metropolitan will include budget requests based on the amount of authorized incentives to conduct evaluation, measurement and verification activities. These activities assure water savings, maintain program efficiency, and provide data to determine when an incentive should be adjusted or is no longer necessary.

To maximize cost-effectiveness, incentives will need to be adjusted as market conditions change. Market conditions that could trigger changes include regional saturation, increase/decrease in average retail price, broad market acceptance for a particular device, new regulations requiring an efficiency standard for a fixture or device, or newer technology that makes a device obsolete. The PAC will provide recommendations on incentive adjustments.

Coordination with 2010 IRP Update Adaptive Management Actions

The 2010 IRP Update describes an adaptive management approach to mitigate against future water supply uncertainty. This approach identifies three additional resources that have potential implications for conservation: recycled water, stormwater, and graywater. Metropolitan will coordinate with the PAC and other entities to identify opportunities to improve conservation savings and further refine the conservation target.

Summary

Implementation of the LTCP will be dynamic, requiring periodic evaluations and use of adaptive management and strategies to adjust implementation approaches. The PAC will provide input on implementation and assist with developing program priorities and evaluations. Successful

communications will require coordination between Metropolitan, its member agencies and retail or subagencies. Metropolitan's funding will be used in accordance with the guidelines for the traditional and strategic focus programs. Metropolitan will manage implementation of the LTCP within approved budgets, maximizing cost-effectiveness and water savings.

6 EVALUATING PROGRESS

Evaluating progress toward the three goals will require both quantitative and qualitative assessments. Metropolitan will periodically calculate water savings and estimate per capita water use to determine progress towards the IRP Update target and expected per capita use of 141 GPCD in 2020. Metropolitan will increase its research efforts to collect and analyze data to guide implementation. Protocols for evaluation, measurement, and verification will be used to ensure data quality and consistency.

Water savings are estimated based on device and non-device based efforts. Some efforts, such as outreach, education, training, and collaborations, produce results more difficult to quantify. The overall impact of the LTCP will be measured through estimated water savings and changes in per capita water use. Estimates will be prepared periodically to guide implementation of the LTCP. Per capita water use data will be reported in Metropolitan's 2015 and 2020 Regional Urban Water Management Plans.

Evaluation Metrics

Metropolitan will use a variety of quantitative and qualitative metrics to evaluate progress. Suggested metrics are listed below; these may need to be adjusted as implementation moves forward.

- Water savings will be estimated based on changes in per capita water use and savings estimates for devices and code implementation.
- Traditional program efforts will be evaluated using several metrics, such as:
 - projected annual and lifetime water savings;
 - cost per acre foot;
 - number of participants in education and training events;
 - pre- and post-campaign surveys measuring attitudes and awareness changes among target audience; and
 - online media metrics including website traffic and social media interactions.
- Strategic focus program efforts will be evaluated through metrics that include pre- and post-market share conditions, product availability, saturation levels, consumer awareness and preferences, and the status of legislation, codes and standards that establish a minimum efficiency level.
- Progress on advancing water use efficiency through innovation will be evaluated through participation in entrepreneurial activities such as the Innovative Conservation

Program, new technologies that enter the market, and the use of new implementation methods with increased water savings.

- Progress toward transforming the public's perception of the value of water will be assessed through qualitative information provided by focus groups, willingness to pay surveys, and anecdotal information from online and printed communications.

Periodic Review

Metropolitan will conduct a periodic review of conservation actions to measure progress towards the LTCP goals. The evaluation will include a review of work that is completed or in progress. It will consider factors that have affected the results as well as opportunities to improve cost-effectiveness and water savings. Water savings projections will be updated based on the evaluation. The periodic review will be used to develop the workplan described in Section 5 and track the region's progress toward the IRP Update conservation target.

Summary

Metropolitan will conduct a periodic review of conservation actions to measure progress towards the LTCP goals. Progress will be evaluated through quantitative and qualitative assessments. A variety of metrics may be used, such as projected and annual lifetime water savings, per capita water use, market share conditions, levels of participation in entrepreneurial opportunities, and attitude and awareness surveys. The periodic review will be used to develop workplans and track the region's progress toward the IRP Update conservation target.

POLICY PRINCIPLE ON WATER CONSERVATION

Policy Adopted: Support urban retrofit actions and permanent behavior changes that effectively reduce water use by:

- Providing cost-effective financial incentives to improve water use efficiency.
- Providing outreach, educational workshops, and training through a range of media and formats.
- ~~Developing Building collaborative program partnerships~~ Building strategic alliances that leverage limited financial resources to maximize collateral water savings benefits such as reduced energy demand and wastewater treatment needs, improved pollution control, and other synergistic benefits that improve program effectiveness.
- ~~Supporting favorable tax relief for installation of water efficient fixtures, both income tax on the rebate received and sales tax on the equipment purchased.~~
- ~~Assisting the pursuit of better data collection and processing~~ Conducting evaluation, measurement, verification and other research studies ~~so as to be able~~ to objectively measure program progress, and identify new savings opportunities.

Policy Adopted: Support equitable wholesaler and retailer agency responsibilities in **implementing cost-effective Water Conservation Best Management Practices (BMPs)** reducing per capita potable water use within Metropolitan's service area, as well as statewide, through the following actions:

- Encouraging adoption and enforcement of local ordinances that support water conservation.
- Encouraging use of conservation-based retail rate structures.
- Encouraging voluntary incentives ~~above~~ for devices and behaviors that exceed mandatory requirements.
- Developing water agency technical expertise through research, information sharing, and technical assistance.
- Encouraging active participation in the California Urban Water Conservation Council (CUWCC).
- Removing state and local barriers to ~~BMP implementation~~ improved water use efficiency (i.e. ~~archaic unnecessary~~ plumbing code constraints ~~or~~ ~~home owner association~~ requirements for turf).
- Statewide public disclosure of agency conservation practices and accomplishments.
- Developing objective standards for water conservation ~~certification as part of a balanced CALFED solution~~ to support achievement of a statewide 20 percent reduction in urban per capita water use by 2020.

Policy Adopted: Support legislation, regulations and voluntary programs that promote improved water use efficiency in the following areas:

- Construction of water efficient buildings and communities.
- State and federal financial assistance to:
 - Evaluate new technologies and their implementation via new programs.
 - Increase the public's awareness of the need for water use efficiency.
 - Expand local and regional water conservation programs.
 - Develop recycled water systems and retrofit sites for recycled water use.
- New product water efficiency standards.
- Implementation and enforcement of state law and local ordinances governing:
 - Water waste.
 - Universal retrofit of toilets and showerheads to efficient models ~~upon the resale of real property.~~
 - Water efficient landscapes consistent with the State Model Water Efficient Landscape Ordinance.

- Statewide installation and reading of water meters and customer billing based on recorded usage.
- State and federal efforts and financial assistance to integrate ~~the energy efficiency and~~ water use efficiency ~~message into existing and future energy efficiency programs and~~ public outreach.
- Supporting favorable tax relief for installation of water-efficient fixtures, both income tax on the rebate received and sales tax on the equipment purchased.

Policy Adopted: Provide leadership in advancing new or untapped water conservation practices and technology by taking the following actions:

- Participating in ~~professional associations~~ collaborative water conservation initiatives at the national and state level, including the California Urban Water Conservation Council (CUWCC) and supporting member agencies' CUWCC dues.
- Working with industry-based organizations and U.S. EPA WaterSense on development of national efficiency and performance standards for equipment and fixtures.
- Identifying, ~~assessing-evaluating~~, and introducing new innovative technologies.
- Working with ~~manufacturers-commercial, industrial, and institutional water users and their representatives~~ to improve the water efficiency of ~~their~~ facilities, manufacturing processes, and facilities ~~large landscapes~~.
- Participating with ~~citizen/stakeholder groups~~ industry and public interest groups, including energy utilities, industry organizations, environmental and watershed groups, federal and state agencies, wastewater agencies and water organizations to advance new ideas in water conservation.
- Encouraging research and development of promising devices and activities.
- Establishing objective measurements of water savings, cost of programs and devices.
- Encouraging and educating the public to adopt beneficial water use efficiency practices.

Policy Adopted: Require water efficiency plans and water efficiency standards for all new annexations ~~proposals~~ to Metropolitan.

Policy Adopted: Support ~~improved irrigation efficiency~~ the use of water efficient landscapes by the following means:

~~Create a new public ethic that embraces native plants and other water efficient landscapes.~~

- Provide training and cost-effective financial incentives to assist in retrofitting inefficient irrigation systems and landscapes.
- Encourage ~~the increased~~ availability of ~~native plants and other water efficient~~ low water use plants, irrigation equipment, and ~~landscapes~~ services in the marketplace ~~and green industry service sector.~~
- Promote the expanded and efficient use of recycled water for irrigation.
- Encourage ~~landscape~~ irrigation ~~device~~ equipment manufacturers to develop and market ~~more efficient equipment~~ new efficient technologies.
- Support local efforts to increase on-site water retention and reduce runoff.
- Encourage enforcement of local water efficient landscape ordinances that are consistent with the State Model Water Efficient Landscape Ordinance.

Policy Adopted: Support increased agricultural water use efficiency by:

- Supporting studies and actions to improve agricultural water use efficiency.
- Supporting development of irrigation timing strategies to reduce peak demand on water supply systems.
- Supporting implementation of water-use audits for agricultural irrigation.
- Providing cost-effective agricultural efficiency incentives for agricultural customers receiving water under Metropolitan's full service rates.

Policy Adopted: Encourage local conservation efforts of member and retail agencies through other Metropolitan policies.

M.I. 39936 - November 10, 1992; "Landscaping" issue removed and "Repeal of Federal Water Efficiency Standards " added by M.I. 42820 - February 10, 1998. [Best Management Practices (BMP) replaced by CALFED Water Use Efficiency policy principle] January 10, 2000 – Staff revision: This policy principle dates from 1992. There are no current federal legislative efforts by the National Wildlife Federation regarding urban water best management practices and integrated resource planning. Should this debate re-emerge, staff would propose an updated legislative policy principle. M.I. 45208 - February 2003, Adopted new Principles.

POLICY PRINCIPLE ON WATER CONSERVATION

Policy Adopted: Support urban retrofit actions and permanent behavior changes that effectively reduce water use by:

- Providing cost-effective financial incentives to improve water use efficiency.
- Providing outreach, educational workshops, and training through a range of media and formats.
- Building strategic alliances that leverage limited financial resources to maximize collateral water savings benefits such as reduced energy demand and wastewater treatment needs, improved pollution control, and other synergistic benefits that improve program effectiveness.
- Conducting evaluation, measurement, verification and other research studies to objectively measure program progress and identify new savings opportunities.

Policy Adopted: Support equitable wholesaler and retailer agency responsibilities in reducing per capita potable water use within Metropolitan's service area, as well as statewide, through the following actions:

- Encouraging adoption and enforcement of local ordinances that support water conservation.
- Encouraging use of conservation-based retail rate structures.
- Encouraging voluntary incentives for devices and behaviors that exceed mandatory requirements.
- Developing water agency technical expertise through research, information sharing, and technical assistance.
- Encouraging active participation in the California Urban Water Conservation Council (CUWCC).
- Removing state and local barriers to improved water use efficiency (i.e. unnecessary plumbing code constraints or requirements for turf).
- Statewide public disclosure of agency conservation practices and accomplishments.
- Developing objective standards for water conservation to support achievement of a statewide 20 percent reduction in urban per capita water use by 2020.

Policy Adopted: Support legislation, regulations and voluntary programs that promote improved water use efficiency in the following areas:

- Construction of water efficient buildings and communities.
- State and federal financial assistance to:
 - Evaluate new technologies and their implementation via new programs.
 - Increase the public's awareness of the need for water use efficiency.
 - Expand local and regional water conservation programs.
 - Develop recycled water systems and retrofit sites for recycled water use.
- New product water efficiency standards.
- Implementation and enforcement of state law and local ordinances governing:
 - Water waste.
 - Universal retrofit of toilets and showerheads to efficient models.
 - Water efficient landscapes consistent with the State Model Water Efficient Landscape Ordinance.
 - Statewide installation and reading of water meters and customer billing based on recorded usage.
- State and federal efforts and financial assistance to integrate energy efficiency and water use efficiency programs and public outreach.
- Supporting favorable tax relief for installation of water-efficient fixtures, both income tax on the rebate received and sales tax on the equipment purchased.

Policy Adopted: Provide leadership in advancing new or untapped water conservation practices and technology by taking the following actions:

- Participating in collaborative water conservation initiatives at the national and state level, including the California Urban Water Conservation Council (CUWCC) and supporting member agencies' CUWCC dues.
- Working with industry-based organizations and U.S. EPA WaterSense on development of national efficiency and performance standards for equipment and fixtures.
- Identifying, evaluating, and introducing new innovative technologies.
- Working with commercial, industrial, and institutional water users to improve the water efficiency of facilities, manufacturing processes, and large landscapes.
- Participating with industry and public interest groups, including energy utilities, industry organizations, environmental and watershed groups, federal and state agencies, wastewater agencies and water organizations to advance new ideas in water conservation.
- Encouraging research and development of promising devices and activities.
- Establishing objective measurements of water savings, cost of programs and devices.
- Encouraging and educating the public to adopt beneficial water use efficiency practices.

Policy Adopted: Require water efficiency plans and water efficiency standards for all new annexations to Metropolitan.

Policy Adopted: Support the use of water efficient landscapes by the following means:

- Provide training and cost-effective financial incentives to assist in retrofitting inefficient irrigation systems and landscapes.
- Encourage increased availability of low water use plants, irrigation equipment, and landscape services in the marketplace.
- Promote the expanded and efficient use of recycled water for irrigation.
- Encourage irrigation equipment manufacturers to develop and market new efficient technologies.
- Support local efforts to increase on-site water retention and reduce runoff.
- Encourage enforcement of local water efficient landscape ordinances that are consistent with the State Model Water Efficient Landscape Ordinance.

Policy Adopted: Support increased agricultural water use efficiency by:

- Supporting studies and actions to improve agricultural water use efficiency.
- Supporting development of irrigation timing strategies to reduce peak demand on water supply systems.
- Supporting implementation of water-use audits for agricultural irrigation.
- Providing cost-effective agricultural efficiency incentives for agricultural customers receiving water under Metropolitan's full service rates.

Policy Adopted: Encourage local conservation efforts of member and retail agencies through other Metropolitan policies.

M.I. 39936 - November 10, 1992; "Landscaping" issue removed and "Repeal of Federal Water Efficiency Standards " added by M.I. 42820 - February 10, 1998. [Best Management Practices (BMP) replaced by CALFED Water Use Efficiency policy principle] January 10, 2000 – Staff revision: This policy principle dates from 1992. There are no current federal legislative efforts by the National Wildlife Federation regarding urban water best management practices and integrated resource planning. Should this debate re-emerge, staff would propose an updated legislative policy principle. M.I. 45208 - February 2003, Adopted new Principles.