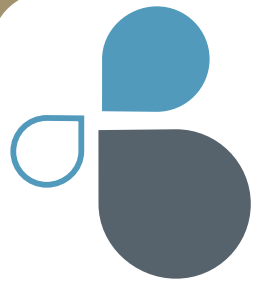
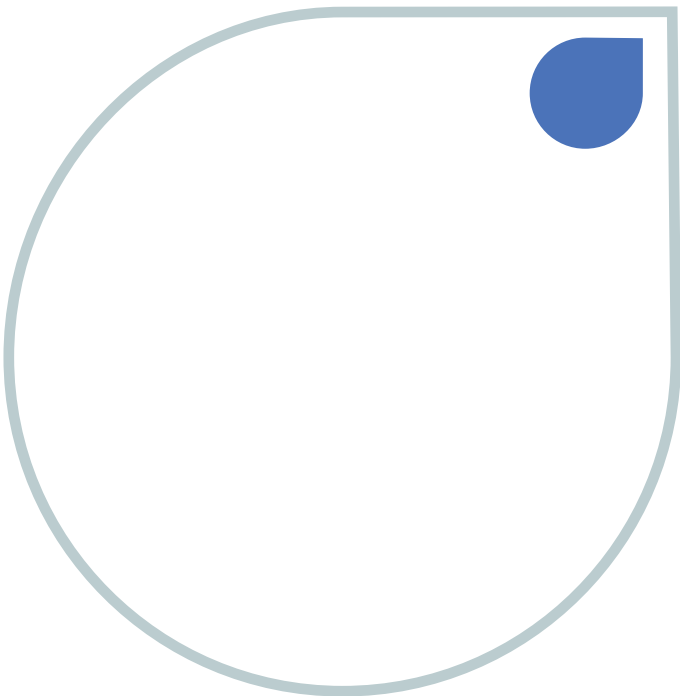




# CUWA

ANNUAL REPORT



FISCAL YEAR  
2014



# MISSION

CUWA's mission is to provide a forum for combining the expertise and resources of its member agencies to advance reliable, high-quality water supplies for the State's current and future urban water needs in a cost-effective manner for the public, the environment and the economy.

## CUWA—WHO WE ARE

Established in 1990, California Urban Water Agencies (CUWA) is a non profit corporation of 10 major urban water agencies that collectively deliver drinking water to approximately two-thirds of California's population. The water delivered by the 10 CUWA member agencies is a lifeline that supports California's urban populations and much of the state's \$1.9 trillion economy. Together, CUWA member agencies invest nearly \$3 billion annually in capital projects to deliver water reliably.

California water agencies today face many challenges—aging infrastructure, greater uncertainties affecting future supply and demand, rising costs, and the ongoing need to reduce water and energy use. Together, CUWA members are exploring means to address these challenges, and are working to achieve common goals both for statewide benefit and to improve outcomes and efficiencies in their individual organizations. CUWA continues to act as an “urban voice” for water supply interests in California, providing common understanding and consensus-based solutions among the urban water community.

## BENEFITS OF CUWA MEMBERSHIP

- Ability to exercise a well-respected and powerful collective urban voice to inform California water policy.
- Efficiency of scale and ability to leverage collective work, which saves on individual agency resource investments on issues of common interest.
- Engagement in a neutral forum that allows agency leaders to exchange ideas and further enhance cooperative relationships through regular Board meetings (six times per year), ongoing committee efforts and other communication venues.
- Information exchanges, including case studies and lessons learned.
- Easy access to a comprehensive and growing library of resource materials through CUWA's members-only SharePoint site.



# 2014 FISCAL YEAR HIGHLIGHTS

In 2014, CUWA focused efforts on actions to improve the sustainability of California's water supplies. In addition to responding to immediate drought concerns, CUWA agencies have been looking to the future to achieve lasting improvements in water use efficiency, sustainability, resilience, and reliability.

**Responding to Drought.** California's historic drought conditions have challenged water agencies across the state. CUWA has provided leadership in the statewide dialogue on drought response and has taken specific actions to conserve water and maintain a more sustainable supply in California. CUWA has worked with the California Department of Water Resources, State Water Resources Control Board, and others to respond to the governor's calls for action in January and April 2014 and to help inform effective means for tracking results. CUWA agencies have also taken extraordinary measures to promote greater conservation among their customers and member agencies leading to significant savings.

**Tracking Progress toward 20x2020.** Looking ahead to longer-term sustainable savings, CUWA agencies have assessed early progress toward the governor's goal of 20% reduction in statewide per capita water demands by 2020. CUWA coordinated closely with the California Department of Water Resources to look at our agencies' annual water use since 2010. Though the early results are subject to the effects of economic and climatic factors, CUWA agencies are making good progress and are confident that they will meet or exceed their targets by 2020.

**Going beyond 2020.** CUWA is committed to water use efficiency for the long term, well beyond 2020. As highlighted in CUWA's new Water Reuse Update and Policy Principles, our member agencies have been working on a wide range of approaches to advance water reuse. CUWA is also looking ahead to new technologies and measures to achieve the next increment of future water use efficiency, focusing on outdoor water savings in collaboration with the Alliance for Water Efficiency and others. In addition, CUWA and several member agency representatives have been working with the California Urban Water Conservation Council to explore conservation pricing approaches that send a strong price signal to customers while producing sustainable revenues.

**Recognizing the Water-Energy Nexus.** In conjunction with the California Municipal Utilities Association, CUWA has engaged in a statewide dialogue on water-related energy use. The agencies are working together on new Water-Energy Policy Principles that help to clarify where energy is used and how best to achieve and track reductions in the water sector.

**Adapting to Climate Change.** CUWA released new Climate Change Policy Principles that recognize the far-reaching consequences of climate change impacts and the need for immediate, incremental, and iterative actions to protect water supply reliability. Our member agencies are also taking early actions to improve water system resilience and reliability.

CUWA has considerably increased its efforts on outreach and partnering with others throughout this year. Working together, CUWA agencies are taking strides toward more sustainable water supplies for the state of California.

James McDaniel, CUWA Board Chair

Cindy Paulson, CUWA Executive Director



In response to the drought, MWDSC doubled its conservation budget and expanded its program to include a regional turf removal program and California Friendly Landscapes® training classes.

# CUWA ACTIVITIES AND ACCOMPLISHMENTS

## RESPONDING TO THE DROUGHT AND CONTINUED PROGRESS ON WATER CONSERVATION

For decades, the CUWA agencies have invested in resilient water supply solutions. Effective water conservation, surface water and groundwater storage, and diversification of supplies to include more drought-resistant sources (e.g., water reuse and desalination) have positioned CUWA agencies to better respond to near-term drought conditions as well as longer-term challenges of climate change and other uncertainties.

While these investments are proving their value during the current drought, the CUWA agencies are also taking other more immediate actions to respond to the drought emergency.

CUWA worked closely with the California Department of Water Resources (DWR) and State Water Resources Control Board (State Water Board) to determine effective drought response measures and to track progress. CUWA agencies took early action to place bans on wasteful water use and to implement their drought contingency plans in support of the governor's call for water use reductions. In direct response to the drought, CUWA agencies have increased funding and efforts to support additional conservation education and outreach, public information, and media campaigns. CUWA agencies have increased staff resources to address media interviews, press releases, outreach, surveys, and expanded program implementation. These programs are leading to significant reductions in water demand. For example, as of mid-September 2014, Zone 7's year-to-date water demand was 30% less than 2013.



The City of San Diego organizes workshops to educate homeowners on sustainable landscape design. Customers are eligible for a variety of rebates for turf replacement, irrigation controls, and rainwater capture systems.



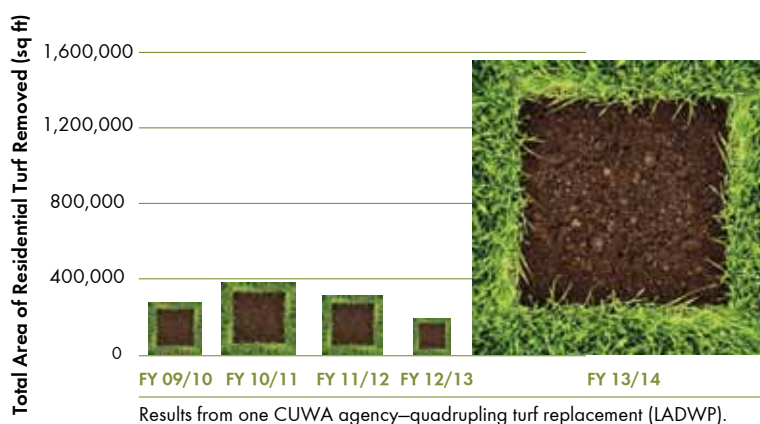


Our agencies have also invested funding and staff resources to expand rebate/incentive programs and to create new programs that are producing tangible results. For example, increased incentives for lawn replacement programs have led to significantly increased customer participation. As part of a suite of increased conservation activity, MWDSC doubled their turf replacement rebates, resulting in an increase of customer rebate requests year-to-date for 2014 from \$2.5M in early July to \$34M by late August and at least 17M ft<sup>2</sup> in replaced turf.

Some agencies are also implementing programs to inform and change customer behavior and to improve the ability to measure water use, including advanced metering infrastructure (AMI) and expanded water use monitoring and reporting. Though it may take time to see results from some

of these expanded conservation programs, they are expected to provide lasting savings for future sustainability of supplies.

Following the governor's April 2014 drought proclamation, CUWA coordinated with the State Water Board to help frame a statewide drought survey and emergency water conservation regulations. CUWA is committed to continuing efforts on the statewide drought response and water conservation.



CUWA agencies are replacing more turf than ever before.



The San Diego County Water Authority completed major construction of the San Vicente Dam Raise Project in June 2014, adding 52,000 acre-feet of emergency storage capacity and 100,000 acre-feet of carryover storage capacity for the region.

## ACHIEVING 20X2020 AND BEYOND

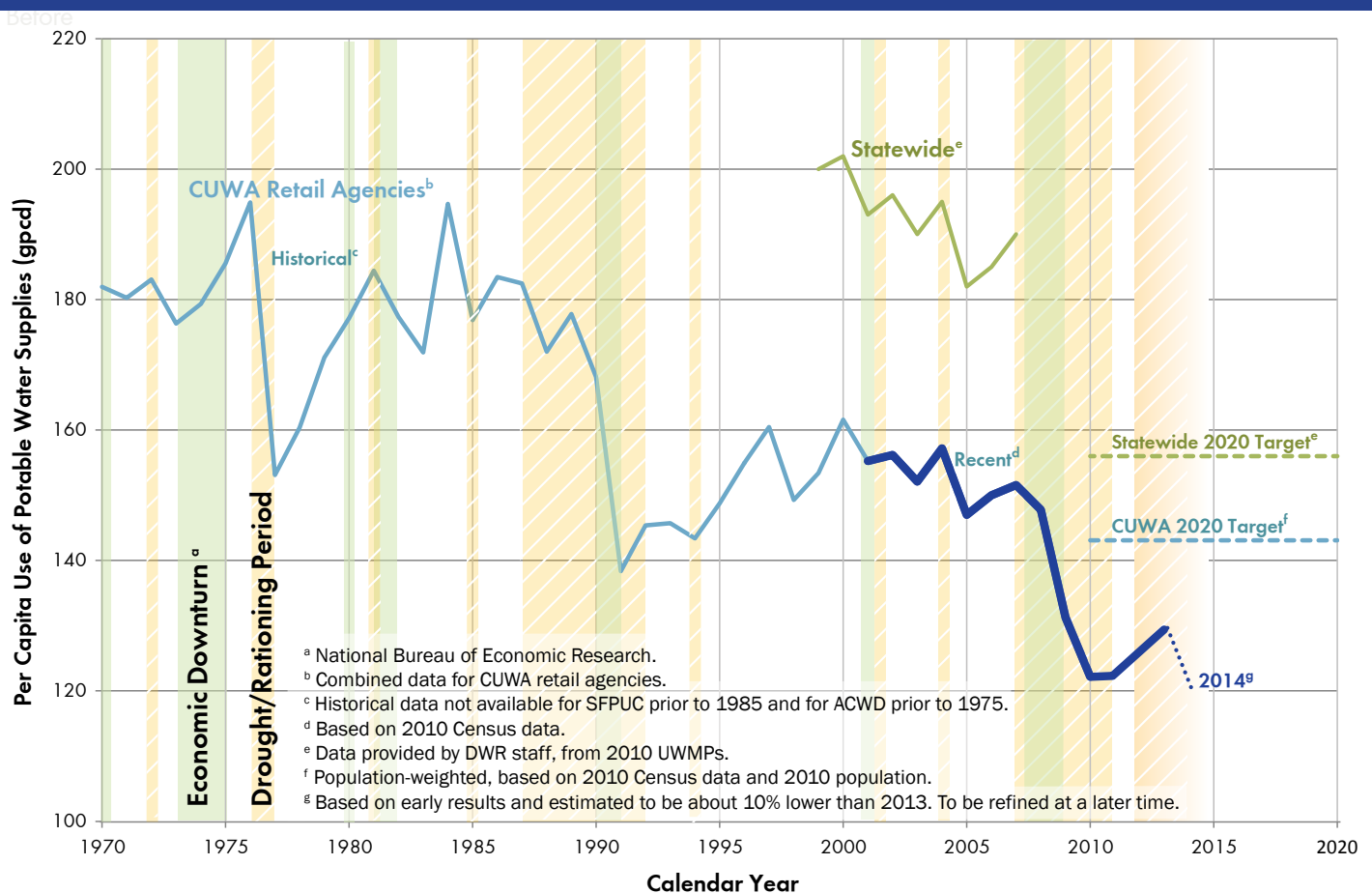
CUWA has been working closely with DWR staff on several aspects of water use efficiency (WUE), including monitoring and reporting. In coordination with DWR, CUWA has developed an update on each member agency's annual water use to support DWR's early interim 20x2020 progress update. CUWA agencies have been making steady long-term progress on WUE, through conservation and reuse, to reduce per capita water use. As shown in the figure, water use tends to fluctuate from year-to-year depending on economic and climatic conditions, but there has been a consistent overall downward trend over time. Although water use temporarily increased after 2010, once economic downturn conditions had passed, CUWA agencies have continued to implement WUE measures that will lead to long-term reductions and continuation of the downward trend.

Water use in CUWA retail agency service areas remains well below the state average. CUWA agencies are working to

make lasting gains in WUE to achieve continued reductions in per capita use.

CUWA is participating in DWR's Urban Stakeholder Committee (USC) to provide technical and policy input to DWR as it plans and implements requirements of the Water Conservation Act of 2009, Sentate Bill x7-7. In addition, CUWA has been actively tracking and helping to inform the DWR Independent Technical Panel (ITP) efforts. CUWA provided input to the seven-member panel formed under Assembly Bill 1420, related to new demand management measures (DMMs), technologies and approaches to WUE, and particularly related to Urban Water Management Planning Act revisions for the voluntary reporting of avoided cost of water and energy intensity. The ITP is developing two reports to the State Legislature, the first of which was completed in March 2014 and includes recommendations on urban water management plan (UWMP) DMMs. The ITP's second report, expected in early 2015, will include recommendations on other DMMs that are not connected with UWMPs. CUWA will continue to track the ITP and provide input for its second report.

CUWA agencies have been making steady long-term progress to reduce per capita water use.







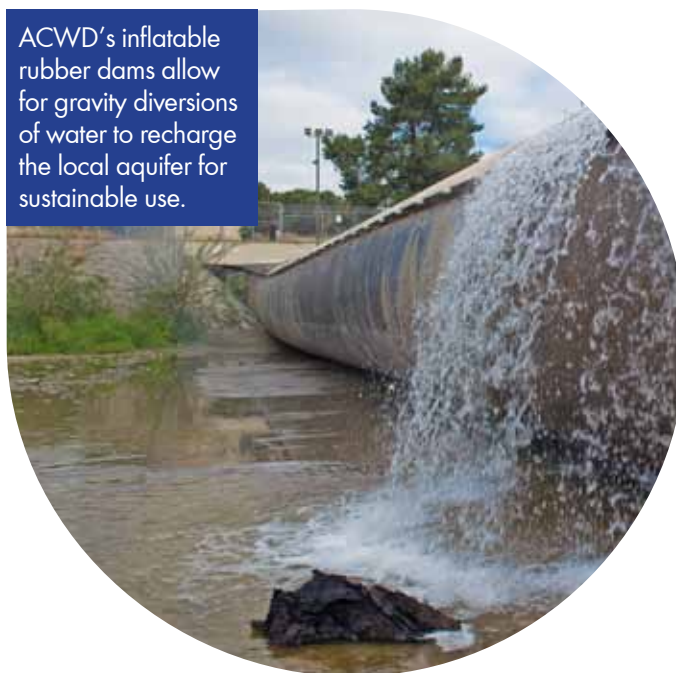
## IMPROVING OUTDOOR WATER SAVINGS

Outdoor water savings represent the greatest remaining potential for significant gains in water conservation. To continue advancing water conservation, CUWA has been collaborating with the Alliance for Water Efficiency (AWE) and others on an Outdoor Water Savings Study. The study provides an opportunity to identify new approaches to more efficient landscape water use. The first phase of the project, which is currently under way, involves an analysis of published research on outdoor water savings and scoping of a more detailed study to follow.



SFPUC sponsors free or low-cost gardening workshops to help San Francisco residents create and maintain beautiful and water-efficient landscapes.

ACWD's inflatable rubber dams allow for gravity diversions of water to recharge the local aquifer for sustainable use.



## ADAPTING TO FUTURE UNCERTAINTIES

Acknowledging the far-reaching consequences of climate change impacts, CUWA developed new Climate Change Policy Principles to help guide actions for mitigation, adaptation, and incorporation of climate-related uncertainties into water supply planning. In the policy principles, CUWA recognizes the importance of the water-energy nexus and supports continued investment in programs to achieve water conservation and associated reductions in energy use to help mitigate climate change. CUWA agencies are also taking actions to develop renewable energy sources. The policy principles provide ideas about flexible climate change adaptation strategies to provide resilient water systems that can effectively adapt to changing future conditions and maintain reliable high-quality water supplies into the future.



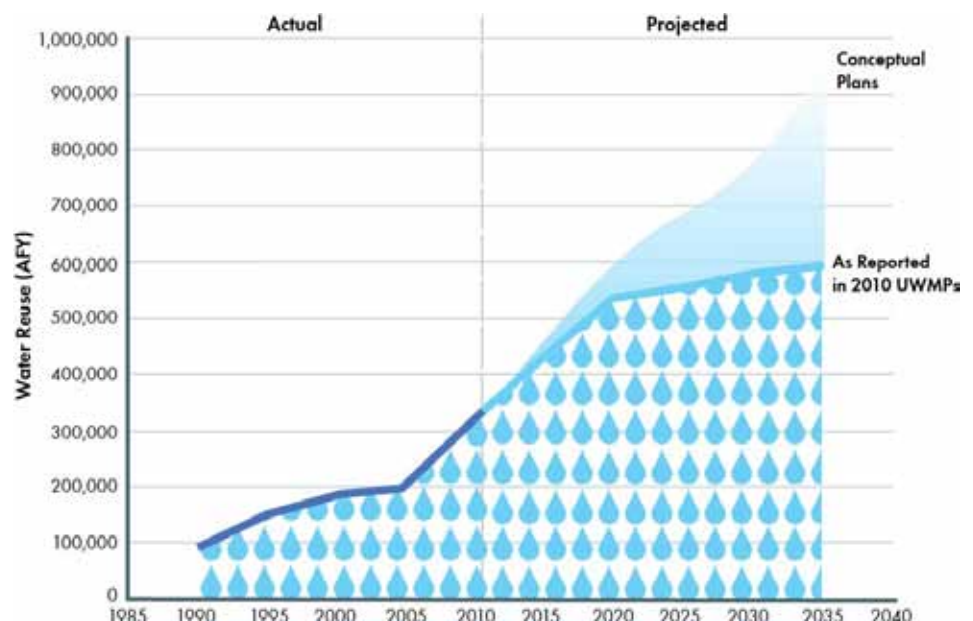
Zone 7 Water Agency has been planning future beneficial water management uses for the Chain of Lakes, a series of quarry sites being turned over to the Agency as mining operations cease over time.

## ADVANCING WATER REUSE

Building on its Water Reuse Policy Principles, CUWA released a Water Reuse Update that demonstrates the potential for urban water reuse to make significant contributions to future California water supplies. As shown in the figure below and reported in individual 2010 UWMPs, CUWA agencies already have projects on the books to produce 600,000 acre-feet per year of reuse water. Even more promising are the conceptual plans that CUWA agencies are now pursuing to increase that amount by another 50% or more. Potable reuse, in particular, represents great potential and could provide a much more significant source of supply in the future. For reuse to move ahead, a complete regulatory context is needed.

CUWA aims to advance water reuse in California by helping to inform the regulatory development process and helping to ensure that public health and ecosystem needs are fully protected. CUWA agencies are actively working with regulators (e.g., the State Water Board's Drinking Water Division), and other relevant organizations to help facilitate completion of water reuse regulations and legislation to increase water reuse for non-potable uses and to enable and encourage further progress toward potable reuse where appropriate. This coordinated effort is intended to provide more clarity on regulatory requirements, and ultimately to enable more efficient navigation of the regulatory process. Streamlined and efficient regulations are needed to provide consistency, sufficient protection of public health, and flexibility to meet local needs. This is especially important as more agencies look to move from non-potable to potable reuse options.

Individual CUWA agencies are also providing funding for critical potable reuse research through the Water Research Foundation and/or the WaterReuse Research Foundation. This research will strengthen the scientific basis for potable reuse by addressing critical outstanding technical issues. The research focuses on many aspects, such as assessing and evaluating critical control points, source water control options, blending requirements for water from advanced purified treatment, sizing of engineered storage, and techniques for demonstrating the safety of product water.

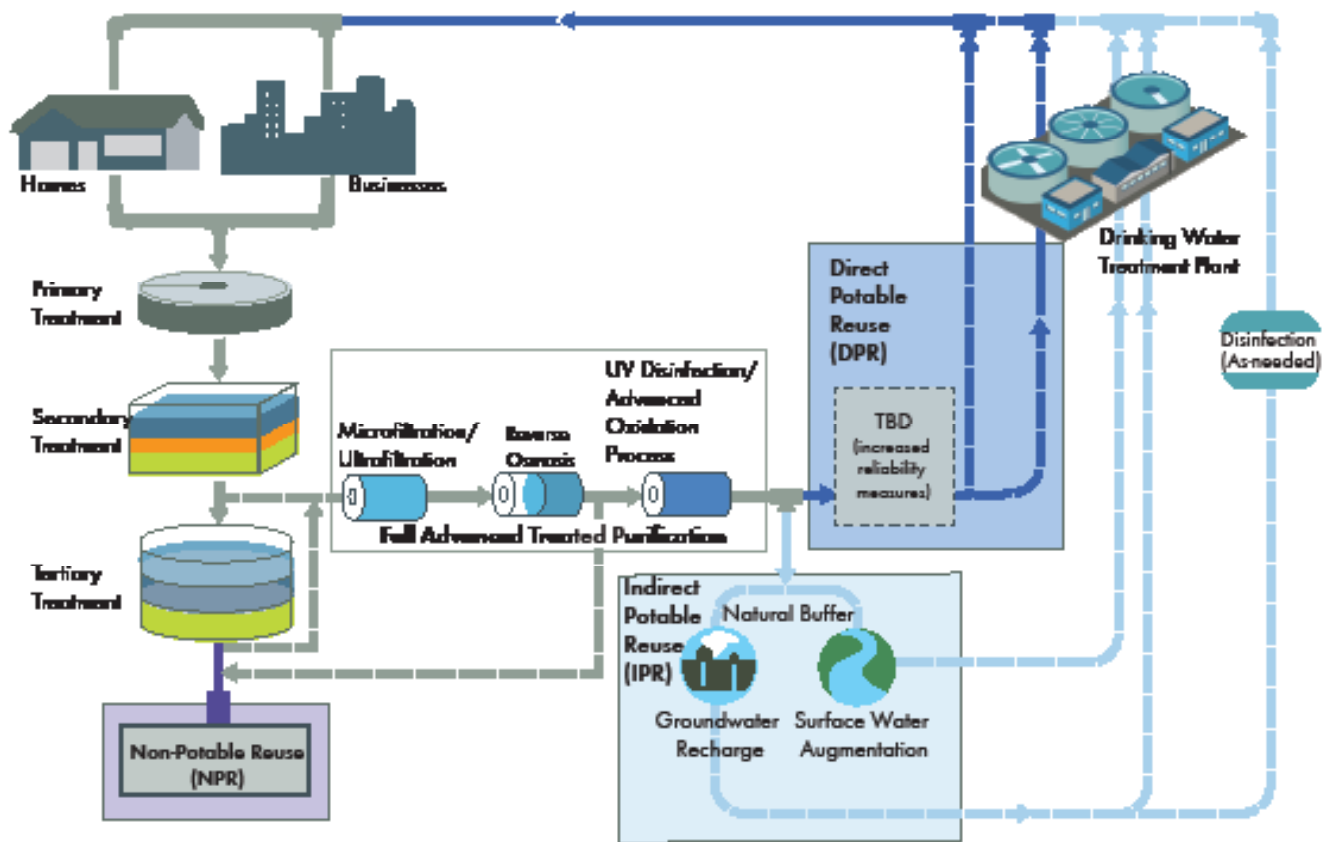


CUWA agencies have conceptual plans in place to triple water reuse by 2035.





As shown in the following figure, the CUWA Water Reuse Update illustrates various reuse treatment schemes that are appropriate for intended uses, from non-potable to direct potable. The paper also highlights CUWA agency current and planned water reuse projects, many of which are cutting edge. The range of approaches to reuse by the CUWA agencies shows that there is no single solution to meet future water demands. Diverse water resource portfolios will be needed to meet future water supply needs, and reuse water will be an ever more important component for the state of California.



**Non-potable reuse. NPR** includes any application of recycled water not involving drinking water for human consumption. NPR water originates from homes and businesses or municipal wastewater and undergoes tertiary treatment at a reclamation facility to meet specific water quality standards (i.e., Title 22 of the California Code of Regulations).

**Indirect potable reuse. IPR** is the application of multiple levels of treatment to achieve full advanced treated purified water for groundwater recharge or surface water augmentation, upstream of a water treatment plant, using those natural buffers for treatment.

**Direct potable reuse. DPR** is the planned introduction of full advanced treated purified water directly into a public water system's treated or raw water supply. DPR may include increased reliability measures in lieu of a natural buffer and will be better defined through ongoing research.



One of the nearly 100 groundwater recharge ponds managed by the Santa Clara Valley Water District

## EXPLORING CREATIVE MEANS TO ACHIEVE FINANCIAL SUSTAINABILITY

CUWA continues to explore innovative ways to improve financial sustainability. Over the last year, CUWA representatives have been deeply engaged in discussions on conservation pricing and related impacts on revenues, particularly in the context of potential revisions to California Urban Water Conservation Council (CUWCC) Best Management Practice (BMP) 1.4. In coordination with that effort, CUWA member agencies helped to define more flexible approaches to meet the intent of BMP 1.4—to send a strong price signal to encourage conservation, while also enabling water utilities to ensure stable sources of revenue to cover fixed costs.

CUWA staff and representatives from several CUWA agencies also participated in development of the AWE water rates model and handbook, which provide valuable, current information for rate-setting considerations and scenario analysis.



San Diego PUD





## PROTECTING WATER QUALITY AND THE ENVIRONMENT

Water quality remains a key focus area for CUWA. CUWA continues to track and monitor water quality in the Sacramento-San Joaquin Delta, including providing comments on Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS). CV-SALTS is a program focused on developing sustainable salinity and nitrate management planning for the Central Valley.

CUWA also continues to engage with Delta Wetlands and the State Water Board to address potential water quality concerns associated with a proposed project to store water on two reservoir islands in the Sacramento-San Joaquin Delta and create habitat on two other islands.

After more than a decade of work on technical studies and coordination with a work group representing a broad range of stakeholders, last year CUWA and others obtained Central Valley Regional Water Quality Control Board approval of the country's first drinking water policy of its kind, the Central Valley Drinking Water Policy (CV-DWP). The policy provides greater protections for source water quality in the Central Valley and could ultimately serve as a precedent for broader protections across the state. As CV-DWP moves into implementation, CUWA continues to monitor progress.

CUWA also continues to review and provide comments on proposed waste discharge requirements to protect Delta water quality and to monitor statewide initiatives that could affect source-water quality (i.e., numeric nutrient endpoints).

CUWA agencies are investing in a number of watershed and source protection efforts, including supporting development of habitat conservation plans. Individual CUWA agencies are actively involved in efforts related to the Bay-Delta Conservation Plan (BDCP) to resolve Delta issues and are committed to achieving BDCP's co-equal goals of water reliability and environmental restoration.



LADWP's stormwater swales provide for groundwater recharge and water quality improvements.





## MAKING PROGRESS ON THE WATER ENERGY NEXUS

With greater focus on greenhouse gas emissions and California's Cap and Trade programs, statewide dialogue on the water-energy nexus has heightened and expanded to numerous venues. CUWA has joined with the California Municipal Water Agencies (CMUA) to form a Water-Energy Committee that is engaging in dialogue and helping to explore approaches to reduce water-related energy consumption. CUWA and CMUA representatives have been providing input to the DWR ITP providing comments on voluntary energy intensity reporting in UWMPs. Our agencies are also coordinating with the California Public Utilities Commission to share best practices and explore approaches to quantify and report water-energy usage, particularly to support cost-effectiveness evaluations to enable greater investment of energy utility ratepayer funds on expanded water-energy programs. Closer to home, CUWA agencies are taking steps to conserve energy and develop more renewable sources within their own systems.

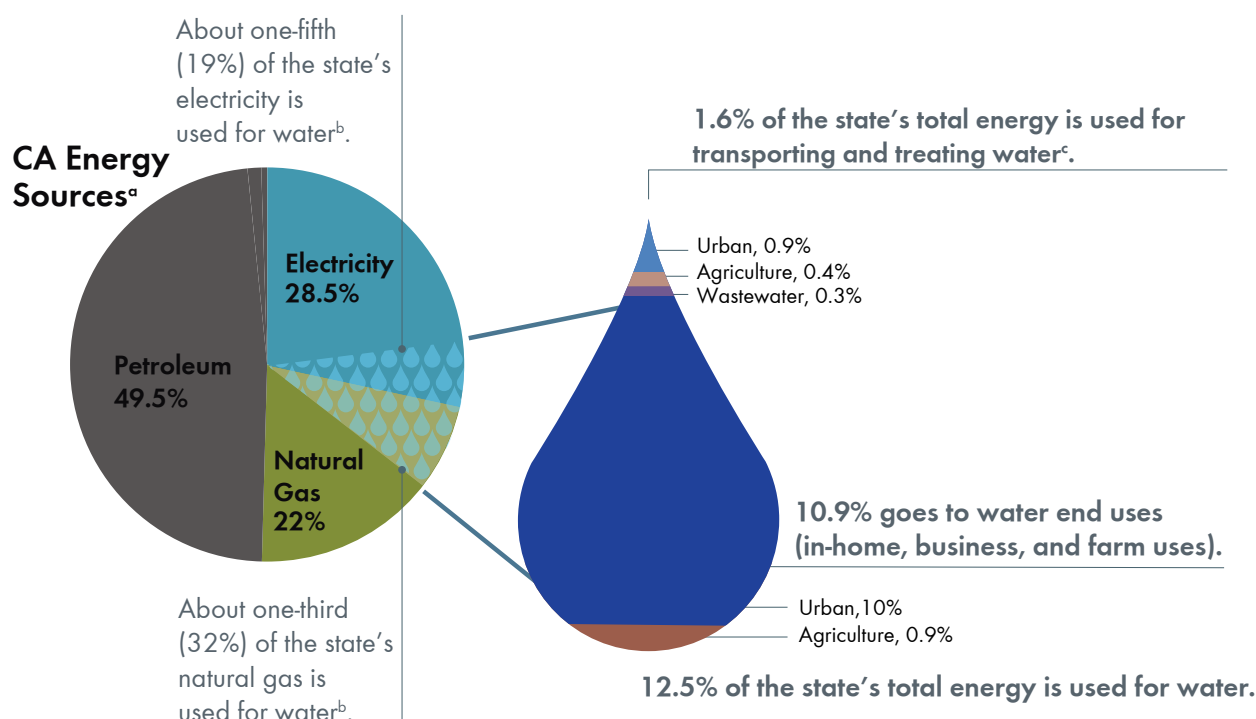
A new turbine at EBMUD's wastewater treatment plant helps create renewable energy. In 2012, EBMUD became the first wastewater treatment plant in North America to produce more energy on site than is needed to power the facility.





The CUWA/CMUA committee is developing Water-Energy Policy Principles (expected for release in fall 2014), reaffirming a joint commitment to efficiency and conservation and outlining principles to guide future programs. CUWA and CMUA are particularly enthused about expanding the existing long-term partnerships between public and private water and energy utilities and further optimizing them to develop joint water-energy efficiency programs. The committee has also been working with others to clarify where energy is used and how best to achieve and track reductions in the water sector. As shown in the figure, about 1.6% of the state's total energy demand is related to water supply and treatment, and about 10.9% goes to water end uses (i.e., in-home, business, and farm uses). Having a better understanding of where the greatest energy use occurs will help focus future programs to produce the most significant cost-effective reductions.

#### CUWA's clarification of California's water-related energy use



**Notes – This figure is consistent with the California Department of Water Resources' approach and data sources for calculating water-related energy use, as reflected in the 2013 California Water Plan.** [www.water.ca.gov/climatechange/water-energy.cfm](http://www.water.ca.gov/climatechange/water-energy.cfm)

<sup>a</sup> Represents energy sources after transformation (e.g., the amount of natural gas used to generate electricity is embedded in the electricity value). Based on a Sankey diagram for 2008 energy use, as published by the California Energy Commission in 2012

(<http://www.energy.ca.gov/2012publications/CEC-500-2012-FS/CEC-500-2012-FS-006.pdf>)

<sup>b</sup> Based on the California Energy Commission's 2005 California's Water-Energy Relationship Final Staff Report (2001 water use)

(<http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF>)

<sup>c</sup> Represents the sum-product of the sources and demands for statewide water-related energy use.

## LOOKING TO THE FUTURE

In fiscal year 2014, CUWA made real progress on drought response/water conservation, water reuse, climate change adaptation, and the water-energy nexus—all important steps toward a more sustainable water supply for California. The CUWA Board also took time to step back from ongoing efforts to look further into the future, aiming to better understand future needs and opportunities in California water 30 to 50 years ahead. In June 2014, the CUWA Board spent a day working with the Institute for the Future (ITF) to anticipate the long-term future trends as a context to frame a new direction for CUWA initiatives over the next 3 to 5 years.

The involvement of ITF helped to provoke new discussion by bringing fresh perspectives and insights. The CUWA session resulted in ideas and strategies that will be considered and further developed to define the path forward for the organization. The outcomes will enable CUWA to provide leadership in positioning California water for the challenges of the coming decades and to drive different actions that better optimize water resources.



Using the Los Vaqueros Reservoir, CCWD is piloting water transfer projects with three other Bay Area water agencies.



# 10

## CUWA MEMBER AGENCIES



### As of 2013, 69%

OF THE STATE'S POPULATION RESIDES WITHIN THE AREAS SERVED BY CUWA MEMBER AGENCIES.

#### RETAIL:

- Alameda County Water District (ACWD)  
REPRESENTATIVE: Walt Wadlow, General Manager
- East Bay Municipal Utility District (EBMUD)  
REPRESENTATIVE: Alex Coate, General Manager
- Los Angeles Department of Water and Power (LADWP)  
REPRESENTATIVE: Jim McDaniel, Senior Assistant General Manager, Water System and CUWA Board Chair

#### RETAIL/WHOLESALE:

- Contra Costa Water District (CCWD)  
REPRESENTATIVE: Jerry Brown, General Manager
- City of San Diego Public Utilities Department (PUD)  
REPRESENTATIVE: Marsi Steirer, Deputy Director and CUWA Board Secretary/Treasurer
- San Francisco Public Utilities Commission (SFPUC)  
REPRESENTATIVE: Michael Carlin, Deputy General Manager

#### WHOLESALE:

- Metropolitan Water District of Southern California (MWDSC)  
REPRESENTATIVE: Debra Man, Chief Operating Officer, Assistant General Manager
- Santa Clara Valley Water District (SCVWD)  
REPRESENTATIVE: Beau Goldie, Chief Executive Officer and CUWA Board Vice-Chair
- San Diego County Water Authority (SDCWA)  
REPRESENTATIVE: Maureen Stapleton, General Manager
- Zone 7 Water Agency (Zone 7)  
REPRESENTATIVE: Jill Duerig, General Manager

#### CUWA STAFF:

Executive Director, Cindy Paulson

Staff Engineer, Jenny Gain

POPULATION SERVED: 26 MILLION



Increased local storage capacity and partnerships among water utilities have enabled CUWA agencies to more effectively manage their water supplies during periods of shortage.

**FOR MORE INFORMATION** See [www.cuwa.org](http://www.cuwa.org) for recent work, including:

#### **CUWA Policy Principles**

- [Climate Change \(October 2013\)](#)
- [Water Reuse \(July 2013\)](#)
- [Cap and Trade Investment Plan \(April 2013—joint with CMUA\)](#)
- [Reliable Water Financing \(March 2013 update—joint with CMUA\)](#)
- [Water Supply Reliability \(December 2012\)](#)
- [Water Conservation \(August 2012\)](#)
- [Water Quality \(April 2012\)](#)

#### **CUWA Reports and White Papers**

- [Meeting California's Water Needs—Water Reuse Update \(March 2014\)](#)
- [Water Supply Reliability Report \(August 2012\)](#)
- Public Investment White Papers  
[Phase 1—October 2011](#)  
[Phase 2—March 2012](#)