Committee on Water
Water Efficiency and Conservation

NARUC February 2019

- Maureen Westbrook
  Vice President, Customer and Regulatory Affairs
Water Conservation in Connecticut

- Water ‘Rich’ State
- Adequate Water Supply to Meet Current and Future Demands
- Strong Environmental Focus
- Laws and Policies Protect Water Resources
- State Water Plan - Balance Public Health, Safety, Economic Development and Environmental Goals
Reflect the “value of water”
Revenue requirement for operating and capital costs
Balance customer rates and company’s financial needs to sustain system
Meet current and future system needs
Water Revenue Adjustment Mechanism

- Authorized by law in Connecticut in 2013
- Intended to support water conservation
- Annual rate adjustments to recover PURA approved revenues from last rate rate case
  - Adjustment could be a surcharge or credit depending on amount of revenues collected in a calendar year
  - Details submitted to PURA annually for approval before adjustment applied to customers’ bills
- Customers protected – sharing of overearnings
Protection for customers if company overearns their allowed ROE

* Rolling review, sharing required if exceed allowed ROE
* Reviewed - WICA and WRA filing

Provides safeguards and assurances as regulators consider such ratemaking tools
Traditional Conservation Efforts

- Bill inserts, bill messages
- Website, social media
- Direct mailings to targeted systems
- Water conservation calendar
- Water conservation calculator
- Notice of high bills
Recent Conservation Initiatives

Municipal Retrofit
- Offered in all service towns
- Fixtures inspected and replaced

Water Drop Challenge – Customer Incentive to Conserve
- 5,000 customers enrolled
- 40% achieved the savings goal
- 30 million gallons saved

Water Drop Watchers – Conservation Education
- 23 schools, 109 classes
- Over 2,500 students
Good regulatory tools make a difference

Simple and easy to understand

Remove financial barriers

Deliver results for shared goals
Committee on Water
California’s New Water Use Efficiency and Drought Planning Legislation: Implications for Regulators

Jack Hawks
NARUC Winter Policy Summit
Washington, DC
February 11, 2019
2014
- Governor declares Drought State of Emergency (Jan)
- California Water Action Plan released (Jan)
- Sustainable Groundwater Management Act (SGMA) of 2014
- Proposition 1 $7.5 billion water bond (Nov)

2015
- EO B-29-15 mandates 25% cutbacks in urban water use (April)

2016
- EO B-37-16 directs 5 State agencies to develop a long term conservation framework

2017
- Final Report “Making Water Conservation a California Way of Life” released (April)
- Report recommendations being considered in legislation (May/June)

2018
- AB 1668 (Friedman) & SB 606 (Hertzberg) signed into law (May)
## 2018 Legislation

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Figure 3-1. Conservation Targets under SB X7-7 Compared with Actual Conservation
**Purpose:** Summarize authorities, requirements, and schedules in new legislation; roles and responsibilities of state agencies, water suppliers, and other parties.

- Requirements summarized and organized by primary goal
- Appendix A: Summarize Actions Mandated by Legislation
- Appendix B: Major State Agency Tasks for Implementation
- Appendix C: Major Water Supplier Tasks for Implementation

Developed by Dept. of Water Resources, State Water Resources Control Board
Each water utility will be subject to an annual target (2023)

- Water use target based on efficiency or performance standards, not a percentage reduction from a baseline
- Efficiency standards used to calculate a water use objective, or budget
- New water use objective is the sum of aggregate estimated efficient use:
  - Indoor water use standard (2018)
  - Outdoor residential irrigation standard (2022)
  - CII Landscape Irrigation with dedicated meters (2022)
  - Water Loss Standard (2020)
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Indoor Residential Standard

- Dept. of Water Resources Completes Indoor Water Use Study and Report, with Recommendations to Legislature by 1/1/2021
- Indoor Standard Set in Statute
  - 55 gpcd until 1/1/2025
  - 52.5 gpcd until 1/1/2030
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Outdoor Standards

• Development of outdoor water use standards for
  – Residential outdoor use
  – Landscape water use associated with CII dedicated-meters

• DWR acquiring data on all state residential irrigated land through aerial imagery, weather stations (2021)

• Based on principles of *Model Water Efficient Landscape Ordinance*
  – Regulation for local land use authorities
  – Sets minimum standards for the design and installation of resource efficient landscapes applying primarily to
    ▪ New developments
    ▪ Retrofit landscapes requiring a permit
    ▪ Water allowance approach
Water Loss Standard

• Per 2015 law, Water Board must set water loss performance standards by July 1, 2020
• Formal rulemaking to begin in July 2019
  – Based on AWWA M 36 Manual
  – CEQA
  – Economic Analysis
Variances: Unique Water Uses

Variances and thresholds of significance will be developed for each of the following unique water uses:

- Evaporative coolers
- Horses and other livestock
- Seasonal populations
- Landscaped areas irrigated with recycled water
- Soil compaction and dust control
- Ponds and lakes to sustain wildlife
- Irrigation of vegetation for fire protection
- Agricultural use
- Others TBD
## Calculating Urban Water Use Objective

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Drought Planning

• Prepare for a drought of 5 years or longer
• Annual supply and demand assessments beginning in 2022
• Support for most vulnerable small systems
  – Identify small suppliers and rural communities at risk of drought and water shortages
  – Propose recommendations to address drought contingency planning for small water suppliers and rural communities in Report to Governor.
  – Countywide planning approach
Progressive approach

- Information Orders
- Conservation Orders
- Administrative Civil Liability
Questions

Jack Hawks
jhawks@calwaterassn.com
Committee on Water
Opinion: No One Can Live on The 55-Gallons-a-Day Water Limit California Is Imposing

It's Now Against The Law In California To Shower And Do Laundry On The Same Day

Look out, California. More punitive water restrictions are on their way

Blame California's Crazy Left-Wing Politics for Water Rationing

As some have noted, the restriction could make it difficult for some California citizens to do laundry and take a shower on the same day without going over the limit.
To create each water provider’s unique target, the following standards will be calculated and added together:

**INDOOR USE**
- The standard for indoor residential water use is 55 gallons per person per day multiplied by the population of the service area.

**OUTDOOR USE**
- The standard for outdoor residential water use is based upon a community’s climate and the amount of landscape area and is still to be determined.

**WATER LOSS**
- The standard for water loss due to leaks in the water system pipes is still to be determined.

**CII LANDSCAPE**
- The standard for outdoor CII water use for accounts with dedicated irrigation meters is still to be determined.
2018:
Begin standard development

2022:
Adopt standards, PMs, and method

2023:
Suppliers calculate objectives

2026:
All suppliers reach objectives

Source: State Water Resources Control Board
The losses have prompted credit ratings agencies to look closer at the finances of public utilities in Texas. One agency, Fitch, downgraded some of Fort Worth’s water and sewer debt last year, and last week the firm downgraded the debt of the city’s wholesale water supplier. Fort Worth lost $11 million last year because of water conservation.”
What Really Affects Revenue Stability?

- Reduced demand from:
  - efficient fixture replacement under the plumbing and appliance codes
  - active conservation programs
  - the recession: industrial shift layoffs, home foreclosures
- Reduced peak demand in wet years
- Increased infrastructure costs
- Rise in other fixed costs
- Continuing Inflation
- Poor Demand Forecasting
Forecasts often overestimate demand

San Diego County, California

Phoenix, Arizona

Recommendation: Examine the accuracy of your demand forecasts and monitor trends in water use.

Review revenue requirement and rate impacts. This worksheet calculates the impact of planned conservation on annual revenue requirement, average rates, and average bills. It assumes the volumetric revenues generated by the baseline demand and rates forecasts correspond to the utility's volumetric revenue requirement. It then adjusts forecasted annual water sales and revenue requirement using the water savings, conservation program cost, and utility avoided cost estimates calculated earlier. The adjusted revenue requirement equals the baseline revenue requirement plus annual conservation program cost minus annual avoided water supply cost. The adjusted average monthly volumetric bill equals adjusted revenue requirement divided by number of accounts divided by 12. Calculations are done for two alternative financing strategies for planned conservation. The first strategy treats planned conservation as an operating expense. The model assumes planned conservation is paid for in the year it occurs (Pay-Go financed). The second strategy treats planned conservation as a capital expense. The model assumes planned conservation is debt financed. You can set the debt financing term using the drop-down list.

Change in Annual Volumetric Revenue Requirement Due To Utility Conservation Program

Baseline Volumetric Revenue Requirement, Average Rate, & Average Bill

Baseline Water Sales Forecast (from 2. Specify Demands)
Citizens complained about being asked to conserve when rates would just go up anyway.

Westminster reviewed marginal costs for future infrastructure if conservation had not been done.

Since 1980 conservation has saved residents and businesses 80% in tap fees and 91% in rates compared to what they would have been without conservation.
LA’s Story

- Similar story with unpopular rate increases
- Study of costs avoided with water conservation programs
- Analysis completed in August, 2018
- LA had $11 billion in avoided infrastructure costs, which reduced customer bills by 26.7%
- Two other studies done in Arizona with similar results
Financing Sustainable Water
What is Financing Sustainable Water?

- **Building Better Rates in an Uncertain World**: A Handbook to explain key concepts, provide case studies and implementation advice

- **AWE Sales Forecasting and Rate Model**: Innovative, user-friendly tool to model scenarios, solve for flaws, and incorporate uncertainty into rate making

- **FinancingSustainableWater.org**: Web-based resources to convene the latest research and information in one location, including consumer videos
Financial Instruments to Manage Revenue Risk

A new white paper explores opportunities for utilities to use financial instruments - such as derivatives, insurance and bonds - to manage weather-related revenue risk in an increasingly volatile climate.

Rates. Revenue. Resources.

Financing Sustainable Water is an initiative of the Alliance for Water Efficiency. It was created to provide practical information to guide utilities from development through implementation of rate structures that balance revenue management, resource efficiency and fiscal sustainability. This website will be updated frequently with new content and we encourage visitors to return often for additional information and resources. The Alliance serves as a North American advocate for water efficient products and programs, and provides information and assistance on water conservation efforts. [Learn More](#)
Committee on Water
NARUC Winter Policy Summit
Water-Efficiency & Conservation
A Utility Perspective

Rob Kuta
Vice President, Engineering
Chief Water Quality & Environmental Compliance Officer
Water-Efficiency Leadership

www.calwater.com/video/bad-days
Water-Efficiency Leadership
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MONTHLY BUDGET & USE INFORMATION

<table>
<thead>
<tr>
<th>Meter Read</th>
<th>Billed Days</th>
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<tr>
<td>02/28/2018</td>
<td>28</td>
</tr>
<tr>
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How Do You Compare?

You: 51 CCF
Target: 20 CCF

Note: In this comparison, "Target" is based on the occupancy and irrigated area of your home.
Water-Efficiency Leadership

California Water Service
Gallons Per Capita Per Day

Gallons: 200, 200, 200, 200, 200, 200, 200, 200, 200, 200, 200
A. APPLICABILITY

1. This schedule applies to all of California Water Service's regulated ratemaking areas in California, as well as Grand Oaks Water.

B. GENERAL INFORMATION

1. All expenses incurred by California Water Service to implement Rule 14.1, and Schedule 14.1, and requirements of the California State Water Resources Control Board ("Water Board") that have not been considered in a General Rate Case or other proceeding shall be accumulated by Cal Water in a separate memorandum account, authorized in Resolution W4976, for disposition as directed or authorized from time to time by the Commission.

2. All monies collected by Cal Water through waste of water penalties established in this schedule shall be recorded in the appropriate memorandum account and used to offset the expenses described in Section 1 above.

3. Except in the case of Grand Oaks, all monies collected by Cal Water through drought surcharges, as established by the Mandatory Water Budgets found in Schedule 14.1, shall be recorded in the appropriate Water Revenue Adjustment Mechanism ("WRAM") account and used to offset under-collected revenues.

4. To the extent that any provision in this Schedule is inconsistent with Rule 14.1, the provisions of this Schedule apply.

5. On April 1, 2015, the Governor of the State of California issued Executive Order B-29-15 due to severe drought conditions. The Executive Order, among other requirements, directs the State Water Resources Control Board ("Water Board") to impose restrictions on urban water suppliers like Cal Water to achieve a statewide 25% reduction in potable urban usage, as compared with the amount used in 2013, through February 2016.

6. Urban water suppliers must develop rate structures and other pricing mechanisms, such as surcharges and penalties, to achieve 25% water conservation.

7. On May 5, 2015, the Water Board issued an Emergency Regulation by Resolution No. 2015-0032 due to continuing drought conditions with specific water use reductions, by service area, and prohibitions on how end-use customers can use potable water. On May 7, 2015, the California Public Utilities Commission ("Commission") issued Resolution W5041 ordering compliance with the mandates of the Governor and the Water Board.

8. On November 13, 2015, the Governor of the State of California issued Executive Order B-36-15 that directed the Water Board to, if drought conditions persist through January 2016, extend until October 31, 2016 restrictions to achieve a statewide reduction in potable usage.

C. DEFINITIONS

For the purposes of this Schedule, the following terms have the meanings set forth in this section.

1. "Commercial nursery" means the use of land, buildings or structures for the growing and/or storing of flowers, fruit trees, ornamental trees, vegetable plants, shrubs, trees and similar vegetation for the purpose of transplanting, for use as stock or grafting, and includes the retail sale or wholesale distribution of such items directly from the premises/lot.
Integrated Planning
California’s New Water Use Efficiency and Drought Planning Legislation: Implications for Regulators

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Drought/Conservation Milestones

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Requirements summarized and organized by primary goal

Appendix A: Summarize Actions Mandated by Legislation

Appendix B: Major State Agency Tasks for Implementation

Appendix C: Major Water Supplier Tasks for Implementation

Developed by Dept. of Water Resources, State Water Resources Control Board
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  - CII Landscape Irrigation with dedicated meters (2022)
  - Water Loss Standard (2020)
  - Variances (e.g., seasonal pop.; recycled water; evap. coolers)

\(^1\) Urban Water Suppliers; defined as utilities with more than 3,000 service connections or more than 3,000 acre-feet per year.
Indoor Standard Set in Statute
- 55 gpcd until 1/1/2025
- 52.5 gpcd until 1/1/2030
- 50 gpcd after 1/1/2030

Dept. of Water Resources completes indoor water use study and report, with recommendations to legislature by 1/1/2021
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<th>(Ccf)</th>
<th>(acre-feet)</th>
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<td>Residential Indoor Use</td>
<td>55</td>
<td>3.419 billion</td>
<td>4,570,856</td>
<td>10,493</td>
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<td>Outdoor Irrigation Use</td>
<td>45</td>
<td>2.797 billion</td>
<td>3,739,305</td>
<td>8,585</td>
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<td>Water Loss</td>
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<td>373 million</td>
<td>498,663</td>
<td>1,145</td>
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<td><strong>Target</strong></td>
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<td><strong>8,809,682</strong></td>
<td><strong>20,223</strong></td>
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Notes: <sup>1</sup>Budget calculations based on the following: Service area population = 170,319 (approx. 50,000 service connections); 325,851 gal/af; 748 gal/Ccf; Days per year = 365
• **Primary Regulator**
  - State Water Resources Control Board (SWRCB)
    - All urban water suppliers (public, private, regulated IOU)
  - California PUC (regulated water IOUs)

• **Progressive Approach**
  - NOVs and Information Orders (warning letters)
  - Conservation Orders (add’l requirements for compliance)
  - Administrative Civil Liability (fines; e.g., $1,000/day)
• Reconcile drought management requirements with CPUC Tariff Rule 14.1
• Reconcile future test year sales forecasts with required annual budgets
  – What to do if budget target (plus CII use) is (much) more or less than adopted sales forecast in most recent GRC
    ▪ Higher = lower rates in test year
    ▪ Lower = higher rates in test year, but must resolve conflict w/SWRCB enforcement
Variances and thresholds of significance will be developed for each of the following unique water uses:

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**Urban Retail Water Supplier’s Urban Water Use Objective** (CWC §10609.20(c))

- Aggregate estimated efficient indoor residential water use
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- Aggregate estimated efficient water losses
- Aggregate estimated water use for variances approved by the State Water Board

**Allowable Bonus Incentive Adjustments** (CWC §10609.20(d))

- Volume of potable reuse water from existing facility, with completed environmental review by January 1, 2019, that becomes operational by January 1, 2022, not to exceed 15% of urban water use objective
- Volume of potable reuse water from new facility, not to exceed 10% of urban water use objective

**Urban Retail Water Supplier’s “adjusted” urban water use objective** for annual reporting purposes and comparison to the actual water use in the previous year