



Making Conservation a Way of Life

Elizabeth Lovsted, PE

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Background

- May 9, 2016, Governor Brown Issued Executive Order B-37-16 entitled “Making Conservation A California Way of Life”
- Four basic elements of the Order:
 - *Use Water More Wisely*
 - *Eliminate Water Waste*
 - *Strengthen Local Drought Resilience*
 - *Improve Agricultural Water Use Efficiency and Drought Planning*
- Formation of Urban Advisory Group (UAG) to review and provide input on first three elements
 - *Approximately 35 water agencies and NGO’s selected*
 - *Technical sub-groups also established*

Executive Order Directives

Use Water More Wisely (Directives #1 through #3)

- Adjust emergency conservation regulations and develop proposal that builds off 25% conservation goal
- Establish long-term water use efficiency “targets” for agencies by establishing standards for indoor water use, outdoor water use and CII (commercial, industrial institutional)
- Permanently require monthly reporting: usage, conservation levels, enforcement

Executive Order Directives

Eliminate Water Waste (Directives #4 through #7)

- Permanently prohibit water waste practices
- Minimize system leaks
- Improve management and prioritize capital projects to reduce water waste
- Certify innovative water conservation and water loss detection and control technologies

Executive Order Directives

Strengthen Local Drought Resilience (Directives #8 through #10)

- DWR to strengthen requirements for urban water shortage contingency plans (WSCPs)
- Create common standards and planning for at least five years of drought
- Facilitate improved drought planning for small water suppliers and rural communities

Executive Order Directives

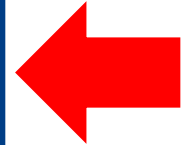
Improve Ag Water Use Efficiency and Drought Planning (Directives #11 through #13)

- DWR and California Department of Food and Agriculture to update existing requirements for Agricultural Water Management Plans (AWMP)
- Requirement for preparation of a permanent AWMP for suppliers with over 10,000 acres of land under irrigation

Draft Framework and Implementation of Executive Order

- Current Status

Draft Framework Report: “Making Water Conservation a California Way of Life” released November 30, 2016



- UAG has met three times (with fourth meeting planned December 7, 2016) to review elements of framework
- Framework includes long-term water use efficiency targets, water loss prevention, WSCP requirements, Ag Water Mgmt.
- Public Draft comments were due by December 19, 2016, for DWR and State Board consideration in Final Report
- DWR and State Board will submit and **administrative draft report to the Governor by Jan 20, 2017**

Strengthen Local Drought Resilience

- Update contents of Urban Water Management Plan (UWMP)
 - Conduct a 5-year drought risk assessment
 - Evaluations criteria used to conduct assessment will be locally applicable
- Prepare Water Shortage Contingency Plan (WSCP)
 - Define methodology and evaluation criteria used to conduct Annual Water Budget Forecast
 - Include six standard shortage levels and shortage response actions for each shortage level
 - Communication plan
 - Implementation authorities
 - Financial plan for drought conditions
- Annual Assessment Water

Issues and Concerns: Strengthen Local Drought Resilience

- Recognize the benefits of drought resilient, hydrologically independent supplies
 - Should be considered fully reliable under all historical drought hydrology and plausible climate change effects
 - Examples: potable reuse, recycled water and desalination
 - May not experience extreme shortage conditions due to drought or climate change

Executive Order Was Specific on Long-term Efficiency Targets



“These water use targets shall be customized to the unique conditions of each water agency, shall generate more statewide water conservation greater than existing requirements, and shall strengthen standards for:

- a. Indoor residential per capita water use;
- b. Outdoor irrigation, in a manner that incorporates landscape area, local climate and new satellite imagery data;
- c. Commercial, Industrial, and Institutional (CII) water use, and
- d. Water loss through leaks”

Draft Framework Report Requirements for Water Use Efficiency Targets

- State agencies will establish new water use targets or performance measures based upon strengthened standards in four areas:
 - **Indoor residential per capita use**
 - **Outdoor irrigation incorporating landscape area and climate**
 - Water lost through leaks
 - **Commercial/Industrial/Institutional (CII)**
- Must increase targets beyond the “20% by 2020” under SB X7-7
- Also requires permanent monthly reporting

Water Use Efficiency Target - Indoor and Outdoor Use, Losses

- An aggregate indoor and outdoor use target and losses in AF/Year will be calculated for each retail agency

$$\text{Target Amount} = (\text{Indoor Standard}) + (\text{Outdoor Standard}) + (\text{Losses})$$

- State will provide landscape area measurements and Evapotranspiration (Eto) data for each agency by 2018
- Excludes Commercial/Industrial (except landscaping)

Indoor Residential Portion of Target

$$\text{Indoor Target} = (\# \text{ of Residents}) \times (\text{Indoor GPCD standard})$$

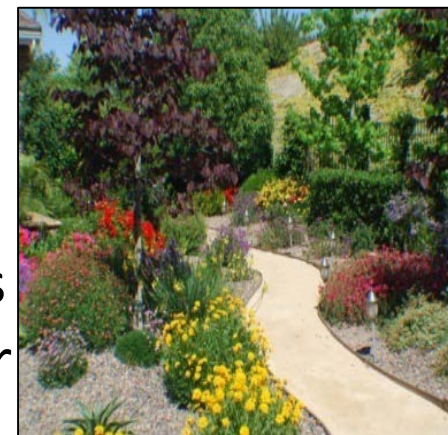
- Proposed initial standard of 55 GPCD
 - DWR and State Board will gather additional data on indoor water use
- Potentially revise 55 GPCD standard downward in 2018
- Compliance required in 2025
- State will reevaluate every five years thereafter



Outdoor Irrigation Portion of Target

$$\text{Outdoor Target} = (\text{Annual Evapotranspiration-Eto}) \times (\text{Landscape Area}) \times (\text{Evapotranspiration Adjustment Factor})$$

- Evapotranspiration or Eto
 - A measured weather factor of solar radiation, temperature, humidity, wind - plant transpiration
- Evapotranspiration Adjustment Factor or “ETAF”
 - Level of water use applied based upon landscape type
- The Model Water Efficient Landscape Ordinances (MWELO) use ETAF to establish water budgets for landscapes

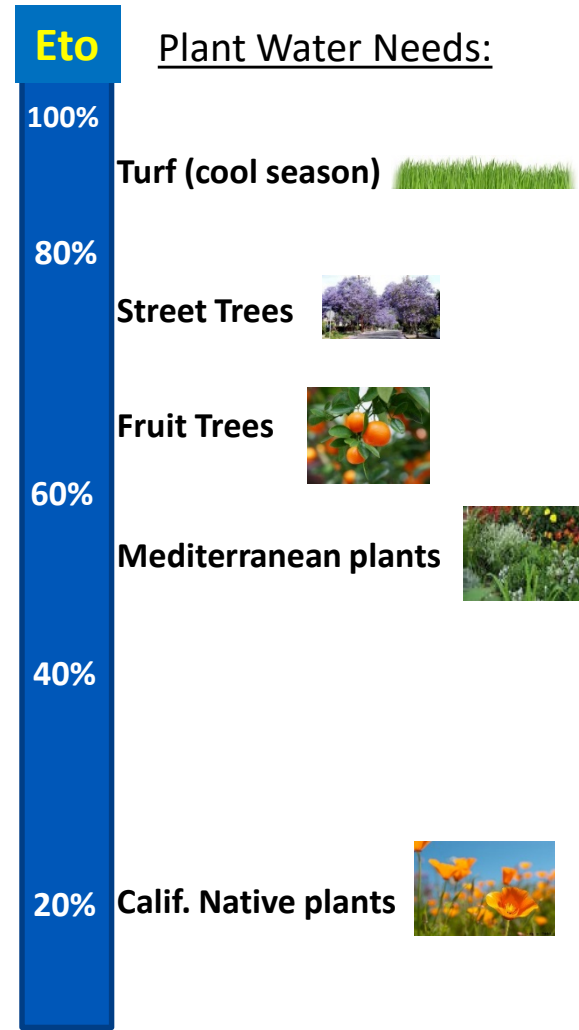


Outdoor Target Variables

Outdoor Efficiency Target:

- **Evapotranspiration (Eto):** averaged across the individual agency service area
- **Landscape Area:** includes landscape area for the specific agency
- **ETAF (Evapotranspiration Adjustment Factor):** Sets a water allowance for irrigation based upon a landscape type (in the State's proposal, age)

Special Landscapes	1.00
<u>Current & New MWELO</u>	
Existing Residential	.80
Existing Commercial	.70
New Residential	.55
New Commercial	.45



State Proposed Initial Application of Evapotranspiration Adjustment Factors

– Applied to individual parcels in a agency’s service area based upon age and aggregated to calculate target:

- | | |
|-----------------------|-----------------------------------|
| – Pre-2010 landscapes | 0.8 |
| – 2010 to 2015 | 0.7 |
| – Post-2015 | 0.55 <i>Residential</i> |
| | 0.45 <i>Commercial Irrigation</i> |
| – Special Landscapes* | 1.0 |

Derived From
State **Model**
Water
Efficient
Landscape
Ordinances
(MWELOs)

(*includes play fields, areas irrigated with recycled water, etc.)

Outdoor Irrigation Portion of Target

- All suppliers receive land area imagery data from DWR at the end of 2018
 - DWR and State Board will review landscape area applied water analysis between 2018 and 2020
- Final landscape standards (Evapotranspiration Adjustment Factors) set by DWR and State Board in 2020
- Compliance required in 2025
- State will reevaluate landscape standards every five years thereafter



Water Loss Standard Portion of Target

$$\text{Loss Target} = (\text{Loss Standard per Connection}) \times (\text{Number of Connections})$$

- Establish water loss standard through SB 555 process:
 - Account for infrastructure age and condition
 - Include real and apparent losses
- Water loss standard and target set by 2020, compliance required in 2025
- State will reevaluate standard every five years thereafter



Commercial, Industrial and Institutional (CII) – Performance Measures

- No volumetric standard or target, but requires three Performance Measures:
 1. Classify all CII accounts by North American Industry Classification System (NAICS) code or other system
 2. Require CII accounts with certain size landscape areas to have separate metering
 - Irrigated areas to be incorporated into outdoor target
 3. Require audits and water management plans for certain CII customers based on usage, percentage, accounts etc.
- State to issue “Regulations and Guidelines” for CII Performance Measures by end of 2018
 - Public process with CII Workgroup



Required Progress Reporting on Target Compliance

- In 2019, suppliers required to submit a limited annual progress report:
 - Progress toward interim targets, CII performance measures
- 2020 Urban Water Management Plan to include plan for meeting 2025 Targets
- Starting in 2022, comprehensive annual progress report:
 - Calculation of progress toward final 2025 targets (indoor, outdoor, losses) and CII performance standards
 - If not progressing, narrative description of actions the will take to meet targets by 2025



Enforcement of Efficiency Standards

- Suppliers submit 2025 compliance report on water use targets - Enforcement would start in 2026
- Suppliers that do not meet 2025 targets would be subject to enforcement by SWRCB
- SWRCB enforcement could potentially include:
 - Information Orders or Conservation Orders
 - Cease and Desist Orders
 - Administrative Civil Liability penalties (fines)
- Enforcement from State would occur at the water agency level (not customers)



Issues and Concerns: Long-term Efficiency Target Process

- Target approach may not work for all agencies:
 - Aerial imagery to get landscape area may not be accurate in some areas - “irrigated vs. irrigable”
 - Areas with older landscaping (pre-1992) should get a higher Evapotranspiration Adjustment Factor (ETAF)
 - Older housing stock may pose unique issues (swamp coolers)
- Should Indirect Potable Reuse be counted as conservation toward meeting efficiency target?



Issues and Concerns: Long-term Efficiency Target Process (cont'd)

- Concern with State's ability to deliver accurate and representative data (landscape area, Eto)
- How is growth considered (population and landscaped areas)?
- Commercial/Industrial Performance Standards - Impacts to economic growth
- Continuous downward ratcheting of standards - Water rights?



Next Steps

- Report finalized - February 2017
- Emergency Regulation – February 2017
- Rulemaking 2017
 - Reporting and restrictions
- Legislation 2017-2018
 - UWMP Requirements
 - WSCP Requirements
 - Water Use Efficiency Targets
- Develop landscape data 2017-2018
 - Pilot study
 - Develop data for all suppliers
- Reevaluate Water Use Efficiency Targets – 2018
- Proposed progress reporting -2019
- Compliance 2025 (Updated targets)



Contact Information

Elizabeth Lovsted
Director of Water Supply Planning
(951) 928-3777 Ext. 4307

lovstede@emwd.org