



Santa Margarita
Water District

MWDOC Planning & Operations Committee

February 14, 2022

Proposed Water Efficiency Standards & Water Use Objective

Updated Analysis*

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*August 2, 2021 – SMWD presented initial analysis to MWDOC



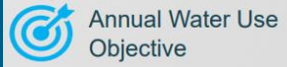
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Presentation Topics

1. 2018 Legislation: “Making Water Conservation a CA Way of Life”
 - AB 1668 / SB 606 – Annual Water Use Objectives & Efficiency Standards
2. Model: Water Use Objective vs. SMWD Water Use
 - Open model to use & modify scenarios
3. Open Policy Questions




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Supplier needs only
to meet total water
use objective; not
individual objectives.

AB 1668 / SB 606 Legislation Overview

Legislation requires DWR & SWRCB to establish:

- **Water Use Objective (WUO):**  Annual Water Use Objective
 - Indoor residential water use
 - Outdoor residential use
 - Outdoor water use with Dedicated Irrigation Meters (DIM)
 - Water loss on the utility distribution system
- Commercial performance measures and classification system
- Appropriate variances for unique water uses



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AB 1668 / SB 606 Legislation Overview

Compliance: Annually, compare actual water use vs. Water Use Objective



The Legislation requires the long-term water use efficiency standards be set at a level designed so that the aggregate water use objectives will exceed the 2020 statewide conservation targets (CWC §10609.2(d) AB).

Proposed Standards:

- Developed by separate agencies/departments
- Individually aggressive and ramp down over time

Open Question: To what scope has the composite WUO been analyzed to assess costs, impacts, and practicality?



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AB 1668 / SB 606 Implementation Schedule

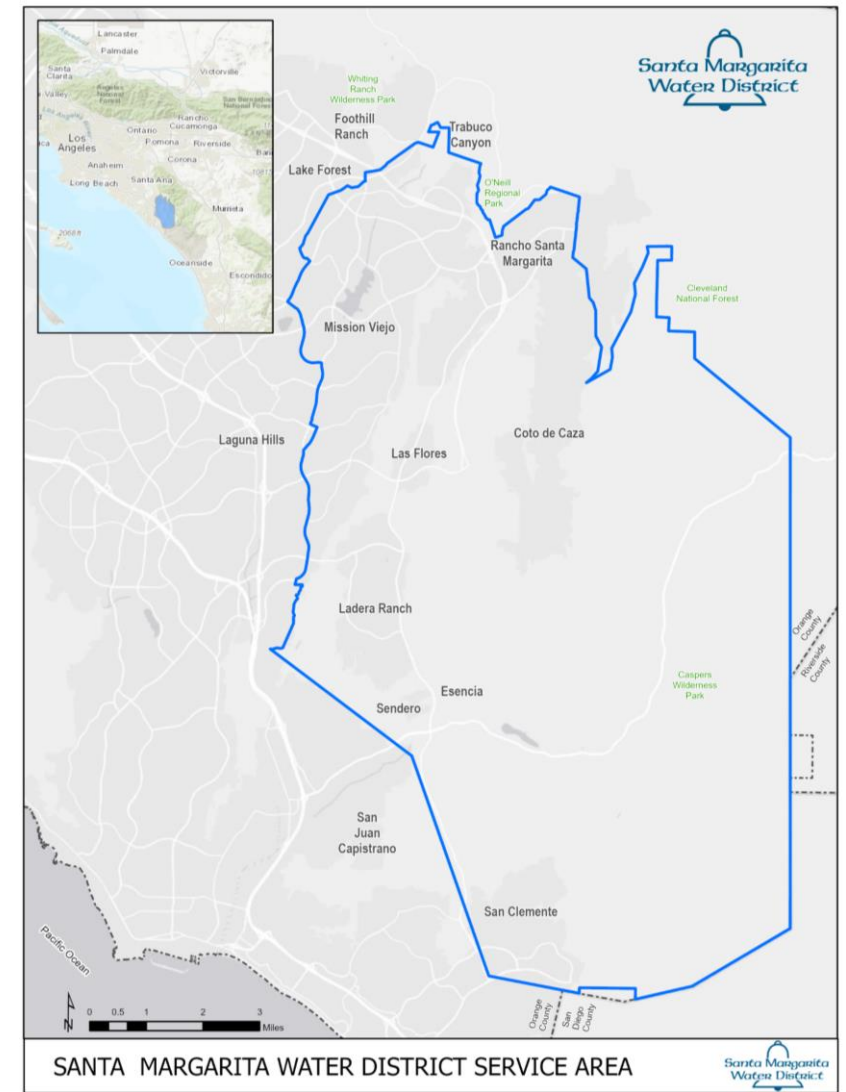
Component	Timing	Lead Agency
Permanent monthly reporting	Since October 1, 2020	SWRCB
Recommendation on indoor standard	January 2021 11/30/22	DWR
Recommendation on standards for WUO	October 2021 Final Report Pending	DWR
Residential landscape area measurements	January 2021 ?	DWR
Water loss standards	End of 2020 Formal Rulemaking	SWRCB
Adoption of standards for WUO	July 2022	SWRCB
Annual water shortage assessment	June 2022	DWR



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Context for Modeling SMWD WUO Compliance*

- Achieved a 39% reduction, per SBx7-7
- 25% of demand met with recycled water
- Budget-based tiered rate structure, implemented in 2015.
 - Landscape area measurements (LAM) for all residential (Res) and dedicated irrigation meter (DIM) accounts
 - Took ~1 year + \$1.5 million to obtain
 - State **is not** providing DIM LAM data



* Note:
This analysis does not yet factor in San Juan Capistrano. SMWD annexed CSJC utility in November 2021.

SMWD	Total	% Potable	% Non-Potable
Connections	57,550	97.5%	2.5%
Demand (AF)	30,100	78%	22%



Indoor Water Use (GPCD) Standard

DWR report to the Legislature 11/30/21

Year	CA Water Code	AB 1434 (<i>shelved</i>)	DWR / SWRCB Recommendation
2020	55	48	55
2025	52.5	44	47
2030	50	40	42

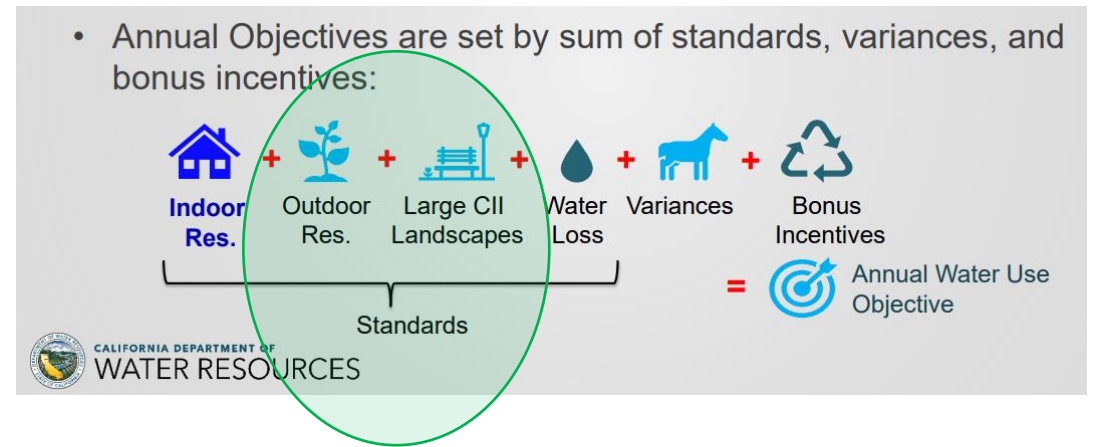
Estimate of indoor GPCD for SMWD ranges from ~45-60

Major Concerns:

- Process: Estimates disregard errors or uncertainties, along with a limited sample size of suppliers
- *Qualitative*, not a *quantitative*, review of impacts to water and wastewater systems conducted
- Adverse impacts / limited consideration for cost-effectiveness

Watch: Requires Legislation to change the tiered standards....

Outdoor Water Use Objectives



Major Issues with Current DWR Methodology:

1) DWR Landscape Area Measurements omits significant area

DWR Provided 2,333 Acres vs. SMWD Measured 7,428 Acres

101,640,612	DWR Supplied AREA (sq.ft.)
2,333	DWR AREA (Acres)
31.4%	% DWR Area to District Area
36,168	residential parcels ID'd by DWR
1,618	resid. parcels short - new growth

Omissions: new development since 2018 and Dedicated Irrigation area (parks, slopes, parkways)

2) ET adjustment factor should not ramp down, per Legislation.

0.8 ET Factor (good) → 0.65 in 2030 (not feasible) (Recycled Water = 1.0 ET Factor, very good)

3) Process to develop standards omits data; incorrectly assuming/holding irrigation performance to MWELO *design* criteria, despite 4 out of 5 homes built before MWELO; water suppliers have limited land-use authority.

4) Adverse impacts → shade trees, DACs, affordability



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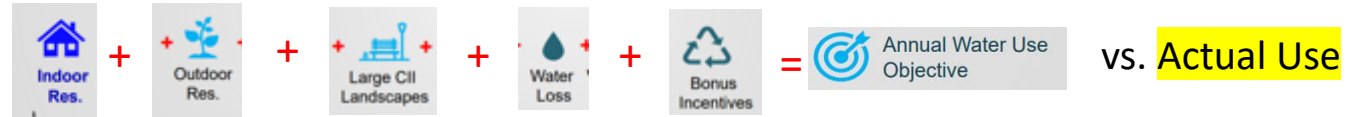
Modeling Results:

Using 2021 Actuals
Vs.
Water Use Objective

77% under budget

Modeling Water Use Objectives*

* Using SMWD landscape area measurements



Agency Specific Water Use Standards & Objective vs ACTUAL Water Use								
RESIDENTIAL	RES Indoor Budget (AF)	RES Outdoor Budget (AF)	CII Ded Irrig Budget (AF)	Water Losses (AF)	Potable Reuse Bonus	Total Water Use OBJ (AF)	CY21 Water Use (AF)	% of State Budget
							14,901	
							2,637	
	10,057	7,164				17,222	17,538	102%
								Single-Family Multi-Family
DED. IRRIGATION			CII Ded Irrig Budget (AF)	Water Losses (AF)		Total Water Use OBJ (AF)	CY21 Water Use (AF)	% of State Budget
							5,133	83%
							7,709	47%
			22,613				12,842	57%
								Potable Irrigation Recycled Irrigation
WL				1,322			1,499	113%
TOTAL	10,057	7,164	22,613	1,322		41,157	31,879	77%
					2,000	43,157		74%
								without PR Bonus with PR Bonus





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Modeling Water Use Objectives*

* Using SMWD landscape area measurements



Modeling Future:

Proposed Standards

55 GPCD

0.8 ET Factor

1.0 RW ET Factor

2030 Standards

42 GPCD

0.65 ET Factor

1.0 RW ET Factor

SMWD	Current Standards	2030 Proposed Standards	ET Factor Performance
WUO Overall Compliance	77%	88%	
Residential	102%	130%	0.94
Landscape DIM - Potable	83%	102%	0.66
Landscape DIM - Recycled	47%	47%	0.47
Water Loss	113%	113%	

Ratcheting down ET Factor to 0.65 by 2030 is not feasible.

- Professionally managed city, commercial, & HOA landscapes may have a hard time meeting this standard
- For residential “compliance”, and additional 4,500 Acre-feet needs to be saved (30% savings)
 - In SMWD, 1,000 homes participated in turf removal rebate in 10 years (3% of parcels)
 - At this pace, 60 years needed to have ¼ of parcels remove some turf
 - Would cost >\$80 million in customer + public agency funds

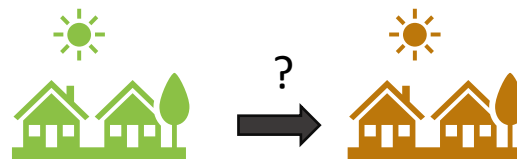


Outdoor Standard & Policy Questions

0.65 ET Factor has adverse impacts that need to be evaluated before standards are arbitrarily lowered.
Examples: tree and landscape health, affordability, DAC, and water supplier costs & compliance

Cost / Compliance / Social & Environmental Justice Issues are Complex and interwoven

- State expects landscapes in a service area achieve a 0.65 ET Factor by 2030
 - Individual landowners make landscaping decisions
 - Residential landscape projects cost \$5-\$30 per Sq.Ft. → easily a \$10,000 project
 - Alternative to renovation is senescence → brown lawns & landscape degradation
 - Urban heating issues
 - Affordability & ratepayer issues
 - All ratepayers bear cost, regardless of whether a ratepayer uses rebates/programs offered by utility (e.g. MWD rate increase of 8%)
 - DWR discounts brown lawns in its landscape area measurement!
 - Future issue as more landscapes “retire”; do suppliers get reduced LAM?





Commercial, Industrial, & Institutional (CII) Performance Measures

DWR Draft Recommendations (comments due 2/15/22)

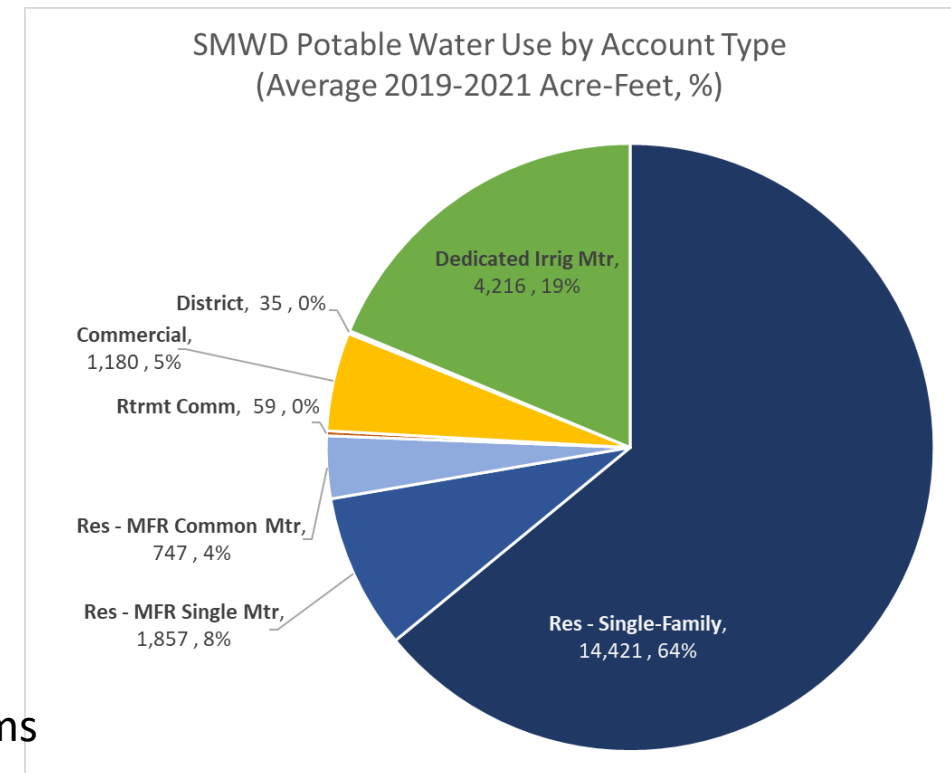
- CII Mixed Use Meter → Dedicated Irrigation Meter threshold = 1 Acre
- CII Classification System
- CII Best Management Practices Performance Measures
- CII In-Lieu Technologies
- Suppliers to identify and outreach to top CII users

- CII proposals, as laid-out, read overly-complex
- How much work for what savings potential?

Support Market-Based vs. Prescriptive CII Actions

How MWD, MWDOC, and retailers have provided incentives to CII customers

- Maintains agency and customer flexibility/choice
- Efficiency with resources and time; recognizes retailers limited land-use authority
- Concern w/ CII Classification system & Billing Systems





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Thank You. Questions?

Model available to modify and use for your agency

Email: NateA@smwd.com

Outdoor Budget Calculations & Standard using District Irrigable Area						Agency Specific Water Use Standards & Objective vs ACTUAL Water Use									
RESIDENTIAL	COUNT	DISTRICT IRRIG AREA (sq.ft.)	IRRIG AREA (acres)	Irrig Area %	Outdoor Objective (AF)	RESIDENTIAL	RES Indoor Budget (AF)	RES Outdoor Budget (AF)	CII Ded Irrig Budget (AF)	Water Losses (AF)	Potable Reuse Credit	Total Water Use OBJ (AF)	FY20 Water Use (AF)	% of State Budget	
		RESIDENTIAL ACCOUNTS													
SFR (SF)			0.00		0										
Multi-Fam (MFS)			0.00		0										
RESIDENTIAL	0	0	0.00	#DIV/0!	0		0	0					0	#DIV/0!	
DED. IRRIGATION	COUNT	DISTRICT IRRIG AREA (sq.ft.)	IRRIG AREA (acres)	Irrig Area %	Outdoor Objective (AF)	DED. IRRIGATION			CII Ded Irrig Budget (AF)	Water Losses (AF)		Total Water Use OBJ (AF)	FY20 Water Use (AF)	% of State Budget	
		DEDICATED IRRIGATION ACCOUNTS													
DOM IRRIGATION			0.00	#DIV/0!	0									#DIV/0!	
NON-DOM IRRIGATION			0.00	#DIV/0!	0									#DIV/0!	
TOTAL DEDICATED IRRIGATION	0	0	0.00	#DIV/0!	0				0				0	#DIV/0!	
WL	Water Losses					WL	0							#DIV/0!	
TOTAL	TOTAL Water Use Objective					TOTAL	0	0	0	0		0	0	#DIV/0!	without PR Credit
												0	0	#DIV/0!	with PR Credit

Dedicated Irrigation Acre-Feet per Acre
 #DIV/0!
 #DIV/0!
 #DIV/0!

Water Use Objective - Variables	
ET Adjustment Factor (ETAF)	0.7
Recycled Water ETAF	0.7 or 1.0?
ET	
Rainfall	
Effective Rainfall %	0.25
Indoor GPCD	55 or 47?
Population	
Pop adj %	1.00

	DWR Supplied AREA (sq.ft.)
0	DWR AREA (Acres)
#DIV/0!	% DWR Area to District Area residential parcels ID'd by DWR resid. parcels short - new growth

Water Loss Data	
2020 gal/connection/day	
5 Year AVG gal/connection/day	
connections	
Water Loss Standard Calc	0
Unavoidable Annual Real Losses (UARL)	

Potable Reuse CREDIT
Potable Reuse credit not to exceed 10% or 15% of Objective
0.1 10% OR 15% IPR Credit Cap
0 AF, 10% cap
Potable Reuse volume (AF)

Bright Yellow = agency specific inputs