



• A Foundation for Water Use Efficiency - the • Allocation-based Rate Structure

State Water Resources Control Board

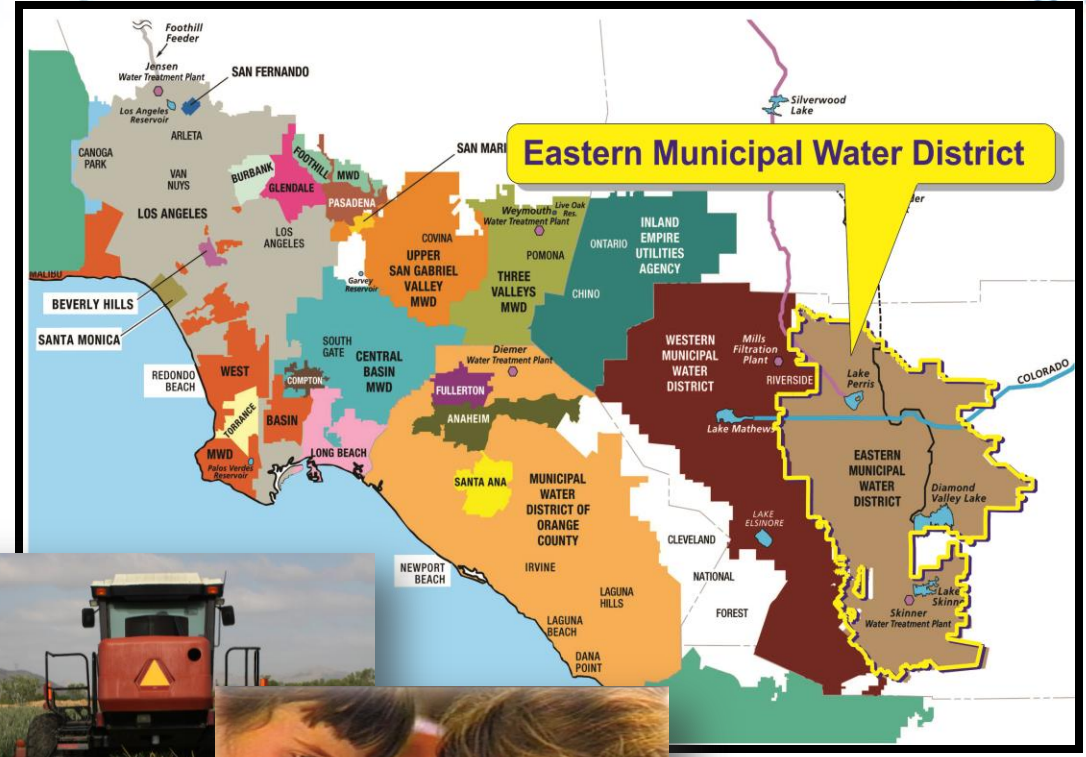
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Overview of EMWD



- Established in 1950
- 542 square-mile service area - population of 768,000
- Serving seven cities and unincorporated areas
- One of 26 MWD member agencies
- High-growth area
- Dry region - 11.0" to 12.6" of rain per year



Foundation of EMWD Water Use Efficiency - the Allocation-based Rate Structure



- Commonly Used Names:

- “Allocation-based Rate Structure”
- “Water Budget Rate Structure”
- “Conservation-based Rate Structure”
- “Tiered Rate Structure”

} Same Basic Rate Structure

- Creates an “Allocation” or “Water Budget” for each customer account based upon reasonable needs and efficient use.

- Uses Economic Incentives: Water is priced to customer *lower for use within allocation* – much *higher for use over allocation*



Unique features of a Budget-based Rate Structure



- **Individualized:** based on land use specific uses (indoor needs) and landscape needs (weather adjusted).
- **Encourages Efficient Use Pattern:** within allocation through a sharply tiered pricing system
 - Rewards efficiency
 - Communicates cost of water over-use
- **Fair Premise:** those who over-use pay more, those who use only what they need, pay much less



Unique features (cont'd.)



- **Identifies Over-use customers:** water bill functions as a “report card” – focus staff resources
- **Provides Appropriate Nexus:** Revenue from over-use tiers reinvested in water use efficiency programs and higher cost supplies
- **Addresses Urban Runoff:** Allocations shown to curb over-irrigation; revenues from over-use tiers can be used for urban runoff control programs.

Identifies excessive and wasteful water use

Provides target for efficiency

Special Information:
Water Use Efficiency Ordinance 72.23 is now effective!
Penalties may be applied for repeated water waste (runoff).
Water-wise landscaping for new development is now required.
See www.usewaterwisely.org for more information.

Summary of Charges			
Balance Forward		0.00	
Water Charges		210.79	
Sewer Charges		22.37	
ACTUAL ACCOUNT BALANCE		233.16	

Meter Information			
Meter No.	Previous Read	Current Read	
61321344	1926	1978	

Water Usage History			
Current Year:			
Read Date	# Days	Billing Units	Average GPD
Mar 25	26	50	37400
Feb 25	29	11	8228
Jan 27	20	11	8228
Previous Year:			
Read Date	# Days	Billing Units	Average GPD
Mar 3	31	10	7480
Feb 01	28	8	5984
Jan 04	32	18	13464

* 1 Billing Unit (BU) = 748 Gallons
+ GPD = Gallons per Day

Water Budget Information	
Indoor Allocation	7 BU
Outdoor Allocation	18 BU
Based on Household Size	3 people
Landscaping Area	6,000 sq ft

How it Works - EMWD's Individualized Allocations

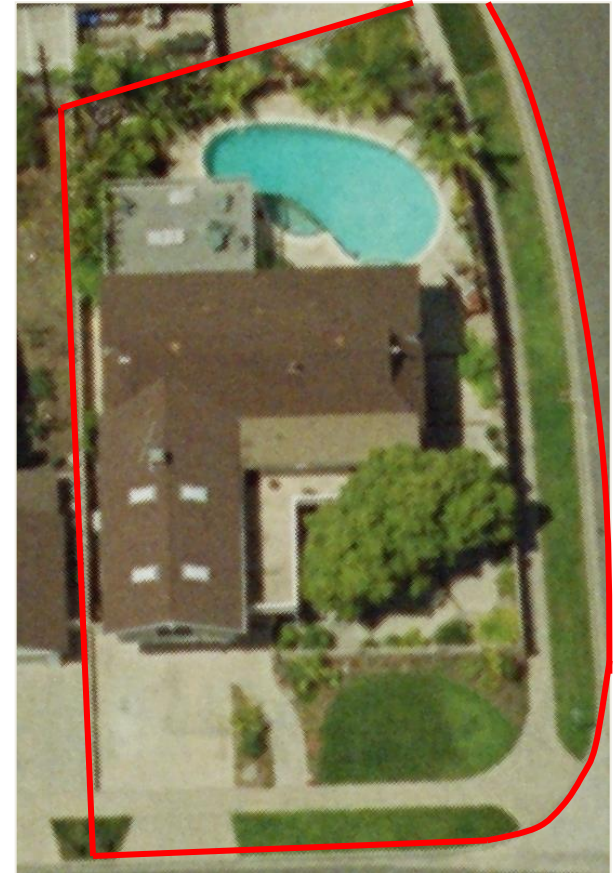


Allocation = Indoor Needs + Outdoor Needs (seasonal) + Variances

- *EMWD may also apply an Indoor and/or Outdoor Drought Factor*

Indoor Use Allocations based upon:

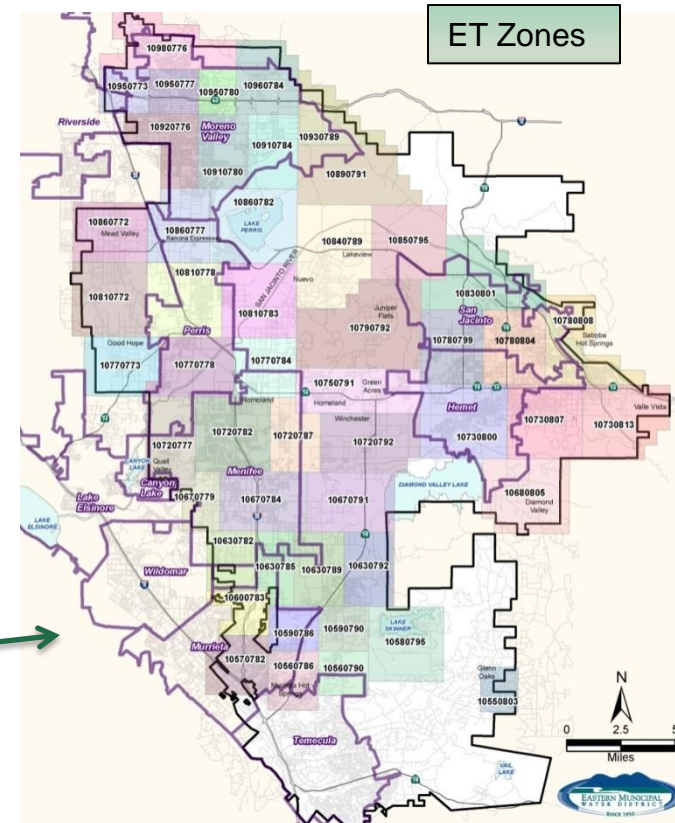
- 3 persons per household for single family residential
- 2 persons per household for multi-family residential
- Variance available for additional occupants and special circumstances



Individualized Allocations (cont'd.)

Outdoor Use Allocations based on:

- Irrigated area and Evapotranspiration (ET)
- Irrigated area is:
 - Estimated using parcel information
 - Measured using infrared aerial photography
 - Verified in the field where necessary
- Variances available for pools, large animals and other needs.
- Evapotranspiration for 50 separate zones.
- Account Adjustment (Conservation) Factor:
 - 1.00 - before September 2008
 - 0.80 - September 2008 and January 2010
 - 0.70 - after January 2010



Four Pricing Tiers



Tier 1: Indoor Use

\$1.73/unit*

- Budget = Number of Persons x 60 Gallons Per Day

Tier 2: Outdoor Use

\$3.16/unit

- Budget = Landscaped Area and Evapotranspiration

Tier 3: Excessive

\$5.66/unit

- Up to 50% use in excess of Indoor and Outdoor budgets

Tier 4: Wasteful

\$10.36/unit

- Over 50% in excess of Indoor and Outdoor budgets

**Within
Allocation**

Over-allocation

* One billing unit equals 100 cubic feet

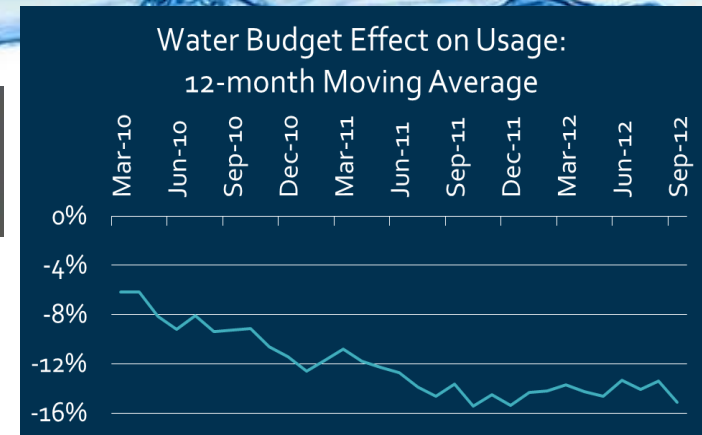
Studying the Efficacy of EMWD's Budget-based Rate Structure



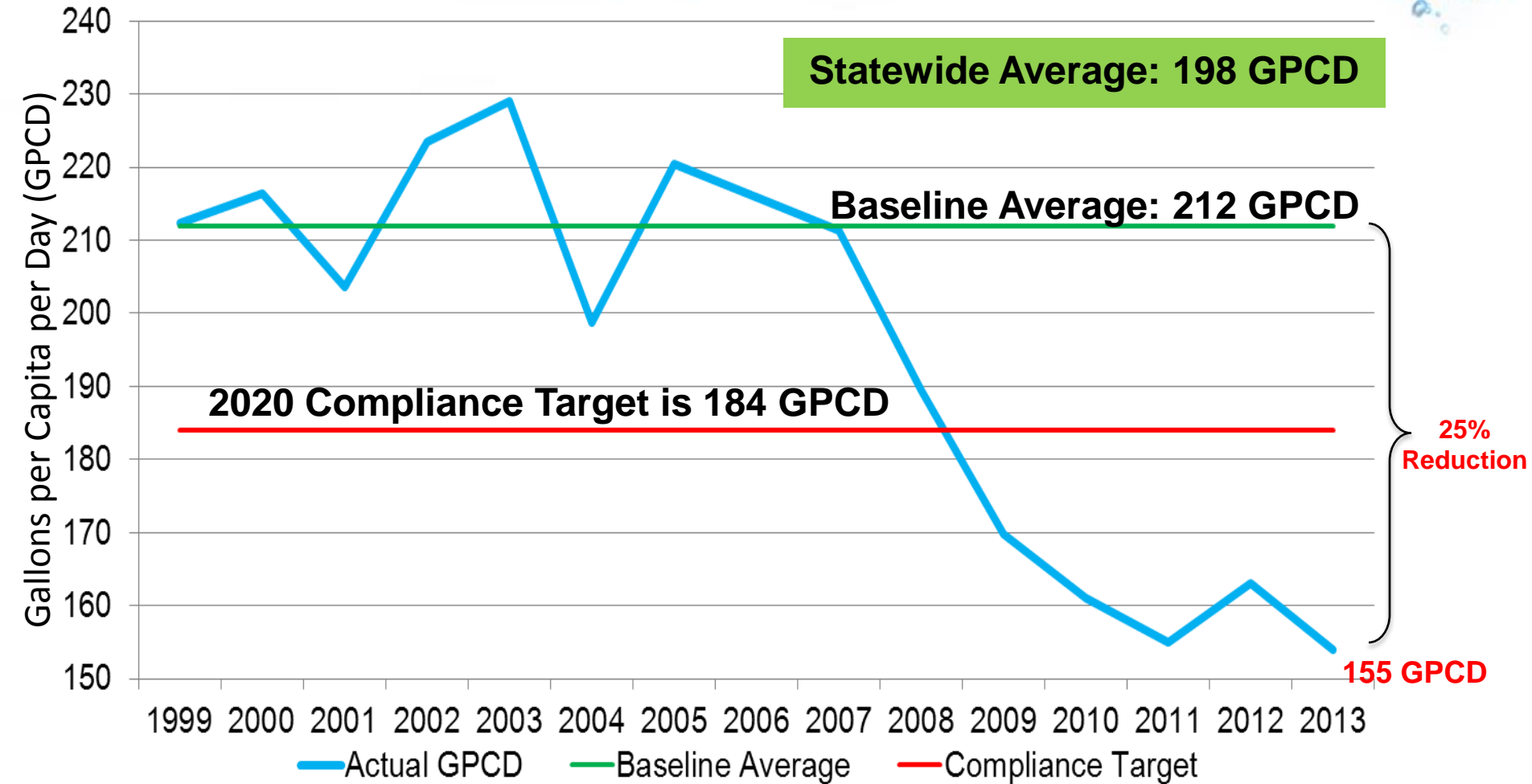
- University of California Riverside 2013 Study – three year history:

“Average prices rose less than 4% under water budgeting, but would have had to rise 34% under flat rate pricing to achieve the same demand effect.”

“Controlling for the effects of inflation and the recent economic downturn, EMWD's Budget-based rate structure resulted in at least a 15% reduction in water use.”



EMWD Water Use Efficiency Results



What do these Water Use Efficiency Efforts Translate To?



Annual Savings

- *Residential Accounts*
 - **30 gal/capita/day reduction**
 - **16,085 af/yr savings**



38,604 Mwh
5,724 tons/yr
CO2e GHG



- *Landscape Accounts*
 - **0.8 af/acre/year reduction**
 - **3,557 af/yr savings**



8,536 Mwh
1,266 tons/yr
CO2e GHG



Total Annual Water Cost Savings - \$10,990,000

Total Annual Energy Cost Savings - \$2,671,000

Allocation-based Rate Structure:

- Encourages efficient use and is fair to customers
- Communicates the value of water
- Identifies wasteful use of water – two way communication
- Urban runoff benefits and energy savings benefits
- **Has resulted in demonstrated 15% savings**
 - Higher savings achievable when paired with other water use efficiency programs





- EASTERN MUNICIPAL WATER DISTRICT

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