



EASTERN MUNICIPAL WATER DISTRICT

Budget-Based Rate Structure Implementation and Outreach Efforts

Jolene Walsh, Senior Director of Public & Governmental Affairs
Eastern Municipal Water District

July 2014

- EMWD Overview
- About Budget-Based Rate Structures
- Goals for Rate Structure
- Development & Deployment Steps
- Outreach Efforts
- Customer Response & Results
- Ongoing Efforts
- Additional Benefits

EASTERN MUNICIPAL WATER DISTRICT

Mission Statement

Our mission is to provide safe and reliable water and wastewater services to our community in an economical, efficient, and responsible manner, now and in the future.

What is a Budget-based Rate Structure?

- **Commonly Used Names:**

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

Same Basic Rate Structure

- **Individualized:** based on indoor needs and landscape needs (weather adjusted)
- **Encourages Efficient Use Pattern:** Sharply tiered pricing system
 - Rewards efficiency
 - Communicates high cost of water over-use
- **Uses Fair Premise:** those who over-use pay more, those who use only what they need, pay much less
- **Are there other types of rate structures that encourage conservation??** Yes, but Allocation-based structures met EMWD’s goals.

Unique Features of Budget-based Rate Structure



- **Identifies Over-use Customers:** Water bill functions as a “report card”
- **Provides Appropriate Nexus:** Revenue from over-use tiers reinvested in water use efficiency programs
- **Enforces Water Shortage Contingency Plan:** Reduces outdoor - and possibly indoor - budgets based on drought status



P.O. Box 8300
Perris, CA 92572-8300
WITHIN SOUTHERN CALIFORNIA 800.426.3883

CUSTOMER NAME: CUSTOMER NAME
ACCOUNT NUMBER: 159282-02
SERVICE ADDRESS: STREET ADDRESS
SERVICE PERIOD: 02/25/09 - 03/25/09
BILL DATE: 03/27/09

NO OF DAYS: 28
NEXT READ DATE: 04/22/09

Identifies excessive and wasteful water use

Meter Information			
Meter No.	Previous Read	Current Read	
61321344	1928	1978	

Water Usage History			
Current Year:			
Read Date	# Days	Billing Units	Average Usage in Gal. * GPD
Mar 25	28	50	37400
Feb 25	29	11	8228
Jan 27	20	11	8228

Previous Year:			
Read Date	# Days	Billing Units	Average Usage in Gal. * 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
Based on Household Size: 3 people

Outdoor Allocation: 18 BU
Landscape Area: 6,000 sqft

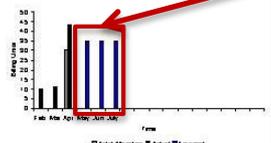
Current Water Charges			
Period/Quantity	Rate/Unit	Amount (\$)	
Water Service	28 Day(s) / .346/day	9.69	
Indoor Use	7 billing units / 1.30100/unit	9.11	
Outdoor Use	18 billing units / 2.38100/unit	42.86	
Excessive Wasteful	13 billing units / 4.26700/unit	55.47	
	12 billing units / 7.80500/unit	93.66	
Total Water Charges	50 billing units	210.79	

Current Sewer Charges			
Period/Quantity	Rate/Unit	Amount (\$)	
Sewer Service	28 Day(s) / .799/day	22.37	

Provides target for efficiency

Total Current Charges	233.16
ACTUAL ACCOUNT BALANCE	233.16

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.



EMWD Goals for Rate Structure



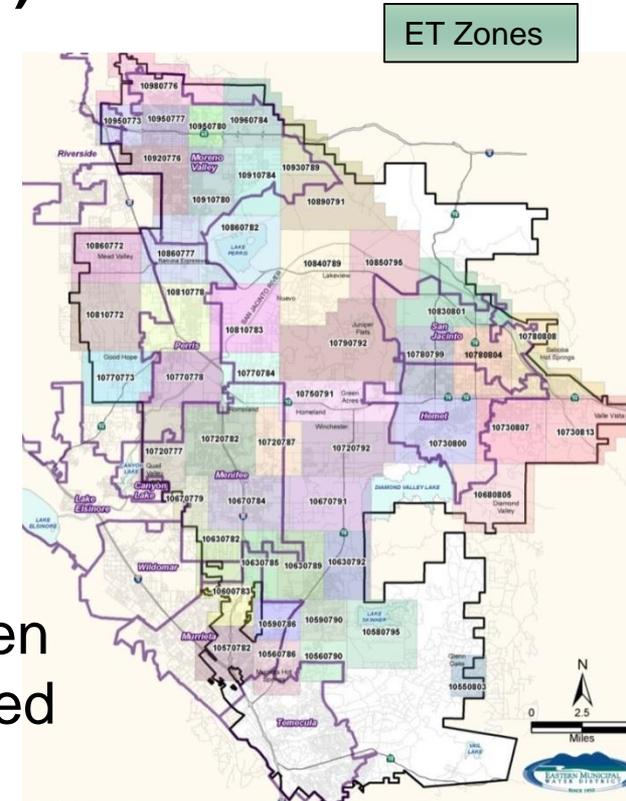
- **Reduce demand per capita**
 - Potential for rapid development in EMWD's large service area
 - Uncertainty of imported water supplies
 - Alternate water supplies vary widely in cost
- **Previous attempt to change flat rate structure to block rate structure in the early 1990's failed**
 - Implemented in summer
 - Block rates unfair to customers with large properties, even if they are efficient
- **Budget-based tiered rates charge wasteful customers more and water-efficient customers less**



- **Default Household Sizes**
 - 3 persons per household for single family
 - 2 persons per household for multi-family
 - Based on Census data
- **60 gallons per person, per day**
 - Based on industry standards – high end
- **Variances available** for additional occupants, special circumstances, etc.
 - Documentation required for:
 - Licensed care facilities, medical needs, etc.
- No indoor budget for landscape customers



- **Irrigated area and Evapotranspiration (ET) data** for 50 separate zones from CIMIS
 - Irrigated area estimated using County parcel data
 - Irrigated area measured using aerial photography or manually in the field
- **Variations available** for revised landscape areas, new landscapes, pools, large animals, and other needs
 - Documentation required for new landscapes
- **Conservation Factor** applied based on when home was built to accommodate for increased water use efficiency technologies



Four Pricing Tiers



Rate consultant helped determine what each tier would be set at based on the number of customers expected to be within each tier with the goal to remain revenue neutral.

- 80% of the customers were estimated to stay within their water budgets.

Tier 1: Indoor Use

\$1.73/billing unit*

- Budget = Number of Persons x 60 Gallons Per Day
- Rate is less than existing flat rate.

Tier 2: Outdoor Use

\$3.16/billing unit

- Budget = Landscaped Area and ET data

Tier 3: Excessive

\$5.66/billing unit

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

Tier 4: Wasteful

\$10.36/billing unit

- Over 50% in excess of Indoor and Outdoor budgets

Within allocation

Over-allocation

One billing unit equals 100 cubic feet or 748 gallons

Development and Deployment Steps



- **Hired rate consultant** (Red Oak) to provide assistance in developing rate structure and water budget parameters to be revenue neutral
- **Targeted Residential and Landscape Customers**
 - Approximately 136,000 total customers in 2009
 - 95% were residential and 2% were landscape
 - Approx. 132,000 total customers targeted
 - Account for 90% of retail sales
- **One-year implementation process**
 - Billing engine changes
 - Generic to customized budget strategy
 - Added 10 customer service staff
 - Outreach efforts, website updates
 - Engaged customers once rate structure and rates had been developed
- **Budget of \$1.5 million** (\$11 per account one-time cost)
 - Actual cost: \$3 million (\$22 per account)



Outreach Timeline



- **Communication efforts** began in May 2008
- **Proposition 218 Public Hearing** held January 2009
 - Notice to customers required 45 days prior to Public Hearing
- **“Shadow bills”** delivered to all customers in February and March 2009 with bills
 - Included customized information to all customers about how the new rate structure would specifically affect them if implemented with that billing statement
- **First bill** sent out April 10, 2009



Shadow Bills



- Gave the ability for each customer to understand how the new rate structure would impact them specifically

Account #: xxxxxx-xx

UNDER BUDGET Sample Shadow Bill Letter

February 2009

IMPORTANT INFORMATION ABOUT WATER RATE CHANGES*

Board of Directors
President
 Ronald W. Sullivan
Vice President and Treasurer
 Joseph J. Kuchler, CPA
Philip E. Paule
 Randy A. Record
 David J. Shawson
Board Secretary
 Rosemarie V. Howell
General Manager
 Anthony J. Pack
Director of the Metropolitan Water District of So. Calif.
 Randy A. Record
Legal Counsel
 Redwine and Sherrill

In April 2009, EMWD will be implementing a water budget-based tiered rate structure. Water budget-based rate structures promote fairness for customers who use water efficiently and discourage customers who waste water.

The new rate structure will be implemented in two phases. Phase I will establish generalized water budgets with tiered rates. Generalized water budgets will provide a typical household with enough water to meet indoor and outdoor needs, and will be adjusted according to weather conditions and lot size. **The indoor water budget is based on three people per single family home and two people per multi-family residence, with each person using 60 gallons per day. The outdoor water budget is determined by weather information, which could vary each month, and the estimated irrigated square footage of your landscape, which we've calculated based on County parcel data and GIS data.** (Please see below for your estimated area.)

Phase II will refine individualized water budgets with indoor and outdoor water allocations determined for each account based on actual household size, landscape area, and weather conditions.

Under the new rate structure, if you stay within your budgeted amount, you will pay the base rates associated with indoor and outdoor use. If you use more than your budgeted amount, you will pay higher rates for excess and wasteful usage. The chart below shows what your current bill would be under the new rate structure.

Your current water use = **4** billing units
 Your current water use charges = **\$18.89**

NEW Water Budget-Based Rate Structure
(effective March 2009 usage/April 2009 bill)

Your water budget for January 2009 = **15** billing units
 Estimated irrigated area of your landscape = **3,000** square feet

Water Charges	Period/Quantity	Rate/Unit	Amount (\$)
Water Service	31 day(s)	\$0.346/day	\$10.73
Indoor Use	4 billing units (BU)	\$1.301/BU	\$5.20
Outdoor Use	0 BU	\$2.381/BU	\$0.00
Excessive	0 BU	\$4.207/BU	\$0.00
Wasteful	0 BU	\$7.805/BU	\$0.00
Total Water Charges	4 billing units		\$15.93

DO NOT PAY THIS AMOUNT

Customers will see their budget and estimated irrigated area.

- continued on reverse side -

Mailing Address: Post Office Box 8300 Perris, CA 92572-8300 Telephone: (951) 928-3777 Fax: (951) 928-6177
Location: 2270 Trumble Road Perris, CA 92570 Internet: www.emwd.org

Account #: xxxxxx-xx

OVER BUDGET Sample Shadow Bill Letter

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Your current water use = **27** billing units
 Your current water use charges = **\$65.78**

NEW Water Budget-Based Rate Structure
(effective March 2009 usage/April 2009 bill)

Your water budget for January 2009 = **15** billing units
 Estimated irrigated area of your landscape = **3,000** square feet

Water Charges	Period/Quantity	Rate/Unit	Amount (\$)
Water Service	31 day(s)	\$0.346/day	\$10.73
Indoor Use	7 billing units (BU)	\$1.301/BU	\$9.11
Outdoor Use	8 BU	\$2.381/BU	\$19.05
Excessive	8 BU	\$4.207/BU	\$33.14
Wasteful	4 BU	\$7.805/BU	\$31.22
Total Water Charges	27 billing units		\$104.25

DO NOT PAY THIS AMOUNT

Customers will see their budget and estimated irrigated area.

- continued on reverse side -

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Location: 2270 Trumble Road Perris, CA 92570 Internet: www.emwd.org

Outreach Materials



- Newsletters
- Bill messages
- Website posts
 - Online bill estimator
- Prop 218 Notice
- Press releases
- Community Workshops
- Imprinted Billing Envelopes

EMWD Reports...
Special Edition - December 2008

Important Information about Water Budgets and Tiered Rates

EMWD will implement water budget-based tiered rate structures in two phases, pending approval from the Board of Directors. The first phase would implement generalized water budget-based tiered rates in April 2009. The second phase would implement individualized water budgets in 2010.

Generalized water budgets are based on average household size, estimated irrigated area, and daily weather information. Individualized water budgets are based on actual household size, actual irrigated area, and daily weather information.

If approved, the generalized indoor water budget for a single family residential customer will be based on 3 people, each using 60 gallons per day. Therefore, the indoor water budget will apply to the first 7 billing units per month.

The outdoor water budget will be based on the amount of water needed to sustain turf grass - which requires the most water - on the estimated irrigated area. The amount of water needed is determined by weather information called evapotranspiration (ET) data. See inset for more information on ET data.

Since the outdoor budget will be based on actual weather conditions, the outdoor water budget will vary month to month. For example, in December, less water may be required for irrigation than in July. The chart below represents a sample annual budget for indoor and outdoor use. The bottom (blue) portion represents the indoor use budget, and the top (green) portion represents the outdoor use budget.

Low to moderate water users may see a **DECREASE** in their water bills if water-budget based tiered rates are adopted.

What is ET data? Evapotranspiration (ET) data is the amount of water that a plant needs to replace what was lost during the day. Since temperatures vary throughout EMWD's service area, ET data gives residents exactly what they need for their specific area.

Sample bills and details outlined on the implementing tiered rates is an important water efficiency consideration with rate schedule information on www.emwd.org.

For better personal information, please bring your February or March water bills.

To RSVP, please call or email
Phone: 951-928-3777, ext. 4226
E-mail: community@emwd.org

EMWD Newsletter

Community Workshop Flier

EASTERN MUNICIPAL WATER DISTRICT

Tiered Water Rates Workshops

Customers can review tiered rates information and use a water budget calculator at www.emwd.org/water_service/UnderstandingTieredRates.html

A new billing structure that includes water budgets and tiered rates becomes effective in March 2009, which customers will see beginning on their bills in April. Customer service representatives will be on hand at three workshops to answer questions and make hands-on calculations.

- **Thursday, March 5**, 6 pm at EMWD's board room, 2270 Trumble Road, Perris
- **Tuesday, March 10**, 6 pm at Towngate Community Center, 13100 Arbor Park Lane, Moreno Valley
- **Wednesday, March 11**, 6 pm at Diamond Valley Lake Visitors' Center, 2325 Searl Parkway, Hemet.

WATER USE IT WISELY

EASTERN MUNICIPAL WATER DISTRICT
P.O. BOX 8300
PERRIS, CA 92372-8300

ADDRESS SERVICE REQUESTED

Important Water Rate Information Enclosed!
Si Usted desea obtener esta información en Español, llame al teléfono (951) 928-3777, ext. 2052.

PRESORTED FIRST CLASS U.S. POSTAGE PAID Eastern Municipal Water District

EMWD

Red Imprint on Billing Envelopes

Online Water Budget & Bill Estimator



- One of the most effective communication tools for customers to understand rate structure as well as impact of water use
- Enabled customer service staff to “walk” a customer through different water use scenarios

Water Budget & Bill Estimator

1. Select a Month:

January
February
March
April
May

2. Double-click each item to enter information:

Household size:

Irrigated area:
Your lot size minus non-irrigated area (house footprint, garage, driveway, patios, etc.)

Compare water use (billing units):
Enter the number of billing units you'd like to compare to the amount budgeted for your household and property.

Water Budget vs. Water Use Billing Units

Category	Indoor	Outdoor	Excessive	Wasteful	Total
My Budget*	7	3	0	0	10
Comparison Use	7	3	5	1	16

Water Budget vs. Water Use Monthly Bill

Category	Daily Service Charge*	Indoor	Outdoor	Excessive	Wasteful	Total
My Budget	10	10	10	0	0	30
Comparison Use	10	10	10	20	5	55

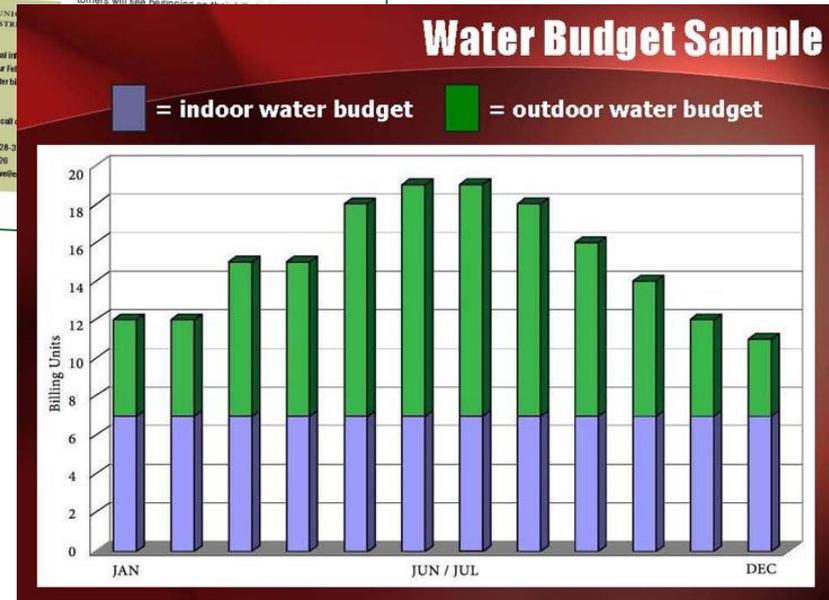
*Mouse over chart data to see values on both charts.

*Daily Service Charge for residential meters 1" or smaller.

Community Workshops



- Held **3 workshops** in different locations within service area to inform customers of upcoming rate change
- Included Conservation and Customer Service staff
 - Access to billing system at EMWD location
- Minimal customer attendance
- Provided excellent opportunities for one-on-one customer service
 - Processed variances
- Customers rarely attend Board meetings



From December 2008 through April 2009, EMWD received:

- 111 letters of protest for public hearing
- More than **2,000** customer calls about new rates
- **4,300** variance requests

Today, EMWD receives:

- Approx. **1000** variance requests every month
 - EMWD has approximately **430** account turnovers every month
 - EMWD has approximately **137,000** customers on water budgets



“You’re not giving me enough water.”

“My grass will die.”

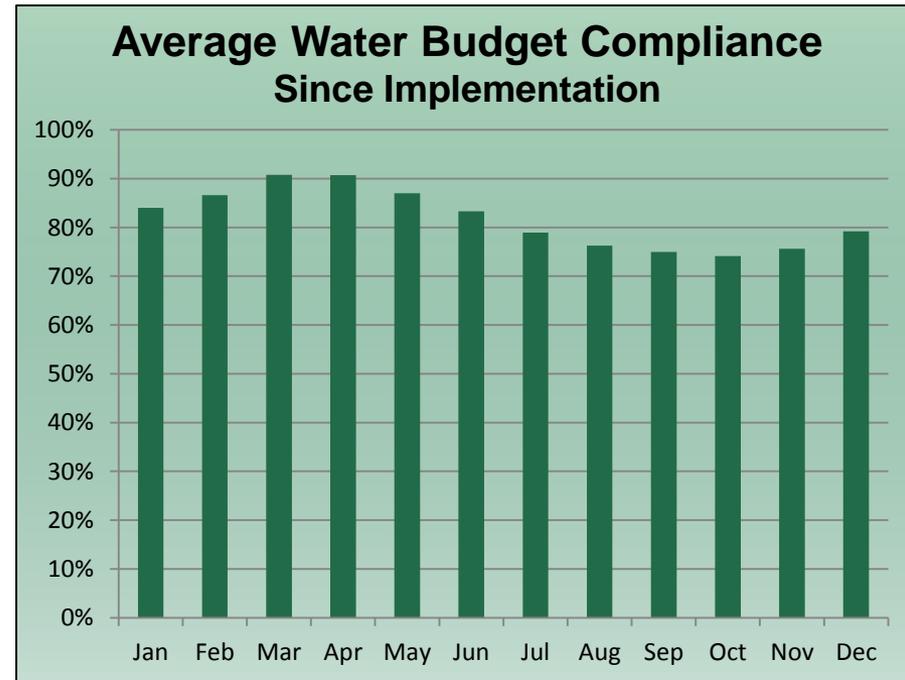
“Can we do this with sewer rates?”

- Customers with extravagant watering patterns had the greatest difficulty accepting the rate structure
- Customers who remained in Tier 1 – mainly seniors – liked the rate structure best because Tier 1 (Indoor use) rate is lower than the existing flat rate
- Primary customer complaints:
 - Over budget
 - Default household size incorrect

Budget Compliance and Revenues



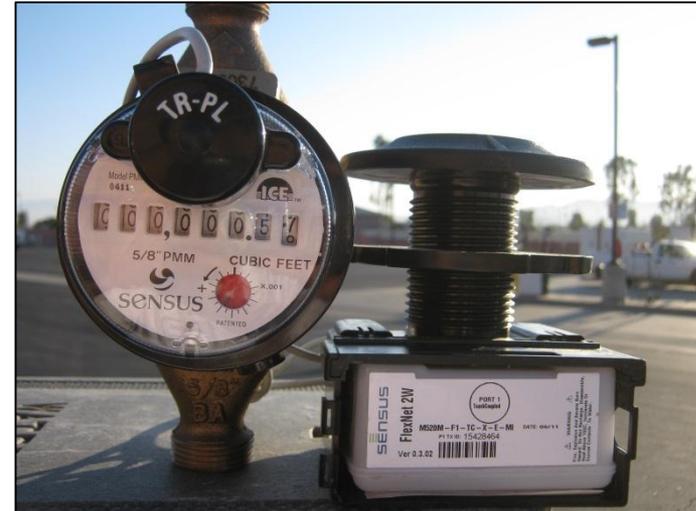
- **Expected Budget Compliance: 80%**
 - Annual Average Since Implementation: 81.2%
 - Current Compliance Fiscal Year-to-Date (Jul 13 – Apr 14): 83.3%
 - Tier 1: 31.4%
 - Tier 2: 51.9%
 - Tier 3: 13.3%
 - Tier 4: 3.4%
- **Revenue by Tier (July 13 – April 14)**
 - Revenue from over-use tiers reinvested in water use efficiency programs
 - Tier 1: 8.3%
 - Tier 2: 51.7%
 - Tier 3: 24.9%
 - Tier 4: 15%



Ongoing Efforts: Implementing Smart Meter Technology



- EMWD is in the process of converting all customers to FlexNet meters
 - Provides enhanced leak detection service
 - Assists staff in troubleshooting water use issues with customers
- FlexNet data will be integrated into EMWD's eBill system
 - Gives customers the ability to view real-time water use data and compare water use with previous cycles



Ongoing Efforts: Rate Changes



- Prop 218 Notice
 - Newsletter format
 - Explained reasons for increases in water and sewer charges
 - Introduced new fixed charge components for capital projects
 - Outlined EMWD's cost-saving efforts
 - Included drought and water shortage contingency plan information
- Revised Billing Statements
 - Includes line items for new fixed charges for capital improvement projects
 - Specifies what portion of charges are due to environmental compliance
- Looking at cost of service study

EMWDreports...

SPECIAL EDITION

MAY 2014

In This Issue:

- How a long-term drought may impact EMWD customers
- Proposed rates for 2015 & 2016
- Rate formulas
- EMWD's cost-saving efforts

California Drought Update

How it will impact EMWD customers

Thanks to EMWD's investments in water supply and reliability projects such as recycled water and desalination—in combination with our customers' efforts to be more water efficient—we do not anticipate any mandatory conservation measures this year. However, that doesn't mean that EMWD isn't impacted at all by the current drought, or that we shouldn't continue to be proactive in preparing for an extended drought, or future drought cycles.

EMWD usually receives 30-40 percent of our drinking water supply from the State Water Project (SWP) in Northern California through MWD. Due to the drought, the current SWP allocation is only 5 percent. So EMWD will need to utilize reserves in local reservoirs in addition to local groundwater supplies and imported water from MWD through the Colorado River Aqueduct. That means EMWD will have to pump water from one part of the service area to the other, resulting in higher energy costs. For more information see "Proposed Water Rates" on page 2.

If the dry weather pattern continues into the next restrictive stage of our Water Shortage Contingency Plan:

Stage 1: Supply Watch - Up to 10 percent in this stage and asking customers for use efficiency requirements and reducing landscape, or leaks that are not repaired

- Stage 3a: No variances or adjustments
- Stage 3b: Tier 3 (Excessive water use)
- Stage 3c: Tier 3 allocations eliminated

Stage 4: Mandatory Outdoor Reduction per week (June-August) or one day per week the water budget-based tiered rates as follows:

- Stage 4a: Tier 2 (Outdoor water use) but
- Stage 4b: Tier 1 budgets reduced by 5%
- Stage 4c: Tier 2 budgets eliminated

Stage 5: Mandatory Indoor Reduction - loss of supplies. Enforced through charges

- Stage 5a: Tier 1 (indoor water use) but
- Stage 5b: Tier 1 budgets reduced by 25%
- Stage 5c: Tier 1 budgets reduced by 50%

You can help us avoid higher WSCP stages by and water use efficiency requirements as well website at www.emwd.org

Notice of Public Hearing for Consideration of Rate Increases Based on Eastern Municipal Water District's Cost of Service and Cost Increases from The Metropolitan Water District of Southern California

Due to increased costs of purchased water, energy, labor, services and supplies, including environmental and regulatory costs, the Board of Directors of the Eastern Municipal Water District will conduct a public

Customer Information

CUSTOMER NAME: EMWD CUSTOMER
ACCOUNT: 123456-01
SERVICE ADDRESS: 123 MAIN ST
SERVICE PERIOD: 07/01/15 to 07/31/15
BILL DATE: 08/01/15
DUE DATE: 08/15/15

NO. OF DAYS: 30
NEXT READ DATE: 09/01/15

Summary of Charges

Balance Forward	0.00
Water Charges	\$1.37
Sewer Charges	\$5.99
TOTAL AMOUNT DUE	\$7.36

Water Usage History

Read Date	# Days	Billing Units	Usage in Gal.*	Average GPD*
Jul 31	30	18	13464	449
Jul 01	32	10	7480	234
May 30	28	10	7480	267

Previous Year:

Read Date	# Days	Billing Units	Usage in Gal.*	Average GPD*
Jul 31	33	17	12716	385
Jun 28	28	9	6732	240
May 31	29	14	10472	361

* 1 Billing Unit = 748 Gallons
 * GPD = Gallons per Day

Water Budget/Sewer Block Data

Indoor Allocation: 7 BU
 Based on Household Size: 3 people
 Outdoor Allocation: 11 BU
 Landscape Area: 3,000 sq ft
 Sewer Block: 2

Water Usage History

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Jul 31	30	18	13464	449
Jul 01	32	10	7480	234
May 30	28	10	7480	267

Previous Year:

Read Date	# Days	Billing Units	Usage in Gal.*	Average GPD*
Jul 31	33	17	12716	385
Jun 28	28	9	6732	240
May 31	29	14	10472	361

* 1 Billing Unit = 748 Gallons
 * GPD = Gallons per Day

Water Budget/Sewer Block Data

Indoor Allocation: 7 BU
 Based on Household Size: 3 people
 Outdoor Allocation: 11 BU
 Landscape Area: 3,000 sq ft
 Sewer Block: 2

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Outcome of outreach

- Fairness and equity of rate structure allowed us to implement the rate structure with customer buy-in
- Intuitive and interactive – gives customers opportunity to make adjustments based on personal information
- Increases awareness of water use, results in conservation and revenue neutrality
- Creates two-way dialogue with customers



EMWD Overview



- Established in 1950
- Agency serving:
 - Water / wastewater / recycled
- Wholesale and retail
- 542 square-mile service area
 - Population of 768,000
- Serving seven cities and unincorporated areas
- One of 26 MWD member agencies
- High-growth area
- 11.0" to 12.6" of rain per year



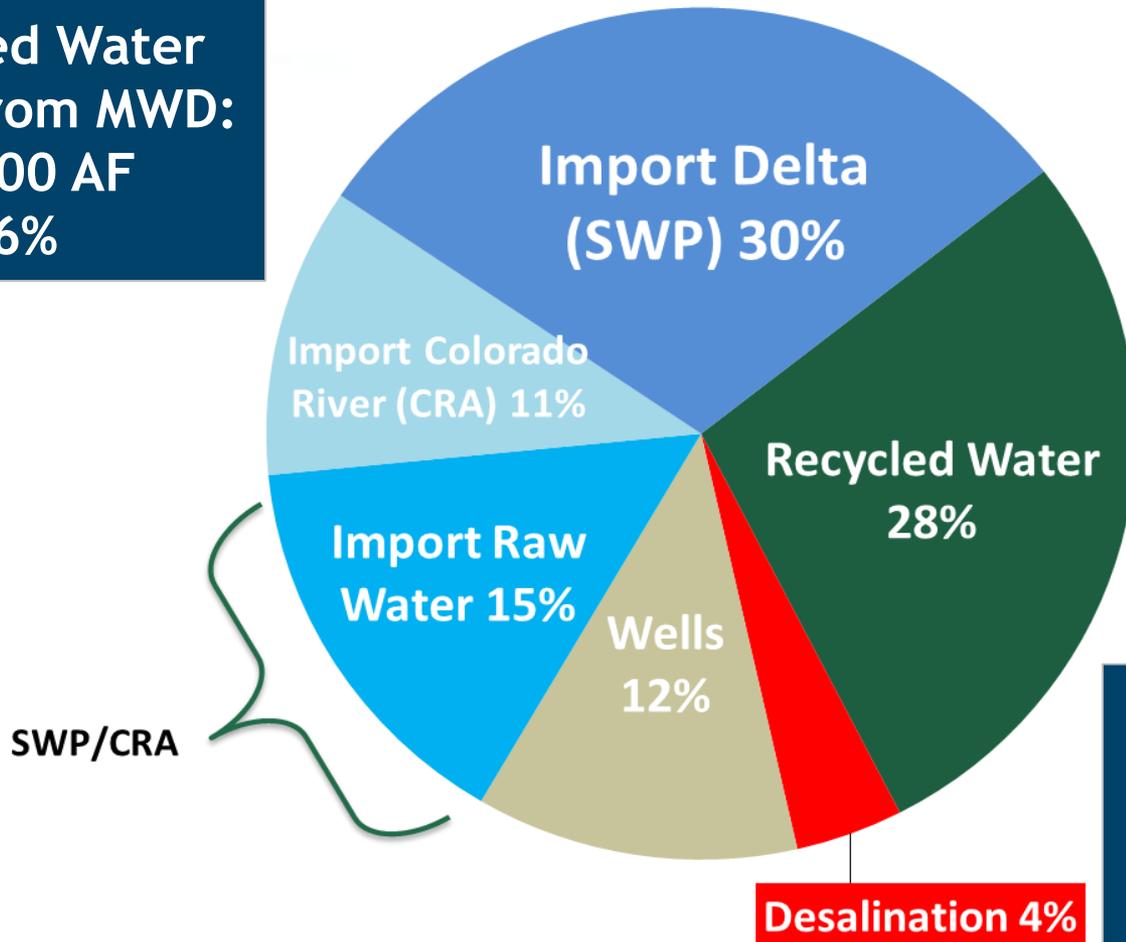
Southern California Sources of Water



EMWD's Water Supply Portfolio



**Imported Water
Supply from MWD:
71,200 AF
56%**

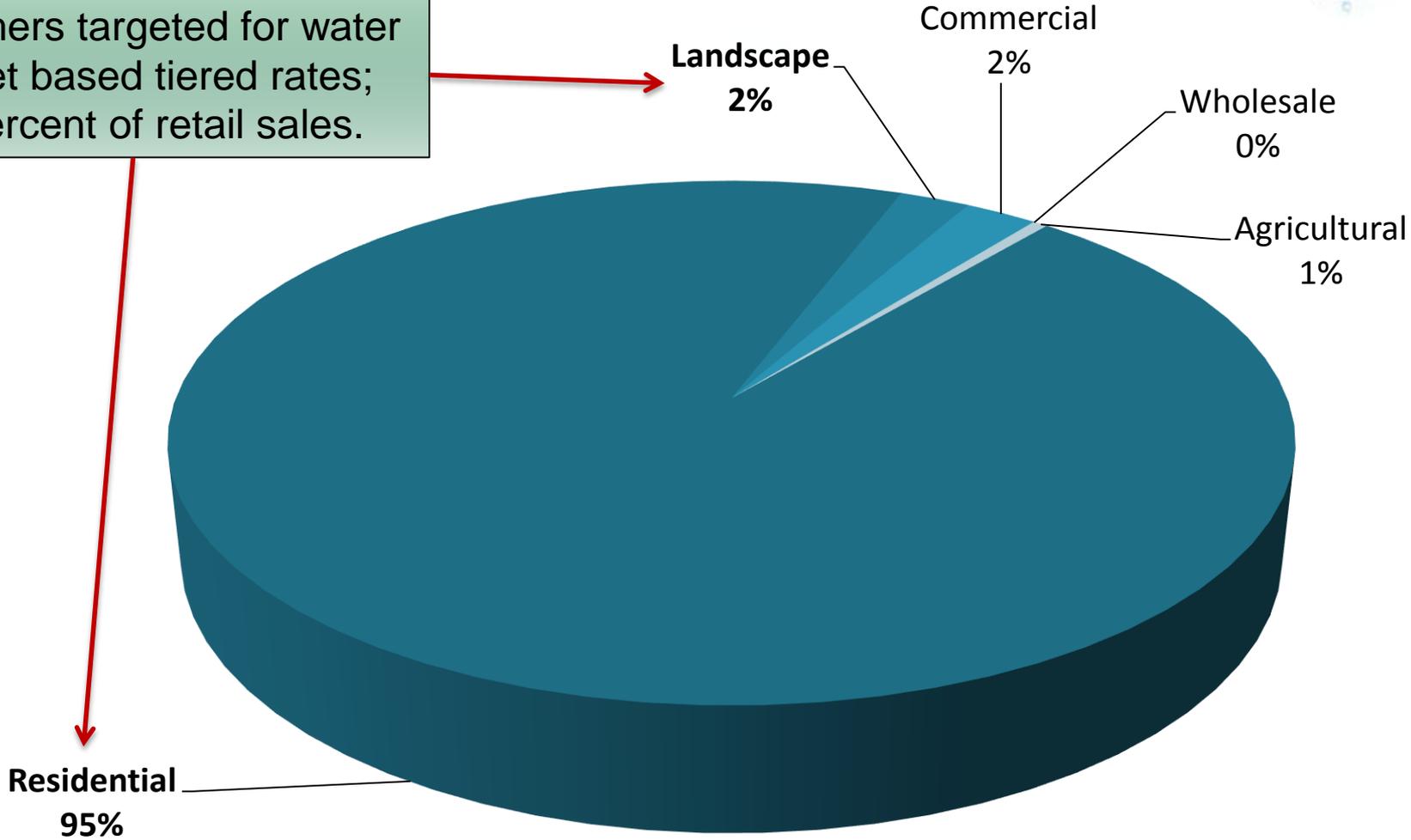


**Local Water
Supply:
56,800 AF
44%**

EMWD's Potable Water Customer Types



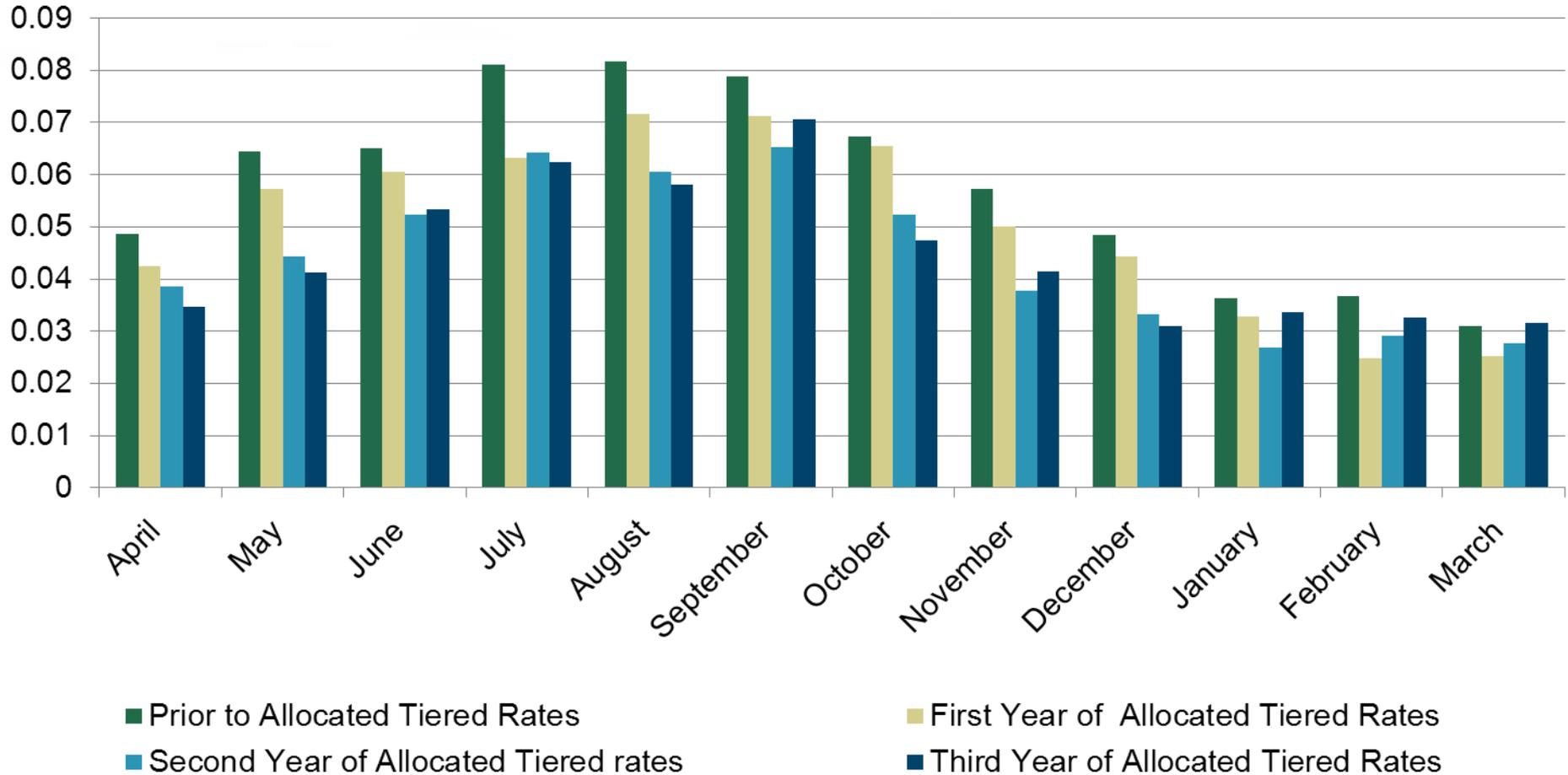
Customers targeted for water budget based tiered rates; 90 percent of retail sales.



Results (2009-2012)



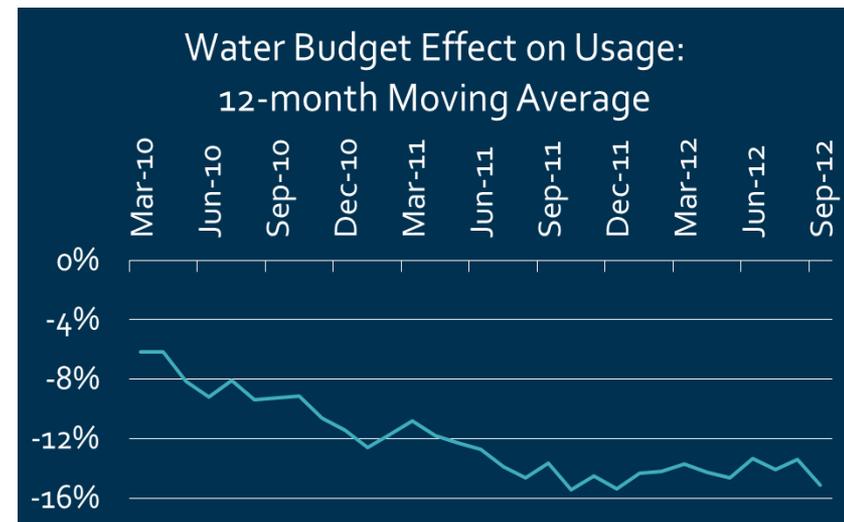
Demand per Meter - Before and After Implementation



Results (2009 - 2012) - cont.



- Study based on 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.”*



- **Household sizes inflated**
 - Sewer block rate structure implemented
- **Time-intensive variance request process**
 - Implemented online forms in 2011
- **Customer water budget vs. water use disputes**
 - Converting to remote metering – customers will be able to monitor water use online

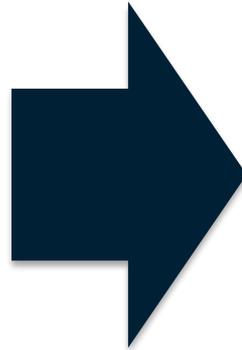


Indoor Efficiency

- Easy to understand
- Devices now readily available
- Easy to quantify savings
- No behavior changes needed
- Enforced through plumbing codes



Reaching Saturation



Outdoor Efficiency

- Requires extensive education
- Can be cost prohibitive for customer
- Behavior change required to achieve savings
- Culture of turf grass
- Difficult to enforce



A “New Normal” Required