



moulton niguel water district

Water Loss Control Program Update

Finance and Information Technology
Board Meeting
April 19, 2017

Water Loss Management Approach

- Expert Consultant institutes best practices
 - Identify Non-Revenue Water Loss Components
- Annual Water Audits by staff
 - Improved Tracking of Reported Leaks
- District Metered Area Water Loss Pilot
- Recycled System AMI Implementation
- Preparation for SB-555 Compliance



REVENUE WATER

WATER SUPPLIED	Authorized Consumption	Billed Authorized Consumption	Billed Metered Authorized Consumption Billed Unmetered Authorized Consumption	REVENUE WATER
		Unbilled Authorized Consumption	Unbilled Metered Authorized Consumption Unbilled Unmetered Authorized Consumption	
	Water Losses	Apparent Losses		Consumption metering errors
				Unauthorized consumption
		Real Losses		Leakage/overflow at service reservoirs
				Leakage from trunk mains
		Leakage from distribution mains		
		Leakage from service connections		

NON-REVENUE WATER

WATER SUPPLIED	Authorized Consumption	Billed Authorized Consumption	Billed Metered Authorized Consumption	REVENUE WATER	
			Billed Unmetered Authorized Consumption		
		Unbilled Authorized Consumption	Unbilled Metered Authorized Consumption		
			Unbilled Unmetered Authorized Consumption		
	Water Losses	Apparent Losses		Consumption metering errors	NON REVENUE WATER
				Unauthorized consumption	
		Real Losses		Leakage/overflow at service reservoirs	
				Leakage from trunk mains	
		Leakage from distribution mains			
		Leakage from service connections			



REVENUE OPTIMIZATION

REVENUE OPTIMIZATION

WATER SUPPLIED	Authorized Consumption	Billed Authorized Consumption	Billed Metered Authorized Consumption	REVENUE WATER	
			Billed Unmetered Authorized Consumption		
		Unbilled Authorized Consumption		Unbilled Metered Authorized Consumption	NON REVENUE WATER
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				Unauthorized consumption	
		Real Losses		Leakage/overflow at service reservoirs	
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	Leakage from distribution mains				
	Leakage from service connections				



REAL LOSS REDUCTION

WATER SUPPLIED	Authorized Consumption	Billed Authorized Consumption	Billed Metered Authorized Consumption Billed Unmetered Authorized Consumption	REVENUE WATER	
		Unbilled Authorized Consumption	Unbilled Metered Authorized Consumption Unbilled Unmetered Authorized Consumption		
		Water Losses	Apparent Losses	Consumption metering errors	NON REVENUE WATER
				Unauthorized consumption	
	Real Losses		Reported Leakage		
			Unreported Leakage		
			Background Leakage		

REAL LOSS REDUCTION



WATER BALANCE - FY2014/15

WATER SUPPLIED 26,819 AF (100 %)	AUTHORIZED CONSUMPTION 24,936 AF (93.0 %)	BILLED AUTHORIZED CONSUMPTION 24,910 AF (92.9 %)	REVENUE WATER 24,909AF (92.9 %)
		UNBILLED AUTHORIZED CONSUMPTION 27 AF (0.1 %)	NON-REVENUE WATER 1,909 AF (7.1 %)
		APPARENT LOSSES 182 AF (0.7 %)	
	WATER LOSSES 1,883 AF (7.0 %)	REAL LOSSES 1,701 AF (6.3 %)	



WATER BALANCE - FY2015/16

WATER SUPPLIED 23,516 AF (100 %)	AUTHORIZED CONSUMPTION	BILLED AUTHORIZED CONSUMPTION	REVENUE WATER
	21,467 AF (91.3 %)	21,438 AF (91.2 %)	21,438 AF (91.3 %)
		UNBILLED AUTHORIZED CONSUMPTION	
		30 AF (0.1 %)	
	WATER LOSSES	APPARENT LOSSES	NON-REVENUE WATER
	2,049 AF (8.7 %)	203 AF (0.9 %)	2,079 AF (8.8 %)
		REAL LOSSES	
		1,846 AF (7.8 %)	



DISTRICT METERED AREA (DMA) PILOT

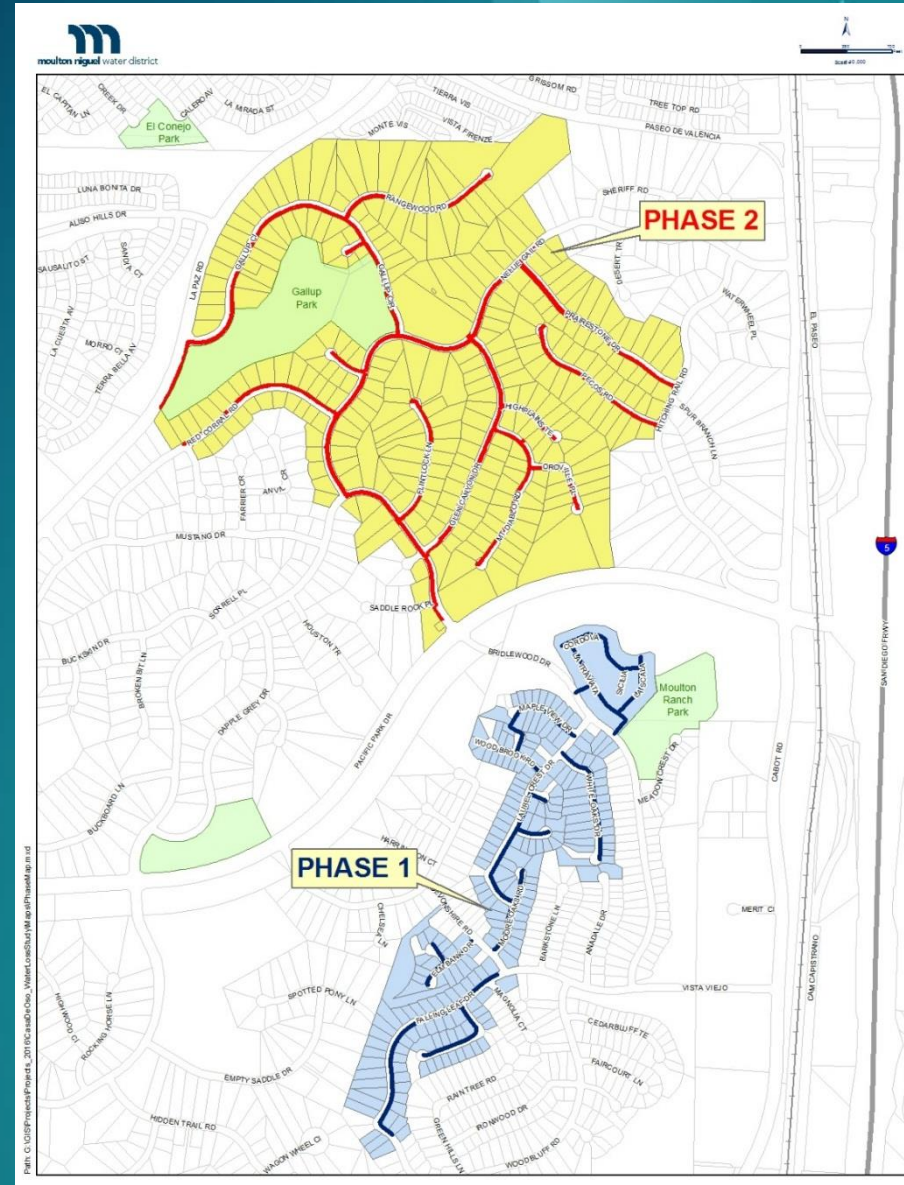
- Definition of District Metered Area - A discrete area of a distribution system usually created by the closure of valves or complete disconnection of pipe work in which the quantities of water entering and leaving the area are monitored.

Goals of the DMA Pilot

- Evaluate leak detection program to reduce water loss
- Evaluate pressure optimization to reduce water loss

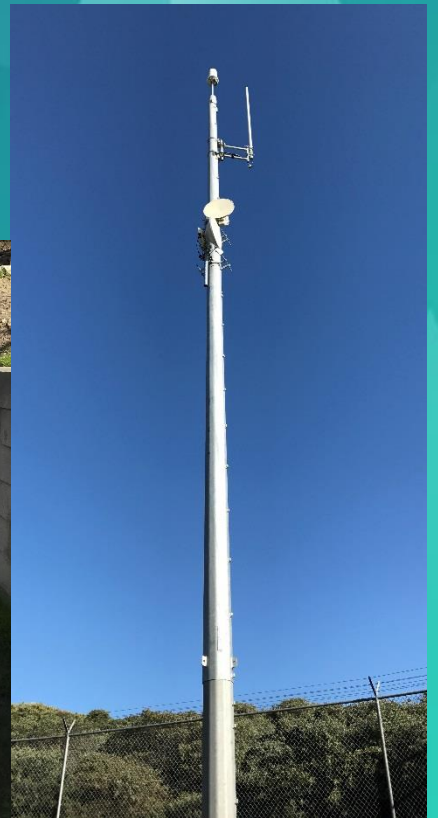
STEPS IN THE PILOT

- Multi-Departmental Collaboration
- Site Selection
- AMI Metering & New 10" Meter
- Gather System Attributes
- Collect Meter Data
- Measure Water Loss
- Pressure Optimization



TRACKING WATER LOSS WITH AMI

- Recycled System converted to AMI (1,330 radios and 6 towers)
- Hourly Consumption Data
- Leak Alerts
- Customer Portal



SB555

- Requires each urban retail water supplier, on or before October 1, 2017, and each year thereafter, to submit a completed and validated water loss audit report for the previous calendar or fiscal year
- Technical Assistance Program funded by the State to provide training and Level 1 validation for the first water audit



moulton niguel water district

CAPITAL IMPROVEMENT PROGRAM BUDGET

Fiscal Year 2017-2018

AGENDA

- FY 2016-17 CIP Budget Review
- Proposed FY 2017-18 CIP Budget
 - 10-year CIP
 - Budget Changes
 - Annual Budget
- CIP Funding

FY 2016-17 BUDGET REVIEW

- 10-year Budget - \$282.9 million
- FY 2016-17 Budget - \$46.6 million
 - Awarded Contracts - \$34.6 million*
 - Funds not yet Committed - \$12.0 million*

*projected to the end of fiscal year

PROPOSED 10-YEAR CIP

- Recycled Water Project Changes

Current (FY 16-17) 10-Year Budget

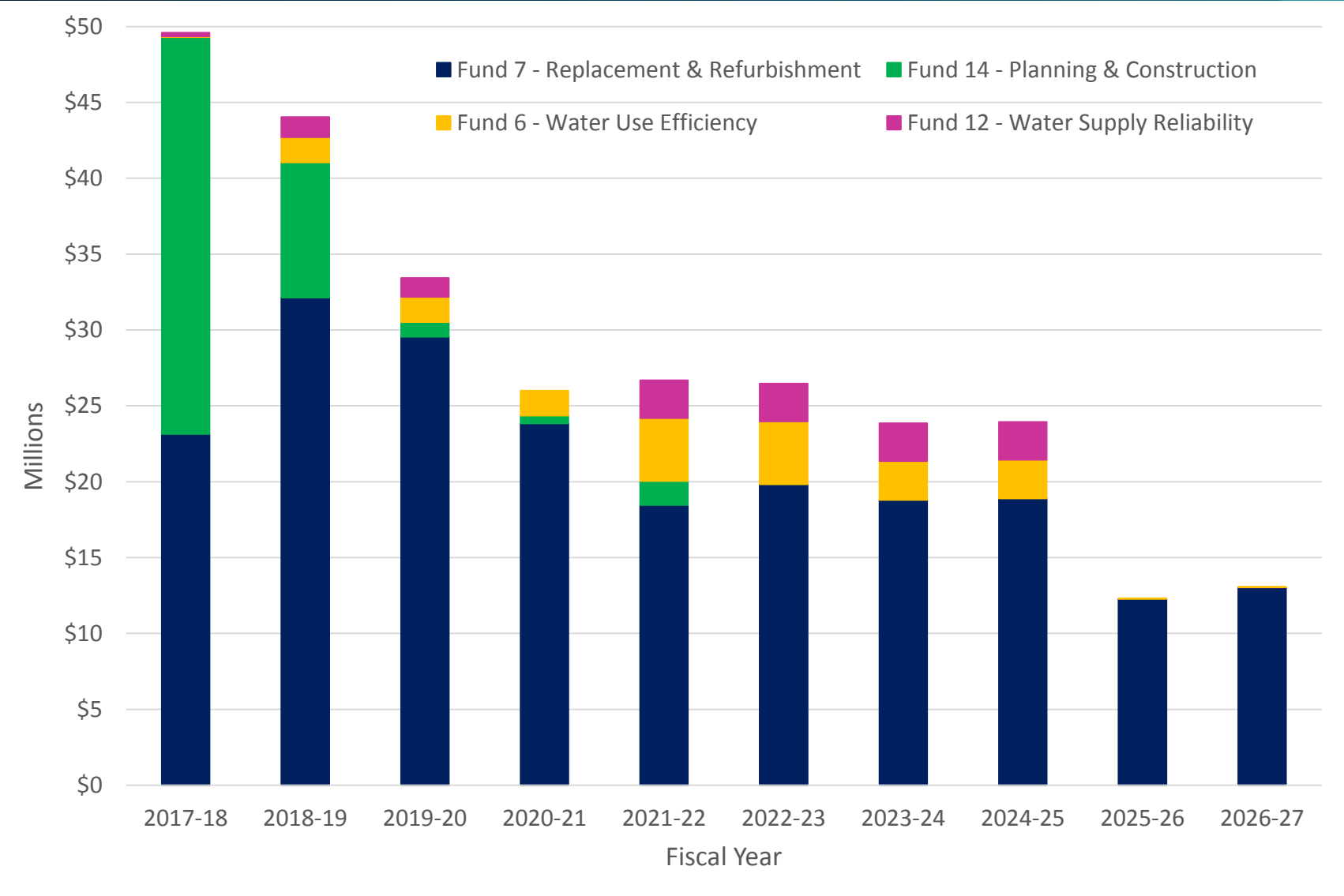
- Trampas Reservoir Capacity Acquisition - \$15 million
- RW Expansion Phase V - \$35 million

Proposed (FY 17-18) 10-Year Budget

- Recycled Water Facilities Improvements Program - \$17.9 million
- RW Main Replacement Galivan to La Paz PS - \$8.4 million
- Oso Trabuco and Lakefill Line Adjustments for Railroad Expansion - \$4.7 million

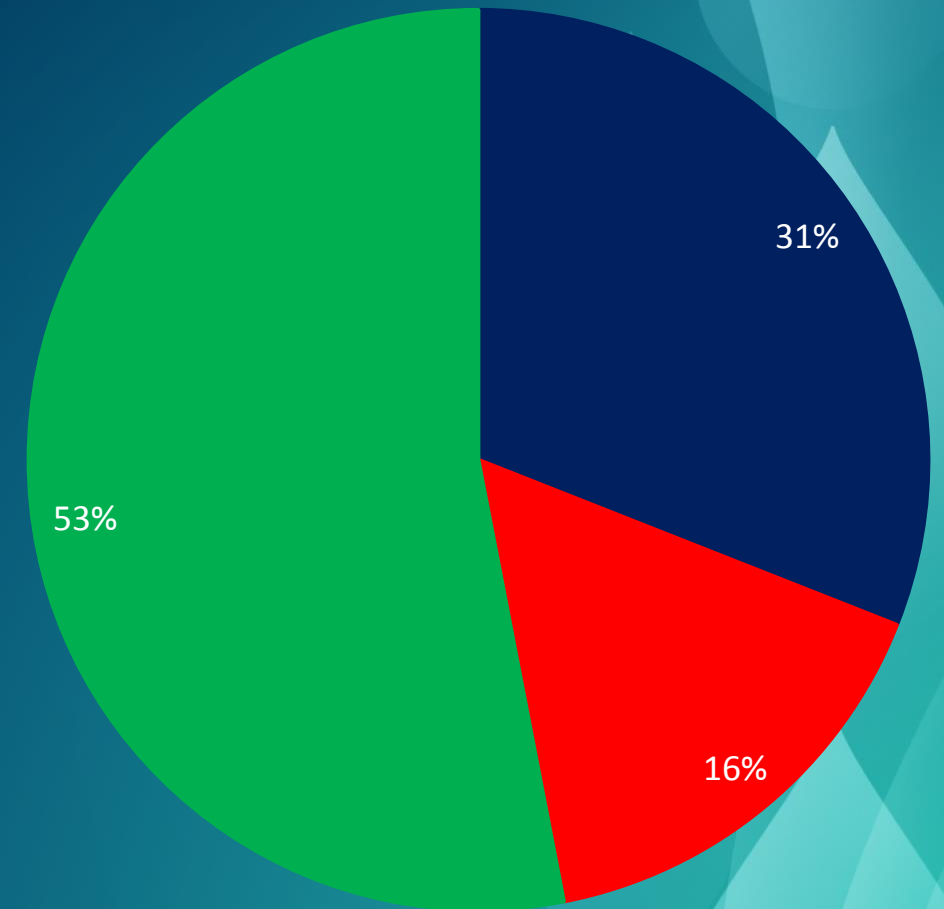
Fiscal Year	Proposed Budget (M)
2017-18	\$49.6
2018-19	\$44.0
2019-20	\$33.4
2020-21	\$26.0
2021-22	\$26.7
2022-23	\$26.5
2023-24	\$23.9
2024-25	\$23.9
2025-26	\$12.3
2026-27	\$13.1
Total	\$279.4

PROPOSED 10-YEAR CIP



FY 2017-18 PROPOSED CIP

System	FY 2017-18 Proposed Budget (M)
District Wide	\$24.4
Potable Water	\$10.6
Recycled Water	\$0.6
Wastewater	
Collection	\$5.6
Treatment (SOCWA, Plant 3A)	\$6.9
Sub-Total	\$48.1
Regional (i.e. JRWSS, etc.)	\$1.0
Unanticipated Projects	\$0.5
Total	\$49.6



- Fund 7 - Replacement & Refurbishment
- Fund 7 - SOCWA, JRWSS & SMWD
- Fund 14 - Planning & Construction

Fund 6 – Water Use Efficiency (< 1%)
 Fund 12 – Water Reliability (< 1%)

FY 2017-18 PROPOSED PROJECTS

- 53 projects
 - 15 projects in construction \$24.3 million (includes District Operation Center)
 - 20 projects in design \$8.7 million
 - 24 projects to be started \$8.2 million
- JPA projects \$7.9 million
- Unanticipated projects \$0.5 million
- Key Projects
 - District Operation Center
 - Mission Hospital 750-Zone Service
 - Reservoir Management System Replacements
 - Valve Replacements
 - Oso Trabuco and Lakefill Line Adjustments for Railroad Expansion

CIP FUNDING

- \$167 M rate funded (PAYGO)
- \$64 M debt issuance in FY 2017-18
- \$48 M debt issuance in FY 2020-21
- No changes to CIP
- No changes to rate projections



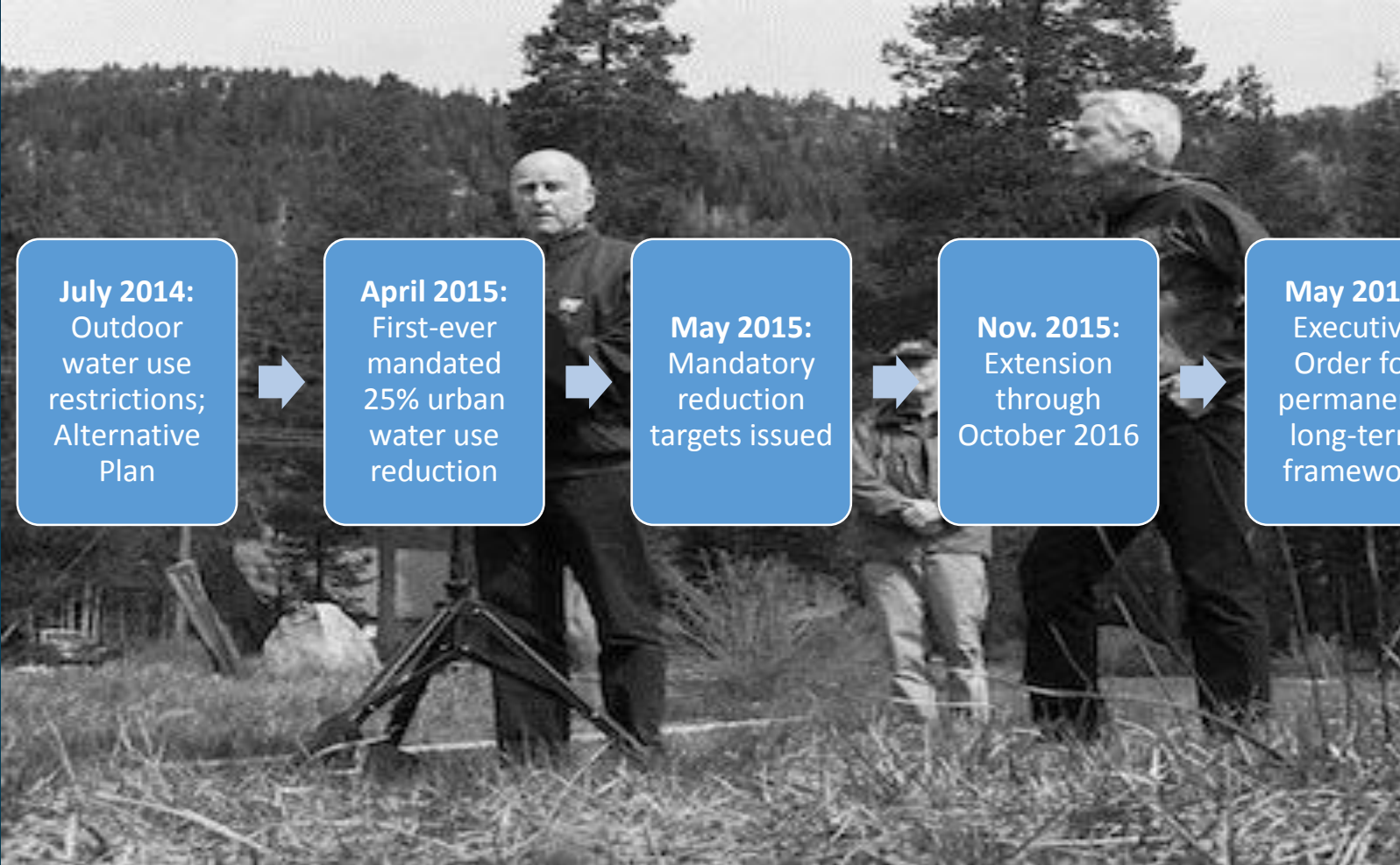
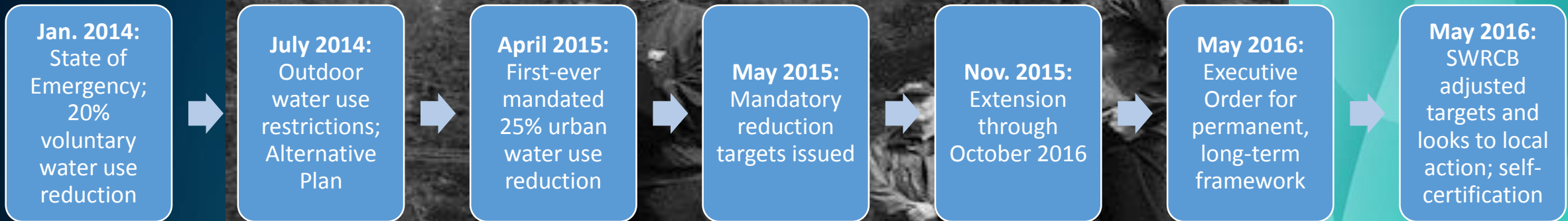
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Long Term Efficiency Framework Update

Finance and IT Board Meeting

April 19, 2017

Governor Brown Takes Action to Address California Drought





California Water Action Plan
Making Conservation a Way of Life



Develop new efficiency targets tailored to local conditions
Generate more statewide water conservation

Long-Term Water Efficiency Framework



Water Shortage Contingency Plan
Strengthen local drought resilience



Prohibitive Actions
Permanent ban on wasteful water uses

Use Water Wisely

- Agency-wide Water Budgets
 - Indoor
 - Outdoor
 - Commercial
 - Water Loss Standards set through SB 555



=



×

60

Gallons per Person per Day

×

#

Days in Billing Cycle
(typically 28 to 35 days)

÷

748

Conversion Factor
(gallons per billing unit)



=



×

ET

Monthly Evapotranspiration Rate
(based on actual daily values,
varies by microzone)

×

0.7

Plant Factor
(based on a combination
of native plants and turf)

×

0.62

Conversion Factor
(to gallons)

÷

748

Conversion Factor
(gallons per billing unit)

Eliminate Water Waste

- Make permanent practices that reduce waste & prohibit:
 - Hosing off sidewalks
 - Watering within 48 hours of rain
 - Irrigating turf on street medians
 - Using non-recirculated water in a fountain
 - Washing cars w/out a shutoff nozzle
- Minimize System Leaks

Strengthen Local Drought Resilience

- Actions required- no impact to District
 - Annual Reporting on WSCP
 - Develop Communications Plan
 - Address Financial Elements
 - Compliance

Long Term Framework Timeline

**November
2016**

**Draft report
released**



April 2017

**Final report
to legislature**



**By end of
2017**

**Legislation
to amend
water code**



Late 2018

**Interim
targets**



2021

**Initial
reporting
from water
agencies and
final targets**

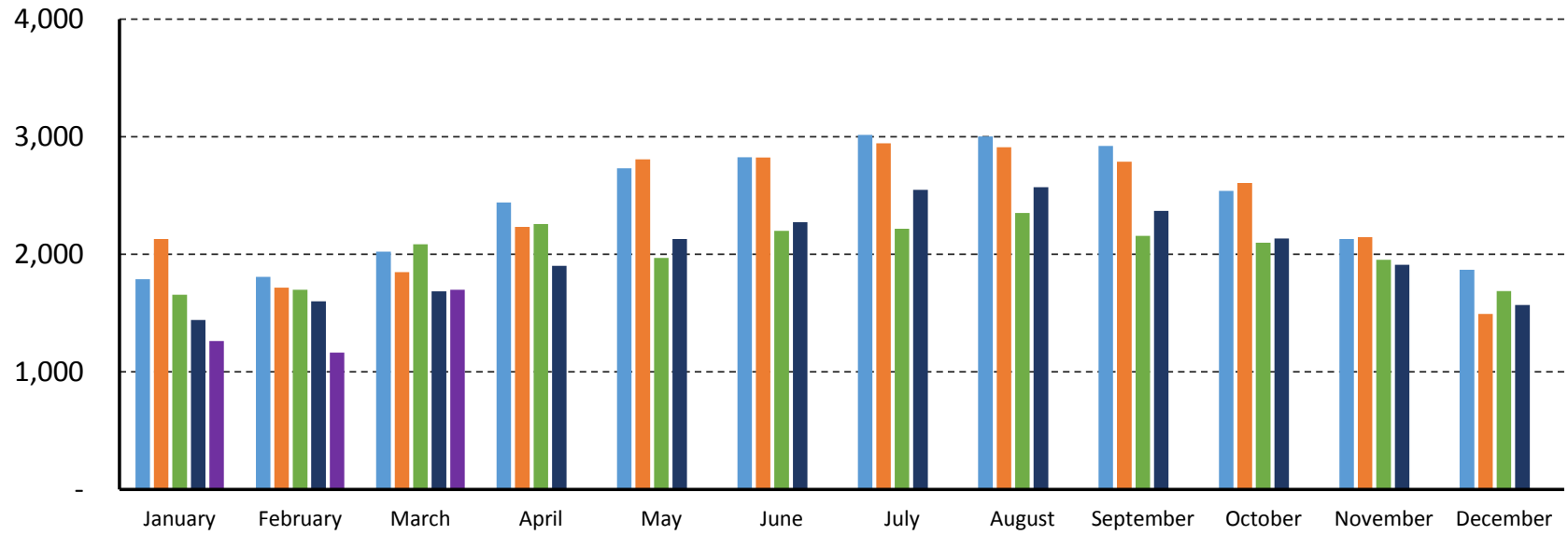


2025

**Compliance
enforced**

AF

Historical Monthly MNWD Water Purchases & Evapotranspiration

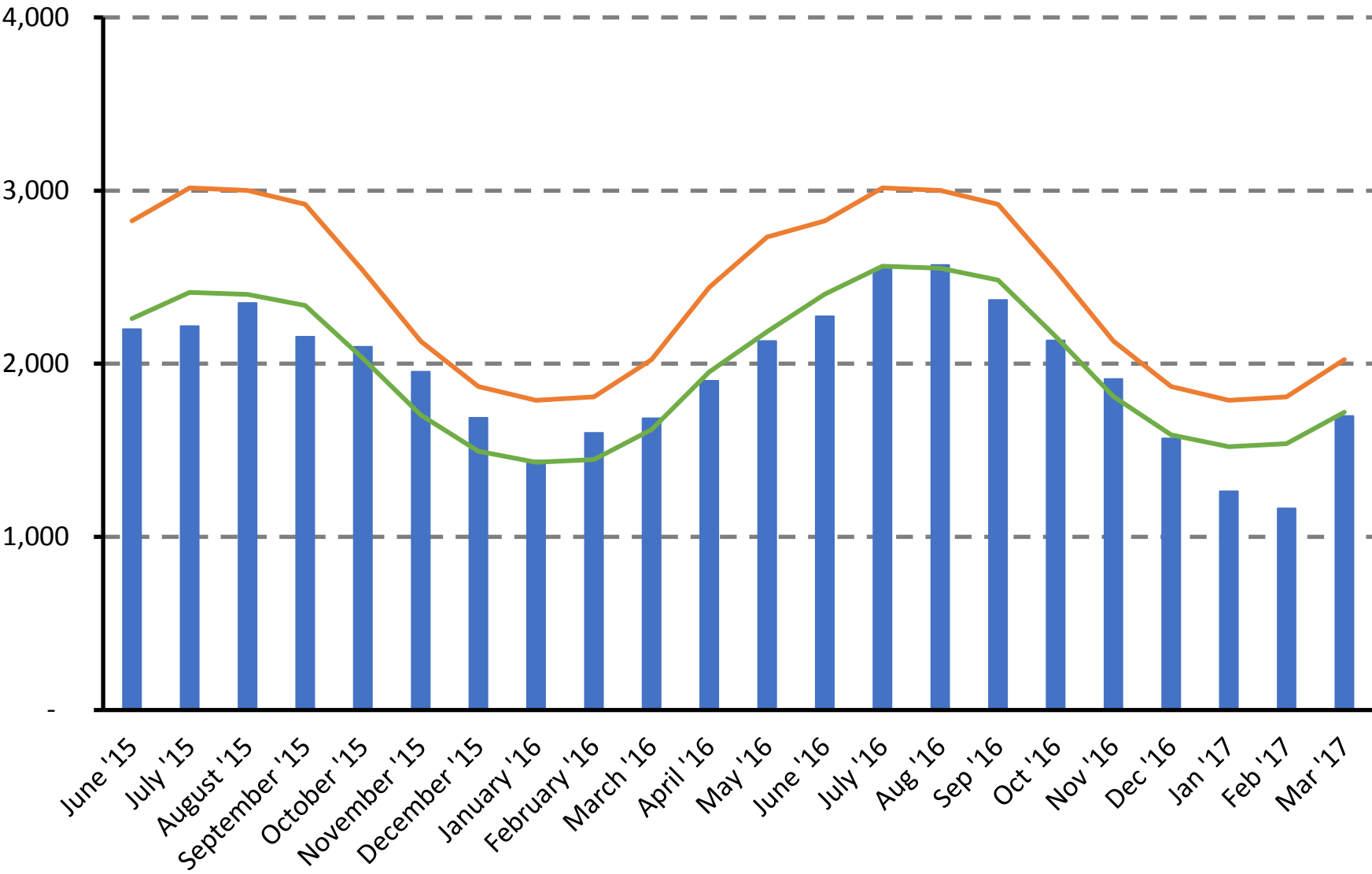


Year	ET (Inches)												
2013	2.54	2.88	4.08	4.79	5.99	6.07	5.81	6.53	5.26	3.92	2.52	2.49	
2014	2.82	2.64	4.09	5.54	6.39	6.45	6.54	6.23	5.21	3.94	3.16	1.91	
2015	2.52	3.02	4.96	5.31	4.48	5.75	5.69	6.27	5	3.88	3.24	2.35	
2016	1.87	3.82	3.98	5.16	4.63	5.77	6.77	5.97	4.51	3.23	2.75	1.89	
2017	1.96	1.75	4.24										

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SWRCB Monthly Target & MNWD Water Purchases

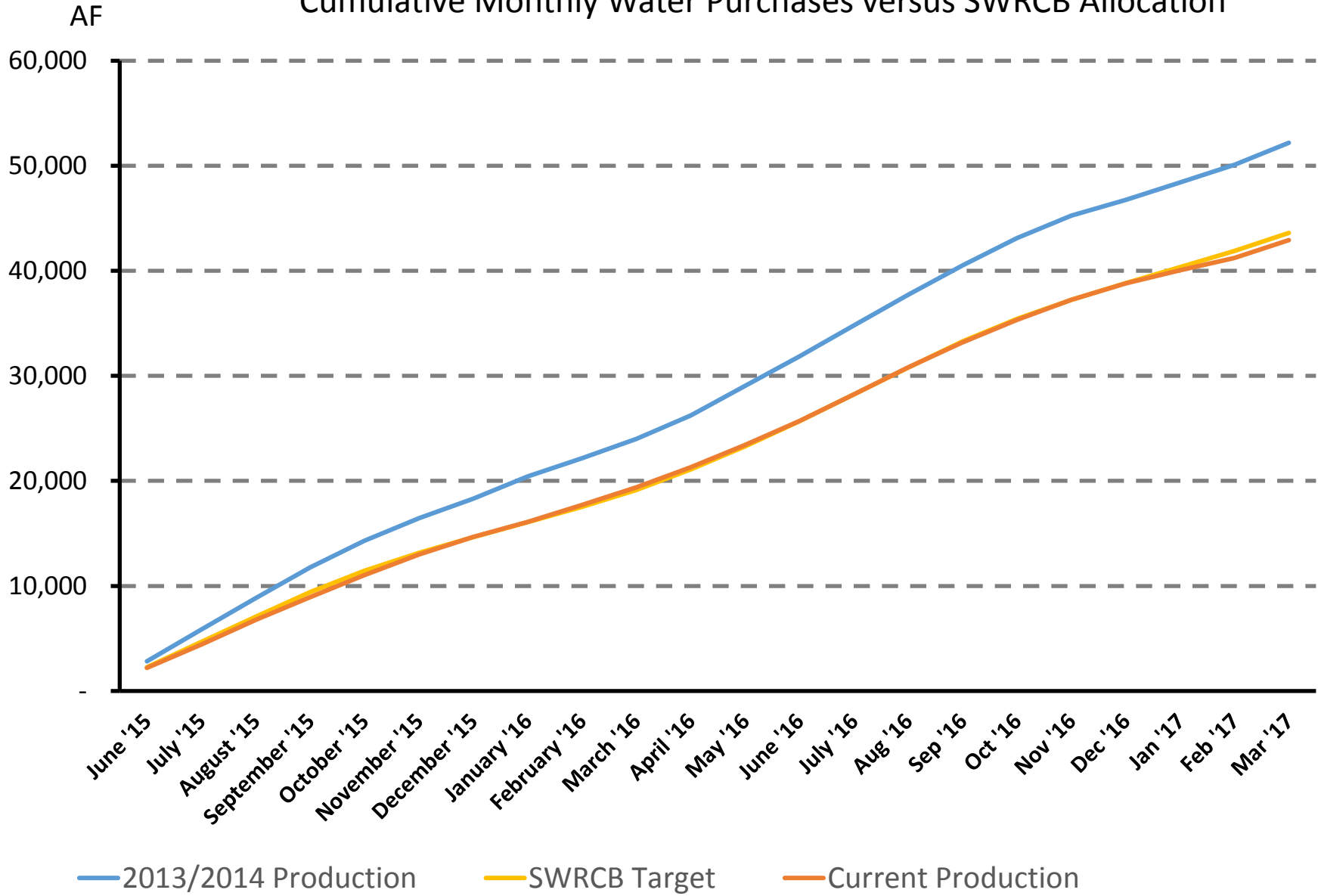
AF



■ Current Production
 — 2013 Production
 — SWRCB Target

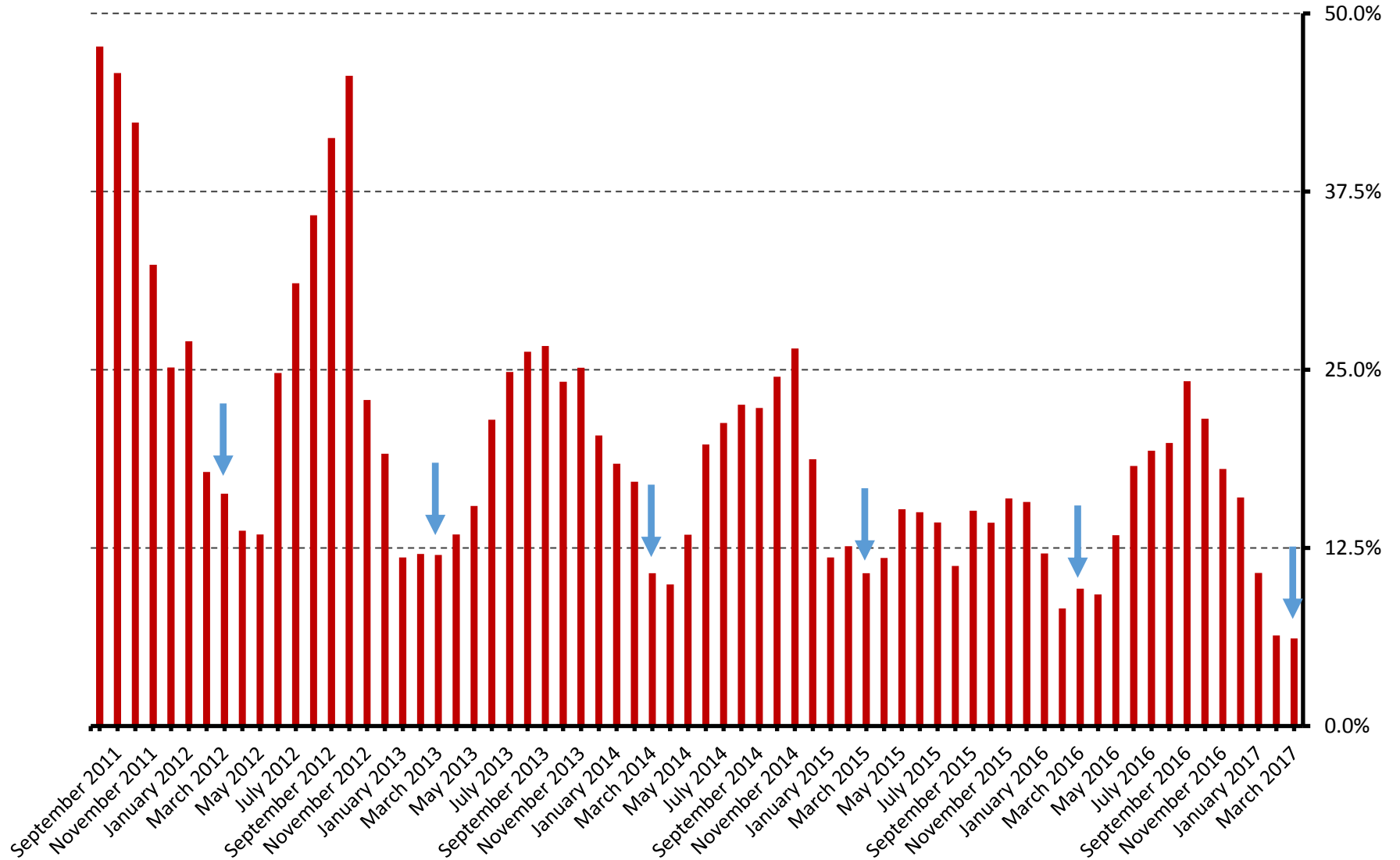
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Cumulative Monthly Water Purchases versus SWRCB Allocation



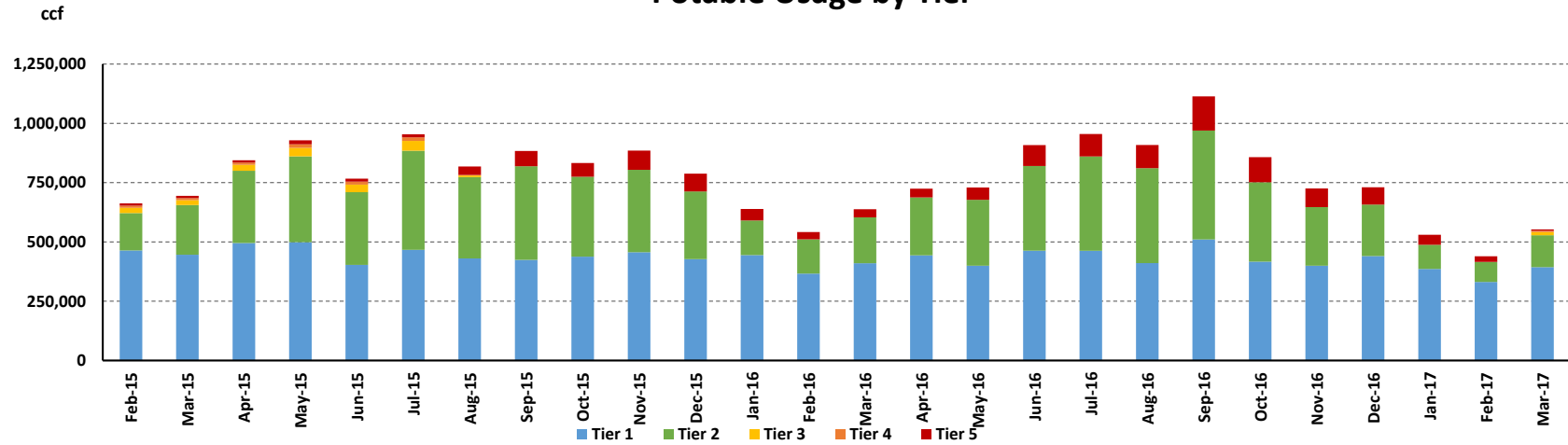
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Single Family Residential Accounts Above Tier 2



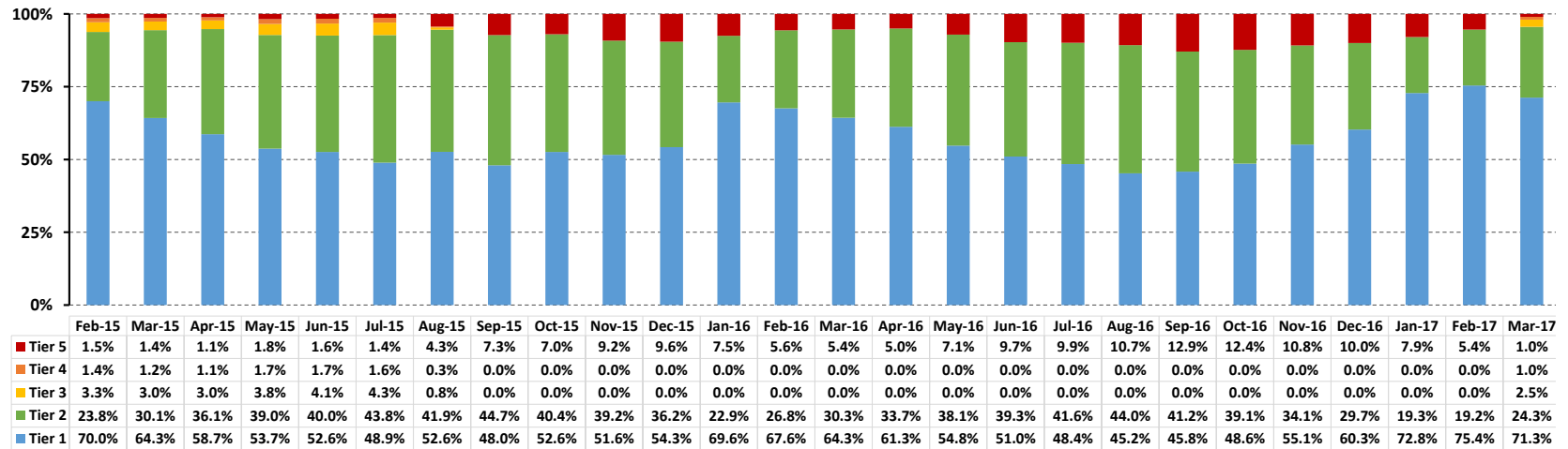
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Potable Usage by Tier



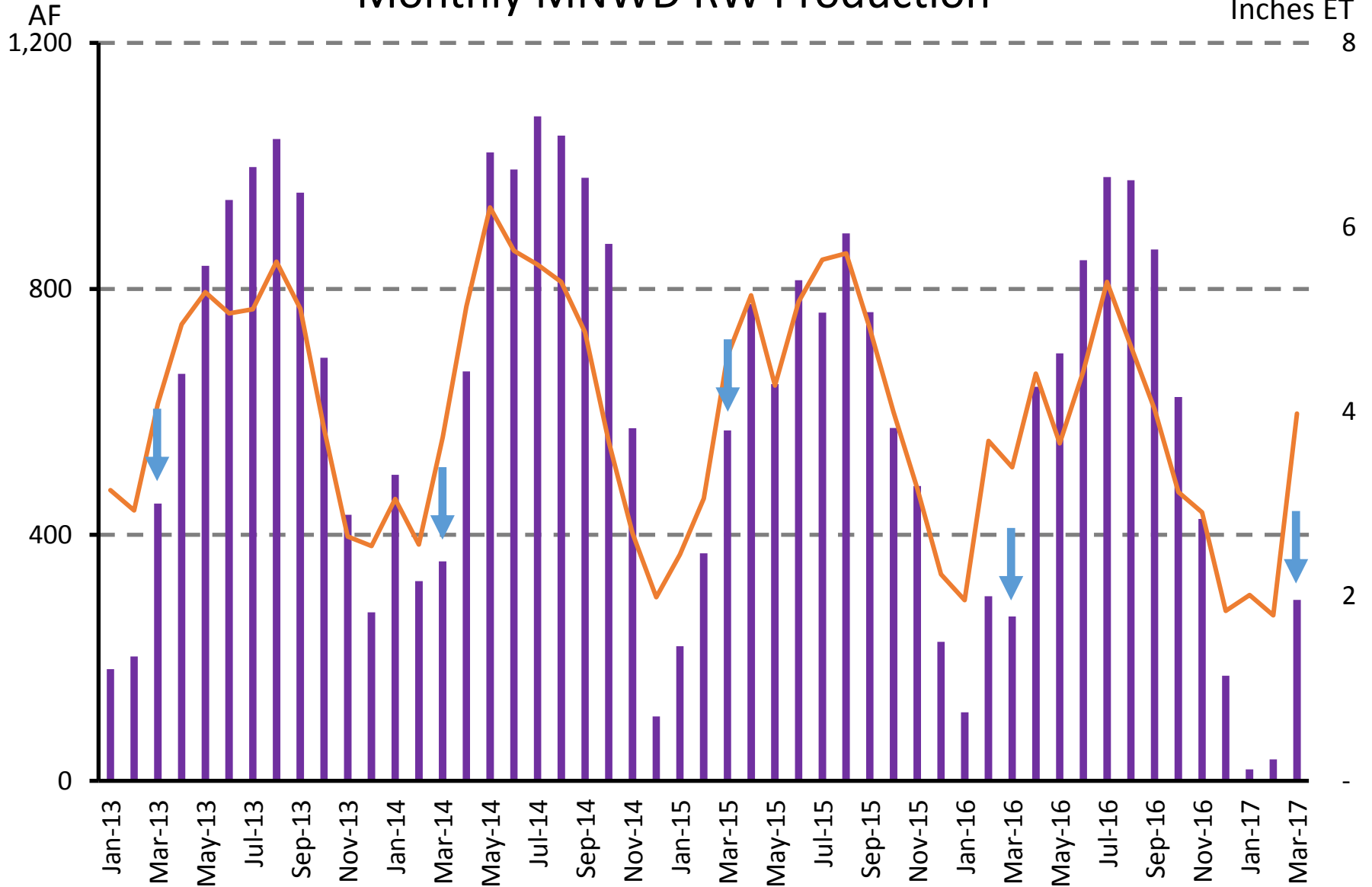
AF in Tier 3, 4, 5	94	89	101	154	131	159	102	148	134	187	173	110	70	78	83	119	202	218	224	331	243	180	167	96	54	56
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Percent Potable Usage by Tier

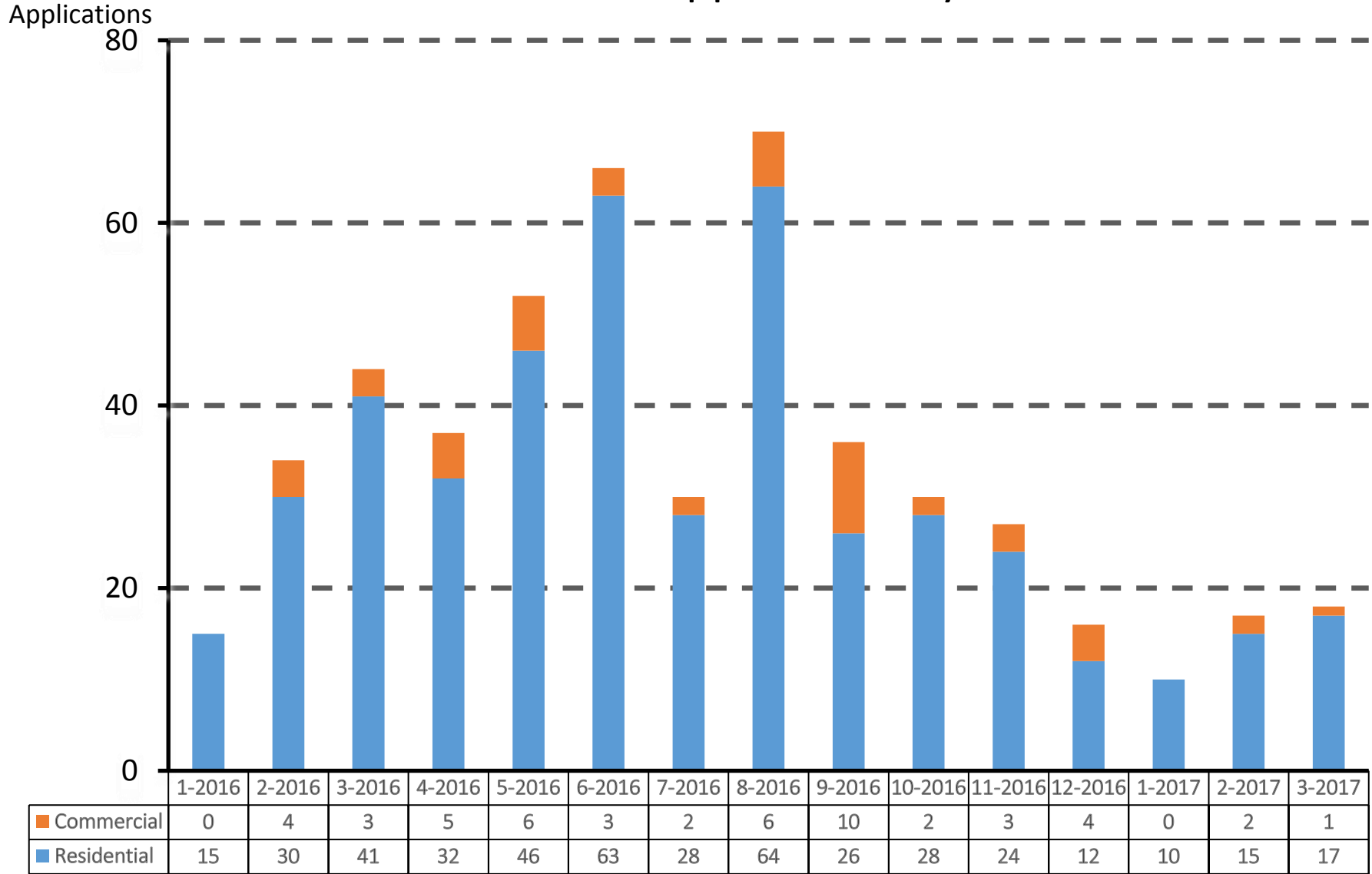


Tier 1 Tier 2 Tier 3 Tier 4 Tier 5

Monthly MNWD RW Production



Total Turf Removal Applications by Month

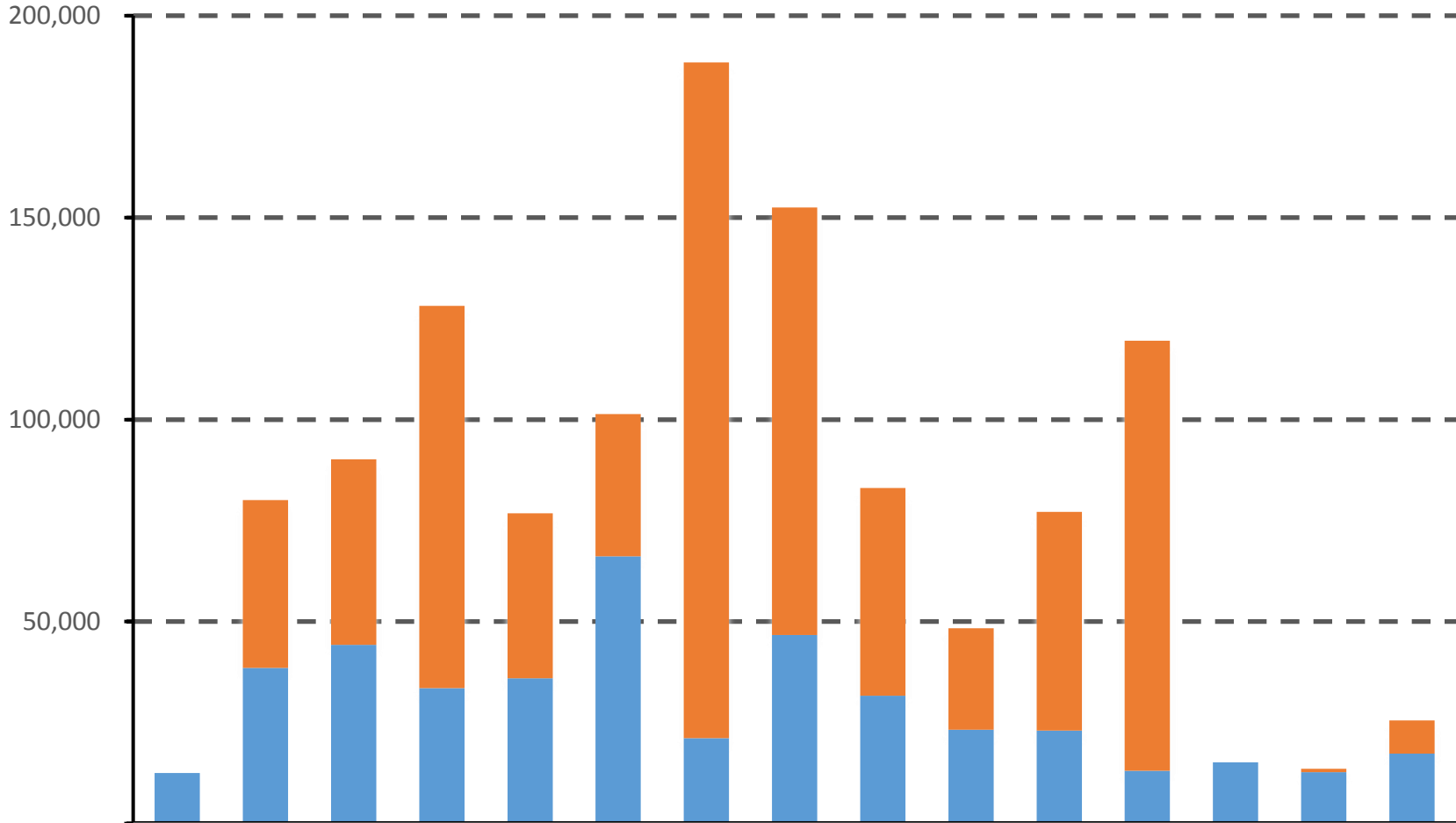


■ Residential ■ Commercial

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Total Turf Removal Application Size by Month

Square Feet

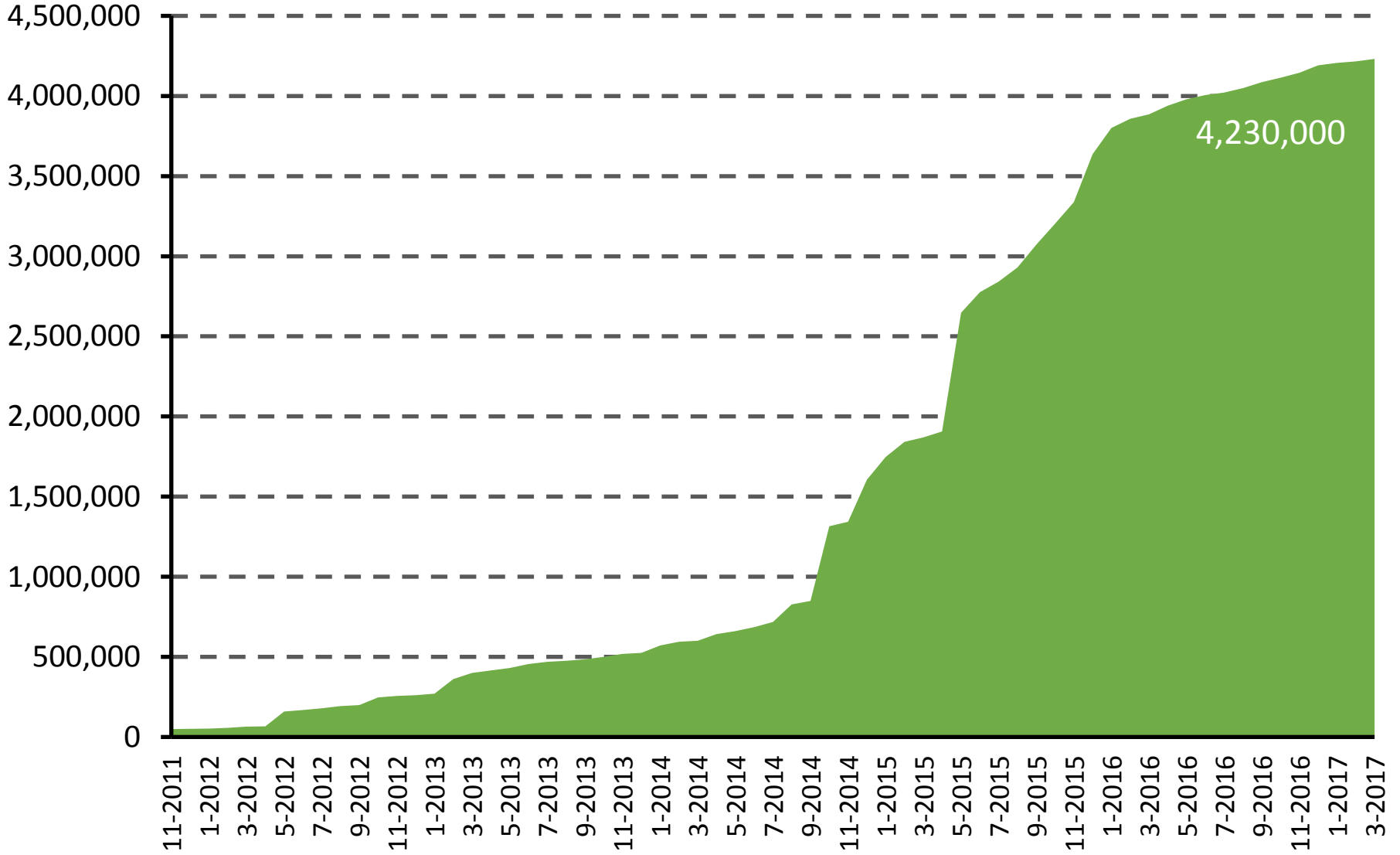


	1-2016	2-2016	3-2016	4-2016	5-2016	6-2016	7-2016	8-2016	9-2016	10-2016	11-2016	12-2016	1-2017	2-2017	3-2017
Commercial	-	41,563	45,913	94,603	40,855	35,153	167,28	105,81	51,389	25,127	54,155	106,45	0	845	8,200
Residential	12,507	38,522	44,231	33,539	35,983	66,181	21,110	46,682	31,654	23,193	23,023	13,087	15,149	12,700	17,343

April 19, 2017

Square Feet

Total Turf Removed



April 19, 2017



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Communications & Outreach Report

April 19, 2017

January 2017 – March 2017

Monthly Newsletters

Topics

- January: Long-Term Efficiency Framework
- February: Investments in Water Reliability
- March: Water Conservation Regulations Extended

Average Open Rate

- 37.3% / 7,411 individuals
- Higher than industry average (~ 26%)

Average No. of Clicks

- 76 throughout e-newsletter
- Top performing links include:
 - MNWD homepage
 - Water Saving Tips
 - Water Budgets



State Releases Long-Term Water Efficiency Draft Framework

With a new year comes new water news. In late 2016, State agencies released a draft plan, "Making Water Conservation a California Way of Life," describing that will meet the "new a

The foundation of the fra resilience. There will conti recirculating water in a de resources and technology

The latest recommendati in urban water use, Impl as local agencies look to c gathered will be useful in

While still in the early plar receives **safe and reliabl** regulatory changes that m place in 2018. For more in

What Does

Water providers will be res a more comprehensive Wa the future.

Even when drought conditi did not implement any res budget-based rate structu We remain in Stage 2 of k water budgets.

We are living in a new, dry **live within their budget**: Get involved! We offer a vi conservation a part of you

BOARD OF DIRECTORS Duane D. Cav DIRECTOR



Our Investments to Ensure Water Reliability for our Customers

Moulton Niguel Water District is dedicated to providing reliable and cost-effective water, recycled water, and wastewater treat that deliver, treat, an reinvestment in the D

We have invested approxi in reliability projects just partnerships throughout t during drought and emerg investments are critical to customers and have inclu recycling systems, increa necessary infrastructure reg annual basis, we have Inve average, in our own District our systems are operating e

For further reinforcement of water reliability policy that adequate capacity and sup regional projects – incl supply development – and supply capacity from a 24-d us to continue providing cu planned and unplanned se

In a time when many utili digit rate increases or post investments as they adapt not. Rather, we are able to l and new capital projects th supply reliability.

BOARD OF DIRECTORS Duane D. Cav DIRECTOR



State Water Board Extends Water Conservation Regulations

On February 8, 2017, the State Water Resources Control Board (SWRCB) voted to extend its existing emergency water conservation regulation. The SWRCB recognized that, while parts of the State are experiencing less severe drought conditions, it is prudent to understand that drought conditions inherently exist in the State and a decision was made to wait until the end of the "water year" in April/May 2017 to re-evaluate statewide and local conditions. This historic drought was years in the making and it will need more than a few months of rain to fully recover.

This decision also aligns with Governor Brown's call for achieving permanent, long-term water use efficiency, as indicated in his Executive Order, "Making Water Conservation a California Way of Life" will maintain urban water supplier monthly reporting, a permanent ban on wasteful water use such as hosing off sidewalks, and continued emphasis on **efficient water use**.

Don't Let the Rain Dampen our Conservation Efforts



The arrival of rains this year have tempered one of California's most severe ongoing drought periods on record. However, drought or no drought, Californians must re-evaluate its relationship with water. The conditions over the last several years have taught us that we need to rethink the way we use current supply while managing the demand and needs of our growing communities, as we work towards enhancing water reliability for the future.

The fundamental goal is to **eliminate water waste**. We all know that water and the infrastructure that conveys, treats, and stores it are invaluable, limited, and scarce resources. While an abundance of water may fall from the sky and flood our aqueducts for a few days, we need to be mindful that the water that flows from our faucets needs to be used efficiently.

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How do we prevent a regression from all of the great conservation milestones we've undertaken?

Moulton Niguel Water District customers have conserved more than **3.3 billion gallons** of potable water from January 2014 to December 2016. The key is reducing wasteful water use and not losing momentum on the conservation milestones we've already achieved.

This can be accomplished through incremental and long-term investments, such as turning off your sprinklers when it rains, or converting to water-efficient landscapes, which can help **reduce outdoor water waste by up to 50%**. Simple adjustments around the house, such as fixing leaks can **prevent approximately 20% of indoor water waste**.

Let's all continue to work together to make water conservation a California way of life! For more information on water efficient practices, rebates, and tips, please visit www.mnwd.com/watersavingtips.



Social Media

High Performing Facebook Post: MNWD Landscape Workshop on 2/25

It's almost time for another landscaping workshop! On March 11, learn all there is to know about water-wise gardening for the spring season. Register today at www.mnwd.com/landscapeclasses.



High Performing Twitter Post: MNWD OpEd in OC Register on 1/30

Moulton Niguel WD @MNWDWater · Jan 30
Don't let the recent rainy weather dampen your conservation efforts! More on water efficiency as a way of life at bit.ly/2kNtaBb.



High Performing LinkedIn Post: ACWA Federal Issues Conference on 3/3

MNWD board members and staff participated in ACWA's Federal Issues Conference in Washington, D.C this week. It was a great opportunity to engage legislators and executive branch officials on water reliability in Southern California.



Social Media Growth



MNWD in the Community

- Landscape Workshops: Jan. 7, Jan. 28, Feb. 25, March 11
*Average attendance: 28
- LNCC 35th Installation Breakfast: Jan. 13
- Niguel Botanical Preserve Fundraiser: Jan. 29
- ACC-OC New Councilmember Orientation: Feb. 2
- ACC-OC Water Committee Panel Presentation: Feb. 21
- Water Education Program Presentations:
 - Laguna Hills High School: Feb. 21 and Feb. 28
 - Mission Viejo High School, Water Expo: Feb. 23
 - Capistrano Valley High School: Feb. 27 and March 20
 - Bergeson Elementary School: March 24
- OCAR 2017 Drought Update: Feb. 24
- SJC State of the City: March 9
- SOCEC South Orange County Economic Report: March 10
- Mission Viejo Women's Club Presentation: March 14
- MWDOC Water Policy Forum: March 30



Outreach Activities

- Launched Social Media Campaign on Facebook & Twitter to Increase Page Likes/Followers
- Orange County Register OpEd: “Don’t Let the Rain Dampen our Conservation Efforts”
- ACC-OC Golden Hub of Innovation Awards: California Data Collaborative

Suggested Page



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To learn about water news in your community, follow Moulton Niguel Water District!



**PROGRAM ANNOUNCEMENTS
AND WATER SAVING TIPS**

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Government Organization
1,955 people like this.

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NEWS

Don't let the rain dampen our conservation efforts



A car drives through a flooded street in the 16th Niyuys section of Los Angeles on Sunday, Jan. 22, 2017.

By **JOONE LOPEZ** | Orange County Register
January 28, 2017 at 12:00 am

THE ASSOCIATION OF CALIFORNIA CITIES - ORANGE COUNTY PRESENTS



6th Annual Golden Hub of Innovation Awards

FRIDAY, MAY 12TH 2017 | 11:30 AM - 1:30 PM

Island Hotel Newport Beach
690 NEWPORT CENTER DRIVE, NEWPORT CA 92660

JOIN ACC-OC IN CONGRATULATING THE WINNERS OF THE 2017 GOLDEN HUB OF INNOVATION AWARDS!

Questions?

FOLLOW US ONLINE!



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