



# ET BACKGROUND

Finance and IT Board Meeting

December 16, 2015

# WHAT IS ET?

- Water lost to atmosphere from plants and soil surface
- Factors to calculate:
  - Solar radiation
  - Air temperature
  - Relative humidity
  - Wind speed

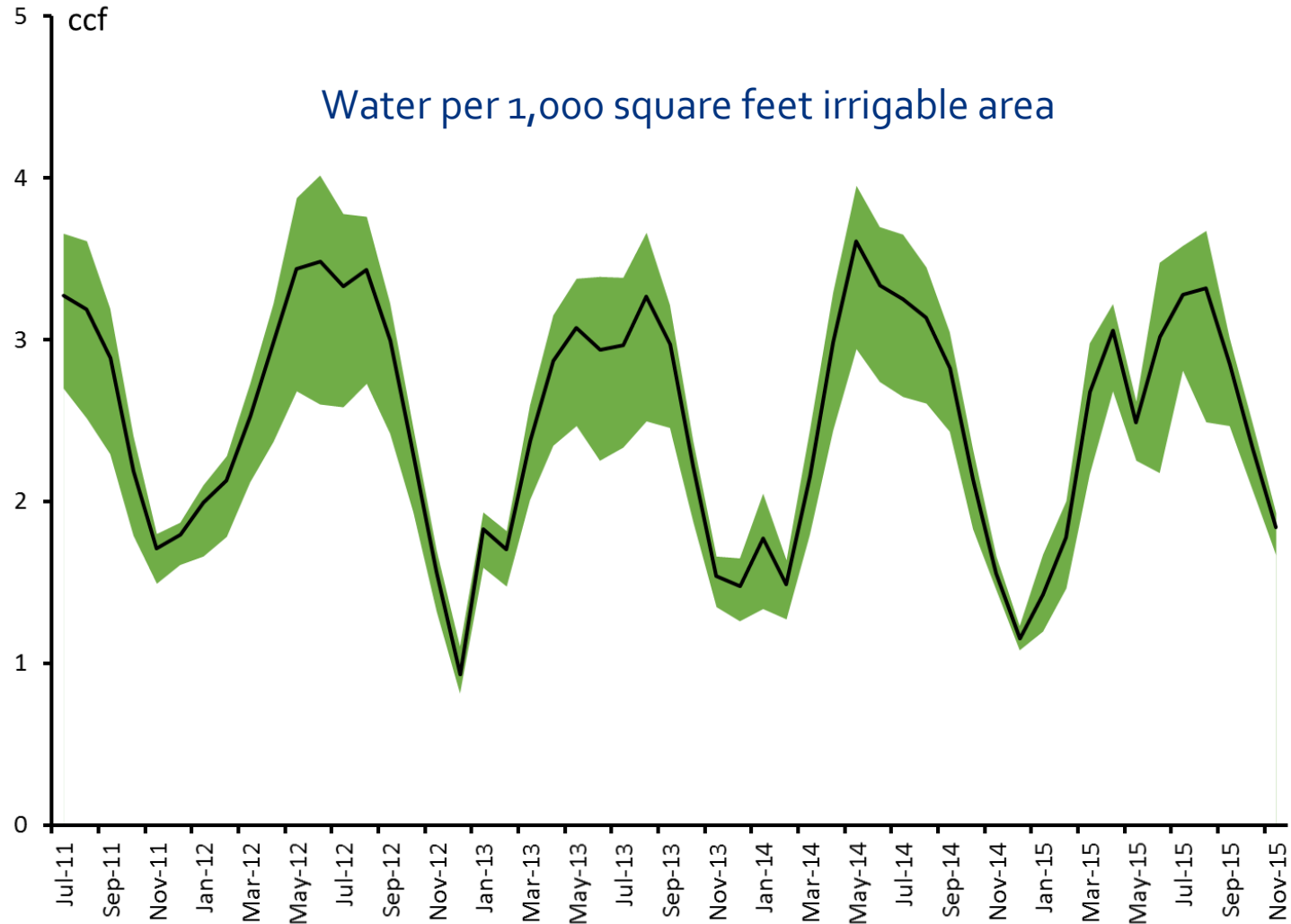


**Outdoor Water Budget** = Irrigable Area (square footage) × ET (monthly evapotranspiration rate, based on actual daily values, varies by microzone) × 0.7 (plant factor, based on a combination of native plants and turf) × 0.62 (conversion factor, to gallons) ÷ 748 (conversion factor, gallons per billing unit)

# DISTRICT MICROZONES

- Each microzone is 1 km<sup>2</sup>
- 118 Microzones- 1 km<sup>2</sup> squares overlaid on service area
- Provides resolution on differences in weather
  - Neighboring microzones usually similar ET
- Consultant Hydropoint provides ET data daily for upload to billing system
  - WMWD also uses Hydropoint
  - Common firm amongst professional irrigators

# HOW DOES VARIATION IN ET AFFECT OUTDOOR WATER BUDGET?



# Research Partnership on Rebate Program Incentives

First Progress Report

December 16, 2015



# Outline

- Review project objectives
- Overview of Phase I activities
- Preview of key concepts for today
- Presentation of results to-date
  - Data
  - Statistical estimation strategy
  - Results
  - Summary
- Discussion

# Project Objectives

Develop data-driven tools to better manage customer demand for water

- Understand residential customers
- Influence current water use
- Predict future water use at the household and agency levels
- Identify the relative cost-effectiveness of alternative water conservation approaches

# Phase I Activities

## Questions addressed:

- What factors influence residential household water use?
- What factors determine if a household participates in a conservation program?

## Available Data:

- Agency, Household (Census), Community, Biophysical Factors

## Deliverables (December 2015):

- Impact of alternative pricing structures on water demand

## Deliverables (January 2016):

- Identification of role of agency, household-level, community factors
- Impact of conservation programs on household water bills & agency revenue and costs



# Preview of key concepts for today

- > Two statistical models
  - > *Model 1: demand under fixed block rates*
    - > Estimated using data from 2007-2011
    - > Useful for estimating the effect of budget-based rates on customer demand after 2011.
  - > *Model 2: demand under budget-based rates*
    - > Estimated using data from 2011-2015
    - > Useful for predicting future changes in demand under different scenarios; and how the budget rate structure could be used to respond to those demand changes.

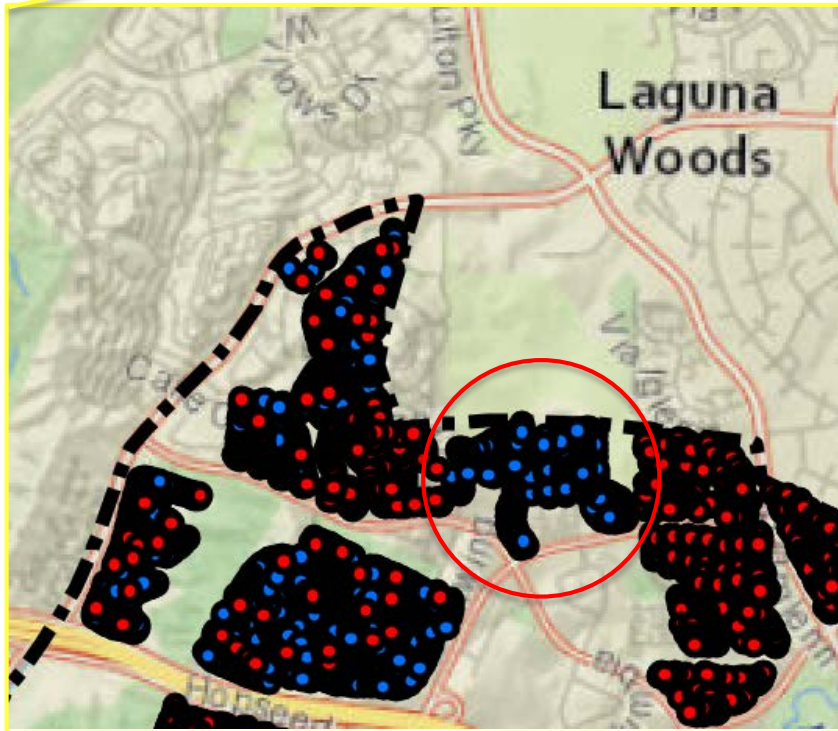
# Comparison with CDM study

CDM study: “aggregated”	UCR study: “disaggregated”
Examines total agency-wide water use	Examines single-family residential water use at the customer level and at the aggregate level
Enables analysis of trends and predictions at the aggregate level	Enables analysis of trends and predictions at the customer level and at the aggregate level
Estimates the effect of changing the rate structure and the price level	Estimates the effect of changing the rate structure after controlling for changes in the average price level
	Enables analysis and optimization of customer rebate programs

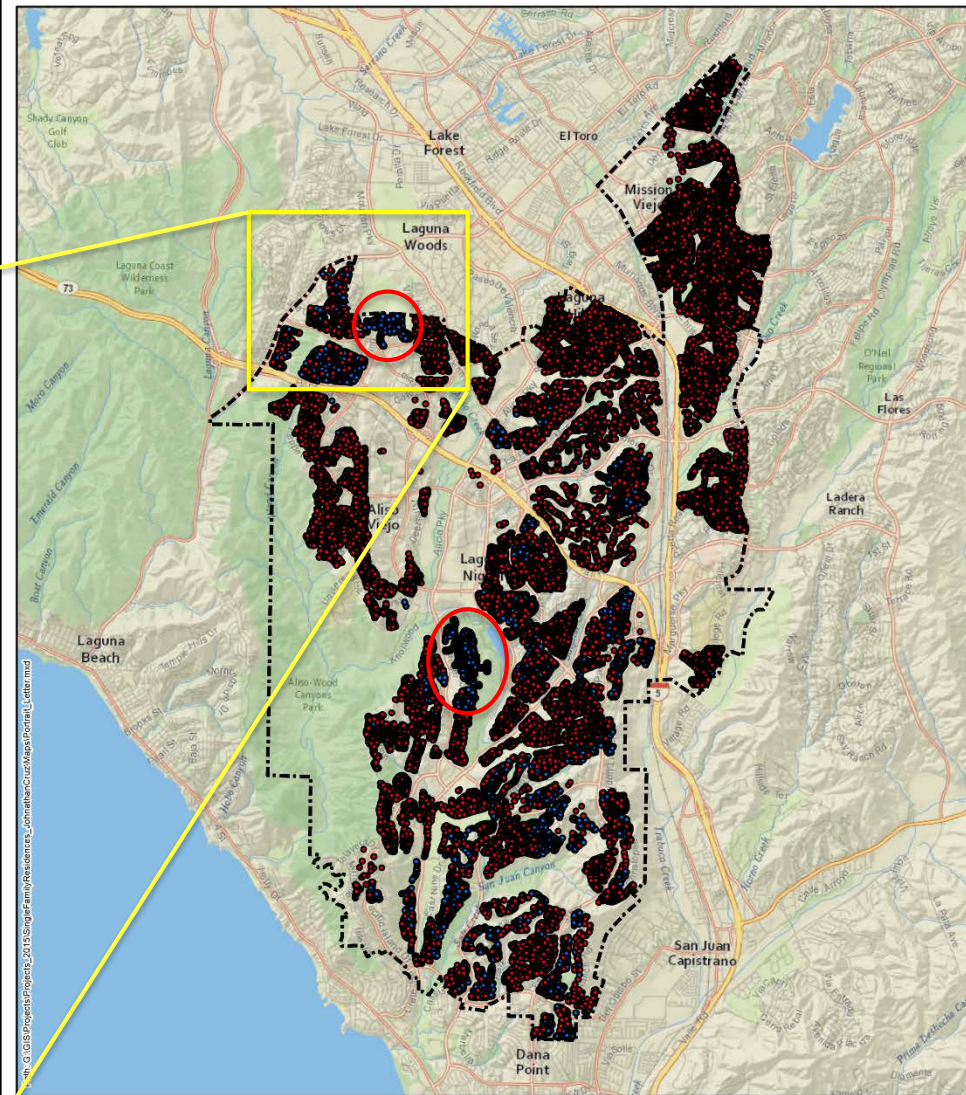
# Data used in our study

- 16,277 residential single-family accounts
- Continuous records from October 2007 through March 2015 (90 months)
  - Budget rates implemented in July 2011
- From MNWD:
  - Pricing, usage, household size, irrigated area, recent ET, watering restrictions
- From other sources:
  - Historical ET, demographics (income, education)

# Spatial distribution of sample households

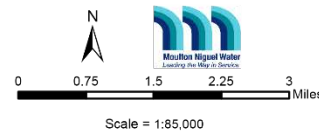


Source: MNWD GIS staff



in: GIS Projects/Projects\_2019/SingleFamily/Residence\_CentralSanCristobalMapa/Panor\_Ucthrmnd

- SFR Accounts In Study
- SFR Accounts Not In Study
- District Boundary



Comparison of In-Study vs. Not In-Study SFR Accounts

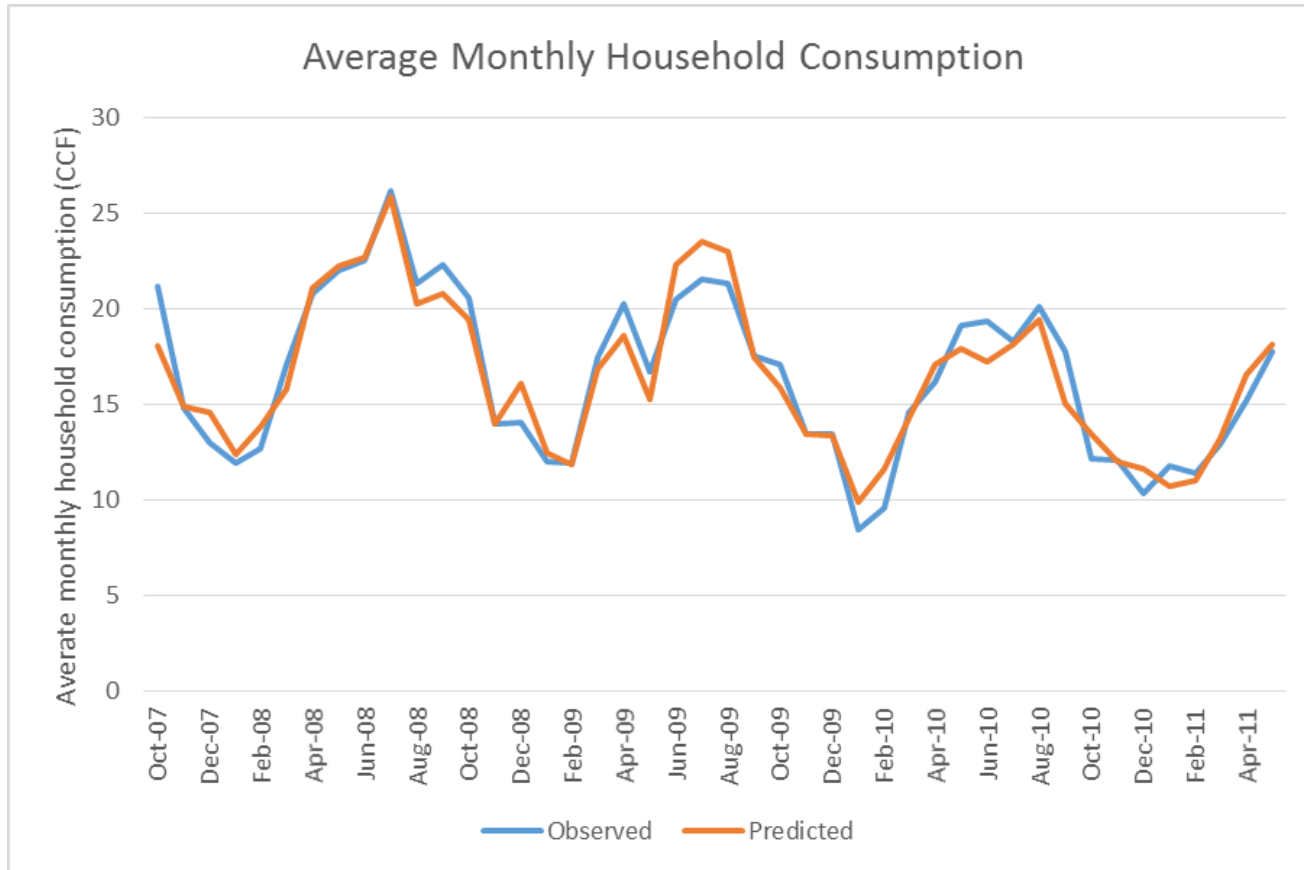
# Data: summary statistics

	2008	2009	2010	2011	2012	2013	2014
Usage (ccf/month)	18.8	16.9	14.8	14.7	15.2	16.2	15.3
ET (inches/month)	4.1	4.2	3.8	4.1	4.5	4.3	4.2
Real price (\$/ccf)	1.56	1.73	1.96	2.28	2.38	2.39	2.36
Money budget (\$/month)	364	358	353	358	366	368	375

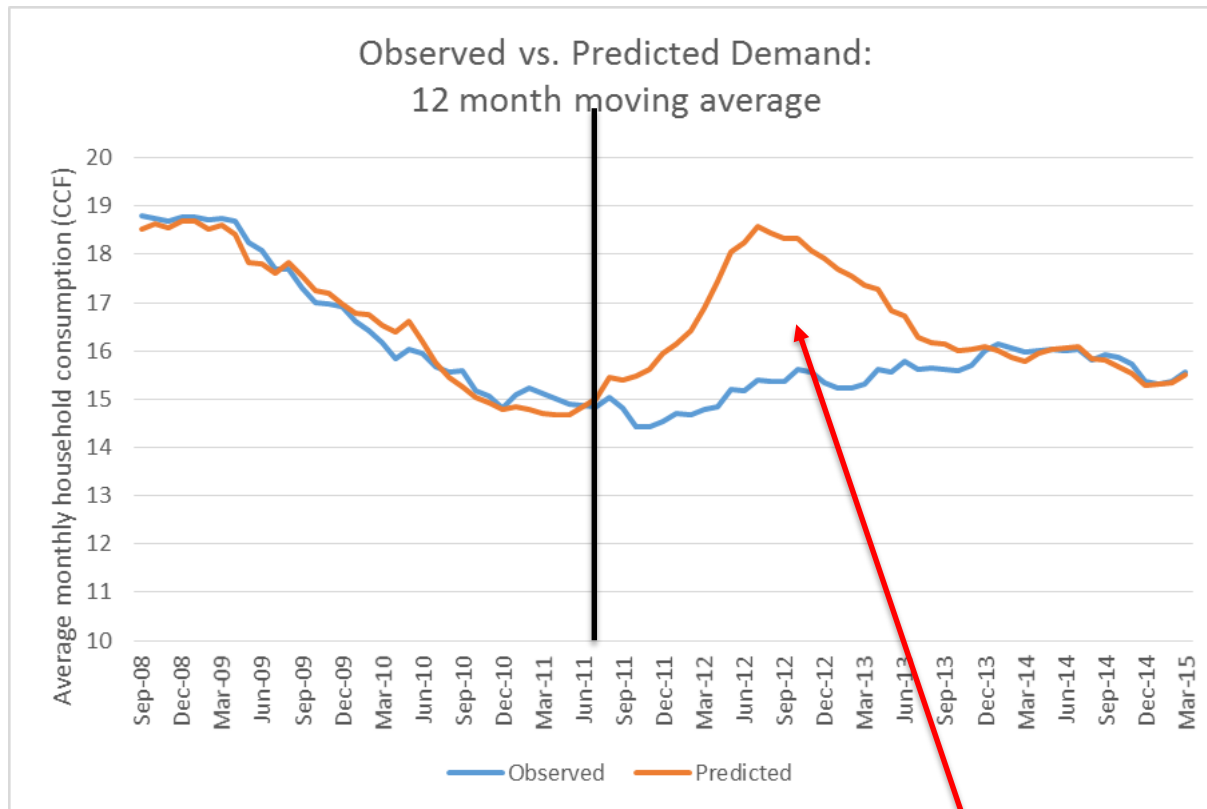
# Model 1: estimating the demand effect of budget-based rates

- Identify major factors influencing household water demand
- Estimate a demand model that accounts for these factors using data from 2007-2011
- Use the model to predict hypothetical demand from 2011-2015 under fixed block rates
- Difference between actual and predicted demand is the estimated effect of the rate structure change

# Assessing the fit of model 1



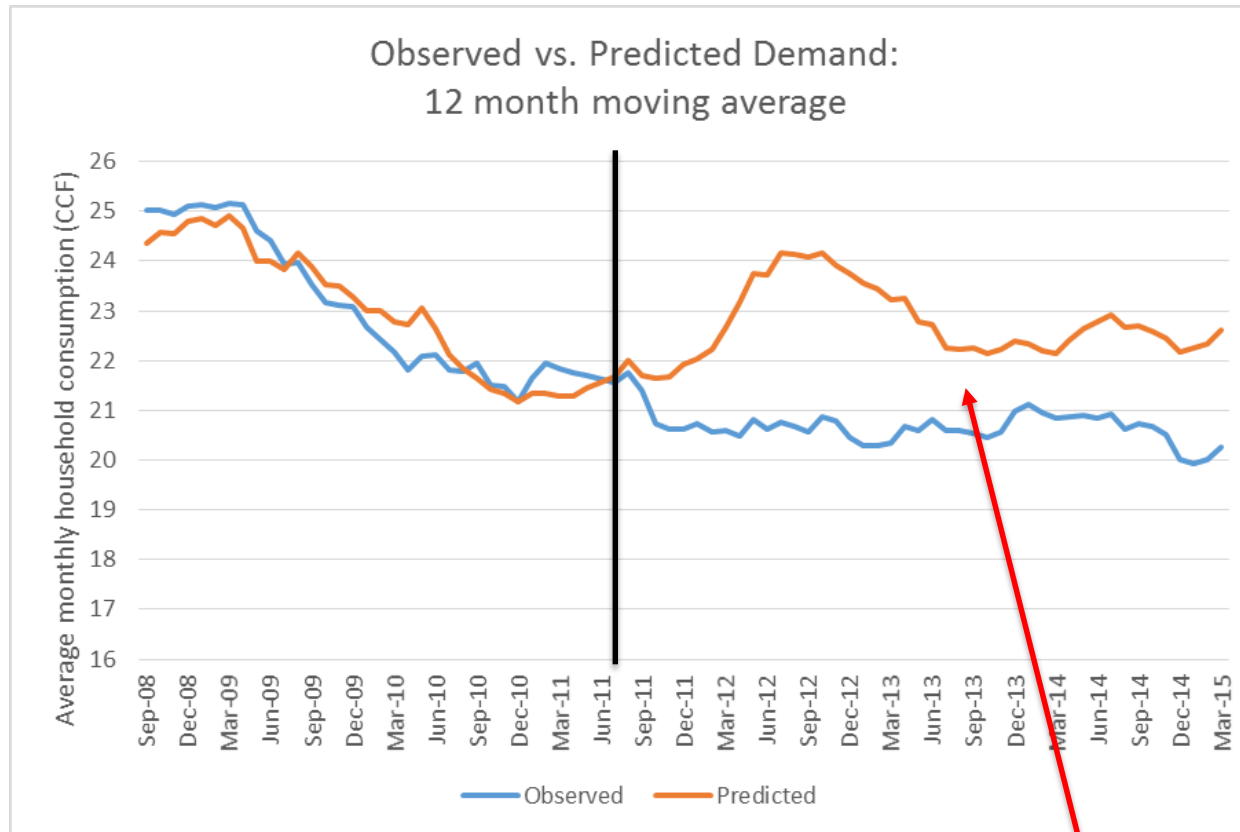
# Using model 1 to estimate the demand effect of the rate change



**Temporary “peak shaving”**  
 (1828 AF saved in sample)  
 (5280 AF saved district-wide)



# Estimated demand effect for inefficient households

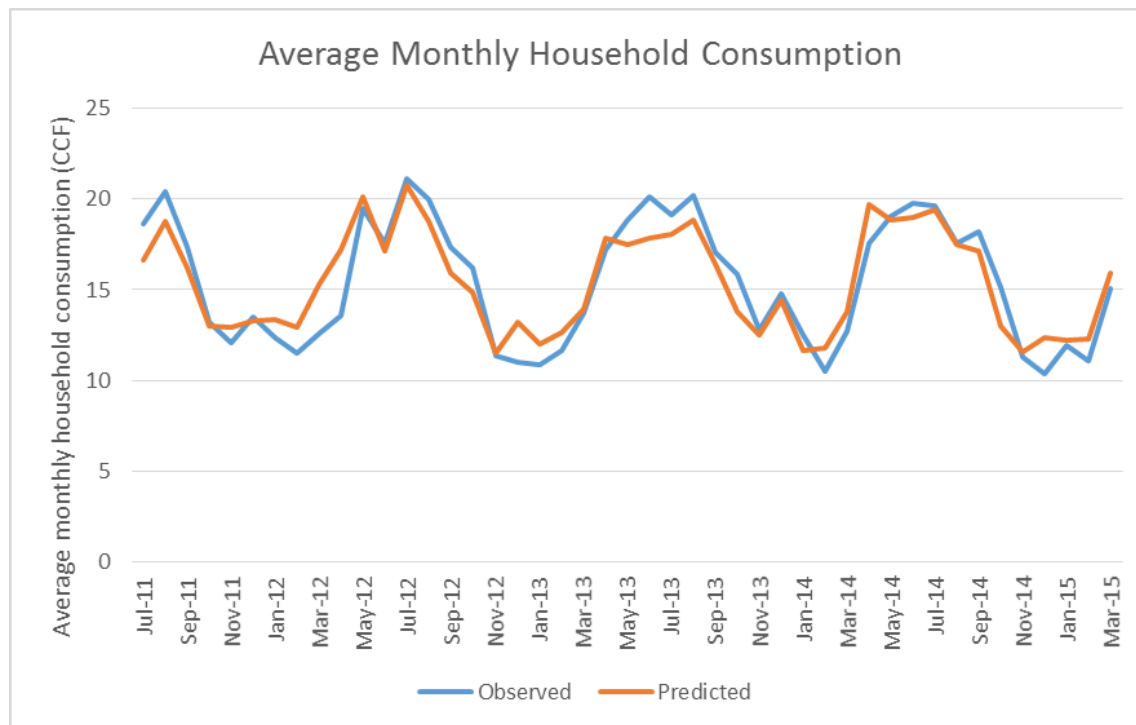


**Persistent 5-15% reduction**

# Summary results for model 1

- ▶ Switching from fixed block rates to budget-based block rates has:
  - ▶ Reduced consumption temporarily when irrigation demands are particularly high (“peak-shaving”)
  - ▶ Reduced consumption persistently among inefficient customers (5-15% reduction)

# Model 2: demand under budget-based rates



**Example simulation:**

10% increase in ET



2% increase in demand

**Thank you!**

Questions?



**Moulton Niguel Water**  
*Leading the Way in Service*

# RESEARCH **FINDINGS & INSIGHTS**

# AGENDA

- 💧 Meeting Purpose
- 💧 Orange Label Approach Research Findings
- 💧 Next Steps

# MEETING PURPOSE

## SCOPE OF WORK

- ◆ Positioning Statement, Branding and Website
- ◆ Create consistency with all Marketing Pieces
- ◆ 6-Month Marketing Execution Strategy



# SHARE RESEARCH & INSIGHTS ABOUT THE MOULTON NIGUEL WATER DISTRICT CUSTOMER BASE

One-to-one interviews and online survey occurred in October 2015

# ORANGE LABEL **APPROACH**

[RESEARCH FINDINGS]

## VIEW FROM THE FIELD PART 1: **ONE-TO-ONE PHONE INTERVIEWS**

Phone Interviews Completed	<b>29 total</b>
Homeowners	<b>18</b>
Irrigation	<b>3</b>
Commercial	<b>2</b>
Multi-Family	<b>3</b>
Board Members	<b>3</b>

## VIEW FROM THE FIELD PART 2: **ONLINE SURVEY**

💧 Sample Size: 1,119

- 💧 Total Audience Size: 47,000 homeowner customers
- 💧 Sent to 14,154 single family homeowner customers/bill pay subscribers
- 💧 Responses: 1,701 – 12% return rate
- 💧 Completed Surveys: 1,119 – 8% completion rate, 34% drop off rate
- 💧 Validation: 99% confidence level with 4% margin of error

## CITY OF RESIDENCE

### VIEW FROM THE FIELD RESPONDENTS

Laguna Niguel	<b>38%</b>
Aliso Viejo	<b>28%</b>
Mission Viejo	<b>19%</b>
Laguna Hills	<b>14%</b>
Dana Point	<b>1%</b>

### MNWD SINGLE FAMILY HOMEOWNER CUSTOMER BREAKDOWN

Laguna Niguel	<b>40%</b>
Aliso Viejo	<b>27%</b>
Mission Viejo	<b>19%</b>
Laguna Hills	<b>13%</b>
Dana Point	<b>1%</b>

## AGES

45-54 **26%**

55-64 **26%**

65+ **21%**

35-44 **17%**

25-34 **9%**

0-24 **1%**

Median Age of Aliso Viejo Residents: **36.3**  
Median Age of Mission Viejo Residents: **46**  
Median Age of Laguna Hills Residents: **41.9**  
Median Age of Laguna Niguel Residents: **43**

\*Source: <http://www.city-data.com/>

## MARITAL STATUS

Married **71%**

Divorced **14%**

Single, Never Married **11%**

## GENDER

Male **51%**

Female **49%**

Female Persons in Aliso Viejo: **52%**  
Female Persons in Mission Viejo: **51%**  
Female Persons in Laguna Hills: **51%**  
Female Persons in Laguna Niguel: **52%**

\*Source: <http://www.census.gov/>

## EDUCATION

Bachelor's Degree	<b>39%</b>
Graduate Degree	<b>32%</b>
Some College	<b>15%</b>
Associate Degree	<b>7%</b>
Technical Degree	<b>4%</b>
High School Diploma	<b>2%</b>

\*Or Equivalent

Residents in Aliso Viejo with Bachelor's degree or higher **57%**  
Residents in Mission Viejo with Bachelor's degree or higher **45%**  
Residents in Laguna Hills with Bachelor's degree or higher **45%**  
Residents in Laguna Niguel with Bachelor's degree or higher **54%**

\*Source: <http://www.census.gov/>

## EMPLOYMENT STATUS

Employed Full-Time	<b>59%</b>
Retired	<b>19%</b>
Employed Part-Time	<b>10%</b>

## # OF INDIVIDUALS LIVING IN RESIDENCE

4	30%
2	27%
3	21%
1	10%
5	8%
6	3%
7	1%

## CHILDREN UNDER 18 LIVING IN HOUSEHOLD

0	62%
1	17%
2	16%
3	4%
4	1%



## YEARS AS A MNWD CUSTOMER

21+	28%
15-20	18%
6-10	16%
3-5	12%
11-15	12%
1-2	8%
>1	4%

## HOUSEHOLD INCOME

\$100,000-\$149,999	21%
\$200,000+	14%
\$75,000-\$99,999	13%
\$150,000-\$199,999	13%
\$50,000-\$74,999	10%
Preferred not to respond	22%

Median HHI of Aliso Viejo Residents: **\$99,394**  
Median HHI of Mission Viejo Residents: **\$96,210**  
Median HHI of Laguna Hills Residents: **\$90,704**  
Median HHI of Laguna Niguel Residents: **\$99,771**  
\*Source: <http://www.census.gov/>

## BRAND PERCEPTIONS

- ◆ Awareness of MNWD as the local water provider is high.
- ◆ Sentiment towards MNWD is positive.
- ◆ Words and phrases used to describe MNWD: Water Provider, Low Rates, Reliable, Good Organization, Customer Service
- ◆ Customers cite Water Delivery and Customer Service as key benefits of MNWD.

## COMMUNICATION PREFERENCES & BEHAVIOR

- ◆ Preferred Method of Communication: Email & Online
- ◆ Preferred Format of Educational Materials: Email & Online
- ◆ Preferred Frequency of Communication: Monthly
- ◆ For Commercial and Multi-Family customers, where there is a distinction between where water is consumed and where the bill is paid, there is opportunity for communication with both touchpoints.

## COMMUNICATION PREFERENCES & BEHAVIOR

### Key Website Needs:

- Conservation/Water Saving Tips
- Real Time Water Usage
- Online Bill Pay
- Rebate Information
- Rate Structure Information

## PROGRAM AWARENESS & UTILIZATION

- 💧 50% of homeowners are aware of MNWD rebates and educational resources, and 34% of homeowners are utilizing rebates or resources.
- 💧 Homeowners have the highest awareness of Turf Removal and High Efficiency Toilet rebates.
- 💧 Customers do not fully comprehend the “water budget-based rate structure.”

## CONSERVATION AWARENESS & BEHAVIOR

- ◆ All audiences view themselves as having an above-average awareness of water conservation practices.
- ◆ 67% of homeowners believe that indoor water usage is greater than outdoor usage.
- ◆ A subset of homeowners are willing to engage in additional conservation practices and have asked for guidance from MNWD on what else to implement.

## CONSERVATION AWARENESS & BEHAVIOR

- ◆ Homeowners are most willing to adjust individual daily water use habits, such as adjusting shower length and lawn watering frequency.
- ◆ The primary motivations for reducing water usage falls into three categories:
  - ◆ Conservation
  - ◆ Personal Values
  - ◆ Saving Money

# NEXT STEPS





I can live with less.

**SHORTER DAYS. SHORTER WATERING TIMES.**

Lawns need no more than 4 minutes a week. To save more, **turn off the sprinklers** these next few months. Water by hand, and let nature handle the rest! Visit [www.mnwd.com/yourmnwd](http://www.mnwd.com/yourmnwd) for more information.





[www.mnwd.com](http://www.mnwd.com)

PO BOX 30204

LAGUNA NIGUEL CA 92607-0204

## WATER SHORTAGE CONTINGENCY PLAN

# STAGE **2** IN EFFECT

Remain within your water budget or pay up to \$9.04 for every billing unit (1 billing unit [BU] = 748 gallons) of water used in excess of your water budget. Visit [www.mnwd.com/yourmnwd](http://www.mnwd.com/yourmnwd) for more information.



**Water less in the winter.**  
**No watering** for at least  
**48 hours** after a rain event.

Thirsty for more information?

[www.mnwd.com/yourmnwd](http://www.mnwd.com/yourmnwd)



# We need your help.

- ✓ **Save water:** Limit outdoor watering to a maximum of **4 minutes** per station each week.
- ✓ **Save more:** **Turn off** outdoor irrigation and water by hand, as necessary.
- ✓ **Save long-term:** **Plant** a beautiful California native garden.

**'TIS THE SEASON. WASTE NOT. LIVE ON LESS.**

We need to save over 370 million gallons these next three months. Reduce outdoor water use. **Turn off the sprinklers**, and let nature handle the rest! Visit [www.mnwd.com/yourmnwd](http://www.mnwd.com/yourmnwd) for more information.



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# Water Wise Lifestyle

Welcome to **Moulton Niguel Water District's** ongoing series to help you navigate through one of California's worst droughts. MNWD will be offering important information and tips along with rebates and cost saving incentives for homeowners and businesses.

## SUMMER IS OVER, BUT THE DROUGHT IS STILL HERE

Saving water in cooler months is just as important as when it's hot. Homes with yards and gardens should **use much less water in winter.** Here are ways to keep saving water all year long.



### FOCUS ON LEAKS & LAWNES TO SAVE WATER!

<p><b>DRIPPING FAUCET</b> wastes up to <b>20 gallons</b> per day for every leak</p>	<p><b>LEAKING TOILET</b> wastes up to <b>30-500 gallons</b> per day</p>	<p><b>LEAKING POOL</b> wastes up to <b>970 gallons</b> per day</p>	<p><b>OVERWATERING</b> wastes up to <b>1,500 gallons</b> per day</p>
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### REBATES

**WE HAVE MANY REBATES AVAILABLE FOR WATER EFFICIENT DEVICES**, including weather-based irrigation controllers, drip irrigation, sprinkler nozzles, washing machines, toilets, and more. Visit [www.mnwd.com/rebates](http://www.mnwd.com/rebates) for more information.



### COOL TOOL!

To see how much water your yard needs, check out the Watering Calculator and Index.

[www.mnwd.com/wateringcalculator](http://www.mnwd.com/wateringcalculator)



**STEP 1.** Calculate key watering data, including total watering minutes per week.



**STEP 2.** Receive emails with the watering index each week (or month).

### OVER 60% OF RESIDENTIAL WATER USE IS APPLIED OUTDOORS



One of the most effective ways to conserve water is by limiting landscape irrigation. In a typical Orange County home, **overwatering can account for over 30% of a household's water use.** There's a lot of room for savings.

- ✓ **PLANT** a California native garden in place of turf.
- ✓ **WATER LESS** frequently and at a slower rate to allow the water to percolate deeper into the soil.
- ✓ Apply **WATER MORE SLOWLY** by installing multi-stream rotating nozzles on your sprinklers, or convert to drip irrigation or hand watering.
- ✓ **ELIMINATE RUNOFF.** Use multiple start times with shorter durations ("cycle and soak") during the allowable watering period to avoid water waste.
- ✓ Be sure **NOT TO EXCEED** the maximum recommended minutes of irrigation per week.

For more water saving tips, visit [www.mnwd.com/watersavingtips](http://www.mnwd.com/watersavingtips)



### TYPICAL HOME WATER USE



### Learn More With a **FREE Home Savings Survey**

MNWD customers can learn more tips and techniques to save on their water bills with a free Home Savings Survey. The team reviews and recommends easy ways to save money by becoming more water-efficient.

The MNWD conservation team will:

- **Review** outdoor watering practices
- **Check** the irrigation system for leaks
- **Advise** on adjusting sprinkler heads
- **Evaluate** indoor water use



Some 90% of Home Savings Survey customers were watering their lawns and plants up to **700% more than needed** this time of year.

Visit [www.mnwd.com/homesavings](http://www.mnwd.com/homesavings) to sign up.

Welcome to Moulton Niguel Water District's ongoing series to help you navigate through one of California's worst droughts. MNWD will be offering important information and tips along with rebates and cost-saving incentives for homeowners and businesses.

# GIVING BACK BY SAVING WATER

For many people in the world, access to clean and safe water is a luxury that we often take for granted here in Orange County.

In a week when many of us give thanks, let's be aware of how precious water is, and to continue to **conserve water in every way we can.**



## WINTER RAINS WON'T END THE DROUGHT

Too often we equate the word "drought" with hot and dry summer weather. It's easier to save more water in the summer, because we tend to waste a lot more water outdoors.

**In the winter, it is critical that we reduce outdoor watering to a bare minimum, as our plants and lawns require a lot less water. To cut down on outdoor water waste, we need to reduce outdoor watering.**



## GOVERNOR'S ORDERS

California Governor Jerry Brown requires California communities to cut water use statewide by

# 25%

Governor Brown recently signed a new executive order to extend the current water reduction requirements, which were set to expire in February 2016, to October 2016, if drought conditions continue to persist in January. All indications are showing that they will.

# 5 TIPS TO SAVE WATER IN WINTER



### Don't water when it rains!

No watering for at least 48 hours after a rain event.

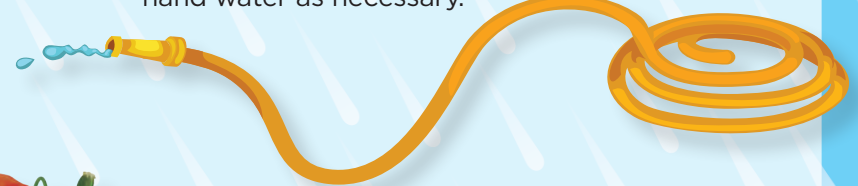
**If you don't use your lawn, lose it!**



**Plant a California native garden instead.**

### Water less often, and for less time.

Turn your sprinklers off and hand water as necessary.



**Use a watering calculator** to figure out how little water your yard really needs.

[www.mnwd.com/wateringcalculator](http://www.mnwd.com/wateringcalculator)

Water no more than four minutes a week this season.

About

# 40%

of residential water use in Orange County is **outdoor water waste** due to **overwatering.**

It's clear that the best way to continue saving water during the ongoing drought is to

*Limit outdoor water waste.*

## OC INSPIRATION FOR YOUR OWN CALIFORNIA NATIVE GARDEN

### Go outdoors in Orange County

to view beautiful gardens that feature California native plants and to learn more about conservation in the community.

- Bolsa Chica Conservancy | Huntington Beach [bolsachica.org](http://bolsachica.org)
- Coastkeeper Garden at Santiago Canyon College | Orange [coastkeeper.org/coastkeeper-garden](http://coastkeeper.org/coastkeeper-garden)
- The Ecology Center | San Juan Capistrano [theecologycenter.org](http://theecologycenter.org)
- Montanez Adobe/Los Rios Park | San Juan Capistrano
- Newport Beach Civic Center Park | Newport Beach [newportbeachca.gov](http://newportbeachca.gov)
- Niguel Botanical Preserve | Laguna Niguel [niguelbotanicalpreserve.org](http://niguelbotanicalpreserve.org)
- Orange County Great Park Farm + Food Lab | Irvine [ocgp.org](http://ocgp.org)
- Reata Park and Event Center | San Juan Capistrano [sjcopenspacefoundation.org](http://sjcopenspacefoundation.org)

## MAKE A SPLASH AND SAVE BIG!

Turn off your irrigation outdoors, and hand water only when necessary. If you decide to keep your sprinklers on, water for no more than four minutes once a week.

Plants and lawns need much less water in the winter, and we can keep them healthier while saving up to thousands of gallons of water a month!



### Saving Water is Beautiful

To learn more about water-saving tips, resources and rebates, go to [mnwd.com/yourmnwd](http://mnwd.com/yourmnwd)

Moulton Niguel Water  
Leading the Way in Service



nothing in this area, reserved for postage metering

## We need your help. Save water outdoors.



We can meet our goal with your help by **turning off outdoor irrigation** and watering by hand, as necessary.

## 💧 Help Save Water 💧

We saved over 1.1 billion gallons since June 1. We need to save at least 370 million gallons more by the end of February 2016 to meet our 20% reduction goal.

**LIVE** within your **BUDGET**

- ✓ **Turn off outdoor irrigation, and water by hand, as necessary**
- ✓ **Plant California natives**

For more information, visit [www.mnwd.com/yourmnwd](http://www.mnwd.com/yourmnwd)



*For Immediate Release*

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## **Governor's New Executive Order to Extend Statewide Water Restrictions if Drought Continues**

**Laguna Niguel (November 24, 2015)** – Governor Edmund G. Brown issued his latest executive order announcing the extension of the current emergency regulations, which call for a statewide reduction of urban water usage by 25 percent if California continues to experience drought conditions through January 2016.

The current regulations went into effect in June 2015, mandating reduction targets for water providers throughout the State over the next nine months. Five months into the regulations, Californians reduced their water usage by approximately 29 percent compared to the benchmark year of 2013, exceeding the mandate; however, the months of October and November were significantly hotter than those same months in 2013, providing a compelling reminder that despite El Niño storm projections, we continue to experience drought conditions that will require multiple years of intense precipitation before drought relief is in sight.

In response to the executive order, Don Froelich, Board President of the Moulton Niguel Water District (MNWD) stated, “We understand conservation is a critical solution to ensuring reliability now and into the future. Based on the likelihood we will still be in a drought in January 2016, it’s important we continue to maintain the high level of conservation efforts going strong as we enter the winter season.”

MNWD customers have exceeded the agency’s target of 20 percent every month except in October, which are a direct reflection of the community’s extraordinary efforts to be water-efficient, which has resulted in the most number of customers living within their water budgets since the inception of the water budget based rate structure in 2011.

“It is this kind of response and resolve that will be needed as California moves towards a long-term, sustained conservation mindset to stretch our limited resources. In doing our part, MNWD continues to implement Stage Two of our Water Shortage Contingency Plan to further encourage efficient use of water,” added Froelich. In tandem with penalizing wasteful water use, MWND continues to offer rebates of up to \$2.00 per square foot of turf removed in favor of drought-tolerant and California native gardens. Learn more at [www.mnwd.com/rebates](http://www.mnwd.com/rebates)



The best thing all customers can do during the holiday season is to remember to conserve while urging friends and family to do the same. Also, during the winter season, most lawns do not need to be watered. Turning off the sprinklers can save as much as 70 percent of a household's water usage. The maximum watering time for lawns during the winter months should be no more than 4 minutes per week. In the event of rain, lawns do not require watering for at least a week, and the current State regulations prohibit any watering for at least 48 hours after rainfall.

### **About MNWD**

Moulton Niguel Water District (MNWD) provides water, recycled water, and wastewater service to more than 170,000 customers in Laguna Niguel, Aliso Viejo, Laguna Hills, Mission Viejo, and Dana Point. Approximately 25 percent of MNWD's water is provided through local water recycling programs. Approximately 75 percent of MNWD's water is imported from the Metropolitan Water District of Southern California – a regional water wholesaler that delivers water from Northern California and the Colorado River.

###



*For Immediate Release*

**Media Contact:**  
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mschneider@mnwd.com

## **Longest Serving Water District Board Member Larry Lizotte Celebrates 45 Years of Service with Moulton Niguel Water District**

**Laguna Niguel (November 19, 2015)** – During the Moulton Niguel Water District (MNWD) Board of Directors meeting, Director Larry Lizotte was honored for his service to the community for 45 years.

Mr. Lizotte began his service to our nation when he was enlisted in the United States Navy from 1954-1958. He attended Fullerton College from 1958-1960 and was the President of the Veterans Club, and continued his education at California State University Long Beach. Soon after, he graduated with his degree in Civil Engineering in 1961. During his long-term residency in the City of Laguna Niguel, Mr. Lizotte served on the Laguna Niguel Corporation as the Chief Engineer and Planner when they entered into agreement with AVCO Community Developers, making Laguna Niguel one of the first master planned communities in California.

Mr. Lizotte moved to the City of Laguna Niguel in 1966, where he and his wife Nancy settled down to start a family. In 1970, he started at Broadmoor Homes as Executive Vice President and left in 1980 as President. He was a residential homebuilder and licensed general contractor, starting his own company where he would eventually retire as President and Owner of LDM Development Inc. from 1985-1995.

The areas served today by MNWD were previously known as two large Spanish land grants: Rancho Niguel and Rancho Mission Viejo, primarily used for ranching up until the early 1960's. Development and ranch owners began to move into the area and settle at an increased rate and landowners soon saw the need to bring a more reliable water supply to the area. During MNWD's inception in 1960, there were only eight customers. However, when Mr. Lizotte started in 1970, MNWD customer base had already reached more than 33,000. With his service and the help from the other directors on the board, they helped represent the major landowners, who put up their land so bonds could be sold and water could be brought to our community from the Metropolitan Water District of Southern California. This agreement brought water from the Colorado River and Northern California to Southern Orange County.

Of Mr. Lizotte's past 45 years of public service with the MNWD, 33 of those years were served as Board President. During this time, he also served on subcommittees with the Aliso Waste

Management Authority (AWMA), South East Regional Reclamation (SERRA), and South Orange County Reclamation Authority (SOCRA) as both Chairman and Director. In 2001, those three agencies consolidated to meet the needs of over 500,000 home and businesses across Southern Orange County to create the South Orange County Wastewater Authority (SOCWA) where Mr. Lizotte currently serves as First Chairman.

Mr. Lizotte was honored with multiple proclamations by local district representatives and his peers from surrounding water districts:

- United States Congress Representative Mimi Walters
- 73<sup>rd</sup> District Assemblyman Bill Brough
- California 36<sup>th</sup> District Senator Pat Bates
- Orange County 5<sup>th</sup> District Supervisor Lisa Bartlett
- El Toro Water District
- Irvine Ranch Water District
- Laguna Beach County Water District
- Municipal Water District of Orange County
- Orange County Water District
- Santa Margarita Water District
- South Coast Water District
- Trabuco Canyon Water District
- South Orange County Wastewater Authority
- City of Laguna Niguel

Afterwards, the remaining Board of Directors each took the time to express their gratitude for Mr. Lizotte's hard work and dedication.

“Larry brings a wealth of institutional knowledge and experience to the Board of Directors. Over the years, he has not only helped me, he has helped every member who has served on this board,” said Donald Froelich, MNWD's Board President. “He has taught me the role of a director and what our civic duty is to the community.”

Mr. Lizotte took a few minutes at the end of the meeting to reflect on his time as a board member and recognized his peers for all of their accomplishments, relating it takes everyone working together.

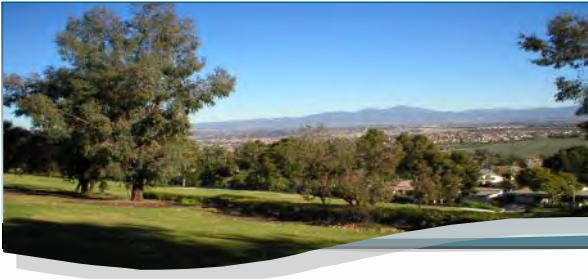
“I take great pride serving on this board, and as I look back over the past 45 years, collectively, we have accomplished a lot,” said Mr. Lizotte. “We have come a long way - the future of our water supply depends on all of us working to conserve water together.”

The elected Board of Directors are committed to providing the community with safe and reliable water services, as well as information on current water issues and water conservation tips during winter-weather months. Over the next few months the community is encouraged to water no more than four minutes a week, turn off outdoor irrigation and water by hand while letting nature handle the rest.

**About MNWD**

Moulton Niguel Water District (MNWD) provides water, recycled water, and wastewater service to more than 170,000 customers in Laguna Niguel, Aliso Viejo, Laguna Hills, Mission Viejo, and Dana Point. Approximately 25 percent of MNWD's water is provided through local water recycling programs. Approximately 75 percent of MNWD's water is imported from the Metropolitan Water District of Southern California – a regional water wholesaler that delivers water from Northern California and the Colorado River.

# # #



## LAGUNA NIGUEL TO SAN JUAN CAPISTRANO PASSING SIDING PROJECT

# YOU'RE INVITED

Come learn about the proposed rail improvements, current project status and schedule. Participants will be able to view exhibits, ask questions and share comments with the project team.

**Thursday, December 10, 2015 - 6:00 - 7:30 PM**

**Niguel Hills Middle School - Blue Commons Room**

29070 Paseo De La Escuela

Laguna Niguel, CA 92677

*Special accommodations and translation is available to the public by calling (714) 560-5556. Requests must be made at least 24-hours in advance of the scheduled meeting.*

If you are unable to attend the meeting and would like to learn more about the project, please contact Tresa Oliveri, Outreach Manager at 714-560-5374 or [toliveri@octa.net](mailto:toliveri@octa.net).

### Stay Connected



[www.OCTA.net/LN-SJCPassingSiding](http://www.OCTA.net/LN-SJCPassingSiding)



714-560-5374



[toliveri@octa.net](mailto:toliveri@octa.net)



METROLINK



# LAGUNA NIGUEL LIBRARY

## ANNUAL HOLIDAY BOOK SALE

**SATURDAY, DECEMBER 5**

**10 A.M. TO 2:00 P.M.**



# 5 Tips To Save Water in Winter



**DON'T WATER WHEN IT RAINS!**



**IF YOU DON'T USE YOUR LAWN, LOSE IT!**



**WATER LESS OFTEN AND FOR**

**USE A WATERING CALCULATOR TO FIGURE OUT HOW LITTLE WATER YOUR YARD REALLY NEEDS**

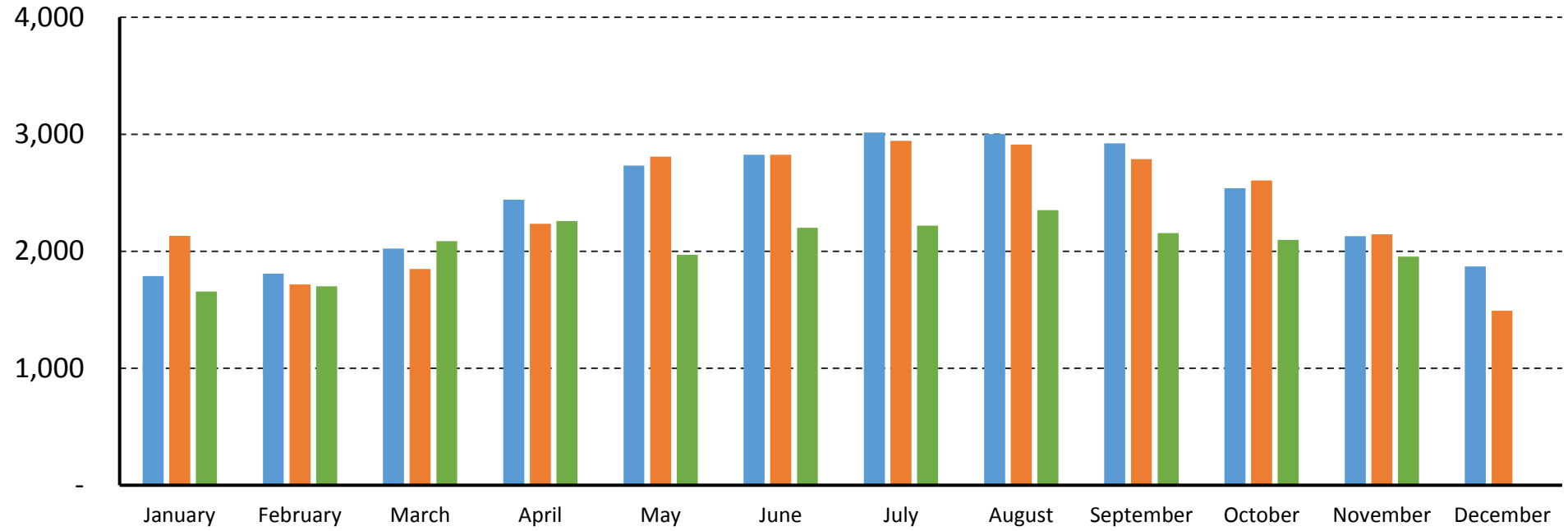


**PLANT A CALIFORNIA NATIVE GARDEN INSTEAD**



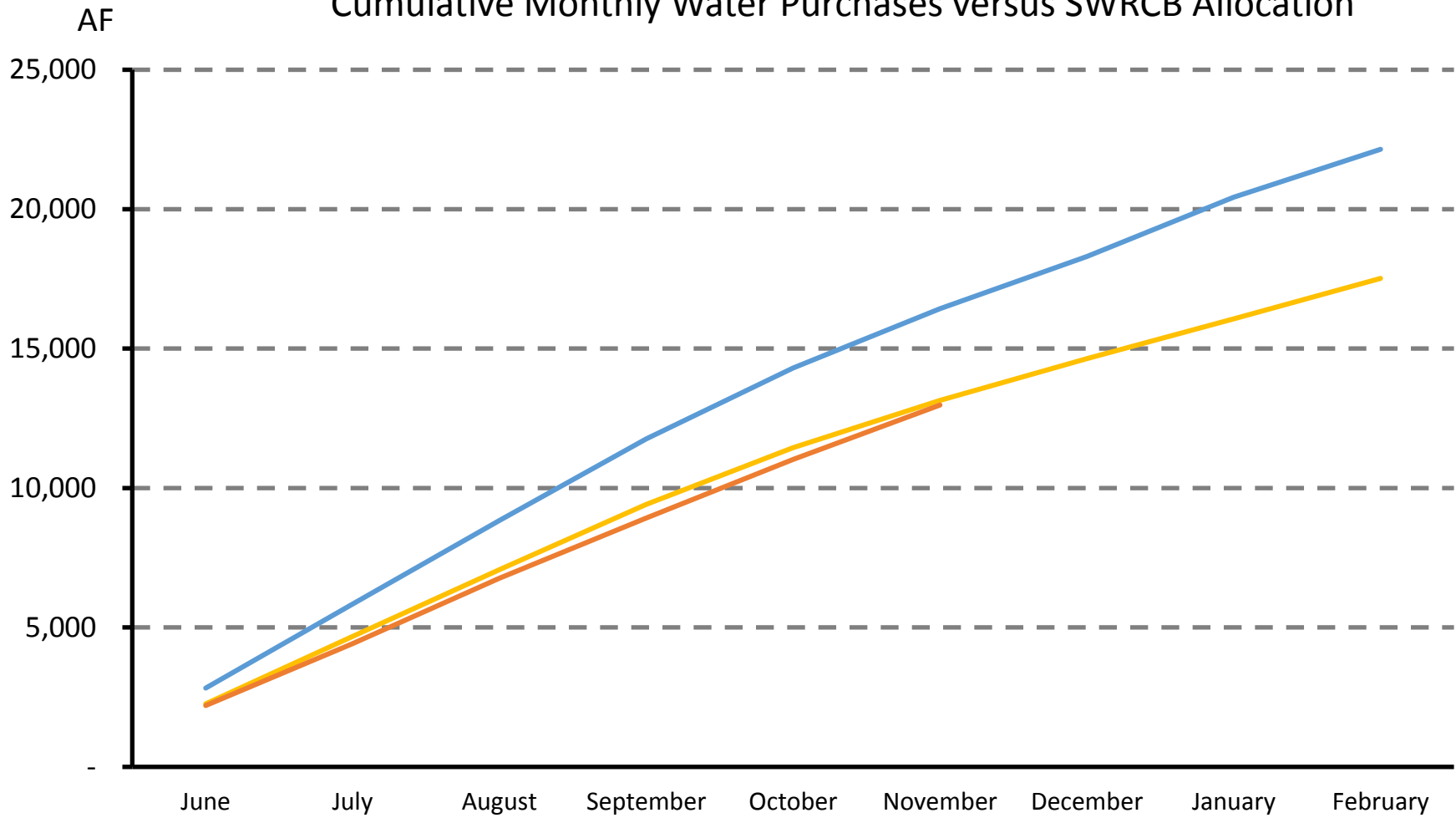
AF

## 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		

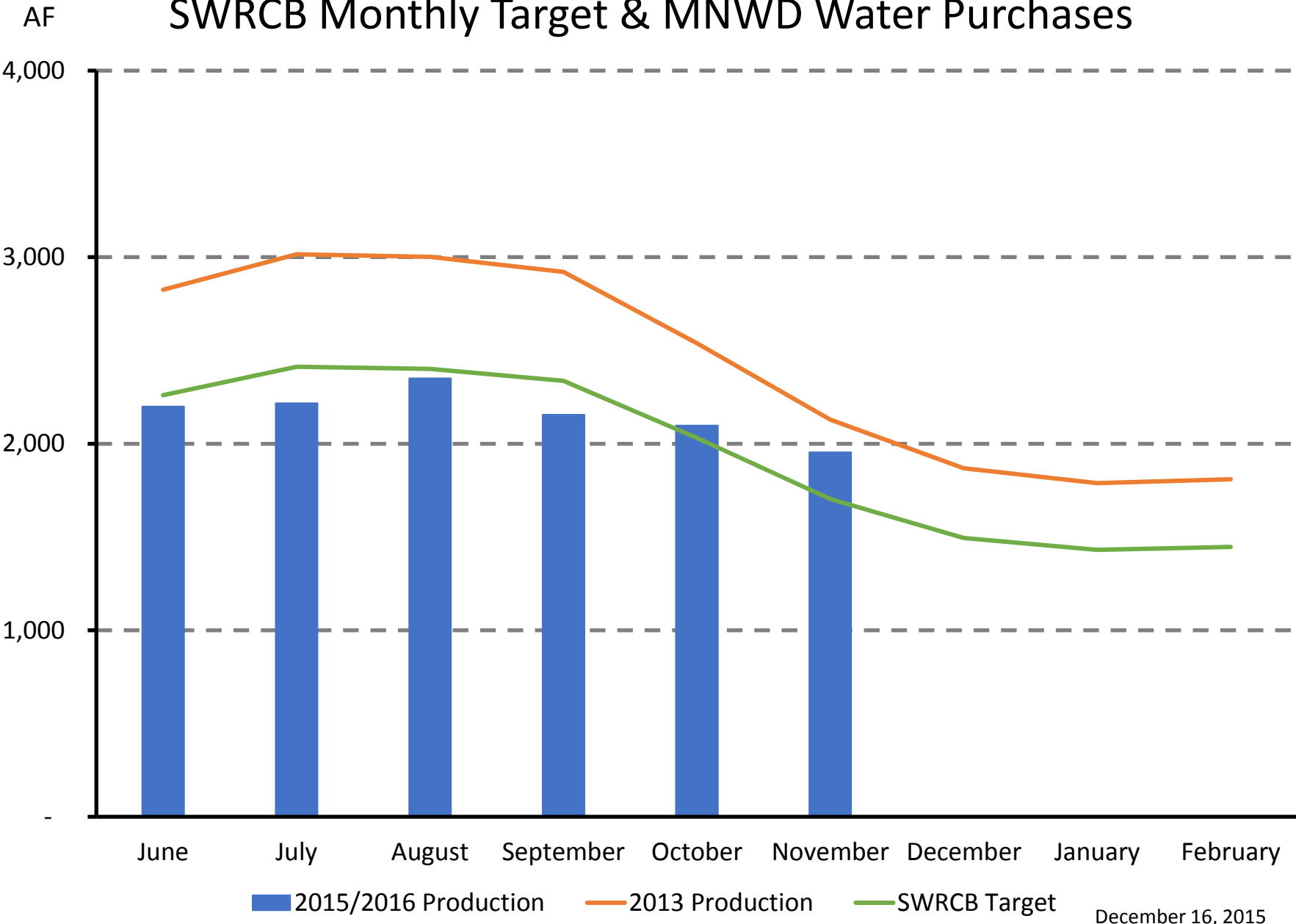
# Cumulative Monthly Water Purchases versus SWRCB Allocation



— 2013/2014 Production    — SWRCB Target    — 2015/2016 Production

December 16, 2015

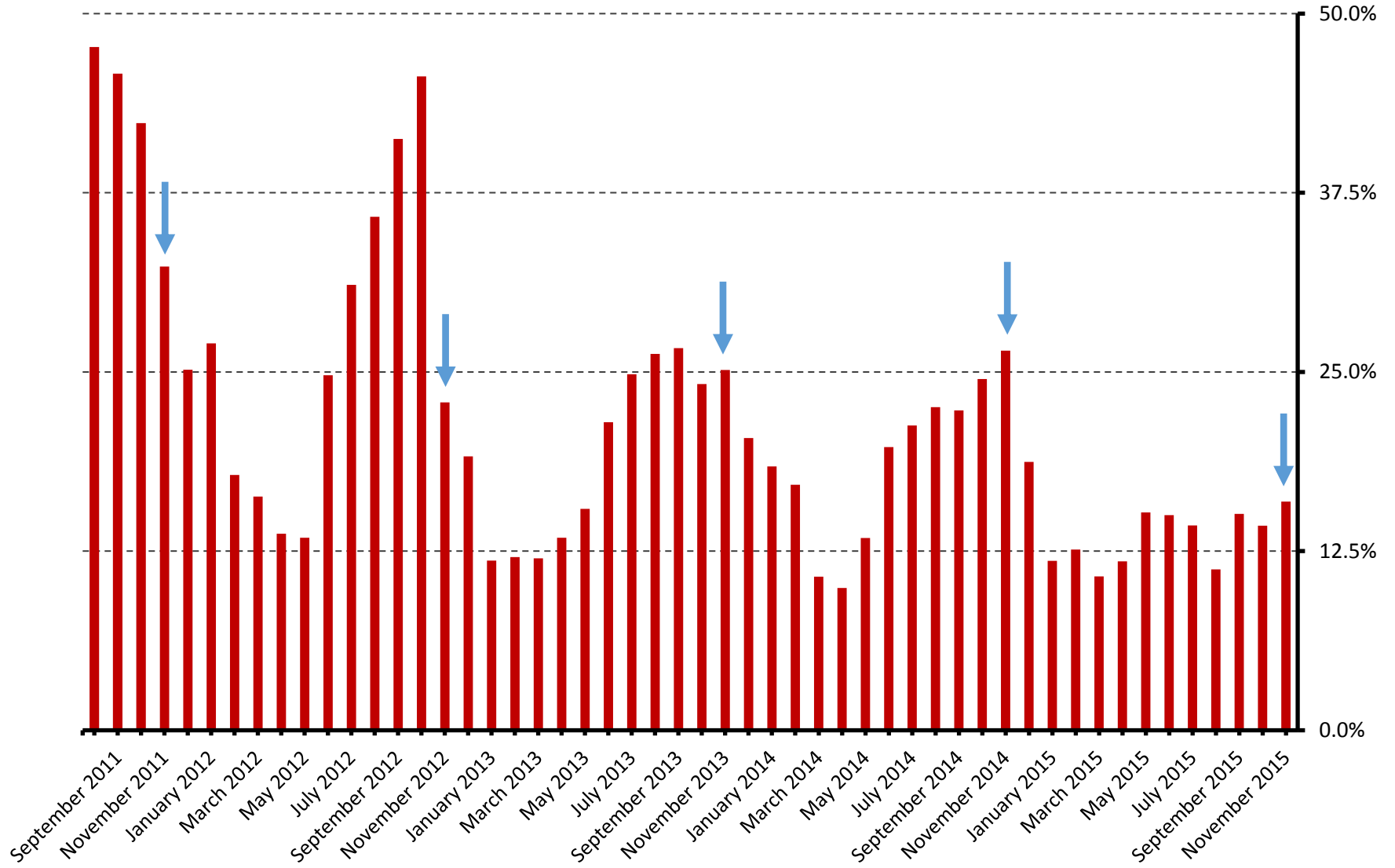
# SWRCB Monthly Target & MNWD Water Purchases



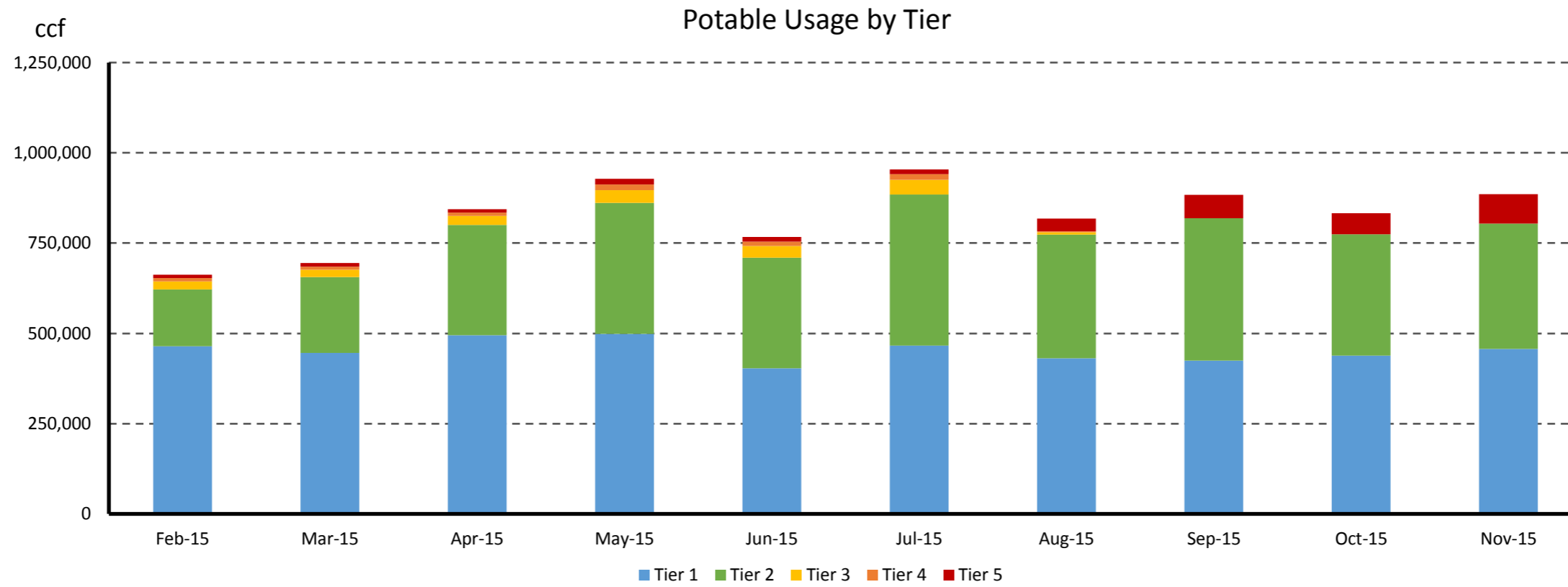
December 16, 2015



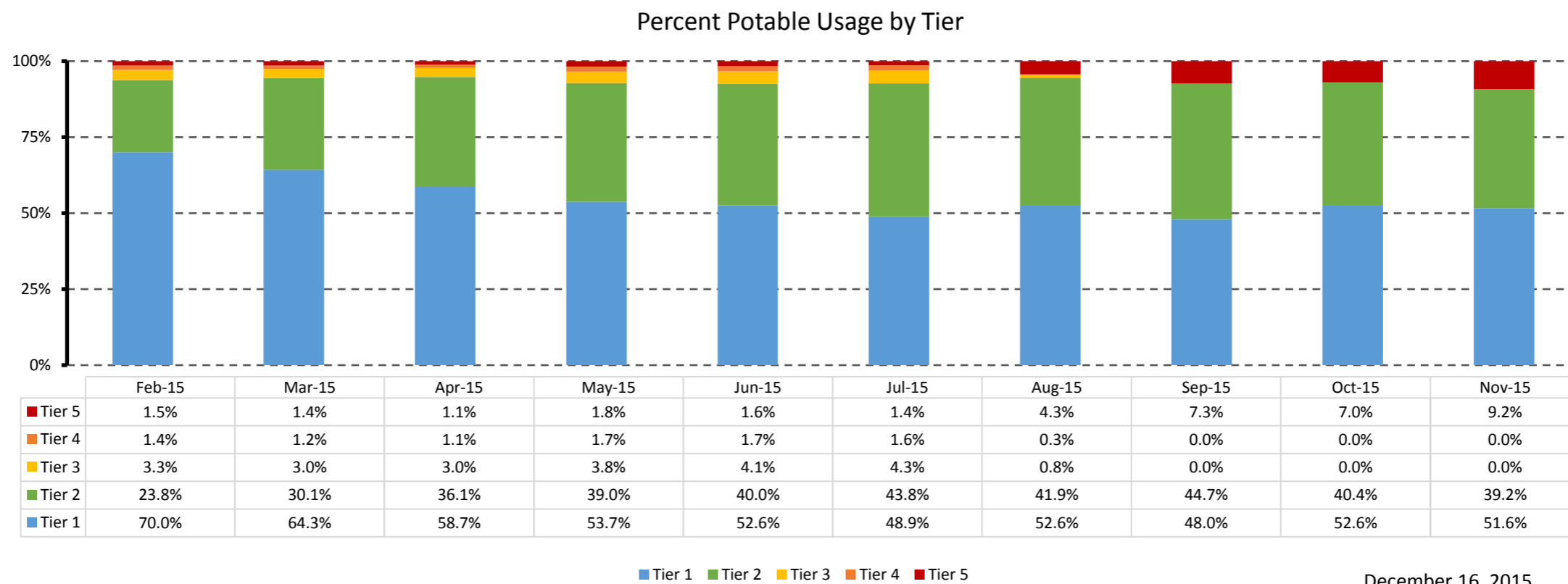
# Single Family Residential Accounts Above Tier 2



December 16, 2015

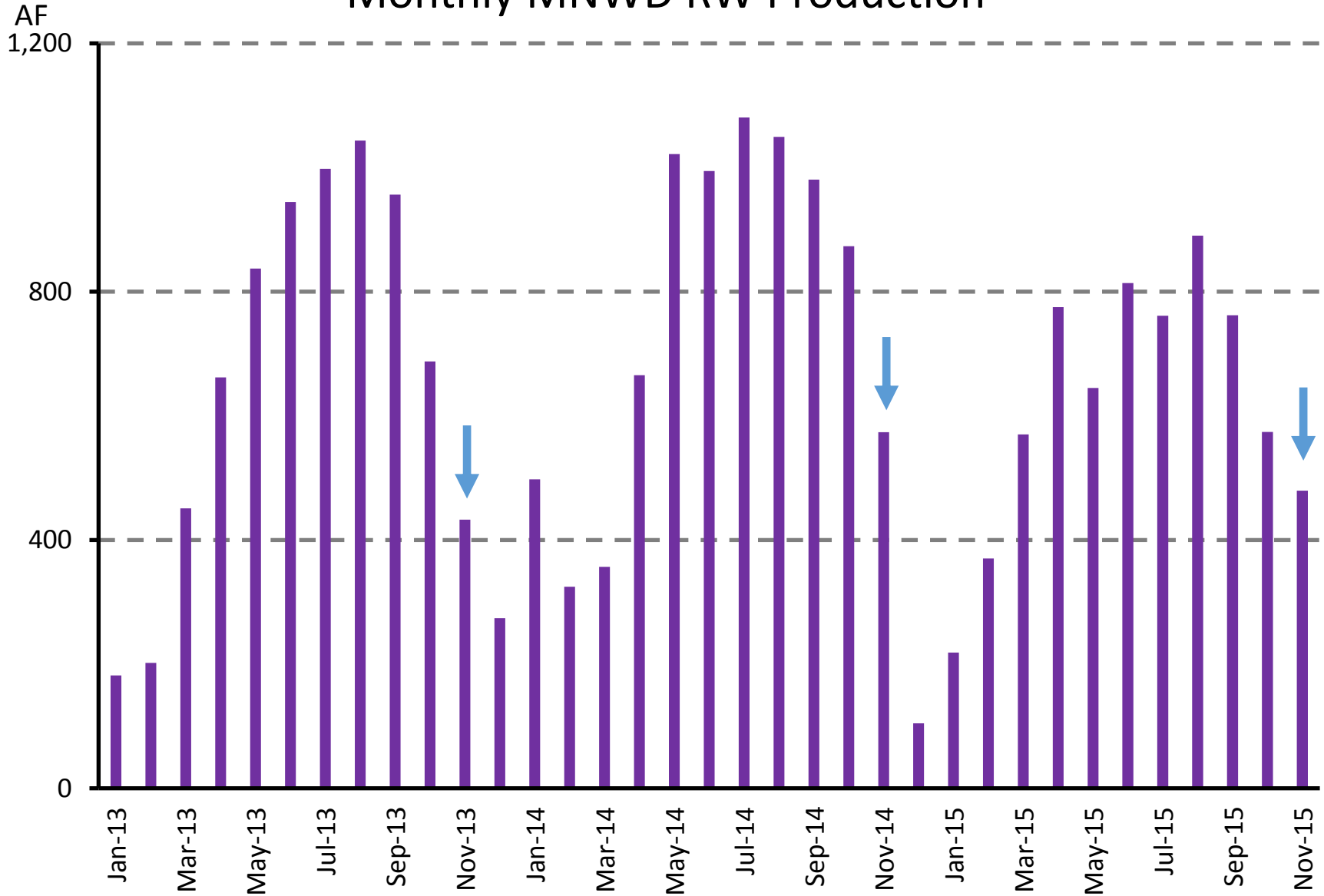


AF in Tier 3, 4, 5	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15
	94	89	101	154	131	159	102	148	134	187



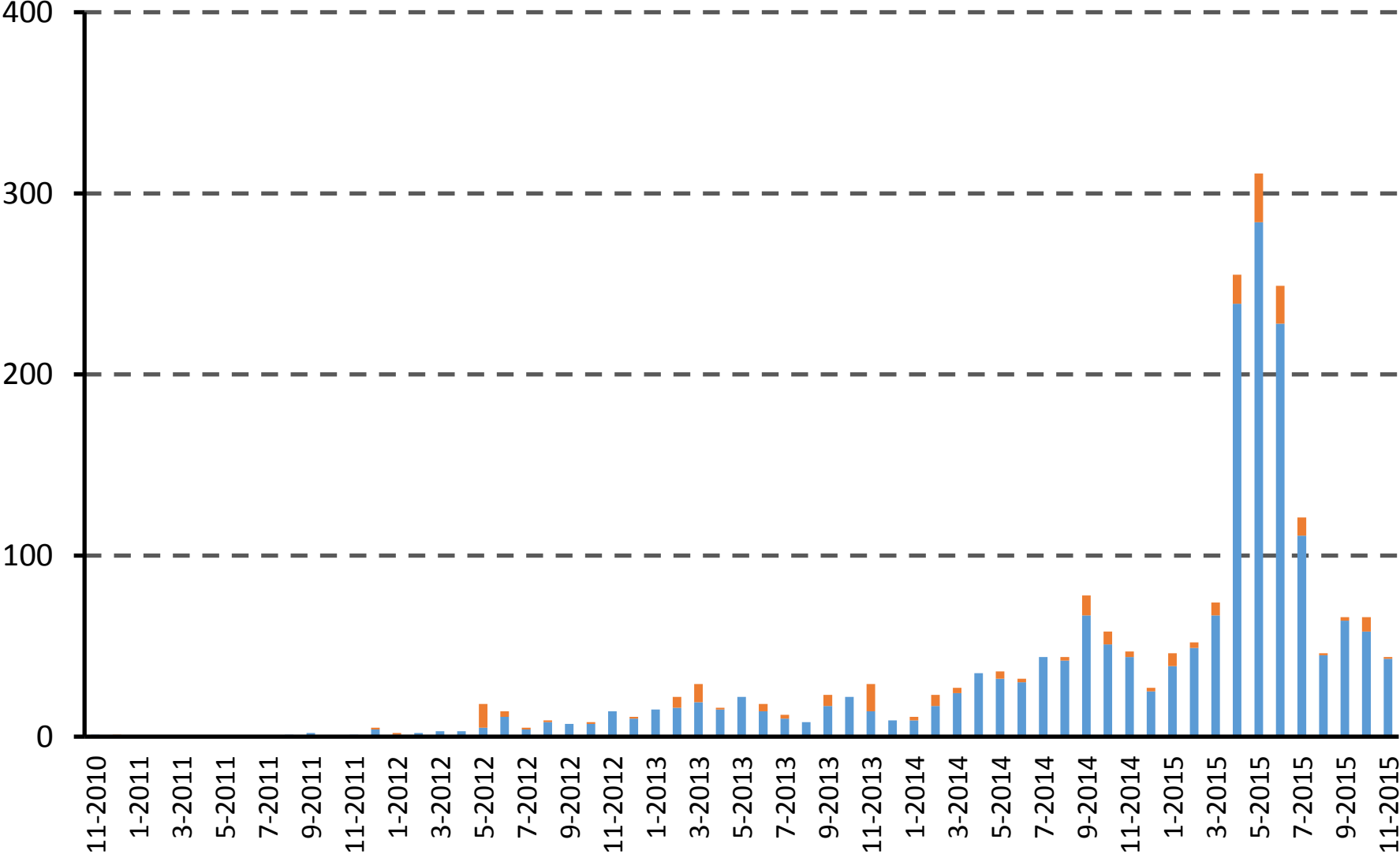
December 16, 2015

# Monthly MNWD RW Production



# Total Turf Removal Applications by Month

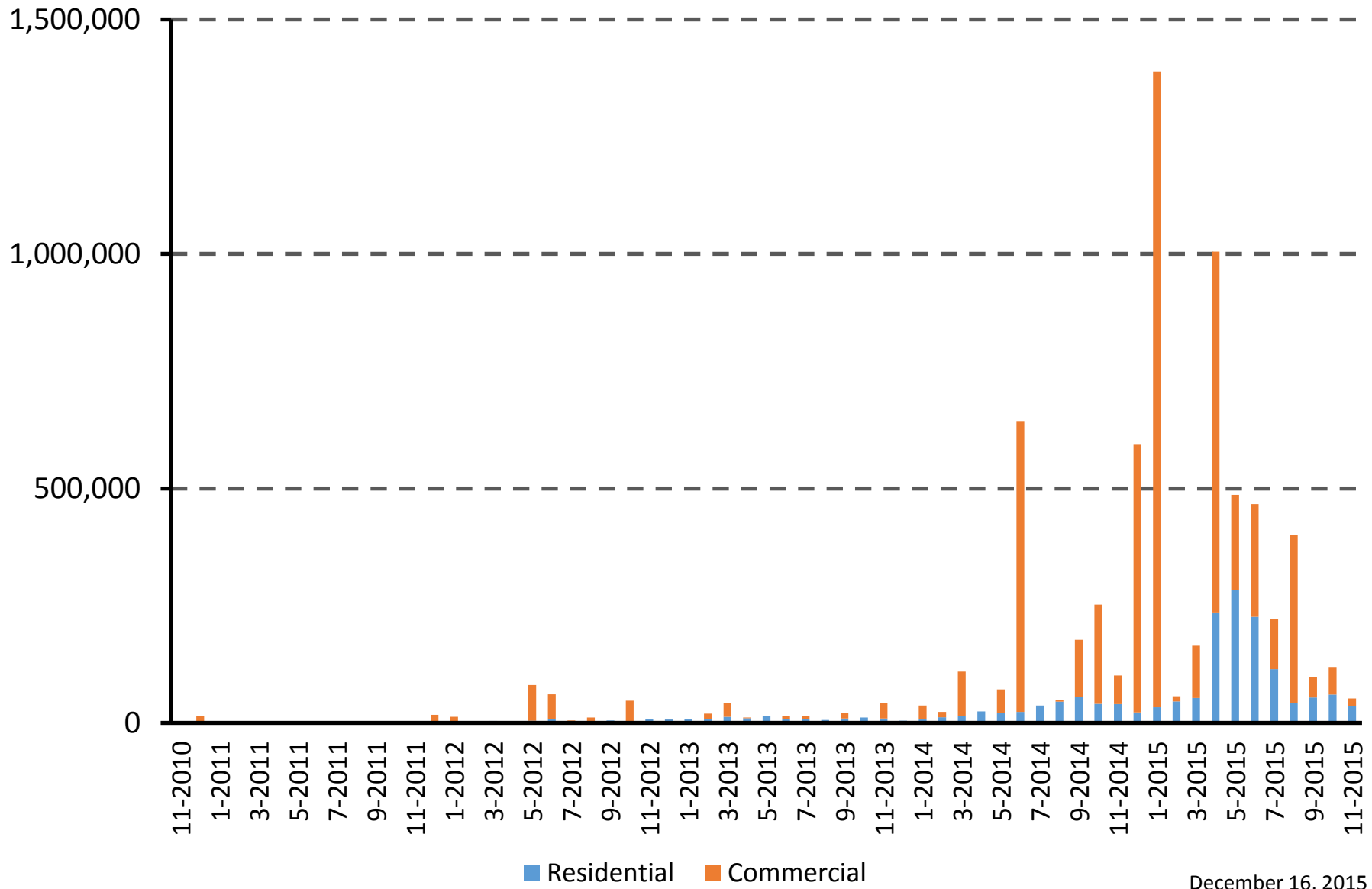
Applications



■ Residential ■ Commercial

December 16, 2015

# Square Feet Total Turf Removal Application Size by Month





**Moulton Niguel Water**  
*Leading the Way in Service*

# DROUGHT EMERGENCY REGULATIONS UPDATE

Engineering and Operations Board Meeting

December 14, 2015

# HISTORICAL BACKGROUND

- January 2014: Governor calls for voluntary conservation
- July 2014: SWRCB issues mandatory restrictions
  - MNWD Alternative Plan Approval
- April 2015: Executive Order
- May 2015: SWRCB statewide mandatory conservation tiers
- November 2015: Governor extends “Drought state of emergency” through October 2016
- Through October: 27 % cumulative conservation statewide
  - MNWD: 23 % Cumulative (21% to date)

# EXPECTED ACTIONS

- SWRCB Extension of Conservation Tiers w/ the following likely adjustments
  - Climate
  - Growth
- Review of extension in April 2016 based on CA hydrology
- Potential to lower conservation standard in April 2016
  
- **Note: Staff to bring recommendation on WSCP in January 2016 based on SWRCB actions.**



# PROJECTED TIMELINE

- Late December to early January: Proposed SWRCB drought regulation extension released
- Early January 2016: SWRCB approves extension
- January Board Meeting: Recommendation on WSCP
- April 2016: modified based on state hydrology
- October 2016: proposed drought regulation extension expires