

CT: Southwest Fairfield County Drought

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How it Progressed, Our Response and Where We're Going

May 21, 2018

NE Conference of Public Utility Commissioners

Jeff Ulrich

Director of Supply Operations



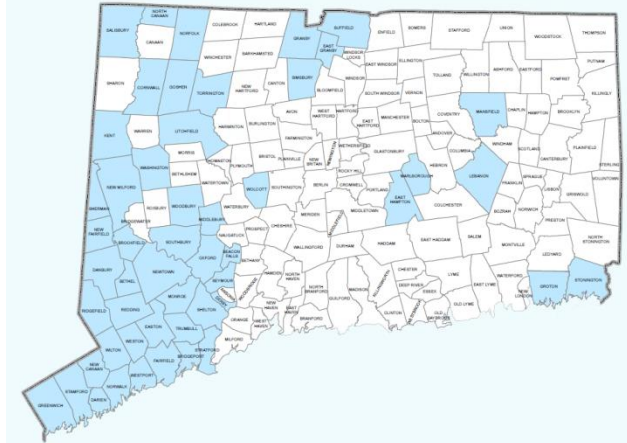
AQUARION
Water Company

Stewards of the Environment™

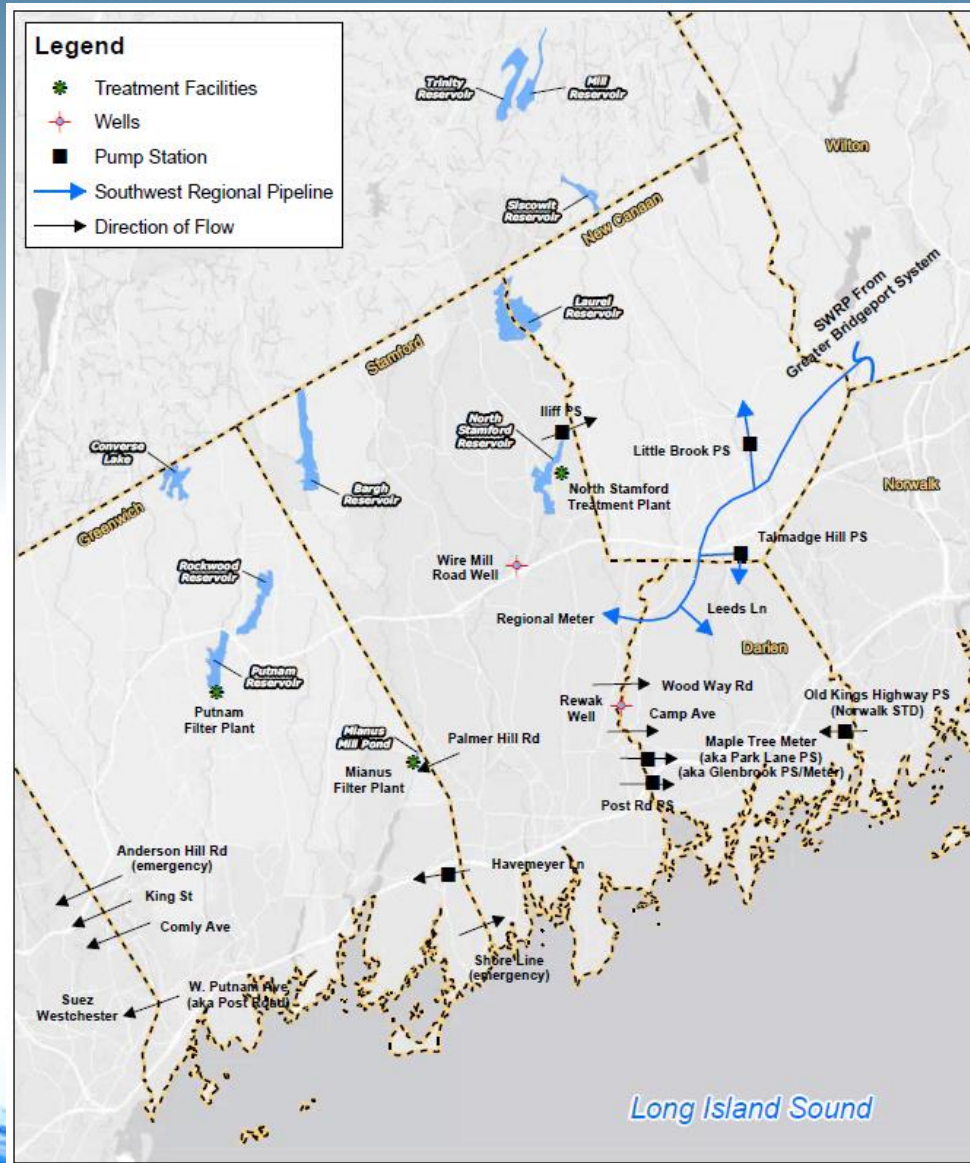


Aquarion Water Facts

- 160-year track record
- P.T. Barnum, second president
- Based in Bridgeport, CT
- Serves CT, MA and NH
 - 75 Water Systems
 - 700,000 people
- A wholly-owned subsidiary of Eversource



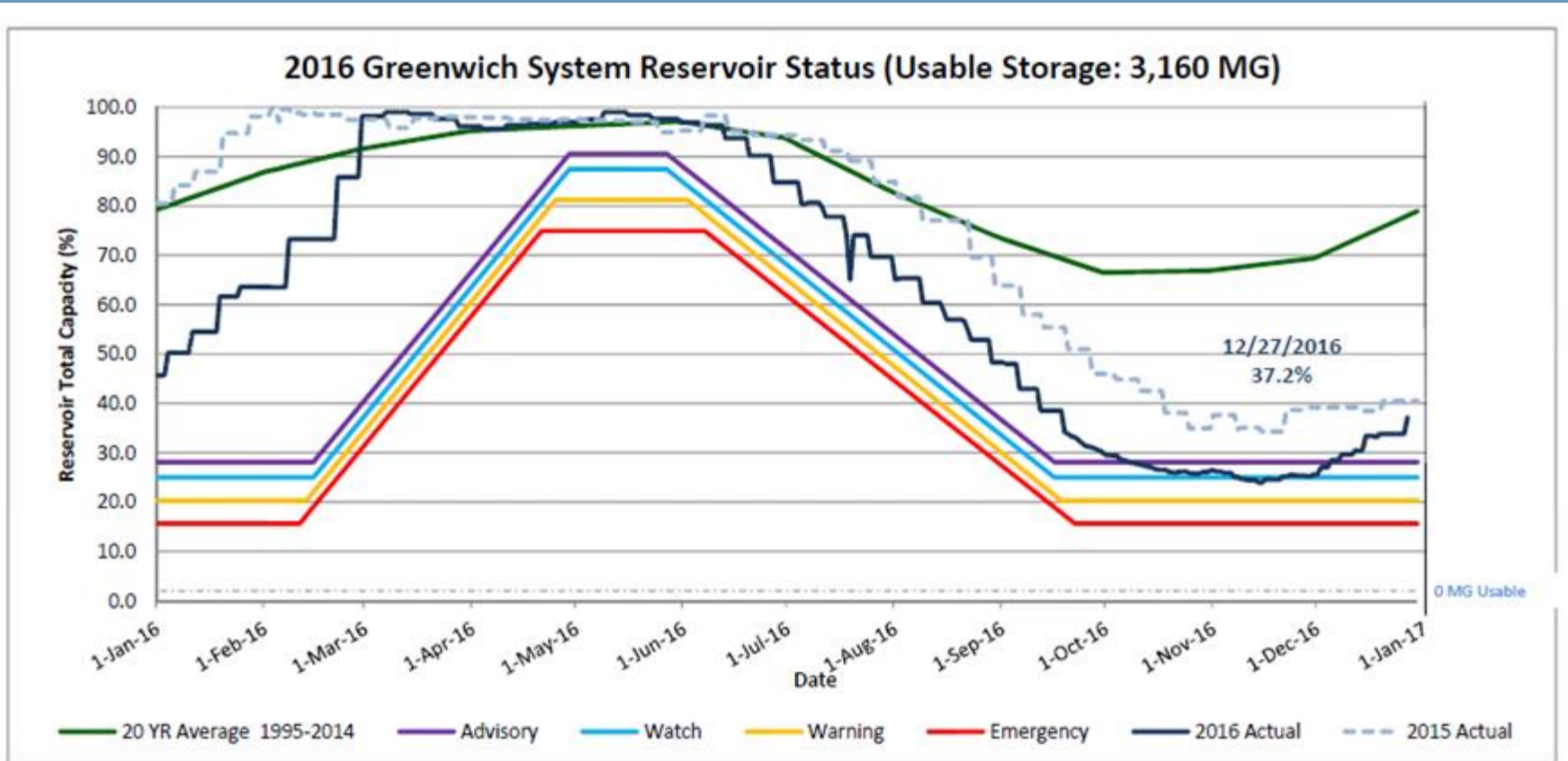
Southwest Fairfield County



- Greenwich Reservoir System
 - Bargh
 - Rockwood
 - Putnam
- Stamford Reservoir System
 - Mill
 - Trinity
 - Siskowit
 - Laurel
 - N. Stamford
- Southwest Regional Pipeline
- Wire Mill Well
- Rewak Well



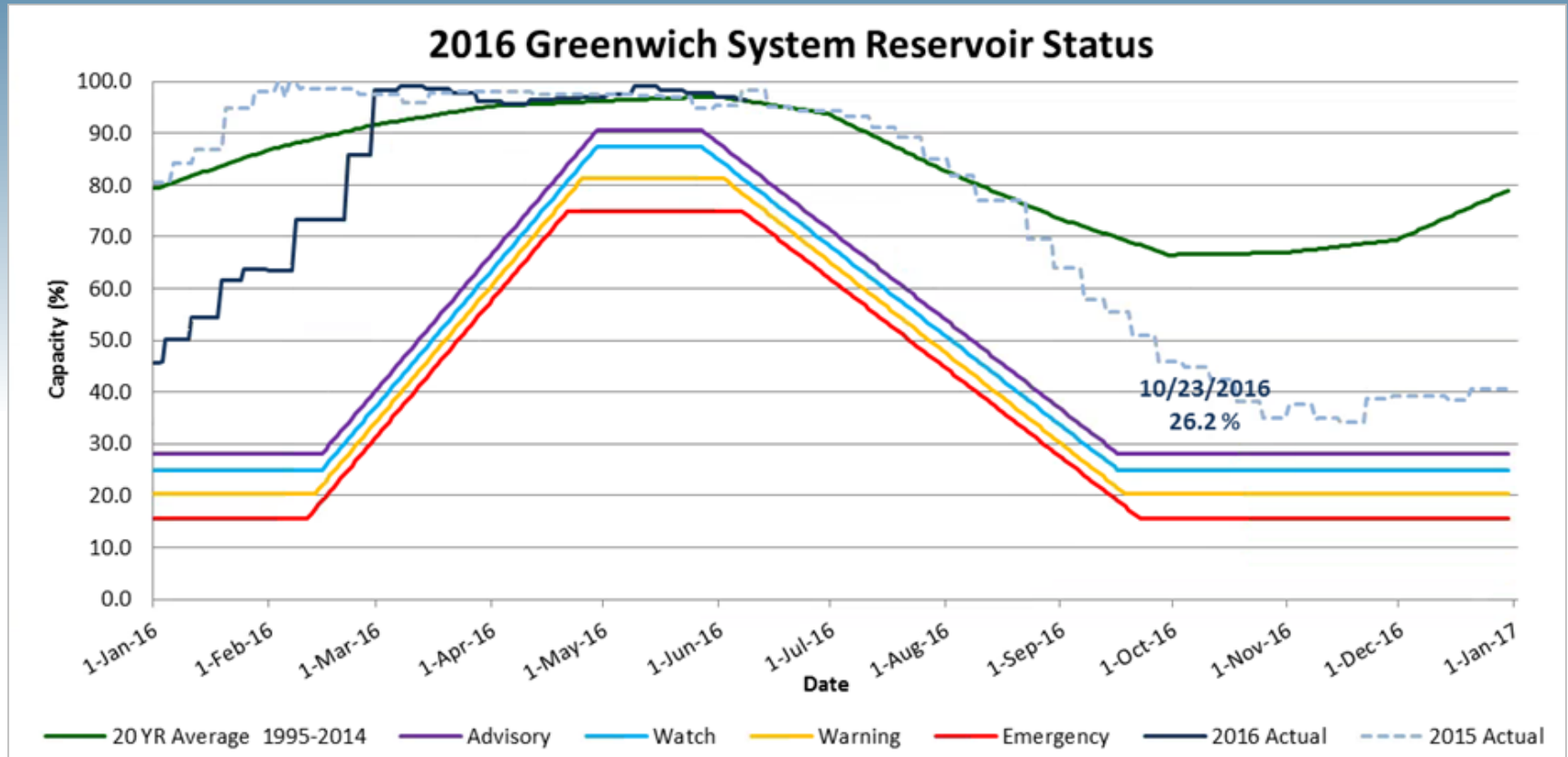
Greenwich Reservoir System – 2016



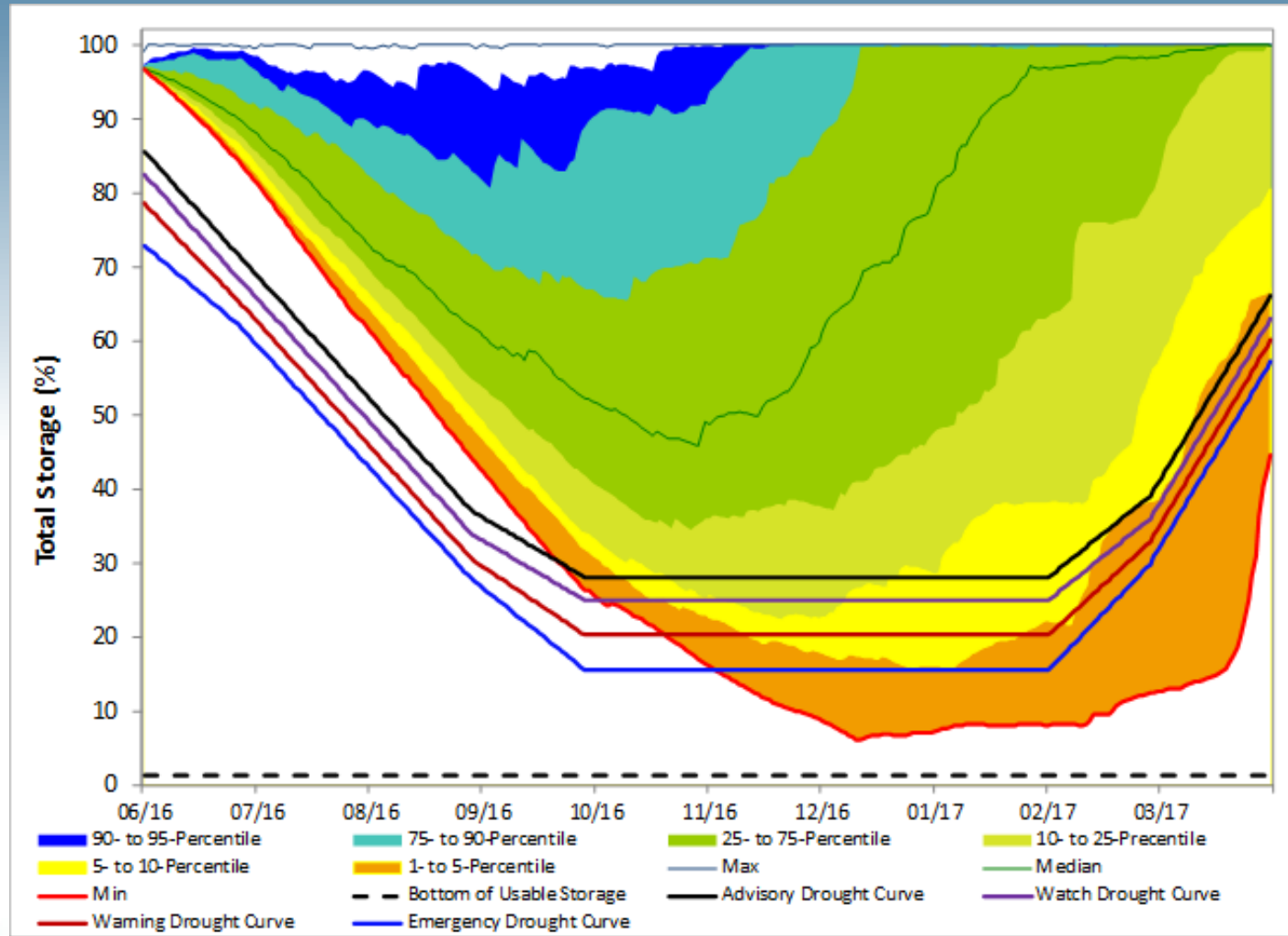
Bargh Reservoir



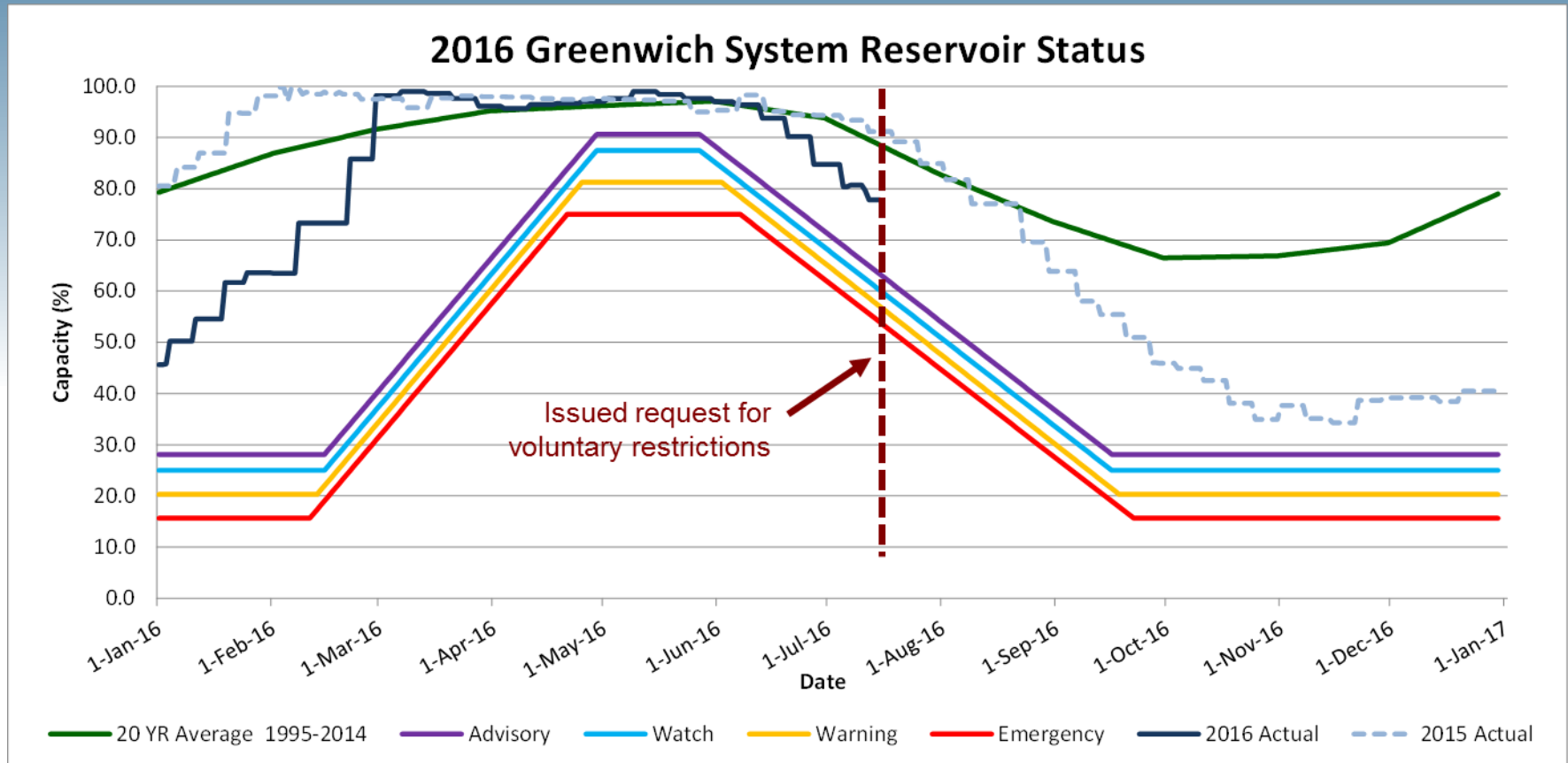
Greenwich Reservoir System – June 2016



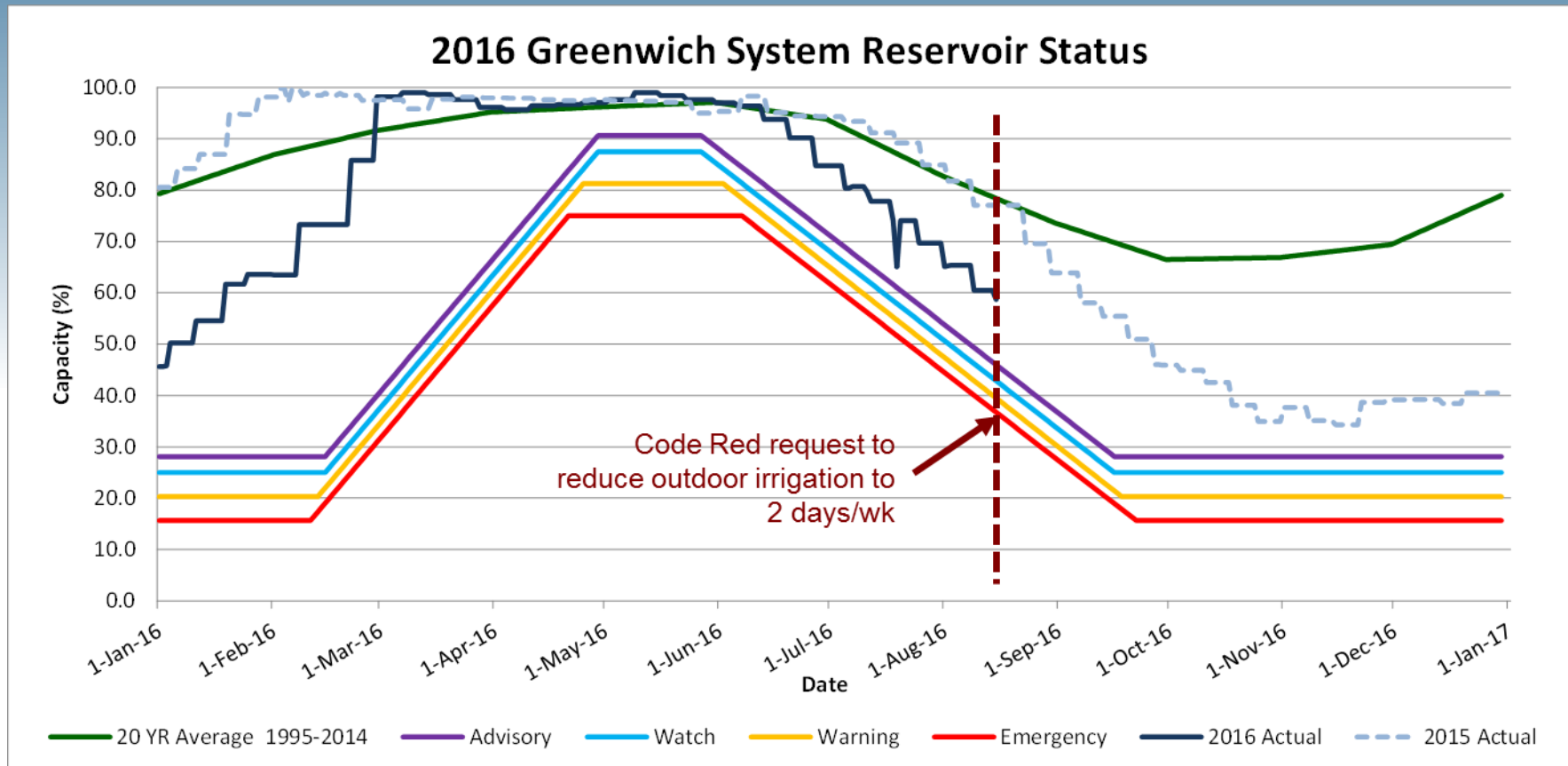
Greenwich Reservoir System – June 2016



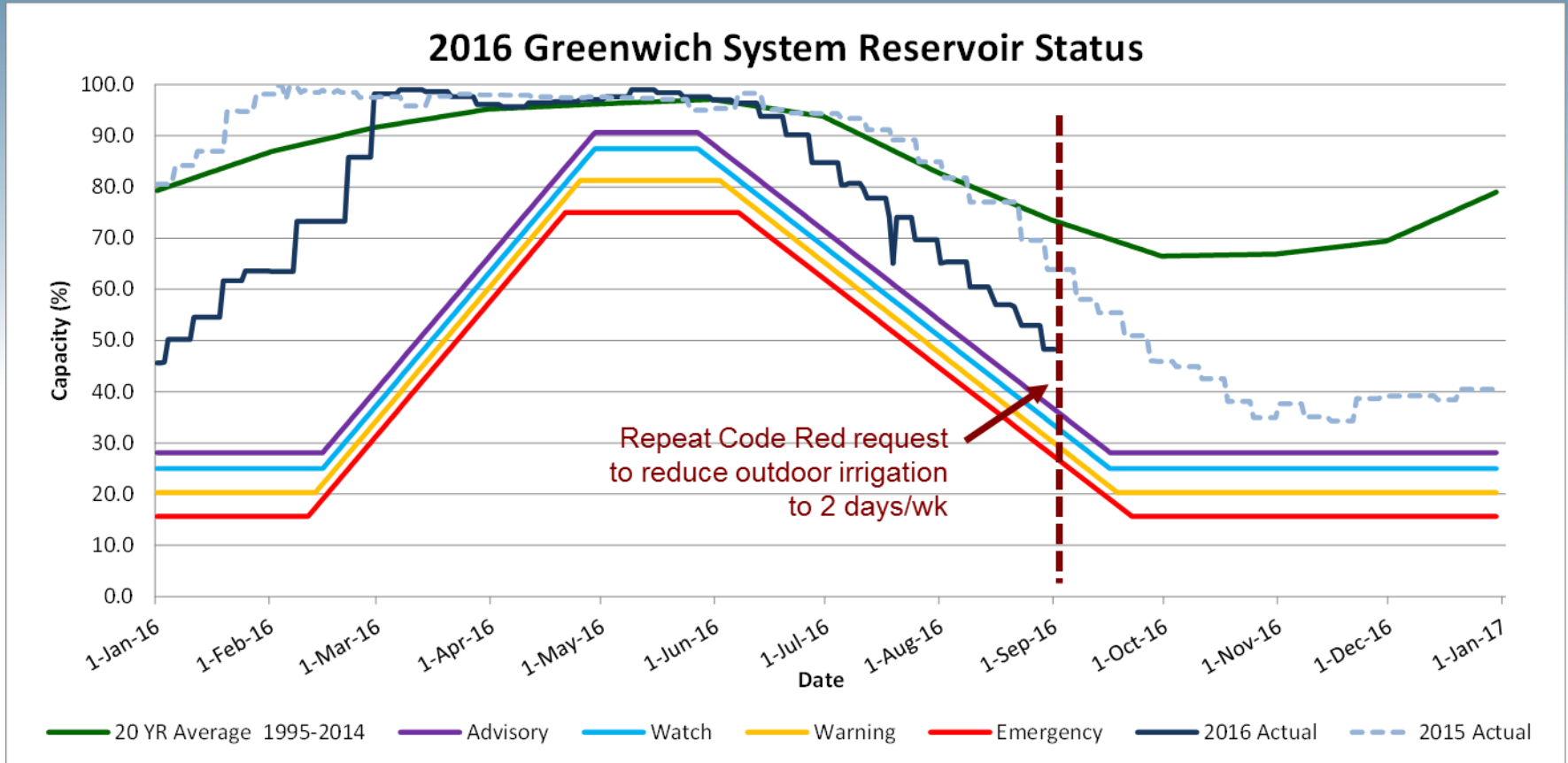
Greenwich Reservoirs – July 2016



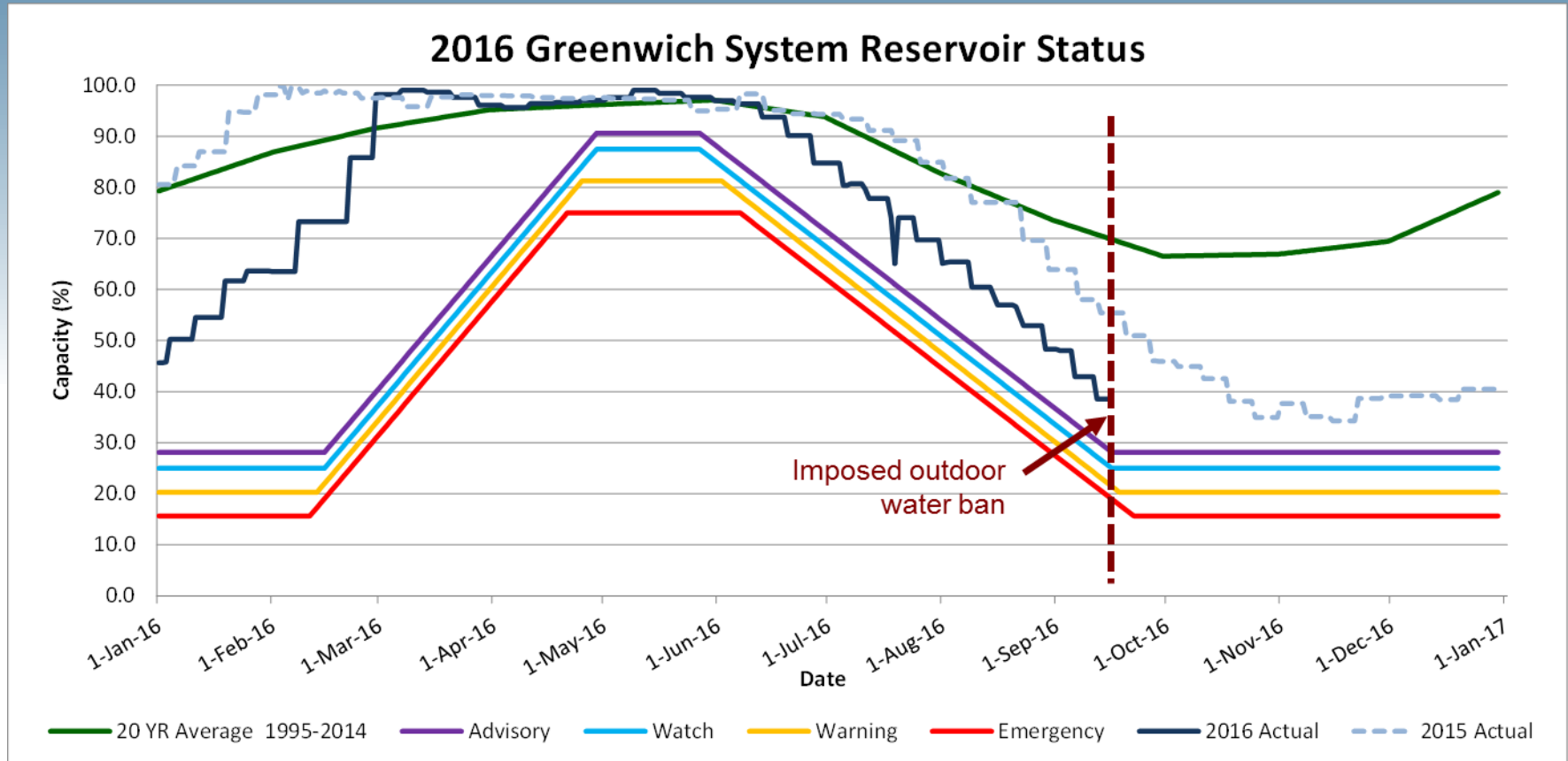
Greenwich Reservoirs – Aug 2016



Greenwich Reservoirs – Sept 2016

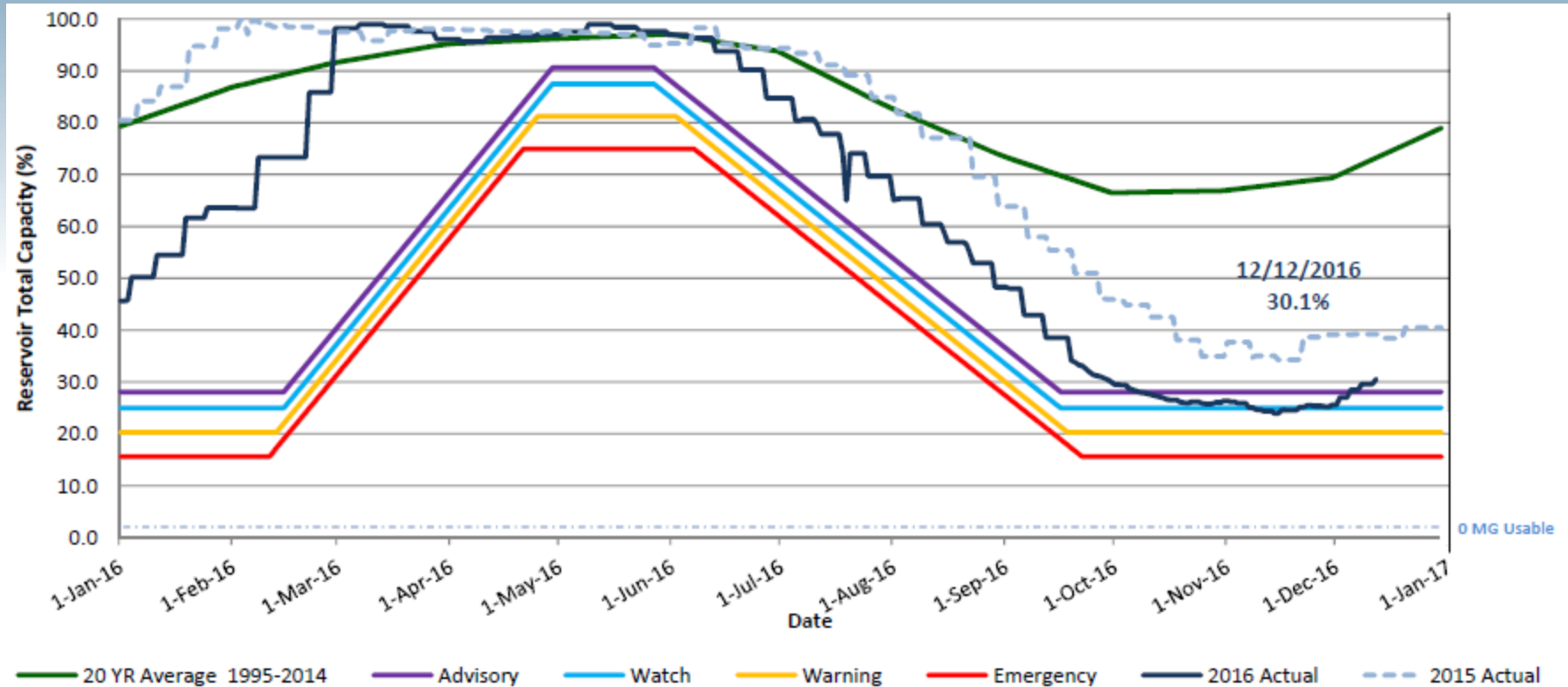


Greenwich Reservoirs – Sept 16, 2016

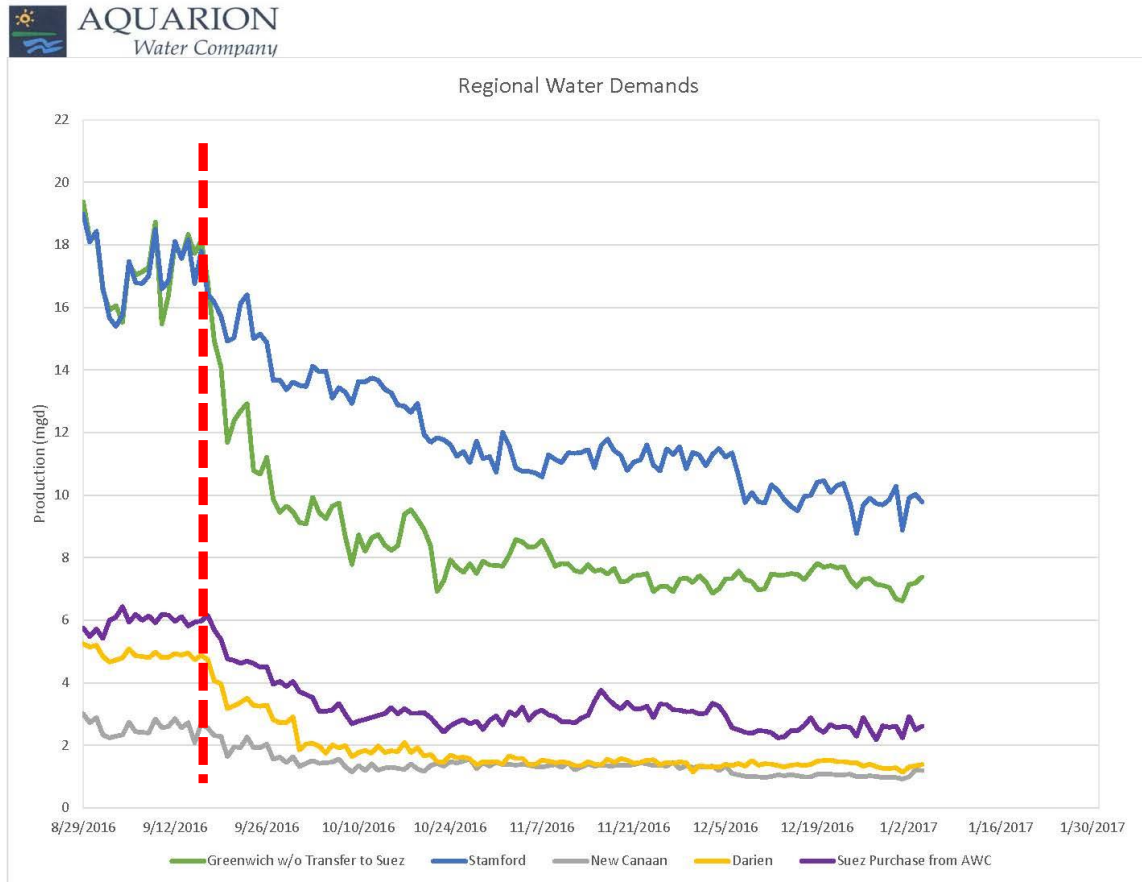


Greenwich Reservoir Capacity

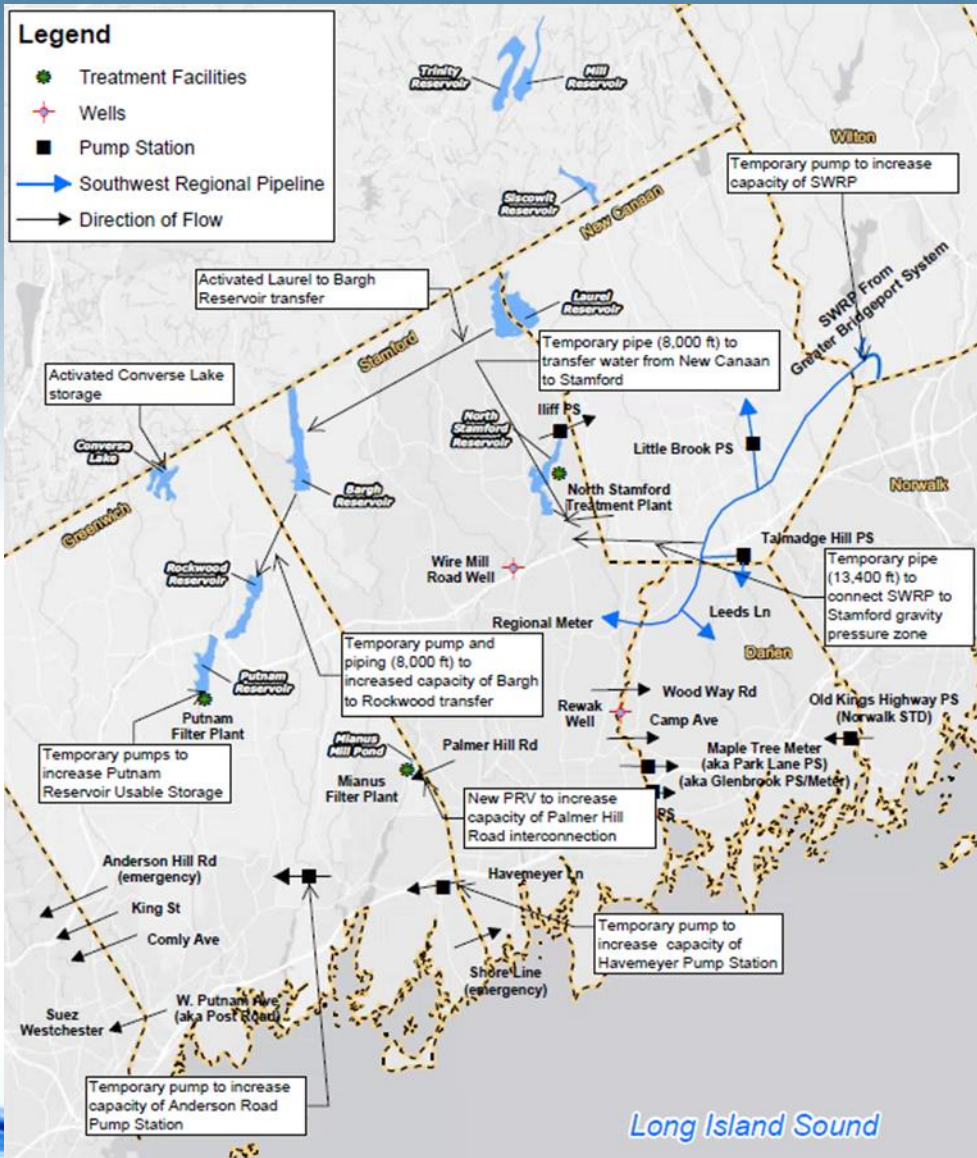
Declined to about 24% full.



Regional Water Demands



Aquarion Actions – Increase Supply



- Temporary Pumps & Piping
- Work with: Local Towns, DPH, PURA, DEEP, DOT



Funding for Drought Response

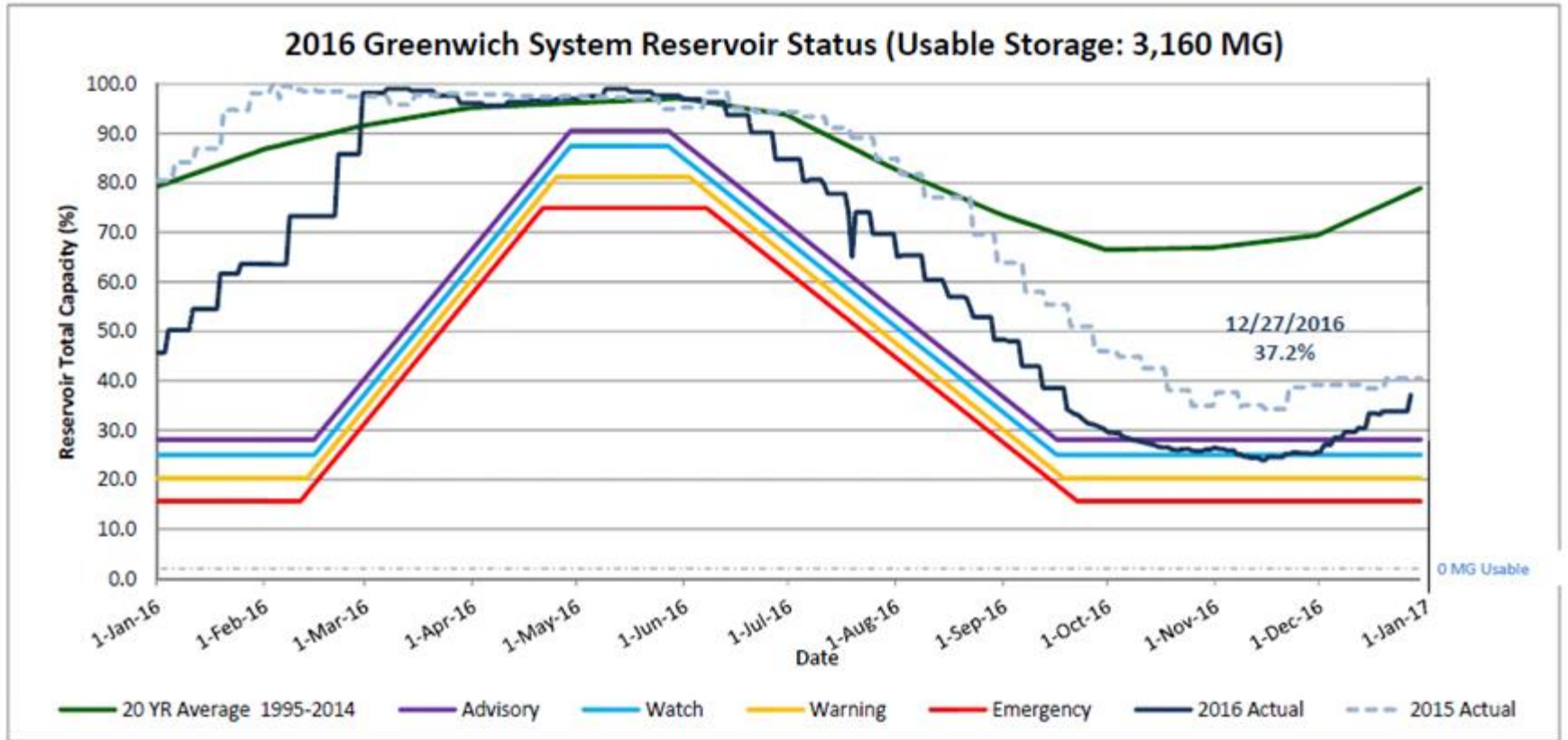
- Temporary Infrastructure/Drought Response
 - Not capital – can't be part of rate base
 - Not recurring – can't be included in test year
 - Estimated cost = \$9.5 million

- Previous Tangible Property Regulations (TPR) Settlement
 - AWC refunding \$30 million to customers over 3 years
 - Approx. \$10 million left to be refunded in 2017

Funding for Drought Response

- Aquarion, OCC, AG and PURA agreed to:
 - Eliminate TPR credit as of Jan 1, 2017
 - Record drought related costs against remaining TPR account
 - If Drought Costs < TPR – then refund remaining TPR
 - If Drought Costs > TPR – then recover in future proceeding
 - During Future Normal Rate Case
 - All drought response costs will be subject to prudence review
 - Determine amortization period for the remaining TPR liability or corresponding under-recovery of drought related costs.
- Aquarion believes this was the best approach to deal with significant drought related costs.
 - No new surcharge
 - No request in next rate case
 - TPR credit was set to expire within 12 months

Greenwich Reservoir System – 2016



Water Conservation

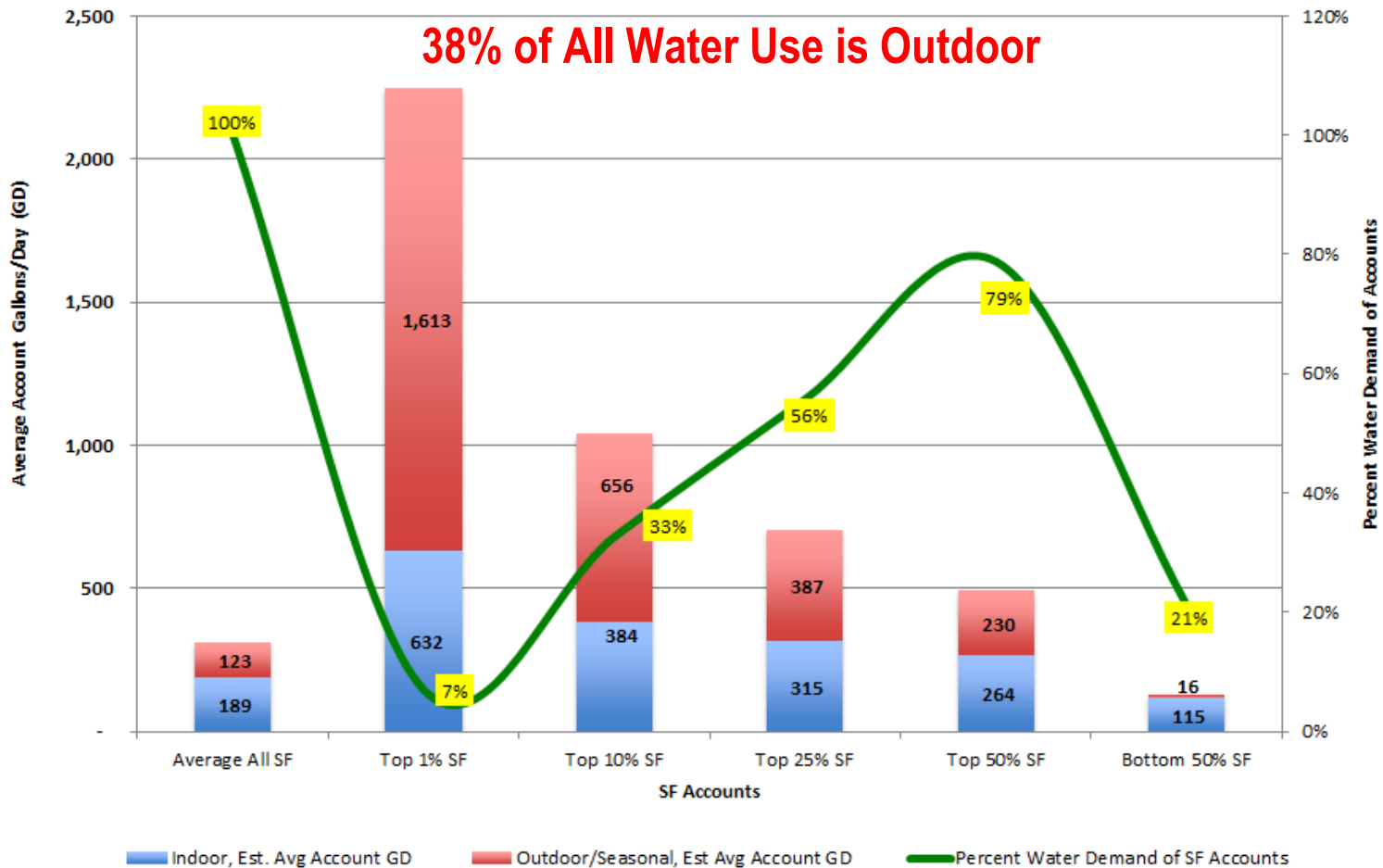
- Already started down this road
- Southwest Fairfield County Demands
 - Southwest Regional Pipeline Expansion
- Streamflow Regulations
 - 10 years out
 - Loss of 15 MGD
- Completed a Water Use Study with Amy Vickers

CT Single-Family (SF) Customer Water Use Analysis

- Average SF 83 GPCD
 - Median SF = 62 GPCD
- CT SF average is below U.S. average domestic 88 gpcd
 - 7 CT systems are above the national average
- Top 1% SF avg. 693 GPCD, 8 times higher than U.S. avg.
 - #1 highest account averages 4,932 GPCD (12,873 GD/acct)
- Bottom 50% avg. 37 GPCD, about 1/3 U.S. avg.
 - Weekenders, seasonal, part-time residents, for sale and under foreclosure, small households, homes with private well augmentation, and “Super savers”

Single Family Use

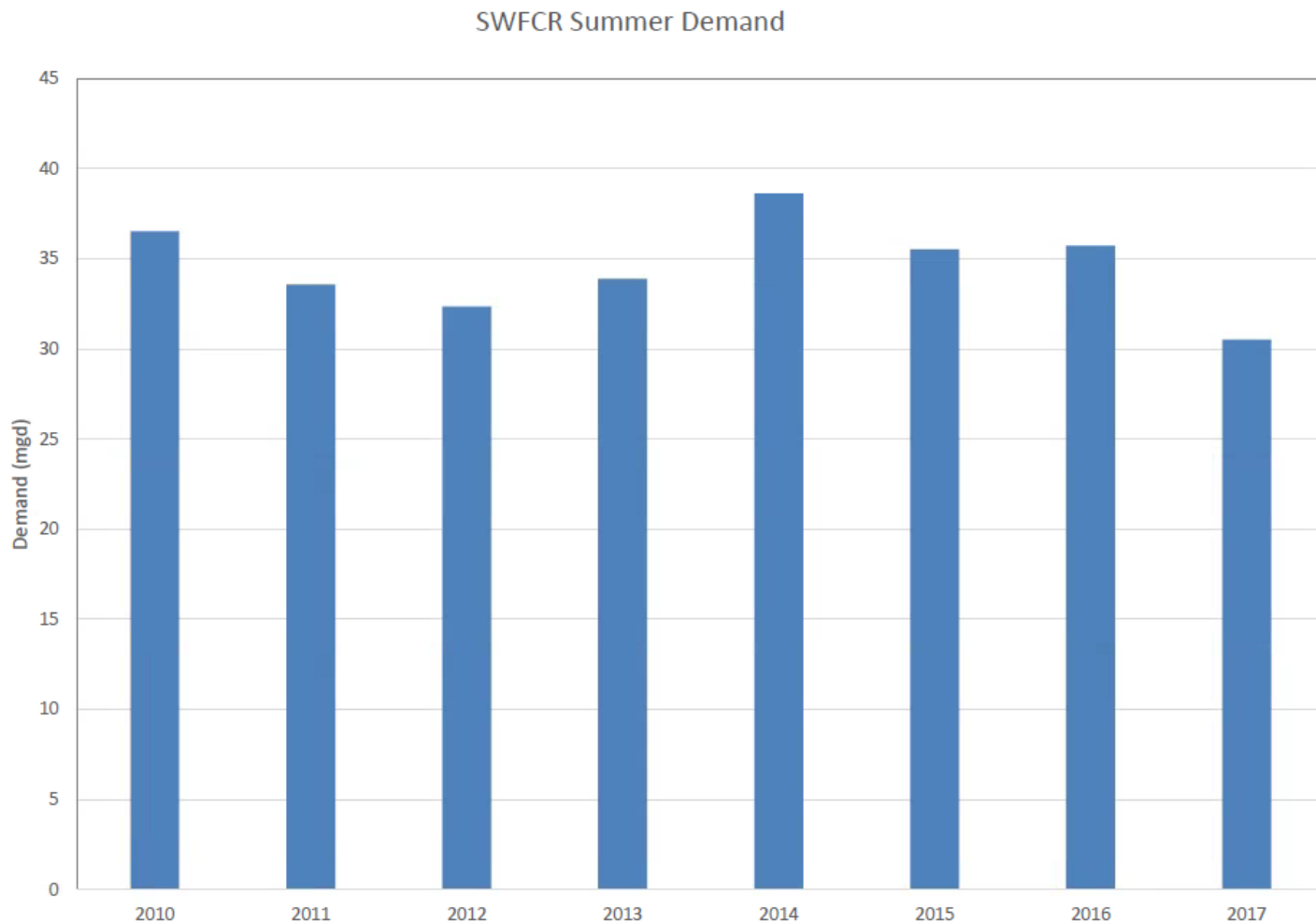
Combined Greenwich, Stamford, Darien and New Canaan
Single-Family (SF) Customer Accounts: Average and Percentile Indoor and Outdoor/Seasonal Gallons Per Account Per Day, 2012-2014



2 Day per Week Irrigation Policy

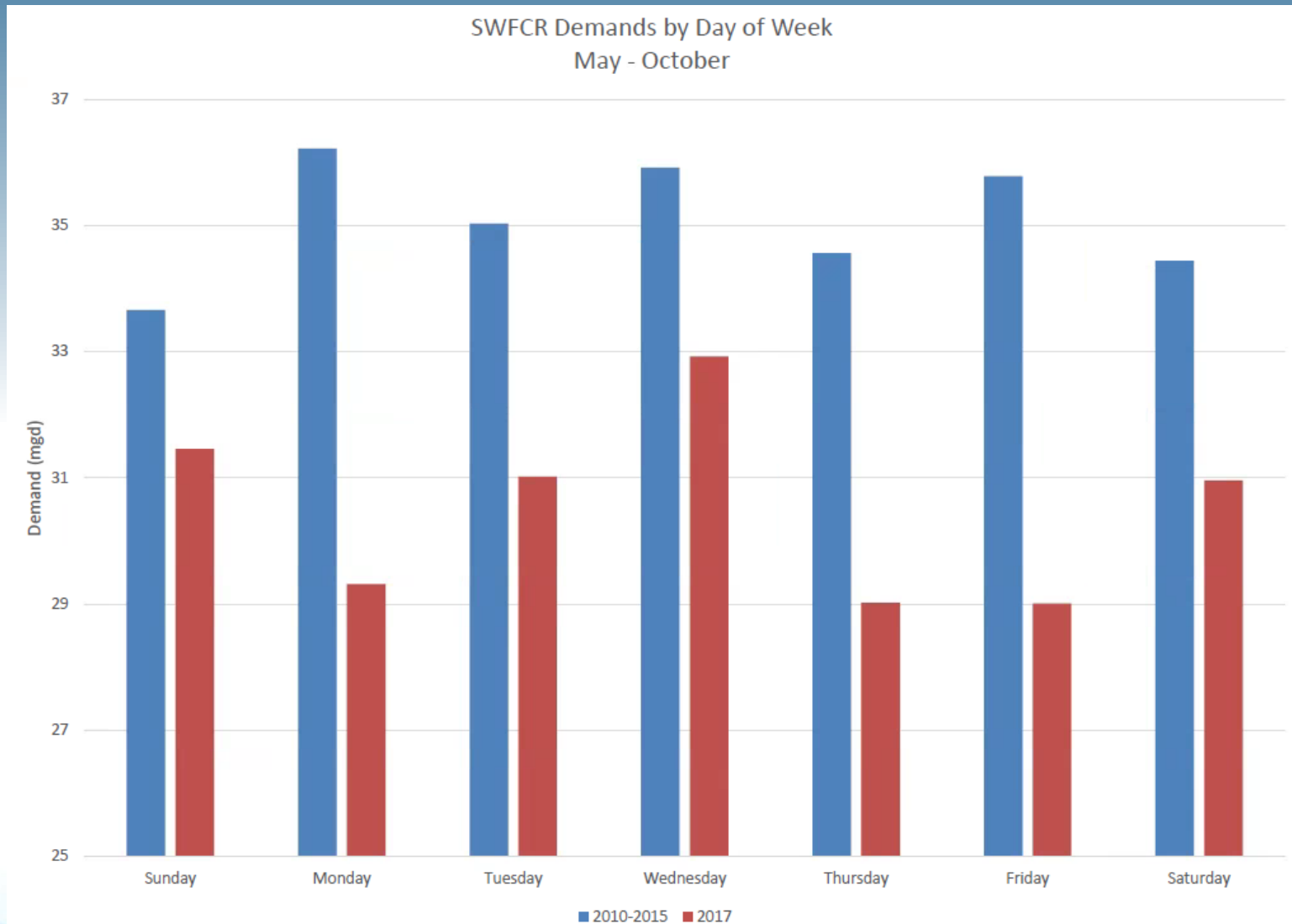
- Used Dallas, Texas Program as a model
- 2 Days per week maximum
 - Even addresses – Sundays and Wednesdays
 - Odd addresses – Saturdays & Tuesdays
- Applies to:
 - Automatic/buried irrigation systems
 - Hose sprinklers
- Doesn't apply to:
 - Handheld watering, drip irrigation, soaker hoses
- Variance process

SWFC Total Demand – May to Sept

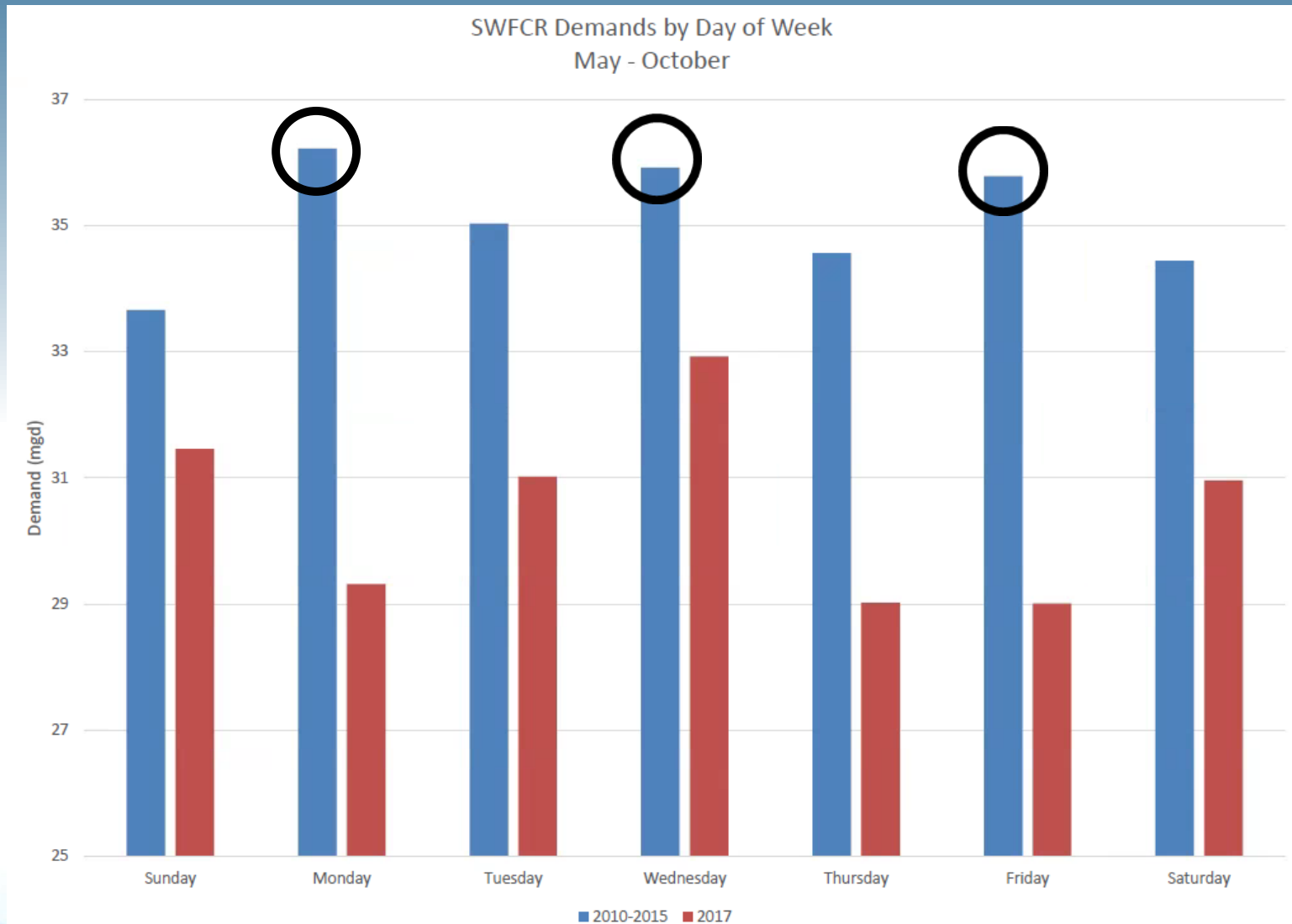


Summer = May - October

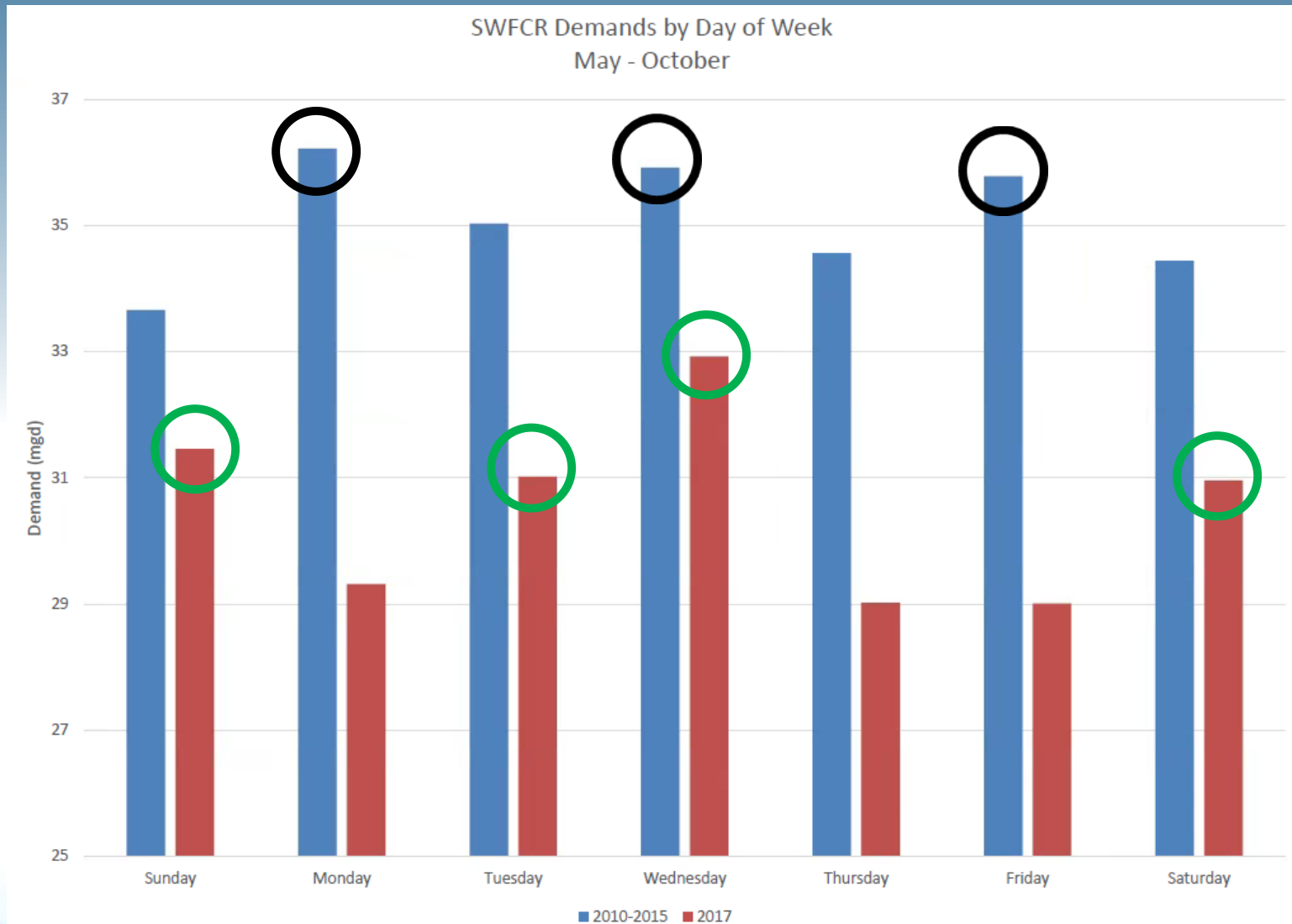
SWFC – Demand – Days of the Week



SWFC – Demand – Days of the Week



SWFC – Demand – Days of the Week



Water Conservation 2017

- May 1 to Late October
 - Greenwich received the same rainfall in 2016 and 2017
 - 20.4 inches – 4 inches below normal
 - 2017 Demand in the 4 towns was down 860 Million Gallons
 - 40,000 customers = approx 120,000 people
 - 15.8% Reduction in demand through October
 - 19.7% Reduction in demand through September
 - 2 Day per week Implementation Cost = \$450,000
 - Communications - \$300,000
 - Back office support - \$100,000
 - Field overtime - \$50,000

Outcomes

- Increased Reliance on Reservoir Forecasts
- Voluntary Restrictions are Ineffective
- Better Understanding of Everyday Water Use
 - Most Customers are Water Efficient
 - Small Number of Users in each Customer Class are Very Large Users
 - Outdoor Water Use offers a Large Potential for Savings
 - Conservation Efforts should be focused on:
 - Very High & High Users in each Customer Class

Outcomes – Two Day per Week Irrigation

- Irrigation has become pervasive in some service areas
- Grass will survive
- Right thing to do
- Reduce the potential for future droughts
- Customer Education required
- Less pushback than expected
- Enforcement required
 - Rules/Laws may be required
- Address impact on revenues