



*EAST BAY MUNICIPAL UTILITY DISTRICT*

# **Long Term Water Supply Board of Directors' Workshop**

March 10, 2015

# Agenda



- Water Supply Management Plan (WSMP) 2040
- 2014 Activities
  - Use of the Freeport Regional Water Project
- Planning for the Future
  - Freeport Supplies
  - Bay Area Regional Reliability
  - Groundwater Supplies
  - Water Recycling
  - Water Conservation
  - Stormwater Capture (Planning Committee May 2015)
- Public and Board Comments

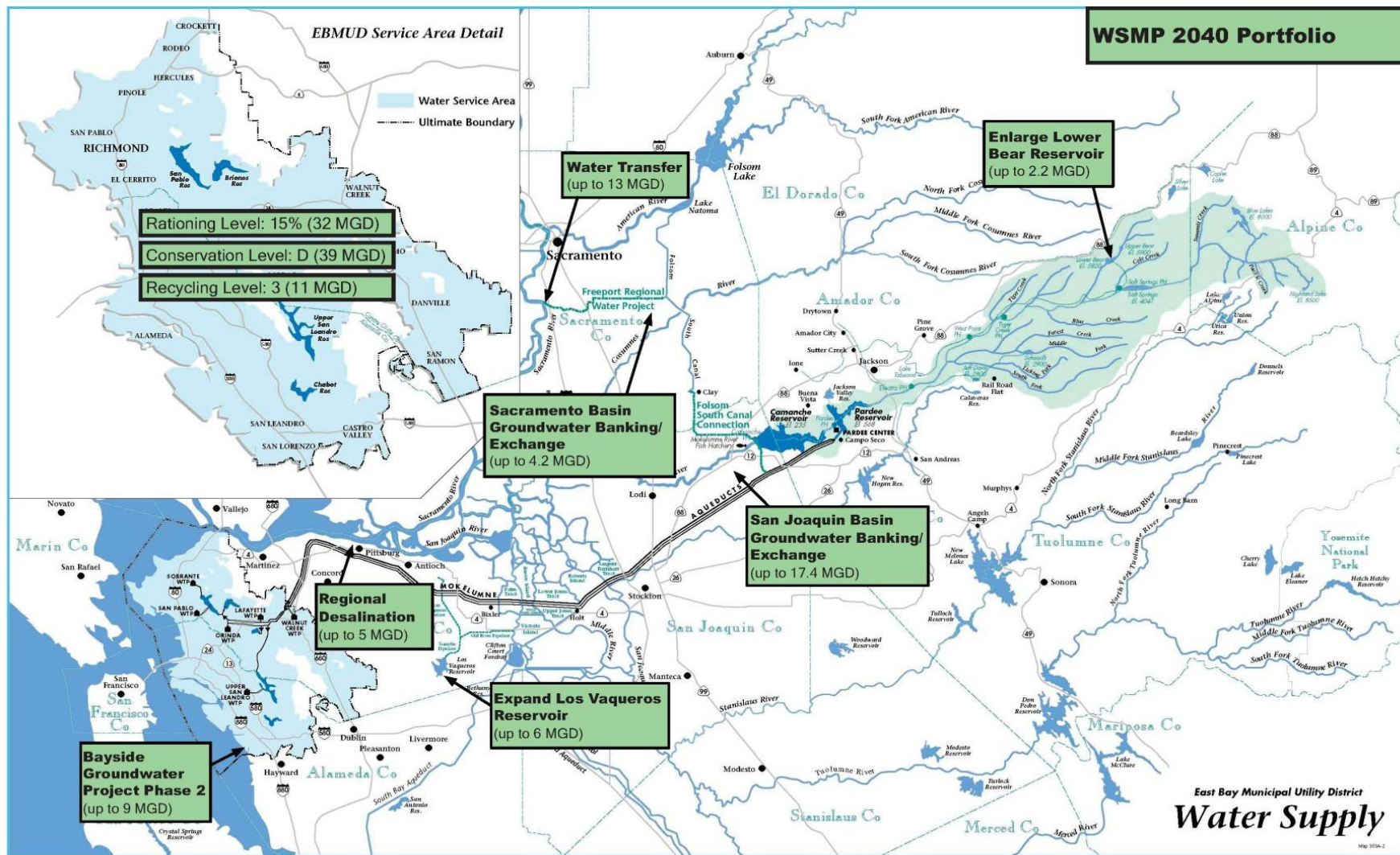
# WSMP 2040

## Purpose & Objectives



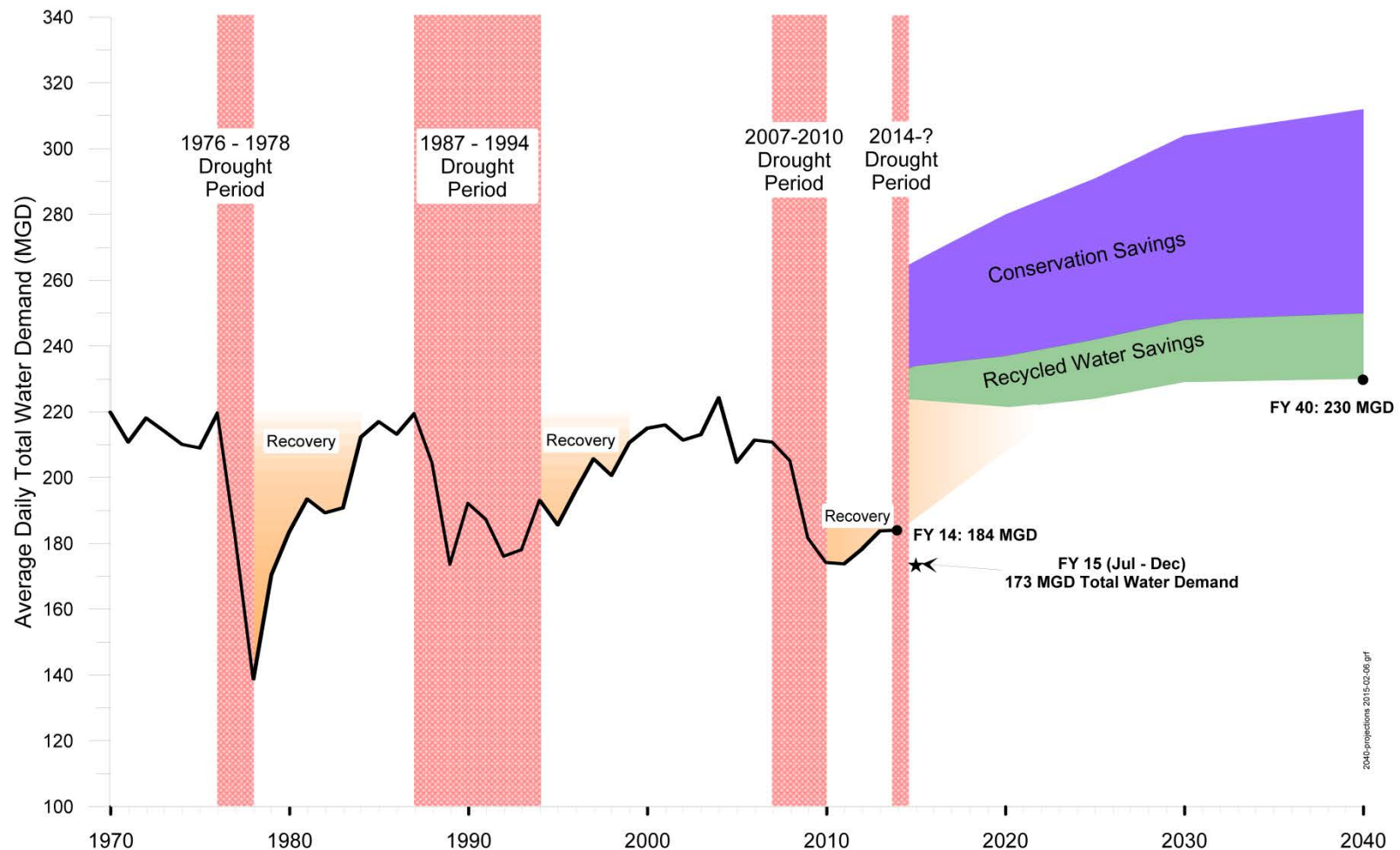
- Provide adequate, reliable water supply thru 2040
- Account for system changes and new regulations
- Address uncertainties (e.g., climate change & Delta)
- Seek regional and cost-effective solutions
- Preserve and protect the environment
- Select optimum mix of rationing, conservation, recycling, and supplemental supply

# WSMP 2040 Portfolio (Adopted April 2012)





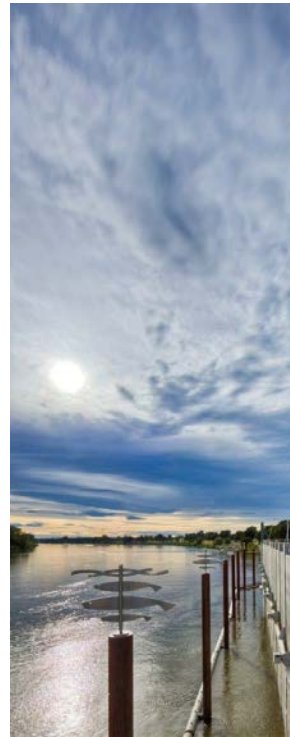
# Water Demand Recovery: Water Production with Conservation and Recycling



# 2014 Activities: Use of Freeport Regional Water Project

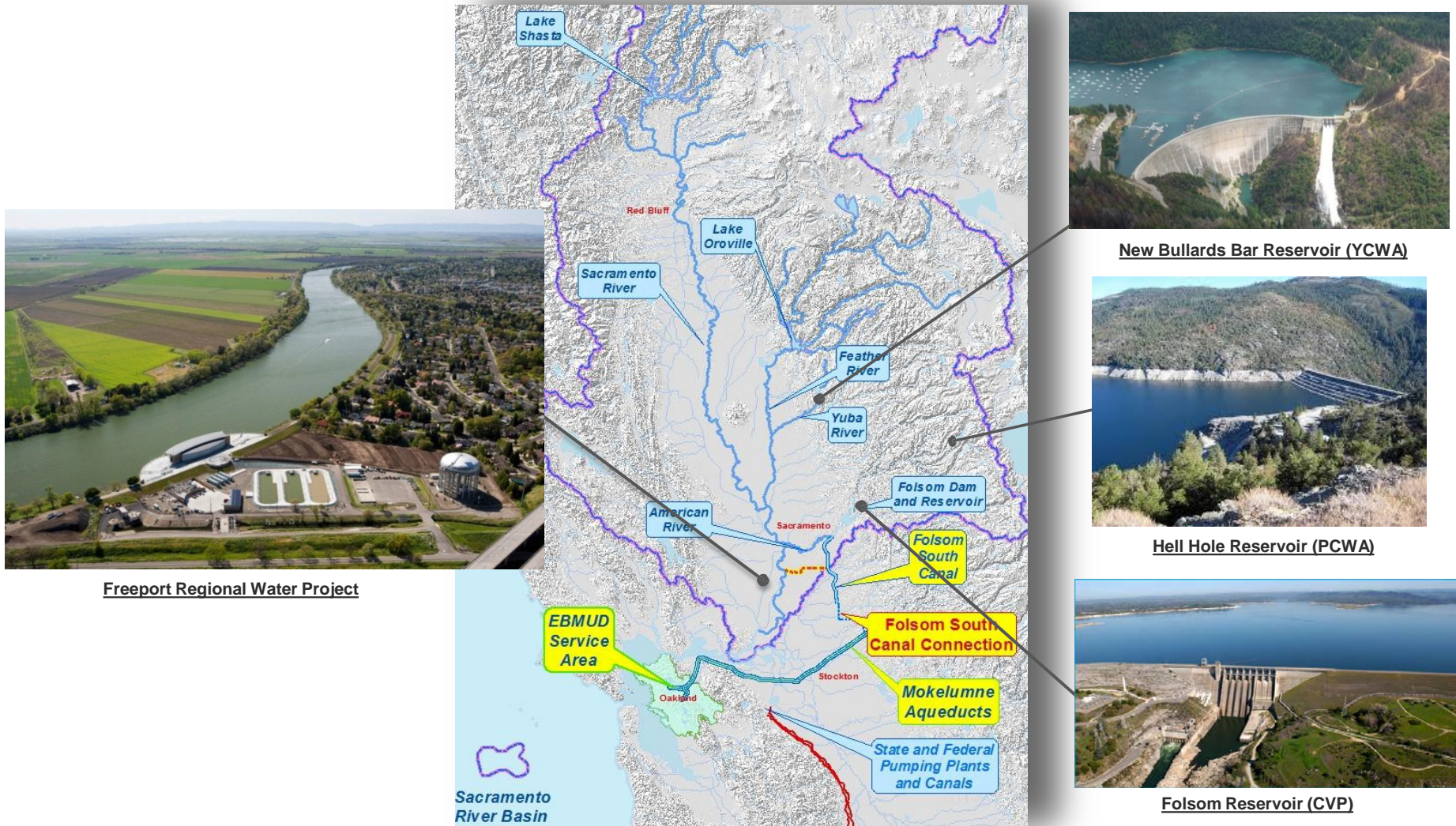


- In dry years, EBMUD entitled to take up to 133 TAF under its CVP Contract
- Due to severely dry conditions in 2014, EBMUD was limited to 50% of CVP Contract (= 66.5 TAF)
- In Spring of 2014 took delivery of:
  - 18.6 TAF CVP water
  - 4.8 TAF PCWA transfer water





# Supplemental Water Supplies via Freeport





# Protecting EBMUD's CVP Supply



- M&I Water Shortage Policy
- Rescheduling
- Bay Delta Conservation Plan
- Coordinated Operations Agreement
- Drought Legislation



Folsom Lake – January 16, 2014



# PCWA/EBMUD Long Term Water Transfer Partnership



- Executed MOU in August 2013
  - Implements PCWA's long standing Water Forum Agreement commitment
  - EBMUD purchases 10 to 47 TAF of environmental releases in dry years
  - Commits parties to work together and share costs to develop long term project
  - Establishes key terms (including pricing) for future long term agreement
- PCWA and EBMUD seeking to complete all environmental reviews and approvals to implement project by 2017



Increased Flows for American River

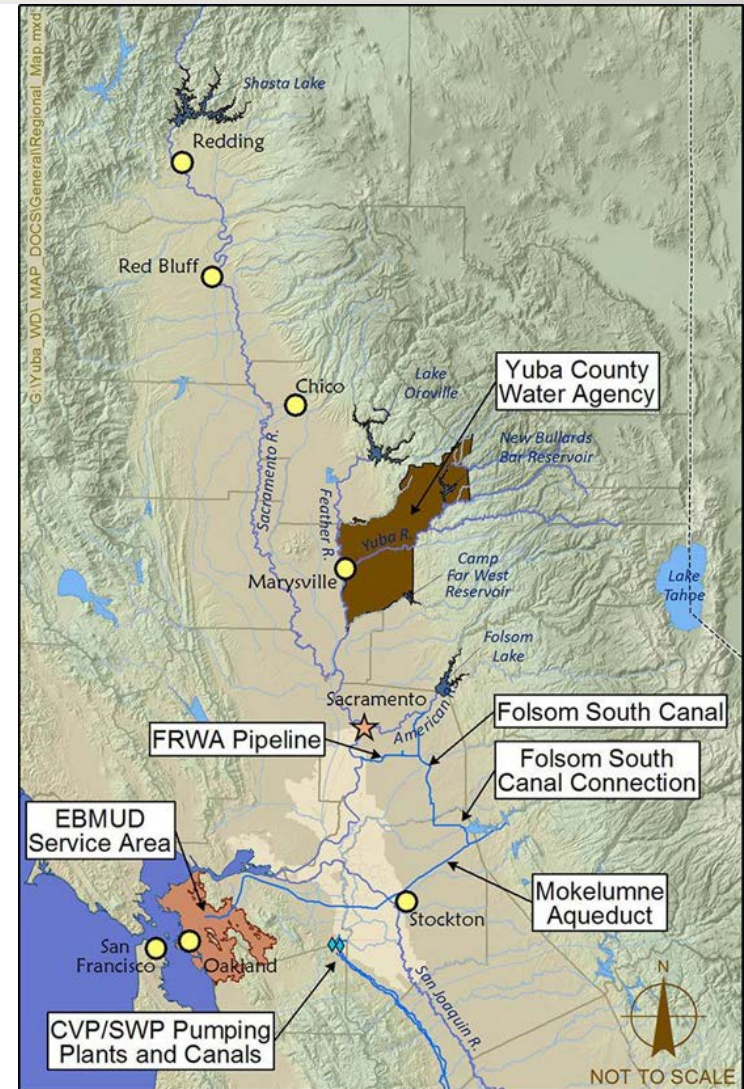


Protection of Lower American River Fisheries

# Yuba Accord: Addition of Freeport as a Point of Rediversion



- In June 2014, State Water Board approved Freeport as a point of rediversion for Yuba Accord transfer water
- Adds flexibility for EBMUD to purchase transfer water under Yuba Accord (up to 34 TAF/year)
- Opportunities for other Bay Area agencies to purchase Yuba Accord water and wheel through FRWA and EBMUD system





# Wheeling of Water: DSRSD/EBMUD Wheeling Agreement



- Wheeling Agreement
  - Approved by DSRSD on Mar. 3, 2015
  - EBMUD Board on Mar. 10, 2015
- Facilitates transfer between DSRSD and YCWA
- 1,500 AF diverted at Freeport in Apr. 2015
- 15% loss factor
- Temporary storage provided in terminal reservoirs
- 1,275 AF Delivered to DSRSD in summer (Jun-Sept 2015) through EBMUD/DSRSD treated water interties
- DSRSD reimburses EBMUD for operation, maintenance, and capital costs





# Bay Area Regional Reliability (BARR)



- Outgrowth of Regional Desalination Partnership
- Regional partnership opportunities, regional benefits
- 8 Partner agencies include CCWD, EBMUD, SCVWD, SFPUC, Zone 7, ACWD, MMWD, and BAWSCA
- Elements
  - Use available capacity in existing facilities
  - Potential interties between water districts
  - Upgraded water treatment facilities
  - Potential regional projects (regional desalination)
- Principles adopted by EBMUD Board on May 26, 2014





# BARR Next Steps



- Working to secure funding for a Bay Area Regional Reliability (BARR) Feasibility Study (FS)
  - FS would evaluate ways to improve water supply for the region combining existing facilities with connections and upgraded facilities
  - FS estimated to cost \$800k
  - Agencies would provide \$200k funding
  - Seeking funding of the remaining \$600k in 2015
    - Bureau of Reclamation
    - Corps of Engineers
    - California Water Bond

# SJ County/EBMUD Groundwater Banking Demonstration Project



## Background

- Memorandum of Agreement (MOA) - Sept. 24, 2013
- SJC secured a consultant to assist in work - March 2014
  - Consultant providing:
    - Public outreach
    - Develop project operation criteria
    - Assist in site selection
    - Preliminary engineering
- EBMUD entered into a cost share agreement with SJC for the consulting effort - August 25, 2014



# SJC/EBMUD Demonstration Project: Success Criteria



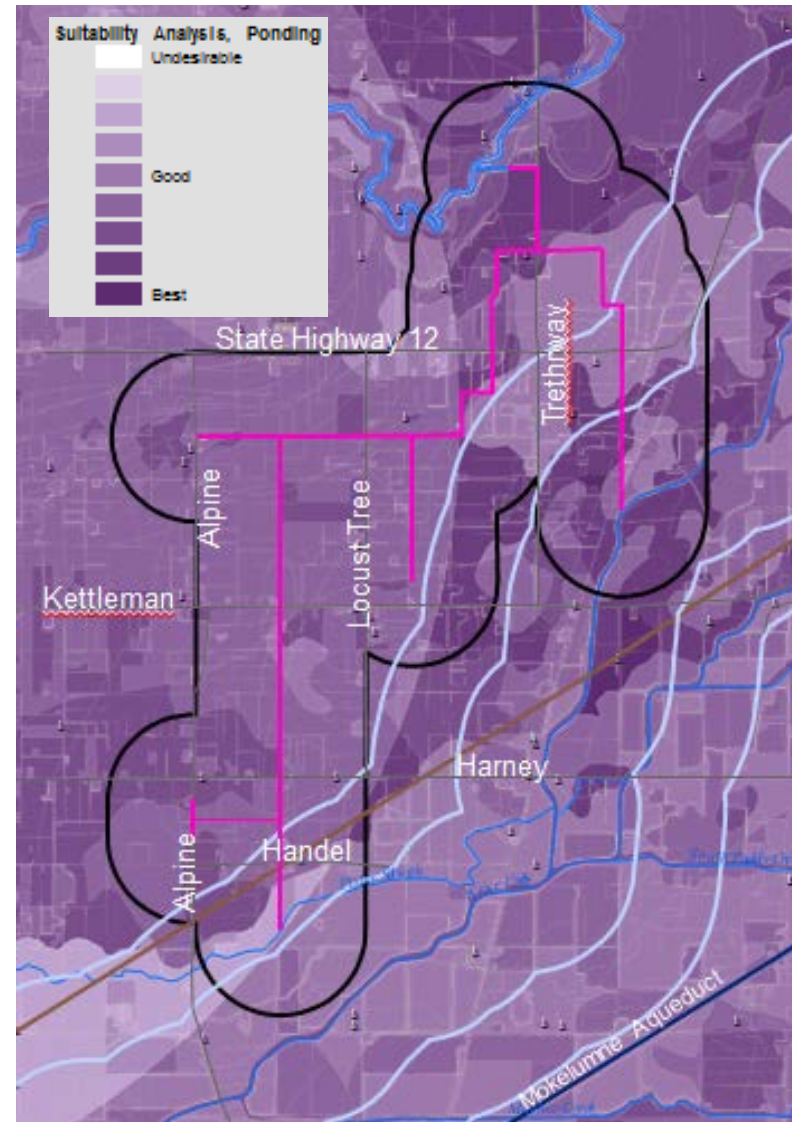
- The Demonstration Project must achieve the following criteria to be deemed a success:
  - Show net improvement in aquifer levels even when permitted withdrawals are made
  - Demonstrate extraction for in-county and outside the county proposes
  - Demonstrate stored water available when needed
  - Be acceptable to the local community and other stakeholders
  - Have the ability to scale up and provide a basis for a larger banking project



# SJC/EBMUD Demonstration Project: Key Considerations



- Provide water from NSJ South System and Mokelumne Aqueducts
- Physically move groundwater into Mokelumne Aqueduct
- Identify cooperating landowner(s)
- Project capital budget of \$4M; no more than \$1.75M for South System improvements
- Consider cost-savings opportunities
- Consider grant funding opportunities
- Export Permit no later than June 30, 2016
- Consistent with CPE Settlement Agreement





# Recycled Water Program Goal: 20 MGD by 2040





# Existing Recycled Water Projects – 9 MGD



- Irrigation/Commercial
  - San Leandro - 0.3 mgd (1988)
  - San Ramon Valley Phase 1 - 0.7 mgd (2006)
  - East Bayshore Phase 1A - 0.5 mgd\* (2008)
  - Truck Program (2008)
- Industrial
  - North Richmond - 4 mgd (1996)
  - Richmond Advanced Recycled Expansion (RARE) Phase 1 - 3.5 mgd (2010)
- Total existing projects ~ 9 mgd (not including in-plant use)

\* At completion of Phase 1A



Pixar Cooling, Emeryville

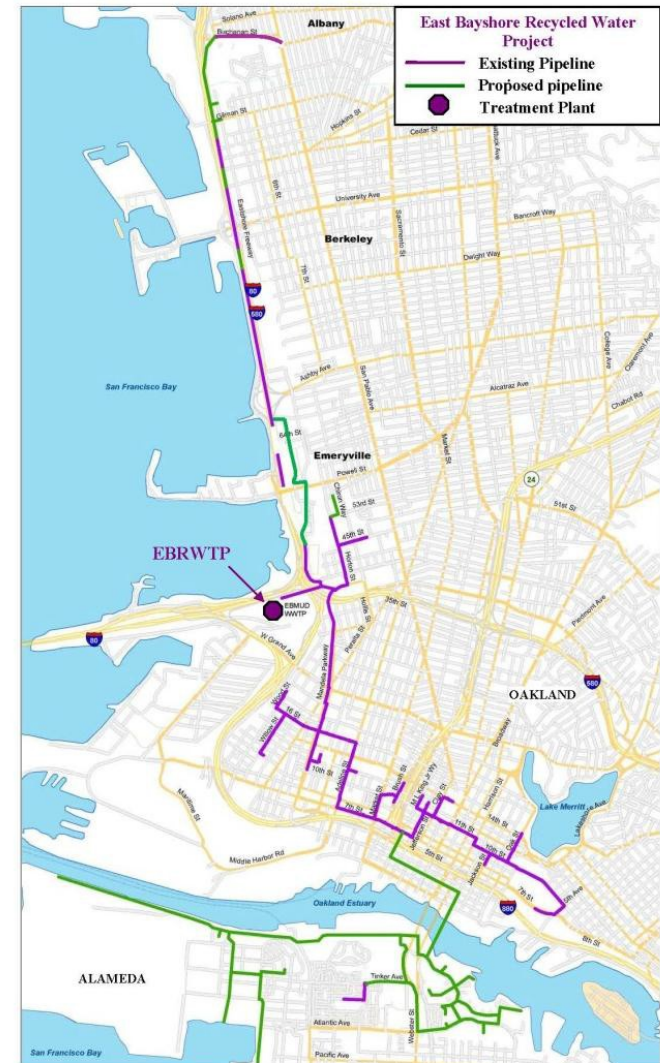


Village Green Park, San Ramon

# East Bayshore Update



- Emeryville/Christie (IKEA to Ashby) pipeline
  - \$1M state grant awarded
  - Design completed in 2014
  - Construction award in June 2015
- Shellmound/Christie customer site retrofits (11 sites - 40,000 gpd) to begin in 2015
- Expansion study in progress
  - Building cooling
  - Evaluate pipeline alignments
- EBMUD building cooling retrofit (332,000 gallons per year; 11% of building water use)

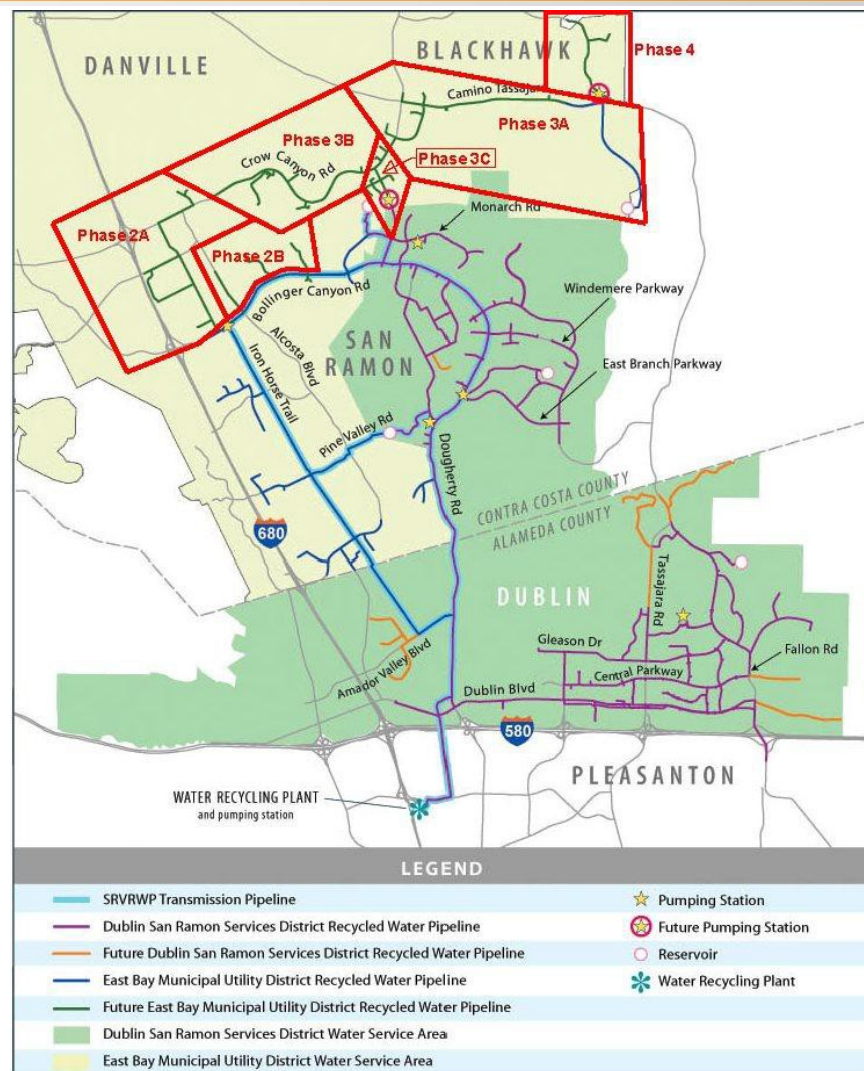




# San Ramon Valley Update



- Bishop Ranch pipeline extension
  - \$2M state grant awarded
  - Design completed
  - Construction to begin in late spring/early summer 2015
- Phase 2A customer site retrofits (40 sites - 0.4 MGD) to begin in 2015
- Phase 3 pump station site evaluations





# Recycled Water Truck Program



- Implemented in 2008 in response to drought
  - Two locations: main wastewater treatment plant and North Richmond plant for commercial trucks
- Information mailing to 370 customers in July 2014 to encourage use of recycled water for construction dust control, street cleaning, and sewer flushing
- Web page updated to include links to neighboring agencies where residents can pick up recycled water for landscape irrigation
- Evaluating options at EBMUD to expand for residential reuse



# North Richmond & RARE Update



- Study of long term alternatives to improve West County effluent water quality in progress
- Study of expansion opportunities to increase recycled water use by up to 2.5 MGD (1.5 MGD at RARE and 1 MGD at North Richmond) in progress
- Studies to be completed in 2015
- CIP includes expansion which is expected to be reimbursed by Chevron





# Diablo Country Club/Satellite



- Primary funding by Diablo Country Club
- CEQA to begin in 2015
- Support Country Club in pursuing state funding
- Demonstration project could be completed by 2017 (0.2 MGD)
- Also monitoring Moraga Country Club (0.2 MGD) and Sequoyah Country Club (0.2 MGD)



# Future Recycled Water Projects - 11 MGD



- Future projects (11 MGD)
  - Expansions of existing projects (East Bayshore, RARE, San Ramon Valley, San Leandro, North Richmond)
  - New projects (Rodeo, Reliez Valley)
  - Satellite/package treatment plants (Diablo CC, Moraga CC, etc.)
- Supporting research of direct potable reuse studies through Water Research Foundation/WateReuse
- Monitor wastewater discharge nutrient optimization and upgrade studies



RARE, Richmond



Central Park, San Ramon



# CY2014 Water Conservation Key Highlights



**Conservation  
Incentives**

- Increased rebates by 23% to more than 14,000 and >\$1.2M
- Expanded turf removal by an additional >1 million sq. ft.
- Awarded \$0.53M in Prop. 84 conservation rebate grants



**Water  
Management**

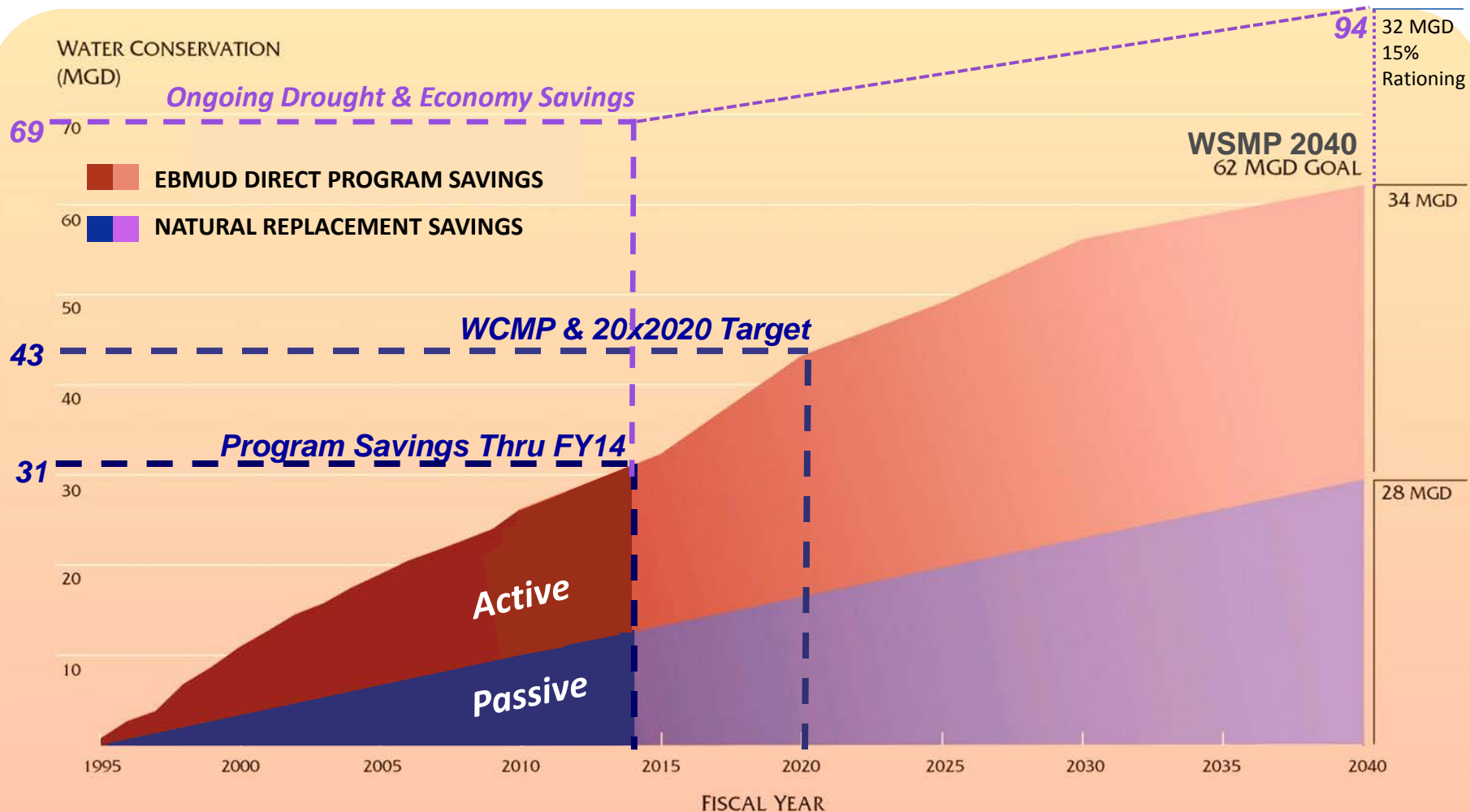
- Delivered Home Water Reports to 32,900 households
- Delivered >20,000 total commercial landscape water budgets
- Responded to >5,100 customer & water waste inquiries



**Education &  
Outreach**

- Delivered >8,000 conservation materials to businesses
- Quadrupled (140) community events, workshops, presentations
- Added 16 certified WaterSmart Businesses

# Water Conservation Master Plan: Water Savings & Targets (1995-2040)



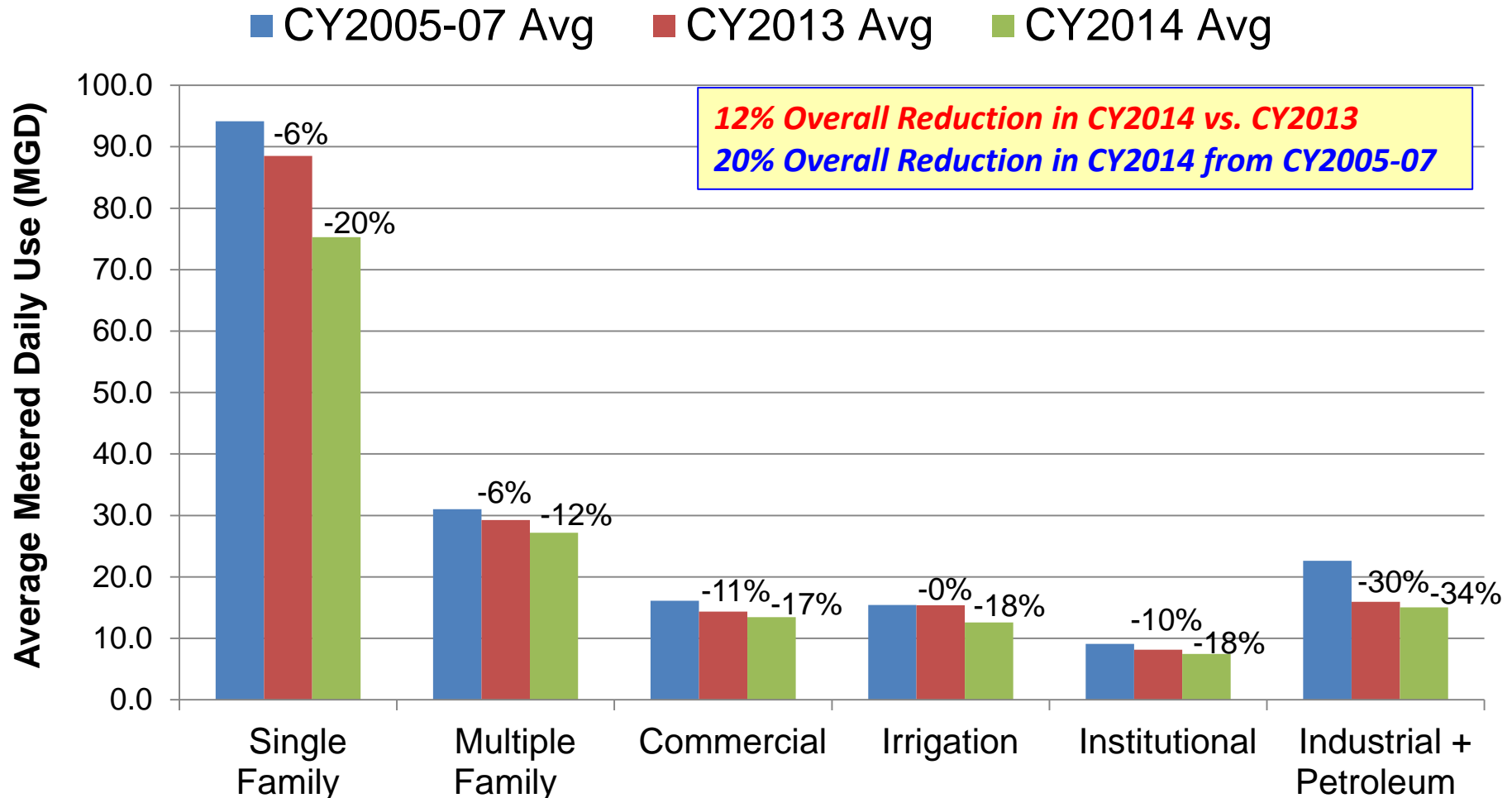
## NOTES:

1. This figure depicts EBMUD's conservation efforts since the implementation of the Water Conservation Master Plan in 1994 and projected in the 2011 update, and it excludes savings associated with prior conservation efforts implemented in the 1970s.



# Average Metered Customer Use

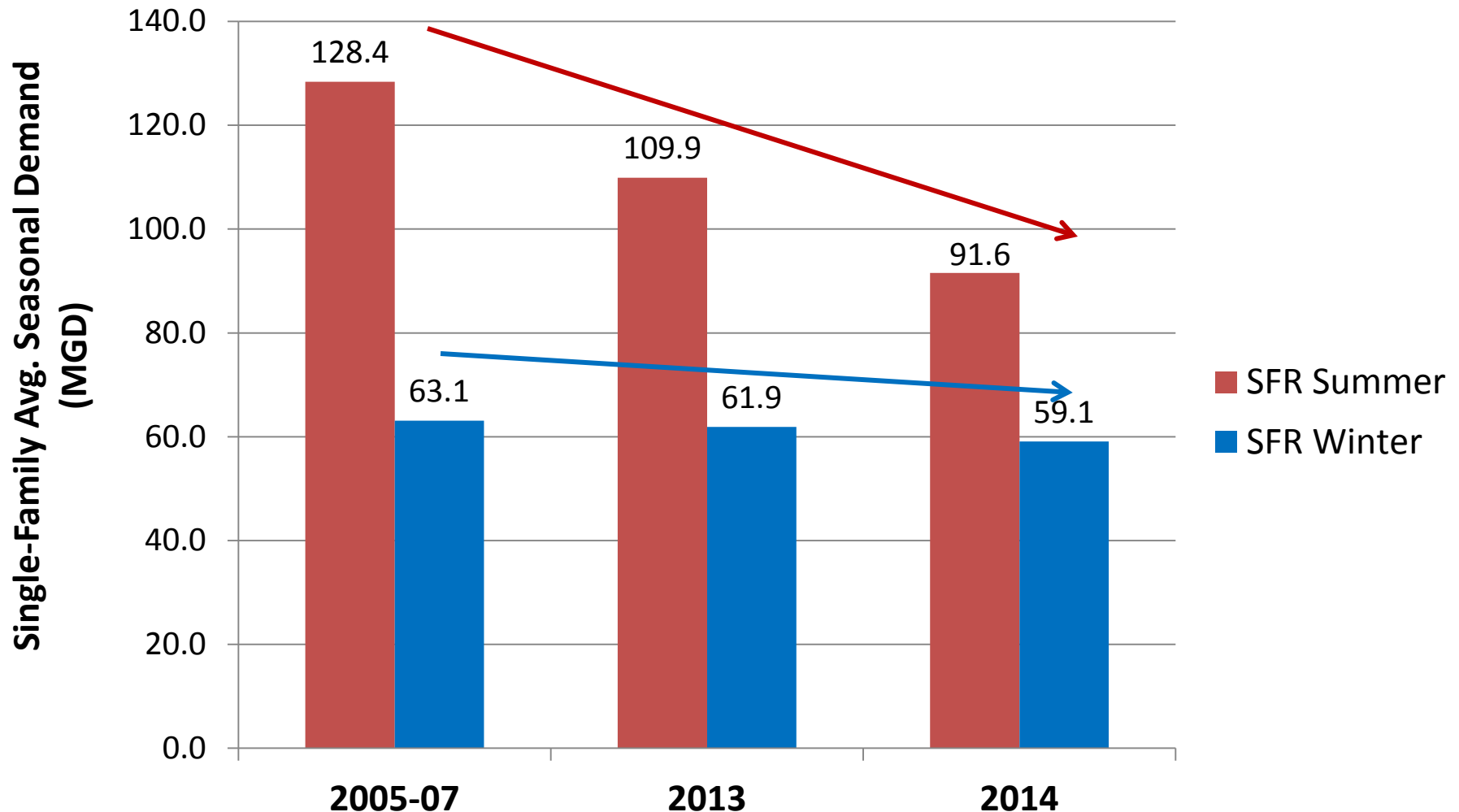
## CY2005-07, 2013, 2014 (Feb-Nov)



Notes:

(1) Feb data begins on the 11<sup>th</sup> when EBMUD voluntary water use reductions were adopted.

# Single-Family Average Seasonal Demand (CY2005-07, 2013, 2014)



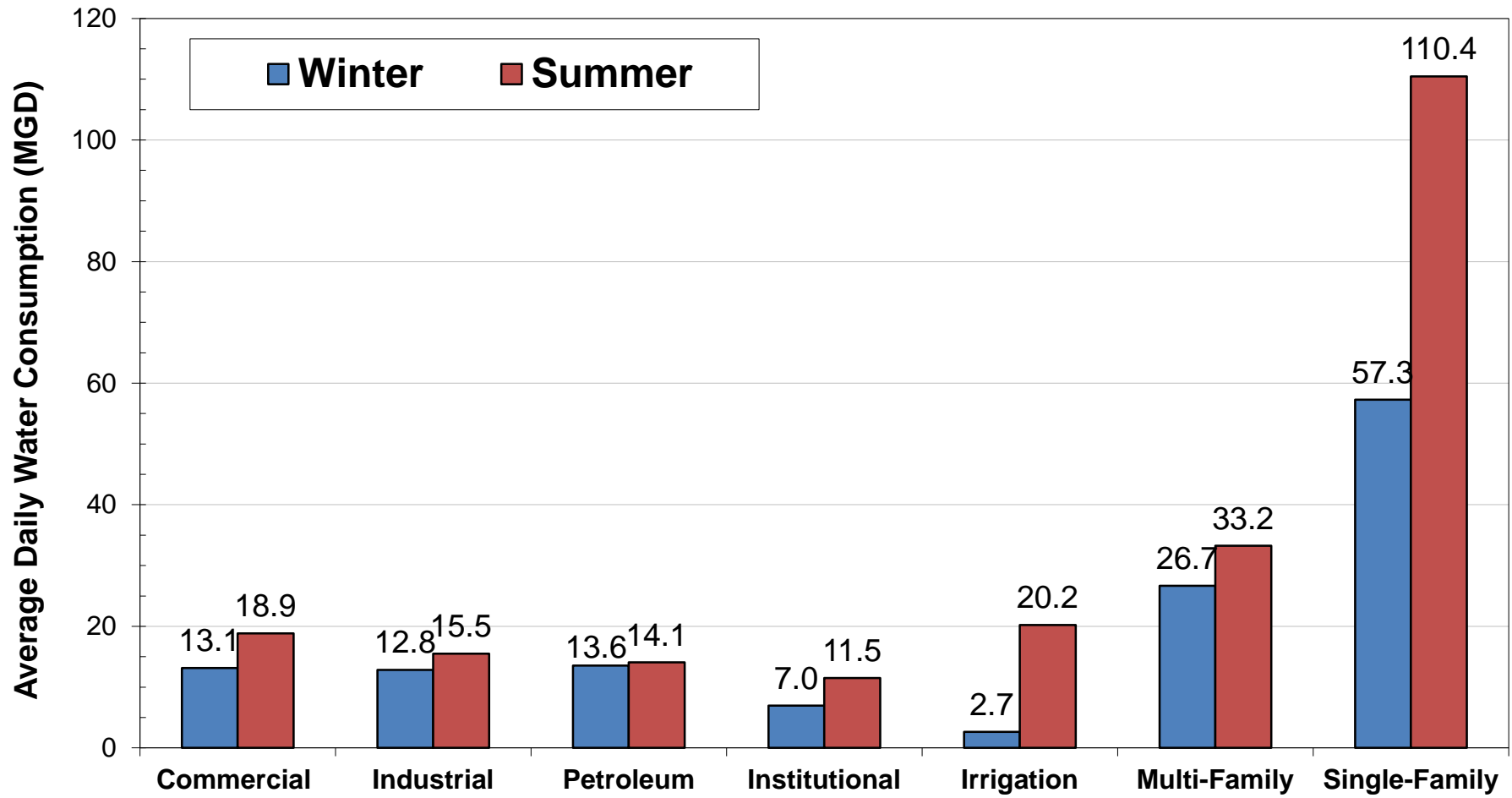
Notes:

(1) Summer Use based on July, August consumption data.

(2) Winter Use based on December, January consumption data.



# Avg. Winter & Summer Water Use by Customer Category (1975-2013)

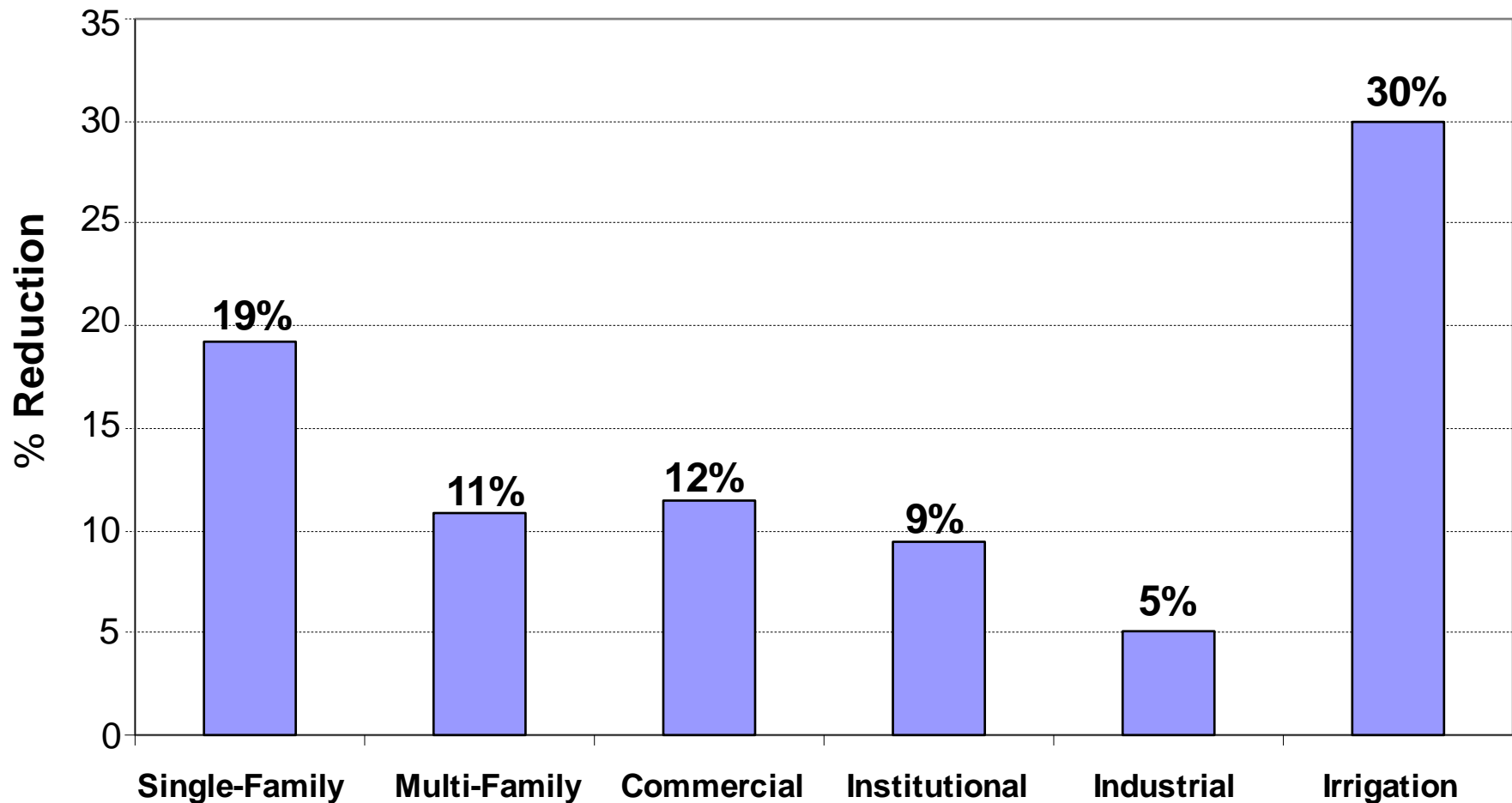


**Notes:**

- (1) Based on Calendar Year 1975 - 2013 consumption data.
- (2) Summer Use based on July and August consumption data.
- (3) Winter Use based on December and January consumption data.

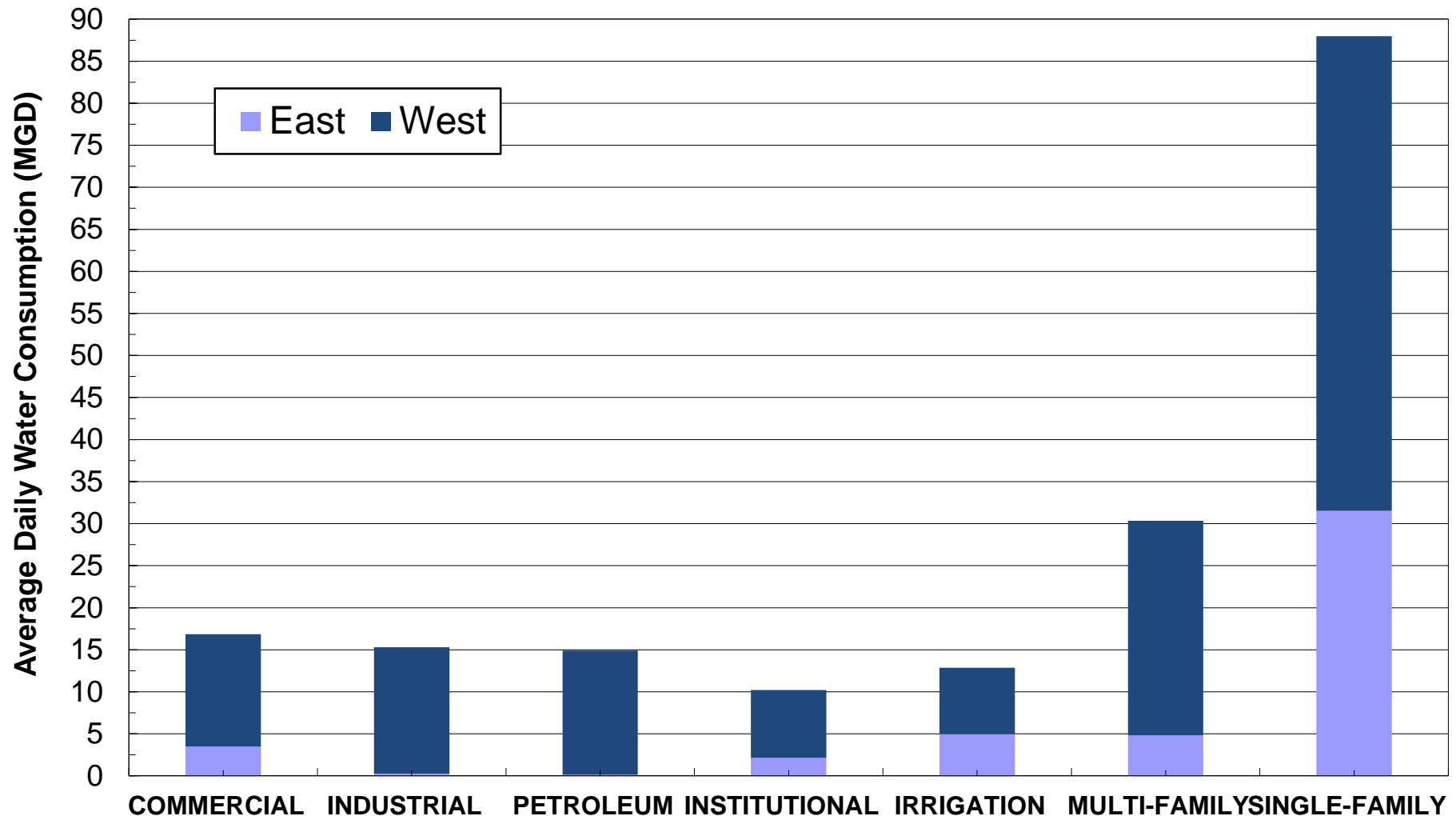


# System Wide Rationing Scenario: Annual Average = 15%





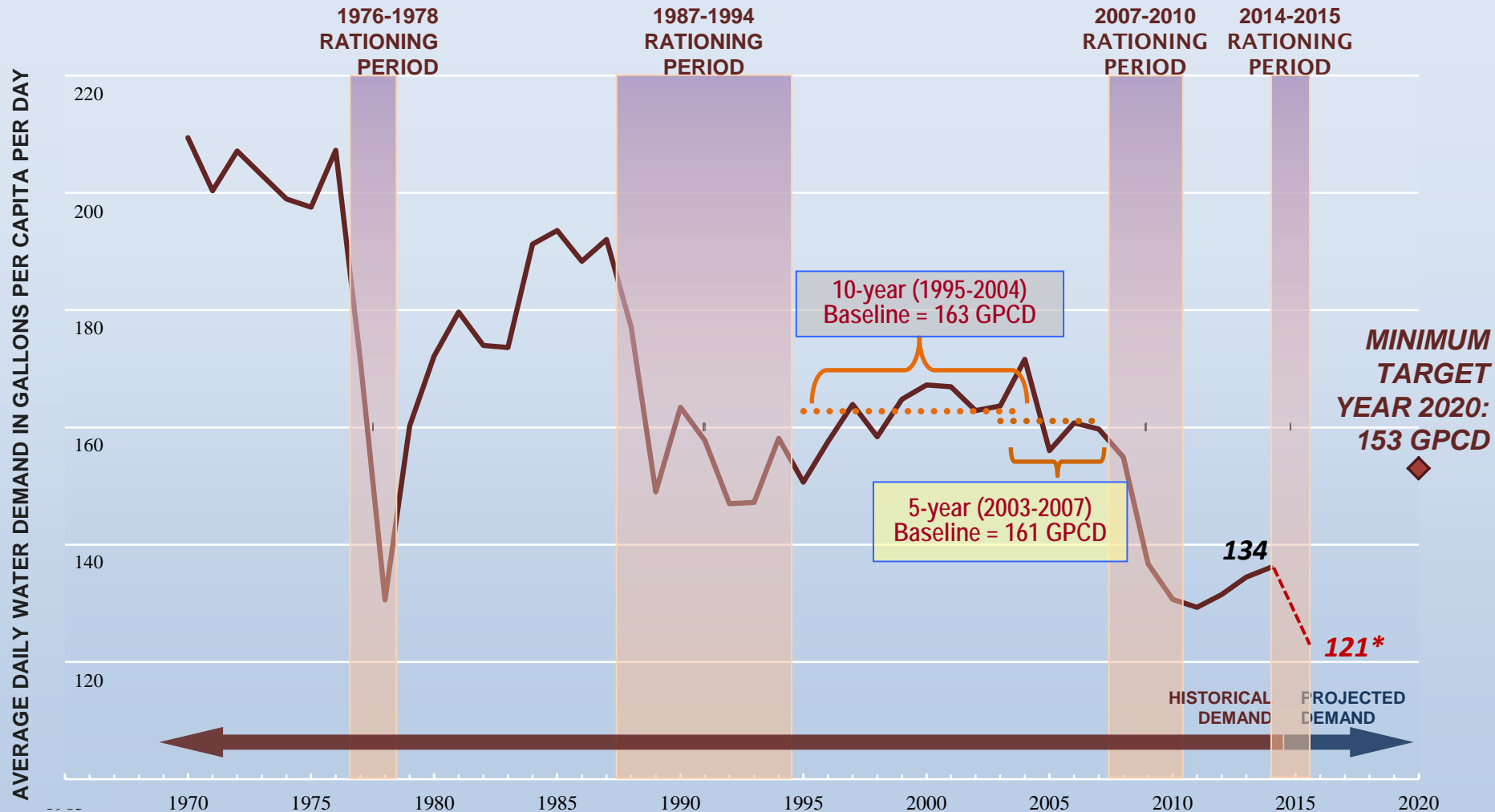
# East- & West-of-Hills Average Daily Water Use by Customer Category



Note:

(1) Based on Calendar Year 1975 - 2013 consumption data.

# SBx7-7 Interim & Compliance 2020 Fiscal Year Per Capita Use Targets



\*Projected value based on historical demand and current water shortage reductions.



# 20x2020 System Wide Parcel Mapping & Computing Tools



- Goal to create account/parcel landscape water use budgets
  - >350,000 SFR, MFR and IRR accts
  - 3 microclimate zones
  - Includes >27,000 half acre parcels
- Application Tools
  - High-resolution color + infrared imagery
  - Google Earth & Map Engine API
  - Software integration services
- Professional services
  - Eagle Aerial Solutions
  - OmniEarth



# CY2015 Water Conservation Initiatives



## Conservation Incentives

- Continue focus on outdoor irrigation rebates
- Launch *Pay as You Save (PAYS)* on-bill financing pilot
- Promote commercial and industrial technology retrofits



## Water Management

- Launch updated Home Water Works website calculator
- Expand Home Water Reports to 75,000 households
- Complete 20x2020 water budgets for >350,000 accts.



## Supply Side

- Continue Fixed Network Leak Detection Pilot Study
- Conduct District Metered Areas Water Loss Control Pilot
- Expand acoustic logger leak detection



## Research & Development

- Complete Advanced Metering Infrastructure Study
- Complete MF Residential/Commercial Submetering Pilot
- Continue water-energy nexus research/funding
- Continue graywater pilot studies and community support

# Public Comments

## Director Comments