

# Are You Ready for the Future of ~~Efficiency~~ Water Demand Management?

Southern California Water Committee

PETER MAYER, P.E.

PRINCIPAL

WATERDM

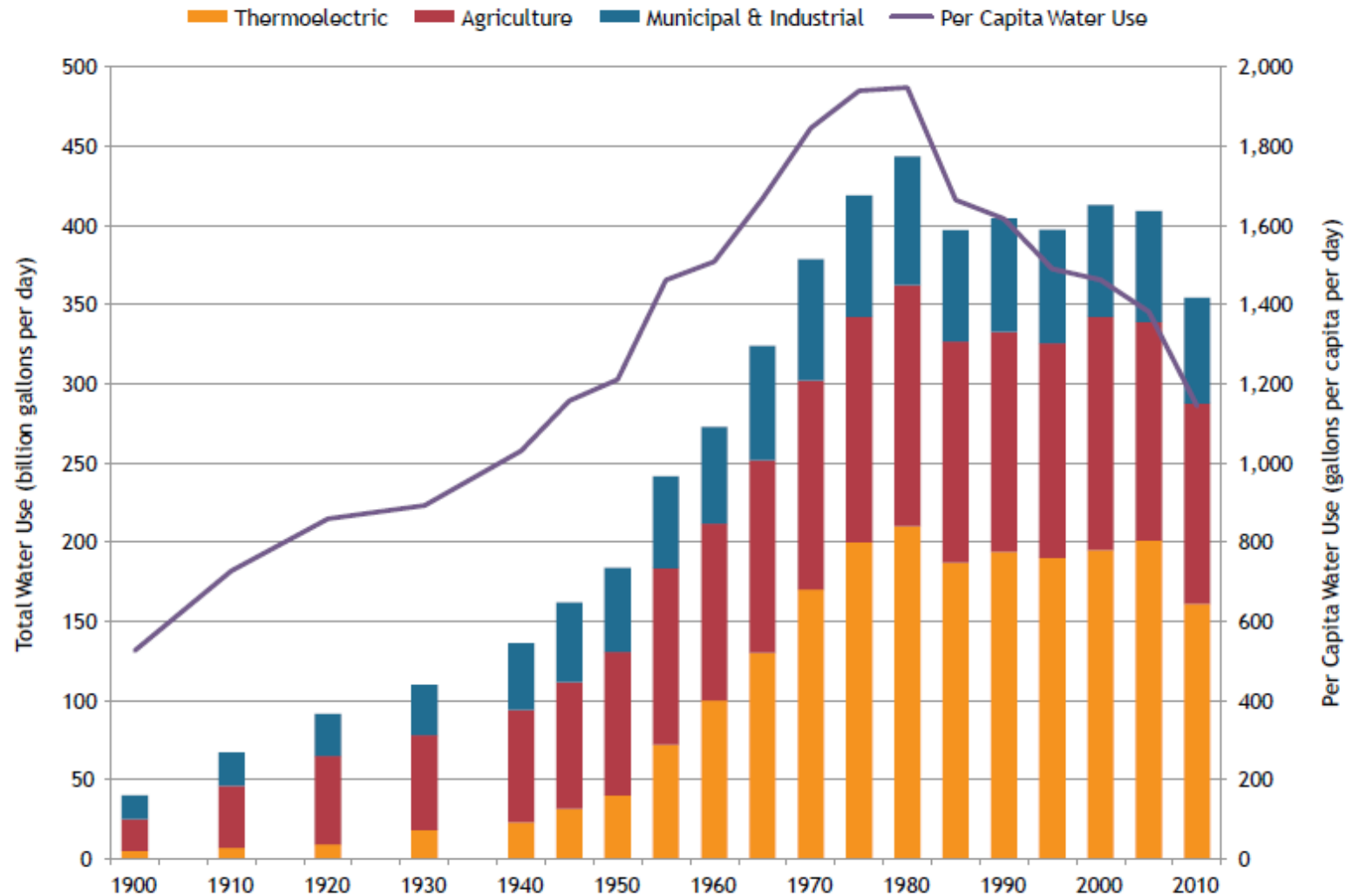
BOULDER, COLORADO



**M.D. SHELTON**

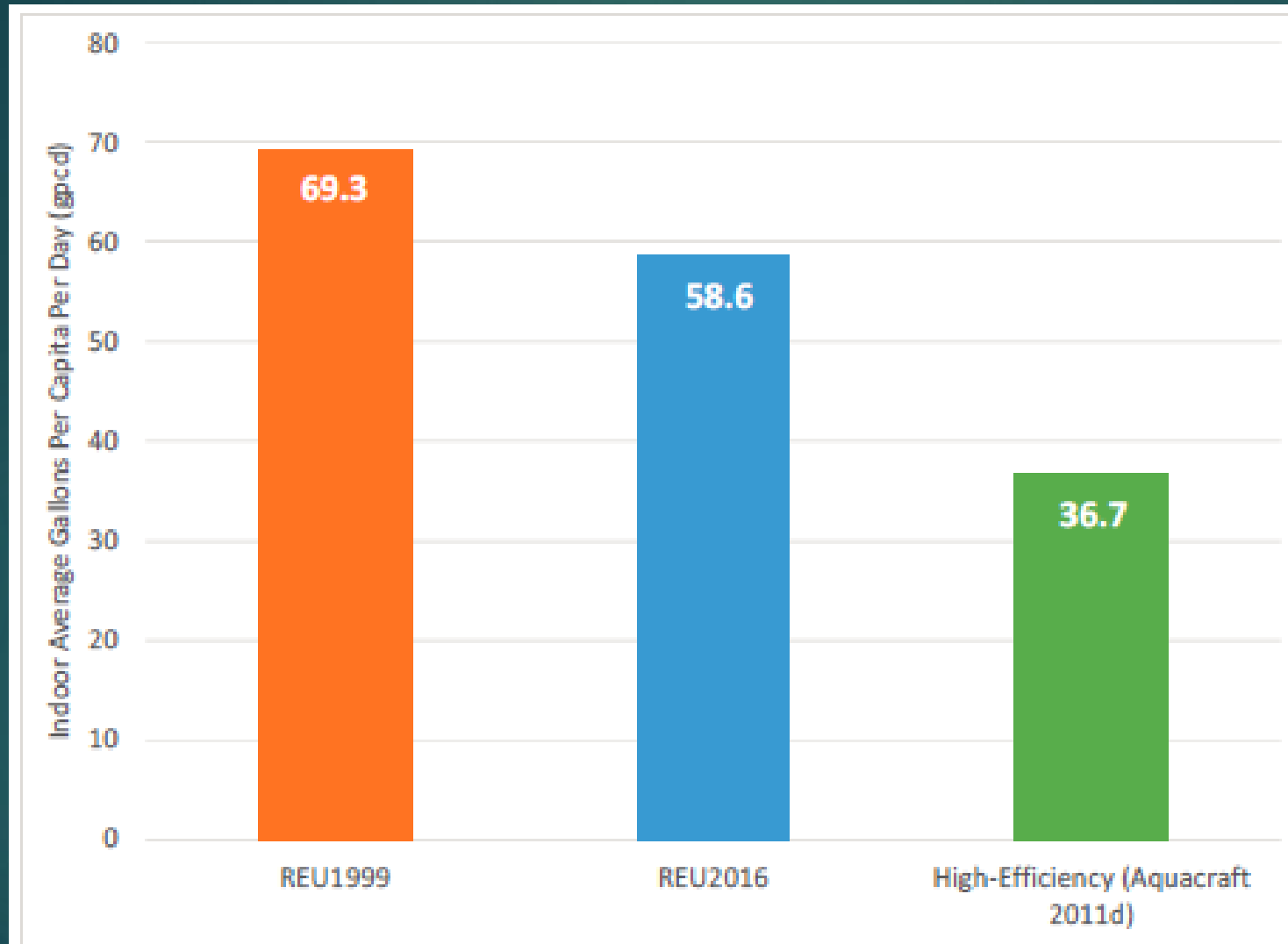


# Water Use in the US, 1900 - 2010



Includes fresh and saline water. Source USGS and Pacific Institute 2015

# Residential Indoor GPCD

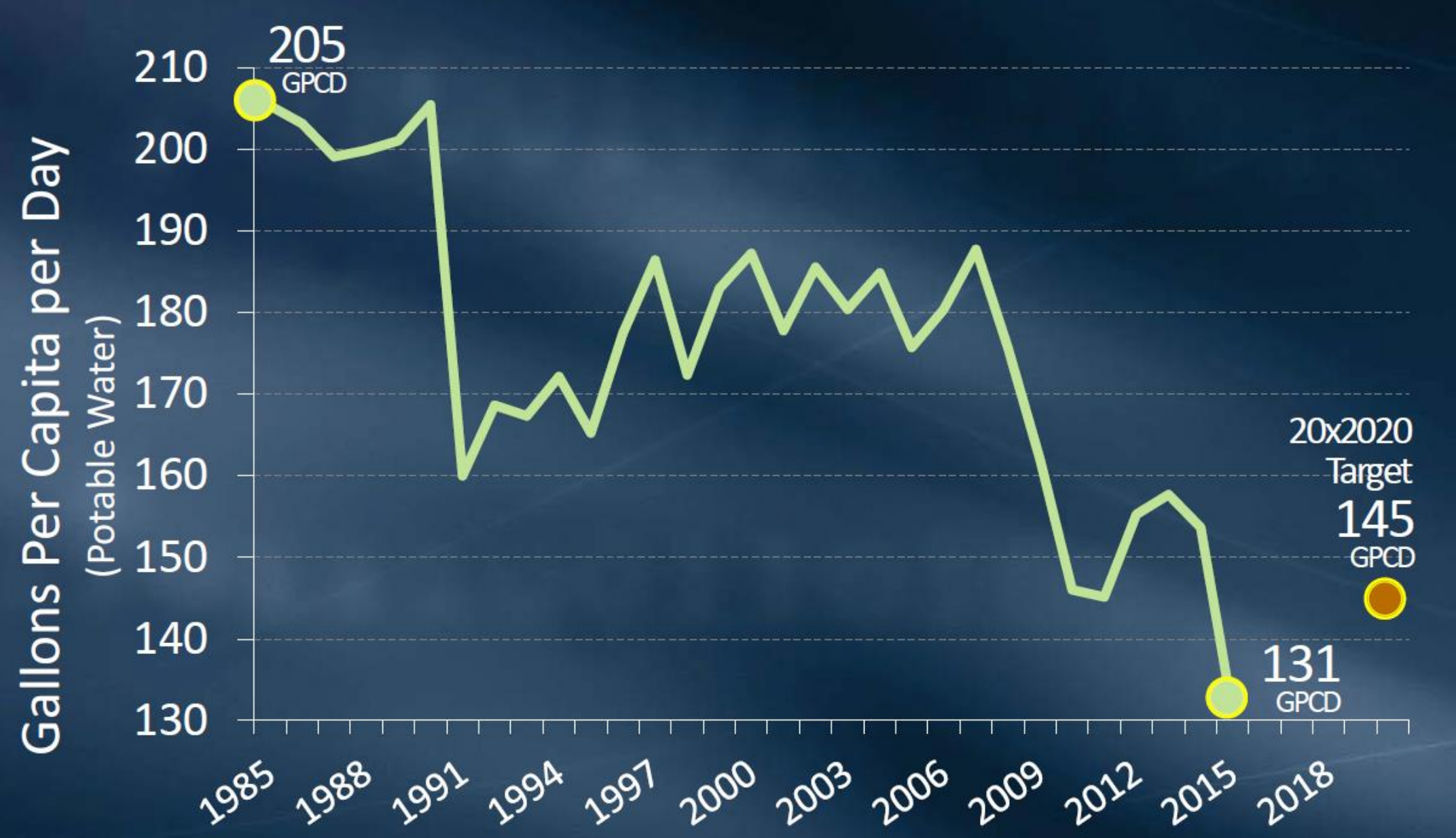


1999 vs. 2016 =  
15.4% reduction

2016 vs. HE =  
37.4% reduction

Source: DeOreo, W., P. Mayer, B. Dziegielewski, and J. Kiefer. 2016. Residential End Uses of Water, Version 2, Executive Report. Project #4309A. Denver, Colo.: Water Research Foundation.

# Gallons Per Capita Per Day – MWD of Southern California



# Peer Review of the Demand Management Programs of the Metropolitan Water District of Southern California



California Water Efficiency Partnership

# Peer Review Goals

*To perform a thorough, but high level review of MWD's water conservation program efforts to date and offer insights and recommendations about how the program should evolve in the future to be more effective.*

# Peer Review Team

- ▶ **Erin Morey**, New York City Dept of Environmental Protection, NY
- ▶ **Doug Bennett**, Southern Nevada Water Authority, NV
- ▶ **Karen Guz**, San Antonio Water System, TX
- ▶ **Kathy Nguyen**, Cobb County Water System, GA
- ▶ **Carol Ward-Morris**, Arizona Municipal Water Users Association, AZ
- ▶ **Peter Mayer**, WaterDM
- ▶ **Bill Gauley**, Gauley and Associates
- ▶ **Mary Ann Dickinson**, AWE and California Water Efficiency Partnership



# Peer Review Process

- ▶ Informational report on Metropolitan conservation program
- ▶ Team teleconference
- ▶ Peer review site visit
- ▶ Summary of reviewer comments
- ▶ Team teleconference to produce recommendations

# MWD Member Agencies Contributing to the Peer Review

- ▶ Los Angeles Department of Water and Power
- ▶ San Diego County Water Authority
- ▶ Municipal Water District of Orange County
- ▶ Eastern Municipal Water District
- ▶ City of Beverly Hills
- ▶ Three Valleys Municipal Water District

# Peer Review Summary Comments

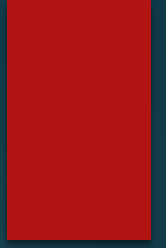
- ▶ Peer review was based on a brief window of insight.
- ▶ The exceptional challenges faced during a drought crisis led to this peer review.
- ▶ *The Peer Review Team found that Metropolitan's water conservation programs were exceptional, far reaching, and innovative particularly given the enormous service area and limited staff resources.*

# Peer Review Summary Comments (cont.)

- ▶ Metropolitan and member agency staff were open and forthcoming. The peer reviewers were complimentary of the performance of these small groups of people, particularly during such a severe and long-lasting drought.
- ▶ All comments from the Peer Review Team, Metropolitan Staff, and Member Agencies are presented anonymously.

1 1

# Consensus Peer Review Recommendations



# 1

## Evaluate and Increase the Base Conservation Rate of \$195/AF.

- ▶ This maximum value is fundamental to the entire conservation program.
- ▶ Re-evaluate and increase the cost-efficiency threshold
  - Could be based on the avoided cost of new supply in MWDs portfolio; or
  - Could be market-based, at level needed to incentivize action.

# 2 Improve and Expand Conservation Research

- ▶ Metropolitan is a national leader in both funding and conducting conservation research.
- ▶ Member Agencies (MA's) want more pilot research and more rigorous program evaluation.
- ▶ Create committee of staff, MA's, and technical experts to develop a prioritized research agenda.

# 2 Improve and Expand Conservation Research (cont.)

- ▶ Integrate research agenda and evaluation into programs as they are developed and launched.
- ▶ Involve MA's throughout the process so they are fully prepared to participate and provide data.
- ▶ Metropolitan needs additional staff dedicated to conservation research, evaluation, and data management.



# 3 Develop a Comprehensive Education Effort

- ▶ Metropolitan's education offerings are valuable and should be improved and expanded.
- ▶ Metropolitan's education and outreach efforts are an essential component of the landscape transformation process, accelerated through the turf replacement program.
- ▶ Education programs are not well suited to a "Just in Time" approach. Programs need to be developed and improved over time.
- ▶ Evaluate Metropolitan curriculum along with existing offerings of MA's and beyond to identify the shared needs across the service area.

# 3 Develop a Comprehensive Education Effort (cont.)

- ▶ Engage the green industry and universities in development and implementation of professional training.
- ▶ Develop core curricula that can be customized by MAs or local experts to address local climate, conditions, etc.



# 4 Reinststate the Turf Removal Program

- ▶ Metropolitan's turf replacement program was a valuable and necessary response to drought.
- ▶ More than just an emergency response, this program can be part of a long term change to urban landscapes.
- ▶ Lower water use is prioritized.
- ▶ Platform for promoting California Friendly landscapes, homeowner classes, and professional training.






# 4 Reinststate the Turf Removal Program (cont.)

- ▶ Maintain this program and its capabilities to further advance landscape changes and to keep the ability to “ramp up” the program if needed.
- ▶ Establish a fixed annual budget. Refine and scale the program annually in coordination with the MA’s.
- ▶ Incentive must be enough to motivate customers to participate in the program.

# 5 Expand the Water Savings Incentive Program (WSIP)

- ▶ The WSIP is valuable and should be expanded and improved.
- ▶ CII water use efficiency is complex. WSIP approach is good, but administratively intensive.

**Project Examples:**

UC Irvine	Emerald Textiles	Starbucks
		
<ul style="list-style-type: none"><li>• Med Center</li><li>• \$4K / 20 AF</li></ul>	<ul style="list-style-type: none"><li>• Filter / Recycle water for Tunnel Washers</li><li>• \$240K / 1,100 AF</li></ul>	<ul style="list-style-type: none"><li>• Store RO Filtration System</li><li>• \$8.2K / 55 AF</li></ul>

# 5 Expand the Water Savings Incentive Program (cont.)

- ▶ Additional assistance is needed to manage multiple projects across the region. Contract out for marketing, inspections, and some program administration. ✓
- ▶ Reduce barriers to participation and simplify contracting.
- ▶ Set minimum \$\$ and water savings thresholds to ensure cost-efficiency. ✓



# 6 Re-start Member Agency Program Advisory Committee

- ▶ Program Advisory Committee (PAC) meetings are important for member agency engagement, communication, and program success.
- ▶ Member agencies value the “practical, detailed, and technical” forum that the PAC provides.
- ▶ Members want productive, valuable meetings.
- ▶ Member agencies are anxious to resume these meetings as they were prior to the drought.

# 7 Before Eliminating Rebates, Work with MA's on Sunset Date and Final Promotion

- ▶ Metropolitan and MA's must determine if and when to terminate rebate programs.
- ▶ May consider saturation studies to base decisions on and ID where there may be opportunities to address through MAA programs or targeted pilots.
- ▶ As a practice, if funding is available, have one last “fire sale” push before closing down.





# 8 Continue the Regional and Member Agency Administered Programs

- ▶ The Regional Conservation Program is Metropolitan's primary program, offering a one stop shop for all customers.
- ▶ Member Agency Program (MAP) is local and has strong support.
- ▶ The combination of the two allows Member Agency options.
- ▶ MAP provides local adaptation member agencies appreciate.
- ▶ The combination of both program elements enables Metropolitan flexibility to swiftly modify and accommodate different conditions, such as drought.

# 9

## Consider Additional Staffing for Water Conservation

- ▶ Metropolitan: 10 FTEs serving population of 19 million.
- ▶ Comparison: Southern Nevada Water Authority – 16 FTEs serving population of 2.1 million.
- ▶ Metropolitan has little or no capacity for redundancy or cross training.
- ▶ Several critical functions have no back up during a prolonged absence or staff vacancy.



# 10 Continue Role in Codes & Standards and Legislation

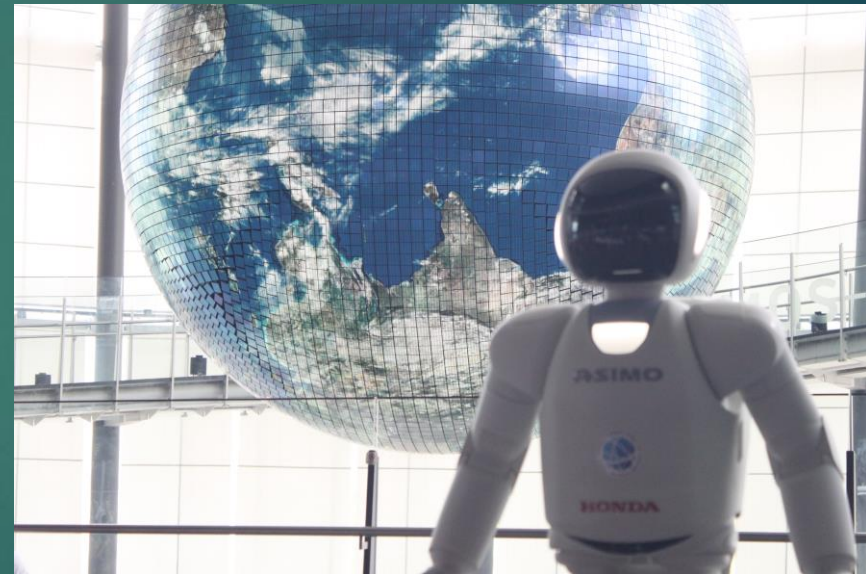
- ▶ Codes, standards, and legislation have played an essential role in increasing water use efficiency.
- ▶ These types of wide-reaching changes have driven market-scale improvements in water efficiency and reduced per capita consumption.
- ▶ Metropolitan's role in driving these efficiency policies was significant.
- ▶ Metropolitan should continue an active role with the potential to reduce future water demand.

# 1 1 Target Programs to Disadvantaged *and* High Water Users

- ▶ Where possible, work with MA's to target customers across regions.
- ▶ High water users have the greatest potential for savings.
- ▶ Disadvantaged customers are least likely to benefit from Metropolitan program offerings without assistance.
- ▶ These are very different customer groups, but both have potential to benefit.

# Are you ready for the future?

- ▶ End user efficiency and water demand management
  - ▶ Data-driven
  - ▶ Connected
- ▶ Cooperation
- ▶ Competition
- ▶ Conflict
- ▶ Ag – Urban water balance



Thank You

Peter Mayer, P.E.

[peter.mayer@waterdm.com](mailto:peter.mayer@waterdm.com)

