



# **DRBC Water Conservation Program and Water Loss Accountability Rules**

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## **DRBC Water Audit Workshop**

April 13, 2011

# **Water Conservation in the Delaware River Basin**

- Tocks Island Dam Project → Deauthorized
- Need to look at managing supply AND demand  
→ Good Faith Agreement
- Southeastern PA Groundwater Protected Area (GWPA)
- DRBC Water Conservation Advisory Committee
- Water Conservation Regulations Adopted late 80's and early 90's...

# Water Metering

(Resolutions 86-12 and 87-7)



- Adopted 1986-87
- Source metering (all sectors – ex. Ag)
- Service metering (PWS sector)
- Applies to systems  $> 100,000$  gpd ( $>10k$  gpd GWPA)
- “If you don’t measure it – you can’t manage it”



# Leak Detection and Repair

(Resolution # 87-6)

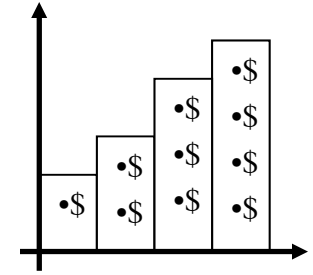


- Adopted 1987
- Applies to water purveyors  $> 100,000$  gpd ( $>10k$  gpd GWPA)
- “Unaccounted-for-water” (UFW)  $\rightarrow 15\%$  target

# Conservation Performance Standards

- Adopted 1988
- Sets standards for plumbing fixtures and fittings
- Toilets, urinals, faucets, showers
- Applied to new construction and renovations
- Reinforced by Federal Energy Policy Act of 1992

# Water Conservation Pricing



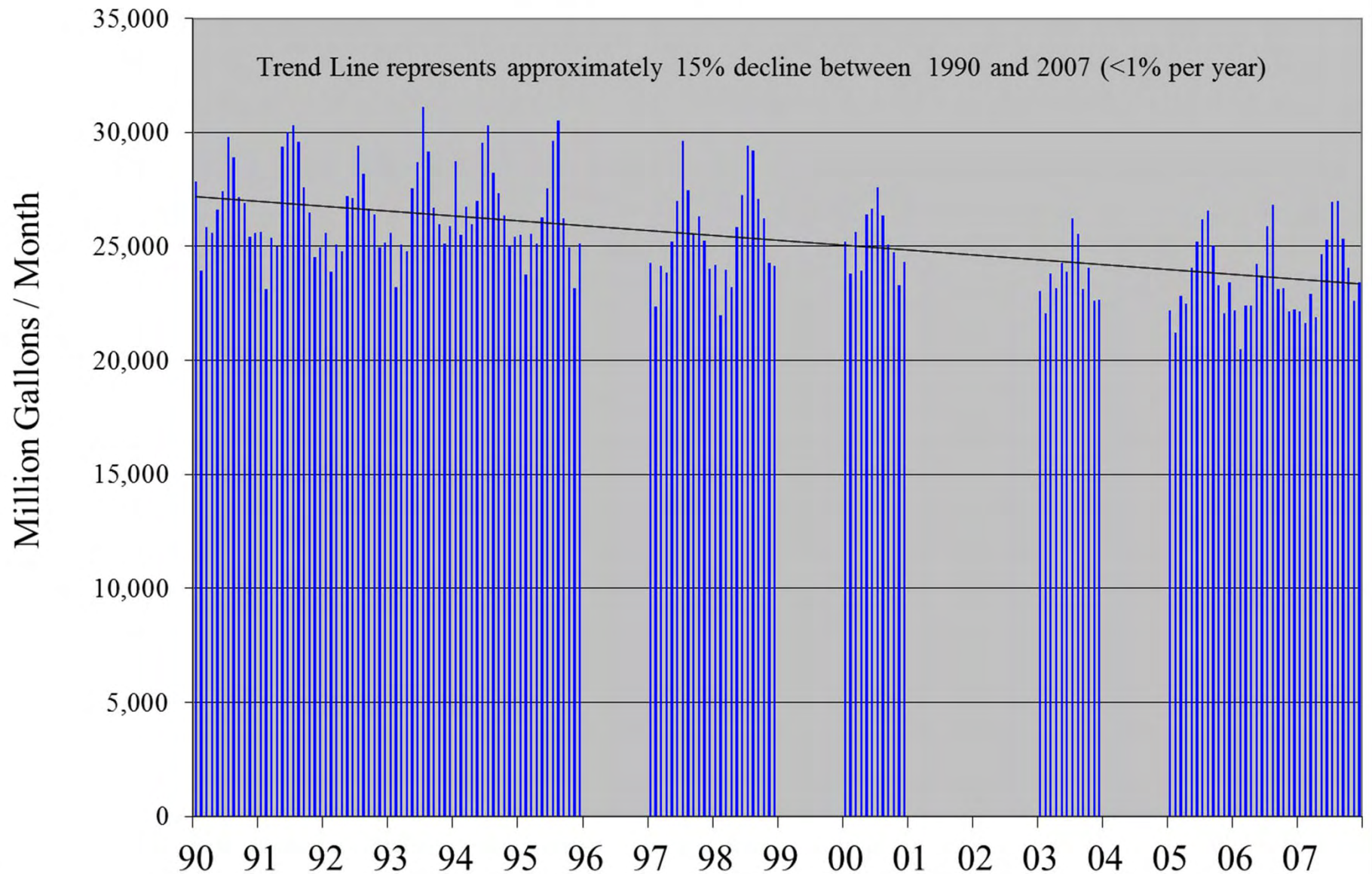
- Adopted 1992
- Applied to purveyors  $> 1$  mgd
- Promotes and supports retail water pricing that encourages conservation
- Requires adoption of conservation pricing, or feasibility study
- Pricing incentives encourage all forms of conservation

So, does conservation work?





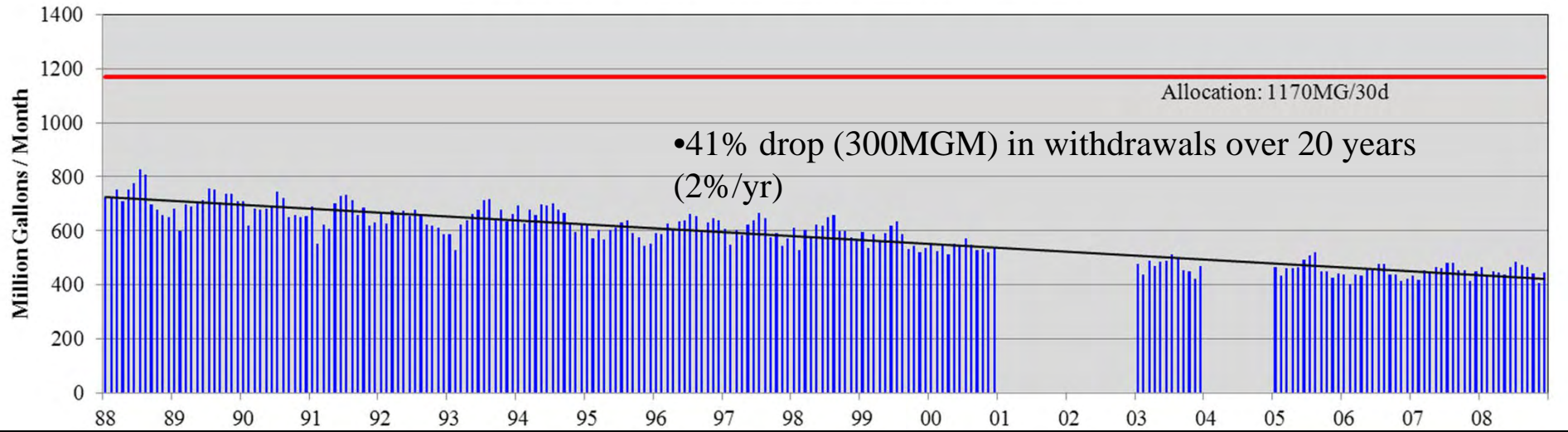
## Aggregate Water Withdrawals for 38 Public Water Systems in the Delaware River Basin



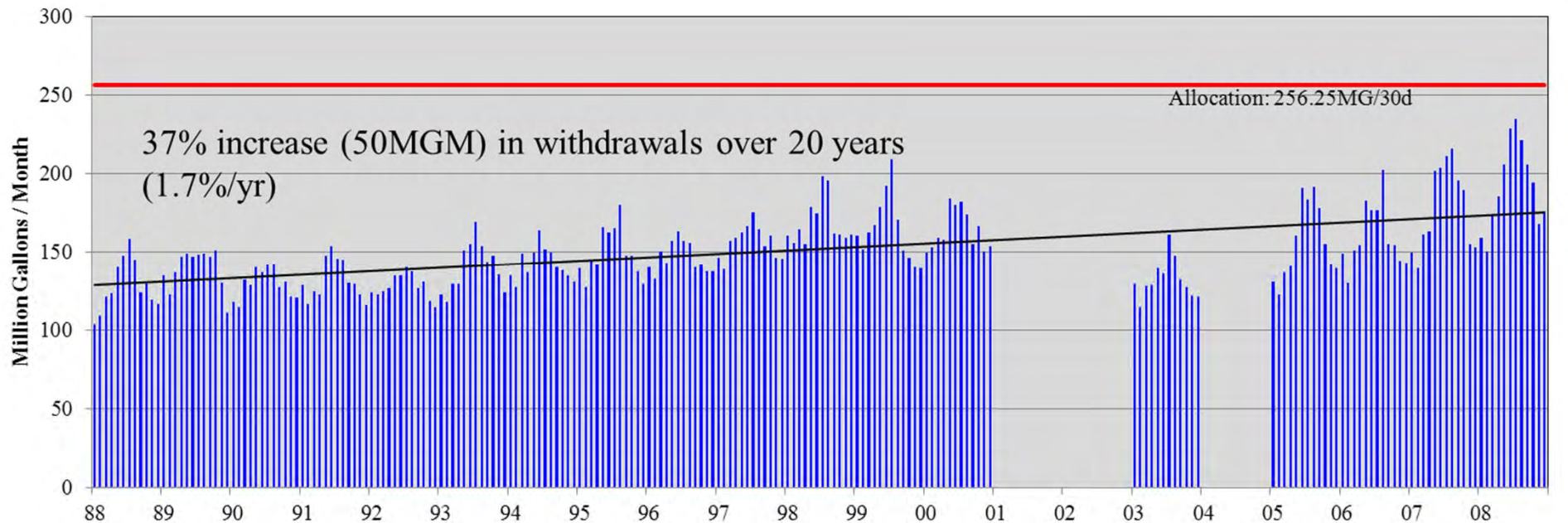


# Example of Urban vs Suburban Trends

01 Allentown Water Auth (D-1984-016 CP, ENT #102)

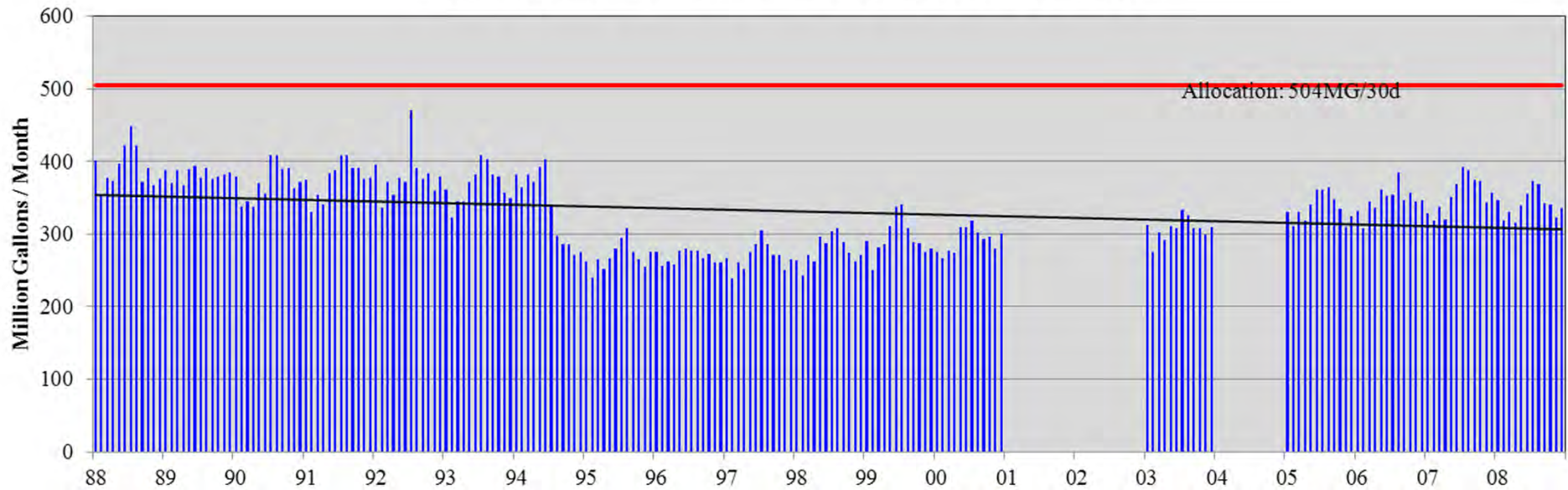


06 Lehigh County Auth (D-2001-020 CP-5)

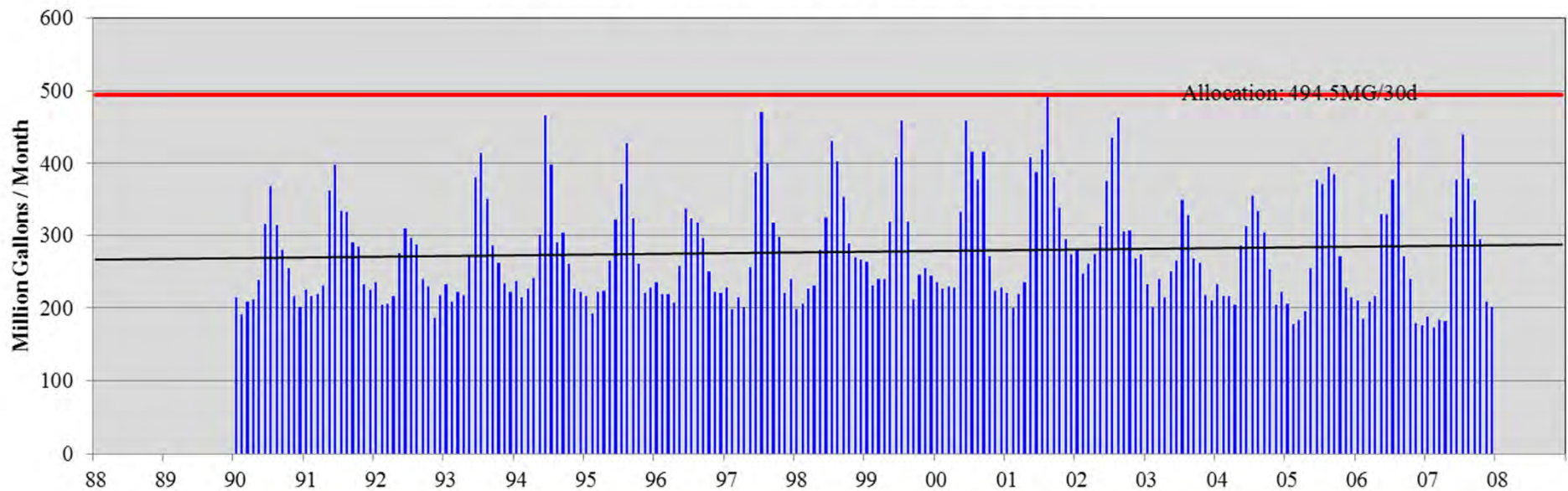


# Peaking Factors: Spot the difference

12 PA American Water Co Norristown Dist (D-1966-100 CP)



34 Vineland Water & Sewer Utility (D-1995-047 CP-2)



# **What's next in the Evolution of Water Management?**

Water Conservation → Water Efficiency

**Water Accountability!**

# Water Accountability & DRBC

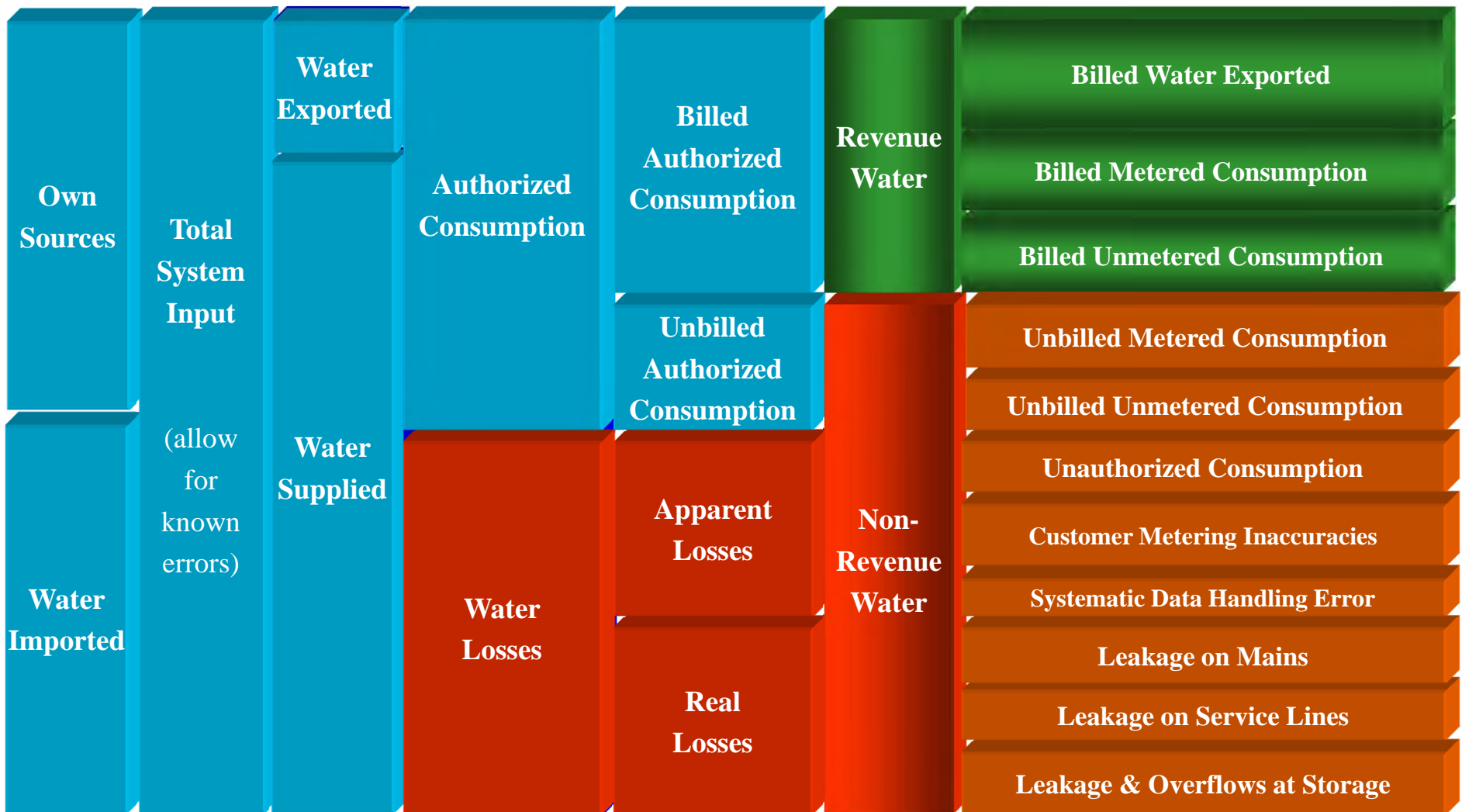
- DRBC Water Management Advisory Committee (WMAC)
- Diverse group of 20 stakeholders
- 2004: **WMAC investigated IWA / AWWA methodology for tracking and controlling water (and revenue) loss**
- Committee recognized benefits of Water Accountability approach, formed subcommittee and drafted a rule change for DRBC



# What prompted DRBC rule change?

- UFW = vague / inadequate definition
- Reporting inconsistencies
- Range of reported UFW:
  - High: 51%
  - Low: -12% (yes, that's a negative)
- Inadequate metric: UFW as % of distribution input is a poor indicator
- Time to update regulations (20+ yrs)

# IWA/AWWA Water Audit Components







# **Benefits of the IWA/AWWA Water Audit Methodology**

- Industry standardized definitions and terminology
- Software outputs meaningful indicators:
  - gpd / mile mains
  - gpd / connection
  - ILI (infrastructure leakage index)
- Better indicators lead to better decisions



# **Implementing Water Accountability:**

Other States / Agencies Advancing AWWA Water  
Audit Approach

- Texas
- New Mexico
- Virginia
- Georgia
- California
- North Carolina
- Tennessee
- Pennsylvania PUC
- Calgary, Alberta, Canada



# Implementing Water Accountability:

## Pennsylvania Public Utility Commission

- PA PUC launched pilot water audit program in 2008
- Technical Support Group established, 2009
- Five companies employed AWWA Free Water Audit Software© for 2009 calendar year audits:
  - 5 investor owned utilities / 18 systems
  - Met in 2010 to review initial data
  - Meeting again April 2011
- DRBC / PAPUC are sharing resources in launching the water audit programs



# Implementing Water Accountability

## - Basin States -

- ◆ In Basin – Required for 2012 and beyond.
  - Submission of completed AWWA Free Water Audit Software will satisfy reporting requirements
- ◆ DE – No statewide implementation, at this time
- ◆ NJ – NJDEP proposes to require Public Community Water Systems complete AWWA format water audit (draft rule status – subject to public comment)
- ◆ NY – No statewide implementation, at this time
- ◆ PA – PUC Pilot program

# Timeline

<b>2004 – 2008:</b>		DRBC WMAC
<b>2009:</b>	V o l u n t a r y ↓	DRBC Resolution
<b>2010:</b>		DRBC Outreach
<b>2011:</b>		DRBC Workshops / Presentations / Outreach
<b>2012:</b>		First year for collecting data in IWA/AWWA format
<b>2013:</b>	M a n d a t o r y ↓	Reporting begins (for 2012 calendar year)
<b>2014?:</b>		DRBC Performance Metrics



# Implementing Water Accountability:

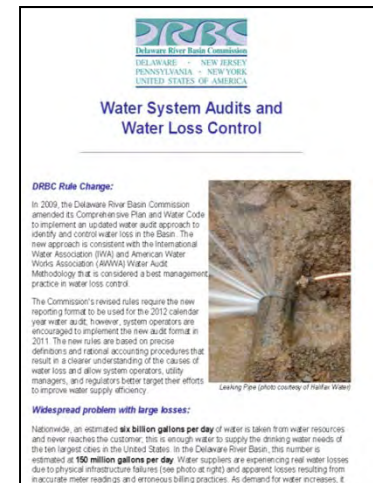
## - Outreach -

- September 2010: DRBC began to contact water purveyors to advise them of rule change.

- New DRBC webpage:

<http://www.nj.gov/drbc/water-audits.htm>

- DRBC workshop (thanks for coming!)
- Other speaking engagements
- Outreach will continue for smaller systems
- Work with other organizations (rural water associations, water system operator training programs, local AWWA, AWRA....)





# Summary



- IWA/AWWA methodology: rational water audit structure
- New audit approach outputs more meaningful indicators:
  - targeting real losses
  - identifying financial costs of losses
- DRBC rule change: currently voluntary; 2012 mandatory
- DRBC outreach ongoing
- Initial audits likely to identify data gaps, learning curve and reporting challenges
- Long term goal to reduce water withdrawals and increase system efficiency



**Thank you for your interest in the DRBC Water  
Audit program**



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