



Customer Rates Meeting  
Water System  
Meeting #2 – Projected FY 2012-13  
Units of Service

November 17, 2011

# Customer Rate Season Schedule

- This is the second of a series of meetings
  - ✓ 10/20 –Capital Improvement Program Presentation
  - ✓ **11/17 – Units of Service**
  - ~~✓ 12/15 – Preliminary SYSTEM Revenue Levels~~
    - ✓ **POSTPONED UNTIL JANUARY**
  - ✓ 1/19/2012 – Preliminary Individual Rate Proposals
  - ✓ 2/22/2012 – BOWC Public Hearing
  - ~~✓ 3/ /2012 – City Council Public Hearing~~
  - ✓ 7/1/2012 – Effective Date for Rates
- Parallel meetings of TAC Work Groups



# Information Portals

- DWSD web site
  - ✓ [www.dwsd.org](http://www.dwsd.org)
  - ✓ Customer Information / “Wholesale Customers Season Rate Schedule”
- DWSD Customer Outreach Portal
  - ✓ [www.dwsdoutreach.org](http://www.dwsdoutreach.org)
  - ✓ For information contact Teresa Newman
  - ✓ [teresa@projectinnovations.com](mailto:teresa@projectinnovations.com)



# Today's Agenda

- Preliminary Units of Service for FY 2012-13 Water Rates
- Preview of Subsequent Meeting Material
  - *Preliminary Revenue Req't Status Report*
  - *Cost of Service Allocation / Rate Design Issues Status Report*



# There are 3 Fundamental Steps in the Water Rate Methodology

- Revenue Requirement Projections
  - ✓ *How Much Money is Needed?*
- Cost of Service Analysis
  - ✓ *From Whom Should the Money be Collected?*
- Design of Recommended Rates
  - ✓ *How Should DWSD Services be Priced?*



# FY 2012-13 Units of Service – Water Supply System

***NOTE: Data presented today reflects all contracts, correspondence, etc. as of 11/15/2011***



# Forecasting rates starts with the annual flow volumes

- Use in Rate Model
  - ✓ *Project revenue base*
  - ✓ *Establish demographic baseline for max day and peak hour demands*
  - ✓ *Allocate Commodity based costs customers*
    - *Chemicals, etc.*
- Theory
  - ✓ *Certain costs are uniform regardless of how customers use water*
  - ✓ *Customers should be allocated these costs solely on the volume of commodity purchased*



# A specific method is applied to project annual flow volumes

- For “New Contract” Customers
  - ✓ *Use Volume in Contract*
- For “Old Contract” Customers
  - ✓ *Review Historical Data*
  - ✓ *Project Rate Year Based on Regression Analyses, etc.*
  - ✓ *Transmit Projections to Customer Communities*
  - ✓ *Utilize Input from Customers*

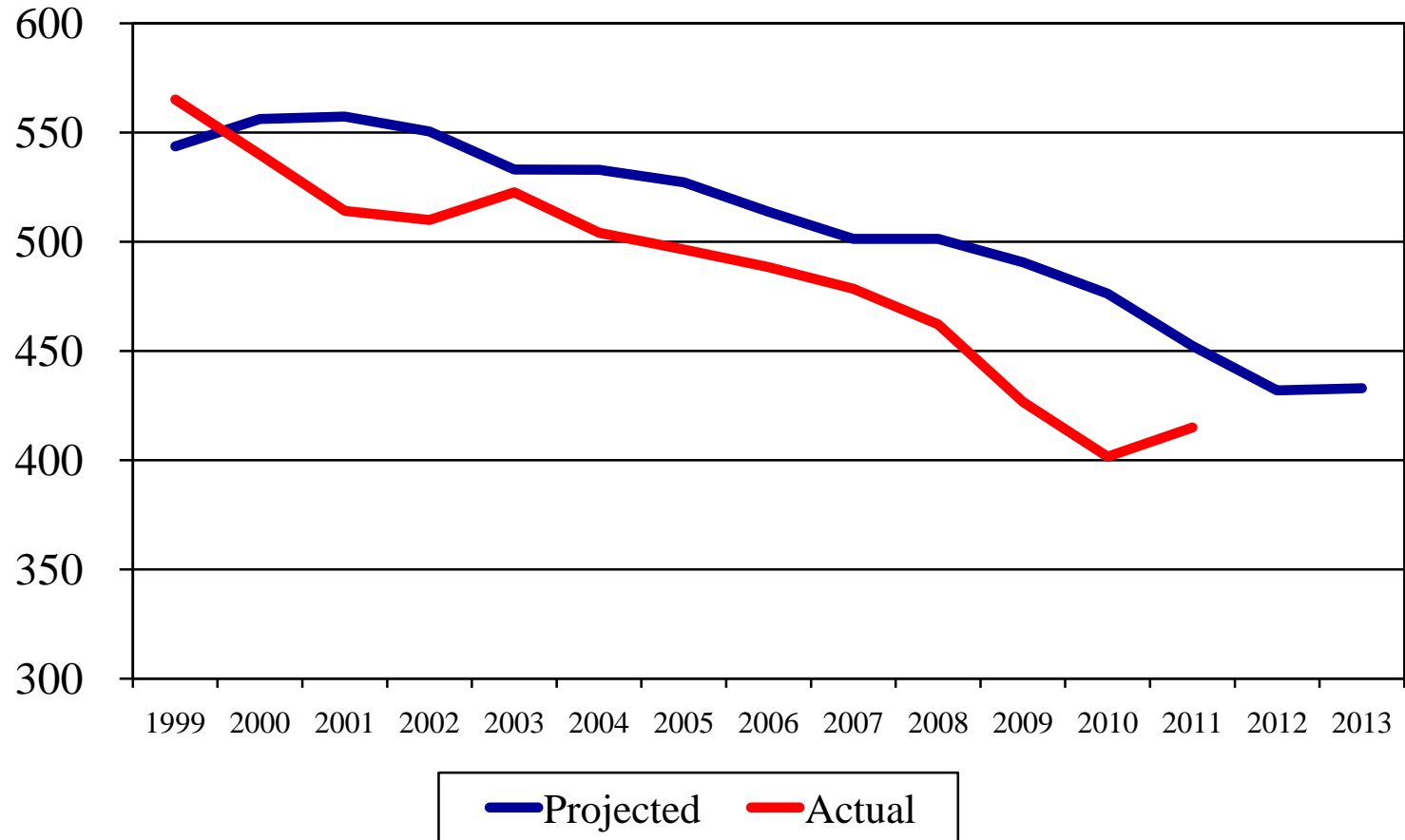


# At the end of the year projected flow volumes are reconciled with BILLED volumes

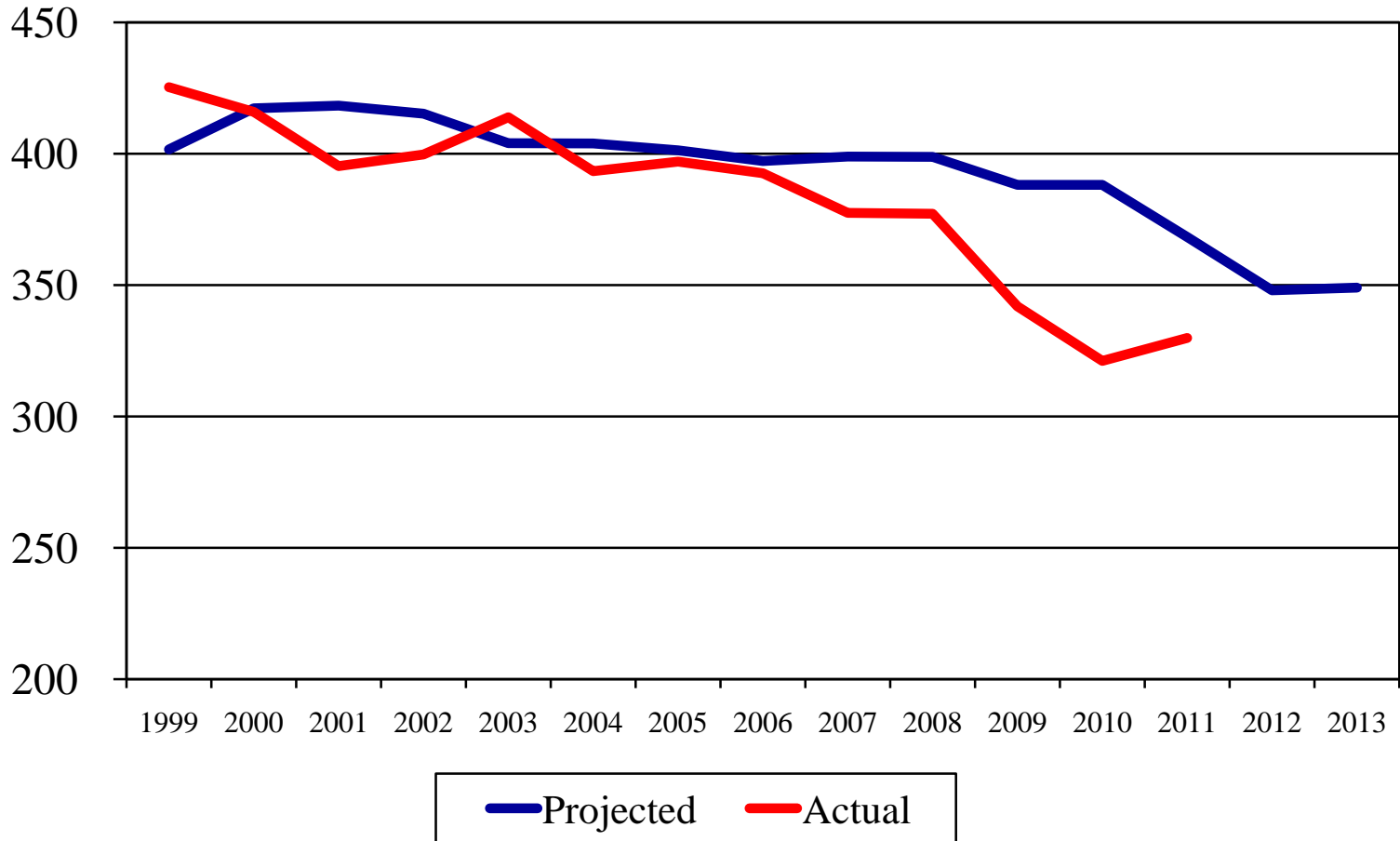
- Summary of FY 2010-11:
  - ✓ *SYSTEM ~ 8.0% Below Target*
  - ✓ *Sub Wholesale ~ 10.5% Below Target*
  - ✓ *Detroit Retail ~ 2.9% Above Target*
- Wholesale Variance is attributable to Contract volumes that are based on unrealistic expectations
  - *Water Rates Work Group considered alternatives to utilizing Contract volumes for rates*
  - *Concluded that reopener process would mitigate the variance and consequences*



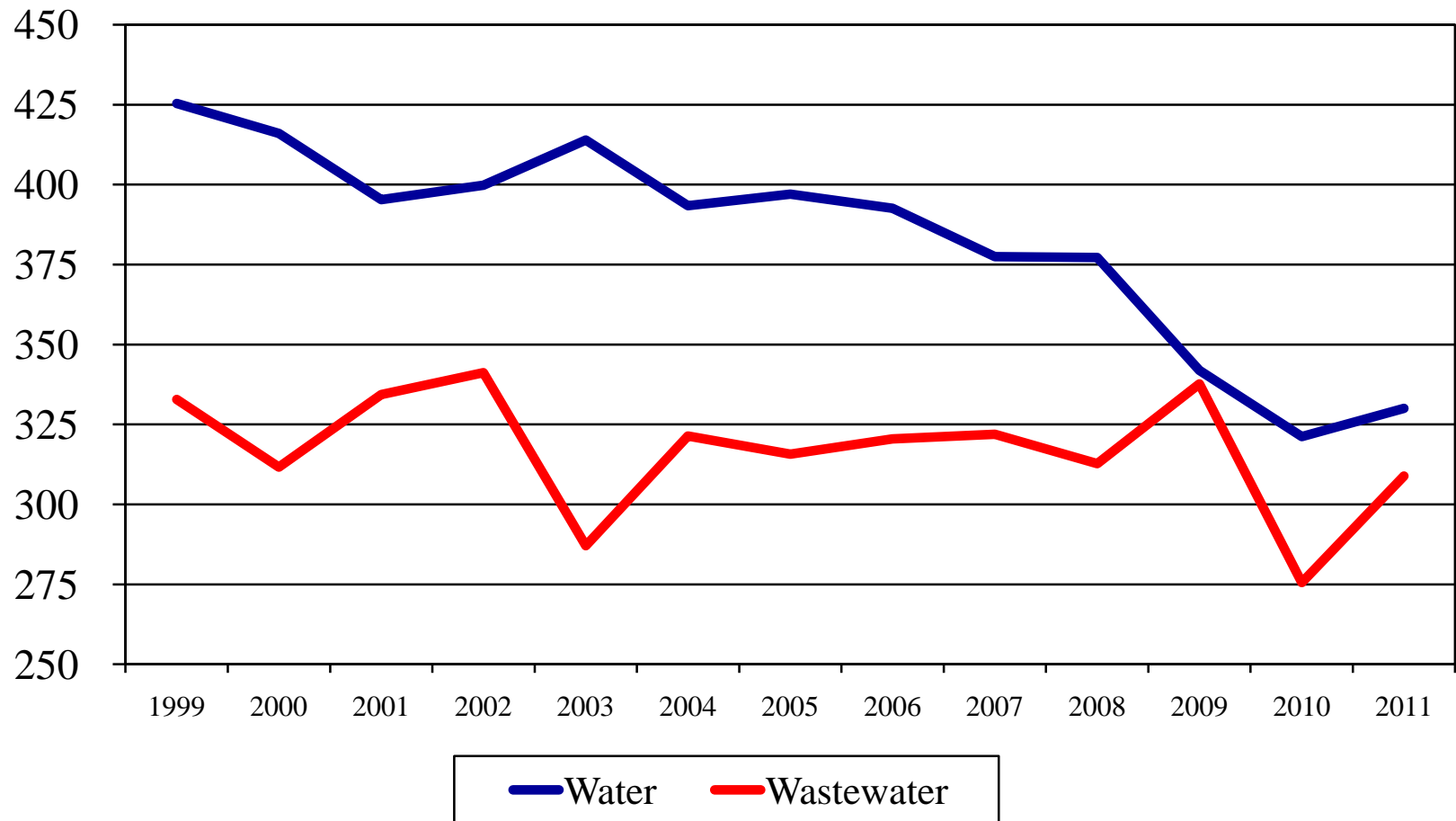
# Annual System Water Sales – (mgd)



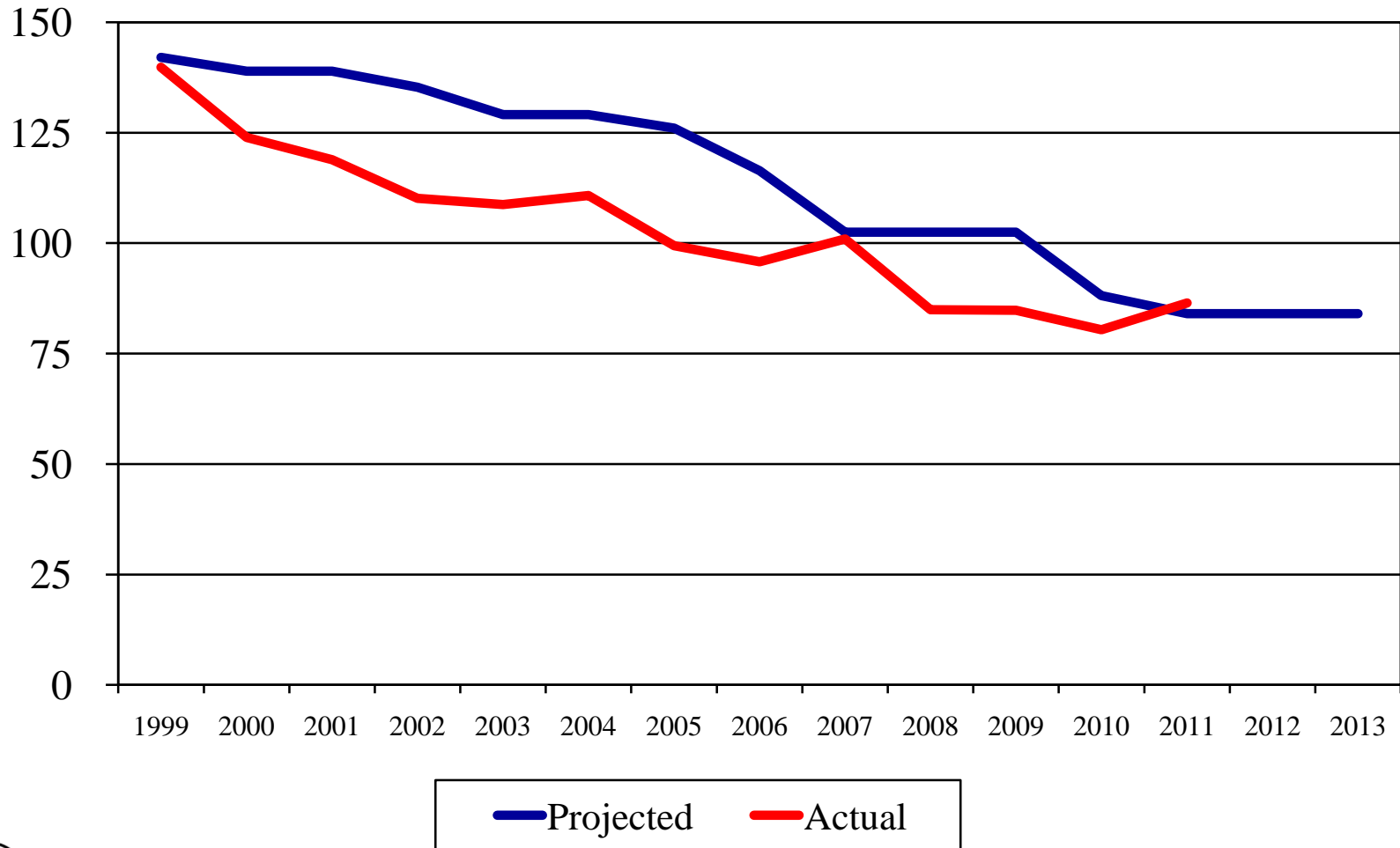
# Annual Suburban Wholesale Water Sales (mgd)



# Annual Suburban Wholesale Water and Wastewater Billed Volumes – (mgd)



# Annual Detroit Retail Water Sales (mgd)



# Additional to Flow Volumes, Distance from treatment plant is a factor in rate making

- Use in Rate Model
  - ✓ *Allocate to customers the costs of:*
    - Major transmission system (big pipes)
    - Pumping (high lift pumps and booster stations)
    - Responsibility for Non-Revenue (Unaccounted for) Water
- Theory
  - ✓ *Customers further away from the water treatment plants:*
    - Are using more of the pipes
    - Require more pumping power
  - ✓ *Should pay a larger share of these costs*

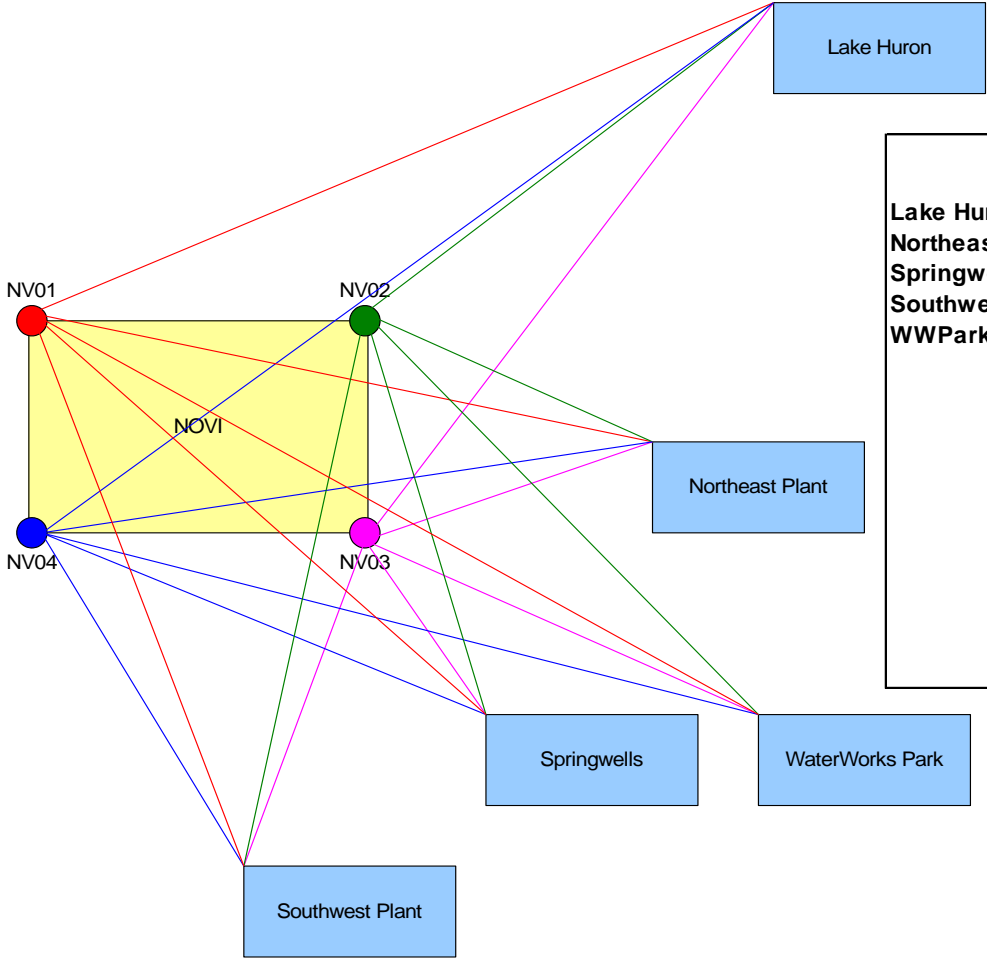


# There is a unique method for determining the rate impact of communities' relative distance from WTP

- Average distance from each WTP to a customer's representative location (or “point of commerce”)
- Definition of representative location
  - ✓ *Meter location for customers with one meter*
  - ✓ *Customers with more than one meter = weighted (by meter capacity) average of average distance to each meter*
  - ✓ *Special consideration for deduct meters*



# Distance Factor Calculation Example



	Distance (mi.)				
	NV01	NV02	NV03	NV04	
Lake Huron	63.7	66.6	65.8	62.4	
Northeast	21.6	24.0	22.5	23.8	
Springwells	16.8	18.3	16.7	20.4	
Southwest	20.2	20.5	19.7	24.5	
WWPark	24.5	26.4	24.9	27.5	
<b>Avg.</b>	<u>29.4</u>	<u>31.2</u>	<u>29.9</u>	<u>31.7</u>	<b>Avg</b> 30.5
	<b>Meter Capacity (eq mtr)</b>				
	NV01	NV02	NV03	NV04	Total
	123	123	285	900	1,431
	<b>Distance-Capacity (mi.-eq mtr)</b>				
	NV01	NV02	NV03	NV04	Total
	3,611	3,833	8,527	28,548	44,519
	<b>Distance Factor =</b>				
	$\frac{44,519}{1,431} =$				<b>31.1</b>



# Similar to the Distance Factor, Elevation must also be taken into consideration

- Use in Rate Model
  - ✓ *Allocate costs of pumping (high lift pumps and booster stations) to customers*
- Theory
  - ✓ *Customers with higher average elevation difference from the water treatment plants require more pumping power and should pay a larger share of these costs*



# As with distance, there is a unique method to calculate the rate impact of a community's elevation

- Average elevation difference from each WTP to a customer's representative location (or “point of commerce”)
- Definition of representative location
  - ✓ *Meter location*
    - Customers with one meter = meter elevation
    - Customers with more than one meter = weighted (by equivalent meter) average of average elevation difference to each meter
    - *Special consideration for deduct meters*



# Elevation Factor Calculation Example

	<u>Elevation, ft</u>	<u>Equiv. Meters</u>	<u>Elev-Equiv Meters</u>
NV01	864	123	106,272
NV02	875	123	107,625
NV03	867	285	247,095
NV04	960	900	864,000
<b>Total</b>		<hr/> 358	<hr/> 331,248
		<hr/> 331,248	
<b>Weighted Avg. Elevation =</b>		358	
<b>Weighted Avg. Elevation =</b>		926	
<b>Avg. WTP Elevation</b>		598	
<b>Elevation Difference</b>		328	



# Status Update - Elevation Factor Investigation by TAC Water Rates Work Group

- Water Rates WG explored concept of augmenting weighted meter elevation with a “Hydraulic Grade Line” factor to incorporate delivery pressures into cost allocation of pumping costs
- No consensus to recommend change at this time – continue to review
- This topic has renewed interest in the Water Rates WG
  - ✓ *Pressure ranges in contracts may spur a change*



# Another factor in determining rates is the customers' Max Day and Peak Hour demands

- Use in Rate Model
  - ✓ *Allocate costs of low lift pumping, treatment, and storage (and capital costs of large pipes) to customers*
- Theory
  - ✓ *Customers that place higher max day and peak hour demands on the System require additional facilities and operating requirements and should pay a larger share of these costs*



# The method of determination for Max Day/Peak Hour demands differs for New Contract and non-contract customers

- For “New Contract” Customers. . .
  - ✓ *Use Demands in Contract*
- For other Customers
  - ✓ *Eight years of history establishes proxy*
  - ✓ *Use absolute highest community max day and community peak hour on DWSD’s max day (exclude midnight to 6 am)*
  - ✓ *Adjust uniformly (20% increase) to reflect recent absence of extraordinary demand conditions*
  - ✓ *Adjust relative to projected volume to reflect demographic conditions*

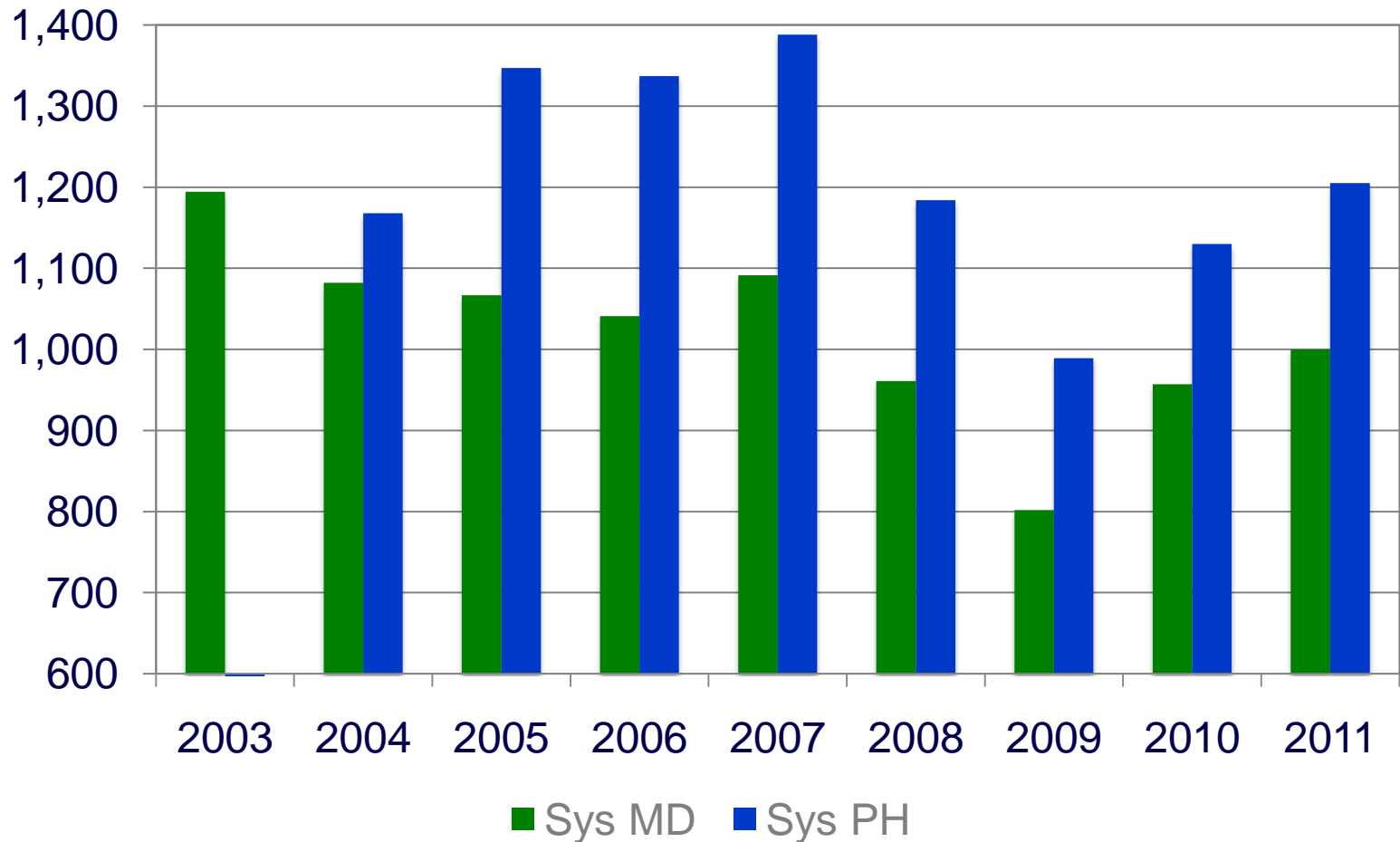


# Contracted Customer Demands Status Report

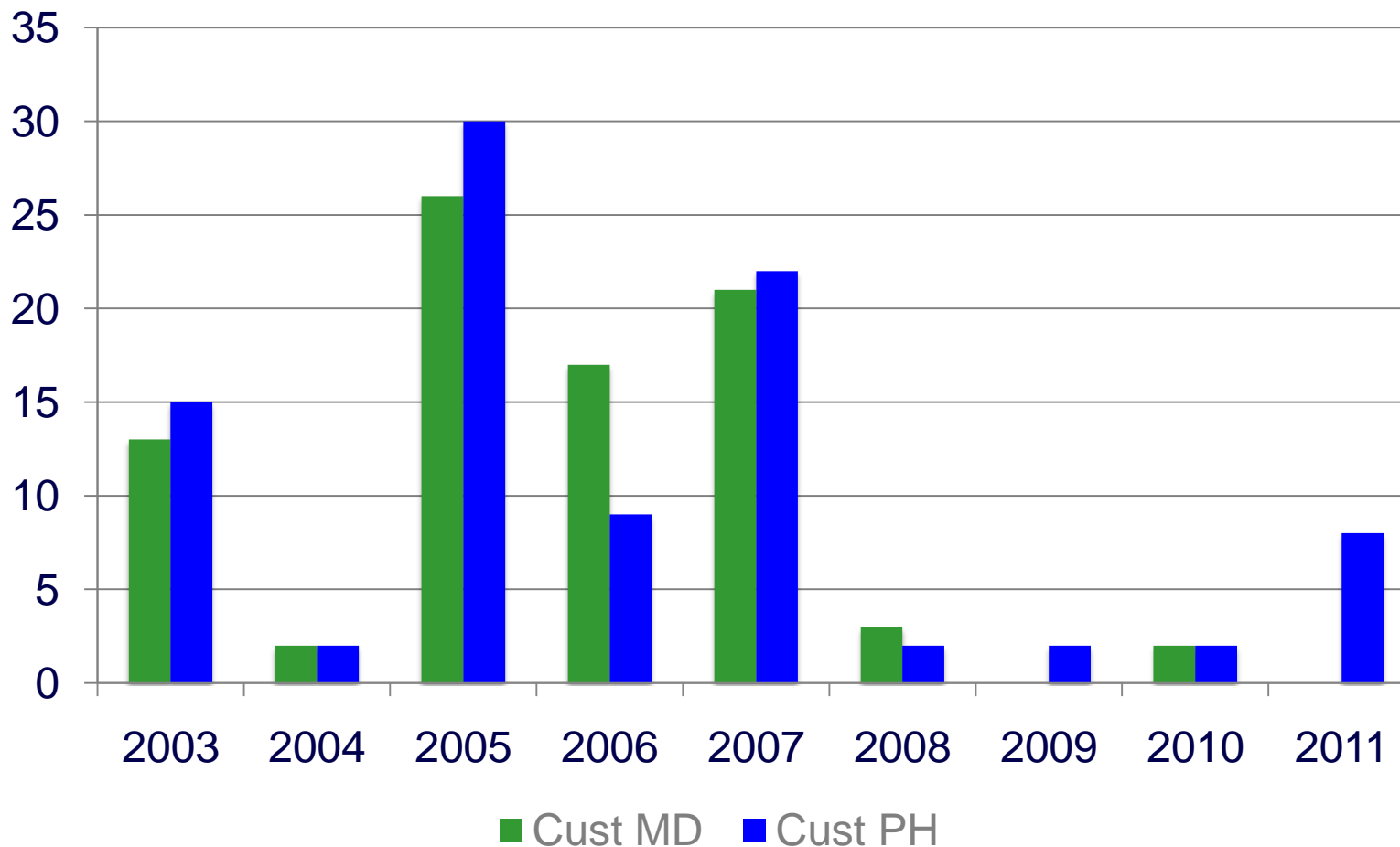
- As of today:
  - ✓ 71 communities have negotiated new contracts
  - ✓ 2 communities has been consolidated into SOCWA
  - ✓ 13 communities remain under the old contract
  - ✓ 17 communities eligible for reopener negotiations prior to finalization of FY 2012-13 rates
- Contracts approved prior to January 15, 2012 will be prospectively reflected in FY 2012-13 rate calculations
  - ✓ After that date new contract demands will be reflected in FY 2013-14 rates



# Summary Review of Demand Data – System Demands



# Summary Review of Demand Data – Customer Demand Proxies



# Summary Review of Demand Data Used to Establish Proxies and Contract Basis

	Customer Proxy		DWSD Max Day		Reported Pumpage Days Over . . .		
	Max Day	Peak Hour	Max Day	Peak Hour	800 mgd	900 mgd	1,000 mgd
2003	13	15	<b>1,195</b>	1,290			
2004	2	2	1,082	1,168			
2005	26	30	1,067	1,347			
2006	17	9	1,041	1,337			
2007	21	22	1,092	<b>1,388</b>	96	40	11
2008	3	2	961	1,184	23	5	0
2009	0	2	802	989	1	0	0
2010	2	2	957	1,130	4	2	0
2011	0	8	1,000	1,205	22	6	1
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	84	92	1,195	1,388	146	53	12



# Takeaways

- DWSD has provided preliminary data indicating customers' projected use of the System for FY 2012-13
- This data, which is under review and may change, will be utilized to allocate costs to customers
- DWSD is reviewing current budget requests and evaluating the potential impact of Judge Cox's November 4 Order on financial operations for FY 2012-13
- The Revenue Requirement Rate Rollout meeting originally scheduled for December 15 will be postponed until January

