

City of Portsmouth Water and Sewer Rate Study



**Public Informational Meeting
December 4, 2012**

**Levenson Community Room
Portsmouth Public Library**

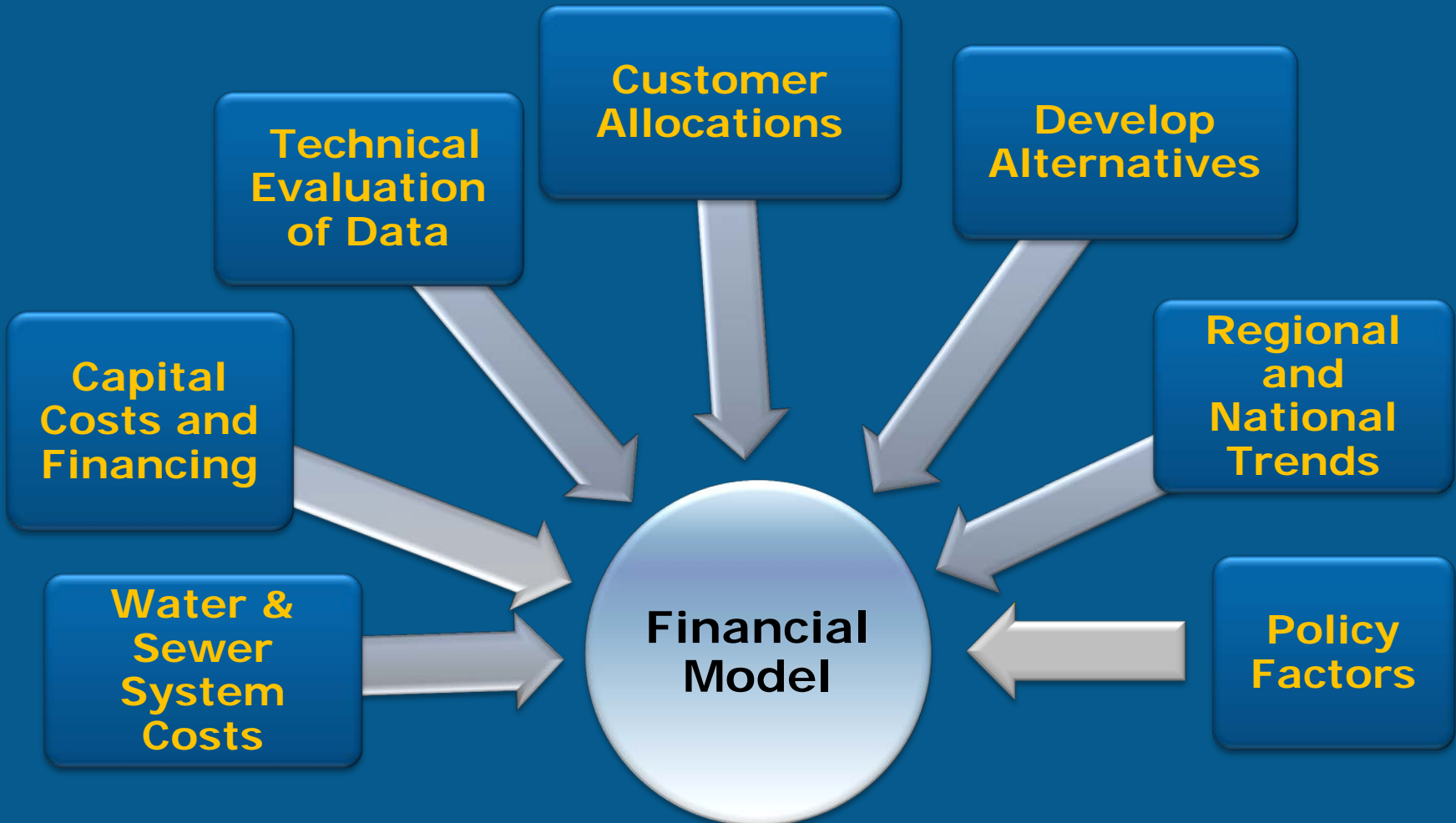
Overview of Tonight's Meeting

- **Introduction**
- **Overview of Water and Sewer Systems**
- **Process to Update Rates**
- **History of Rates and Community Comparisons**
- **Potential Policy Changes to be Evaluated**
- **Proposed Schedule**
- **Questions & Comments**

Why Update the Rate Model

- **Reduction in Billable Consumption**
- **Changing Water and Sewer Customer Base**
- **Policy Questions Such as Additional Tiers, Irrigation Meters**
- **Regulatory Requirements**
- **Capital Project Costs**
- **Good Practice to Update Model on Regular Basis**

Rate Study Components



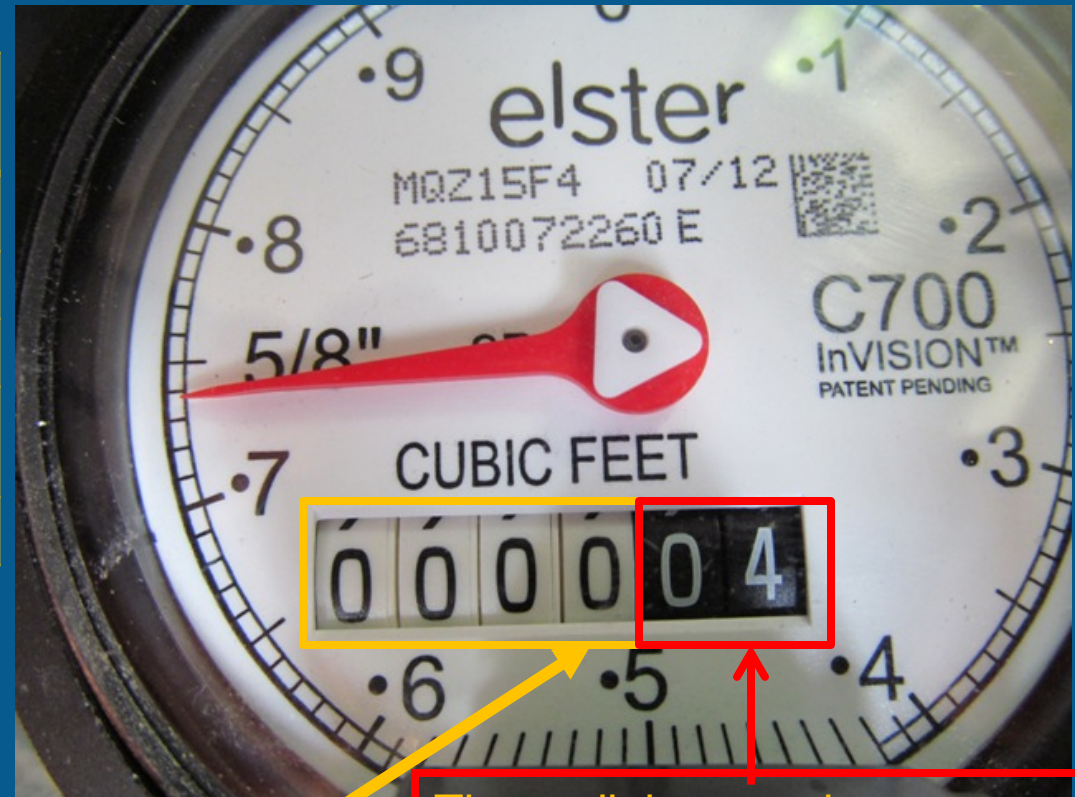
System Funding: Enterprise Funds

- Enterprise Funds Account for Operations That are Financed and Operated in a Manner Similar to Private Business
- Must have Fees and or Charges Sufficient Enough to Cover the Cost of Providing Goods and Services, Including Capital costs (i.e. Depreciation and Debt Service)
- Note: Property Taxes do not Subsidize the Water and Sewer Funds

Residential Meter Registers

5/8" Meter (normal residential size)

Customer Classification	Accounts
Commercial	976
Industrial	81
Municipal	66
Residential	6,843
Irrigation	238

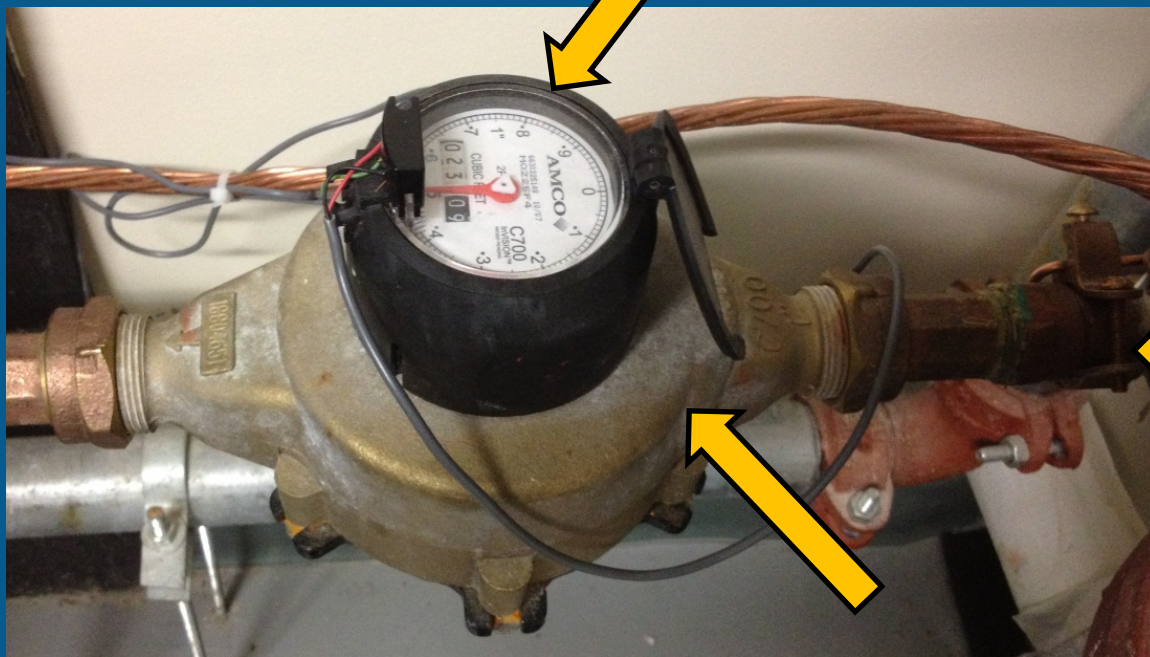


100 cubic feet = 1 Unit (748 gal)

These dials move but you are billed for whole units

Residential Water Meter Setup

Register



Flow

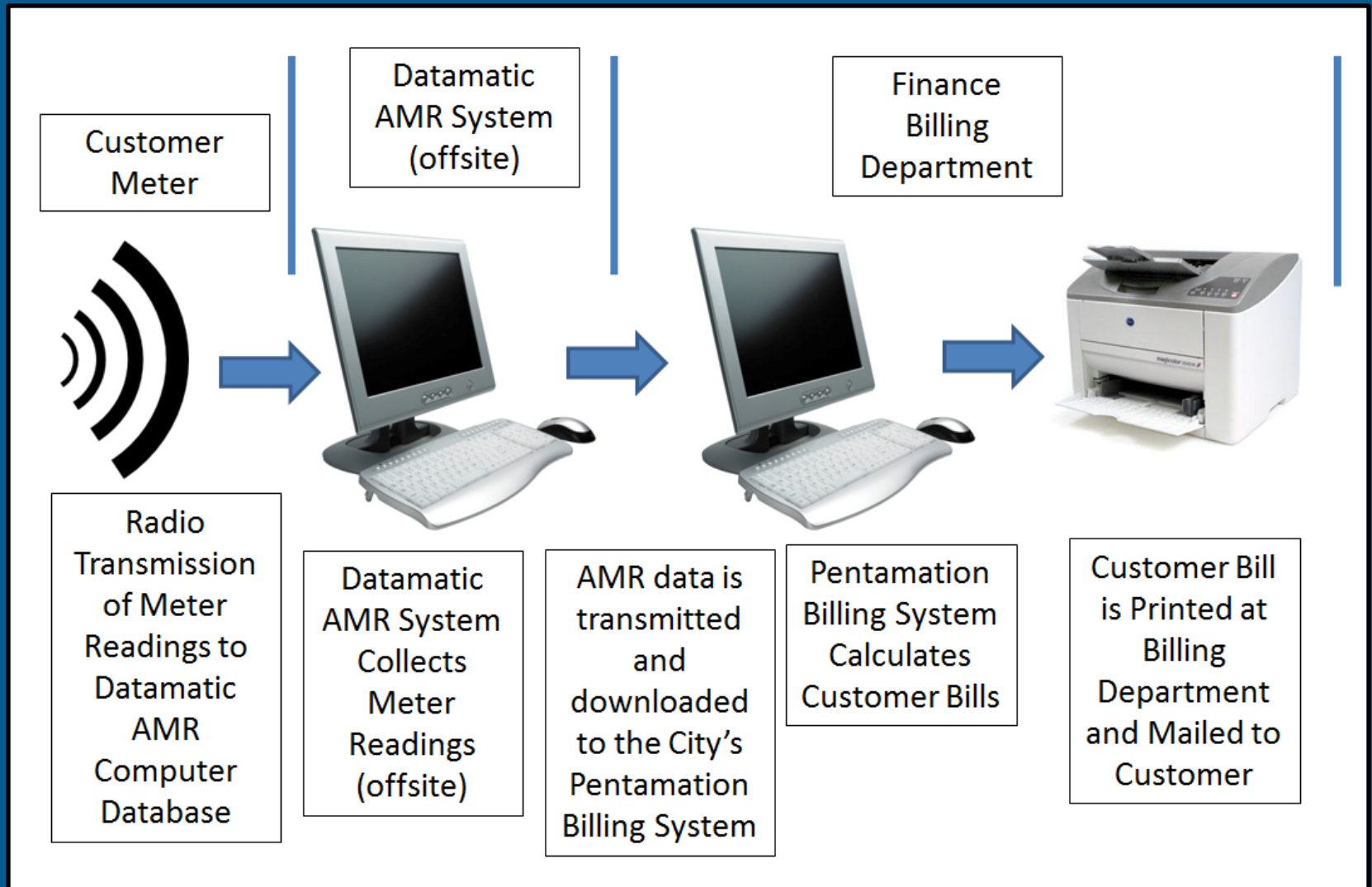
Water Meter
(5/8-Inch Meter)

Automated Meter Reading (AMR) Setup



**AMR Radio Used to Transmit
Meter Register Data to Datamatic
Mosaic Reading System**

Meter Reading and Billing System



Monthly Water and Sewer Bill



City of Portsmouth, NH
 PO Box 6660
 Portsmouth, NH 03802-6660
 (603)610-7237 or (603)610-7248

Remittance Portion

Amount Paid Please Pay
 Total Amount \$ 172.83

2012 UTILITY BILL

DUE BY 12/19

Account Number



Service Location

1062000000 01 19 0000017283 0

PLEASE MAKE CHECK PAYABLE TO: CITY OF PORTSMOUTH

DETACH AND REMIT TOP PORTION WITH CHECK

PLEASE REFERENCE ON THE CHECK:

Readings	Current	Previous	Usage		
Meter ID - Dial #	Date	Reading	Date	Reading	Usage
19310178 -1	09/30	381	08/31	369	12

1 Unit = 748 gallons or 100 cubic feet, unless otherwise indicated.

Previous Balance (10/10/12)	\$ 0.00
Balance Forward	\$ 0.00
WATER USAGE-O&M	18.14
WATER CAPITAL EXPENSES	33.36
MIN CHRG RESID 5/8" MTH	4.95
SEWER USAGE-O&M	68.38
SEWER CAPITAL EXPENSES	48.00
Current Charges (11/19/12)	\$ 172.83

DUE BY 12/19 \$ 172.83

Penalty per month of 1.5% will be added if not paid by due date.

This bill is for September's consumption.

Utility rates, payment options and other information on reverse side.

CITY HALL HOURS

Monday: 8:00am - 6:00pm

Tuesday - Thursday: 8:00am - 4:30pm

Friday: 8:00am - 1:00pm

RETURN THIS PORTION

ADDRESS CHANGE

If you wish to change your mailing address, please complete the form below. **If you wish to discontinue service, please contact the billing office by phone.**

Effective date of change: _____

Name _____ Phone Number _____

Street _____

City _____ State _____ Zip _____

Signature: _____ Date: _____

INQUIRIES/SERVICE REQUESTS

The Billing Office is available by telephone Monday, 8:00am to 6:00pm, Tuesday through Thursday 8:00am to 4:30pm and Friday 8:00am to 1:00pm. The telephone number is (603) 610-7248 or 610-7237. If you prefer to write please use a separate piece of paper and include your name, address and account number. The Maintenance Department is available by telephone Monday through Friday between the hours of 7:30am and 3:30pm at (603) 423-1552.

MINIMUM METER SERVICE CHARGE

The minimum charge is based on the size of the meter located at the property. The charge is to recover costs associated with making water service available to each customer. It includes such expenses as having the mains and meters available to provide service.

WATER/SEWER CONSUMPTION CHARGES

Effective with all bills generated with readings after June 30, 2012, water and sewer consumption charges will be based on a two-step, inclining block rate structure. One unit equals 100 cubic feet or 748 gallons.

ESTIMATED BILLS

An estimated bill is rendered when we are unable to read your meter, as when the reading device has become dislodged. Your bill will indicate that the reading has been estimated. It is important for the City to obtain an actual reading as soon as possible. A corrected billing or issuance of credit will be applied to your account when an actual reading is obtained.

GRACE PERIOD

Your bill is payable upon receipt. You have 30 days from the date of the bill to pay your balance in full before a penalty will be imposed. Penalty per month of 1.5% will be added if not paid within 30 days of bill date.

FINAL BILL REQUESTS

Final bills are generated at the request of property owners or their representative. In order to process the final bill request, the following guidelines have been established: readings will be completed within 48 hours of the request access inside the property is necessary between the hours of 8am - 3pm, and authorization by the owner to perform meter maintenance if required. There will be a final bill charge of \$35.00 assessed to your account to perform the final bill process. Please contact the Water/Sewer Billing Office at (603) 610-7248 or 610-7237 for additional information.

PAYMENT OPTIONS

The City currently has five payment options available for water and sewer customers.

1. Payments are accepted at the Tax Collector's Department.
2. By mail, the City encloses a self-addressed envelope with each billing. Please include the payment stub with your payment.
3. Drop-off Grey Box: Payments and payment stub secured in an envelope, may be deposited in the grey receptacle located in front of City Hall.
4. Monthly automatic electronic debit transfer from your checking or savings account. Contact the Water/Sewer Billing office for additional information.
5. Online payment processing with your checking account or a credit card. Only American Express, Discover Card, and MasterCard may be accepted for water and sewer payments. Visit the City's website at www.cityofportsmouth.com and click the "ONLINE BILL PAYMENT" button.

FY13 User Rates, Effective 7/1/12		
	Water Rates	Sewer Rates
First Tier Rate (10 units or less per month)		
General Operations	\$1.37	\$5.54
Capital Related Expenses	\$2.78	\$4.00
Total Tier 1 Rate, per unit	\$4.15	\$9.54
Second Tier Rate (units over 10 per month)		
General Operations	\$2.22	\$6.49
Capital Related Expenses	\$2.78	\$4.00
Total Tier 2 Rate, per unit	\$5.00	\$10.49
Irrigation Meter Rate (All units billed)		
General Operations	\$2.22	
Capital Related Expenses	\$2.78	
Total Irrigation Meter Rate, per unit	\$5.00	

Current Rate Structure

FY13 User Rates, Effective 7/1/12

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General Operations	\$2.22	\$6.49
Capital Related Expenses	\$2.78	\$4.00
Total Tier 2 Rate, per unit	\$5.00	\$10.49

Meter Charge – Water Only

Meter Size	Monthly Meter Charge
5/8" and 3/4"	\$4.95
1"	\$8.27
1 1/2"	\$14.25
2"	\$22.91
3"	\$36.26
4"	\$68.74
6"	\$120.27
8"	\$168.01
10"	\$252.02

Current Rate Structure

- Capacity Use Surcharge for New Customers or Change in Use
- Surcharge for High Strength Commercial/Industrial Sewer Discharges
- Water and Sewer Extensions are paid by the Benefitting Parties
- Irrigation Meter for Single-Family Residential Customers

Payment Methods - Current

Five Payment Options:

1. At the City's Tax Collector Office
2. By mail
3. The Gray Drop-box in front of City Hall
4. Automatic monthly electronic debit transfer from checking or savings account
5. Online with checking account or credit card. Access through the City's Website



Official Municipal Website
City Of Portsmouth
New Hampshire



| City Home |

City Hall, 1 Junkins Avenue, Portsmouth, NH 03801, Tel: (603) 431-2000. Hours Monday-Friday 8:00 a.m. to 4:30 p.m.

ONLINE BILL PAYMENT

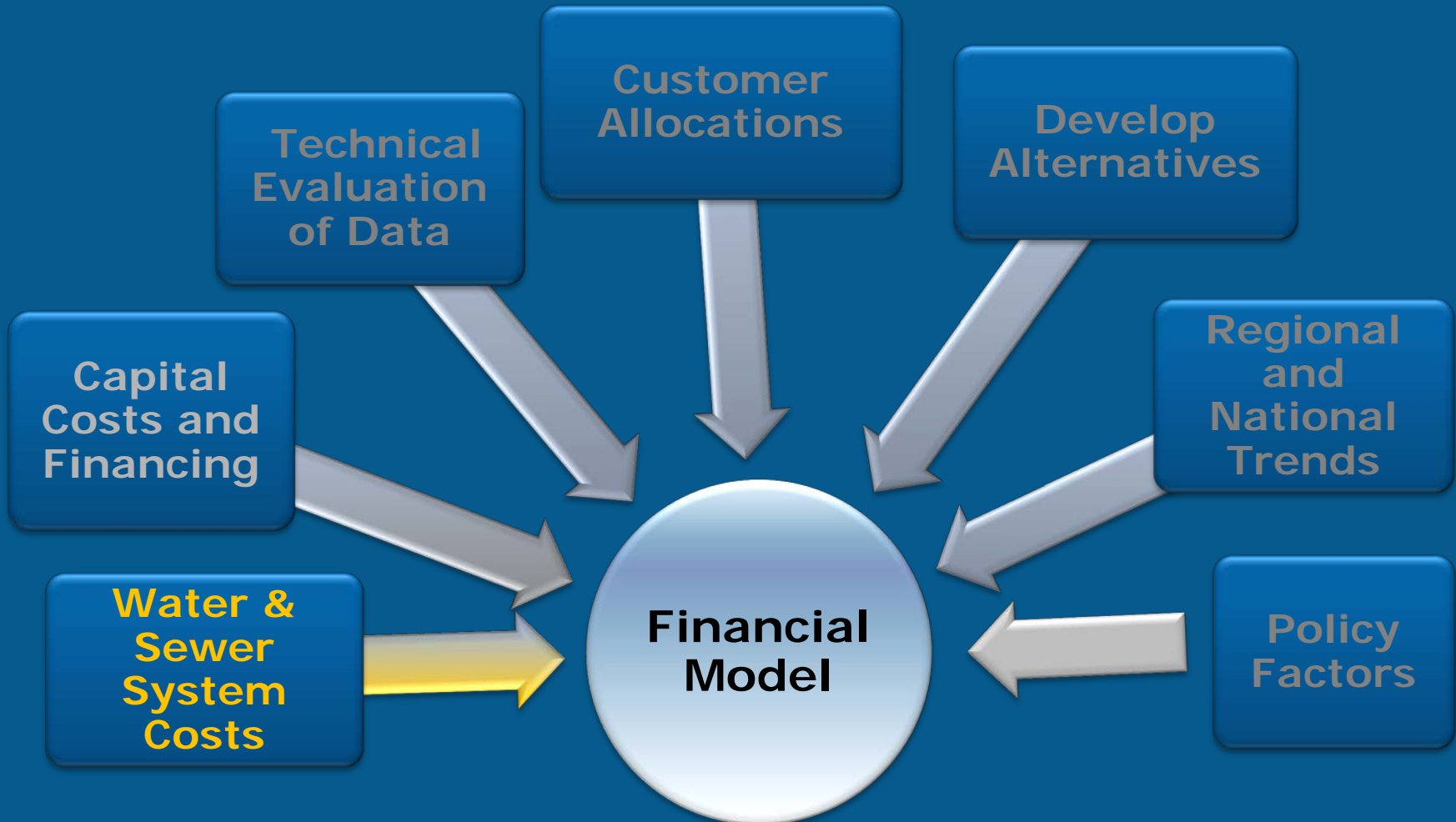
Online Bill Payments

[PARKING TICKET, WATER/SEWER and PROPERTY TAX \(Click here\)](#)

Request From Customers:

1. Option to have Electronic Bill (Paperless Billing) with Electronic Notification of Bill Availability
 - Currently reviewing State RSA's
2. Ability for Customers to Monitor Their Usage On-line
3. Option to have Automatic Electronic Notification of Unusual Water Usage
4. Historical Water Usage Information with Bills

Rate Study Components



Portsmouth's Regional Water System

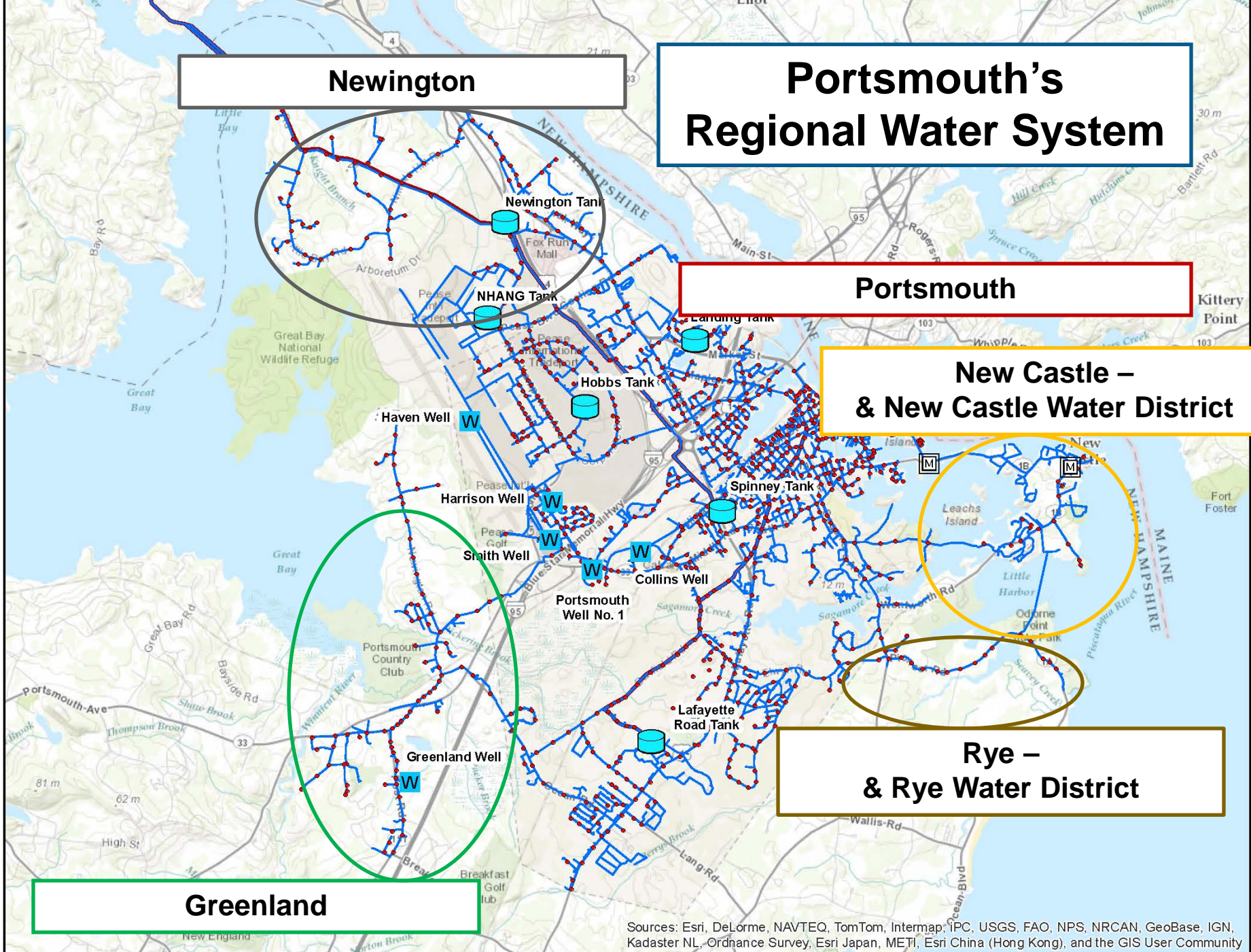
Newington

Portsmouth

New Castle –
& New Castle Water District

Rye –
& Rye Water District

Greenland



Water System

- Bellamy Reservoir
- Madbury Water Treatment Facility
- 9 Wells
- 5 Storage Tanks
- Two Pressure Zones
- 4.5 to 6.5 Million Gallons a Day

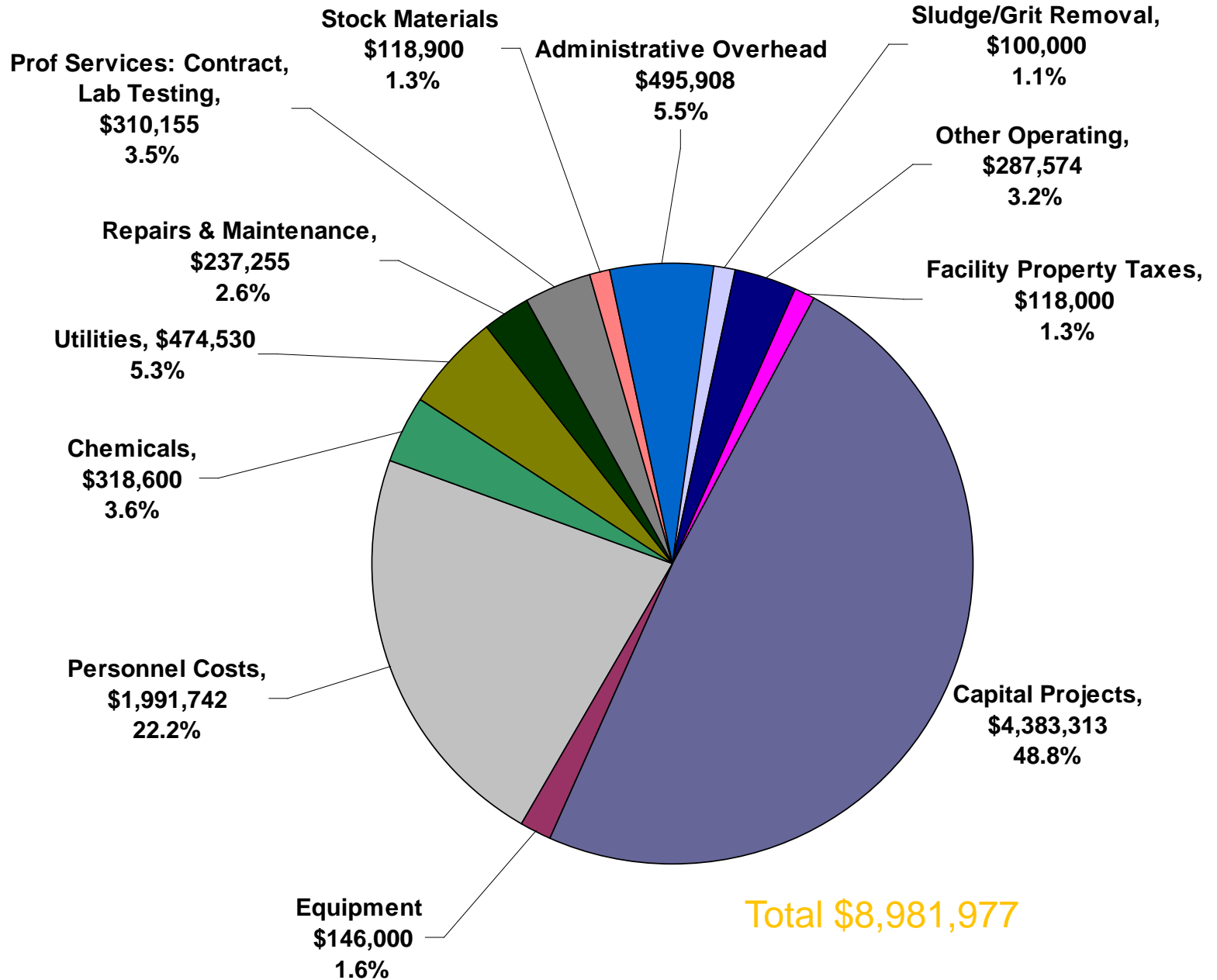


Water System

- 189 miles of pipe
- 972 Fire Hydrants
- 2,840 Valves
- ~8,200 Meters/Customers



Water Division FY 2013 Cash Requirements



Wastewater System



Collection System

Wastewater Treatment Facilities



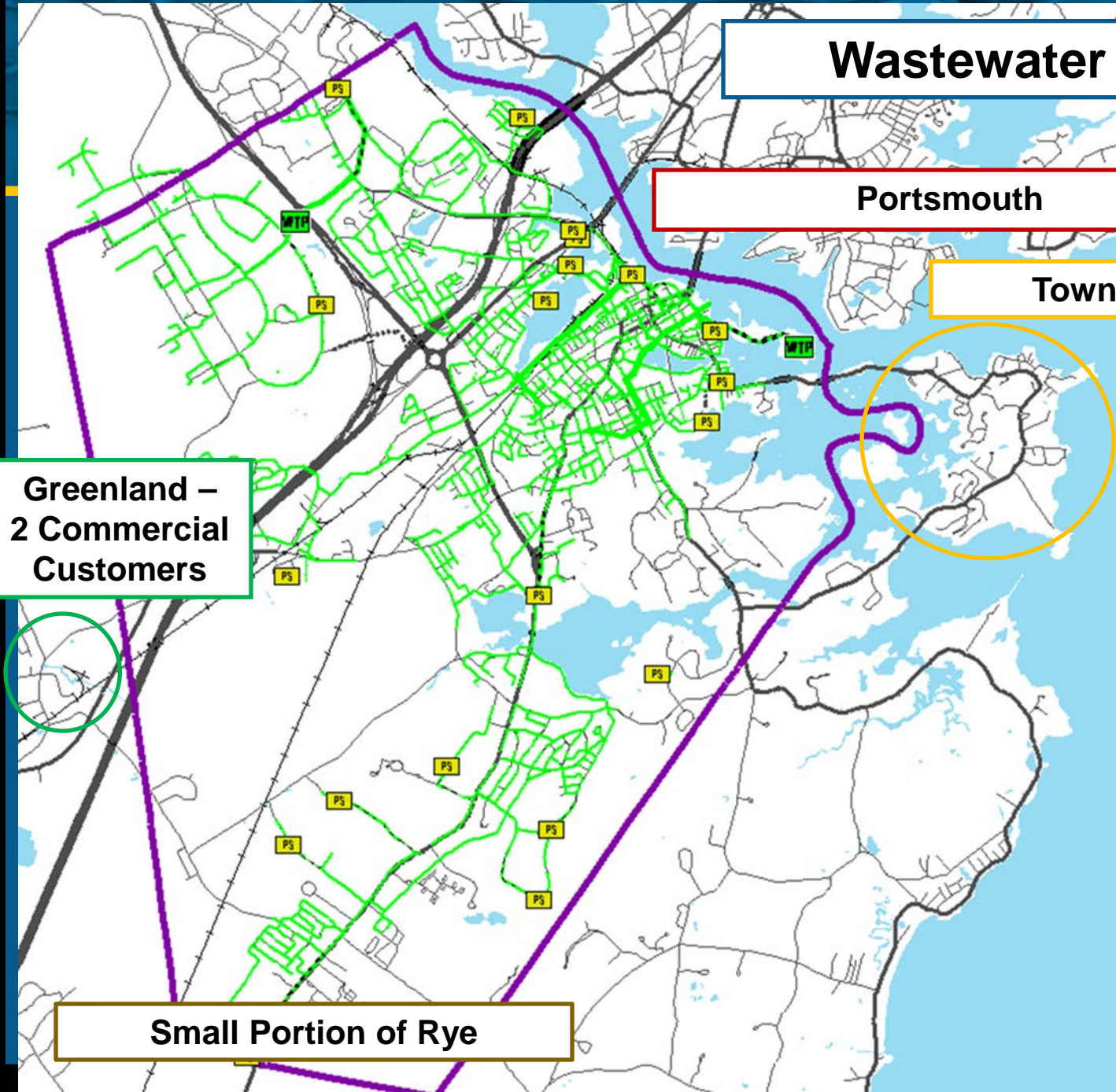
Wastewater System

Portsmouth

Town of New Castle

Greenland –
2 Commercial
Customers

Small Portion of Rye



Two Wastewater Treatment Facilities



Pease

1.2 Million Gallons per Day Capacity

Peirce Island

4.8 Million Gallons per Day Capacity

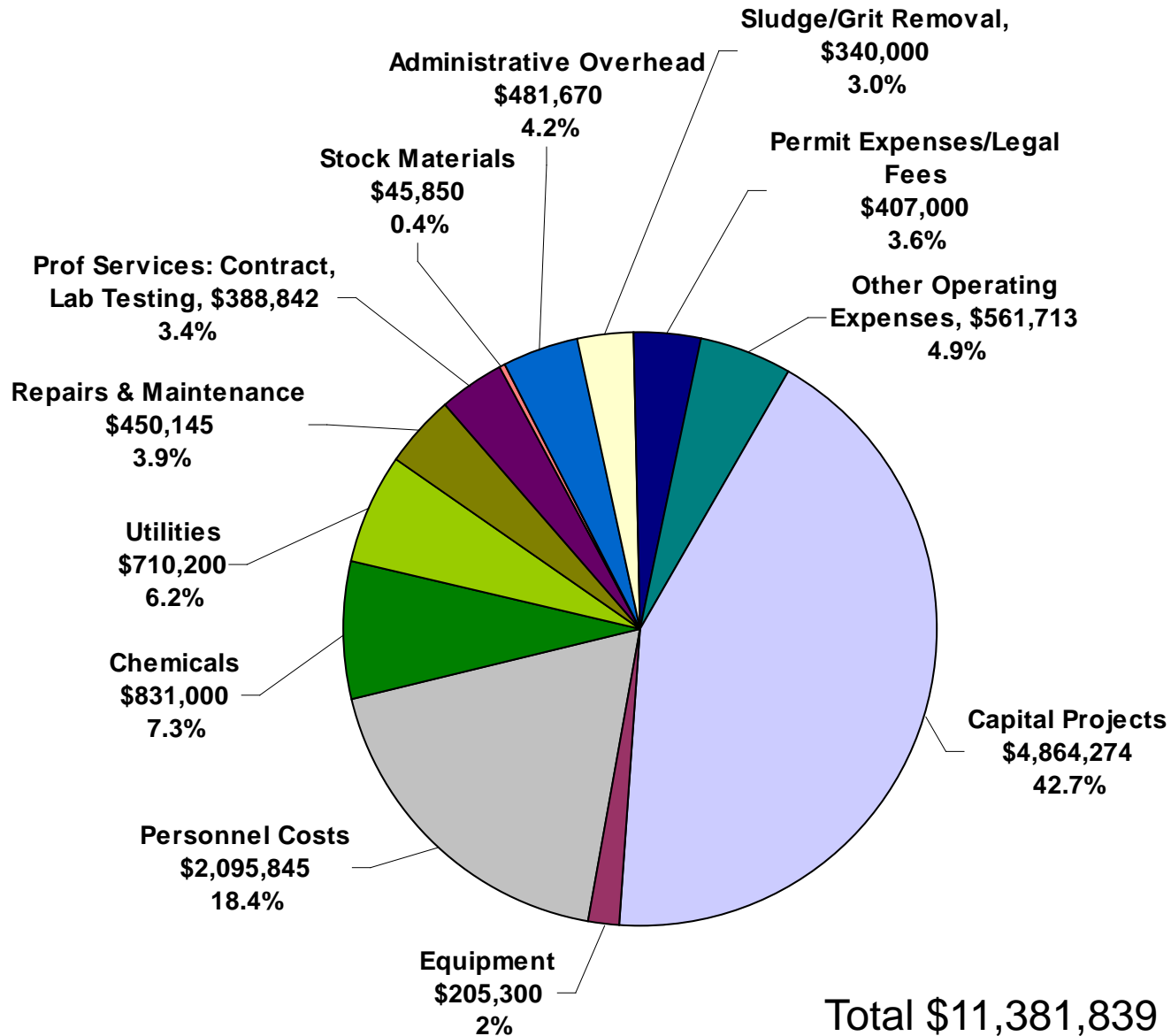


Wastewater System

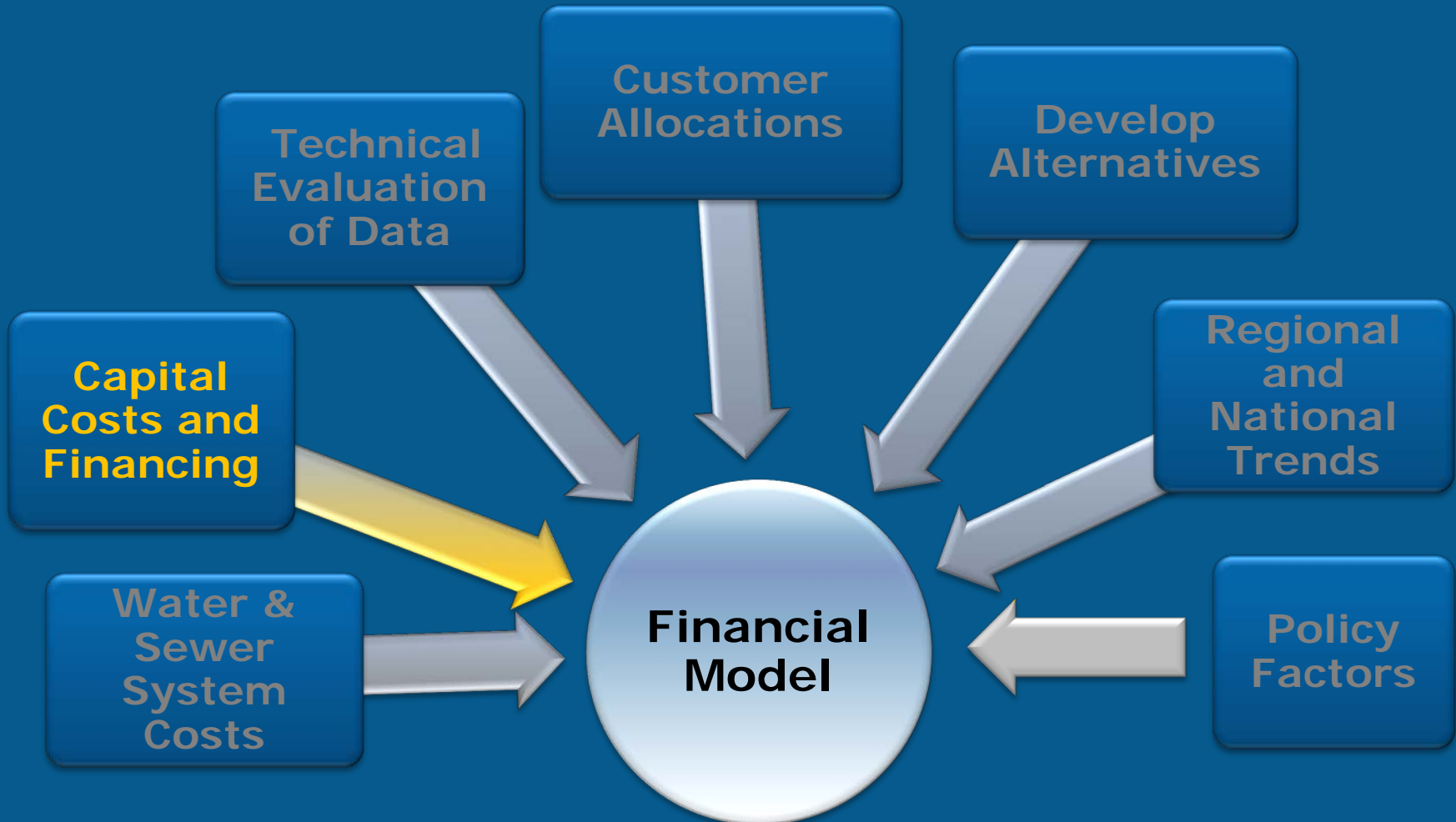
- 115 Miles of piping
- 20 pumping Stations
- 1,650 Manholes
- ~6,350 Customers



Sewer Division FY 2013 Cash Requirements



Rate Study Components



Capital Needs are Driven by:

- Aging Infrastructure
- Regulatory Requirements
 - Safe Drinking Water Act
 - Clean Water Act (Sewer)



Recent Water System Improvements



New Water Mains



Madbury Water Treatment Facility



Harrison Well



Spinney Road Tank



Water Meter Upgrade

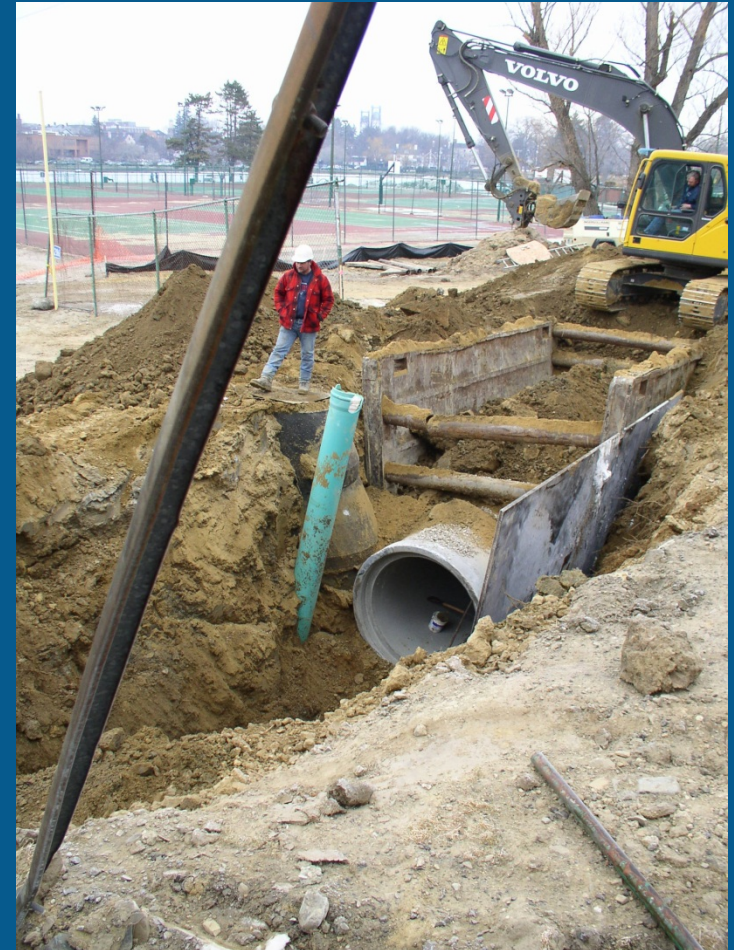


Future Capital Improvements - Water

FY	Project	Budget	Funds
14-19	Annual Water Line Replacement	\$ 3,300,000	Revenues
14-17	Stage II Disinfection By-Product Rule	\$ 674,000	Revenues
15	Maplewood Avenue Waterline	\$ 3,300,000	Bond/SRF
14	Osprey Landing Tank Demolition	\$ 100,000	Bond/SRF
15	Hobbs Hill Water Tank (rehabilitate or replace)	\$ 2,800,000	Bond/SRF
14-16	Well Station Improvements	\$ 400,000	Revenues
15	New Castle Water Line Improvements	\$ 3,040,000	Bond/SRF
15-17	Pressure and Storage Improvements	\$ 1,550,000	Bond/SRF
	TOTAL	\$ 15,164,000	

Sewer Projects Completed Since 1997 - over \$42 Million

1. Peirce Island Bridge Forcemain
2. Essex Sheffield Separation
3. Thaxter Fells Separation
4. Pannaway Manor Separation
5. Brickbox Cleaning
6. Brackett Road Sewer Extension
7. Peirce Island WWTP Improvements
8. Mechanic Street Pumping Station Upgrade
9. Route One Sewer Improvements
10. Upper Court Street (LTCP)
11. South Mill Pond Area - Contract 1 (LTCP)
12. South Street Sewer Separation
13. Pease Interceptor Upgrade
14. Lafayette Road Pumping Station Upgrade
15. SCADA System Upgrade
16. Gosling Road Pumping Station Upgrade
17. Dennett Street Sewer Separation
18. Pleasant Point Sewer Extension
19. Lower Court Street (LTCP)
20. Deer Street Pumping Station (LTCP)
21. Borthwick Avenue Sewer (LTCP)
22. Bartlett Area (LTCP)
23. State Street (LTCP)

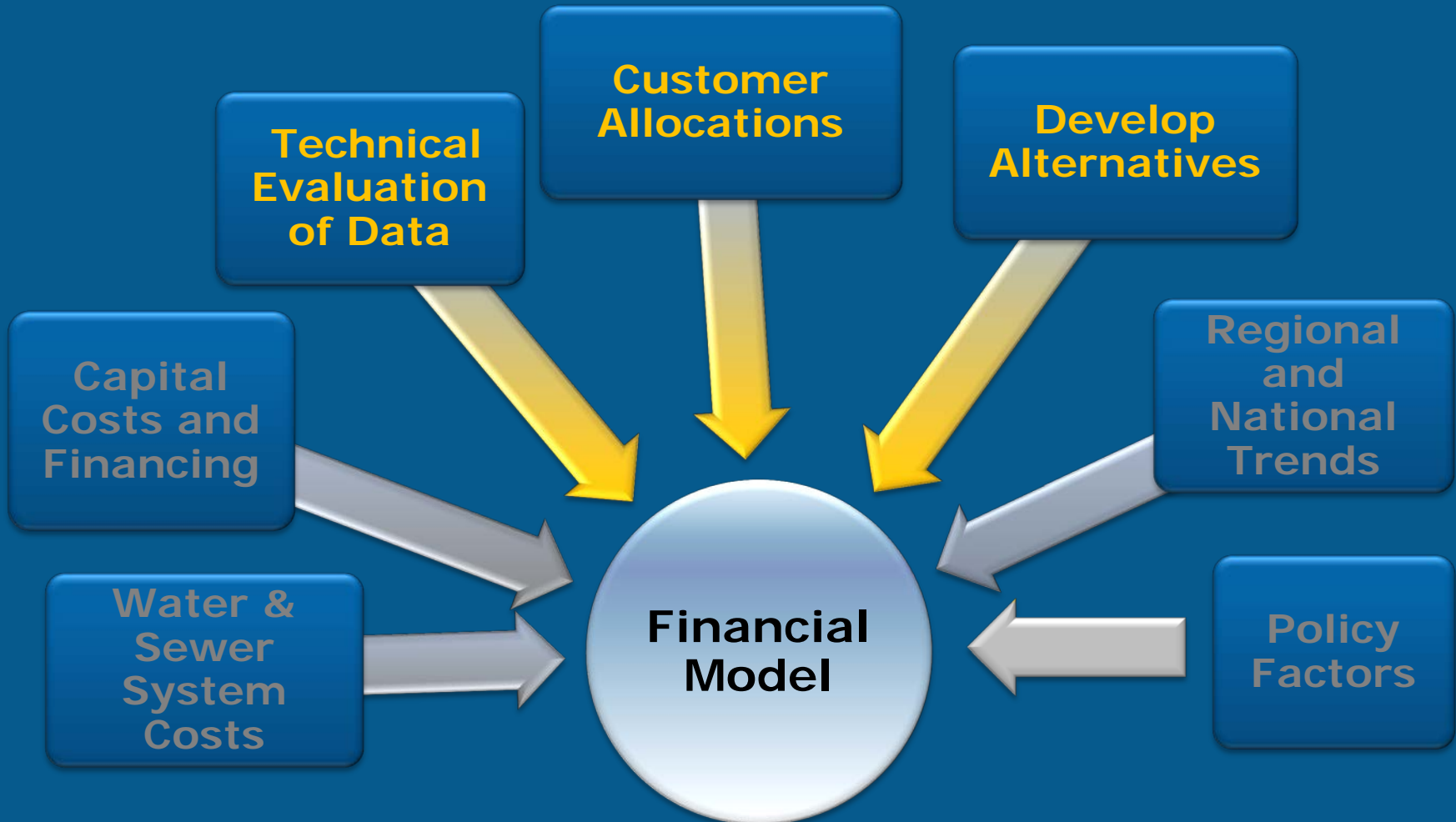




Future Capital Improvement - Wastewater

FY	Project	Budget	Funds
14-15	Fleet Street Utilities Upgrade	\$ 580,000	Bond/SRF
13-14	Peirce Island Wastewater Treatment Plant Upgrades	\$ 62,500,000	Bond/SRF
14	Pease Wastewater Treatment Plant Upgrades	\$ 3,250,000	Bond/SRF
14-19	Annual Sewer Line Replacement	\$2,250,000	Revenues
15	Maplewood Avenue Sewer Line Replacement	\$500,000	Revenues
14-15	Lafayette Road Pumping Station	\$550,000	Bond
18-19	Mechanic Street Pumping Station	\$5,500,000	Bond
	TOTAL	\$75,130,000	

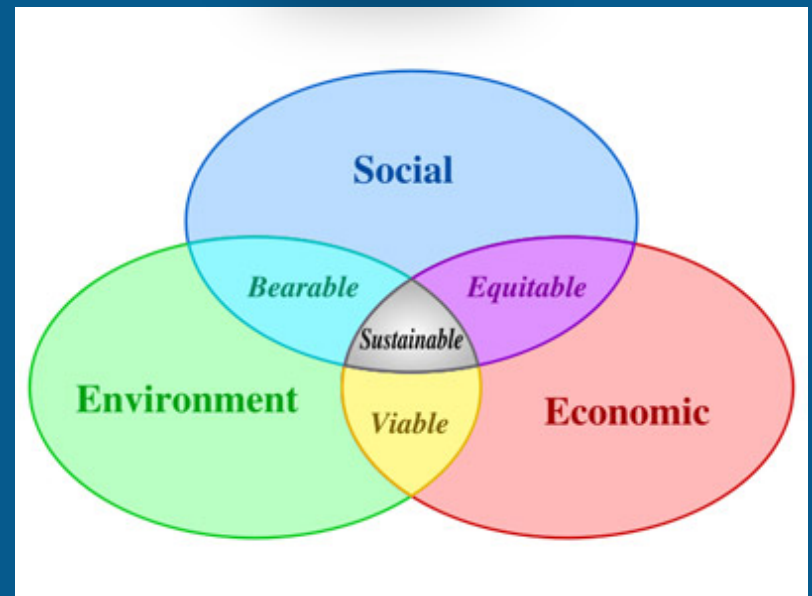
Rate Study Components



Rate Model Development

Takes into consideration:

- Usage Trends
- Policy Goals
- Revenue Needs
- Industry Standards



Principles of Rate Setting

- Water and sewer operations are self-supporting
 - ▶ Rates and fees are set to recover cost of providing service
 - ▶ No profit and no subsidy from General Fund
 - ▶ Operations function as a business
 - ▶ Utilities reimburse General Fund for support services

Principals of Rate Setting

- Water and sewer rates are user fees rather than taxes and therefore are designed to charge customers based on their use of the service.
 - ▶ Should be cost-based
 - ▶ Cannot be arbitrary

Principals of Rate Setting

- Water and sewer are set on a zero sum basis
 - ▶ Reductions in revenues due to decreased usage, rate structure changes or other factors result in the need for rate increases

Rate Setting Process

Step 1 - Revenue Requirements
Identification of the cost of providing water and sewer service



Step 2 - Cost of Service
Allocation of costs to customer classes



Step 3 - Pricing the Service
Defines how costs are recovered from customers

Step 1: Recommended "Building Blocks" of Revenue Requirements

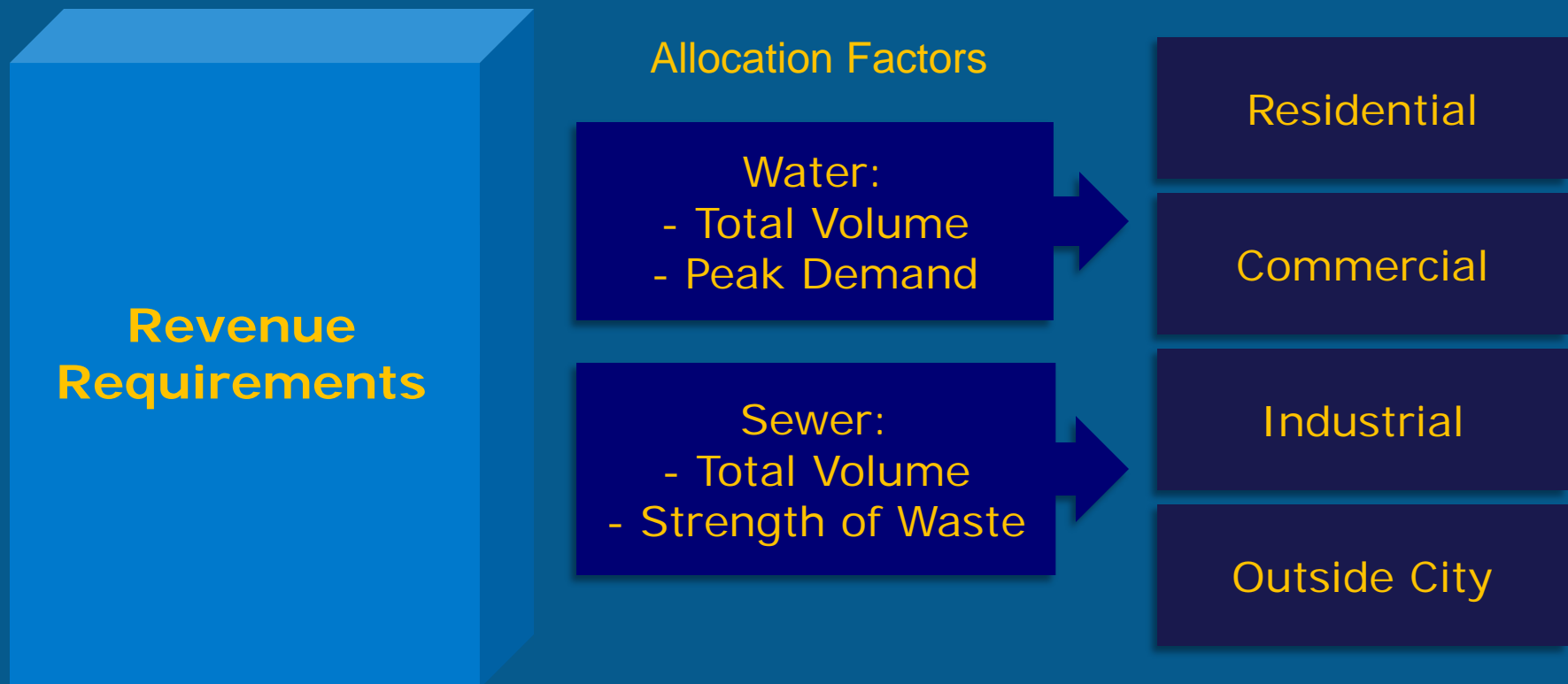


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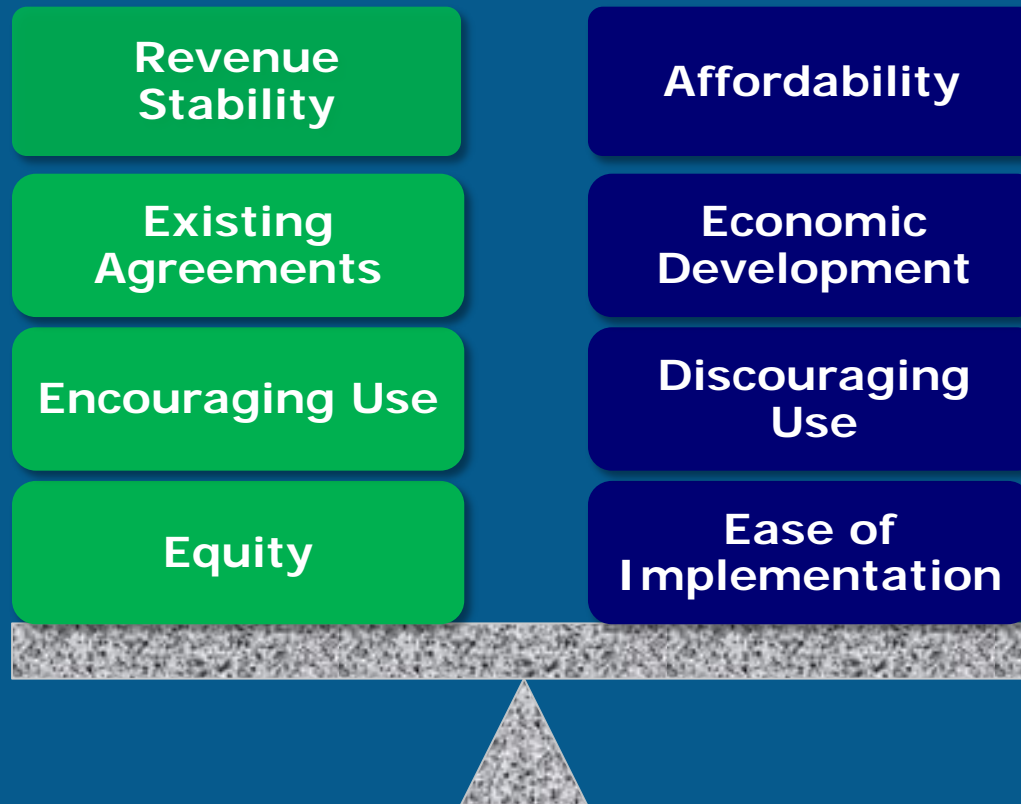
Step 2: Cost of Service Analysis

- Goal of cost of service analysis is to appropriately allocate revenue requirements based on cost of providing service.



Step 3: Rate Design – Pricing the Service

Rate design is largely influenced by policy objectives of the utility.



Rate Design: Current Rates – Water

*CF = cubic feet,
1 CF = 7.48 gallons
CCF = 100 cubic feet
1 Unit = 100 cubic feet
100 cubic feet = 748 gallons*

Current Water Rates	
Base Charges	
Meter Size	Monthly Meter Charge
5/8" and 3/4"	\$4.95
1"	\$8.27
1 1/2"	\$14.25
2"	\$22.91
3"	\$36.26
4"	\$68.74
6"	\$120.27
8"	\$168.01
10"	\$252.02
Usage Rates – Variable Portion	
All User Classes	Monthly Usage Rates
Tier 1: 0 – 10 Units	\$4.15 per Unit
Tier 2: Over 10 Units	\$5.00 per Unit
Irrigation	Monthly Usage Rates
All Usage	\$5.00 per Unit

Rate Design: Current Rates – Sewer

Current Sewer Rates	
Base Charges	
Meter Size	Monthly Meter Charge
5/8" and 3/4"	-0-
1"	-0-
1 1/2"	-0-
2"	-0-
3"	-0-
4"	-0-
6"	-0-
8"	-0-
10"	-0-
Usage Rates – Variable Portion	
All User Classes	Monthly Usage Rates
Tier 1: 0 – 10 Unit	\$9.54 per Unit
Tier 2: Over 10 Units	\$10.49 per Unit

CF = cubic feet,

1 CF = 7.48 gallons

CCF = 100 cubic feet

1 Unit = 100 cubic feet

100 cubic feet = 748 gallons

Rate Design – Base Charge

What Costs to Recover

- Meter Reading
- Billing & Collection
- Customer Service
- Debt Service
- Other

- Higher the base charge the greater the revenue stability
- Higher the base charge the more expensive service is for smallest user

Basis for Applying the Charge

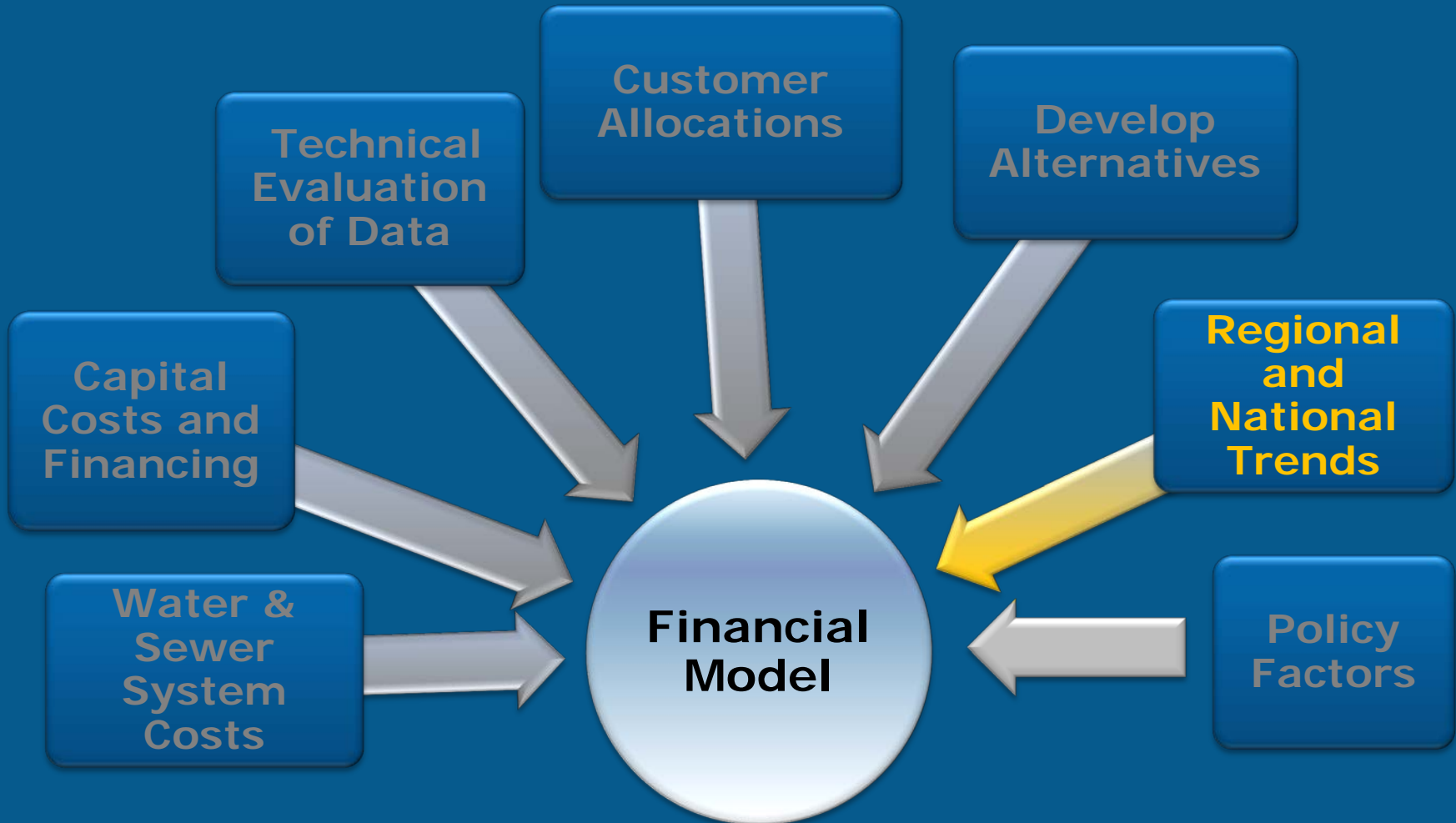
- Account
- Meter size
- Equivalent Residential Unit (EDU)

- Basis selected should be consistent with costs recovered

Rate Design – Variable Usage Charge

- **Common variable usage charge structures**
 - ▶ Uniform: All metered water and sewer use billed at the same unit rate.
 - ▶ Inclining Block (City of Portsmouth): Metered water and sewer use billed at increased rate with increased use.
 - ▶ Seasonal: Metered water use billed at higher rate during summer for usage that exceeds winter usage.
 - ▶ Pyramid: Metered water and sewer use billed at increased rate with increased use to a point and then rate reduced for higher usage.

Rate Study Components



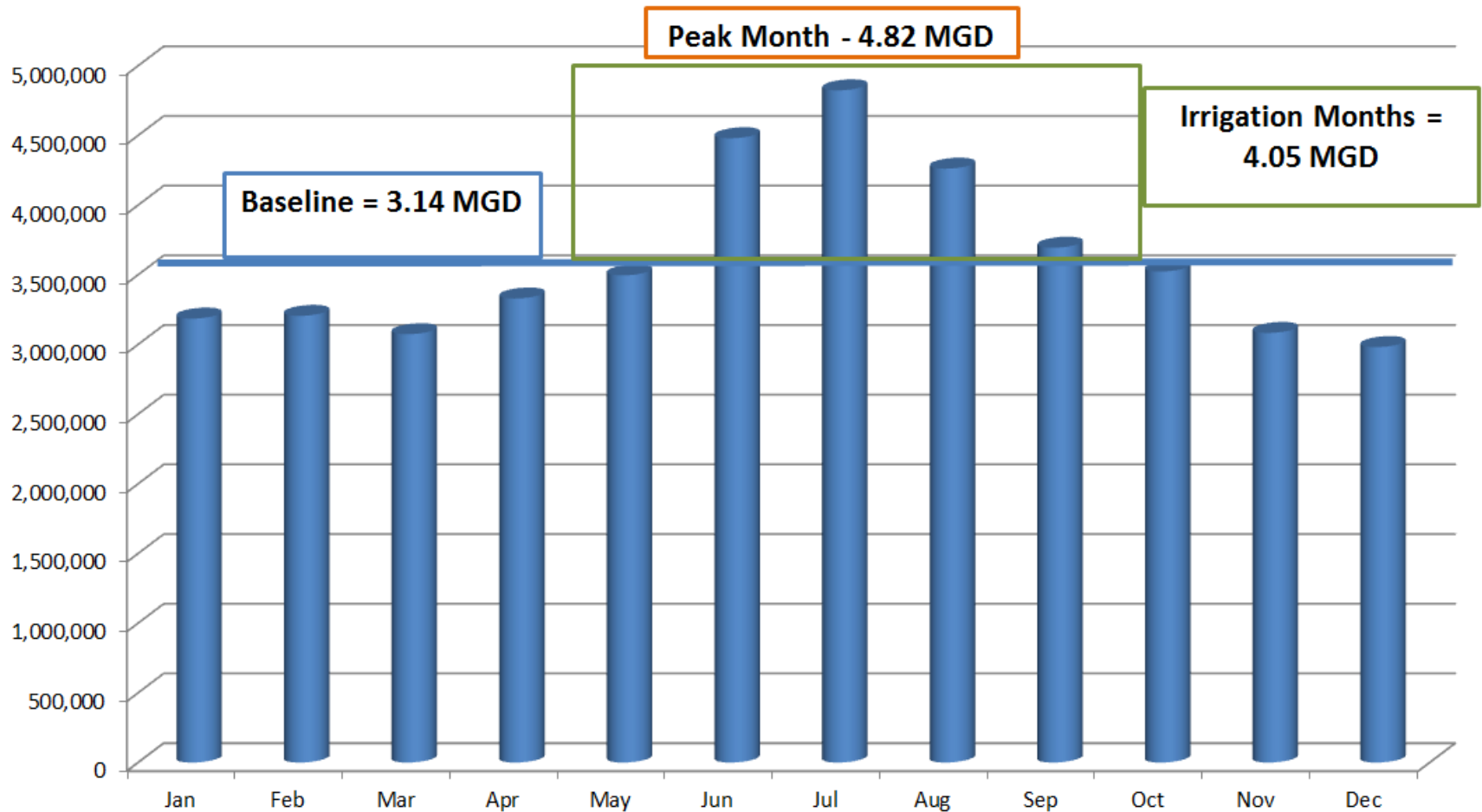
Portsmouth Compared with Regional and National Trends

- Aging Infrastructure
- Regulatory Requirements
 - Safe Drinking Water Act
 - Clean Water Act (Sewer)
- Reduction in Billable Usage



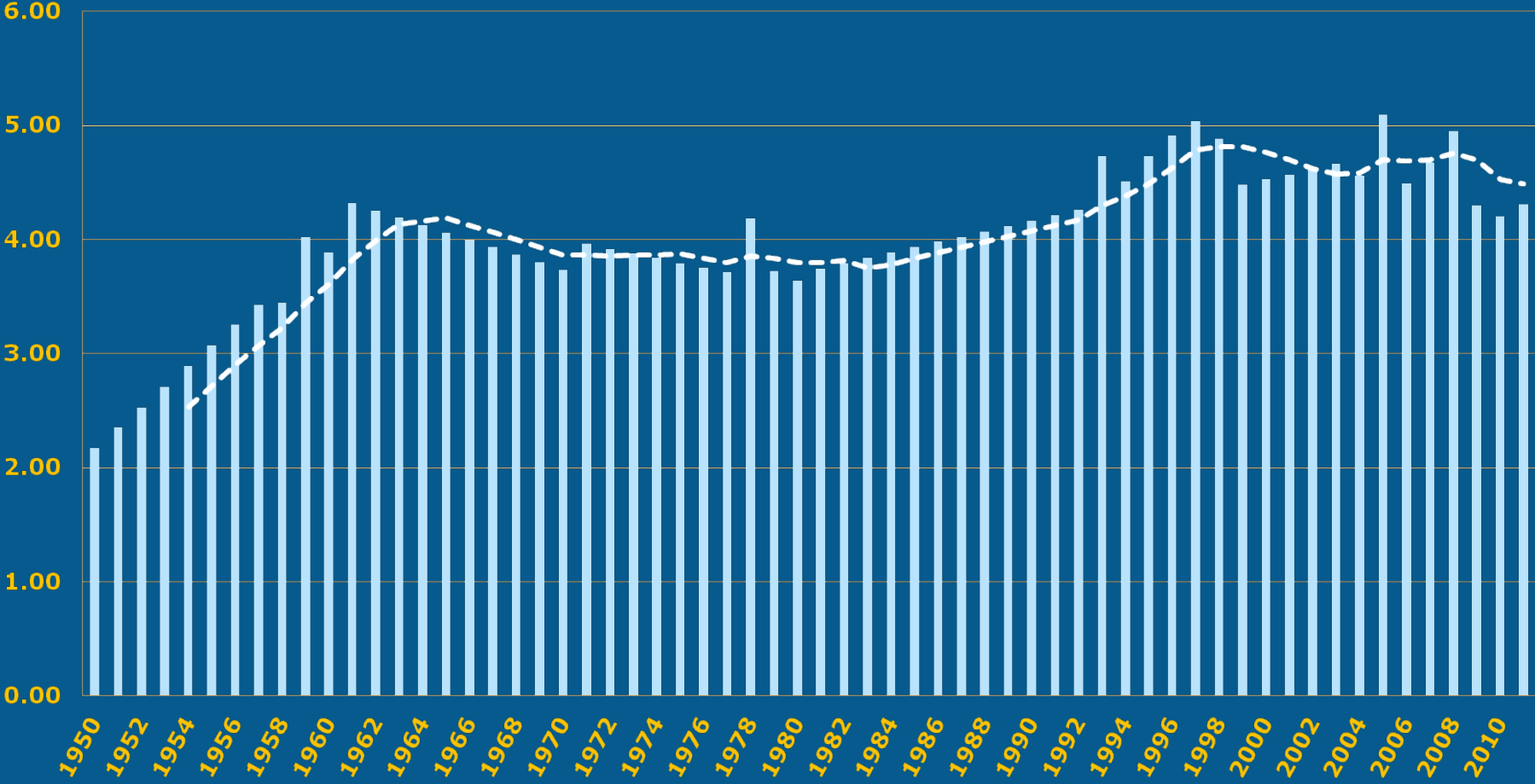
Normal Portsmouth Usage Pattern (Million Gallons Per Day)

Portsmouth Water System - Average Customer Use Per Day - 2011



Portsmouth Water Demand Trends

Million Gallons per Day and 5 Year Rolling Average



2012 Water System Master Plan Analysis

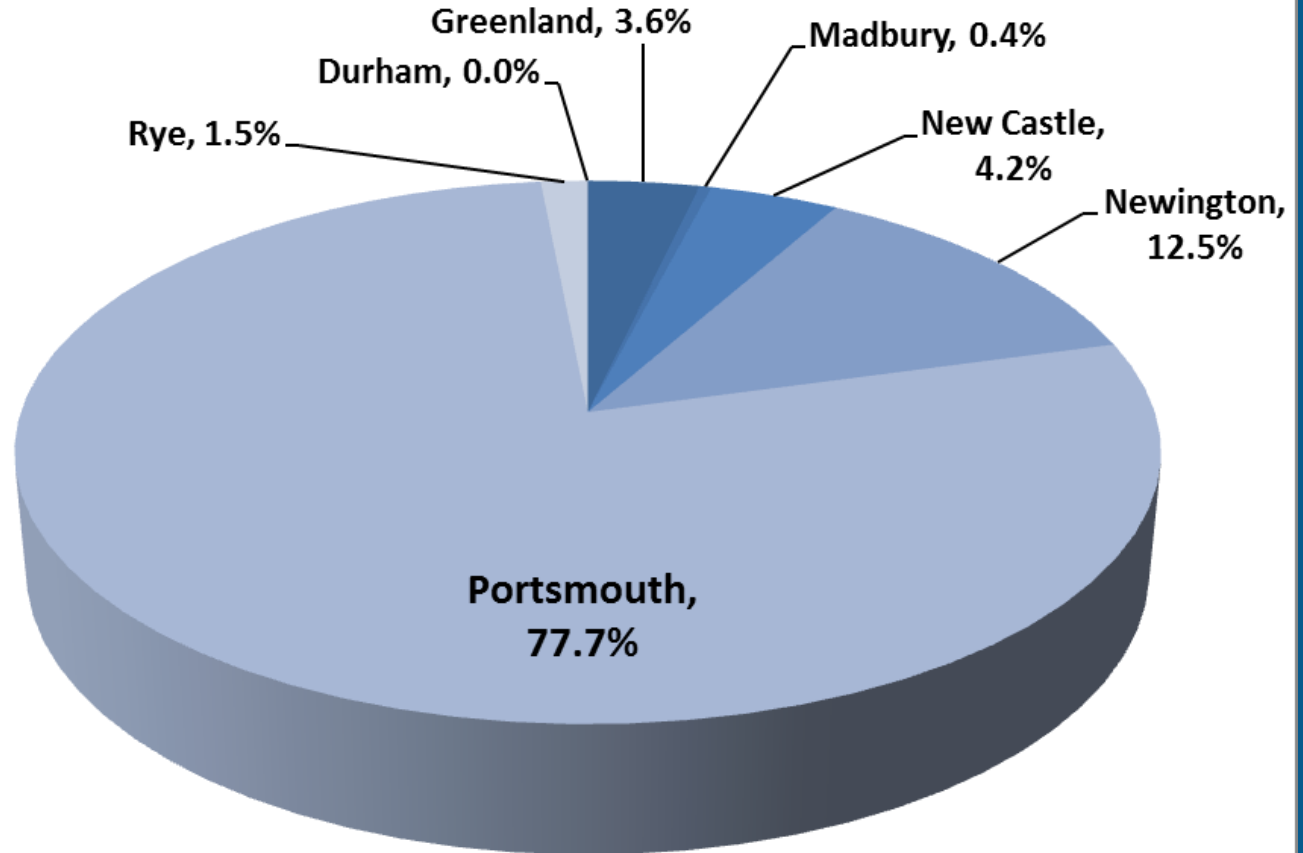
Customer Classification	Accounts	Current Average Per Account Gallons Per Day	Average Billable Units Per Month
Commercial	976	1,444	59
Industrial	81	6,904	282
Municipal	66	1,659	68
Residential	6,843	199	8
Irrigation	238	275	11
Rye and New Castle Water Districts	2	61,932	2,525

2012 Water System Master Plan Analysis

Customer Classification	Accounts	Current Average Per Account Gallons Per Day	
Commercial	976	1,444	Average Residential Usage has declined by 8.3% since 1999 when it was 217 Gallons per Day
Industrial	81	6,904	
Municipal	66	1,659	
Residential	6,843	199	
Irrigation	238	275	
Rye and New Castle Water Districts	2	61,932	
			8
			11
			2,525

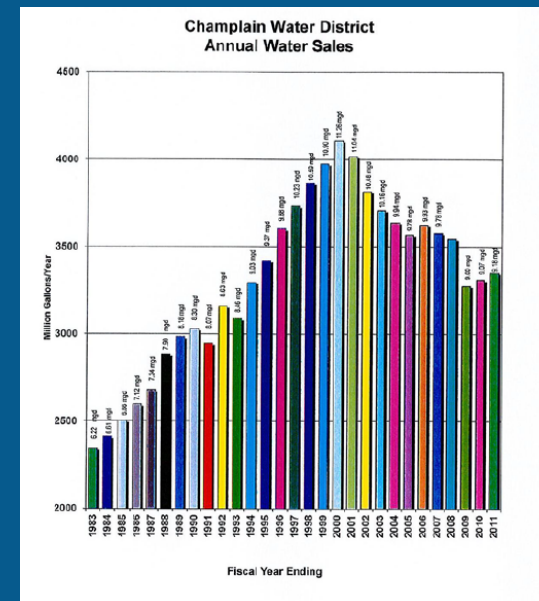
Water Use – Community Breakdown

Town	Customers
Durham	2
Greenland	508
Madbury	52
New Castle	222
Newington	398
Portsmouth	7157
Rye	73



Usage Trends – Regionally

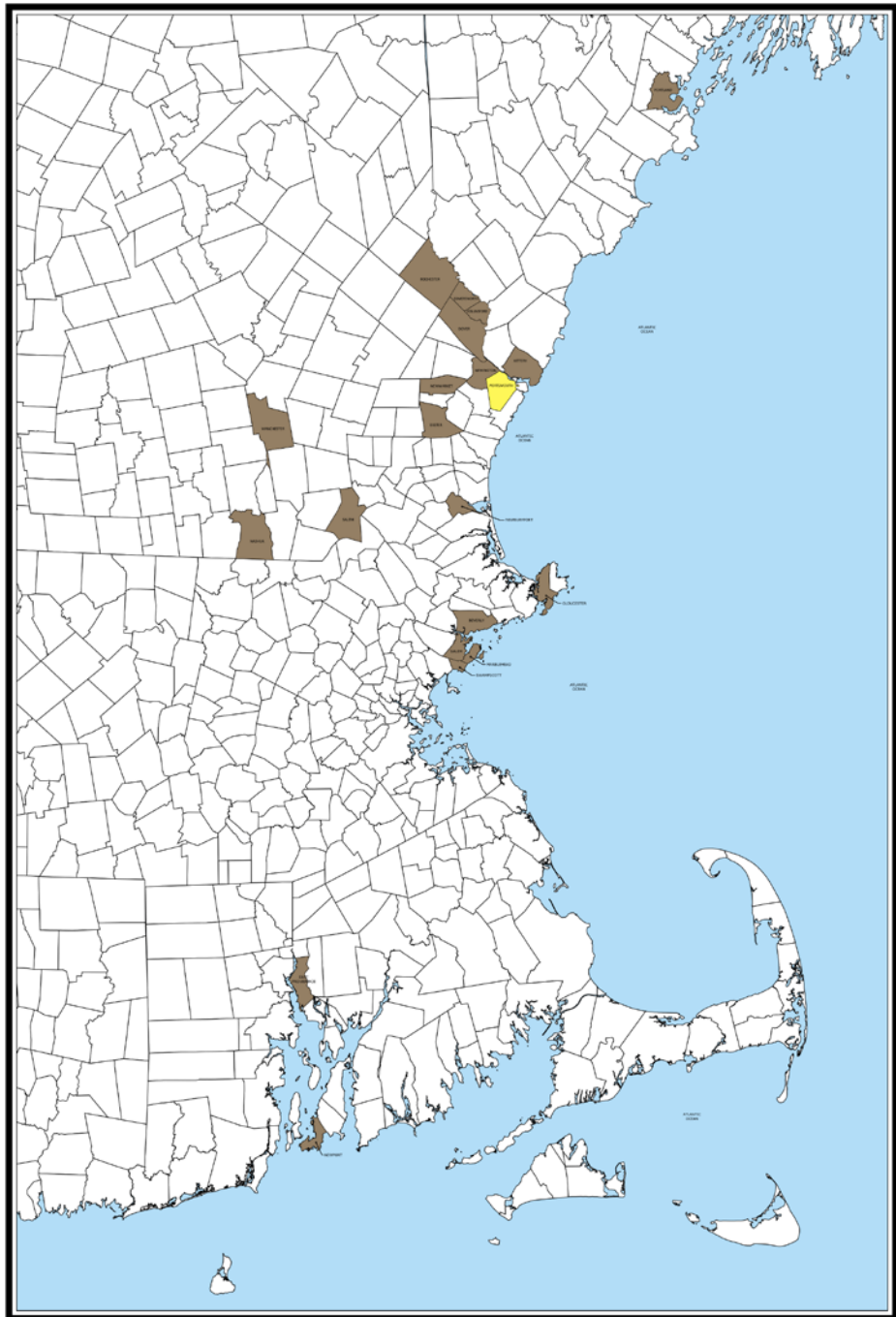
- **Portsmouth, New Hampshire – 26% Decrease from 2002 to 2011**
 - Portsmouth 2012 Water & Sewer Rate Study
- **Boston Water Sales - 32.5% Decrease since 1985**
 - Boston Water & Sewer Commission – 2012 Rate Document
- **Champlain Water District – 18% Decrease from 2001 to 2010**
 - Champlain Water District 2010-2011 Annual Report
- **City of Peabody, Mass – 10% Decrease from 2002 to 2011**
 - Peabody 2012 Water & Sewer Rate Study



Usage Trends – Nationally

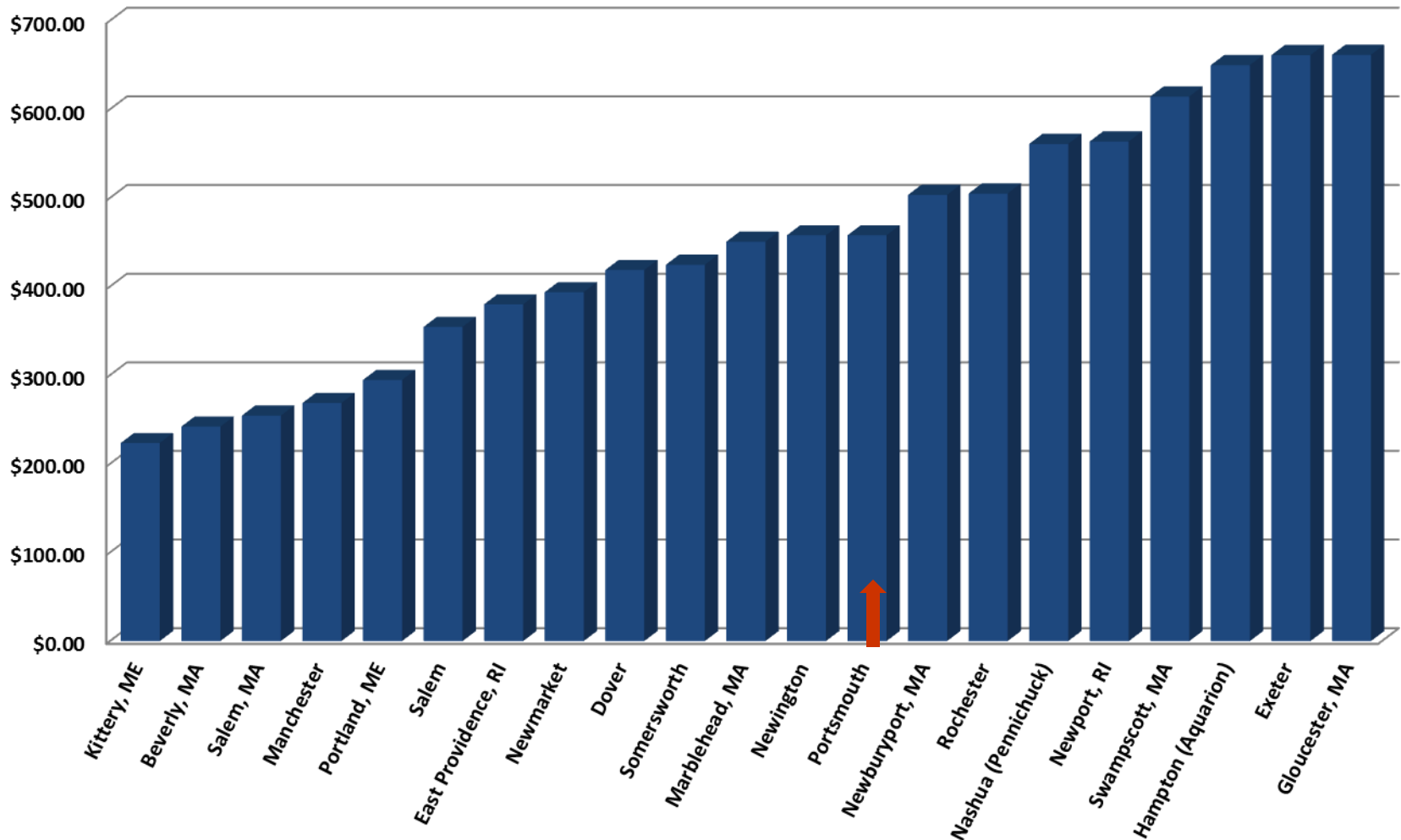
- **Milwaukee, Wisconsin: 46% reduction in Residential Use since 1975**
 - AWWA Streamlines, August 23, 2012
- **Seattle, Washington: 30% reduction in Total Use since 1995**
 - AWWA Streamlines, August 23, 2012
- **Louisville, Kentucky: 20% reduction in Total Use from 1975 to 2000**
 - AWWA Journal, February 2011
- **“When the price of residential water increases by one percent, the quantity demanded falls by 0.41%”**
 - USEPA: The Importance of Water to the U.S. Economy, September 2012 Public Review Draft

Regional Rate Comparison



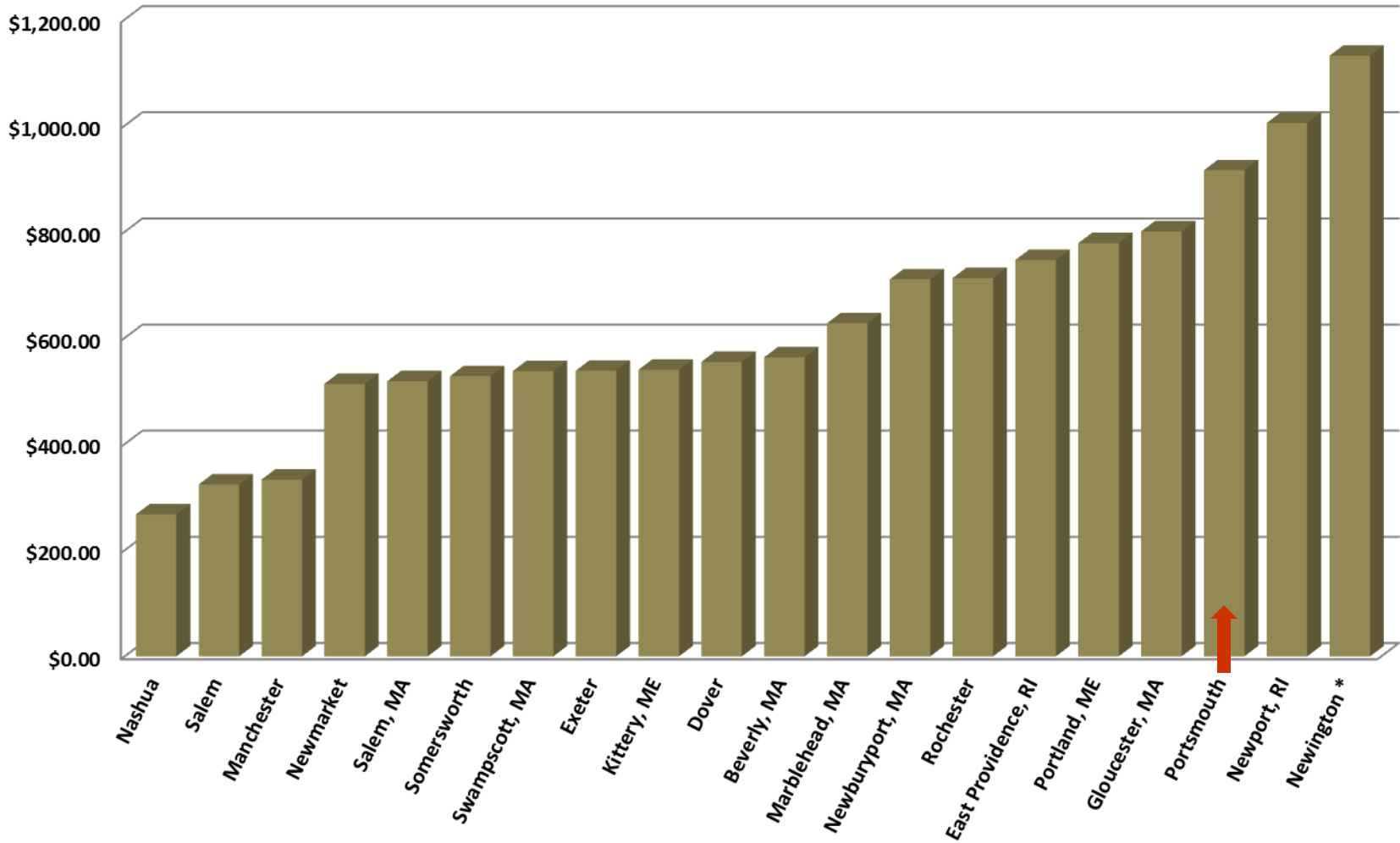
Rate Comparison - Water

Average Annual Residential Water Bills
(based on 8 units/month)



Rate Comparison - Sewer

Average Annual Residential Sewer Bills
(based on 8 units/month)

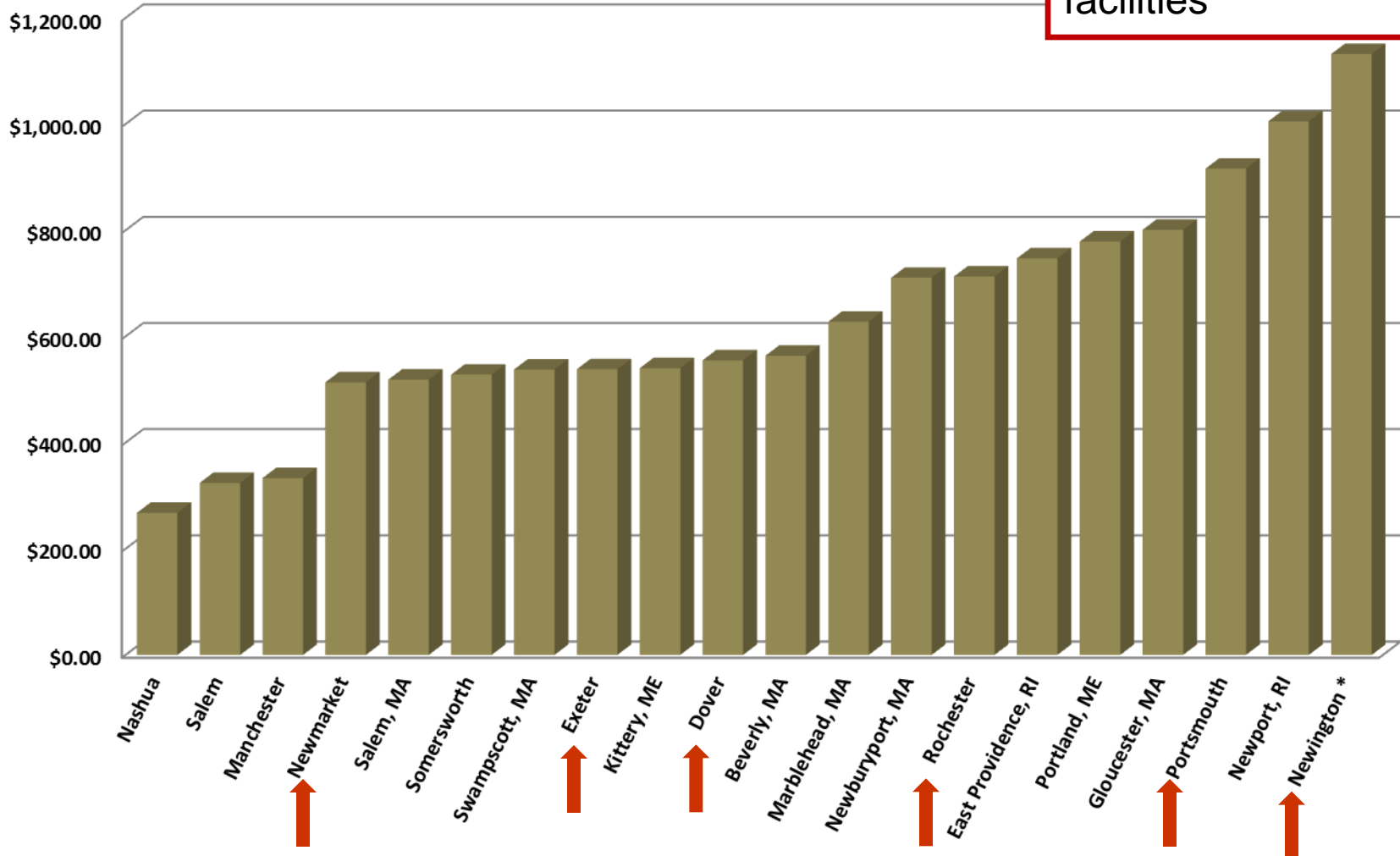


* Newington only has Commercial Customers

Rate Comparison - Sewer

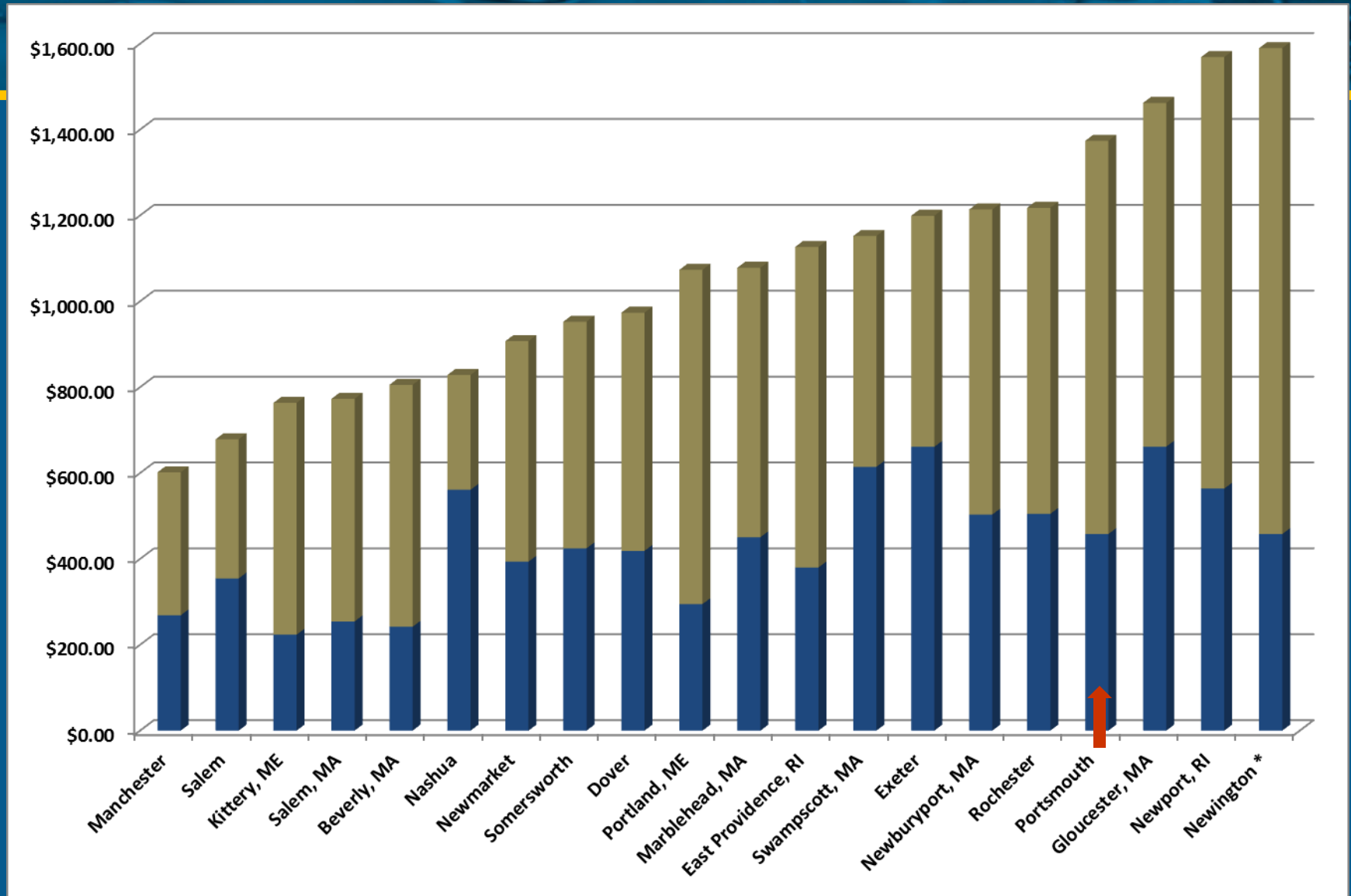
Many nearby systems are facing significant capital needs to upgrade facilities

Average Annual Residential Sewer Bills
(based on 8 units/month)



* Newington only has Commercial Customers

Rate Comparison - Combined



Rate Comparison – Sewer Bill Offsets

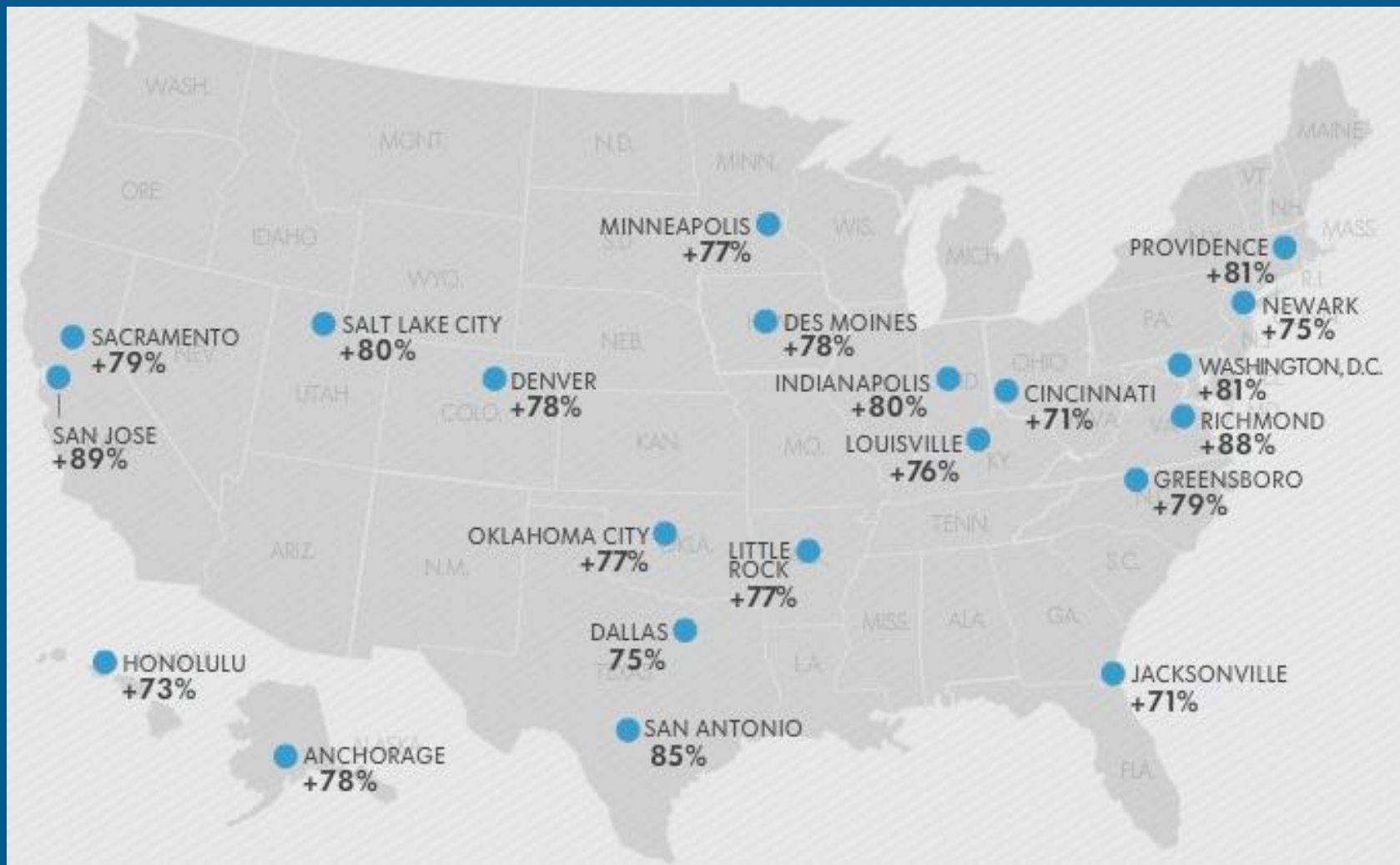
- **Some Systems Utilize General Funds to offset capital and/or operating costs:**
 - **Peabody, MA:**
 - 20% of sewer costs are paid for by the General Fund
 - **Wolfeboro, NH:**
 - All sewer capital projects are financed through the General Fund (43% of overall sewer costs)

National Trends - Rates

- **Overall United States Water and Sewer Rates Increased 53% from 2001 to 2009**
 - Black & Veach 2009/2010 Water/Wastewater Rate Survey

Combined Water and Sewer Rate Increases 2000 to 2010 (70% to 89%)

2010 Water and Wastewater Rate Survey
American Water Works Association



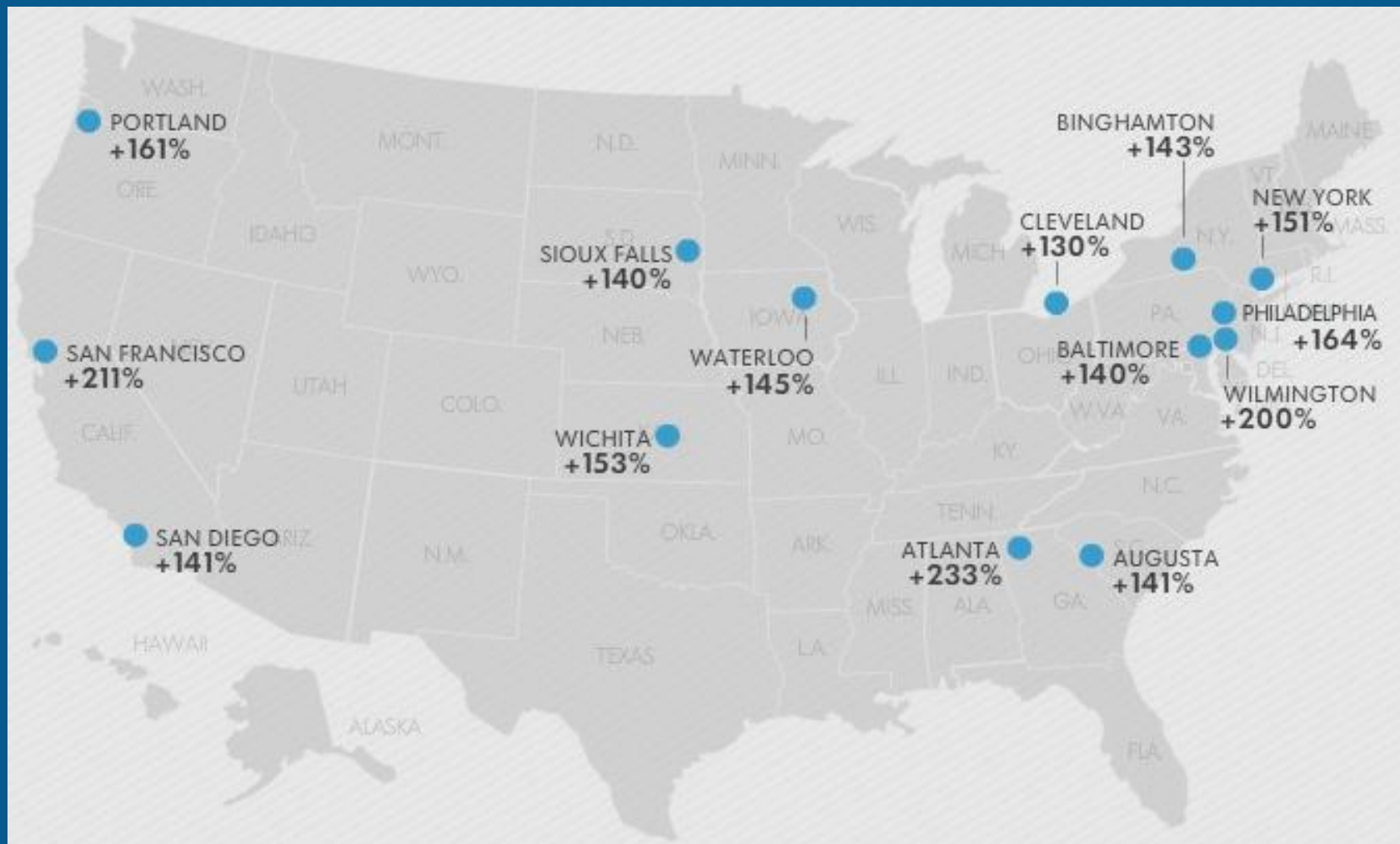
Combined Water and Sewer Rate Increases 2000 to 2010 (80% to 129%)

2010 Water and Wastewater Rate Survey
American Water Works Association

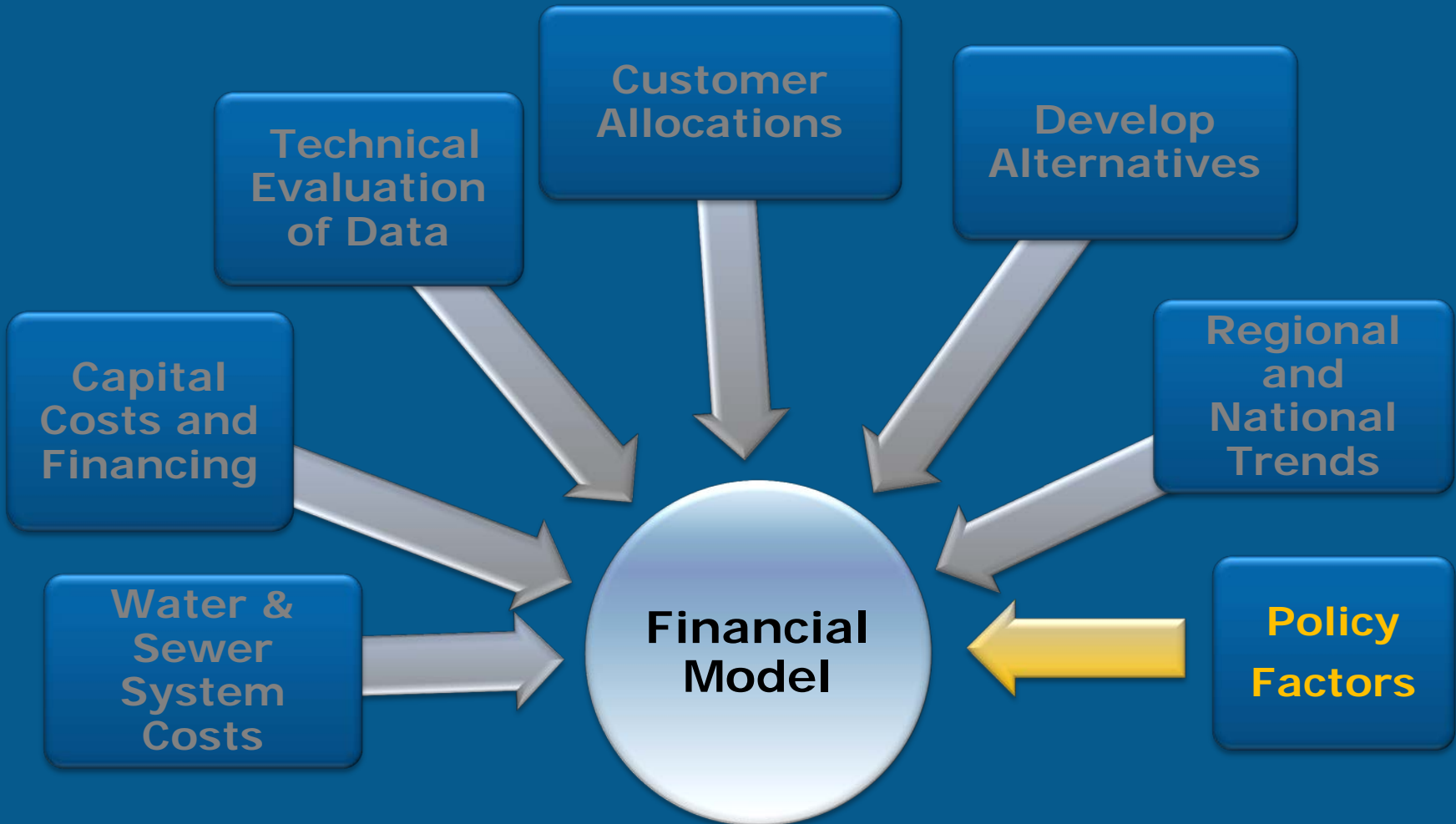


Combined Water and Sewer Rate Increases 2000 to 2010 (Over 130 to 233%)

2010 Water and Wastewater Rate Survey
American Water Works Association



Rate Study Components



Potential Policy Changes to Be Evaluated

■ **Base Charges (Readiness to Serve)**

- Currently, the revenue collected from base charge is approximately 10% for water
- No base charges are assessed for sewer customers
- Industry standard is typically 20 to 30% of revenues are generated from base charges

Billable Units are a Critical Component of Portsmouth's Water Revenue –

Water Cash Requirements FY13 Proposed Budget	Units	Rate	Revenue	Revenue %
Fees			\$544,500	6.1%
State Aid Grant			\$0	0.0%
Minimum Charges			\$700,001	7.8%
Use of Retained Earnings			\$100,000	1.1%
Other Utility Revenue			\$45,550	0.5%
Special Agreements			\$42,000	0.5%
Billable Units Tier 1	394,405	\$4.15	\$1,636,781	18.2%
Billable Units Tier 2	1,183,215	\$5.00	\$5,916,075	65.8%

84% of Revenue from Billable Units

Billable Units are even more Critical for Portsmouth's Sewer Revenue –

Sewer Cash Requirements FY13 Proposed Budget	Units	Rate	Revenue	Revenue %
Fees			\$210,500	1.9%
State Aid Grant			\$423,687	3.5 %
Pease Reimbursements			\$41,529	0.4%
Special Agreements (Interest)			\$28,931	0.3%
Use of Retained Earnings			\$0	0.0%
Pease Payback toward debt			\$116,289	1.0%
Special Agreements (principal debt)			\$65,142	0.6%
Other Agreements			\$100,000	0.9%
Billable Units Tier 1	336,920	\$9.54	\$3,214,217	28.3%
Billable Units Tier 2	684,051	\$10.49	\$7,175,695	63.1%

91% of Revenue from Billable Units

Potential Policy Changes to Be Evaluated

■ **Water and Sewer Tiers**

- Currently only a two-tiered system
- Should this be increased to three tiers or dropped to a single-tiered rate?
- Life-line tier
- Irrigation tier

Potential Policy Changes to Be Evaluated

- **Irrigation meter charges and policies**
 - Currently available to single-family residential customers
 - Metered irrigation is billed only for water
 - » This currently results in a 1% reduction in overall billable sewer use
 - Should irrigation meters be made to all customers?
 - » Potential reduction in billable sewer use is estimated to be 10 to 15%

Potential Policy Changes to Be Evaluated

■ Multi-Family Billing

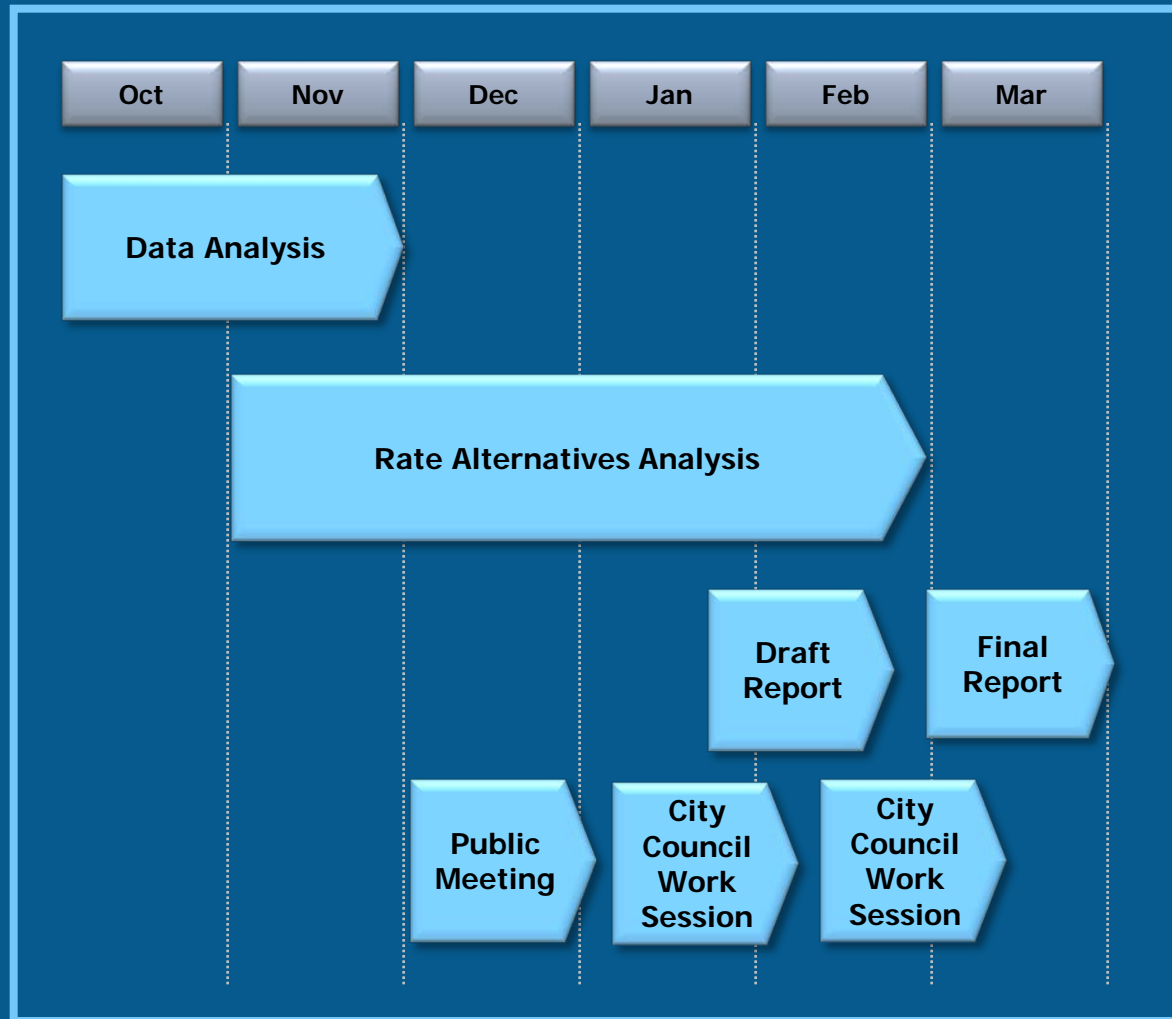
- Currently these facilities pay the tiered rate based on their metered use
- Alternatively:
 - » Should this use be divided by the number of dwelling units to assess a tiered use based on the average dwelling use? Or
 - » Have each dwelling unit install separate meters

Potential Policy Changes to Be Evaluated

■ Fire Service Charges

- Currently only 3% of water revenues are based on the fire service charges
- Comparable systems have fire service charges that amount to 10 to 30% of their revenue

Proposed Schedule



Questions and Comments

