



Connecticut's Public Drinking Water

Role of the State *Department of Public Health's* *Drinking Water Section*

Lori Mathieu, Public Health Section Chief
Drinking Water Section, Department of Public Health
Town of Mansfield Town Council Meeting
July 12, 2012



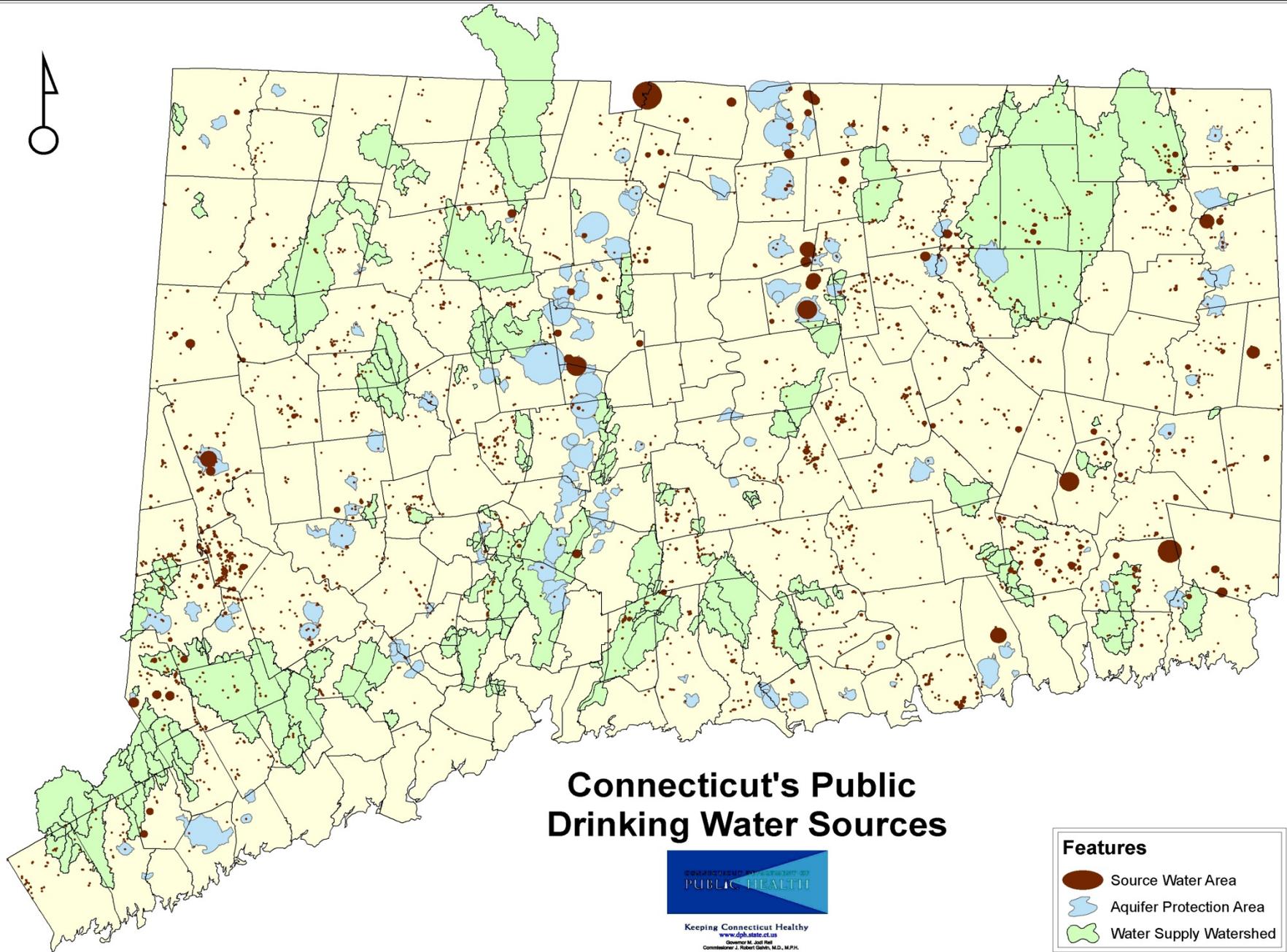
DPH – Branch of Regulatory Services Drinking Water Section

- 💧 Minimize risk to public health through the oversight of public drinking water systems and sources statewide
- 💧 Primacy under the EPA's Safe Drinking Water Act
- 💧 Safe, Pure & Adequate Public Drinking Water - CT Statutes 25-32 through 25-53, 19-37, 19-38, et al
- 💧 Drinking Water Section - 46 staff, 7 units



DPH Drinking Water Section Responsibilities

- 🔥 Regulate 2,585 Public Water Systems with 4,400 sources
- 🔥 2.704 million CT residents served
- 🔥 96 systems serve over 1,000 people
- 🔥 461 systems serve under 1,000 people - small community systems
- 🔥 2,028 non-community systems



Connecticut's Public Drinking Water Sources



Keeping Connecticut Healthy
www.dph.state.ct.us
Governor M. Jodi Weill
Commissioner J. Robert Glick, M.D., M.P.H.

Features

-  Source Water Area
-  Aquifer Protection Area
-  Water Supply Watershed



DPH Drinking Water Section Responsibilities

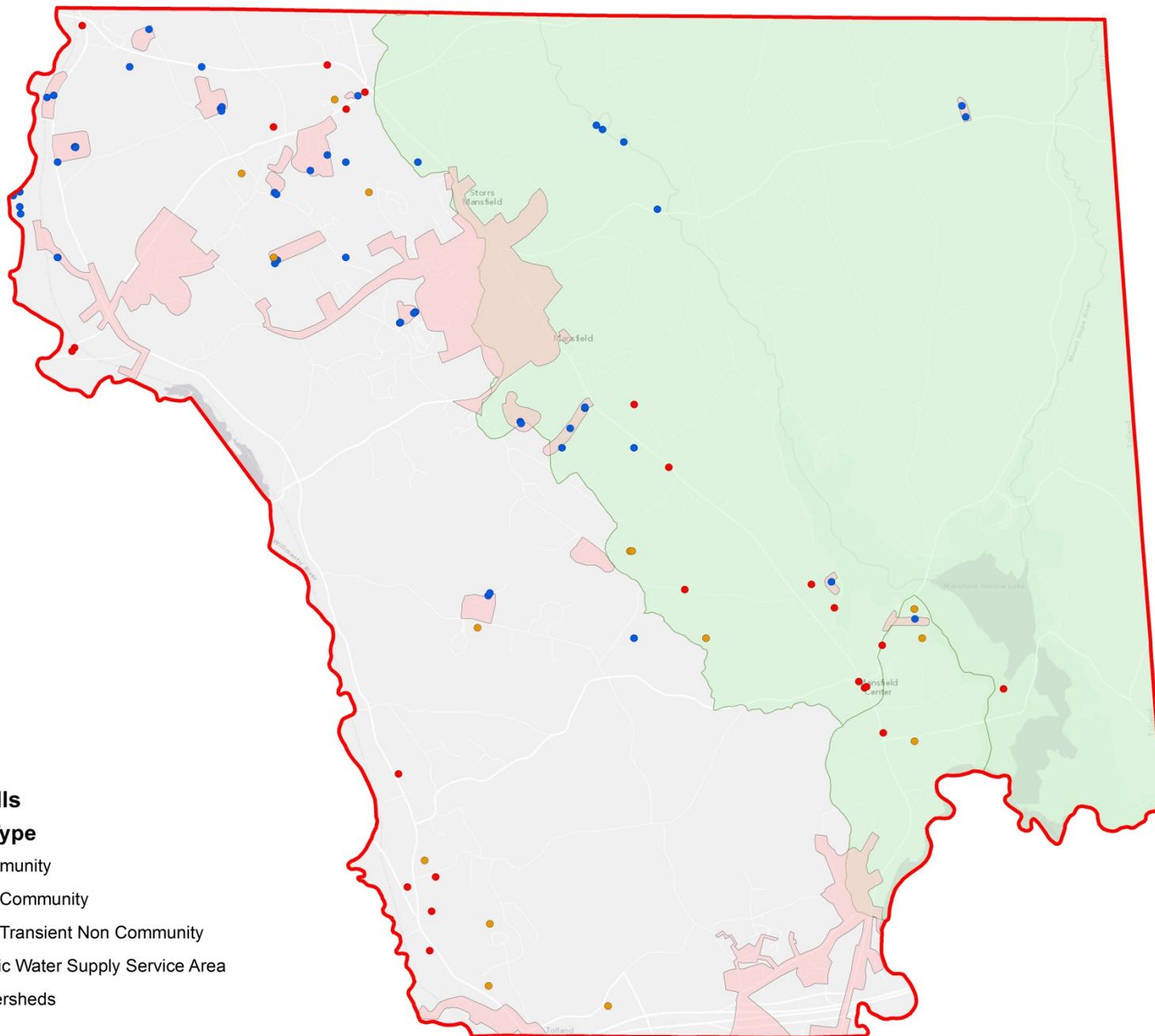
- ◆ Oversee Individual and Regional Public Water Supply Planning
- ◆ Track, monitor and enforce public water supply drinking water quality statewide
- ◆ Conduct engineering inspection for each public water system 3 to 5 years
- ◆ Respond to emergency (adequacy and purity) situations 24/7
- ◆ Certify and train public water system operators
- ◆ Administer public drinking water loan program – \$50 million
- ◆ Regulate the use and sale of 100,000 acres of water company owned land
- ◆ Review and approve new sources of public drinking water
- ◆ Review development of new public water systems
- ◆ Oversee the protection of public drinking water sources

Legend

PWS Wells

System Type

- Community
- Non Community
- Non Transient Non Community
- Public Water Supply Service Area
- Watersheds

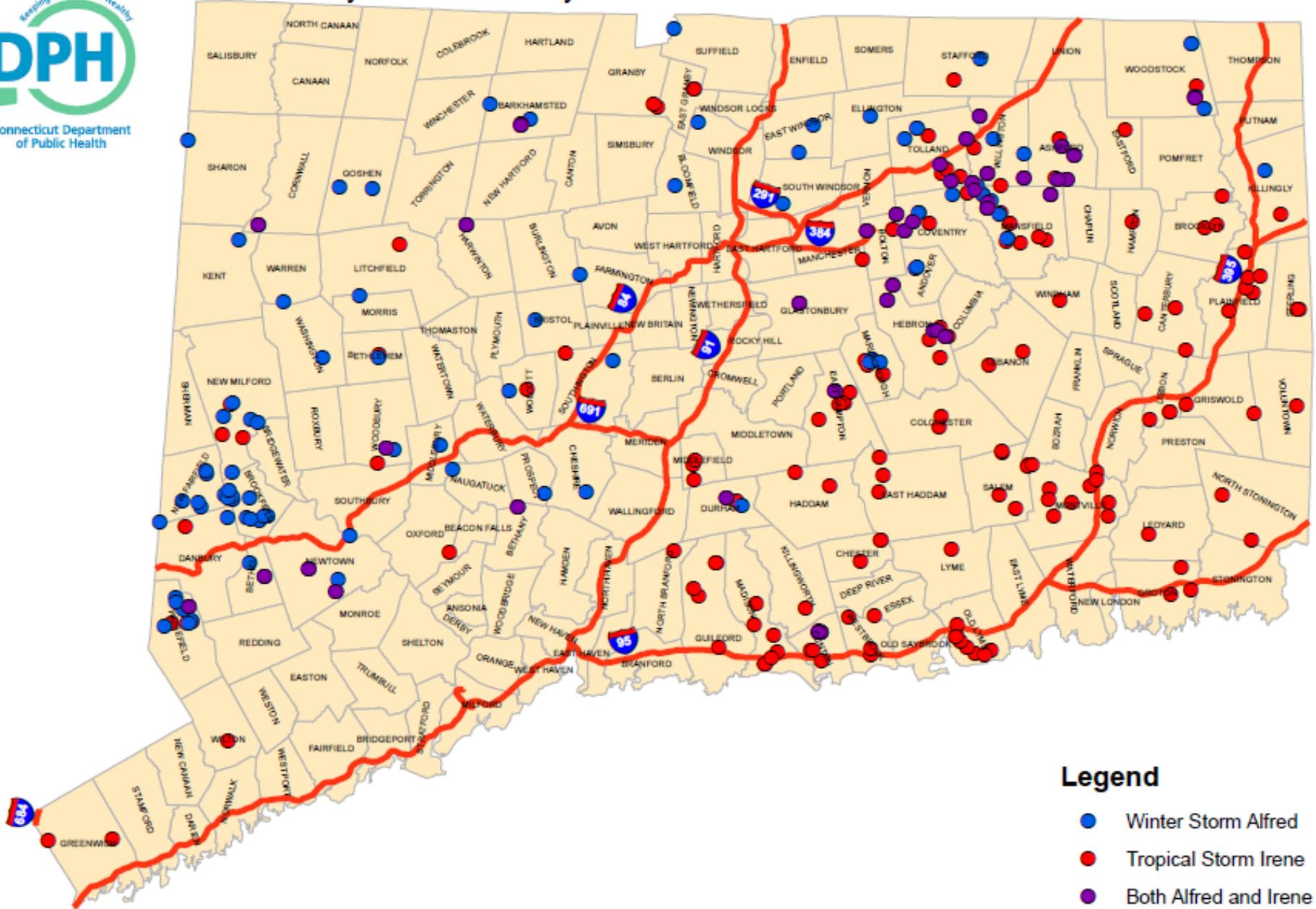


Storms Irene & Alfred Fall 2011

- 💧 Average of 130 small community public water systems (cpws) on boil water advisory
- 💧 Average of 18,000 people affected
- 💧 99% of CT Residents retained their community public water
- 💧 Large cpws lost street power, however operations not affected due to emergency power capacity, street power restored slowly some large cpws without street power for 8 to 9 days



Community Public Water Systems that were on Boil Water Advisories





Thank You

lori.mathieu@ct.gov

Drinking Water Section



Connecticut Department of Energy and Environmental Protection



CT DEEP's Role in Public Water Supply Planning & Regulation

July 12, 2012

Presented by Rob Hust

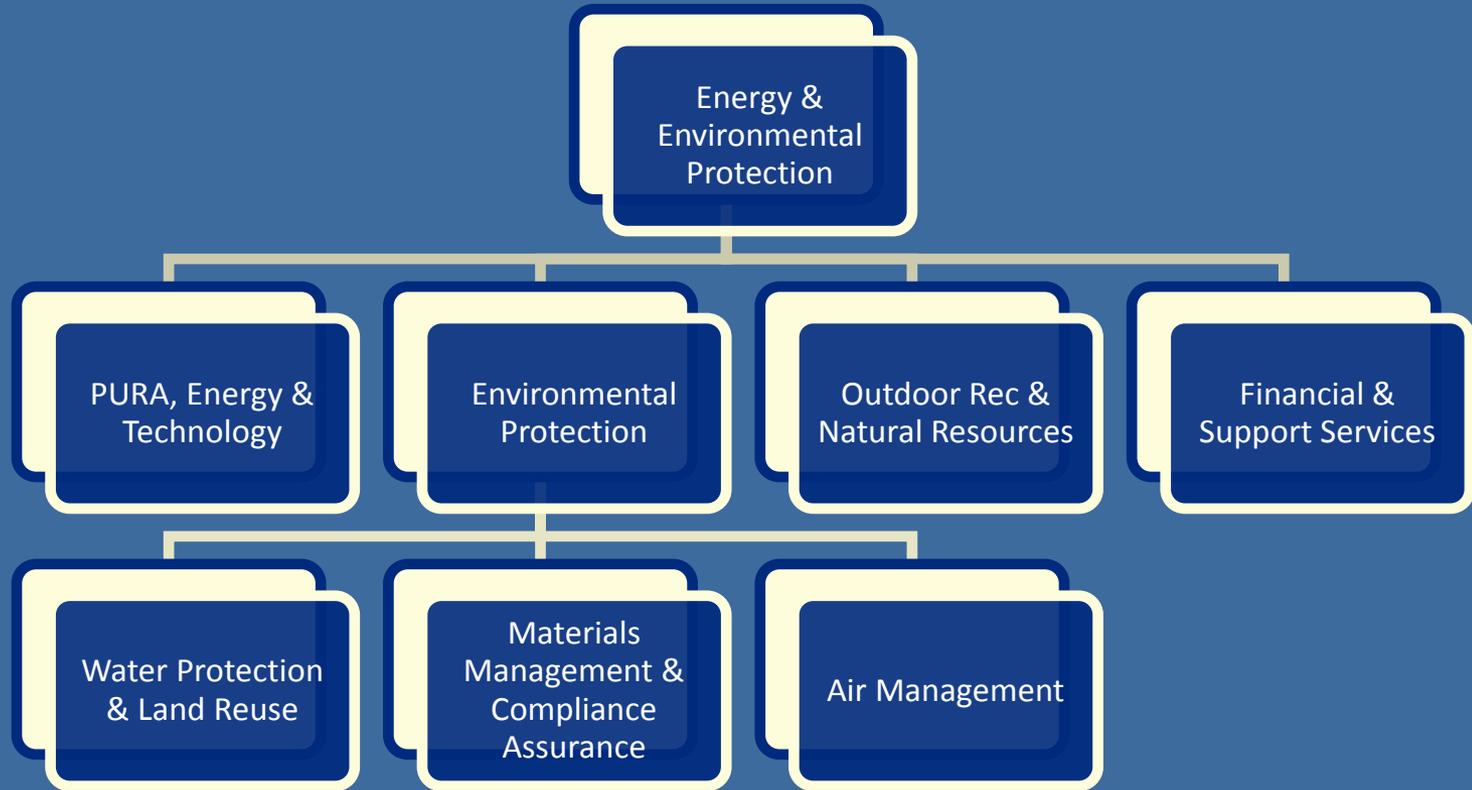
To Mansfield Town

Council



Connecticut Department of Energy and Environmental Protection

CT Dept of Energy & Environmental Protection



Bureau of Water Protection & Land Reuse



- Both WPLR and PURA divisions of DEEP are involved in public water supplies
- WPLR focus is on water resource management
 - Clean Water Act
 - protect, maintain & restore waters
 - quality, quantity & biological integrity
 - Diversion of water
 - Watershed Management and Supply Planning
 - Environmental Impacts
 - Aquifer Protection

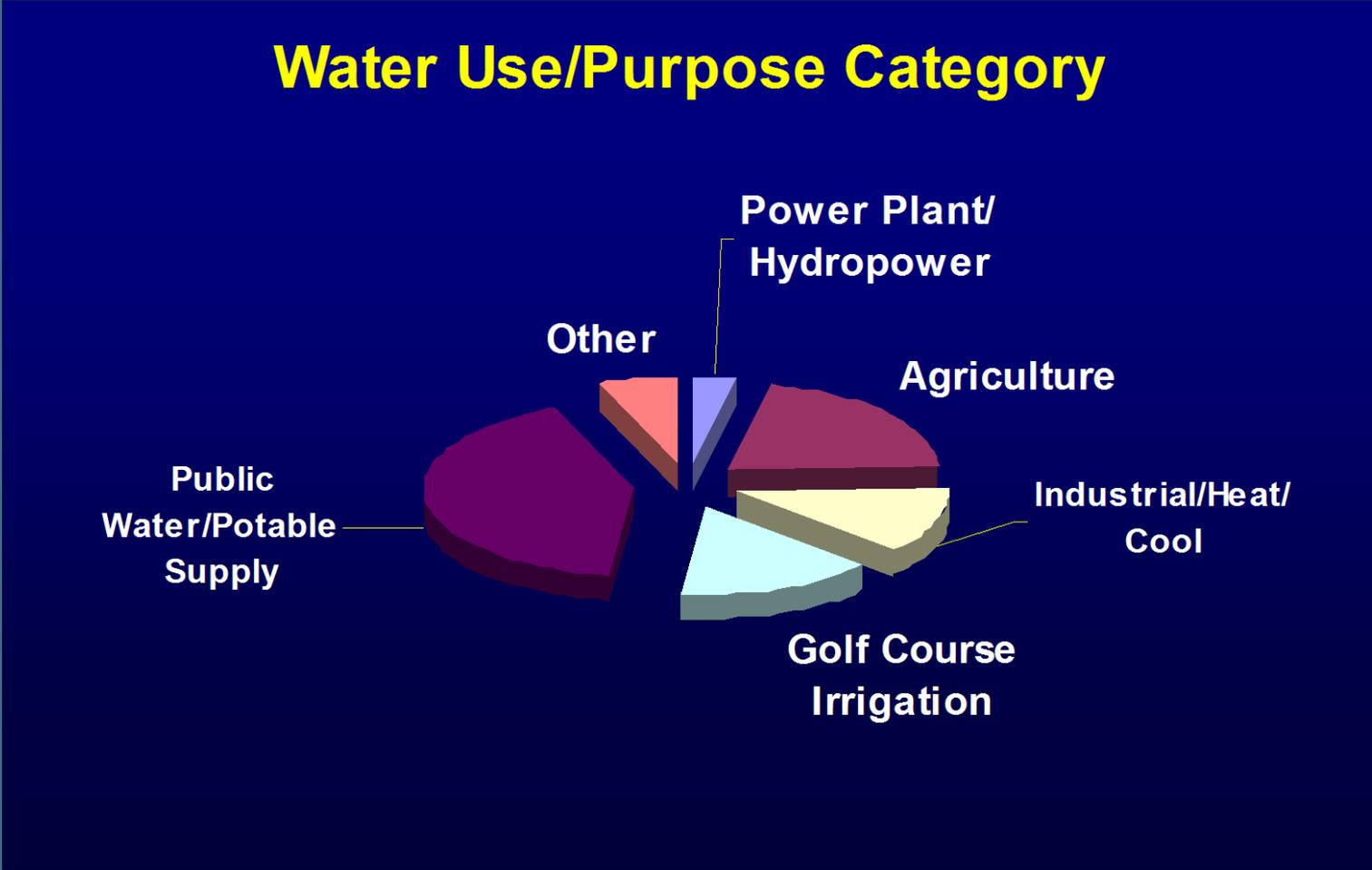


Demands on Water Resources

- Aquatic habitat
- Recreational Uses
- Power Production
- Industrial Uses
- Drinking Water Supply
- Irrigation/Agriculture
- Wastewater assimilation



Relative Water Demands in CT



Diversion Program

- Regulates activities that affect the flow of the waters of the state:
 - Withdrawal of water > 50,000 gpd
 - Transfer of > 50,000 gpd
 - Surface water & ground water
 - Registration vs permits
 - Individual vs general permits



Diversion Program

- Considerations in diversion permit process:
 - Necessity
 - Alternatives
 - Effect on existing and proposed water uses in area
 - public & private water supplies
 - water quality
 - water-based recreation
 - fish & aquatic life
 - hydropower
 - flood management
 - wetland habitats
 - wastewater treatment needs & waste assimilation
 - agriculture
 - Water conservation
 - Compatibility with long-range water resources planning (C&D Plan)
 - Consistency with proper management & use of CT's water resources



DEEP Water Supply Planning

- Member of the Water Planning Council
- Develop and review State water policy
 - State C & D Plan Policy
- Clean Water Act
 - Water Quality Standards & Classification
- Review & concurrence of Water Supply Plans
- Participant in WUCC (regional) Plans



Water Supply Plan Reviews

- Adequacy of approved diversions of water sources
- Consistency with WQ Standards & Classifications
 - Existing quality, impairments, waste loads, source protection
- Water conservation & demands
- Environmental Impacts of proposed water sources
- Stream flow needs
- Proposed service areas & demands



DEEP Participation in EIE Process

- EIE are prepared under CT Environmental Policy Act
- Applies to certain State Agency projects and funding
- Sponsoring agency prepares Scoping Notice
 - CT DEEP identifies agency issues to be addressed in the EIE -
 - environmental resources, permitting issues, etc
- EIE is prepared, CT DEEP reviews and comments back to sponsoring agency
- Sponsoring agency prepares a Record of Decision addressing the issues raised
- OPM reviews and issues the approval



Aquifer Protection Area Program

Purpose

- identify , map and protect major public water supply aquifers

Program elements

- Establishes “aquifer protection areas” around major public water supply well fields in stratified drift aquifers (recharge areas)
- Establishes municipal Aquifer Protection Area agencies to implement the program
- Requires certain existing regulated activities (involving hazardous materials) to register with the municipality (or DEEP) and follow protection standards (best management practices)
- Prohibits certain new activities (involving hazardous materials) in aquifer protection areas



Questions?

www.ct.gov/deep



Connecticut Department of Energy and Environmental Protection

Registration of Existing Diversions

- Registration of historic diversions by July 1, 1983
- Diversion in place as of July 1, 1982 to be registered
- Unregistered diversions subject to permit
- Registration is an exemption from permitting, not a water right
- Vast majority of water diverted is grandfathered through registrations:
 - 1842 registrations versus 354 permits



How CT Allocates Water & Manages Instream Flow

- CEPA
- Riparian Rights Doctrine
- Minimum Streamflow Regulations
- Clean Water Act
- Designated Uses under Water Quality Standards and Criteria
- 401 Water Quality Certifications
- Water Diversion Policy Act





A Regulator's Perspective on Rate Setting for Water Utilities



Vice Chairman Jack Betkoski
Connecticut Public Utility Regulatory Authority

Town of Mansfield
July 1, 2012



The Public Policy Issue

How to mitigate rate increases required to invest in needed capital improvements and maintain water quality protection?





Connecticut Public Utility Regulatory Authority's Mandate

Connecticut PURA's mandate is to protect the ratepayer while assuring that a utility company has both sufficient revenues to provide safe, adequate & reliable service and the opportunity to earn a return on its investment.





Regulator's Focus

Overall must focus on:

- Technical, managerial, financial capability
- Strict accounting practices and checks and balances



Infrastructure - need the REAL numbers/ BEST estimate

- To present to the stakeholders (legislators, other state agencies, consumers)

State regulators in general are (per NARUC's Survey of the States - July 2004) :

- Committed to allowing cost recovery of costs that are prudently incurred
- Feel it is unnecessary to reinvent the wheel - existing cost recovery protocols and cost recovery mechanisms are sufficient Rates - must take into account *standards of reasonableness* (used & useful and prudently incurred costs)

Rates design - must address issue of FULL cost (includes environmental) vs. TRUE cost (infrastructure/water-only related costs)





Utility Rates

Determining Revenue Requirements

- Rates must be “*reasonable*”
 - *Standards or tests of reasonableness:*
 - Cost of service – (most used standard) – costs are definitive (used by DPUC)
 - Value of service – value of service is more subjective (a consumer will not pay more for a service than he thinks it’s worth – he will go without)
 - Quality of service –refers to a utility’s obligation to provide adequate service
 - Comparison of rates
 - Competitive service
 - Economic conditions
 - History of the company
- Costs must be *prudently incurred*
- Expenditures must be for *used and useful* purposes
- Utility rates must *show cause* as to why existing rates should continue or different rates instituted



Water Utility Rates Determining Revenue Requirements

Review of Financial Reports (Income Statements, Balance Sheets, etc.)

- Improvements completed to water system
- New or replaced water mains
- New or upgrades to filtration plant
 - SDWA mandates being met?
- New or upgrades to filtration plant
- Mapping of systems
- Office, administrative equip – computer system (upgrades), furniture
- Property taxes, inflation, legal & accounting expenses, payroll





Water Utility Rates Determining Revenue Requirements

Public Health Protection Factors Considered in Rates Decisions

- Filtration plant expenses – chemical, etc
- Periodic water testing expenses
- Cost of compliance with SDWA
- Costs of compliance with CT DPH





Info on Water Quality Protection Issues Required in DPUC Rate Proceeding

PURA asks each water utility company, in interrogatories, during a rate case if there are:

- Any violations of the standards of the SDWA – as determined by CT DPH
- Any enforcement Actions by CT DPH – for violations of the standards of the SDWA

DPH is eyes & ears for CT on SDWA standards and compliance





CT Security Related Legislation

AAC the Treatment of Expenditures for Critical Assets & Facilities

Reasonable costs of security for the utility's assets, facilities, and equipment that are incurred solely to respond to security needs associated with the September 11, 2001 attacks and the continuing war on terrorism can be recovered by a utility in its rates.



CT Water Stakeholder Partnerships

Mission of the Water Planning Council (Public Act 01-177)

- WPC will identify issues & strategies which bridge the gap between the water supply planning process & water resources management in order that water can be appropriately allocated to balance competing needs while protecting the health, safety & welfare of the people of Connecticut & minimize adverse economic & environmental effects.

Role of Water Planning Councils

- WPC facilitates communication between stakeholders to create collaborative solutions for create public-private partnerships to better leverage resources.





Regulatory Programs Needed to Mitigate Sharp Rate Increases

- State Revolving Fund Loans (SRF) – low interest loans keep rates down
- Single tariff pricing – uniform statewide (or regional) rate structures
- Infrastructure improvement surcharges – to avoid frequent rate cases and mitigate regulatory lag
- Programs to phase in rate increases
- Acquisition adjustments – troubled water companies
- Agreements between CT PURA and CT DEEP

Source: Nicholas DeBenedictus, Chairman and CEO Aqua America





Innovative Regulatory Environment Results In:s

Better Bond Rating

“Standard and Poor’s views the regulatory environment in PA as supportive of credit quality, because water utilities can use a future test year during rate cases, have an incentive to rehabilitate aging infrastructure through DSIC mechanism, and can recover the acquisition premium for certain troubled systems of up to 3,300 users, which provides an incentive for small water system consolidation within the state.”

S&P’s Bond Rating Report: September 2003





Innovative Regulatory Environment Results In:

- Better Bond Rating = Lower cost of capital
- Lower cost of capital = Lower rates



Water Infrastructure Financing

Consider all options:

- Available federal funds
- State, local bonding
- Look at creating public-private partnerships for financing
- WICA – Water Conservation Adjustment charge





Water Infrastructure Financing

Securitization through the water company

- Can provide mechanism for better rate - when secured by line item charge on customer bills that notes ownership by funded
- As regulators, and the industry as well - must be cognizant of difficult economic times and structure financing and accordingly





Distribution System Improvement Charge (DISC)

States implementing a DSIC:

- Connecticut
- Delaware
- Illinois
- Indiana
- Missouri
- Ohio
- Pennsylvania

Source: NAWC



Increase in Federal Assistance

Prevent a gap in water infrastructure financing by changing and expanding existing DWSRF and other drinking water programs, or creating a new, infrastructure-focused fund to include:

- Significant increase in federal funding for projects to repair, replace, or rehabilitate drinking water infrastructure
- Increase in federally supported research on infrastructure management, repair and replacement technologies
- Steps to increase the availability and use of private capital

Source: AWWA Dawn of the Replacement Era, May 2001





Rates - PUR Guide -1

Rates and Rate Making - Basis for Pricing

- Measures of Reasonableness
- The Test Period
- The Revenue Requirements Formula
- Rate of Return
- Weighted Cost of Capital
- Significance of the Rate of Return
- Restructuring and Return on Equity
- The Cost of Debt
- Determining Cost of Equity
- Estimating Growth
- Is Rate of Return Guaranteed?



Rates – PUR Guide -2

Types of Rate Structures

The Evolution of Rate Design

- Minimum Block Rates
- Fuel Adjustment Clauses
- Public Utility Regulatory Policies Act
- PURPA's Differential Rate Standards
- Emerging New Rate Structures
- Unbundled Natural Gas Rates
- Transportation Rate Design
- Unbundling Electric Utility Services
- Restructuring and Its Effect on Rates
- Rates for Standby Service
- Economic Development Rates
- Anti-bypass Discounts
- Price Cap Rates
- Performance-based Rate Making
- Other Pricing Mechanisms
- Specific Types of Charges
- Review Questions

The General Rate Case

- Background of the Rate Case
- Initiating Changes in Rates
- The Rate Department
- The Content of a Rate Case
- When Do New Rates Take Effect?
- Appeal and Review



Water Infrastructure Crisis

“Americans concerns about security threats are real, but so are the threats posed by crumbling infrastructure”

Thomas Jackson, American Society of Engineers, President

Drinking water systems are aging rapidly.

Some sewers systems are 100 years old.

Federal funding remains flat.

Source: 2003 Associated Press Report: American Society of Civil Engineers





Water Rates Comparison to Other Nations

USA – water rates on average are \$2.00 per thousand gallons

Europe – water rates on average are \$5- \$6.50 per thousand gallons

Water rates as a % of income:

- 0.5% in USA (electric: 2.4%; telephone: 2.1%)
- 2.0% in Europe

Source: William F. Hill, Vice President, United Water





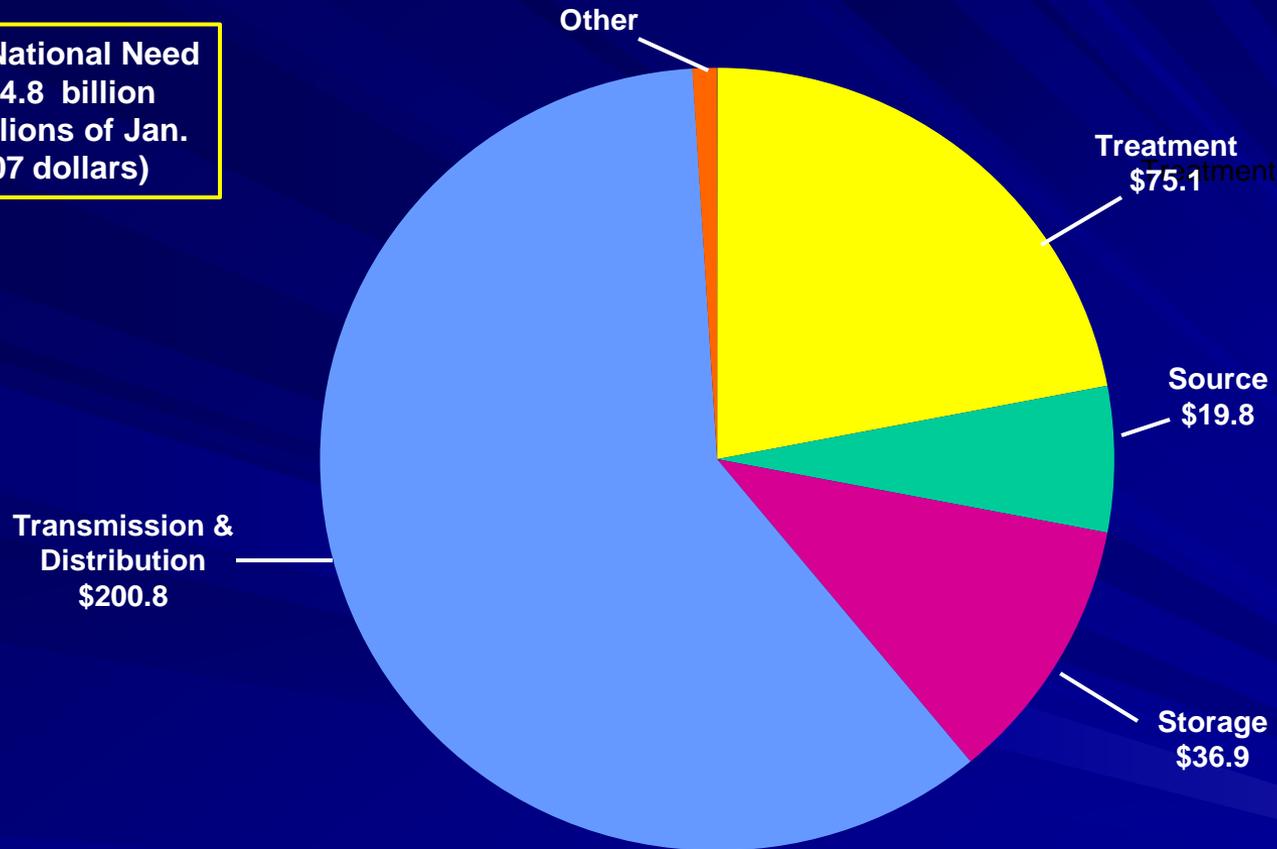
Magnitude of Infrastructure Investment

- Requires substantial increase in capital spending
- Many water utilities will double their rate base over the next 10 years
- Need for rate relief will be accelerated
- Cost/foot of main in 1935 = \$2
- Cost/foot of main in 2000 = \$75
- The average cost/foot of main in 2011 was \$258



EPA: \$334.8 billion needed over next 20 years to ensure compliance with existing & future regulations

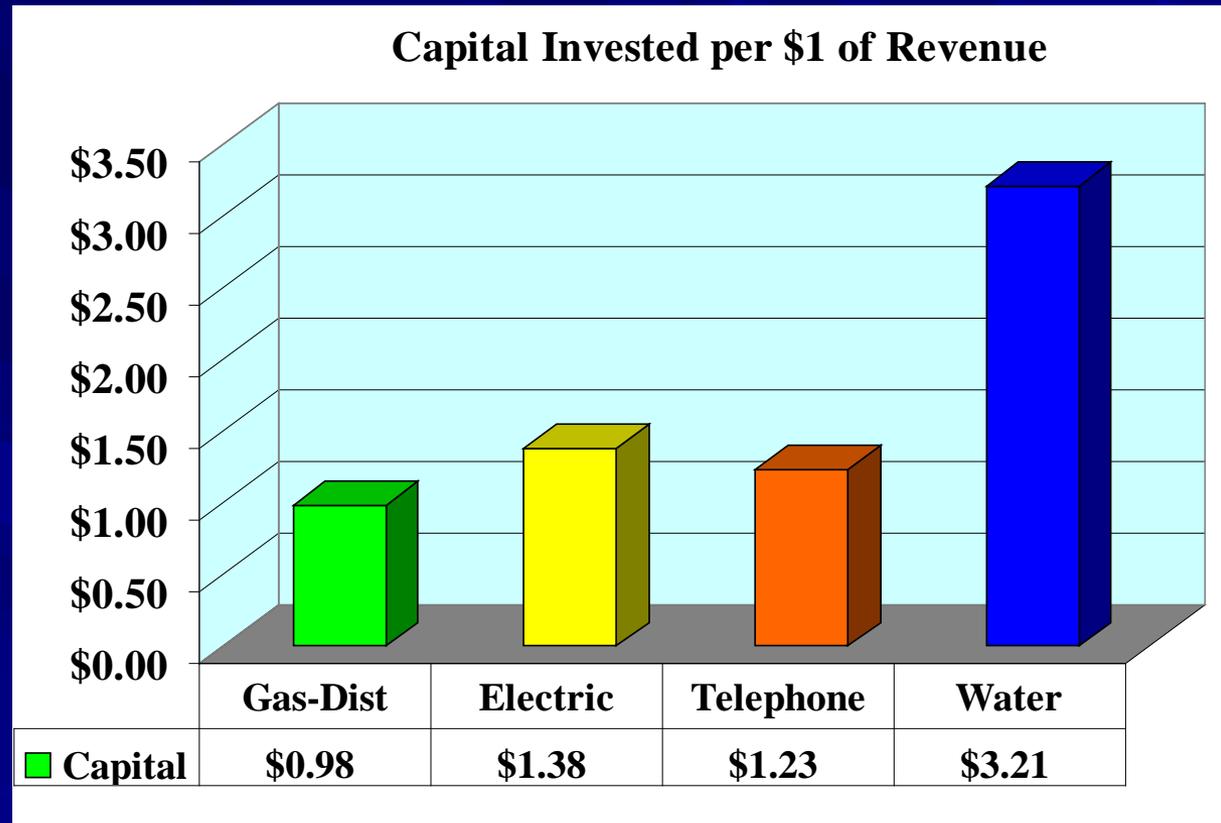
Total National Need
\$334.8 billion
(in billions of Jan.
2007 dollars)



Source: EPA Drinking Water Infrastructure Need Survey Fourth Report to Congress, February 2009

Water Industry is the Most Capital Intensive Utility Industry

- Immense investment needed for distribution system and road repair
- More capital per revenue than all other utilities & manufacturing industries
- No technological substitute for water distribution
- EPA rules require large investment in filtration plants



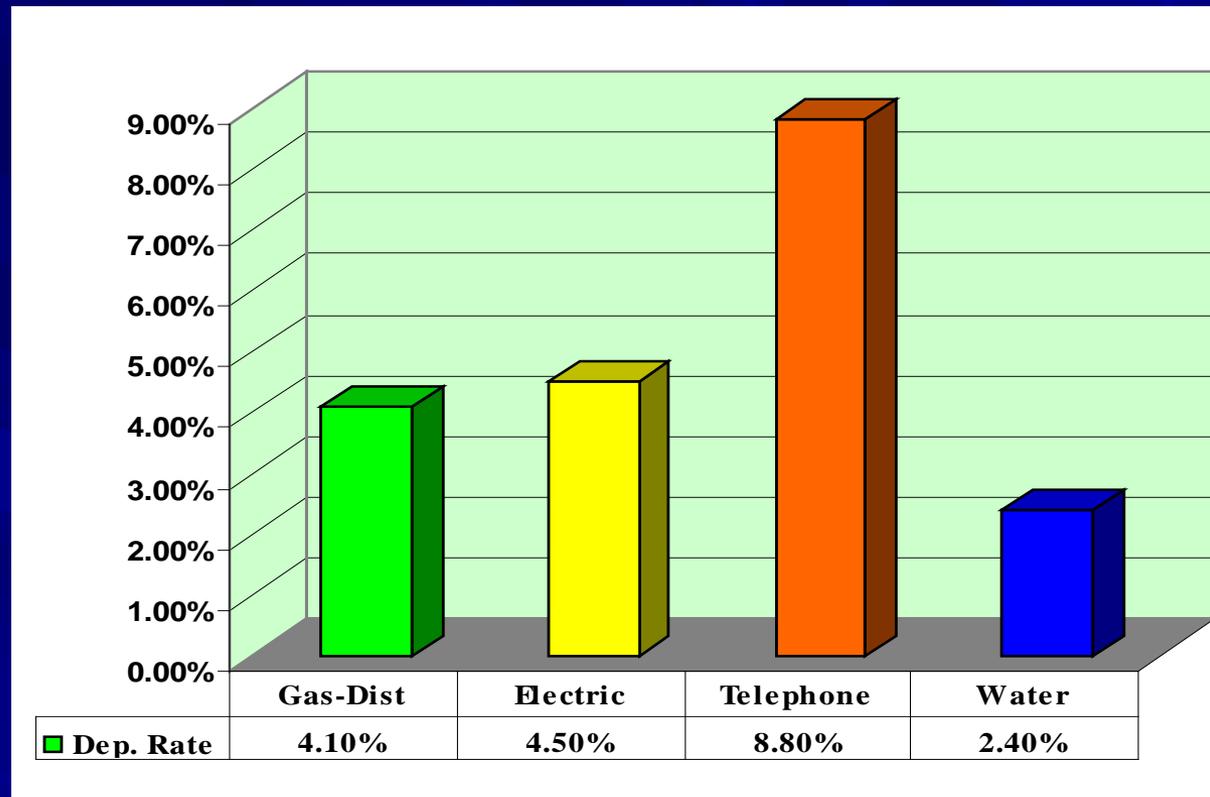
*Source: Nicholas DeBenedictus,
Chairman and CEO Aqua America*

Source: 2001 C.A. Turner Utility Reports

Water Industry has the Lowest Depreciation Rate in the Utility Industry

- Historic cost recorded is lower than replacement cost
- Water industry has longest capital recovery period, which is viewed negatively by Wall Street

*Source: Nicholas DeBenedictus,
Chairman and CEO Aqua America*



Source: 2001 C.A. Turner Utility Reports



Municipal vs. Private investor-Owned Water Systems

- Municipal water rates are set by the local governing body ... there's no State oversight provided for setting water rates
- Private investor-owned water companies are regulated by the Public Utilities Regulatory Authority (PURA)



“When the well’s dry, we know the worth of water”

Benjamin Franklin (1706-1790), Poor Richard’s Almanac, 1746





The Role of Eastern Highlands Health District

- Health Education
 - Drinking/potable water information
 - Risk Communication
- Local Government Support
 - Liaison/facilitator
 - Local subject matter expertise
 - Special projects
- Public Health Code Enforcement
 - Food Safety
 - Housing Safety
 - Complaint investigation/outbreak investigation
 - Project referrals/information
- Support/ Collaboration with State DPH
- Public Health Emergency Response