



**AQUARION**  
*Water Company*

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*Stewards of the Environment*

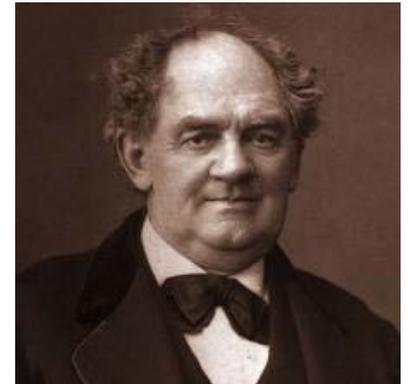
**Meeting with  
Water Supply Committee  
September 26, 2016**



**AQUARION**  
*Water Company*

# About Aquarion

- Founded in 1857, Bridgeport, CT.
- More than 300 employees with diverse experience in a range of fields including water quality, environment / sustainability and engineering.
- Provides water to >700,000 people, largest in New England, managing all aspects of the water supply process.
- Aquarion received the Public Water System Award for "Outstanding Performance and Achievement" from MASS DEP in 2014 and 2015.
- J.D. Powers ranked Aquarion 2nd in the Northeast and 5th in the US amongst all large public and private water suppliers.



PT Barnum

# Hingham Water Company

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- Incorporated in 1879 by a group of Hingham investors; remains a private entity.



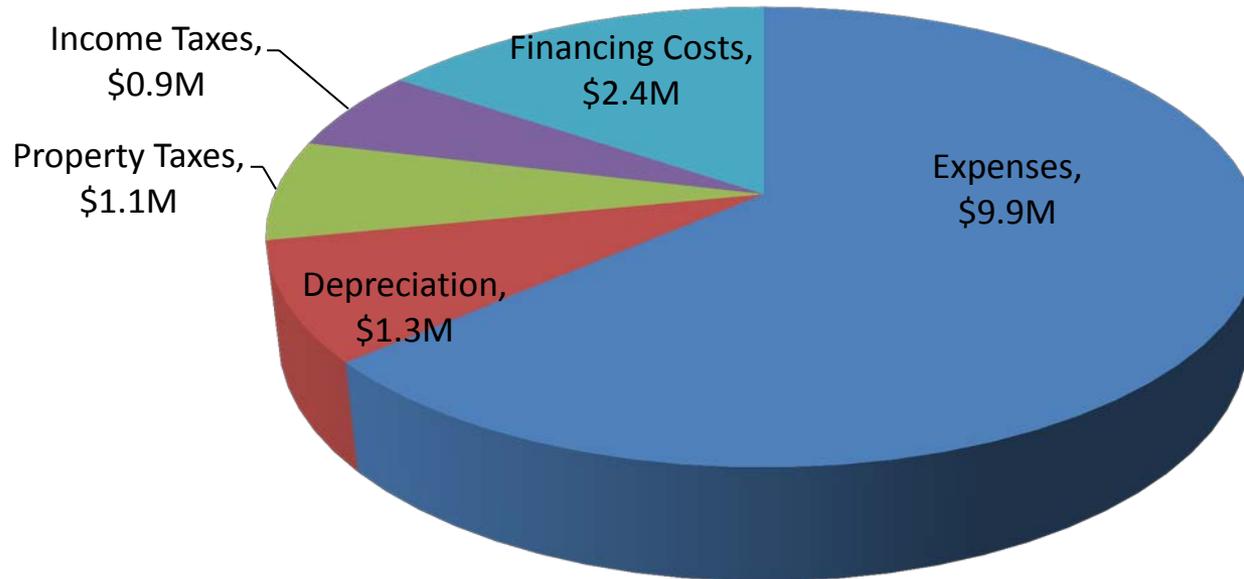
# Rate Case Basics

- AWC customer rates can only be changed upon approval from the Massachusetts Department of Public Utilities (MA DPU). This is generally the result of a rate case proceeding.
- A rate case takes approximately 1 year from the Company's filing of a petition to the implementation of new rates.
- The rate case examines our existing levels of expense and our completed, in-service capital investments.
- The Company's filing includes testimony and exhibits demonstrating the Company's "Cost of Service." The burden of proof is on the Company. Prior year capital expenditures are used to develop the cost of service.
- Towns in the Company's service territory as well as the attorney General's office can intervene in the case, offering testimony, data requests and briefs to support their positions.
- The Company responds to hundreds of data requests and provides witnesses subject to cross examination
- Customer rates are established based on the approved cost of service and rate design. The rate design is guided by a Cost of Service study performed periodically.

# Cost of Service Components

- Cost of service is separated into several main categories.
- The total revenue requirement (costs to operate the water system) commensurate with DPU 12-44 was \$15.6M and is comprised of the following:

## DPU 12-44



- Financing costs reflect the costs associated with capital investment.

# Cost of Service Sensitivities

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- Rate Impacts associated with cost increases and capital spending are fairly easy to determine.
- In general, if operating expenses increase by \$100k, then cost of service, and correspondingly customer rates, must increase by 0.6% (\$0.1M/\$15.6M).
- Every \$1M of infrastructure investment will generally result in a 0.8% increase in rates at our next rate case. This is determined based on 7.5% of financing costs plus an additional ~5% for depreciation and property costs (12.5% x \$1M / \$15.6M).
- Aquarion strives to reduce expenses and maintain an appropriate level of capital expenditures in an effort to provide safe and reliable service while keeping rates low.

# Cost of Service Methods

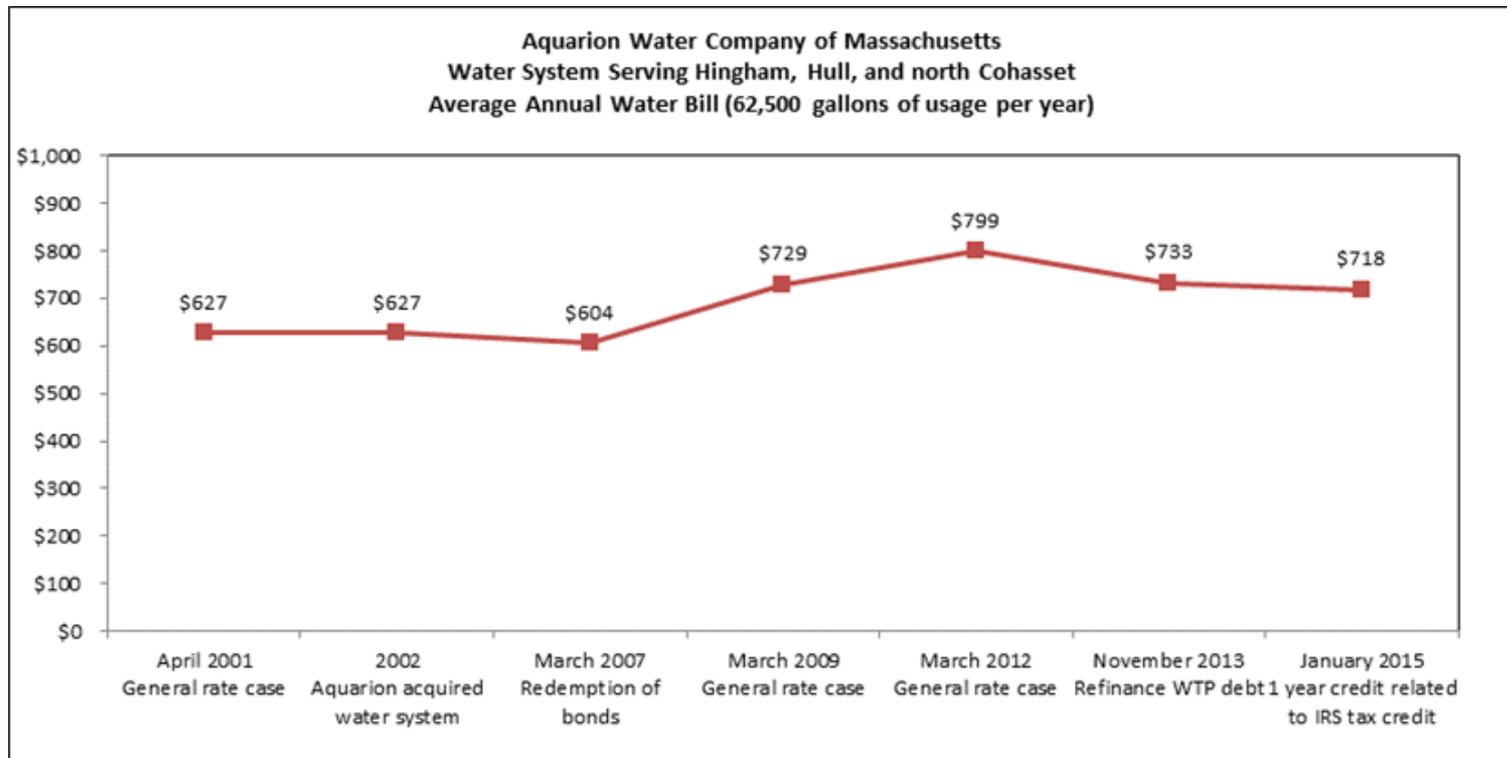
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- The cost of providing service is passed on to customers through various rates or tariffs.
- A cost of service ("COS") study is used periodically to ensure that the cost of providing service is recovered from the right classes of customer.
- The cost of service study examines the various cost of service components and functionalizes those costs in certain groups:
  - Base costs are those that tend to vary according to average use.
  - Extra Capacity Maximum Day and Extra Capacity Peak Hour are costs that tend to vary according to the maximum day or peak hour demands on the system.
  - Customer costs for such items as billing, accounting and collecting (also referred to as commercial costs) do not vary with either average or maximum demands but instead according to the number of bills. Similarly, customer costs for meters and services tend to vary according to the equivalent number of such units.
  - Hydrant costs consist of the investment in and maintenance of public hydrants.
- Functionalized costs are then allocated to the various customer classes based on accepted allocation methods.
- The detailed cost of service study's goal is to endure that there is no subsidization among customer classes.



# Rate History

- Aquarion continues to balance the need for investment with the impact on rates.
- Aquarion rates have increased on average by 1.1% per year from 2002 to 2016.
- The Tighe & Bond survey of 252 water systems in MA showed that the average system increase from 2000 to 2014 was 4.9%.



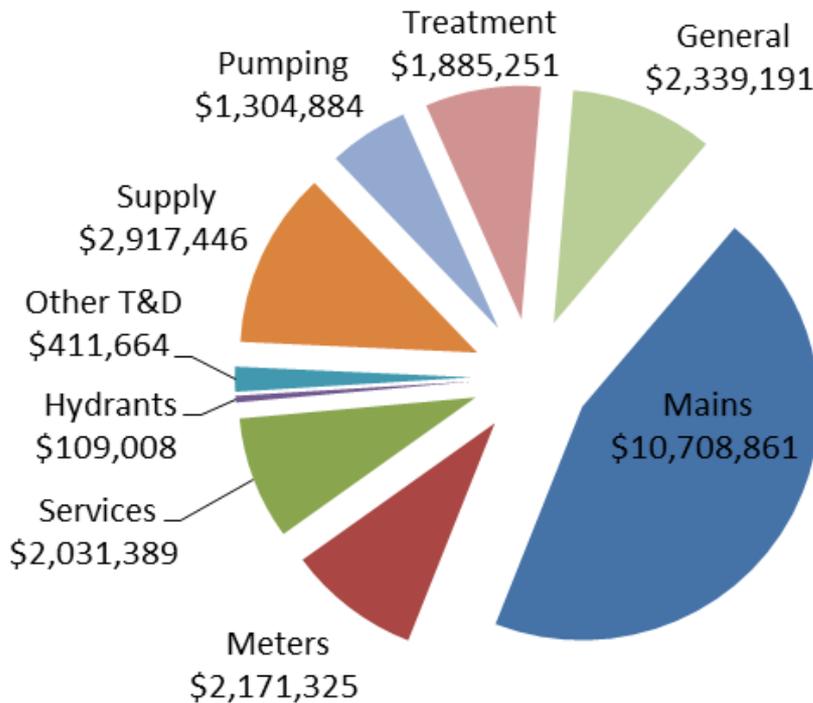
# Aquarion Water System

- 250 Acres of Land
- 12 Wells (9 Active)
- Accord Pond
- Accord Brook
- Water Treatment Plant
- 192 Miles of Pipes
- Two Storage Tanks
  - Accord Pond
  - Turkey Hill



# Investments and Assets

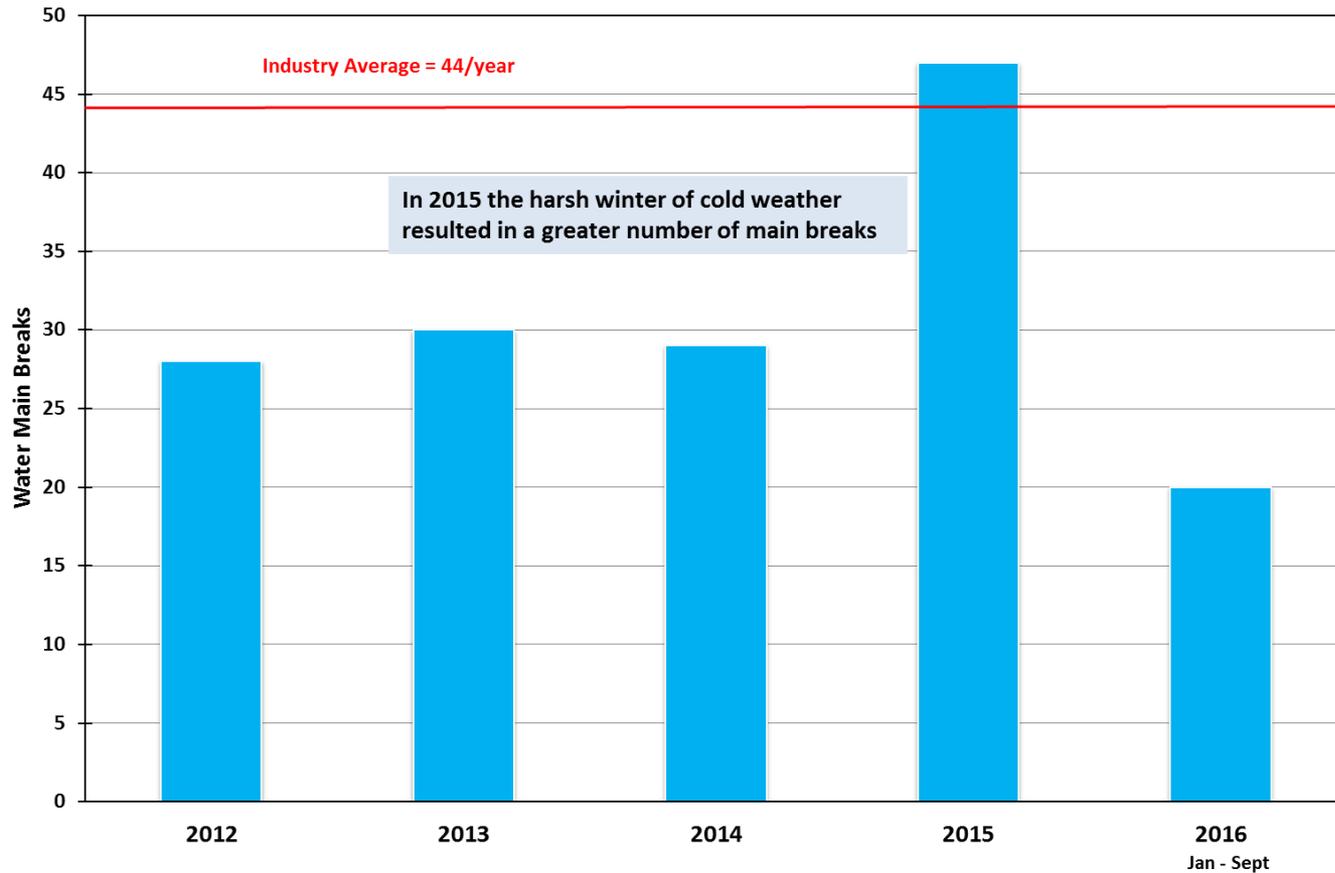
## Capital Investments Since 2002



Water Mains:	192 Miles (transmission & distribution)
Valves:	3,075
Fire Hydrants:	912/415
Water Meters:	12,911
Customer Services:	12,960
Storage Tanks:	2 (2.75 million gallons)
Supply Facilities	12 wells, 2 surface water sources
Pumping Facilities:	16 supply, 2 finished, 2 distribution
Treatment Facilities:	2 (H/H WTP and Downing Street)

# Annual Water Main Breaks

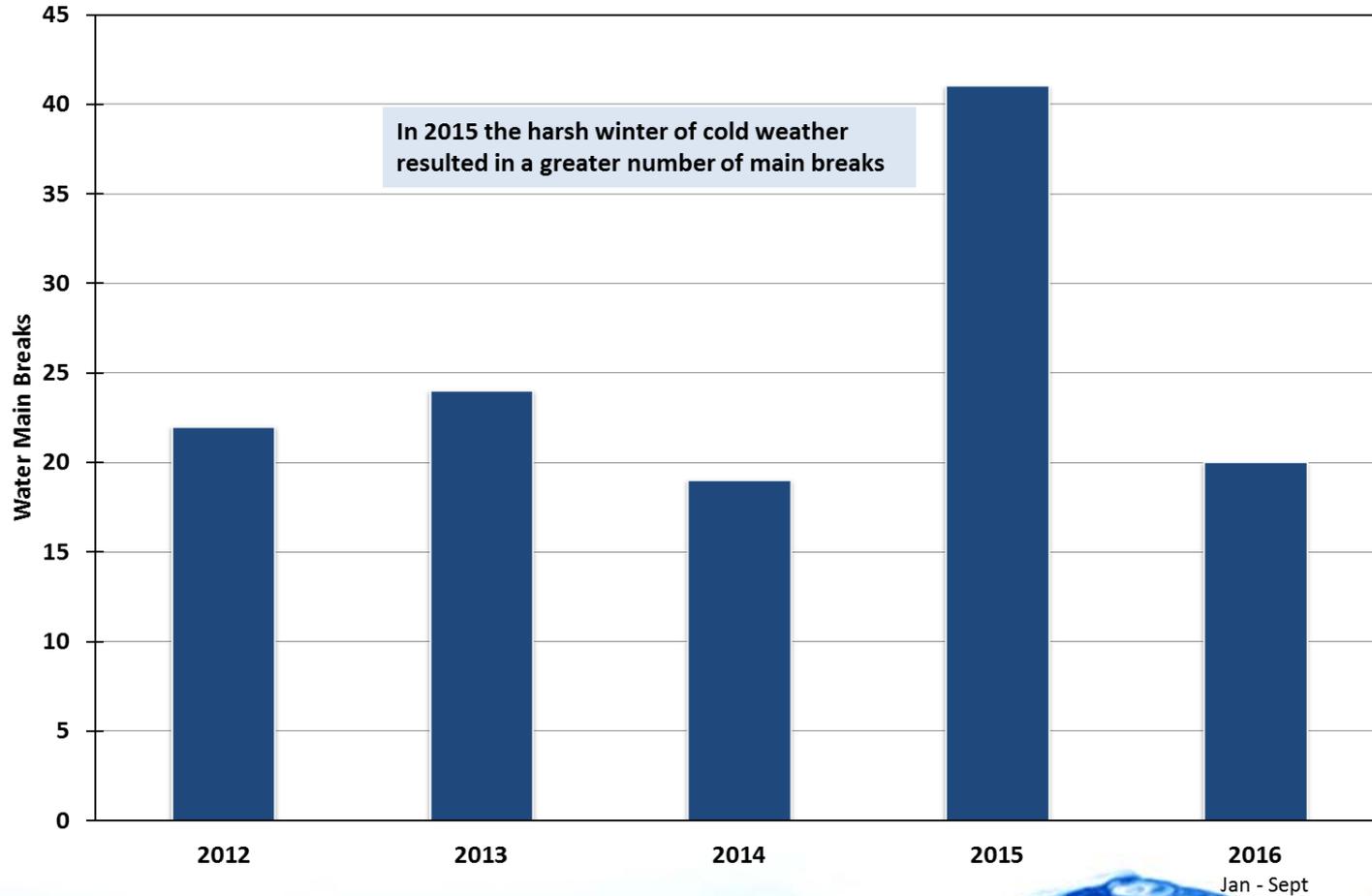
Hingham / Hull / N. Cohasset  
Number of Main Breaks Per Year



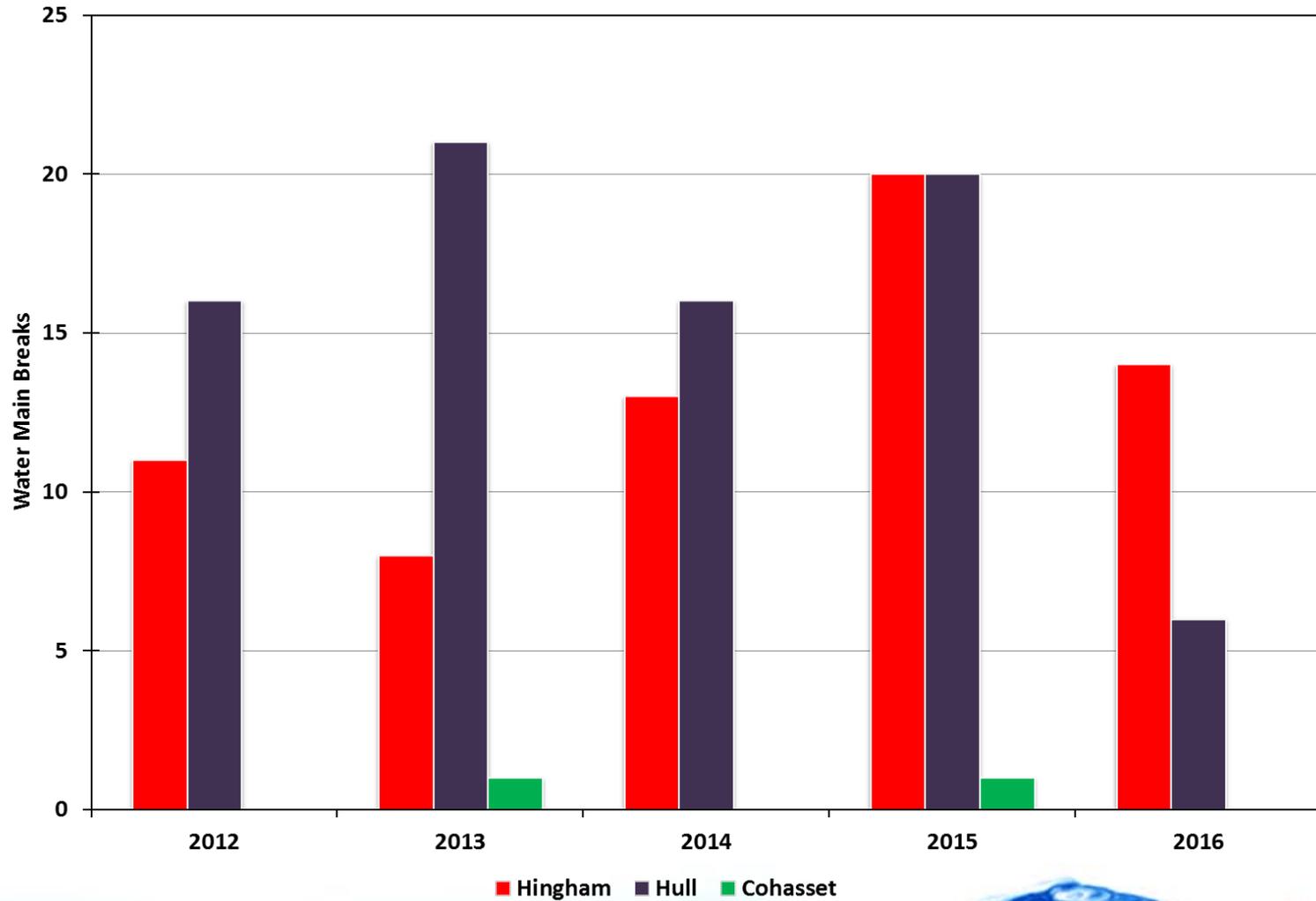
Industry average based on 0.23 per mile (AWWA, 2007)

# Water Main Breaks: Through September

Hingham / Hull / N. Cohasset  
Number of Main Breaks Through September

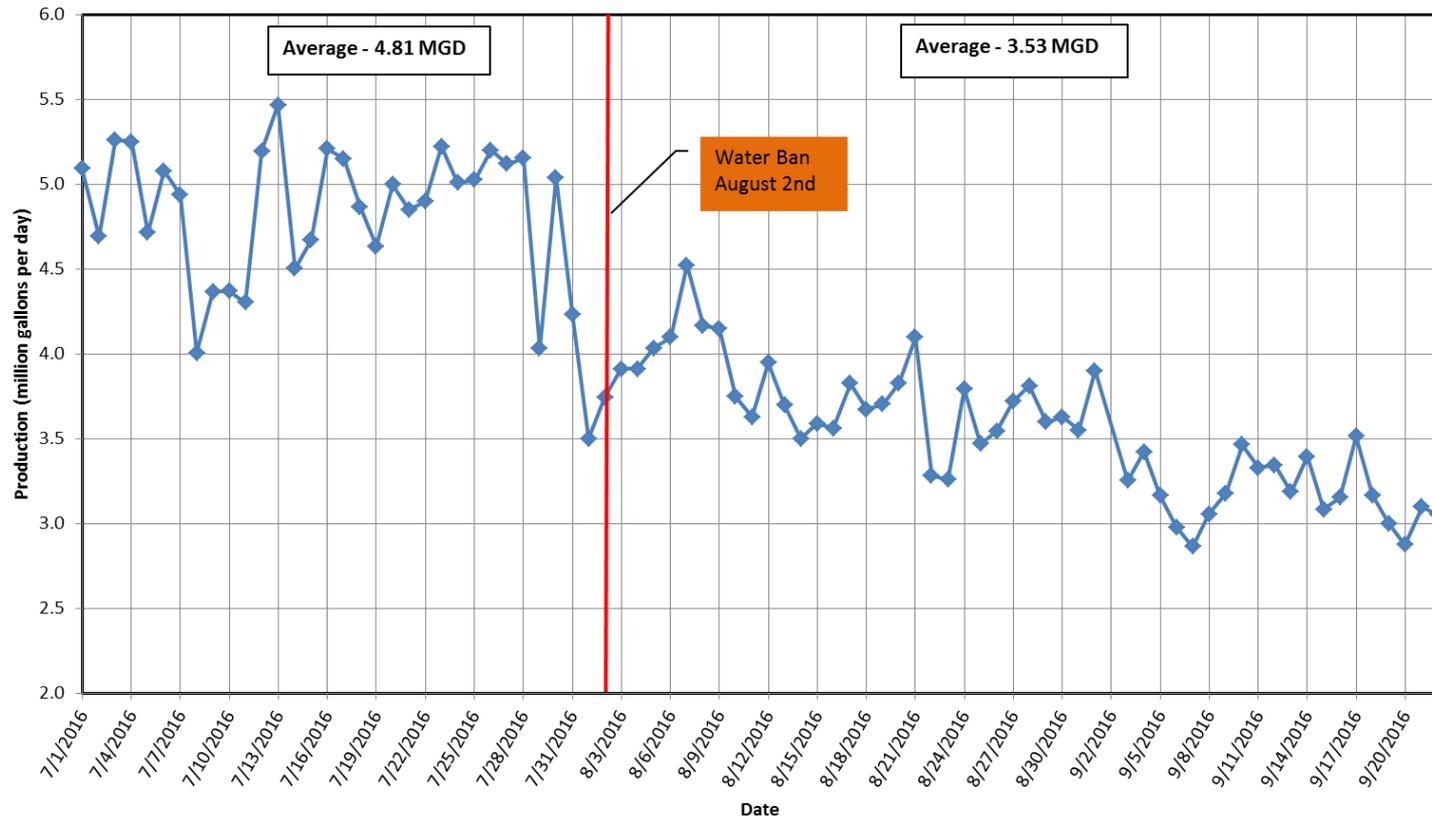


# Water Main Breaks By Town

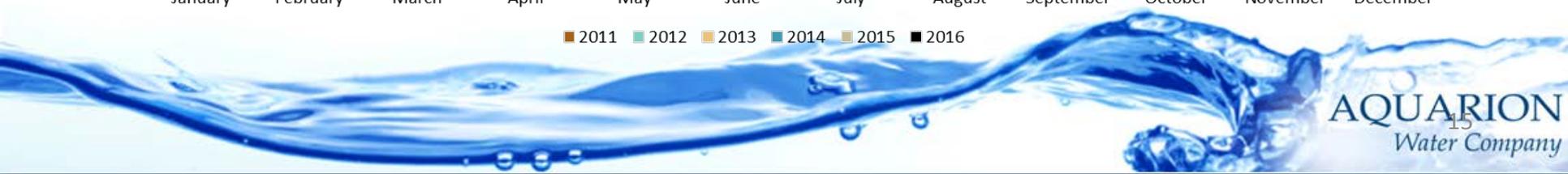
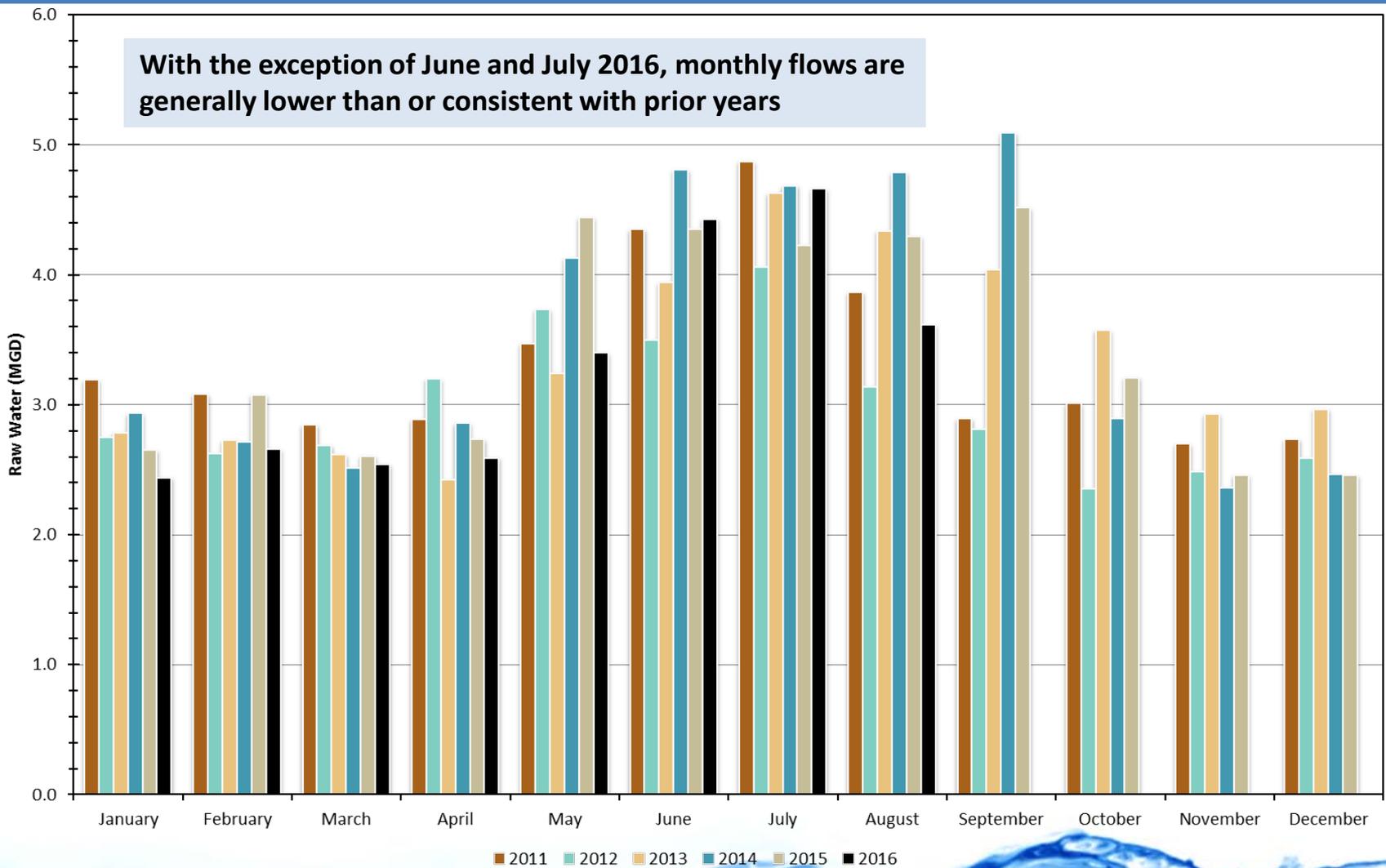


# Water Production Trend: Water Ban

Aquarion Water Company  
Daily Water Production  
Hingham/Hull/N. Cohasset  
July - September 2016



# Monthly Raw Water Flows



# Cumulative Annual Monthly Flow

