



Massachusetts Water Resources Authority

*Tenth Anniversary of the  
Shaft 5 Pipe Break*

*May 1, 2010: A Photo Timeline*



May 1, 2010 Was a Beautiful Saturday Morning in Weston...







# Until a Coupling on the MetroWest Tunnel at Shaft 5 Let Go







# The Site Quickly Flooded and Water Cascaded into the Charles River







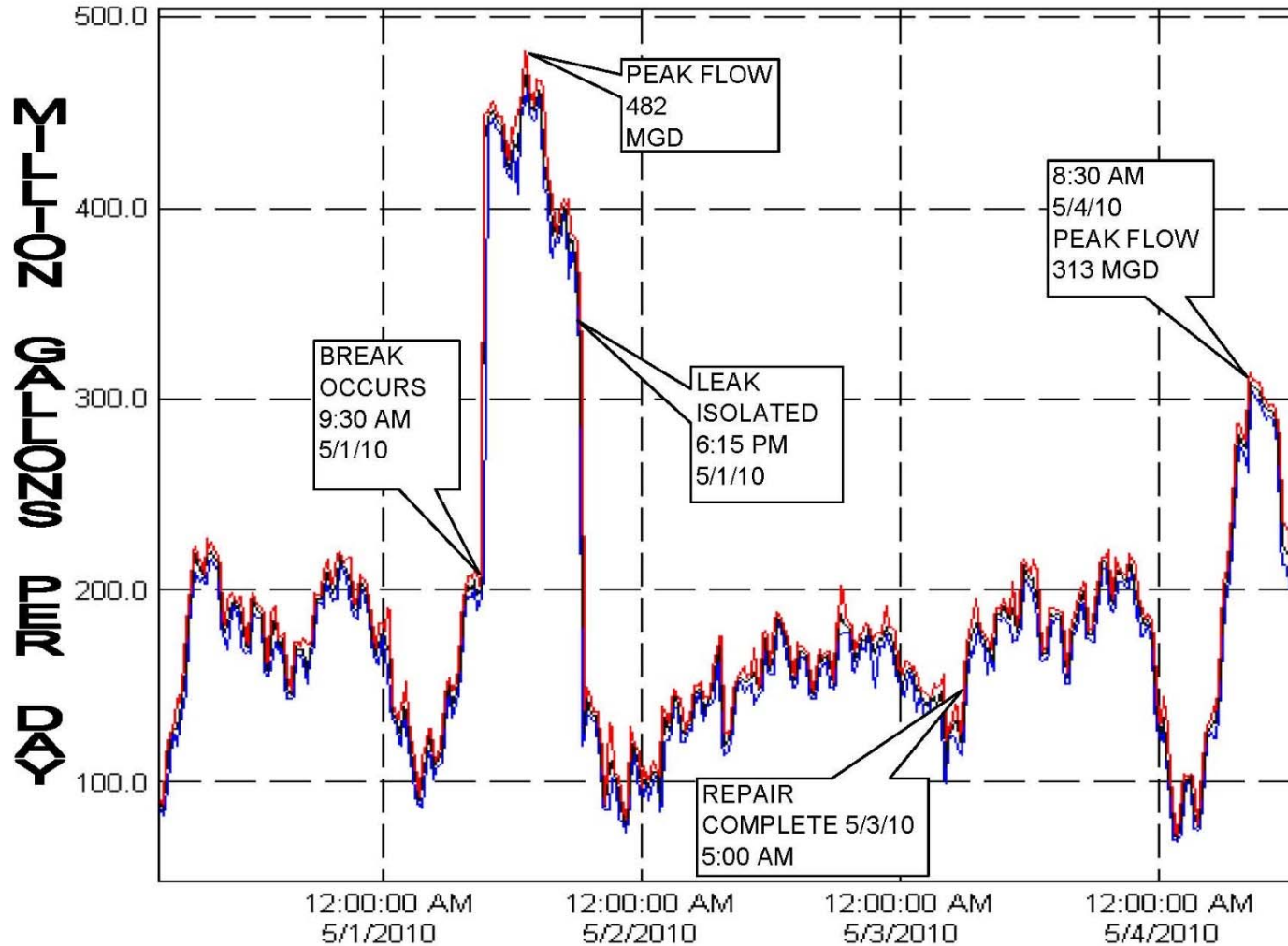
# The Charles River Suddenly Had Rapids





# System Flows During the Incident

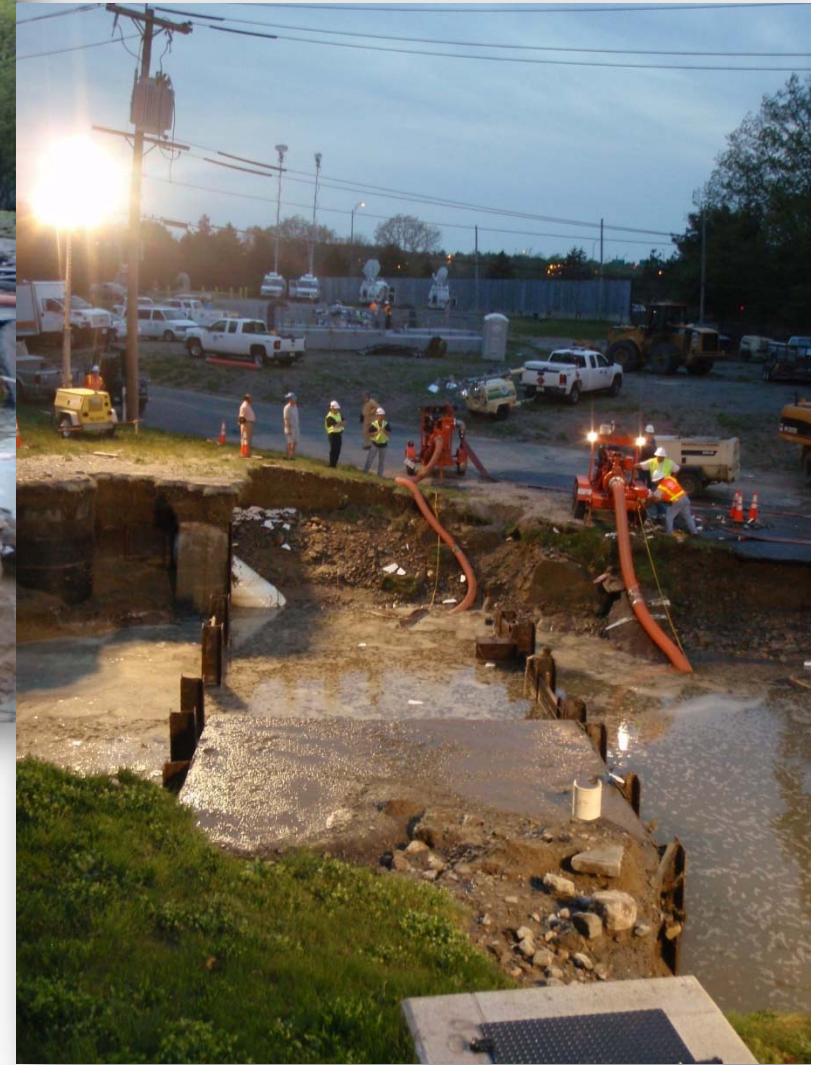
## MGD vs. Time







# Dewatering Continued Through the Night







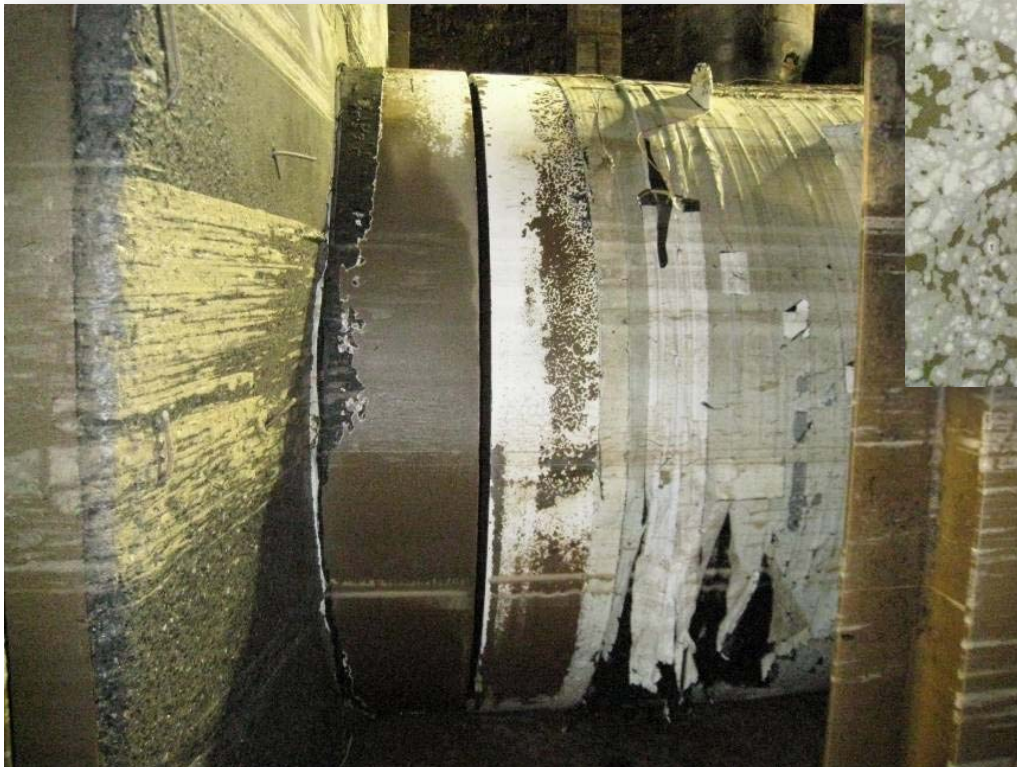
## Regular Briefings Were Held at the Site







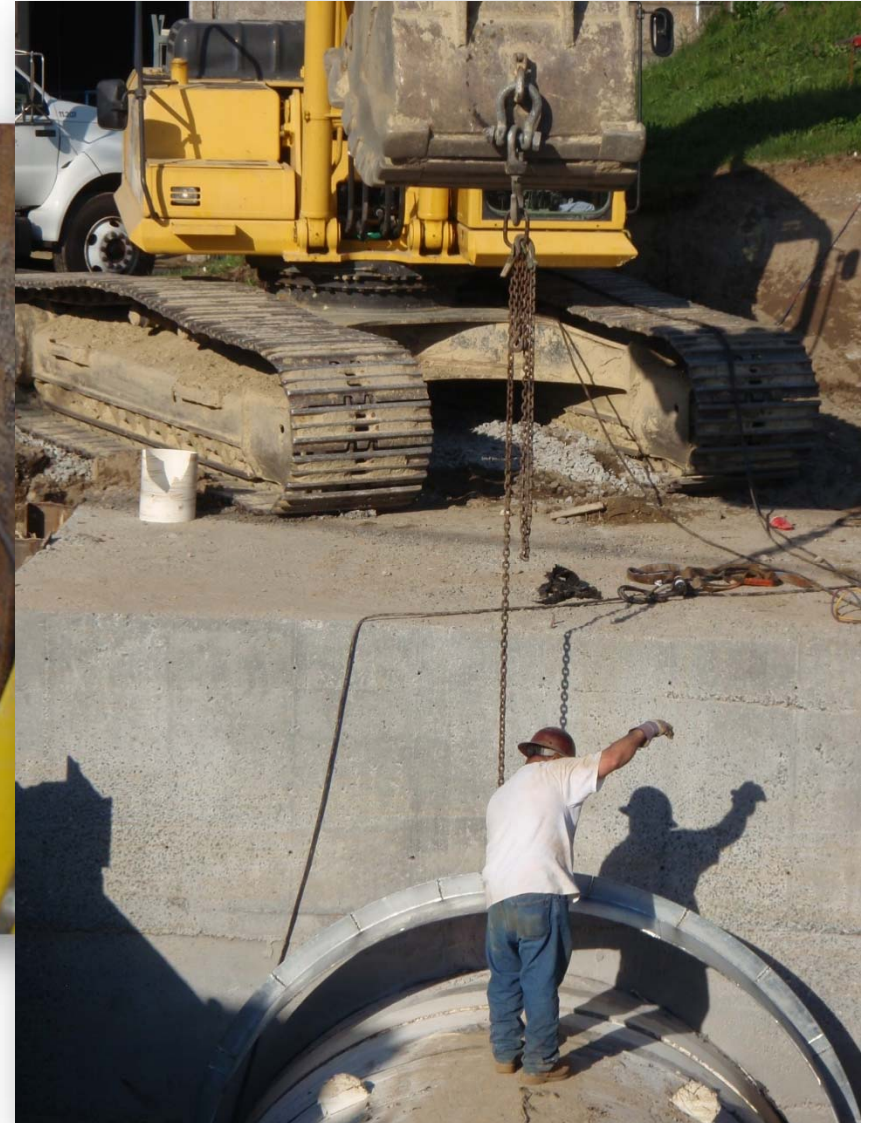
## Once the Water was Shut Off, We Could See That the Coupling was Gone







# Crews Raced to Repair the Coupling and Get the Pipe Back On-line







## Pipe Repair Timeline

EVENT	DATE/TIME
Leak Detected on Security Cameras	May 1/10:00 am
Total Line Shut Down	May 1/6:40 pm
Dewatering of Flooded Area Complete	May 1/10:00 pm
Pipe and Repair Collar Preparation for welding begins	May 1/10:00 pm
Pipe and Collar Preparation Completed	May 2/9:15 am
Welding of Collar on Bottom Half of Pipe Begins	May 2/10:00 am
Welding of Collar on Bottom Half of Pipe Complete	May 2/10:00 pm
Chlorine Addition Complete	May 2/11:00 pm
Welding of Collar on Top Half of Pipe Begins	May 2/11:00 pm
Concrete Cradle Pour Begins	May 2/Midnight
Concrete Cradle Pour Complete	May 3/12:45 am
Welding of Collar on Top Half of Pipe Complete	May 3/ 4:00 am
Filling of Pipe Begins	May 3/ 4:00 am
Filling of Pipe Complete	May 3/ 4:30 am
Pipe Pressure Test Begins	May 3/ 4:30 am
Pipe Placed into Service	May 3/ 5:30 am
Flow Fully Restored	May 3/ 6:15 am



## The Chelsea EOC Was Open 24/7







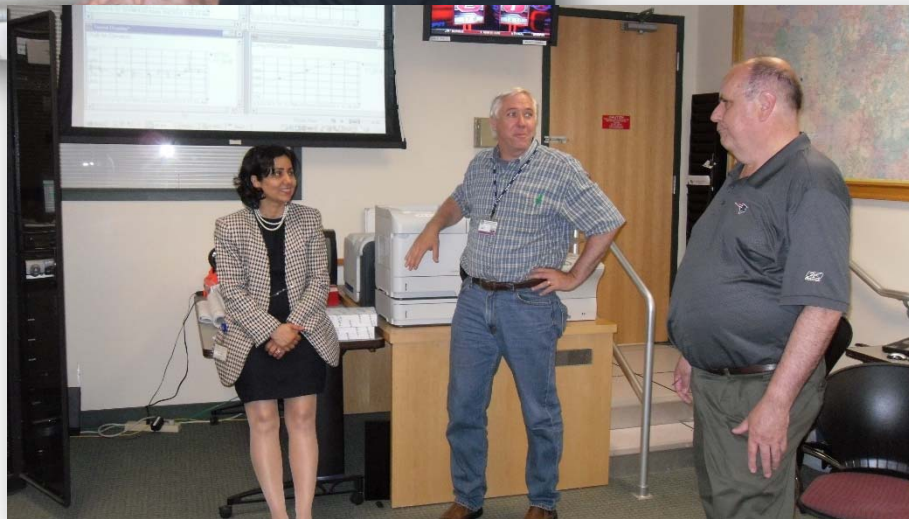
## If You've Ever Wondered Why That Valve is Mounted at Chelsea

- Although it was over 100 years old, it saved the day (with 4,286 turns)





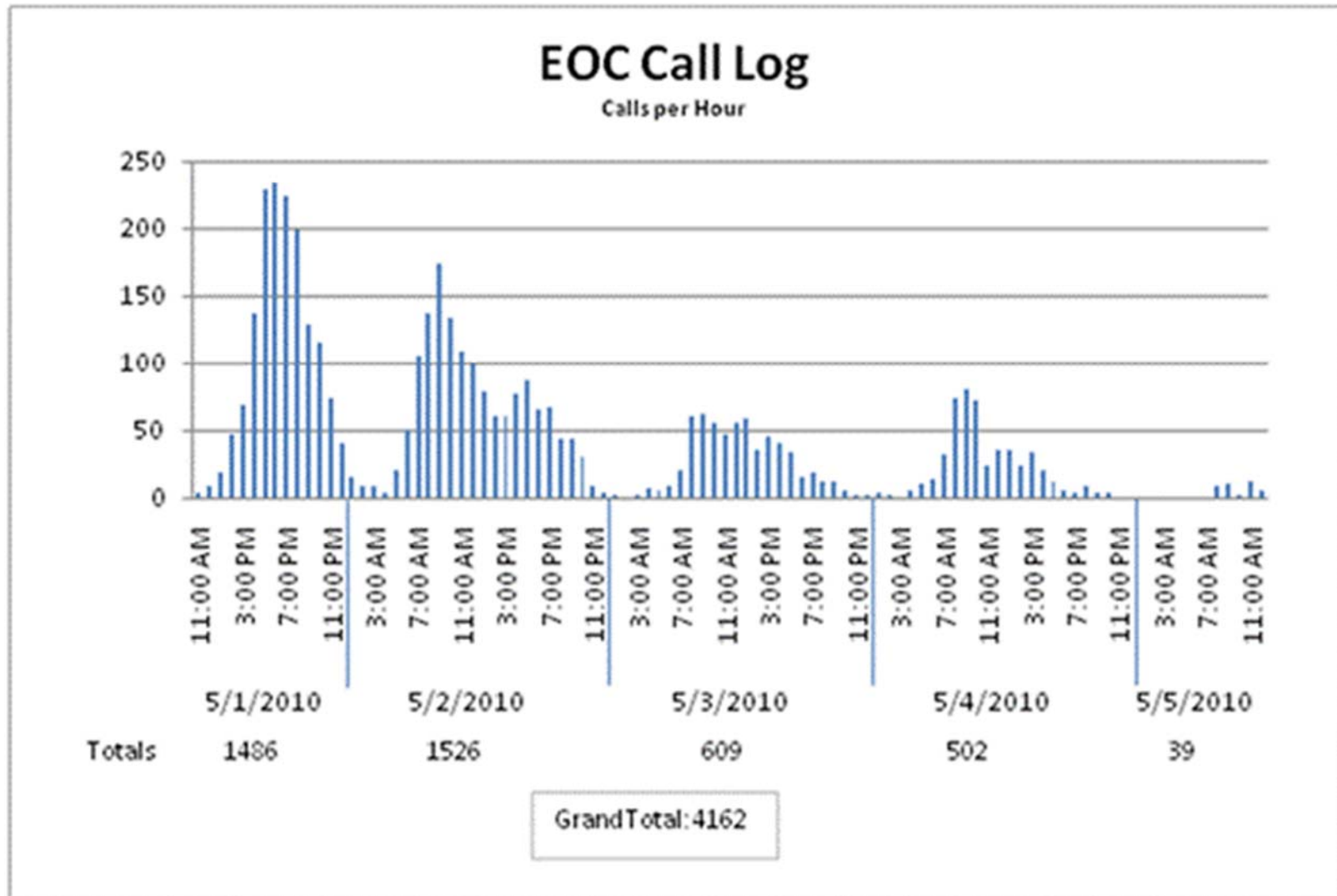
## Staff From Across the Agency Just Showed up in Chelsea to Pitch In





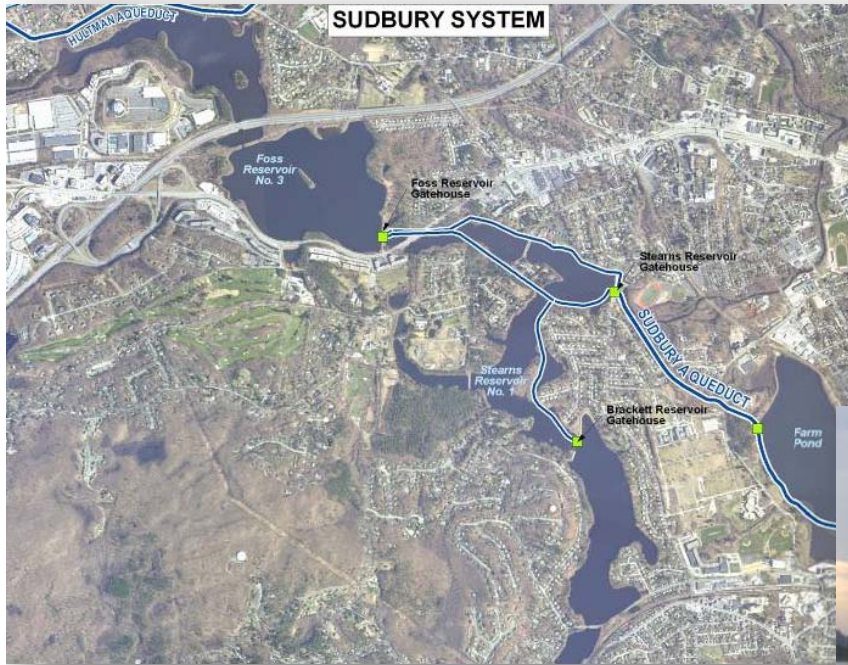


# EOC Call Volume





# Sudbury Aqueduct and Chestnut Hill Reservoir Activated for Emergency Water Supply – Requiring Boil Order







## Spot Pond Was Made Ready Just in Case, But Not Needed

- Staffed, all valving reset and chlorine delivered May 1
- Could have provided another 30-40 million gallons per day





# Boil Water Order Was Issued for the Entire Service Area

HOME TODAY'S GLOBE NEWS BUSINESS SPORTS LIFESTYLE A&E THINGS TO DO T  
Local National World Politics Business Education Health Science Green Obituaries

BOSTON & BEYOND. NOW.  
**METRODESK**

< Back to front page Text size - +

## 'Boil-water' order issued for nearly 2 million in Mass.

May 1, 2010 09:45 PM E-mail | Link | Comments (165)

DAVID SCHUTZ/BOSTON GLOBE STAFF

A graphic showing the location of the break.

By Martin Finucane, Beth Daley, and John M. Guilfoil, Globe Staff, and Sean Teehan and Caitlin Castello, Globe Correspondents

A major pipe bringing water to the Boston area has sprung a "catastrophic" leak and is dumping eight million gallons of water per hour into the Charles River. Governor Deval Patrick declared a state of emergency and issued a "boil-water" order for [Boston and dozens of other communities](#).

"The water is not suitable for drinking. ... All residents in impacted communities should boil drinking water before consuming it," he said at a news conference this afternoon.





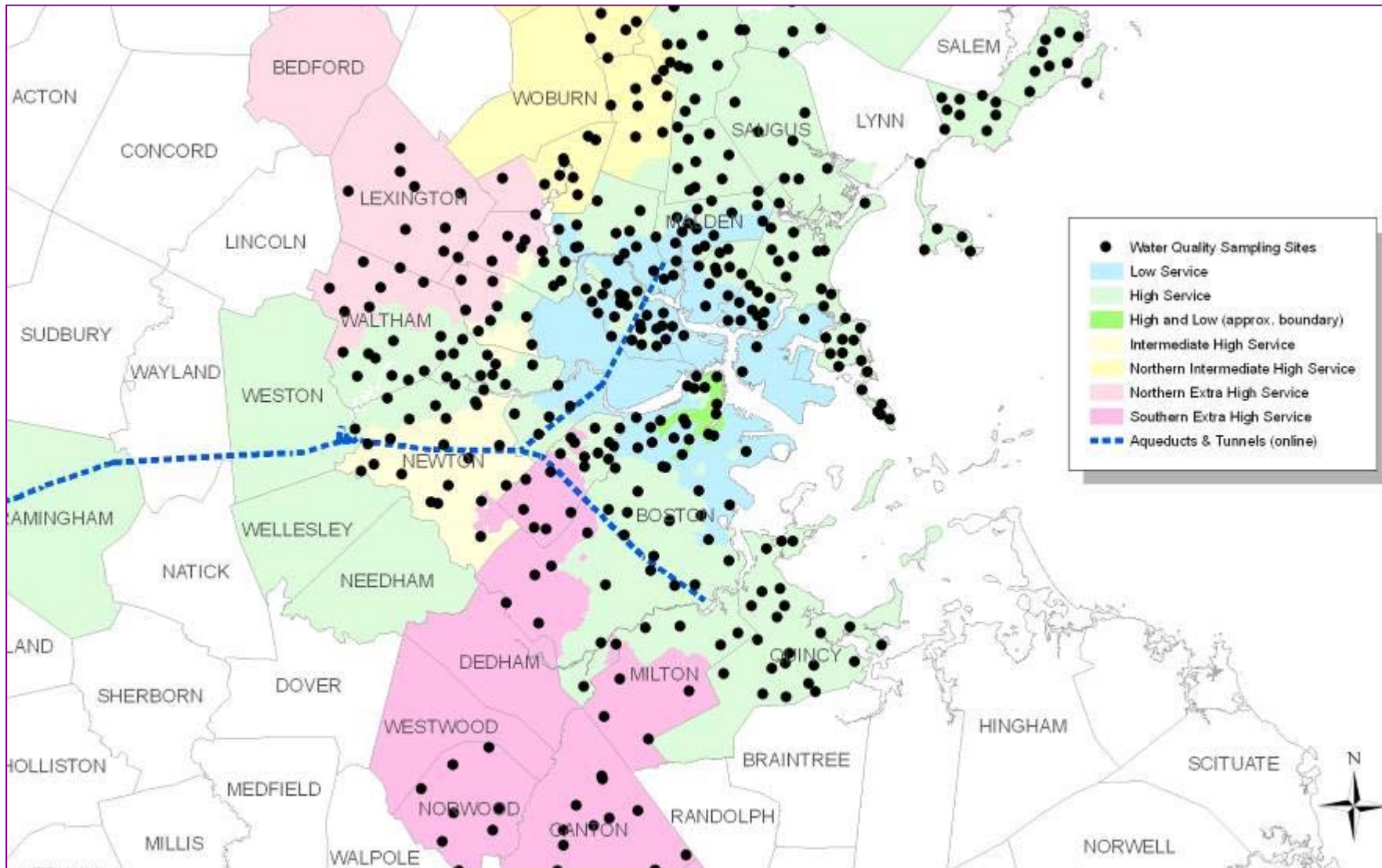


## The Lab Was Also Abuzz Throughout the Incident





# Samples Were Collected Throughout the Service Area





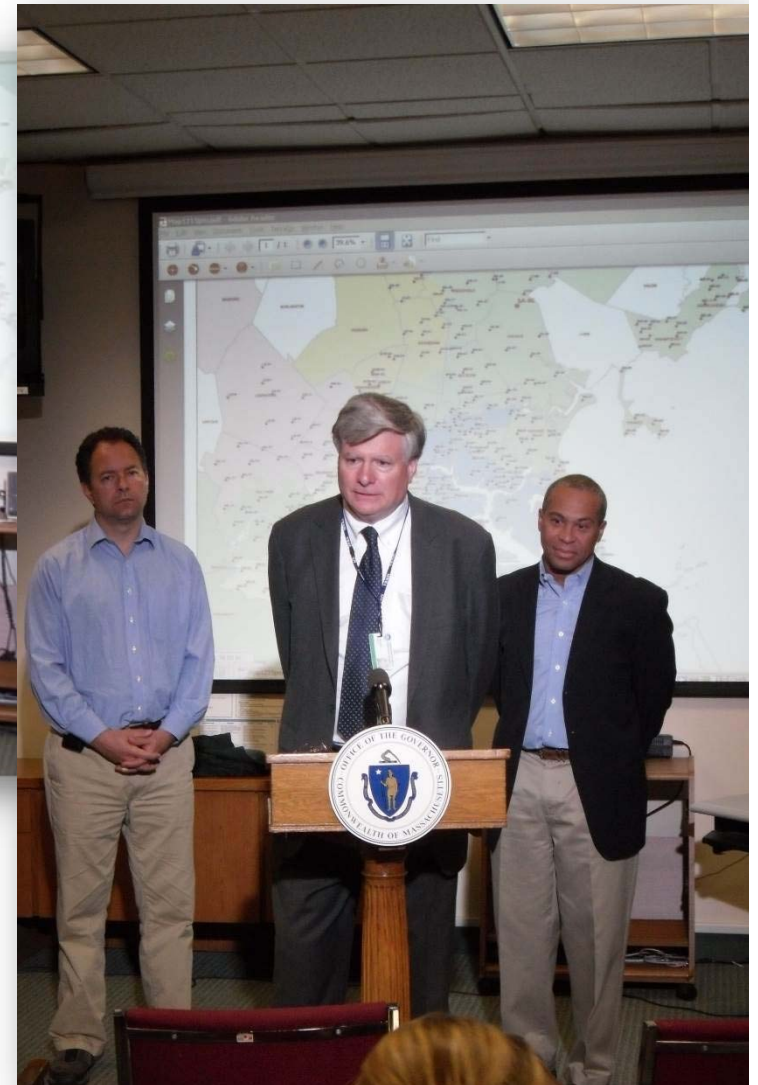


# The Press Camped Out in Chelsea, Too





## Lifting the Boil Order was a Media Event





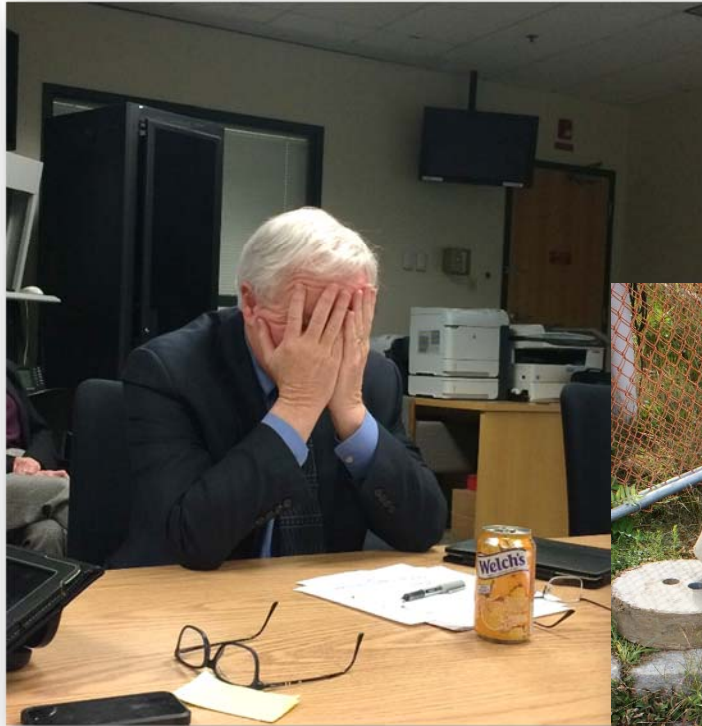


## Some Became Media Stars...





# ...Others Were Just Very Tired







## The Search for the Coupling Went On (and On)







## Until Finally!

- On July 15, the coupling was found under the pipe







# An Expert Panel Was Charged With Finding the Cause of the Break







# MWRA Received Positive Press for Emergency Planning and Leadership

## The Boston Globe

Founded 1872

CHRISTOPHER M. MAYER *Publisher*

MARTIN BARON *Editor* PETER S. CANELLOS *Editor, Editorial Page*

CALEB SOLOMON *Managing Editor*

### Water emergency plan works, building confidence for future

**A** BREAK in a major water line Saturday had the potential to turn into a debacle for much of the Boston area. Yet by yesterday afternoon, word of the problem had spread smoothly, the boil-water order was being obeyed, and authorities were close to restoring clean water to 2 million customers. The crisis was mitigated, if not averted.

The Massachusetts Water Resources Authority's rapid response should inspire confidence for the future. The pipe itself was repaired in less than 48 hours, all the more impressive because the breach occurred on a weekend. The authority also quickly reactivated an aqueduct that hadn't been in service for decades, assuring sufficient water pressure for emergencies and tap water for homes, provided it was boiled.

This wasn't just good luck. The rapid response, including efforts to inform the public of the emergency, was an outgrowth of a handful of post-9/11 emergency training sessions and tabletop exercises conducted by the water authority along with state and federal officials, as recently as last fall.

"We've trained this to death, and it paid off," said Fred Laskey, executive director of the water authority.

That said, the MWRA still owes the public

a thorough explanation and investigation into why this happened. The repair involved welding plate steel over the broken pipes. That sounds like a lot stronger way to make a connection than the original clamping mechanism, raising the question of why it wasn't done that way at the beginning.

Unfortunately, it may be a long time before MWRA and state officials get to the bottom of the failure. A flaw in engineering or construction is a possible cause. Recent changes in the groundwater — the direct or indirect consequences of record spring storms — may also have played a role in the breach.

Key evidence, including a steel component of the failed coupling, washed away as nearly 8 million gallons of water an hour burst from the broken pipe Saturday into the Charles River, according to Laskey. So much sediment and debris resulted that about half the river was filled in near the vicinity of the breach.

"So much stuff washed away," says Laskey. "We may never know."

For its own good and for the public's, the authority must learn what it can from this incident. But citizens can take comfort in the agency's ability to keep a massive break in the drinking water system from spiraling into a much larger problem.

## The Boston Globe

Founded 1872

CHRISTOPHER M. MAYER *Publisher*

MARTIN BARON *Editor* PETER S. CANELLOS *Editor, Editorial Page*

CALEB SOLOMON *Managing Editor*

The impressive response to last weekend's water main rupture in Weston showed government at its best. But anyone who knows Fred Laskey, the Everett-born, Medford-raised, UMass Boston-educated executive director of the Massachusetts Water Resources Authority, knows that he would never take the credit himself.



The break, which would send 265 million gallons of water gushing out over the next two days, occurred Saturday morning. After around-the-clock efforts, it was fixed by dawn Monday — and by 3 a.m. on Tuesday, Governor Patrick could lift his boil-water directive.

In an interview, the self-effacing Laskey praised Patrick and Mayor Thomas Menino of Boston for their leadership. He also praised his own team — people whom he describes as "top-flight professionals." Yet it's Laskey who most deserves the public's gratitude, both for the quietly effective way he has led the water-and-sewer agency since June 2001 and for his leadership in this situation.

"What stands out about Fred," says Ian Bowles, who as secretary of energy and environmental affairs chairs the MWRA board, "is his incredible hard work, his being present around the clock, the depth of his knowledge about the system itself, and the high degree of credibility he has with all the employees."

Dedicated, determined, and capable leaders shine most in emergencies. Laskey should take a bow.