The Importance of Communication with Local Officials Prior to an Emergency

Bristol Water Department
Robert J. Longo, Superintendent

Bristol Water Department

- Medium Size Water System
- Population 62,000
- Average Day Demand – 5.6 MG
- 18,000 Service Connections
- 380 Miles of Water Main
- 36 Employees
- Enterprise Fund of City of Bristol
- $7 million Annual Budget

Major Operational Issues since 2005

- E-Coli Outbreak – Sept 2005
- Lead and Copper Exceedance – Sept 2007
- Hurricane Irene Flooding – Sept 2011

E-Coli Violation

- E-Coli was found in samples in Northwest section of City
- Tier I Violation
- Major Breakdown in Communication between Water Department, City Officials and Bristol/Burlington Health District staff
- Board of Water Commissioners not fully educated on severity of Tier I Violation
- System Wide Boil Order

Communication Issues

- Water Department and Local Health Department never met prior to an emergency to discuss how any potential water quality issues would be handled
- Water department staff did not communicate with local officials until after repeat samples tested positive
- Delayed reporting and response to DPH
- Word of E-Coli leaked out to public before Public Notification was done
- TV and Radio reported on situation prior to most Public Officials learning of situation
- Created adversarial relationship between Mayor, Local Health Director and Water Department

Consent Order Issued by DPH

- Full survey of system identified over 20 major operational issues
- Over $4 million spent correcting deficiencies
- 2 years to complete
- DPH opened lines of communication and assisted Bristol Water in repairing deficiencies
- Learning experience for all parties involved

Strained Relations due to Poor Communication

- Adversarial relationship continued between Mayor, Water Superintendent and Health Director
- Local articles continued for months following boil order questioning the management of the Water Department
- Customer Confidence declined substantially and has taken years to rebuild
- Motion made at City Council to have a Management Study of the Water Department conducted 9 months after Boil Order issued– Motion Failed 4-3

Lead and Copper Exceedance

- Elevated lead levels throughout system
- Meeting with Mayor and Health Director
- Tier II Violation
- Developed Public Notification as collaborated effort
- Conference call with DPH and Health Director
- Continuous contact with DPH
- Time to brief all City Officials before Public Notification
- Determined all elevated levels were due to new faucets
- All subsequent required samples results below Action Level

Measures taken to Improve Communications after Lead and Copper Exceedance

- Bristol Water Department staff meet with local health district staff on regular occurrences
- All City Council members provided a tour of water system upon election
- Water department employees educated on the importance of water quality samples and signs of potential problems
- All water department management introduced to City leaders during orientation
- Increased communication with DPH staff
- Board of Water Commissioners routinely educated on day to day operations

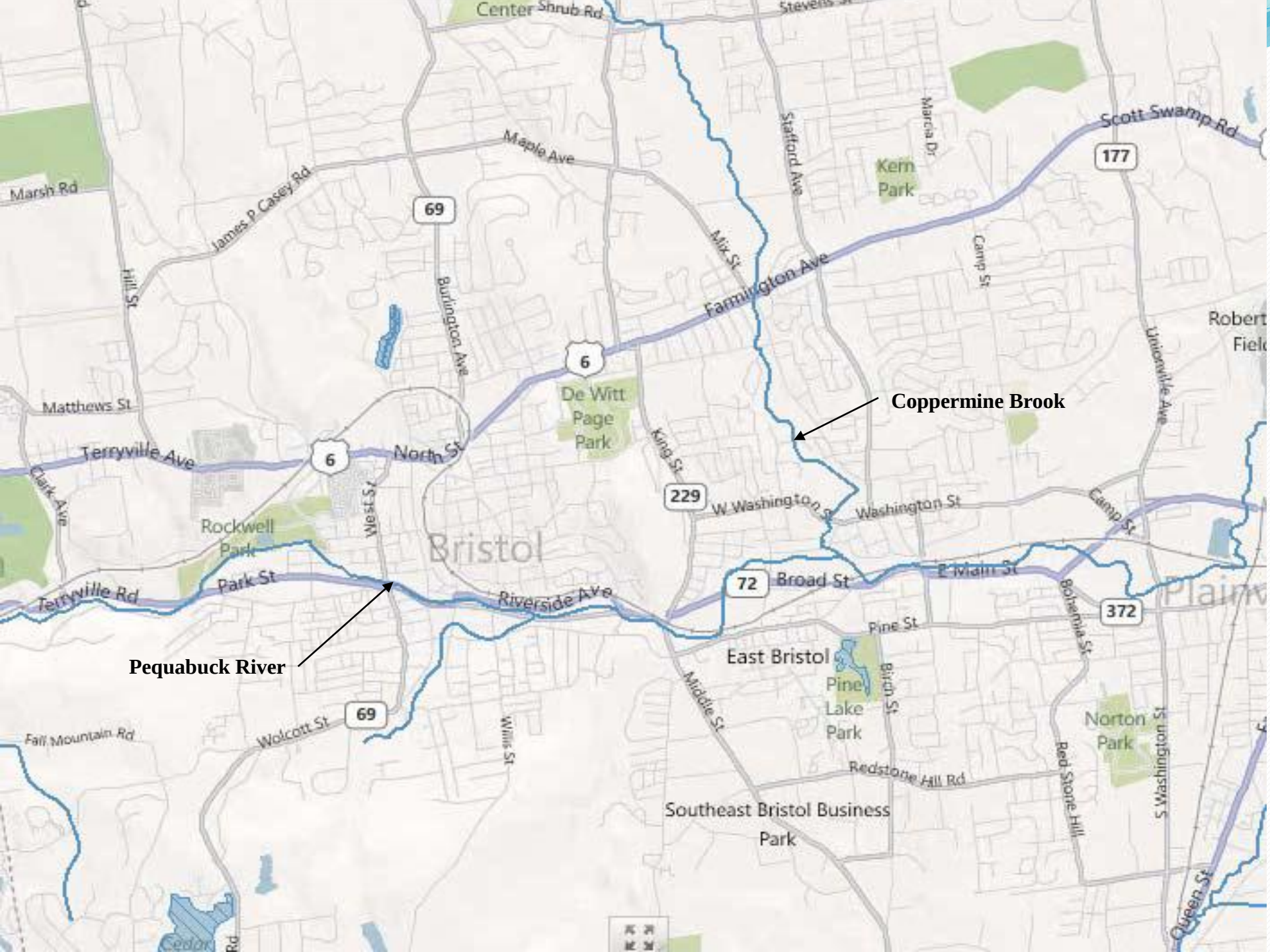
Hurricane Irene

Preparation for Storm

- Notified Mayor, City Council and Health Director 8 Days prior to Storm that preparations were being made
- Meetings with managers twice each day before landfall
- Worked with City to get press releases out prior to storm of preparations being made
- No press release was to be sent without ALL parties reviewing it prior
- Daily Progress Meetings with Mayor and Health Director
- Team Effort
- Planned for Major Power Outages and Minor Flooding

Landfall

- Reservoir 5 Harwinton – 11.5 Inches of Rain
- Reservoir 1 Bristol – 7.5 Inches of Rain
- Bristol – Moderate Winds, Minor Power Outages, MAJOR flooding of Coppermine Brook and Pequabuck River
- By 1:00 PM City Split into 3 sections


Coppermine Brook
Pequabuck River
Bristol
Center Shrub Rd
Maple Ave
Marsh Rd
James P Casey Rd
Hill St
69
Burlington Ave
Mix St
Stafford Ave
Marcia Dr
Kern Park
Scott Swamp Rd
177
Farmington Ave
Camp St
Unionville Ave
6
De Witt Page Park
Matthews St
Terryville Ave
North St
Clark Ave
Rockwell Park
West St
King St
229
W Washington St
Washington St
Broad St
72
E Main St
Park St
Terryville Rd
Riverside Ave
Pine St
East Bristol
Pine Lake Park
Birch St
Bohemia St
372
Middle St
Willis St
Wolcott St
Fall Mountain Rd
Redstone Hill Rd
Red Stone Hill
Norton Park
Southeast Bristol Business Park
Queen St

Memorial Boulevard



Memorial Boulevard
After Storm







Route 72 Washouts



Coppermine Brook



Coppermine Brook
After Storm



City Impact After Storm

- Building collapses into river
- Canoe capsizes in river leaving 1 person dead
- Major debris and sediment accumulation on City roads

Bristol Water Department Impact After Storm

- Erosion at Emergency Spillway at Reservoir in Plymouth
- Farrell Avenue

Potential Communication Issues

- Local TV and Radio reported a “Dam Failure” in Plymouth
- Local Officials in Plymouth heard false report
- Governors office called DPH looking for information
- DPH called Water Department and false report immediately corrected

Farrell Avenue

- West End of City behind Rockwell Park
- 4 Houses on street
- 16” Cast Iron Transmission Main from Surface Water Plant to City
- Runoff from flooding causes road to wash out
- Hole approximately 80 feet wide X 80 feet deep and 100 feet long created









Communication with Local Authorities

- Mayor, Director of Health and DPH immediately notified of potential hazard
- Conference Call with DPH and Mayor assured City Officials that DPH would assist in any way possible
- Mayor and City Officials understood potential danger of main failure and impact on City
- DPH inspected site
- DPH contacted DEEP on behalf of Water Department to increase diversion permit with City of New Britain from 500,00 gal/day to unlimited amount
- Governor's Office and State Senator’s briefed on potential situation

- DPH offered to keep State Laboratory open afterhours so coliform samples on temporary by-pass could be immediately analyzed
- DPH collected samples and brought to lab

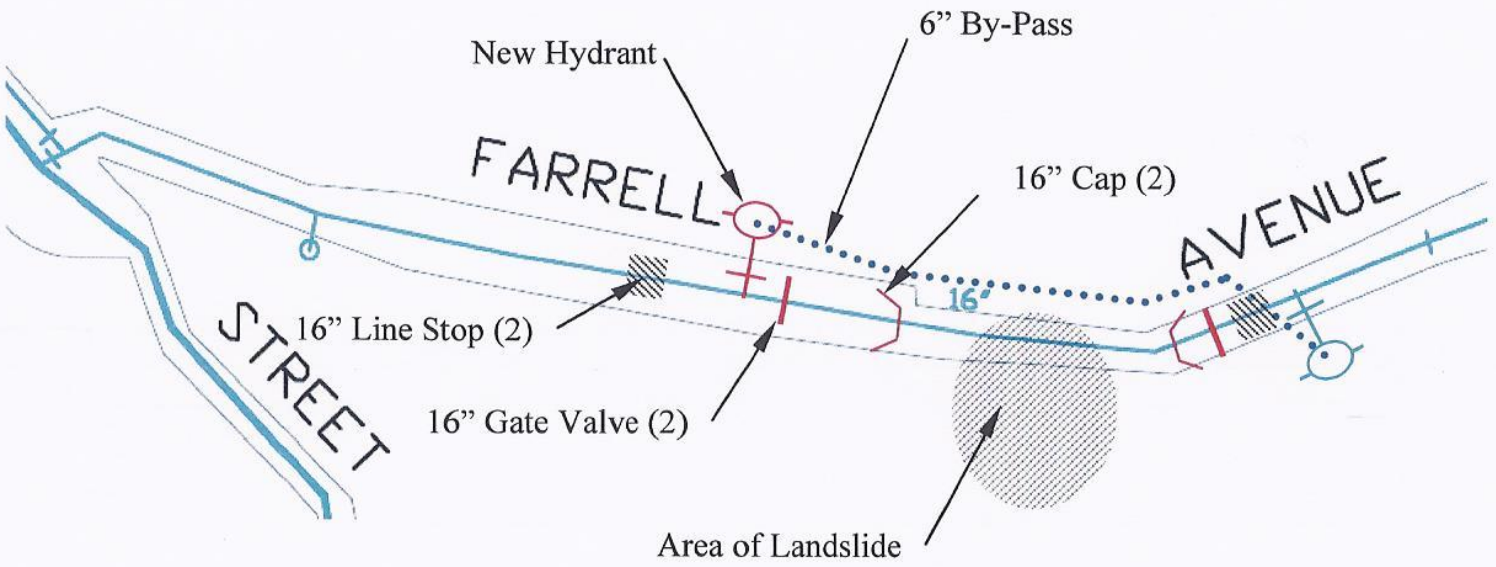
Farrell Avenue Water Main

- Installed 1938
- Lead Joint Cast Iron
- 1 of 3 Transmission Mains from 8 MGD Surface Water Plant
- Old abandoned water service broken off and leaking
- Valves would not completely hold
- 3 Joints exposed and starting to drip

Temporary Repair

- Installed 2 – 16” Line Stops on each side of the hole approximately 60 feet away
- Installed 2 – New 16” Gate Valves
- Installed New Hydrant
- Cut and Capped Existing 16” CI between gate valves and hole
- Bristol Water Crews and Contractors worked for 4 days to cap off water main

Temporary Repair



Repair Issues

- Access to site limited
- Public and Media Interest
- Time to make repair
- Available Materials
- System Hydralics
- 1.4 MDG Well Off-Line due to Generator Failure
- Tank Levels Dropping
- Bacteria Test time table
- DPH Sampled By-Pass and had State Laboratory on standby to accept samples

Long Term Issues

- 20% Reduction in Available Fire Flow during Peak Demand
- Constant Monitoring of Tank Levels and Adjustment to System Controls to maintain levels
- Freezing of Temporary By-Pass

Unanticipated Issue

- Tree fell during Winter Storm Alfred onto By-Pass, breaking pipe and creating washout



Permanent Repair

- Project Designed by Engineering Department
- Drainage Installed, hole backfilled in lifts and road repaved
- Restrained Joint Ductile Iron installed
- All system controls set back to prior to storm

Communication Accomplishments

- Communication Improvements helped reduce controversy and control issues during situation
- Relationships with all parties stronger
- Importance of providing Safe Drinking Water understood by all

Questions?

Robert J. Longo, Superintendent
Bristol Water Department
119 Riverside Avenue
Bristol, Connecticut 06010
860-582-7431
robertlongo@ci.bristol.ct.us