

# Sewer Main Breaks

February 2, 2016

# Sewer System in Plymouth

- Approx. 4.5 miles of forced sewer main runs through the Town from Water Street to Camelot Drive – WWTP
- Pipe and system on line in 2001 (1999 construction) – now at 1.5 mgd
- Type of pipe – cement lined ductile iron (not plastic)
- Designed and built with no redundancy in the event of a fail of the 30” line



# Sewer Breaks

- Break One – December 19th MADOT property adjacent to Route 3 southbound to the WWTP
- Break Two – January 27th Braley Road
- Break Three – January 31, 2015 Westerly Road

# State Partners

- DOR – DLS – Finances and emergency spending
- Mass DOT – property and closing roads
- DEP and EPA and DMF – protecting environment
- DCAMM – Emergency waiver for bidding/ad
- Board of Health and MDPH – water supply
- State Delegation and Board of Selectmen

# Break 1

- Saturday, December 19, 2015
- Flow into the woods/swale that runs parallel to Route 3 – Mass DOT property
- Emergency repairs/mobilization – C. Brito
- Two 18” bypass lines – under 6000 feet each
- Condition of Force Main pipe – excessive internal corrosion not mechanical failure
- Veolia & private contractors transporting wastewater from pump station to treatment plants
- Thursday, December 24<sup>th</sup> bypass operational







# Break 2

- Wednesday, January 27, 2016
- Off of Braley Road – 150 linear feet from Braley Road cul-de-sac
- Excavation of pipe 100' south of break showed 30" main still deteriorated; had to dig another 120' further away to install bypass pipelines
- Groundwater Protection – Lout Pond Well
- Sunday, January 31, 2016 –bypass operational







# Board of Health Involvement

- 11 Residential wells ½ mile away from break.
- Engineering Update
  - Water boil issuance not necessary at this time
  - Ground water is running north – away from the spill
  - Area has been bermed
  - Spill has been contained
  - New connection should be complete by tomorrow
- Conservation Update
  - Lout Pond; Cranberry Bog - Located near spill but not being affected
- Public Notification through Selectmen's channels fine at this time

# Corrective Actions Taken

- Septage haulers began pumping from Water Street Pumping Station 24/7
- 2 Godwin pumps at 500 gpm were setup at the pump station by the next day to pump wastewater onto the trucks to allow faster loading
- Six trucks were loading from the Water Street PS simultaneously and 4 trucks could off load at the Plymouth WWTP simultaneously





# Break 3 – Westerly Road

- January 31, 2016 – just as Braley bypass on line
- Ahead of this break
- Had already begun digging and mobilizing in area as we intended to do a bypass
- Had already identified area for flow of wastewater
- Needed to make decisions that would include 4<sup>th</sup> weak area on Westerly Road





# Public Notifications

- Press Releases (4) sent to media regarding
- WATD interview for all 3 breaks
- Reverse 911 utilized to inform residents in Braley area
- Reverse 911 utilized to conserve water request (Feb. 1)
- Daily updates to press starting Feb. 2, 2016
- Partnered with schools on communication outreach

# Challenges

- Slowing/stopping flow for work progress
- Use of private haulers at headwaters to load flow and bring to plants
- Identifying containment areas for flow
- Change in pressure each time a bypass is installed
- Uncertainty regarding condition of full pipe
- Costs
- Weather & Exhaustion

# Short Term

- Identified most vulnerable areas
- Mobilize quickly to repair breaks with temporary lines
- Identify areas other areas of weakness in Main
- Stabilize system and complete pipe breach investigation
- Complete full bypass
- Communication to public and agencies
- Consider Road Issues – boring rather than directional drilling
- Collaborate for a long term solution

# Long Term Planning

- Stop flow so that full length of original 30" main can be cleaned & analyzed
- Camera length of that pipe and determine if it can be
  - Reused
  - Sleeved
  - Replaced
- Design a redundant system
  - New path for sewer main through Town
  - Run 2 pipes along existing route

# Costs and Funding Sources

- Short Term – 3+ million
- Long Term – 30-50 million – full replacement
- State Revolving Funds
- 2% over 20 years
- Massachusetts Clean Water Act
- Work with legislatures for 0%