



## CITY COUNCIL AGENDA ITEM

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Date: November 30, 2016

To: Brian Kischnick, City Manager

From: Kurt Bovensiepe, Public Works Director  
Paul Trosper, Water and Sewer Operations Manager

Subject: Great Lakes Water Authority- 84" Water Main Break Update

Great Lakes Water Authority (GLWA) contracted the repair of the 84" water main to Ric Man construction of Sterling Heights, MI. The repair process required the replacement of three (3) sections of water main. Due to the fact that water main of this large size are not kept in stock by GLWA, the replacement sections had to be shipped from outside of Michigan. Ric Man construction worked around the clock removing the damaged sections in preparation for the installation of the new water main sections. The cause of the water main failure has not been clearly determined. Since the cause is not obvious, there was no way for GLWA to predict or prevent a failure of this type.

The 84" water main remained out of service during the entire repair process and caused the City of Troy to look at temporary solutions. During the repair, the Water & Sewer Division, with the cooperation of GLWA opened an existing but not normally utilized water feed located at the intersection of South Boulevard and Beach Road. This connection draws water from the same 54" GLWA water main that supplies the east side of the City of Troy, which was not permanently impacted by the large main break. The temporary water connection used during the event required continuous monitoring since it was not protected against unpredicted pressure increases. To assist with protecting the city's water infrastructure against any city owned water main breaks from increases in pressure, a device was installed on a precisely calculated fire hydrant location. This device opened and relieved pressure from the system when pressures threatened the city's system. During the initial pressure loss causing the Boil Water Advisory, air was able to enter the water system and affected a few areas. While this air-entrained water is not harmful, it did raise some concerns. Persistent flushing in the impacted areas remedied most of the concern but it would not be uncommon for some residents to experience some air for the next several weeks.

The temporary connection used at Beach Road and South Boulevard was installed by GLWA over 20 years ago. While this connection has been used only twice now in the last 20 years, in the situation that just occurred, it was the difference between the City of Troy having the ability to sustain water pressure throughout the entire city and a larger crisis.

From what was learned throughout this situation, we now know far more as to what works and what does not; it has shown us that having the ability to draw water from alternate feeds is crucial when one feed is compromised. A feasibility study on creating a more permanent and updated connection at Beach Road will be considered in the near future.



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During the Boil Water Advisory, the Police and Fire Departments distributed bottled water to affected residents at Firefighters Park. The city received several comments during the process that proved residents appreciated these efforts. The remaining inventory will be stored for any future situations requiring this type of distribution.

The Water & Sewer Division received notice on November 28, 2016 that the 84" water main repair was complete, good water sample results had been produced, and pressure in the main was back to normal. The Water & Sewer Division, working with GLWA, closed the temporary water connection and re-established the normal 84" water main on November 30, 2016. Once this process was completed, the City of Troy water system was operating under normal conditions.