

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 29, 2019
SUBJECT: Update on May 3, 2019 Water Main Break, Section 89, Winchester



COMMITTEE: Water Policy & Oversight

X INFORMATION
 VOTE

Mark Johnson, Director of Waterworks
Valerie Moran, Deputy Director, Waterworks
Preparer/Title



David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only.

DISCUSSION:

On Friday May 3, 2019, a geotechnical contractor drilled through MWRA's Section 89, a 48-inch pre-stressed concrete cylinder pipeline that is the primary means of supply for the Northern Intermediate High service area and the communities of Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn. The contractor was part of the design team preparing plans and specifications to replace this critical pipeline.

The affected section of pipeline is located in a wooded easement on the Winchester/Woburn town line and caused a geyser of water that ran down the access road along the easement to a nearby wetland without causing significant property damage or creating a public safety concern. This allowed staff to size-up system service options before the pipeline had to be shutdown, thereby preventing loss of service.

MWRA staff immediately mobilized pipeline repair and valve crews and opened the emergency operations center in Chelsea. Notices sent from MWRA caught the attention of media outlets that dispatched video crews to the area. Working closely with the water departments of the impacted communities, staff were able to identify and set up a reconfiguration of the Northern Intermediate High service area.



This plan relied on several key components:

- Partially served communities (the Towns of Winchester, Woburn, and Wilmington) could come off the MWRA system completely and utilize their local supplies entirely due to the low water demand at this time of year. In higher summer time demands, these supplies would not have been adequate and these communities would have had to utilize emergency connections to and mobile pumping from other, non-affected communities.
- The Town of Wakefield maximized use of its local supply and was able to reconfigure its system to be supplied by MWRA's Fells Reservoir in the Northern High service area and a pumping station they maintain for this purpose. A small portion of Wakefield continued to rely on Northern Intermediate High service area for water.
- Emergency by-passes around MWRA supply meters for the Town of Stoneham were opened which allowed flow for Stoneham, Reading, and a portion of Wakefield to pass through Stoneham's distribution system. Water flowed north through the community distribution network and then continued back onto MWRA's new Section 110 pipeline to supply Reading and Wakefield. This section of pipeline had been constructed and placed into service as part of the Northern Intermediate High redundancy initiative; without this pipeline and the fact that total water demand is lower at this time of year, the headloss through the Stoneham system would have been excessive resulting in inadequate service pressure for Reading and Wakefield. These communities would have required mobile pump set-ups to neighboring unaffected communities as well.
- The damaged section of pipeline was downstream of the pipeline connection to the Bear Hill Tank. As a result, it was possible to isolate the pipeline while allowing the tank to remain in service. This helped stabilize pressures and allow continued supply to Stoneham from the new Spot Pond pump station, which was utilized because of its variable speed pumps and lower pump capacity. It would have been harder to control pressure and flow from the old Gillis pumping station with its larger capacity constant speed pumps.

Multiple MWRA valve crews were dispatched throughout the service area and directed from the EOC to perform the necessary valve operations required to reconfigure the system, assure that isolated sections were protected, and finally to shut down the damaged section of pipeline. The EOC was prepared to answer rusty water and low pressure complaints due to the system reconfiguration, however, very few calls were received.

As soon as the flow stopped, MWRA pipeline staff began restoration of the dirt roadway into the damaged pipe section and excavated and prepared the pipeline for repair. This work was completed late Friday night. Meanwhile, staff had located a repair saddle, in Florida, designed especially for this type and size pipeline and made arrangements for its purchase and delivery. In addition, a technician specializing in installation of the repair saddle was located in Ohio. The technician and his tools arrived in his vehicle on Saturday afternoon and the saddle arrived via truck delivery to the site early Saturday evening.



Within two hours the repair was completed, and MWRA valve crews began refilling the line for pressure testing. Reactivation was completed by 1:00 a.m. Sunday, May 5, 2019.

BUDGET/FISCAL IMPACTS:

The costs related to this incident are being calculated for the repair part and technician, staff overtime and equipment costs. Subject to cost recovery, the costs will be absorbed in the FY 19 CEB.