

## Town of Colchester Interoffice Memorandum

To: Mary Bylone, First Selectman  
From: James Paggioli, Director of Public Works  
CC: Sewer and Water Commission  
Date: May 26, 2020  
Re: Force Main Break

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The Town of Colchester Sewer system collects waste water from the central portion of Town and portions of Hebron and Lebanon. The system flows to a central pump station located at Prospect Hill Road, where it is then pumped from that location to a gravity sewer located on Smith Street in East Hampton at the trail head of the Airline Trail, where it joins the shared system of the Town of East Hampton and Colchester. The pipe that is used for travel of this 7.8 mile trek, is known as a force main, and is constructed of 16" cement lined ductile iron pipe. This pipe will be referred to as the "16" DIP Force Main". The pipe travels from the Pump Station, under Route 2 to the intersection of Prospect Hill Road and Old Hartford Road, then along Old Hartford Road, then along Route 149 to the Airline Trail, then along the Airline Trail to the terminus of the force main at Smith Street in East Hampton. Once combined into the shared system, waste water travels to the Colchester-East Hampton Waste Water Treatment Plant located near the intersection of Route 16 and Route 66 in East Hampton. The force main was installed in 1981-1982. The Town of Colchester is financial responsible ( along with percentage of Hebron) for the cost of repair and replacement of the portion of force main from the Prospect Hill Pump Station to the Smith Street connection. The anticipated life expectancy of the pipe is in the range of 80 to 100 years.

On Friday May 15, 2020, at 11:30 am, a force main break and sewage leak was reported on the Airline Trail in East Hampton. The location was found to be approximately 110 feet westerly of the west end of the Rapello Viaduct. The viaduct is a former steel truss bridge that is buried and of historic nature. Staff and a contracted crew from DelRay Construction were dispatched and repaired the brake. During the repair, the force main is taken out of service and sewage is bypassed, and trucked directly from the Prospect Hill Pump Station to the Waste Water Treatment Plant via tanker trucks. The pipe was inspected at the point of the break and there was identified an isolated section of pipe with a failure that was due to a thinning of the pipe lining. The operating pressure at this point in the line is approximately 30 psi. It was noted that within 9 feet of the pipe, the pipe was found to be sound and a 9 foot replacement DIP was inserted with solid sleeves. The force main was brought back into service at approximately 10:00 pm that day. Samples of the pipe and attached material to the pipe outer surface were collected for analysis. (See attached May 15, 2020 photos)

Noted sewage spilled during that break, was recorded and the primary property that was affected was at 28 Flatbrook Road in East Hampton. The property has had on-going well and surface water testing that continues to date. There has been no impact to the well to date. The surface water (small pond and wetland) has an elevated e-coli bacteria count, which is anticipated to return to normal with regular rainfall events.

It should be noted that the Town's insurer Traveler was informed of the issue and claim at 1:00 pm on May 15, 2020.

On Saturday, May 16, 2020, at 5:25 pm there are photos depicting the repair area. Overnight rainfall cleared much of any down slope staining. (See May 16, photos)

On Sunday May 17, 2020 at 3:30 pm, a force main break was reported. Upon inspection, the location was approximately 50 feet westerly of the Rapello Viaduct. This location was approximately 60 feet easterly from the previous break. Again, staff and a contracted crew from DelRay conducted the repair while the Prospect Hill Pump Station flows were bypassed and trucked directly to the Waste Water Treatment Plant. A seven foot portion of the pipe was replaced and solid pipe was tied into. Photos of failed pipe and the pipe leading to the west were obtained. Based upon the photos, the pipe had been corroded from the inside, by hydrogen sulfide gas being trapped within this section of pipe due to an air pocket. The repair was completed by Monday, May 18, 2020 at 2:00 am. At this point the need for a RFP for Engineering Services to be prepared for advertisement in order to determine length of the corrosion and the best means to affect a permanent repair was made.

On Monday May 18, 2020 at 10:35 am, a third force main break was reported in the same area. This break occurred between the two previous repairs. It was determined that no section of the pipe between the valve (found to be not operational) located 170 feet westerly of the viaduct and the viaduct could be relied upon for structural integrity. Additionally the possibility of pipe corrosion within the force main of the Viaduct crossing would have to be investigated. In order to record camera footage within the viaduct , restore the operational ability of the pipe length and to ensure the operational capacity of the force main path while a permanent repair is being conducted in the future, a 18" HDPE overland bypass was determined to be the best method to bring the force main online in the shortest amount of time. The bypass installation was designed and installed within 48 hours. The work involved the installation of two 16" valves, one for each end of the tie in, to isolate the bypass and repair area. There was great difficulty in obtaining mechanical joint 16" fittings. The length of the by-pass is 1600 ft. Contracted forces from Hayward Construction of Colchester, Cunningham Construction of Salem, United Rentals, and Staff constructed and installed the bypass around the clock and completed the connection. HDPE pipe arrived at 5:00 pm and the bypass was completed on Wednesday May 20, 2020 at

approximately 8:00 pm. Bypass pumping and trucking of the Prospect Hill Pump Station flows to the Waste Water Treatment Plant occurred throughout the construction. No overflows of the Pump Station occurred outside of the wet well room. The connection was made by HY-Max friction adapters from the 16" DIP to the 18" HDPE pipe.

On Thursday, May 21, 2020 at 7:00 am, a failure of the easterly HY-Max fitting occurred due to the unrestrained 45 degree HDPE bend.

Mechanical reducers 16"x18" were located in Swedesboro, NJ and flanged "spool" fittings were obtained by staff driving to the locations in order to speed up the repairs. Contracted forces from DelRay Construction, United Rentals, and Staff conducted the repair once the mechanical fittings were on site at 7:00 pm. Again, Bypass pumping and trucking of the Prospect Hill Pump Station flows to the Waste Water Treatment Plant occurred throughout the construction. The replacement connection was completed at approximately 2:00 am on Friday May 22, 2020.

On Friday, May 22, 2020 from 7:00 am to approximately 5:00 pm- Staff conducted clean up and trail restoration in accordance with the DEEP request to have the trail open for the Memorial Day Holiday weekend. The Prospect Hill Pump Station is operating at a level of 800 gal/min which is reduced from 1300 gal/min cycle times. To date there are no other issues, however the Staff believe it is prudent to replace the Hy-Max fitting on the westerly end of the connection. This would be a controlled replacement with all necessary parts in hand, additionally this would allow for the camera access to conduct the pipe assessment at this time. Work is scheduled for June 3, 2020.

The process forward should/will include the following:

- 1) RFP/RFQ for Engineering services in order to assess/design the pipe lining of the 16"DIP within the Rapello Viaduct and Replacement of approximately 180 feet of 16" DIP with either PVC or HDPE which are non-reactive to Hydrogen Sulfide gas and the need for an additional air release valve.
- 2) RFP for General Specialty Contractor for Installation of recommended permanent repair, including removal of 18" HDPE Bypass and reconnection of the main, with all restoration. Cost for one day of bypass pumping may be required for final reconnection.