TO: John Paul Castro, Utilities Director

COPIES: John Bartelmo, CH2M Hill OMI

FROM: Ralph Estevez, CH2M Hill OMI

DATE: March 16, 2017

SUBJECT: Purchase 2 Piece Clamps

John Paul,

On Feb. 1^{st,} we had a failure on one of the 30in force mains at White St. & Eaton St. The break occurred at one of the flanged connections. As you are aware the pipe's run parallel and are close to each other, usually 8 inches apart. At this location, the flange connections were only 4 inches apart. The 2-piece flange repair clamps that we have could not be used not work because of the clearance issue. We had to use a 3-piece clamp which made the repair very difficult and time consuming. A 2-piece clamp would have significantly reduced the system downtime (all pump stations in the City were disabled). After an extensive search, we found one company (Victaulic) that builds 2 piece clamps for this diameter pipe. Unfortunately, the two 30 inch force mains that run between pump station A and the treatment plant are prone to failure in locations where the pipes are joined by flanges. It is our recommendation that two of these clamps be purchased for future failures of this type which are certain to occur.

The price for these 2 - piece clamps is reasonable for custom made large diameter stainless clamps and due to the necessity that crews need to minimize repair times of these force mains. The 30" force mains maintain flow of all the City's raw sewage creating the need to shut down the entire system when breakages occur. Crews only have a matter of hours to repair these mains before the system back's up and starts to spill causing a public health hazard.