



DEPARTMENT OF PUBLIC UTILITIES

Thomas M. Dolan
Mayor

Scott J. Bond
Chief Administrative Officer

Thomas K. Ward, P.E.
Director

TO: Council Chair Chris McCandless

COPY: Mayor Tom Dolan, Scott Bond, Mike Applegarth

FROM: Tom Ward

DATE: August 3, 2017

SUBJECT: Update on River Oaks water pipeline breaks and “stray current” pipe corrosion

As requested, this memo provides a brief update of the City’s ongoing evaluation of an increased level of pipe breaks and impacts to the neighborhood as presented at the July 25, 2017 City Council meeting by Karen Wiet, Aaron Wiet, and Phil Solomon from the River Oaks HOA. We are providing a brief update at this time based upon preliminary data, and we will provide a more thorough presentation later this fall when we have more information on specific projects. The City has an annual fund and the recent water bond includes funding for replacement of mainline water pipes.

We are scheduled to attend the River Oaks HOA on August 24 to listen to the residents and share information to date about the nature of the problem and solutions under consideration. We are committed to a project in that area. It will likely include pipe replacement for certain areas, but are still too early at this point in the evaluation process to define exactly what/where project that will be. Attached is a copy of our recent correspondence with Mrs Wiet. It gives a good overview of our current understanding and approach to solving their pipe break issues.

Fortunately, the City has an annual fund for mainline pipe replacement that will help us address this issue. The FY 2018 budget for this line item is \$757,417 with a projected FY 2019 increase to \$1,545,000. The water bond approved by City Council this year provides timely additional funding that will also accelerate mainline pipe replacement.

Fortunately, funding and projects over the past decade has addressed most of the known water system capital needs to improve fireflow, emergency supply, corroded steel water tanks, and replacement of aging water pipes. Normally water pipes have a design life of at least 50 years. This recent and developing trend of increased corrosion pipe breaks on newer pipe (10-20 years old) is an anomaly that we have been studying to understand and address. With the advent of plastic pipes (PVC and HDPE), the City switched from a ductile iron pipe standard to PVC pipe about 10 years ago for the areas known with corrosive soils, primarily the area west of 200 East (TRAX). The current Asset Management initiative is to identify the areas of most stray current corrosion, eliminate the source and protect our pipe where we can, and strategically replace our existing corroded pipe over an appropriate time while minimizing impacts to the public. Public Utilities has been gathering data and working on a thorough evaluation of the localized pipe break issues and proposed solutions for presentation to Administration and Council this fall/winter.

Exhibit - River Oaks HOA email correspondence:

>>> Tom Ward 7/28/2017 2:41 PM >>>
To Karen Wiet, Aaron Wiet, Philip Solomon

Karen,

I want to thank you, Aaron and Philip for taking the time to speak with our City Council, Mayor, Shane Pace and I on July 25 regarding your concerns over the excessive City water main breaks in your neighborhood, high water pressures, and your request to solve the problem. I would be grateful for the opportunity to have Sandy Public Utilities attend your HOA meeting on the 24th, and will plan on it. Please let me know the time and location.

As we discussed, the City has recently identified increasing water main breaks as an issue in your neighborhood. City staff have been working over the past month identifying the causes and potential remedies. The water pressures in your area are a maximum of 150 psi which is within the higher range of standard operating conditions. City staff identified some water system efficiency improvements in the past few weeks that have reduced pressures in your area without compromising water service in other areas of the City. We have also been evaluating the cost, benefit and impacts of a potential new pressure zone with installation of pressure reducing valves (PRVs) for your area as suggested by Mr. Solomon. We would need to install at least 3 PRVs to create a new zone, which at current pricing could cost up to \$300,000 or more.

Unfortunately, reducing the system pressures will at best only delay, and not prevent, future breaks. The pipe breaks we are experiencing are not caused by high pressures, but rather severely corroded metal pipe. We have seen an increase in pipe corrosion breaks in other "hot spot" areas in the City with similar pipe corrosion issues (e.g. corrosive soils and/or stray electrical currents). Solving this problem will require some time and additional funding. At present, our focus is on developing an Asset Management Plan that includes identifying and protecting our pipe from corrosion sources and for replacement of severely corroded pipe throughout the City. We should have more information to share when we meet with you on August 24th.

In the meantime, if the HOA or homeowners are experiencing pipe breaks in their irrigation system, it is recommended that the HOA review its plumbing design and consider installing PRVs at the irrigation supply lines so that the irrigation system pressure can be regulated to the maximum it was designed for. Standard plumbing code/practice requires a pressure reducing valve to protect their household plumbing from system pressures or pressure surges that may occur. Depending upon the private irrigation system design, plumbers may also install PRVs on irrigation systems to limit the maximum pressure the irrigation system is exposed to. It is common for private irrigation systems to be designed for 60 to 90 psi, although some irrigation systems are designed for 150 psi or more. Typical sprinkler heads are often at their best efficiency in the 40 to 70 psi range, although each system is unique and may require higher pressure at the water supply source so each sprinkler head has adequate minimum pressure. The design pressure for your parts and materials of your construction should be reviewed along with the pipe design for optimization.

Relative to the detention basins, it is typical throughout the City for private envelopments such as your HOA to retain ownership and maintenance responsibility for the basin. This is a requirement for developer onsite control of their stormwater discharge permit for quantity and water quality in accordance with City development code. The basins are also integrated into the development landscape design. The City does not provide assistance for developer owned detention basins except in unique instances. The River Oaks

Villas PUD plats state that the open space is privately owned and maintained. The City participated in cleanup of the River Oaks detention basin several years ago after our city water main broke and caused excessive debris to fill the basin.

Hopefully this gives you an snapshot of where we are at, and we will be able to give additional information and answer questions at your HOA meeting on August 24. In the meantime, please feel free to contact me or our staff at any time.

Best regards,

Tom

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