



Memorandum 16-174

TO: Katie Koester, City Manager

THROUGH: Carey Meyer, PW Director

FROM: Dan Gardner, PW Superintendent

DATE: September 26, 2016

SUBJECT: Storm Drain Pipe Failure
Construction Funding for Rehabilitation

Ordinance 16-12(A) approved funding for the research and design of storm drain rehabilitation improvements. That work is substantially complete and construction funding for the first phase of the project is now required.

In May of 2016, Stephl Engineering performed a cursory survey of the city's storm drain (SD) manholes and piping system. This inspection was motivated by the sinkhole that occurred on E. Bunnell last winter due to corrosion in the SD piping. The survey consisted of entering approximately half of the SD system manhole structures and inspecting the SD piping with a zoom camera from the MH structure. Inspections took place mostly in the piping that was installed in the 1980s, which represents a significant majority of the city's SD system. There are approximately 65 MH structures and approximately 18,500 feet of SD piping in the system. A report was prepared in July with recommendations regarding the need for immediate repair of portions of storm drain piping, and the need to plan to replace other portions in the near future.

Based on the report, and due to recently discovered/repared pipe failures (Bunnell Street sinkhole and Main Street sinkholes), Public Works arranged to have some of the oldest piping inspected with CCTV video. This video inspection provided much greater detail and revealed the extremely poor condition of the piping on Bunnell Street. This section of SD piping needs to be replaced immediately due to the extensive corrosion and holes in the pipe in order to prevent another sinkhole like the one that took place over the winter of 2015/2016. See attached pictures of recent repairs on Bunnell Street and Main Street and CCTV pictures of Bunnell Street SD piping.

The process for rehabilitating the failing pipe would be to line the pipe with a cured in place pipe (CIPP) system. This is the same system that was utilized in 2010 to rehabilitate old sections of sewer mainline (Ocean Drive Loop, Pioneer Ave., Bartlett St). The final product is a new pipe with an expected life of around 50 years. The benefits of lining existing pipe rather than excavating and replacing the pipe are that there is virtually no disruption to traffic, the project is completed in a fraction of the time, minimal erosion and traffic control efforts, and is less expensive. The estimated cost to line the E. Bunnell Street SD piping is \$495,000. This work could take place during the 2016/2017 winter months.

Public Works will continue to evaluate other portions of SD piping for replacement in upcoming years.

RECOMMENDATION – City Council pass an ordinance authorizing funding for construction of E. Bunnell Street SD replacement from HART in the estimated amount of \$495,000. (HART \$7,000,00)



E. Bunnell Street Sinkhole January 2016
36" Storm Drain Failure



E. Bunnell Street SD Piping Failure Due to Corrosion. Multiple holes shown
January 2016





One of Two Storm Drain laterals extending from MH to ditch line with total failure at flow line of pipe. Caused sinkhole in road. February 2016



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E. Bunnell Street 36" SD Piping



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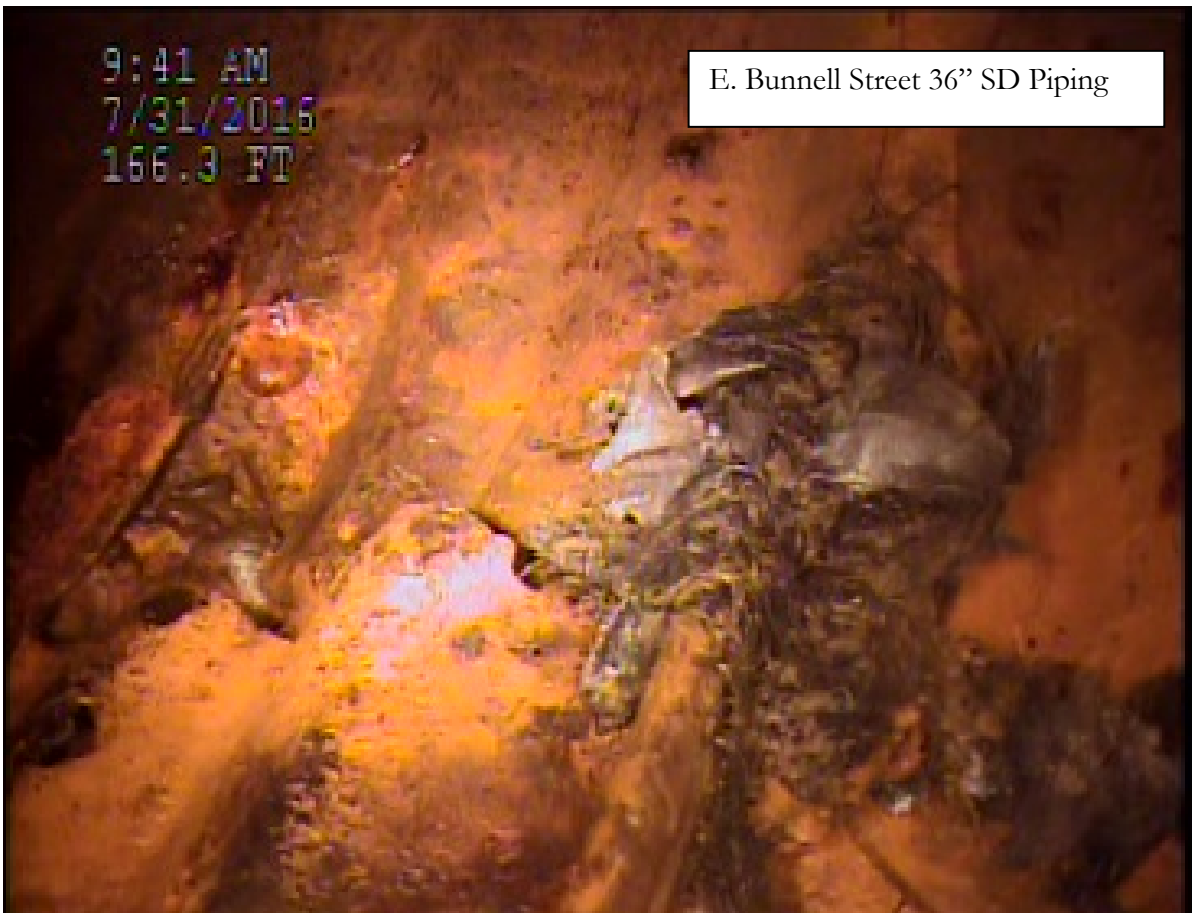


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