



MEETING OF SEPTEMBER 5, 2023

TO: Mayor Jordan and City Council
THRU: Susan Norton, Chief of Staff
FROM: Tim Nyander, Utilities Director
DATE:
SUBJECT: **Structural Preservation Systems, LLC - Change Order No. 3**

RECOMMENDATION:

Staff recommends approval of a change order to the Design-Build contract with Structural Preservation Systems, LLC in an amount not to exceed \$7,884,343.00, and approval of a budget adjustment.

BACKGROUND:

In 2021 City Water/Sewer Staff performed an inspection of the 48-inch gravity sewer line that extends from Gregg Avenue to Sunshine Road. Visual inspections of each manhole were conducted, and a 'boat' was constructed to float down each line segment and record video. Overall, the line was in excellent shape, however, one area in the vicinity of Interstate-49 has experienced damage at some point during its 15-years of service. This segment of line cannot be repaired with typical excavation techniques due to its location under the Southbound Highway-112 Exit Ramp on I-49.

City Council approved a design-build contract (Res. 6-23) with Structural Preservation Systems, LLC (SPS), a national leader in trenchless pipe point repairs, to develop a plan for repairs in this location. Once mobilized, SPS created a bypass system to dry the work zone, then entered the pipe for initial shoring and sanitizing. Then a detailed engineering in-pipe investigation was conducted to determine exact location and extent of repairs necessary. During this investigation, the pipe and tunnel system were found to be "unsafe in its current condition" and "subject to imminent collapse."

DISCUSSION:

The root cause of the failure of this pipeline is the lack of grouting in the annular space outside the pipe, between the pipe wall and the tunnel encasement and tunnel walls. Without this grout the original steel tunnel liner plates have corroded and the tunnel has started to collapse, thereby crushing the sewer pipe.

The original design-build contract cost (Res. 6-23) was \$2,477,644.00 with a \$375,000.00 contingency. SPS proposes a solution to completely rehabilitate the pipeline and stabilize the tunnel, filling all void spaces. This solution will require four months additional construction time and a change order cost of \$7,884,343.00.

Staff has considered alternatives to this proposed change order. For example, installing a new, independent sewer line in a new parallel tunnel. This option could be a lower cost at first glance. However, it would take approximately two years to design, permit, and construct. All the while the active sewer would be bypass pumping, at risk of failure, and at a significant operational cost. Furthermore, the existing line would still need a

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high-cost grouting abandonment. Other pipe-lining technologies have been considered as well such as cured in place pipe. However, these technologies would likely create a very deformed final pipe shape due to existing deflections and failed pipe segments. Furthermore, these liners would not address existing void spaces nearby the tunnel that could contribute to surface settlement. Finally, these liners would require all existing safety shoring in the pipe to be removed, a very high life-safety risk.

BUDGET/STAFF IMPACT:

A budget adjustment is attached to move funds into the Sanitary Sewer Rehabilitation account within the Water & Sewer fund to pay for Change Order No. 3.

ATTACHMENTS: SRF Structural Preservation Systems CO3, 2023-1023 BA Structural Preservation CO3, Change Order 3 (signed by sps), Change Order Request 635148-03

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