MEMORANDUM

TO: Donna Barron, City Manager

FROM: David Salmon, P.E., City Engineer

VIA: Eric Ferris, Assistant City Manager

DATE: August 19, 2019

SUBJECT: **Approval of a Professional Services Agreement with RJN, Inc. For an Amount Not to Exceed $794,000 For the Timber Creek Pump Station Interceptor Sewer Design; and Authorization for the City Manager to Execute the Agreement.**

BACKGROUND

The Timber Creek Interceptor Sewer consists of approximately 8,400 linear feet of 36- and 42-inch steel and clay pipe that begins west of the Timber Creek Pump Station near Railroad Street, continuing along the north side of Timber Creek and ending east of Business SH121 south of the intersection of E. Southwest Parkway.

The typical lifespan of clay pipe is between 40 to 50 years. According to as-built drawings, the City of Lewisville constructed Timber Creek Trunk Sewer in 1978, so this pipeline has effectively reached the end of its useful life.

In 2018 RJN completed City of Lewisville's Report Card for the Sanitary Sewer System. RJN rated the City's sewer lines based on consequence of failure (COF) and likelihood of failure (LOF). Consequence of failure was based on the following parameters: Pipe diameter, manhole depth, proximity to railroads, creeks, street type, and facilities. Likelihood of failure was based on inflow and infiltration (I/I) rate, NASSCO PACP or RJN structural defects, existing material, and age. NASSCO PACP or RJN defects were rated on a 1 to 5 scale with 5 being the worst grade possible. The defect scoring system was divided into two types of defects, Operational Defects which included items like grease, roots, and debris, and Structural Defects which included items like holes, broken pipe, and offset joints.

The 42-inch Timber Creek Trunk line was ranked a level 5 out of a scale of 1 to 5, with 5 being the most critical for consequence of failure (COF) due to its proximity to a waterway. It was rated a level 4 for likelihood of failure (LOF) due to its pipe material. Given both the COF of 5 and LOF of 4, the report card grade for the Timber Creek Trunk line was determined to be an "extreme" risk.

ANALYSIS

The cost of the Prairie Creek East Trunk Interceptor Sewer Professional Services Agreement is $734,900. This includes a condition assessment of the sanitary sewer using multi-sensor pipeline inspection (MSI) to determine recommended rehabilitation methods. MSI collects data like debris level, ovality, H2S corrosion, lateral location, and damage without requiring flow diversion, flow interruption, or manhole ring removal. MSI uses multiple sensors on one robotic platform in a single pass through a pipeline.

Once the condition assessment is complete, conceptual (30%), preliminary (60%), final (90%) design, and construction (100%) drawings and specifications for approximately 8,400 LF of 36- and 42-inch sanitary sewer pipeline will be developed. This PSA cost will also include surveying, geotechnical engineering services, and permitting services.

The negotiated fee is well within the customary fee for a project of this scope and size based on an estimated construction cost of $5,738,000. Funding for professional services is available in the Utility Capital Project Accounts. The design timeline for completion of the design is 425 calendar days exclusive of Staff review time. Construction bidding is expected in late 2020.

RECOMMENDATION

It is City staff's recommendation that the City Council approve the agreement as set forth in the caption above; and authorize the City Manager to execute the agreement.