MEMORANDUM

To: Mayor and City Council

From: Kent Collins, P.E., Interim Director of Public Works

Date: April 10, 2018

Reference: Work Session Discussion I and I Phase 3 improvement

2030: Sustainable City Government, Goal 3
Excellent and Well-maintained City Infrastructure and Facilities

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General Information:

- City of Coppell contracts with TRA for wastewater treatment
- In November 2014 city staff observed an increase in flow volume to TRA
- Preliminary investigations tied the flow increases to rain events
- April 2015 City Council approved a contract for I&I study with RJN Group, Inc.
- Flow monitoring began in May 2015 and meters were in place through July (Phase 1)
- Final Report was received in 2016
- Phase 2 was to identify the inflow and infiltration in 2 basins that needed immediate attention.
- The final report for Phase 2 was received in December of 2016, which identified some necessary repairs and replacements of sewer main and manholes in the basins adjacent to Denton Creek and Cottonwood Branch Creek.
- Phase 3 is to repair/replace section of main identified in the study and others located near/in creeks.
- May of 2017, City Council approved a contract to begin repairing/replacing manholes identified in the Phase 2 study (Phase 3)
- Early Summer of 2017, City Council approved an emergency repair to a failure in the system along Cottonwood Branch Creek
- Late Summer of 2017, City Council approved a contract to repair 6000 feet of this same segment of sewer main. (Phase 3)
- City Staff has identified other areas of the system that need repairs and/or replacement.

Introduction:

The City of Coppell operates and maintains approximately 965,000 feet of wastewater collection lines. These lines collect wastewater from all homes and businesses and deliver it to the collection system of the Trinity River Authority (TRA). The TRA then transports Coppell's wastewater to their Grand Prairie plant for treatment. TRA charges the City of Coppell for this service based on the volume of flow that enters their system. This flow is metered at a meter station located in McInnish Park just beyond our city limits. All of Coppell wastewater flow passes through this one meter.

In November 2014 the city saw an increase in our flow rate into the TRA collection system and a corresponding increase in cost to treat the wastewater. The increased volume of flow has continued for all of 2015. Our average daily flow from the month of September 2014 was 3.34 million gallons per day (MGD), and in June of this year we had an average daily flow rate of 7.05 MGD. Our wastewater treatment costs for FY 14/15 were $1,100,000.00 more than anticipated, due to this issue.

As a result of these increased flows and costs, the city contracted with RJN Group, Inc. to perform an inflow and infiltration (I&I) assessment and flow monitoring study. RJN is a civil and environmental engineering firm specializing in water, wastewater, and storm water services. They have a major presence in the Dallas area and have concentrated in the field of collection and conveyance systems for 40 years.

For the initial assessment and flow monitoring (Phase 1), RJN divided the collection system into 22 individual basins, and installed flow meters in each basin. They also installed rain gauges throughout the city. These gauges and meters were in place during the significant rain events of May and June.

During Phase 2 of the I&I study RJN performed field investigation including TV and sonar inspection of all large diameter lines within the two basins adjacent to Denton Creek and Cottonwood Branch (Andy Brown Park System), all manholes on these lines, and the connecting lines up to the next manhole for all connections to these large diameter lines. This phase identified sections of the system that needed repairs and or replacements including manholes and mains.

Analysis:

In Early 2017, City Council approved a contract for $200,000 to begin repairing/replacing manholes identified in the Phase 2 study. This is an annual ongoing project that will continue until all the manholes have been inspected and repaired/replaced as needed.

During the summer of 2017, city staff identified a break in the system underneath the bridge on West Parkway Blvd. in the Cottonwood Branch Creek. This break was fixed by adding a new section of pipe. In Late 2017, City Council approved a contract to replace 6000 feet of this segment ($965,000), which is currently being replaced with the anticipated completion day in early May 2018.

Phase 3 will continue with areas identified in the study as well as other areas along all the creeks and older systems as the highest priority. This phase will also incorporate a permanent flow monitoring program basin wide to identify failures efficiently.

Legal Review:

This item did not require legal review.

Fiscal Impact:
The amount being requested is a total of $3 Million being included in the certificates of obligation to be issued later this year.

Recommendation:

Staff will bid out any projects and bring to future council meetings for consideration of approval.