



## MEMORANDUM

**To:** Mayor and City Council

**From:** Kent Collins, P.E., Director of Public Works  
Jamie Brierton, Capital Program Administrator

**Date:** August 9, 2022

**Reference:** Consider approval of a professional services engineering design contract with BGE, Inc. to design the Emergency Water System Interconnects with the City of Lewisville and City of Grapevine, as part of the water system redundancy plan, in the amount of \$425,960.00, as provided by 2020 Bond proceeds and authorizing the City Manager to sign all necessary documents.

**2040:** Pillar 0: Sustainable City Government  
Goal 3: Well-maintained City Infrastructure

---

### General Information:

- This contract is for the design of emergency water line interconnects to the City of Lewisville and the City of Grapevine.
- This design effort is to provide emergency water system supply redundancy by securing emergency connections on the west side and north side of the city.
- There will be four connection locations, two at each city.
- This project will provide an estimated 9,950 GMP of water in an emergency scenario.
- Total design contract is \$425,960.00.
- The total estimated cost of the interconnect improvements is \$2M.

### Introduction:

This agenda item is to consider approval of a professional services engineering design contract with BGE, Inc. to design the emergency water system interconnects with the City of Lewisville and City of Grapevine, as part of the Water System Redundancy Project, in the amount of \$425,960.00.

### Analysis:

The City of Coppel is a wholesale water customer of Dallas Water Utilities (DWU) and DWU is our sole provider. Treated drinking water is delivered to Coppel ready for distribution to our residents and business customers. Our distribution system includes two elevated storage tanks, 200 miles of

water main, two ground storage tanks, and the Village Parkway Pump Station. Using these facilities, we purchase and pump more than 3 billion gallons of water annually. The Village Parkway Pump Station has a design capacity of 42 million gallons per day (MGD), however we are currently purchasing no more than 18.5 million gallons per day from DWU.

The Village Parkway Pump Station was constructed in 1990 with four pumps and a single ground storage tank. In 1995 the facility was expanded with two additional pumps and an additional ground storage tank. Total ground storage capacity is 10 million gallons. All the water purchased by the City of Coppell from DWU is delivered to the Village Parkway Pump Station and passes through these two ground storage tanks, then is pumped into our pressurized distribution system. City staff and contract vendors perform annual preventative maintenance and periodic pump overhaul. However, we are reliant on DWU as our single source of water delivery.

In 1999, the city began planning for the construction of an additional pump station and ground storage tank on city-owned land on Starleaf Drive. Preliminary design schematics for the Starleaf project were started in late 2015. This effort included site evaluation, pumping and electrical needs assessment, and related facility evaluation. Based upon this initial effort, the estimated cost of Starleaf in 2018 was approximately \$17 million. Given this estimate, staff felt that it would be prudent to pause the design and evaluate if other, less costly alternatives exist that would meet the project goals of providing emergency water supply and alter Village Parkway so that it can be taken off-line for major renovation or repair.

The city engaged with BGE to assist with the alternative evaluations, which included:

- Evaluating the feasibility of emergency interconnections for treated water with the Cities of Irving, Grapevine and Lewisville, to include facilitation and consultation of meetings, distribution system modeling, and opinions of probable cost for connection facilities.
- Evaluate and make recommendations for redundancy improvements at the existing pump station, including both yard piping and interior pump station gallery piping.

Based on the outcome of the feasibility and modeling meetings with City of Grapevine and City of Lewisville, it was determined that the Grapevine and Lewisville distribution interconnections would provide partial water supply redundancy during an emergency interruption in water supply. In the event of a failure at the Village Parkway Pump Station or some other water emergency, emergency water interconnections between the City of Coppell would be able to provide water under pressure to allow the normal water supply to be restored. Interlocal agreements with both cities will be presented for approval as separate agenda items. The proposed contract will allow the city to begin design of interconnects at the following locations:

City of Lewisville:

1. Denton Tap Rd./Highlands Dr.
2. MacArthur Blvd./Lake Vista Dr.

City of Grapevine:

1. W. Bethel Rd./Creekview Dr.
2. Hwy 121/Northpoint Dr.

Each location will include tying in the water mains and any associated valves, meters and other appurtenances. The connections at the City of Lewisville will require approximately 1,000 LF of 12” water line, boring under street crossings and a flow control valve & vault at each location. The

connections at the City of Grapevine will require approximately 2,600 LF of 12” water line, bores under street crossings and a flow control valve & vault at each location.

Historical demand has been approximately 15,500 GPM. The Lewisville interconnects are anticipated to provide approximately 5,750 GMP and the Grapevine interconnects are anticipated to provide approximately 4,100 GMP, for a total of 9,950 GPM. Based on historical flows, this would provide emergency water supply for most of the year (8-9 months) excluding high demand or extreme dry weather months. It should be noted that in an emergency supply interruption such as this, the City Manager would be authorized to implement Stage 5 water conservation response, which allows for essential water use only.

The city has sold bonds to cover the cost of all water line redundancy project efforts. The contract for professional services design will allow BGE to move forward on the detailed design of the interconnects at the 4 locations outlined above. The special services outlined in the contract will only be utilized when absolutely necessary as the design progresses. Interlocal Agreements with both cities, as well as coordination efforts with an Irving/DWU potential redundant supply line will be presented in future meetings.

**Legal Review:**

The contract has been reviewed by the City Attorney.

**Fiscal Impact:**

The fiscal impact of this item is not to exceed \$425,960.00, as provided by 2020 Bond proceeds.

**Recommendation:**

The Public Works Department recommends approval of this item.