

ATTACHMENT A – BGE Inc. Scope of Work**Project 1-Village Parkway Pump Station (VPPS) Redundancy**

The purpose of this **Project 1** is as follows:

The survey, preliminary and detailed design, bidding phase support and construction phase services for the following:

- VPPS emergency bypass pumping system
 - suction and discharge connections
 - discharge pipeline to 30" water main in Kimbel Kt.
 - pump staging area w/concrete pavement
 - Electrical controls
 - provisions for metering such as manhole for clamp-on style meter, or similar.
- Isolation valve on the existing 36" main discharge header;
- Replace/repair of three (3) existing 24-36" yard piping valves.

Special services efforts will include Subsurface Utility Engineering (SUE) and Geotechnical investigation.

**ARTICLE I
SCOPE OF SERVICES**

The ENGINEER agrees to furnish the OWNER the following specific services on a lump sum basis:

BASIC ENGINEERING SERVICES**A. Task 1 – Project Management**

BGE will perform the functions to manage the project in a manner that fulfills the contractual requirements. Specific management tasks include:

- A.1. Prepare monthly summary reports and invoices.
- A.2. Develop Project Management Plan (PMP) that include a project specific QA/QC Plan.
- A.3. Develop and update, on a monthly basis, a design schedule that encompasses preliminary design phase through construction. Schedule will be developed using Microsoft Project.
- A.4. Meetings- Conduct bi-monthly progress meetings via video conferencing with the Owner (Assume a total of 8 meetings)

Deliverables

- Project Management Plan – One-time submittal.
- Design Schedule – Initial schedule submitted with PMP. Monthly schedule updates submitted with summary reports.

B. Task 2 – Development of Preliminary (30%) Design Report

The Preliminary Design Report (PDR) will be reviewed and developed for TCEQ and client review and include the following tasks:

- B.1. Perform site visit for Preliminary Design, and assess conflicts.
- B.2. Perform analyses and calculations to determine suction and discharge pipe sizing, and pump sizing.

- B.3. Develop project layout including suction and discharge piping, pump layout and valve installation. This is also to include bored pipe crossings within VP site.
- B.4. Update Opinion of probable construction cost (OPCC).
- B.5. Perform internal QC review and address QC comments.
- B.6. Address comments provided by Owner.

Deliverables

- 30% Plan Layout Plots

C. Task 3 – 60% Design Phase

C.1. Perform site visits as needed for 60% design, up to 2 site visits included.

C.2. Construction Drawings

C.2.1. Finalize analyses and calculations to support the design as follows:

- C.2.1.1. Pump sizing
- C.2.1.2. Suction and discharge pipe sizing, Joint Restraint (for one pipe material)
- C.2.1.3. Trenchless Engineering and Calculations (include casing and/or liner thickness)
- C.2.1.4. Combination Air Vacuum and Air Release Valves, Blow-off Valves
- C.2.1.5. Meter type and size selection
- C.2.1.6. Structural design calculations: pump laydown area, VPPS pump room valve vault for main discharge header valve.

C.2.2. Develop 60% Plan Set

- C.2.2.1. General Sheets (Cover, Project Layout, General Notes, etc.)
- C.2.2.2. Construction Sequencing Narrative
- C.2.2.3. Survey Control Sheet
- C.2.2.4. Schedules (Piping, Valves, Coatings)
- C.2.2.5. One-line Diagram
- C.2.2.6. Site Layouts & Sections (Overall, Pumps, Valves Replacement Sheets)
- C.2.2.7. Plan and Profile sheets
- C.2.2.8. Paving and drainage sheet
- C.2.2.9. Connection Details & sections
- C.2.2.10. Project Details Sheets
- C.2.2.11. Structural Details
- C.2.2.12. Details (Mechanical, Miscellaneous, Standard details, etc)

C.3. Develop Project Manual

- C.3.1. Development of Table of Contents
- C.3.2. Incorporate General Conditions, General Requirements and Special Conditions
- C.3.3. Draft project specific technical specifications.
- C.4. 60% OPCC (20% contingency)
- C.5. Perform internal QC review and address QC comments.
- C.6. 60% Design Workshop
 - C.6.1. Conduct 60% Design workshop to review the 60% Design Submittal
 - C.6.2. Prepare and distribute meeting notes
 - C.6.3. Address comments provided by the Owner

Deliverables

- 60% Design Deliverables (plans and specifications) (three half-size copies and one PDF)
- 60% OPCC
- 60% Design Review Workshop and meeting notes

D. Task 4 – 90% Design Phase

- D.1. Perform site visits as needed for 90% design, up to 1 site visits included.
- D.2. Construction Drawings – Develop 90% Plan Set
- D.3. Draft Project Manual – including all front end and contract specifications
- D.4. 90% OPCC (10% Contingency)
- D.5. Perform internal QC review and address QC comments
- D.6. 90% Design Workshop
 - D.6.1. Conduct 90% Design workshop to review the 90% Design Submittal
 - D.6.2. Address comments provided by Owner

Deliverables

- 90% Design Deliverables (plans and specifications) (three half-size copies (1 unbound) and one PDF)
- 90% OPCC
- 90% Design Review Workshop and meeting notes

E. Task 5 – 100% Design Phase

- E.1. Construction Drawings – Develop 100% Plan Set
- E.2. Final Project Manual
- E.3. Final Opinion of Probable Construction Cost

- E.4. Submittal to TCEQ for approval
- E.5. Perform internal QC review and address QC comments

Deliverables

- Final design deliverables (plans and specifications) (three half-size copies and one PDF)
- 100% OPCC

F. Task 6 – Bidding Phase Services

- F.1. Prepare and submit Advertisement for Bids to OWNER for OWNER publication. The OWNER will pay advertising costs outside of this contract.
- F.2. Support the contract documents by preparing and issuing addenda (assume 2 Addenda).
- F.3. Participate in pre-bid meeting.
- F.4. Attend the bid opening.
- F.5. Prepare bid tabulation.
- F.6. Evaluate bids and recommend award.
- F.7. Prepare conformed contract documents (i.e. integrate addenda items).
- F.8. Prepare construction contracts.

Deliverables:

- Conformed contract documents (Four half-size copies and one PDF)

G. Task 7 - Construction Administration

During the construction administration phase of the project, Engineer will:

- G.1. Attend Pre-Construction Conference and Issue a Notice to Proceed letter to the Contractor.
- G.2. Attend up to 7 bi-monthly progress/coordination meetings, through the anticipated duration of construction.
- G.3. Perform up to 6 site visits to determine the overall progress of construction and conformance with plans and specifications
- G.4. Review all shop drawings for the Project and respond to contractor with acceptance or rejection as appropriate. When requested, review laboratory testing reports, field change requests and change orders and provide comments to the Owner. Provide written responses to requests for information or clarification to Owner and / or contractor. Provide and maintain an accurate Submittal Log to track submittals, Requests for Information (RFI) and change orders and field orders.
- G.5. Upon substantial completion of construction will participate in a final walk-through with the Owner and the contractor and prepare a punch list on behalf of the Owner.
- G.6. Prepare record drawings utilizing Owner and contractor field redline information.

ADDITIONAL SERVICES

Any additional services that may be required by the OWNER for completion of the project that are not included in the Basic or Special Services. Compensation by the OWNER to the ENGINEER for all Additional Services, which may be required by the OWNER will be paid on an hourly basis per the attached rate schedule. No work will be undertaken on this item without specific written authorization from the OWNER.

Project 2 – Supply Main Redundancy (DWU & IWU Pipeline Interconnects)

The purpose of **Project 2** is as follows:

Coordination and support for the City of Coppell (Coppell) for the development of a Preliminary Design Report including coordination with Dallas Water Utilities (DWU) and City of Irving (Irving) for feasibility, location and design standards for the following:

- Water supply pipeline interconnections at 2 locations for supply redundancy:
 - Irving/Coppell – Connection between the City of Irving 60-inch supply main and the DWU/Coppell 42-inch supply main at Sandy Lake Dr. and Starleaf Rd., including 42-inch piping, and a Pressure Reducing Valve (PRV) station.
 - DWU/Coppell – Connection to the DWU 30-inch main in Sandy Lake Rd. and 440LF of new 30-inch pipeline in Kimbel Kourt to the ex. 36-inch supply main at the VPPS connecting immediately before the DWU rate of flow control vault.
 - IWU Meter station, if needed
 - I&C for valving and/or meter station, if needed
 - Other considerations and approaches as needed and directed by Coppell

**ARTICLE I
SCOPE OF SERVICES**

The ENGINEER agrees to furnish the OWNER the following specific services on a time and materials basis:

BASIC ENGINEERING SERVICES**A. Task 1 – Project Management**

BGE will perform the functions to manage the project in a manner that fulfills the contractual requirements. Specific management tasks include:

- A.1. Prepare monthly summary reports and invoices.

B. Task 2 – Development of Preliminary (30%) Design Report

The Preliminary Design Report (PDR) will be developed and will include the following tasks:

- B.1. Assistance and support of Coppell in coordinating with DWU and Irving
- B.2. Data Collection
- B.3. Perform site visits as needed.
- B.4. Perform analyses and calculations as needed to evaluate feasibility of interconnections considered.
- B.5. Develop pipeline alignment and vault layouts for each interconnection evaluated.
- B.6. Opinion of probable construction cost (OPCC).
- B.7. Technical memo establishing interconnect locations, system pressures, required valving and flow and volume to be provided.
- B.8. Address comments provided by Owner.

Deliverables

- Technical Memo with 30% Plan Layout Plots, Preliminary Specification List, and OPCC (three copies and one PDF)

Project 3 – Distribution System Interconnects (to City of Lewisville)

The purpose of **Project 3** is as follows:

Coordination and support for the City of Coppell (Coppell) for the development of a Preliminary Design Report for finalizing water distribution system interconnections for the following:

- Water supply pipeline interconnections at 3 locations between the City of Lewisville (CoL) and Coppell for water distribution redundancy:
 - Coordination with CoL on final locations, flow and volume to be provided.
 - Interconnect 1 (Denton Tap Dr. at Highlands Dr.) – Connection between a CoL 12-inch main and a Coppell 12-inch main, including bored street crossing and Flow Control Valve (FCV) vault.
 - Interconnect 2 (MacArthur Dr. at Lake Vista Dr.) – Connection between a CoL 12-inch main and a Coppell 12-inch main, including bored street crossing and Flow Control Valve (FCV) vault.
 - Interconnect 3 (Vista Ridge Dr. at Ridgewood Dr.) – Connection between a CoL 12-inch main and a Coppell 12-inch main, including 780 LF of 12-inch water line, in a new easement, and Flow Control Valve (FCV) vault.

**ARTICLE I
SCOPE OF SERVICES**

The ENGINEER agrees to furnish the OWNER the following specific services on a time and materials basis:

BASIC ENGINEERING SERVICES**A. Task 1 – Project Management**

BGE will perform the functions to manage the project in a manner that fulfills the contractual requirements. Specific management tasks include:

- A.1. Prepare monthly summary reports and invoices.

B. Task 2 – Development of Preliminary (30%) Design Report

The Preliminary Design Report (PDR) will be developed and will include the following tasks:

- B.1. Data Collection
- B.2. Perform site visits as needed for Preliminary Design, up to 2 site visits included.
- B.3. Perform analyses and calculations to determine pipe and FCV sizing for both locations.
- B.4. Develop pipeline alignment and layout for each location including size and orientation of FCV station.
- B.5. Opinion of probable construction cost (OPCC). Address comments provided by Owner
- B.6. Technical memo establishing final locations, flow and volume to be provided.

Deliverables

- , Technical Memo, 30% Plan Layout Plots, Preliminary Specification List, and OPCC (three copies and one PDF)

Project 4 – Distribution System Interconnects (to City of Grapevine & Irving)

The purpose of **Project 4** is as follows:

Coordination, support and development of a Preliminary Design Report for the following:

- Water supply pipeline interconnections at 2 locations between the City of Grapevine (CoG) and City of Irving (Irving) and the City of Coppell (Coppell) for water distribution redundancy:
 - Coordination with each City on available, pressure and flow feasible
 - Determine proposed interconnect locations, flow and volume available.
 - Prepare technical memo determining
 - Interconnect location
 - Water volume and pressure available
 - Potential site locations and proposed layouts

**ARTICLE I
SCOPE OF SERVICES**

The ENGINEER agrees to furnish the OWNER the following specific services on a time and materials basis:

BASIC ENGINEERING SERVICES**C. Task 1 – Project Management**

BGE will perform the functions to manage the project in a manner that fulfills the contractual requirements. Specific management tasks include:

- C.1. Prepare monthly summary reports and invoices.

D. Task 2 – Development of Preliminary (30%) Design Report

The Preliminary Design Report (PDR) will be developed and will include the following tasks:

- D.1. Data Collection
- D.2. Perform site visits as needed for Preliminary Design, up to 2 site visits included.
- D.3. Perform analyses and calculations to determine pipe and FCV sizing for both locations.
- D.4. Develop pipeline alignment and layout for each location including size and orientation of FCV station.
- D.5. Opinion of probable construction cost (OPCC).
- D.6. Technical memo establishing final locations, flow and volume to be provided.
- D.7. Address comments provided by Owner.

Deliverables

- Technical Memo with 30% Plan Layout Plots, Preliminary Specification List, and OPCC (three copies and one PDF)