



1365 Hamlet Avenue, Clearwater, FL 33756, (727) 442-7196

WORK ORDER INITIATION FORM for the CITY OF CLEARWATER

Date:	May 19, 2020
Consultant Project Number:	0992-0xxx
City Project Number:	20-0017-UT
City Plan Set Number:	2020012

1. PROJECT TITLE:

Lift Station 25 12-inch Force Main Replacement

2. SCOPE OF SERVICES:

The City of Clearwater (City) owns and operates Lift Station 25 (LS 25) and its associated 12-inch force main located along Countryside Boulevard. This force main runs from LS 25, which is located west of US 19, to a gravity sewer manhole located near the intersection of Countryside Boulevard and Winding Wood Drive, a distance of approximately 5,400 LF. In addition to LS 25, there are three (3) other City owned lift stations and one (1) private lift station that manifold into the 12-inch force main.

The 12-inch force main has recently been repaired following a failure near its terminus. At this time the City desires the condition of the force main be investigated to determine the extent of the recommended repairs, if any, including the potential need to line the pipe, perform point repairs, install ARVs, and, if recommended, the full replacement of the force main.

The City has requested McKim & Creed (Consultant) to provide professional engineering services to investigate the condition of the force main and evaluate the need and type of repairs to extend the useful life of this force main. The work included with this scope of services includes the following tasks.

TASK 1.0 - PROJECT MANAGEMENT AND ADMINISTRATION

Task 1.1 – Project Setup, Status Reports and Project Administration: Consultant will develop project documents and filing systems needed to administer the project such as CPM project schedule, project management plan, project QA/QC plan, project safety plan, electronic file systems, and sub-consultant agreements. Consultant will administer the project and provide monthly status reports of the progress of this scope of work to accompany monthly invoices.

Task 1.2 – Project Meetings: Consultant will schedule and attend a total of two (2) project meetings during the course of the project including:

1. Project Kick-Off Meeting
2. Draft Basis of Design Review Meeting

The Consultant will prepare the meeting minutes and distribute to the attendees as PDF copy via email.

TASK 2.0 PRELIMINARY DESIGN SERVICES

Task 2.1 – Data Collection and Review: Consultant will conduct a site visit and review existing record drawings and utility atlas maps to become familiar with the obstacles within the corridor and develop design strategies to minimize community impacts and costs. Consultant will submit a design ticket to Sunshine State One Call to obtain private utility information within the Countryside Boulevard right-of-way. Field survey and subsurface utility engineering will not be performed.

Task 2.2A – Pressure Pipe Assessment: Consultant will contract with a pipe assessment sub-consultant (Pure Technologies or Aquam Corp.) to perform the field investigation of the 12-inch force main. The field investigation will include internal inspection using acoustic technology (Pure Technologies Smartball® or Aquam Bullet™) for leak and gas pocket detection. With the location(s) of leaks and/or gas pockets identified, the City will be able to conduct further field investigation by exposing the pipe to perform pipe observation and pipe wall thickness measurement.

Task 2.2B – Transient Pressure Monitoring: Consultant will deploy transient pressure monitoring devices on each force main (5 total) to record transient pressure events for 30 days. The transient pressure monitors continuously monitoring pressure while under normal operating conditions and record normal operating data every few minutes. However, when a transient event occurs in a pipeline, the monitor detects the sudden change in pressure and records data at a higher sampling rate (typically in intervals of 50 milliseconds). Collection of transient pressure data is beneficial in that it documents the actual pressures within the pipe that influence the pipe's performance. The transient pressure monitoring will be performed concurrently with the pressure pipe assessment (Task 2.2A). The results of the transient pressure monitoring will be included in the Basis of Design Report.

Task 2.3 – Field Investigations: Based on the results of Task 2.2A, the Consultant and the City will determine the feasibility to excavate and expose the 12-inch force main at the locations where potential leaks and/or gas pockets were identified to determine the nature of the leak and/or pipe wall thickness. It is understood that the City will assist with the performance of

the field investigations by trench excavating and exposing the pipe to provide safe access to the pipe for the Consultant to observe the pipe and to measure the pipe wall thickness. For budgeting purposes, Consultant assumes the need to perform fifteen (15) pipe wall thickness measurements at a unit rate of \$860 per test, for a total of \$12,900. Actual cost will be based on the number of measurements performed.

Task 2.4 – Draft Basis of Design Report: Using the information obtained in Tasks 2.1 through 2.3, Consultant will prepare a draft Basis of Design Report (BODR) summarizing the results of the pipe assessments and field investigations. The BODR will include recommendations for point repairs, installation of ARV's, and/or lining of the force main where necessary, recommended installation techniques including maintenance of lift station/force main operations during the construction, conceptual maintenance of traffic, and a preliminary opinion of construction cost (AACE Class 5) for the repairs. The draft BODR will also include an evaluation of a potential pipe corridor to install a replacement 12-inch force main from LS 25 to the terminal manhole located near the intersection of Countryside Boulevard and Winding Wood Drive and a preliminary opinion of construction cost (AACE Class 5). Three (3) hard copies and an electronic PDF copy of draft BODR will be submitted to the City for review. A review meeting will be scheduled with City staff to discuss the recommendations of the draft BODR and the City's comments. Consultant will conduct the meeting and prepare meeting minutes. Evidence that each submittal has been internally reviewed will be provided to City with the submittal.

Task 2.5 – Final Basis of Design Report: Consultant will revise the BODR, incorporate comments received from the City and decisions made during the draft BODR review meeting. Three (3) signed & sealed hard copies and an electronic PDF copy of final BODR will be submitted to the City.

Task 2.6 – Project Catalog: Consultant will prepare and submit a Project Catalog which shall include the following items, as applicable to this project:

1. Files of correspondence, meeting minutes
2. Contract Documents, change orders, field orders, RFIs, work change directives, addenda, additional drawings issued subsequent to the execution of the Construction Contract
3. Progress reports
4. Shop drawing and progress submittals
5. Regulatory correspondence
6. Other project-related documents such as O&M manuals and warranty information.

At the conclusion of the project, Consultant will combine this information into a project catalog and submit to the City for review and comment. The project catalog will be submitted electronically on CD/DVD ROM. We have budgeted for up to one round of City review and comments.

3. **PROJECT GOALS:**

The main project goal is to evaluate the condition of the existing Lift Station 25 force main and identify/recommend repairs or replacement to this critical piece of the City's wastewater infrastructure.

Deliverables for the project will include:

- Monthly Status Reports with Invoice
- Project Meeting Minutes
- Draft Basis of Design Report
- Final Basis of Design Report
- Project Catalog

In the event that during the evaluation of the force main, it is decided that the condition of the force main warrants replacement, the City will notify McKim & Creed to stop the evaluation and remaining fees can be used towards a portion of the design costs for a replacement force main.

4. **BUDGET:**

See attachment "B".

This price includes all labor and expenses anticipated to be incurred by McKim & Creed, Inc. for the completion of these tasks in accordance with Professional Services Method "A" – Hourly Rate, **for a fee not to exceed One Hundred Forty-Eight Thousand Six Hundred Fourteen Dollars (\$148,614.00).**

5. **SCHEDULE:**

The project is to be completed 216 ⁽¹⁾ days from issuance of notice-to-proceed. The project deliverables are to be phased as follows:

Kick-off Meeting	10 calendar days from NTP
Pressure Pipe Assessment (Task 2.2A)	90-calendar days from NTP
Transient Pressure Monitoring (Task 2.2B)	90-calendar days from NTP
Field Investigations (Task 2.3)	30-calendar days following the completion of the pressure pipe assessment ⁽¹⁾
Draft Basis of Design Report	45 calendar days after receiving the results of the field investigations
City review of draft BODR and review meeting	3 weeks from submission of the draft BODR
Final Basis of Design Report	30 calendar days after the draft BODR review meeting

⁽¹⁾ Schedule is dependent on City's schedule to assist with field investigations as described in Task 2.3. For the purpose of determining the time to complete the project, Consultant assumed 30-calendar days for this Task.

6. STAFF ASSIGNMENT:

Consultant:

A. Street Lee, PE	Senior Vice President
Mitch Chiavaroli, PE	Senior Project Manager
Blake Peters, PE	Senior Engineer

City:

David Ojeda	Project Manager
Jerry Wells	Public Utilities Assistant Manager
Glenn Daniels	Public Utilities Manager
Jeremy J. Brown, PE	Utilities Engineering Manager
Richard G. Gardner, PE	Public Utilities Assistant Director
Michael Gilliam	Public Utilities Infrastructure Maintenance Manager
Kervin St. Aimie	Public Utilities Infrastructure Maintenance Assistant Manager

7. CORRESPONDENCE/REPORTING/COMMUNICATION PROCEDURES:

ENGINEER's project correspondence shall be directed to:

Mitch Chiavaroli, PE (mchiavaroli@mckimcreed.com)

Blake Peters, PE (bpeters@mckimcreed.com)

All City project correspondence shall be directed to:

David Ojeda (David.ojeda@myclearwater.com) with copies to the Utilities Engineering Manager, Public Utilities Assistant Director, and others as may be appropriate.

ENGINEER shall provide a minimum of forty-eight (48) hours' notice prior to conducting fieldwork/site visits. ENGINEER shall provide a minimum of seven (7) days notification for site visits requiring the assistance of City Operations and Maintenance personnel.

ENGINEER acknowledges that all City directives shall be provided by the City Project Manager.

In addition to the original copies delivered as stated in the scope of work, all project deliverables will be submitted in electronic format on CD or other City approved device prior to approval of final invoice.

8. INVOICING/FUNDING PROCEDURES:

For work performed, invoices shall be submitted monthly to the:

City of Clearwater, Engineering Department
Att. Veronica Josef, Senior Staff Assistant
PO Box 4748
Clearwater, Florida 33758-4748.

Contingency services will be billed as incurred only after written authorization provided by the City to proceed with those services.

City Invoicing Code: **3217321-561300-96686 for \$148,614.00**

9. INVOICING PROCEDURES

At a minimum, in addition to the invoice amount(s) the following information shall be provided on all invoices submitted on the Work Order:

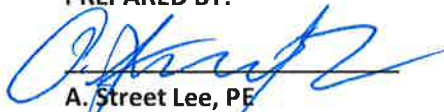
- A. Project, Purchase Order, Invoice Numbers and Contract Amount.
- B. The time period (begin and end date) covered by the invoice.
- C. A short narrative summary of activities completed in the time period
- D. Contract billing method – Lump Sum or Hourly Rate
- E. If Lump Sum, the percent completion, amount due, previous amount earned and total earned to date for all tasks (direct costs, if any, shall be included in lump sum amount).
- F. If Hourly Rate, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, total earned to date for each task and other direct costs (receipts will be required for any single item with a cost of \$50 or greater or cumulative monthly expenses greater than \$100).
- G. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

10. SPECIAL CONSIDERATIONS:

The consultant named above is required to comply with Section 119.0701, Florida Statutes (2013) where applicable.

- A. The Consultant named above is required to comply with Section 119.0701, Florida Statutes (2013) where applicable.
- B. City will provide support personnel during the pipe assessment (Task 2.2A and B) for locating the access man ways, traffic control, and other support as necessary.
- C. City staff may be requested to assist in the sensor installation and removal, if necessary.
- D. City staff will operate the lift stations during the pipe assessment (Task 2.2A and B) which may require changes to the normal operational procedures to provide minimum and maximum flow velocities within the force main.
- E. Render confined space areas safe for service.
- F. No alternate equals without Owner approval.

PREPARED BY:



A. Street Lee, PE
Senior Vice President
McKim & Creed, Inc.

5/19/20

Date

APPROVED BY:

Tara Kivett, P.E.
City Engineer
City of Clearwater

Date



CITY OF CLEARWATER ENGINEERING DEPARTMENT

WORK ORDER INITIATION FORM CITY DELIVERABLES

1. **FORMAT**

The design plans shall be compiled utilizing the following methods:

1. City of Clearwater CAD standards.
2. Datum: Horizontal and Vertical datum shall be referenced to North American Vertical Datum of 1988 (vertical) and North American Datum of 1983/90 (horizontal). The unit of measurement shall be the United States Foot. Any deviation from this datum will not be accepted unless reviewed by City of Clearwater Engineering/Geographic Technology Division.

2. **DELIVERABLES**

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. Upon completion the consultant shall deliver all drawing files in digital format with all project data in Autodesk Civil 3D file format. If not available Land Desktop files are still acceptable, however the City or Clearwater is currently phasing out Land Desktop.

NOTE: If approved deviation from Clearwater CAD standards are used the Consultant shall include all necessary information to aid in manipulating the drawings including either PCP, CTB file or pen schedule for plotting. The drawing file shall include only authorized fonts, shapes, line types or other attributes contained in the standard release of Autodesk, Inc. software. All block references and references contained within the drawing file shall be included. Please address any questions regarding format to Mr. Tom Mahony, at (727) 562 4762 or email address Tom.Mahony@myClearwater.com.

All electronic files (including CAD and Specification files) must be delivered upon completion of project or with 100% plan submittal to City of Clearwater.

Lift Station 25 12-inch Force Main Replacement City Project No. 20-0017-UT



WORK ORDER INITIATION FORM PROJECT BUDGET

Task	Description	Subconsultant Services	Labor	Total
1.0	Project Management and Administration			
1.1	Project Setup, Status Reports & Administration		\$11,780	\$11,780
1.2	Project Meetings		\$3,110	\$3,110
Task Total				\$14,890
2.0	Preliminary Design Services			
2.1	Data Collection and Review		\$5,013	\$5,013
2.2A	Pressure Pipe Assessment	\$53,784	\$9,552	\$63,336
2.2B	Transient Pressure Monitoring	\$5,250	\$2,905	\$8,155
2.3	Field Investigations		\$18,000	\$18,000
2.4	Draft Basis of Design Report		\$17,170	\$17,170
2.4	QAQC Draft Basis of Design Report		\$1,650	\$1,650
2.5	Final Basis of Design Report		\$4,730	\$4,730
2.5	QAQC Final Basis of Design Report		\$1,110	\$1,110
2.6	Project Catalog		\$1,050	\$1,050
Task Total				\$120,214
Subtotal				\$135,104
Contingency (10%)				\$13,510
Grand Total				\$148,614