

RESOLUTION NO. 1813

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF FIFE, PIERCE COUNTY, WASHINGTON AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT WITH PARAMETRIX, INC. FOR CONSULTING AND DESIGN SERVICES FOR SCADA/TELEMETRY AND SEWER PUMP STATION IMPROVEMENTS

WHEREAS, the City has ten sewer pump stations with dedicated force mains (PS-1, 4, 5, 6, 8, 10, 11, 12, 13 and 14), and three sewer lift stations (PS-2, 3, 7). Maintenance staff currently performs station checks twice weekly; and

WHEREAS, the scope of this project will consist of review of existing communication infrastructure at each of Fife's 16 pump stations and preparation of a communications design and bid package preparation to allow remote monitoring; and

WHEREAS, the scope also includes preparation of a bid package of three improvements at sewer Pump Station 12 (PS-12) and one improvement at Pump Station 13 (PS-13). The improvements consist of a wet well recoating, pump replacement and generator at PS-12 and generator installation at PS-13; and

WHEREAS, the scope of the project also includes design services for the relocation of sewer pump station No. 8 (PS-8). PS-8 is located at the SW corner of the intersection of 20<sup>th</sup> Street E and 62<sup>nd</sup> Ave E; and

WHEREAS, staff interviewed two design consultants on November 17, 2017 and selected Parametrix as the most qualified consultant. After selection, staff negotiated the attached contract, scope and fee; now therefore

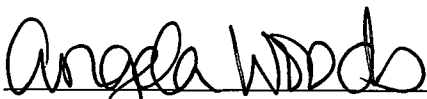
BE IT RESOLVED that the Fife City Council hereby authorizes the City Manager to execute a contract with Parametrix, Inc. in the amount not to exceed \$519,434.93 for consulting and design services for SCADA/Telemetry and sewer pump station improvements in the form attached hereto as Exhibit A.

ADOPTED by the City Council at an open public meeting held on the 23<sup>th</sup> day of January, 2018.



Kim Roscoe, Mayor

Attest:



Angela Woods, City Clerk

**CITY OF FIFE PROFESSIONAL SERVICES AGREEMENT**

**1. Parties and Date.** THIS Agreement is made effective as of the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by and between CITY OF FIFE, WASHINGTON ("City") and Parametrix, Inc. \_\_\_\_\_ ("Consultant").

**2. General Purpose and Intent.**

This contract includes the scope of work, design schedule, and compensation for Parametrix for designing the bid documents for the SCADA/Telemetry and Pump Station Improvements project for the City.

**3. Services by Consultant.**

A. Consultant shall perform the services described in the Scope of Work attached hereto as Exhibit "A" (the "Scope of Work"). The services performed by the Consultant shall not exceed the Scope of Work without prior written authorization from the City.

B. The City may from time to time require changes or modifications in the Scope of Work. Such changes, including any decrease or increase in the amount of compensation, shall be agreed to by the parties and incorporated in written amendments to the Agreement.

**4. Schedule of Work.**

A. Consultant shall perform the services described in the Scope of Work in accordance with the schedule attached hereto as Exhibit "B." If delays beyond Consultant's reasonable control occur, the parties will negotiate in good faith to determine whether an extension is appropriate.

B. Consultant is authorized to proceed with the services described in the Scope of Work upon receipt of a written Notice to Proceed.

**5. Compensation.**

LUMP SUM. Compensation for the services described in the Scope of Work shall be a Lump Sum of \$ \_\_\_\_\_.

TIME AND MATERIALS NOT TO EXCEED. Compensation for the services described in the Scope of Work shall not exceed \$ 519,434.93 without written authorization and will be based on the list of billing rates and reimbursable expenses attached hereto as Exhibit "C."

TIME AND MATERIALS. Compensation for the services described in the Scope of Work shall be on a time and material basis according to the list of billing rates and reimbursable expenses attached hereto as Exhibit "C."

OTHER. \_\_\_\_\_

**6. Coordination of Contract Documents.** This Agreement consists of this professional services agreement form and Exhibits "A" through "C." If there is any inconsistency between this professional

services agreement form and any of the Exhibits, the professional services agreement form shall take precedence.

**7. Payment.**

A. Consultant shall provide monthly invoices in the format acceptable to the City for work performed to the date of invoice. Consultant shall maintain time and expense records for reimbursable expenses and any work that is billed hourly under this Agreement and provide them to the City upon request.

B. All invoices shall be paid by City warrant within sixty (60) days of receipt of a proper invoice.

C. Consultant shall keep cost records and accounts pertaining to this Agreement available for inspection by City representatives for three (3) years after final payment unless a longer period is required by a third-party agreement. Copies shall be made available on request.

D. If the services rendered do not meet the requirements of the Agreement, Consultant will correct or modify the work to comply with the Agreement. City may withhold payment for such work until the work meets the requirements of the Agreement.

**8. Discrimination and Compliance with Laws.**

A. Consultant agrees not to discriminate against any employee or applicant for employment or any other person in the performance of this Agreement because of race, creed, color, national origin, marital status, sex, age, disability, or other circumstance prohibited by federal, state, or local law or ordinance, except for a bona fide occupational qualification.

B. Consultant shall comply with all federal, state, and local laws and ordinances applicable to the work to be done under this Agreement.

C. Consultant shall obtain a City of Fife business license pursuant to the provisions of Chapter 5.01 FMC prior to receipt of written Notice to Proceed.

D. Violation of this Paragraph 8 shall be a material breach of this Agreement and grounds for cancellation, termination, or suspension of the Agreement by City, in whole or in part, and may result in ineligibility for further work for City.

**9. Term and Termination of Agreement**

A. This Agreement may be terminated by the City at any time upon the default of the Consultant or upon public convenience, in which event all finished or unfinished documents, reports, or other material or work of Consultant pursuant to this Agreement shall be submitted to City, and Consultant shall be entitled to just and equitable compensation for any satisfactory work completed prior to the date of termination, not to exceed the total compensation set forth herein. Consultant shall not be entitled to any reallocation of cost, profit or overhead. Consultant shall not in any event be entitled to anticipated profit on work not performed because of such termination. Consultant shall use its best efforts to minimize the compensation payable under this Agreement in the event of such termination. If the Agreement is

terminated for default, the Consultant shall not be entitled to receive any further payments under the Agreement until all work called for has been fully performed. Any extra cost or damage to the City resulting from such default(s) shall be deducted from any money due or coming due to the Consultant. The Consultant shall bear any extra expenses incurred by the City in completing the work, including all increased costs for completing the work, and all damage sustained, or which may be sustained by the City by reason of such default.

B. The City may suspend this Agreement, at its sole discretion, upon one week's advance notice to Consultant. Such notice shall indicate the anticipated period of suspension. Any reimbursement for expenses incurred due to the suspension shall be limited to the Consultant's reasonable expenses, and shall be subject to verification. The Consultant shall resume performance of services under this Agreement without delay when the suspension period ends.

**10. Standard of Care.** Consultant represents and warrants that it has the requisite training, skill and experience necessary to provide the services under this agreement and is appropriately accredited and licensed by all applicable agencies and governmental entities. Services provided by Consultant under this agreement will be performed in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing in similar circumstances.

**11. Ownership of Work Product.**

A. All data materials, reports, memoranda, and other documents developed under this Agreement whether finished or not shall become the property of City, shall be forwarded to City at its request and may be used by City as it sees fit. Documents pertaining to work done by the Consultant for the City may be considered public records under the Public Records Act (RCW 42.56) and shall be tendered to the City upon the City's request. Failure to tender all requested documents is considered a material breach of this Agreement. Upon termination of this agreement pursuant to paragraph 9 above, all finished or unfinished documents, reports, or other material or work of Consultant pursuant to this Agreement shall be submitted to City. City agrees that if it uses products prepared by Consultant for purposes other than those intended in this Agreement, it does so at its sole risk and it agrees to indemnify and hold Consultant harmless therefore.

B. Spatial data created by consultants for City of Fife via this contract should be delivered as either ESRI shapefiles or an ESRI file geodatabase. The data should be developed in (or projected to) StatePlane 1983, WA South (Projection), NAD83HPGN (Datum), US Survey Feet (units). These datasets should be delivered on CD/DVD, complete with any projection files, accessory tables relatable by a fixed unique identifier to the spatial data, and metadata using Federal Geographic Data Committee (FGDC) specifications. If the data is produced in AutoCad 2000 or later, the shapefile format is an export option and should be utilized and all other criteria still apply. The City of Fife retains ownership to such data layers produced using taxpayer dollars and controls any future dissemination or reuse of this data.

**12. Indemnification/Hold Harmless.** Consultant shall defend, indemnify and hold the City, its officers, officials, employees and volunteers harmless from any and all claims, injuries, damages, losses or suits including attorney fees, arising out of or resulting from the acts, errors or omissions of the Consultant in performance of this Agreement, except for injuries and damages caused by the sole negligence of the City. Should a court of competent jurisdiction determine that this Agreement is subject to RCW 4.24.115, then, in the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of the Consultant and the City, its officers, officials,

employees, and volunteers, the Consultant's liability, including the duty and cost to defend, hereunder shall be only to the extent of the Consultant's negligence. It is further specifically and expressly understood that the indemnification provided herein constitutes the Consultant's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement.

**13. Insurance.** The Consultant shall procure and maintain for the duration of this Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Consultant, its agents, representatives, or employees. Consultant's maintenance of insurance as required by this Agreement shall not be construed to limit the liability of the Consultant to the coverage provided by such insurance, or otherwise limit the City's recourse to any remedy available at law or in equity.

**A. Minimum Scope of Insurance**

Consultant shall obtain insurance of the types described below:

1. Automobile Liability insurance covering all owned, non-owned, hired and leased vehicles. Coverage shall be written on Insurance Services Office (ISO) form CA 00 01 or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage.
2. Commercial General Liability insurance shall be at least as broad as ISO occurrence form CG 00 01 and shall cover liability arising from premises, operations, stop-gap independent contractors and personal injury and advertising injury. The City shall be named as an additional insured under the Consultant's Commercial General Liability insurance policy with respect to the work performed for the City using an additional insured endorsement at least as broad as ISO CG 20 26.
3. Workers' Compensation coverage as required by the Industrial Insurance laws of the State of Washington.
4. Professional Liability insurance appropriate to the Consultant's profession.

**B. Minimum Amounts of Insurance**

Consultant shall maintain the following insurance limits:

1. Automobile Liability insurance with a minimum combined single limit for bodily injury and property damage of \$1,000,000 per accident.
2. Commercial General Liability insurance shall be written with limits no less than \$1,000,000 each occurrence, \$2,000,000 general aggregate.
3. Professional Liability insurance shall be written with limits no less than \$1,000,000 per claim and \$1,000,000 policy aggregate limit.

C. Other Insurance Provisions

The Consultant's Automobile Liability and Commercial General Liability insurance policies are to contain, or be endorsed to contain that they shall be primary insurance as respect the City. Any Insurance, self-insurance, or insurance pool coverage maintained by the City shall be excess of the Contractor's insurance and shall not contribute with it.

D. Acceptability of Insurers

Insurance is to be placed with insurers with a current A.M. Best rating of not less than A:VII.

E. Verification of Coverage

Consultant shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Consultant before commencement of the work.

F. Notice of Cancellation

The Consultant shall provide the City with written notice of any policy cancellation, within two business days of their receipt of such notice.

G. Failure to Maintain Insurance

Failure on the part of the Consultant to maintain the insurance as required shall constitute a material breach of contract, upon which the City may, after giving five business days notice to the Consultant to correct the breach, immediately terminate the contract or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the City on demand, or at the sole discretion of the City, offset against funds due the Consultant from the City.

H. Full Availability of Consultant Limits

If the Consultant maintains higher insurance limits than the minimums shown above, the City shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Consultant, irrespective of whether such limits maintained by the Consultant are greater than those required by this contract or whether any certificate of insurance furnished to the City evidences limits of liability lower than those maintained by the Consultant.

**14. Assigning or Subcontracting.** Consultant shall not assign, transfer, subcontract or encumber any rights, duties, or interests accruing from this Agreement without the express prior written consent of the City, which consent may be withheld at the City's sole discretion.

**15. Independent Contractor.** The Contractor is and shall be at all times during the term of this Contract an independent contractor and not an employee of the City. Any and all employees of the Contractor, while engaged in the performance of any work or services required by the Contractor under this Contract, shall be considered employees of the Contractor only and not of the City. As an independent

contractor, the Contractor shall be responsible for the reporting and payment of all applicable local, state, and federal taxes.

**16. Notice**

A. Any notice or communication required by this Agreement must be in writing, and may be given either personally, electronically with evidence of receipt, by express delivery service, or by registered or certified mail, return receipt requested. If given personally, by express delivery service, or by registered or certified mail, such notice or communication shall be deemed to have been given and received upon actual receipt. If delivery is made electronically, either by e-mail or facsimile transmission, a notice shall be deemed to have been given when delivered to the person to whom it is addressed, and there is electronic confirmation that it was received. Such notices or communications shall be given to the Parties at their addresses set forth below:

Hyun Kim  
City Manager  
5411 23<sup>rd</sup> Street East  
Fife, WA 98424

Phone: 253 922-2489  
Fax: 253 922-5355  
Email: [hkim@cityoffife.org](mailto:hkim@cityoffife.org)

Brian Bunker  
Water Solutions Division Manager  
1019 39th Avenue S.E., Suite 100  
Puyallup, WA 98374

Phone: (253) 604-6634  
Fax: (855) 542-6353  
Email: BBunker@Parametrix.com

B. Either party may change its contact information by sending its new contact information to the other party in the same manner as is provided for sending the other party notice under the provisions of paragraph 16.A.

**17. Disputes.** Any action for claims arising out of or relating to this Agreement shall be governed by the laws of the State of Washington. Venue shall be in Pierce County Superior Court.

**18. Attorneys' Fees.** In any suit or action instituted to enforce any right granted in this Agreement, the substantially prevailing party shall be entitled to recover its costs, disbursements, and reasonable attorneys fees from the other party.

**19. Severability.** Should any clause, phrase, sentence or paragraph of this Agreement or its application be declared invalid or void by a court of competent jurisdiction, the remaining provisions of this Agreement or its applications of those provisions not so declared shall remain in full force and effect.

*(This space intentionally left blank)*

20. **Extent of Agreement/Modification.** This Agreement, together with attachments or addenda, represents the entire and integrated Agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may be amended, modified or added to only by written instrument properly signed by both parties.

CITY OF FIFE, WASHINGTON

CONSULTANT

By: \_\_\_\_\_  
Hyun Kim  
City Manager

\_\_\_\_\_ 

Date: \_\_\_\_\_

By: \_\_\_\_\_

Name: Brian E. Plunker

Approved as to form:

Title: Water Solutions Division Manager

By: \_\_\_\_\_  
Gregory F. Amann  
Assistant City Attorney

Date: 1/10/18

\_\_\_\_\_  
CITY

  
\_\_\_\_\_  
CONSULTANT



## Exhibit A

# SCOPE OF WORK

## City of Fife SCADA/Telemetry and Pump Station Improvements

### OVERVIEW

The City of Fife (City) has ten sewer pump stations with dedicated force mains (PS-1, 4, 5, 6, 8, 10, 11, 12, 13 and 14), and three sewer lift stations (PS-2, 3, 7). The City also has three stormwater pump station facilities (Wapato, 26<sup>th</sup> Street E and Erdahl Ditch). Maintenance staff currently performs physical checks of every station twice weekly because there is no existing Supervisory Control and Data Acquisition (SCADA) system to remotely communicate station status and alarms. To determine station status, the City relies on their bi-weekly physical checks as well as police staff and others to report red alarm lights on top of the control panels.

The City started construction of a SCADA system under Sewer LID 98-2, which installed Allen Bradley Programmable Logic Controllers (PLCs), radios, and antennas at PS-1, 5, 6, 10, 12, 13 and 14. The communications equipment was never fully configured and the City still does not have communications with any of their stations.

This scope of work includes effort to assess the condition and potential reuse of the existing communication equipment and provide a recommendation for a SCADA and telemetry system to serve all of the facilities. The scope of this project will also include a detailed design package for the City's use in bidding this project.

This scope of work also includes detailed design for installing generators at PS-12 and 13 and coating the wet well and replacing the pumps at PS-12. These items will be included in a separate package for bidding from the SCADA and telemetry system package.

This scope of work also includes a technical memorandum that will recommend a relocation site for PS-8.

This scope of work describes the services Parametrix will perform to design the elements above, as well as assist the City with the bidding phase of this project. Construction and systems integration services are not included in this scope of work but can be provided under a separate scope once the project is sufficiently designed.

### PHASE 01 – SCADA/TELEMETRY AND PUMP STATION IMPROVEMENTS

#### Task 01 – Project Management

##### Goals

The goals for this task are to provide overview and guidance for the project to ensure that the project remains on schedule, within budget, and is completed consistent with the scope for the entire project duration.

## Approach

This task will include the following items:

- Project administration
- Communication with City project manager and other staff
- Management of budget, contract, billing memos, and schedule
- Coordinating internal tasks
- Maintaining project records
- Project coordination for internal team meetings
- Project accounting

Note that this task includes effort for project accounting and project coordination services that are not included as part of the Parametrix audited overhead rate applied to this project.

Communication will be accomplished through a combination of email, phone, and in-person meetings with the City project manager and staff.

This task also includes application for a Transportation Worker Identification Credential (TWIC) card for station access within the Port of Tacoma in order to accomplish the radio communication analysis.

## Assumptions

The assumptions for this task are as follows:

- The length of project management services is limited to the schedule at the end of this scope which assumes this phase of work will be completed in 12 months.
- 1 Parametrix staff will obtain a TWIC card.

## Deliverables

- Monthly effort tracking, project progress reports, and generation of invoices (up to 12 total).

## Task 02 – Pump Station 8 Relocation Evaluation

### Goals

The goal of this task is to provide the City with potential options for relocating PS-8.

### Approach

The existing station was installed more than 20 years ago and has limited entry to maintain equipment. It is located in front of the Hebron Christian Reformed Church on the southwest intersection of 20<sup>th</sup> Street E and 62<sup>nd</sup> Ave E. This task will review options for relocating PS-8 and adding a generator to the station.

The first part of this task will be to review the existing utilities, both underground and overhead, and research potential parcels for the relocation of station. Parametrix will present up to 3 potential relocation options in a technical memorandum along with the estimated costs, dimensions of property acquisition needed, pros, cons, and risks associated with each potential site.

### Assumptions

- The City will provide all drawings available associated with the utilities in the area and for the station.
- Utility locating and survey is not included, but can be provided if needed.
- The potential relocation sites will need to be evaluated by the City if property purchase is needed.
- The draft tech memo will be provided to the City one week prior to the review workshop.
- The review workshop of the technical memorandum with the City will be up to 2 hours in length and include up to 2 Parametrix staff.
- The final tech memo will incorporate any comments and decisions made at the review workshop.
- Detailed design of the station is not included in this scope, but can be provided for the selected option if desired by the City.

### Deliverables

- Draft and Final tech memo, up to 10 pages in length, plus appendices, and will be delivered as an electronic PDF.

### Task 03 – Pump Station 12 and 13 Improvements

#### Goals

The goal of this task is to provide the City with a detailed design, ready for bidding, for the desired improvements at Pump Stations 12 and 13.

#### Approach

There are several subtasks that will be addressed under this task. A single technical memorandum will be delivered covering all of the tasks below. The memorandum will be reviewed with the City prior to moving forward with detailed design. A single bid package will be prepared for all improvements.

### Task 04A – Pump Station 12: Recoating of the wet well, piping, and metal appurtenances

This task will provide the City with a design for a wet well interior coating and exterior coatings for the piping and metal appurtenances in the wet well. Parametrix will perform a site visit to Pump Station 12 to evaluate the condition of the existing concrete wet well and provide the City with up to 4 interior wet well coating options, pros and cons for each type of coating, and a recommended coating for this wet well in the technical memorandum. Parametrix will also provide a local station where each coating has been installed so that the City can visit them if desired.

The detailed design will include the technical specifications and drawings for recoating the wet well using the system selected by the City and a suggested temporary bypass pumping system for the Contractor's reference.

### Task 04B – Pump Station 12: Pump Replacement

This task will provide the City with potential options for replacing the existing pumps that consistently clog. Parametrix will provide up to three pump options of different types that would potentially help to reduce the clogging at the station. Parametrix will compare and contrast the potential pumps and provide the City with a recommendation in the technical memorandum.

## SCOPE OF WORK (continued)

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Depending on the pump type selected, modifications in the wet well, including changes to the guide rail system and discharge elbows may be necessary. Parametrix will provide the detailed design if needed, including drawings and technical specifications, for replacement of the pumps at this station. Depending on the type of pumps selected, improvements will be coordinated with the wet well coating in the design documents. At least one type of pump does not require modifications in the wet well and can utilize the existing guide rails and discharge elbow.

### **Task 04C – Pump Station 12: Generator Installation**

This task will provide the City with a recommended option for installing a standby generator on an elevated platform above the adopted 100 year flood elevation. The task will include locating the generator with base mounted fuel tank and automatic transfer switch (ATS) on the site as well as the details required to connect it to the existing station. The generator will be specified to include status for the SCADA/Telemetry system.

The elevated platform will be concrete with enough room for City staff to maintain the generator while standing on the platform. The height of the platform will be determined in detailed design. Safety rails will be provided if required by local and state code.

Parametrix will summarize the design in the technical memorandum prior to moving into detailed design.

### **Task 04D – Pump Station 13: Generator Installation**

This task will provide the City with a recommended option for installing a standby generator. The task will include locating the generator with base mounted fuel tank and automatic transfer switch (ATS) on the site as well as the details required to connect it to the existing station. The generator will be specified to include status for the SCADA/Telemetry system.

Parametrix will summarize the design in the technical memorandum prior to moving into detailed design.

### **Assumptions**

- The City will provide all record drawings available associated with each of the stations.
- The generators will be located on the existing site drawings.
- The draft tech memo will be provided to the City two weeks prior to the review workshop.
- The final technical memorandum along with its figures and appendices will be considered the 30% design.
- The review workshop of the technical memorandum with the City will be up to 2 hours in length and include up to 3 Parametrix staff.
- The final tech memo will incorporate any comments and decisions made at the review workshop.
- The detailed design package will include all of the components under Task 04.
- The 90% design will include drawings, specifications and an Engineer's Opinion of Probable Construction Cost (EOPCC).
- The 90% workshop will be up to 2 hours in length, including up to 3 Parametrix staff and will occur two weeks after delivery of design documents to the City.
- Preliminary drawings and specifications the 90% level will be stamped by a professional engineer licensed in the state of Washington but will not be signed or dated.
- Final design submittal will include drawings, specifications, and an EOPCC.

## SCOPE OF WORK (continued)

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- Drawings will be limited to a total of 19 drawings – 2 general sheets, 3 drawings for the wet well and piping recoating, 4 drawings for the pump replacement, 6 drawings for the PS-12 generator replacement, and 4 drawings for the PS-13 generator replacement.
- Specifications will be delivered similar to the specifications for the EDA Pump Replacement project. Specifications will include Legal Documents and Special Provisions (Div. 1 only) as provided by the City. CSI specifications will be provided for Divisions 1-17.
- Permits will be obtained by others; this scope of work does not include permitting effort by Parametrix.

### Deliverables

- Draft and Final tech memo (30% design), up to 10 pages in length, plus appendices, and will be delivered as an electronic PDF.
- 90% design drawings, specifications, and an Engineer's Opinion of Probably Construction Cost (EOPCC) will be delivered in electronic PDF format.
- Final design drawings, specifications, and an EOPCC will be delivered in electronic PDF format.

### Task 04 – Evaluate Existing Communication Infrastructure

#### Goals

The first goal for this task is to determine what type(s) of communication and data the City desires from their stations and how to incorporate and access it securely by City personnel. After that is determined, Parametrix will evaluate the existing communication infrastructure and provide the City with a technical memorandum with recommendations. The recommendations will allow the city to make informed decisions on system architecture, existing equipment that can be reused, existing equipment that needs to be replaced, and new equipment recommended for providing a system-wide SCADA and telemetry system.

#### Approach

As the first part of this task, Parametrix will request that the City provide all of the record drawing and station data for all of their stations. Parametrix will review the drawings and data prior to the site visit.

Two workshops with City staff are planned for this task. The first workshop with the City will determine the type(s) of communication and data anticipated by the City. The types of communication and data could include remote alarm monitoring, controlling equipment, and trending data for proactive maintenance. The data will be acquired will be from existing instrumentation at the stations. The frequency of the transmitted data, location of the master telemetry unit (MTU) and other system details will be determined in this workshop as well.

After the initial workshop with the City, Parametrix will perform site visits to each pump station, evaluate the existing equipment for potential reuse, and determine the infrastructure needed for system-wide SCADA and telemetry systems. The equipment to be evaluated for reuse at PS-1, 5, 6, 10, 12, 13 and 14 include the PLCs, radios and antennas. The results of this evaluation will provide the basis for the detailed SCADA and telemetry system designs.

Parametrix will also perform a system-wide communication analysis to determine the options for the telemetry system to communicate with the MTU, located either at City Hall or Public Works. This will include a visit to each pump station site and a visit to the reservoir site up on the hill. Parametrix will provide the radio and antenna equipment required for the communication analysis.

## SCOPE OF WORK (continued)

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Parametrix will provide the City with a draft technical memorandum that summarizes the evaluation and provides recommended option(s) for SCADA and telemetry systems.

A second workshop with the City will review the draft technical memorandum, discuss the recommended options, and agree on details required to move into detailed design. Parametrix will incorporate any City comments into the memo and provide an updated technical memorandum documenting the workshop decisions. This memorandum will serve as the basis of design for the project.

### Assumptions

- The SCADA system will be obtaining data from existing instrumentation and existing level sensing equipment is currently using 4-20 milliamps signal.
- Confined space will not be required during the site visits.
- The first workshop with the City will be up to 2 hours in length, including 3 Parametrix staff. Budget includes time for prep.
- The site visits to each site will be up to 3 hours in length, including travel time and 2 Parametrix staff, and will occur within a time span of one month.
- The equipment evaluation and the communication analysis will occur during separate site visits.
- The equipment required for the communication analysis will be provided by Parametrix.
- The communication analysis will be up to 2 hours in length at each station, including 2 Parametrix staff.
- The draft tech memo will be provided to the City one week prior to the review workshop.
- The review workshop with the City will be up to 2 hours in length and include up to 3 Parametrix staff.
- The final tech memo will incorporate any comments and decisions made at the review workshop.
- The City will provide all drawings available associated with each of the stations.

### Deliverables

- Draft and Final tech memo, up to 20 pages in length, plus appendices, and will be delivered as an electronic PDF.

### Task 05 – SCADA/Telemetry System Detailed Design

#### Goals

The goal of this task is to provide the City with a detailed design, ready for bidding, for system-wide SCADA and telemetry systems for their sewer and stormwater stations.

#### Approach

Using the evaluation from the previous task as a basis of design, Parametrix will develop a detailed design for the SCADA and telemetry system. The design will include improvements at each pump station, at the MTU, and at a remote telemetry unit (RTU) at the public works office as needed.

The design will include:

- Telemetry radio/antenna design
- Design of PLC control/monitoring systems for sites that do not already have a PLC
- Design for all new PLC control panels providing the necessary control and monitoring of all stations

## SCOPE OF WORK (continued)

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- Modifications of the existing PLC control panels
- Process narratives describing the control and monitoring functions at each RTU site as well as the SCADA system functionality at the MTU location
- Specifications for MTU hardware equipment and software

The detailed design will be delivered to the City at a 30% design with a workshop to review the design with the City. The detailed design will incorporate comments from the 30% workshop and continue to 90% design with a final workshop with the City. The detailed design will incorporate comments from the 90% design and will conclude with a final design submittal that the City will be able to use for bidding purposes.

### Assumptions

- This task includes the detailed design for the project but does not include any work during the construction phase of the project such as programming but can be provided under a separate scope once the project is sufficiently designed.
- Stations without existing PLCs will all be based on a typical panel design layout.
- Adequate space for the proposed panels and adequate power is available at all of the sites.
- Panel shelters will not be included in the design.
- The design will use photos to document existing infrastructure if record drawings are not available.
- All hardware and software required for the SCADA/Telemetry system is not purchased by Parametrix.
- The 30% and 90% workshops will be up to 2 hours in length, including up to 3 Parametrix staff and will occur two weeks after delivery of design documents to the City.
- The 30% design will include up to 40 drawings and an Engineer's Opinion of Probable Construction Cost (EOPCC).
- The 90% design will include drawings, specifications, and an updated EOPCC.
- The final design submittal will include drawings, specifications, and an EOPCC.
- Preliminary drawings and specifications at 30% and 90% levels will be stamped by a professional engineer licensed in the state of Washington but will not be signed or dated.
- Drawings will be limited to a total of 71 drawings – 2 general drawings, 3 drawings per station with existing PLCs (21 total), 4 drawings per station without existing PLCs (36 total), 8 typical panel detail drawings, 2 drawings for the MTU site, and 2 drawings for the potential repeater site at the abandoned reservoir.
- Specifications will be delivered similar to the specifications for the EDA Pump Replacement project. Specifications will include Legal Documents and Special Provisions (Div. 1 only) as provided by the City. CSI specifications will be provided for Divisions 1-17.
- Contractor is responsible for all permitting required during construction including but not limited to building, mechanical, and electrical permits.

### Deliverables

- 30% design drawings and an EOPCC will be delivered in electronic PDF format.
- 90% design drawings, specifications, and an updated EOPCC will be delivered in electronic PDF format.
- Final design drawings, specifications, and an EOPCC will be delivered in electronic PDF format.

## Task 06 – Bidding Support

### Goals

The goal of this task is to assist the City of Fife staff during the bidding phase for both of the final design packages included in this scope (Tasks 3 and 4).

### Approach

The specific activities included under this task may include the following services as requested by the City of Fife.

- Assist the City of Fife with responding to questions and clarifications from bidding contractors during the bid period and non-mandatory pre-bid meeting.
- Attend one pre-bid walkthrough on-site meeting for each project.
- Prepare a maximum of four addenda for issuance by the City of Fife (assumes 2 addenda per project).
- Tabulate all bids and prepare a spreadsheet detailing the construction costs from each bidding contractor for both projects.
- Recommend to the City a responsible low bidder for award for both projects.

### Assumptions

The assumptions for this task are as follows:

- The City will advertise the projects on their website, as required for compliance with public records act, and Builders Exchange and pay all associated costs.
- Builders Exchange will maintain the plan holders list for the projects.
- Parametrix will receive all question and clarification requests from bidders. Parametrix will coordinate response with the City of Fife before issuing responses to potential bidding contractors and plan holders.
- The task assumes the pre-bid meetings will be up to 3 hours in length and include up to 2 Parametrix staff.
- Parametrix will take meeting minutes at the pre-bid meetings and provide copies of the minutes and include in an addendum.

### Deliverables

The deliverables for this task are assumed to be as follows:

- Provide electronic bid documents and addenda to the City.
- Documents will be posted on Builders Exchange website by the City.
- Informal (email) communication with the City of Fife regarding bidders' questions.
- Bid tabs for each project.
- Pre-bid walk through minutes.
- Recommend to the City a responsible low bidder for award.



## Schedule

See Exhibit B.

Exhibit B

Days = Working Days

PROJECT SCHEDULE UPDATE

ID	Task Name	Duration	Start	Finish	Predecessor	Successors	Total Slack
1	SCADA & PS Improvements Design	259 days	Tue 1/30/18	Fri 1/25/19			0 days
2	NTP	0 days	Tue 1/30/18	Tue 1/30/18			15FS+15 day 0 days
3	Task 01 - Project Management	259 days	Tue 1/30/18	Fri 1/25/19 2			0 days
4	Start PM	0 days	Tue 1/30/18	Tue 1/30/18 2			259 days
5	Finish PM	0 days	Fri 1/25/19	Fri 1/25/19 24			0 days
6	Task 02 Pump Station 8 Relocation Evaluation	72 days	Tue 1/30/18	Wed 5/9/18			187 days
7	PS 8 Relocation Evaluation	72 days	Tue 1/30/18	Wed 5/9/18 2			187 days
8	Task 03 Pump Station 12 and 13 Improvements	134 days	Tue 1/30/18	Fri 8/3/18 2			105 days
9	Recommendation Tech Memo (30% Design)	40 days	Tue 1/30/18	Mon 3/26/18			105 days
10	Review Workshop	10 days	Tue 3/27/18	Mon 4/9/18 9			105 days
11	90% Design	44 days	Tue 4/10/18	Fri 6/8/18 10			105 days
12	Review Workshop	10 days	Mon 6/11/18	Fri 6/22/18 11			105 days
13	Final Design	30 days	Mon 6/25/18	Fri 8/3/18 12			105 days
14	Task 04 Evaluate Existing Communication Infrastructure	64 days	Tue 2/20/18	Fri 5/18/18			0 days
15	Site Visits	24 days	Tue 2/20/18	Fri 3/23/18 2FS+15 day 16			0 days
16	Recommendation Tech Memo	30 days	Mon 3/26/18	Fri 5/4/18 15			0 days
17	Review Workshop	10 days	Mon 5/7/18	Fri 5/18/18 16			0 days
18	Task 05 SCADA/Telemetry System Detailed Design	160 days	Mon 5/21/18	Fri 12/28/18 17			0 days
19	30% Design	44 days	Mon 5/21/18	Thu 7/19/18			20 days
20	Review Workshop	10 days	Fri 7/20/18	Thu 8/2/18 19			0 days
21	90% Design	66 days	Fri 8/3/18	Fri 11/2/18 20			0 days
22	Review Workshop	10 days	Mon 11/5/18	Fri 11/16/18 21			0 days
23	Final Design	6 wks	Mon 11/19/18	Fri 12/28/18 22			0 wks
24	Task 06 Bidding Support	125 days	Mon 8/6/18	Fri 1/25/19			0 days
25	Bidding Support for Task 03	20 days	Mon 12/31/18	Fri 1/25/19 23			0 days
26	Bidding Support for Task 04	20 days	Mon 8/6/18	Fri 8/31/18 13			105 days

