



Tetra Tech, Inc.

WORK ORDER INITIATION FORM for the CITY OF CLEARWATER

Date: March 23, 2016

Project Number: _____

City Project Number: 16-0001-UT

Plan Set Number: _____

1. PROJECT TITLE:

Reclaimed Water Booster Pump Station Chlorine Feed System Improvements Design, Permitting and Bidding

2. SCOPE OF SERVICES:

The City of Clearwater has identified the need for modifications to the existing chlorine injection and chlorine residual monitoring facilities to improve the automated operational reliability at the Skycrest, Union and Drew Street Reclaimed Water Pump Stations and has requested Tetra Tech, Inc. (Tetra Tech) to provide a scope of services for the evaluation of alternatives, design, permitting, and bidding of improvements at these facilities. The goal of these improvements is to allow the City to institute automated operation of supplemental chlorine feed systems at each of these facilities.

Specific details regarding the proposed facility improvements are presented below:

- A. Skycrest Reclaimed Booster Pump Station: The Skycrest facility serves as a storage and re-pumping station for reclaimed water, and includes a 5.0 million gallon (MG) reclaimed water storage tank. Hydraulic control valves control filling of the storage tank during daytime hours, and the station pumps reclaimed water from the storage tank into the distribution system during the night. The chlorine dosing system is currently designed for use when the system is pumping water, however the City would like to include consideration of dosing chlorine during tank filling operations as a possible alternative.

- B. The Drew Street (Del Oro Park) and Union Street booster stations are both in-line booster pump stations that increase pressure in the downstream reclaimed water distribution system based on control set points and remote operation. The condition of the existing sodium hypochlorite storage tanks, feed pumps and piping will be reviewed and

equipment will be replaced if necessary.

- C. Controls will be provided through the existing programmable logic controller (PLC) and SCADA HMI interface at each pump station.
- D. The supply of electrical power will be through the existing MCC, starters, and power distribution panels.

The following tasks will be completed as part of the preliminary and final designs of the aforementioned facility improvements:

- Prepare Technical Memoranda outlining alternatives for each of the pump stations and conduct one (1) workshop to provide ranking of alternatives. This task will also include field testing of the existing systems at two (2) booster pump stations to help determine existing system operation.
- Develop the contract documents (bidding and contract documents, engineering drawings and technical specifications) for the procurement and construction of the improvements.

In order to provide logical, orderly completion of this assignment, the project is presented in phases. Tasks to be completed in each phase are described herein.

I. TECHNICAL MEMORANDA

Task 001 - Data Request, Kickoff Meeting, Site Visits and Sampling

The purpose of the technical memoranda phase is to gather information, develop, evaluate, and present the basis of design for the proposed improvements. Tasks to be completed in this phase are described below.

- A. Prepare a list of requested documents for the City to provide for Tetra Tech's use in evaluation and design of the proposed improvements. It is anticipated that at a minimum the following information will be provided by the City:
 - 1. Record Drawings and specifications from construction of the pump stations.
 - 2. Specifications, shop drawings and O&M manuals, factory test performance curves, and model and serial numbers for all equipment scheduled for replacement under the proposed improvements.
 - 3. Water quality and other available operational data from water reclamation facilities including TDS, pH, hardness, alkalinity, TOC.
 - 4. All available CAD files for the above record drawings.

- B. Facilitate a project kick-off meeting and Site Visit with the City and Tetra Tech's staff. Tetra Tech will prepare and distribute meeting minutes to all attendees.
- C. Facilitate collection and analysis of reclaimed water samples during site visits. One (1) reclaimed water sample will be collected at each in-line booster pump station and two (2) reclaimed water samples will be collected at the storage and pumping station. Samples will be used for measurement of chlorine residual and demand. The purpose of this sampling is to capture a representative/typical reclaimed water sample at each pump station. If operational conditions are not representative of typical water quality at the time of the initial site visits, then additional sampling may be need to be performed by the City and tested at the City's expense.

Task 002 – Field Testing of Existing System (Two Sites)

Construction of the Drew and Union Street reclaimed water booster pump stations was completed in 2007 and the Skycrest reclaimed water booster pump station was completed in 2010. The three projects were designed with similar layouts and features. Based on operational observations made by the City's utilities staff, the existing chemical injection and monitoring locations for supplemental dosing of sodium hypochlorite at these facilities have led to inconsistencies in the reclaimed water free chlorine residual when operated in automated control mode. The existing system utilizes chemical injectors but without the aid of static mixers or other means to provide mixing of the injected chemical with the reclaimed water. Additionally, the chemical injection is located upstream of propeller style flow meters, and there is insufficient space available to install static mixers without impacting the straight piping requirements of the flow meters. Also, the length of piping between the sodium hypochlorite injection point and the location where the reclaimed water is sampled for chlorine residual is relatively short and may not be sufficient to allow for complete mixing and reaction to occur within the piping prior to diversion of the sample stream. Furthermore, the location of the chlorine residual analyzer with respect to the sample point may contributing to a lag in the control response time from when dosing adjustments are made and when the responses are measured by the control system. The combination of these factors is believed to be contributing factors to the control system's difficulty in achieving stable feedback control of the chlorine residual.

The suspected challenges noted above will be evaluated for each of the reclaimed water booster pump stations and summarized in a technical memorandum for each facility. Additional site specific details are provided in the technical memorandum sections below.

Prior to the submittal of draft technical memoranda, Tetra Tech will develop a field testing plan and submit it to the City for review and comment. The field testing plan will outline a methodology for a field test that will consist of operating the existing system under controlled conditions and without improvements in order to collect data for operating characteristics such as the chemical mixing effectiveness and the sample measurement delay time. It is

anticipated that the field testing for a pumping station will occur within a single day and will include operation of the system at various chemical doses and reclaimed water flow rates. Tetra Tech will coordinate with City utilities staff and provide on-site engineering staff for two (2) days to conduct field testing at two (2) booster pumping stations that are operationally available to facilitate the various tests to be conducted. The City shall confirm that existing system components are operational prior to commencing the field testing, and shall provide temporary equipment as needed (chemical metering pump and/or chemical tote and Tetra Tech to provide suggested temporary equipment specifications) to facilitate chemical dosing if the installed equipment is not functional. Depending on the results of field testing, it may be recommended to conduct similar testing at the remaining one (1) booster pumping station. If such testing is requested by the City, Tetra Tech will prepare a supplemental work order for additional field testing services.

Task 003 – Skycrest Reclaimed Water Booster Pump Station Tech Memo

Due to limited available space at the Skycrest Booster Pump Station site and the need for this facility to remain on-line during periods of peak seasonal demand, the ability to address these operational issues through modifications to the existing discharge piping are expected to be limited, and therefore, other alternatives may be necessary.

The City would like to evaluate alternatives to modify mechanical piping and chemical mixing, and/or methods of monitoring to allow for reliable automated control. Tetra Tech will provide preliminary concepts for four (4) alternatives;

1. Alternative that entails discharge piping modifications to provide sufficient chemical mixing and hydraulic detention times within the pump discharge piping header prior leaving the pump station site,
2. Alternative that will utilize either side stream pre-dilution mixing or other advanced chemical mixing technologies to allow a more complete reaction with reclaimed water prior to sampling in order to minimize impacts to existing piping,
3. Alternative for injection of sodium hypochlorite with reclaimed water on the suction header of the booster pumps, which may require refitting of seals and impeller materials on the existing pumping equipment, and
4. Alternative for injection of sodium hypochlorite on the influent line to the storage tank. For this final alternative, an evaluation of DBP formation potential will be conducted on reclaimed water that is sampled from the system.

Depending on which alternative is selected for implementation, Tetra Tech will also evaluate the potential benefits of relocating the Chlorine residual analyzer to reduce lag time in the sample measurement.

Tetra Tech will prepare a draft technical memorandum to summarize the preliminary concepts and rough-order-of-magnitude budgetary costs of alternatives for addressing the existing control deficiencies, and submit the memorandum to the City for review and comments. Following the City's initial review, Tetra Tech will present the concepts to City

staff in an alternatives workshop (one meeting for all three pump stations) to capture the operational advantages and disadvantages of each, and determine criteria rankings for selection of a preferred alternative. The results of the workshop ranking will be included in a finalized technical memorandum that will serve as a basis of design. The memorandum will include a summary of the work including a list of existing chemical feed pumps and/or storage tanks that are in need of replacement, any restrictions on allowable impacts to the pump station operations that must be followed by the Contractor during construction. The memoranda will also include the City's equipment preferences to be used as a basis of design.

Task 004 – Drew Street (Del Oro Park) Reclaimed Water Booster Pump Station Tech Memo

Operated as an in-line booster pumping station, the existing Drew Street Booster Pump Station site layout does provide some space that may allow for the installation of additional piping or relocation of existing piping to address potential shortfalls in chemical mixing and/or detention times.

Tetra Tech will provide preliminary concepts for three (3) alternatives;

1. Alternative that entails discharge piping modifications to provide sufficient chemical mixing and hydraulic detention times within the pump discharge piping header prior leaving the pump station site,
2. Alternative that will utilize either side stream pre-dilution mixing or other advanced chemical mixing technologies to allow a more complete reaction with reclaimed water prior to sampling in order to minimize impacts to existing piping, and
3. Alternative for injection of sodium hypochlorite with reclaimed water on the suction header of the booster pumps, which may require refitting of seals and impeller materials on the existing pumping equipment.

Depending on which alternative is selected for implementation, Tetra Tech will also evaluate the potential benefits of relocating the Chlorine residual analyzer to reduce lag time in the sample measurement.

Tetra Tech will prepare a draft technical memorandum to summarize the preliminary concepts and rough-order-of-magnitude budgetary costs of alternatives for addressing the existing control deficiencies, and submit the memorandum to the City for review and comments. Following the City's initial review, Tetra Tech will present the concepts to City staff in an alternatives workshop (one meeting for all three pump stations) to capture the operational advantages and disadvantages of each, and determine criteria rankings for selection of a preferred alternative. The results of the workshop ranking will be included in a finalized technical memorandum that will serve as a basis of design. The memorandum will include a summary of the work including a list of existing chemical feed pumps and/or storage tanks that are in need of replacement, any restrictions on allowable impacts to the pump station operations that must be followed by the Contractor during construction. The memoranda will also include the City's equipment preferences to be used as a basis of design.

Task 005 – Union Street Reclaimed Water Booster Pump Station Tech Memo

Operated as an in-line booster pumping station, the existing Union Street Booster Pump Station site layout does provide some space that may allow for the installation of additional piping or relocation of existing piping to address potential shortfalls in chemical mixing and/or detention times. Suction piping is configured differently than other pumping stations, with the suction header piping entering the building from the same side that the discharge piping leaves the building. Once in the piping trench, the suction piping splits at a TEE fitting located between two of the pumps.

Tetra Tech will provide preliminary concepts for three (3) alternatives;

1. Alternative that entails discharge piping modifications to provide sufficient chemical mixing and hydraulic detention times within the pump discharge piping header prior leaving the pump station site,
2. Alternative that will utilize either side stream pre-dilution mixing or other advanced chemical mixing technologies to allow a more complete reaction with reclaimed water prior to sampling in order to minimize impacts to existing piping, and
3. Alternative for injection of sodium hypochlorite with reclaimed water on the suction header of the booster pumps, which may require refitting of seals and impeller materials on the existing pumping equipment.

Depending on which alternative is selected for implementation, Tetra Tech will also evaluate the potential benefits of relocating the Chlorine residual analyzer to reduce lag time in the sample measurement.

Tetra Tech will prepare a draft technical memorandum to summarize the preliminary concepts and rough-order-of-magnitude budgetary costs of alternatives for addressing the existing control deficiencies, and submit the memorandum to the City for review and comments. Following the City's initial review, Tetra Tech will present the concepts to City staff in an alternatives workshop (one meeting for all three pump stations) to capture the operational advantages and disadvantages of each, and determine criteria rankings for selection of a preferred alternative. The results of the workshop ranking will be included in a finalized technical memorandum that will serve as a basis of design. The memorandum will include a summary of the work including a list of existing chemical feed pumps and/or storage tanks that are in need of replacement, any restrictions on allowable impacts to the pump station operations that must be followed by the Contractor during construction. The memoranda will also include the City's equipment preferences to be used as a basis of design.

Deliverables – One (1) electronic pdf file copy will be provided of the following documents:

- *Draft and Final Technical Memoranda for each pump station*

II. FINAL DESIGN PHASE

Task 001 – Final Design

Upon acceptance of the technical memoranda and selection of a preferred alternative by the City, Tetra Tech will initiate final design of improvements for the each of the pump stations. The final design will result in preparation of the bidding and contract documents, engineering drawings and technical specifications, which will be submitted to the City for review at 75- and 100-percent completion levels. Design will be based on the City's existing record documents. The proposed improvements for all three (3) pump stations will be combined into one (1) set of contract documents. The 75-percent submittal shall include engineering drawings (all disciplines) plan views, sections, and details; bidding, contractual, and technical specifications; and opinion of probable construction costs. The 100-percent submittal shall include updated engineering drawings; updated bidding, contract and technical specifications and updated opinion of probable construction costs incorporating the City's comments. The project drawings will be prepared utilizing Autodesk AutoCAD and/or Revit 2013 to allow for the production of two dimensional drawings and bidding/specifications using MS WORD.

To ensure proper design of the facilities, Tetra Tech will obtain approval from the City for any substantial changes in the technical memoranda prior to incorporation in the final design. Tasks to be completed during this phase are summarized below:

1. Prepare construction drawings necessary to depict the improvements identified in the technical memoranda. In addition to new facilities that are required for improvements, it is also anticipated that some of the existing chemical metering pumps and storage tanks will be scheduled for replacement due to age or non-use. Such components will be included in the proposed work as replacement with like kind, however it is assumed that replacement will not require redesign of chemical piping systems or structural grating that are associated with the existing chemical feed facilities. The construction drawings shall be compiled using the City's Deliverables Standards, as referenced in Attachment "A". A preliminary list of drawings used as the basis of pricing is presented below. For the purposes of providing a scope of services through the bidding phase of the project, Tetra Tech has assumed that a majority of the design work will be related to process piping modifications with minor structural and electrical design work that will result from implementation of the selected alternatives. Should the alternatives selected by the City result in the need for additional design effort, Tetra Tech will prepare and submit a separate work order to the City for additional design services.

General

Cover Sheet

Index of Drawings, Location Maps and General Notes

Legend and Abbreviations
Process Flow Schematics

Structural

Structural Details

Process

Existing Site Plan – Demolition Plan (3 sheets, 1 per pump station)
Proposed Yard Piping Plan (3 sheets, 1 per pump station)
Process Flow Diagrams
Piping Plans and Sections (3 sheets, 1 per pump station)
Mechanical Details

Electrical

Electrical Symbols and Abbreviations
Electrical and Control Plan, Schedules (3 sheets, 1 per pump station)

2. Prepare a comprehensive project manual that contains the City's bidding and contract documents (Division 0 and 1) and technical specifications (Divisions 2 through 16) for competitive bidding. The project manual and its contents will be formatted in accordance with the Construction Specification Institute (CSI) and prepared using MS WORD.
3. Prepare and submit an opinion of probable construction costs with the 75- and 100-percent submittals based on vendor quotations and previous bid tabulations.
4. Prepare for and attend up to 2 project coordination meetings with the City during final design. Prepare and distribute meeting minutes to all attendees.
5. A review meeting will be held with the City following each submission. Tetra Tech will prepare comment tracking sheets at each completion level, document meeting minutes, and distribute such minutes to all attendees over the project duration.

Deliverables – Three (3) 24x36 copies, two (2) 11x17 copies, and one (1) PDF electronic copy will be provided for each submittal described below:

- *75- and 100-percent submittals of the bidding and contract documents, engineering drawings and technical specifications.*
- *Project coordination meetings minutes (pdf copies only, distributed by e-mail).*
- *75- and 100-percent submittal review meeting minutes and comment/response tracking spreadsheet.*
- *Opinion of probable construction costs at the 75- and 100-percent completion levels.*

III. PERMITTING

As noted under the final design task, the specific changes to existing facilities will not be known until completion of the ranking of alternatives that will follow the draft technical memoranda submittals, and the extent of permitting effort required for FDEP or SWFWMD

permits is unknown. Therefore, Tetra Tech's scope for permitting is limited to the preparing and preparation of a FDEP notification letter for permitting determination and the submittal of permit applications and supporting documentation to the City's Planning Department to obtain permits for construction of the proposed improvements. Tetra Tech will also respond to requests for additional information (RAIs) from the City to clarify the original applications. All permit application fees will be paid by the City. Anticipated permit related activities for this project and associated work are as follows:

1. City of Clearwater Building Permit Application – Prepare materials for City Engineering staff to use in coordinating with the City's Planning and Development Department.
2. FDEP Permitting – Depending on the nature of the improvements, modifications to reclaimed water and wastewater facilities that are regulated under FAC 62-610 and 62-620 may require permitting through the Florida Department of Environmental Protection (FDEP). Once a determination of specific improvements has been confirmed by the City, Tetra Tech will summarize the proposed improvements and prepare a notification letter to FDEP to request a determination if the activities will require a permit application. If FDEP determines that formal permitting is required, Tetra Tech will prepare and submit a separate work order to the City for FDEP permitting services. Any permit application fees for FDEP permitting shall be paid by the City.
3. SWFWMD Permitting – The need for permitting through SWFWMD is unknown at this time. If formal permitting is required due to the alternative selected for implementation, Tetra Tech will prepare and submit a separate work order to the City for SWFWMD permitting services. Any permit application fees for SWFWMD permitting shall be paid by the City.

Deliverables – Five copies (5) and one (1) electronic pdf file copy of each station (3 submittals total) to be provided of the following documents:

- *Draft and Final City Planning and Development Permit Applications*
- *Meeting minutes of pre-application and coordination meetings*

IV. BIDDING ASSISTANCE

Bidding services are based upon the generation of one (1) set of construction documents for the improvements at all three (3) pump stations to be bid as a single contract. Upon authorization to proceed with the bidding phase of the project, Tetra Tech will complete the following tasks:

1. Provide one (1) signed and sealed copy of the Contract Documents (engineering drawings and specifications) in PDF format for distribution to potential bidders by the City's Purchasing Department.
2. Attend the pre-bid meeting with the City.
3. Respond to questions as required to interpret, clarify or expand the bidding documents. The City Purchasing Department will prepare and distribute all addenda.
4. Review and evaluate the apparent low bidder's qualifications for undertaking the work and make recommendations of contract award.
5. Prepare and provide three (3) conformed sets of the Contract Documents (engineering drawings in AutoCAD and PDF format and specifications in MS Word and PDF format) to the City.

3. **PROJECT GOALS:**

The following work products will be delivered to the City as part of this project:

- *Draft and Final Technical Memoranda*
- *75%, and 100% Design Plans and Specifications*
- *Draft and Final Permit Applications*
- *One (1) conformed set of the Contract Documents*

Five (5) hard copies and electronic pdf file copies of these documents will be provided to the City. In addition, three (3) copies for each pump station at 75% design will be provided for the City's Planning and Development Department review. The project drawings will be produced utilizing AutoCAD and/or Revit 2013. At the completion of the project, the record drawings will be submitted in AutoCAD Release 2011 format.

4. **BUDGET:**

This price includes all labor and expenses anticipated to be incurred by Tetra Tech, Inc. for the completion of these tasks in accordance with Professional Services Method "A" – Cost Times Multiplier Basis, **for a fee not to exceed ninety nine thousand, nine hundred eighty dollars (\$99,980.00).**

The City will be responsible for paying permit application fees.

5. **SCHEDULE:**

The project design and permitting is to be completed 10 months from issuance of notice-to-proceed. The project deliverables are to be phased as follows:

Prepare Technical Memoranda	90 calendar days
75% construction documents	150 calendar days
Final (100%) construction documents	210 calendar days

6. **STAFF ASSIGNMENT (Consultant):**

Many team members will be involved in this project. Tetra Tech's primary staff assignments for this project are as follows:

- Project Manager - Emilie Moore
- Engineer of Record - Scott Smith: Process, David Burger: Electrical and I&C
- Quality Assurance/ Quality Control (QA/QC) – James Christopher, Jon Fox
- Project Engineers – Dave MacNevin, Jennifer Roque, Jason Seignoret, Justin Coward

The City's primary staff assignments for this project are as follows:

- Project Manager – Khang Nguyen, P.E.
- Project Team – David Porter, Kathryn McGrath, Kervin St. Aimie, Robert Fahey, Jack Sadowski, Richard Gardner

7. **CORRESPONDENCE/REPORTING PROCEDURES:**

Engineer's/Architect's project correspondence shall be directed to Emilie Moore, PE, ENV SP. City project correspondence shall be directed to Khang Nguyen, PE with copies to others as appropriate.

8. **INVOICING/FUNDING PROCEDURES:**

Invoices for work performed shall be submitted monthly to the City of Clearwater, Engineering Department, Attn.: Veronica Josef, Senior Staff Assistant, PO Box 4748, Clearwater, Florida 33758-4748.

City Invoicing Code: 327-96654-561300-535-000-0000__

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. Purchase Order Number 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 Cost Times Multiplier.
- 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 Cost Times Multiplier, 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.

The City is responsible for paying all application fees for permits, registrations, and certifications.

PREPARED BY:



Jon Fox, PE
Vice President
Tetra Tech, Inc.

3-23-16

Date

APPROVED BY:

Michael D. Quillen, PE
City Engineer
City of Clearwater

Date

WORK ORDER INITIATION FORM

CITY OF CLEARWATER DELIVERABLES STANDARDS

FORMAT:

The design plans shall be compiled utilizing one of the following standards:

City of Clearwater CAD standards or Consultant's CAD standards (please provide all supporting documents when utilizing Consultant's Standards).

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.

DELIVERABLES:

A minimum of two (2) signed and sealed Plans and Contract Documents (specifications book) labeled "ISSUED FOR BID" shall be provided at the onset of the bid phase, as well as electronic copies. Electronic plan copies in PDF and CAD and electronic contract documents in PDF and MS Word.

The design plans shall be produced on bond material, 24" x 36" at a scale of 1" = 20' unless approved otherwise. The consultant shall also deliver all digital files in CAD drawing format and PDF format together with all project data in AutoCAD Civil 3D file format. All references, such as other drawings attached, images and graphic files, custom fonts and shapes shall be included in hard copy and electronic copy.

Prior to the City Council award date, a minimum of two (2) copies of signed and sealed plans and contract documents (specifications book) labeled "CONFORMED" shall be provided. All revisions made during the bid phase shall be included in the plan sets and noted in the revision block or as a footnote. Copies of each Addendum shall be included at the front of the contract and all revisions made during the bid phase shall be incorporated into the Contract Documents.

Electronic copies of "CONFORMED" plans (PDF and CAD) and contract documents (PDF and MS Word) shall be provided prior to the City Council award date.

NOTES:

- If approved deviation from using Clearwater CAD standards, the consultant shall include all necessary information to aid in manipulating and printing/plotting the drawings. Please address any questions regarding file format to Mr. Tom Mahony, Geographic Technology Manager, at (727) 562-4762 or email address: tom.mahony@myclearwater.com.

**RECLAIMED WATER BOOSTER PUMP STATION CHLORINE FEED SYSTEM
IMPROVEMENTS**

Design, Permitting and Bidding

Tetra Tech, Inc.

**WORK ORDER INITIATION FORM
PROJECT BUDGET**

Task	Description		Consultant Services	Total
1.0	Technical Memoranda			
1.1	Data Request, Kickoff Meeting, Site Visit		\$7,441	
1.2	Field Testing of Existing System		\$13,587	
1.3	Skycrest Reclaimed Storage and Pumping		\$8,985	
1.4	Drew Street Reclaimed Booster		\$8,218	
1.5	Union Street Reclaimed Booster		\$8,218	
				\$46,449
2.0	Final Design			
2.1	Project Management & Progress Meetings		\$3,717	
2.2	QA/QC, Design Coordination, Cost Estimating		\$4,815	
2.3	75% Design		\$21,603	
2.4	100% Design		\$12,802	
				\$42,937
3.0	Permitting			
3.1	Meetings, Permits/Notifications Preparation		\$3,927	
				\$3,927
4.0	Bidding Assistance			
4.1	Prepare Bid Documents		\$724	
4.2	Pre-Bid Meeting, Respond to Bidding Questions		\$2,858	
4.3	Bid Evaluation, Recommendation		\$694	
4.4	Prepare Conformed Documents		\$2,391	
				\$6,667
Total				\$99,980