

CONSULTANT WORK ORDER

Supplement No. 1

Date:	May 17, 2022
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1. PROJECT INFORMATION:

Project Title:	RO2 Injection Well (IW-1) Retrofit		
City Project Number:	20-0020-UT		
City Plan Set Number:	2020014		
Consultant Project Number:	31402378.003		

2. SCOPE OF SERVICES:

The City of Clearwater (City) requires modifications to the wellhead piping on injection well IW-1 at the Reverse Osmosis Water Treatment Plant No. 2 (RO-2). The installation of a modulated flow control valve at the current location of a 10-inch diameter gate valve adjacent to the tee on the wellhead is proposed to regulate concentrate flow rates into the well and maintain a relatively constant level in the concentrate storage tank. The purpose of the wellhead improvements is to prevent cascading of water into the injection well. Concentrate flows via gravity into the well and the system has been operated for approximately eight months in this manner with flow rates adjusted manually by the WTP operations staff. WSP will utilize McKim & Creed (M&C) to provide electrical and instrumentation and control (I&C) design services.

The CONSULTANT (WSP USA Inc.) performed inspections of the injection well and wellhead appurtenances to assess the work necessary to modify the wellhead. The results and recommended wellhead retrofit were provided in the report, RO-2 Injection Well Retrofit Basis of Design Report (WSP, 2021). This scope was developed to implement the recommendations of the Basis of Design Report.

The improvements desired by the City include the following:

- Remove the existing gate valve and install a flow control valve and appurtenances.
- Establish a flow control feature within the SCADA system to modulate the flow control valve either by flow rate or concentrate storage tank level.
- Install a butterfly valve on the concentrate piping to further regulate flow rates to avoid cavitation across the valves.

VI. PRE-DESIGN PHASE:

Task 6.1: Project Management

This task includes several activities associated with managing the project effectively. WSP will participate in a project kick-off meeting and two progress meetings with the City during the project to ensure that the process is moving along efficiently. This task also includes management of all in-house paperwork and electronic files, including invoices, written and telephonic communications and consultation between WSP, the City, and WSP's electrical/I&C subconsultant staff. This task includes QA/QC review of all documents produced for the project. Overall project management of all activities is included here to make sure of necessary staffing when needed and to make sure that the project schedule is maintained, within budget, and in accordance with our contract with the City.

VII. DESIGN PHASE:

Task 7.1: Well Head Preliminary Design (30% Design)

WSP will provide a Preliminary Design Technical Memorandum (PDTM) that will document the design of the proposed improvements. The PDTM will include the following:

- A brief narrative that describes the improvements and design criteria
- A sketch that depicts the layout of the improvements
- An estimate of probable construction cost

Task 7.2 SCADA and Electrical Preliminary Design

M&C will perform field investigations with WSP at the RO-2 facility for electrical and I&C related items. Field investigations are estimated as one (1) day for each discipline.

M&C will review existing plant information provided by the City. Data required from the City for the design on this project may include, but not be limited, to the following:

- Record Drawings applicable to the project
- Relevant operations data and equipment shop drawings
- O&M documentation

M&C will provide a technical memorandum in electronic format summarizing the results of the field investigation and the information obtained through the review of the data collection. The memorandum will be prepared in consideration of the project scope of work and provide recommendations for the work to be included in the design effort.

M&C will participate in a conference call with WSP and the City to review the contents of the memorandum and to receive and review any comments. M&C will prepare a final memorandum incorporating agreed upon comments to refine the project scope of work.

VIII. FINAL DESIGN PHASE:

Task 8.1: Well Head Final Design

Final design will commence with the City's written approval of the PDTM. Final design will include the production of technical specifications and drawings that will depict the proposed improvements. The technical specifications will be provided in City specifications format as Section IV A. Edits will be made as needed to the contract document sections to reference the project specific information.

A review set of drawings will be provided to the City at the 75% completion level. WSP will participate in a design review meeting with the City prior to starting the 100% design phase to review and receive City comments. Meeting minutes to be compiled and distributed by WSP. Agreed upon comments will be incorporated into the project design as part of the 100% design submittal.

WSP will update the probable construction cost estimate. The design plans shall be compiled using the City of Clearwater CAD standards, as attached.

The following assumptions apply to this task group:

- The new flow control valve will be selected to fit in the location where the existing gate valve is adjacent to the tee fitting on the wellhead. The City will advise if a sole source for the valve is desired.
- The electrical service near the wellhead has capacity to operate the motor operated valve.
- A land survey of the site will not be needed since all work will be done on City property or will be tied to existing structures.
- The capacity of the modified well/wellhead will not exceed 1,900 gpm.

Task 8.2 SCADA and Electrical Final Design

M&C will prepare design drawings using the data collected and defined as part of Task 2. The drawings will generally consist of the following:

- Electrical Plans including an electrical legend (1), limited site plan (1), limited power and control plan (1), single line diagrams (1) and electrical details (1), as needed.
- I&C including I&C legend and symbols (2), P&ID (1), control panel modification details (1), instrumentation details (1) and communication diagrams (1), as needed.

- Details for overall design cover page, general notes and index drawings will be provided for drawings prepared by others.

M&C will prepare Electrical and I&C technical specification for the construction of the new components and will prepare an Opinion of Probable Construction Cost for the Electrical and I&C work using information from manufacturers and the design documents. A review set of drawings will be provided to WSP at the 75% completion level. M&C will participate in the design review meeting with the City prior to starting the 100% design phase to review and receive City comments.

M&C will perform and assist others with a cross discipline review of the overall design, as it pertains to Electrical and I&C components. M&C will prepare and submit the Final design submittal package to WSP for inclusion in the delivery to the City. The submittal will include the design drawings, technical specifications and opinion of probable construction cost in electronic format.

IX. BIDDING PHASE

Task 9.1 Bidding Services

The City will manage the bidding phase of the project with the assistance of WSP.

WSP will provide the following services to the City during bidding:

- Respond to questions from bidders.
- Issue up to two (2) addenda to the City to clarify the plans and specifications. The City will issue the addenda to the plan holders.
- Review bids and recommend award.

X. PERMITTING PHASE

Task 10.1 Prepare an Application for a Minor Modification of the FDEP Operation Permit

WSP will prepare an application package for a Minor Modification of the Operation Permit. The package will include completion of the FDEP application to construct, test, and operate a Class I Injection Well, a letter describing the proposed well head improvements, and design drawing.

XI. CONTINGENCY PHASE

Task 11.1 Contingency Services

This task is for additional services not included in the existing scope that may be required as the project proceeds. This may include meetings, conference calls, or other follow-up written correspondence, etc. Contingency services will be billed as incurred only after written authorization provided by the City to proceed with those services.

3. PROJECT GOALS:

WSP will provide the following deliverables:

- A digital copy of the draft and final versions of the Preliminary Design Technical Memorandum. An electronic file in pdf format will be provided for the final version.
- Three (3) copies of the 75% completion level plans and specifications.
- Three (3) copies of the final completion level plans and specifications. An electronic file in pdf format will be provided for the final version. Design drawings will be provided in CAD format using the City of Clearwater CAD standards, as attached.

4. FEES:

This price includes all labor and expenses anticipated to be incurred by WSP-USA for the completion of these tasks in accordance with Professional Services Method "A" – Hourly Rate, for a fee not to exceed Ninety-eight thousand seven hundred sixty-eight dollars and eighty cents (\$98,768.80).

The Minor Modification of the Operation Permit has a fee of \$250, which will be paid by the Consultant and invoiced to the City as a reimbursable.

5. SCHEDULE:

The project is to be completed in **150** days from issuance of notice-to-proceed. The project deliverables are to be phased as follows:

30% Construction Plans:	<u>60</u> calendar days
75% Construction Plans and Permit Applications:	<u>100</u> calendar days
Final Construction Documents:	<u>150</u> calendar days
Bidding Services	<u>210</u> calendar days

Design phase schedule assumes a 30-day period for City review and subsequent revisions.

6. STAFF ASSIGNMENT:

WSP's Staff:

Scott Manahan, P.E. – WSP Supervising Engineer

Jeffrey M. Trommer, P.G. – WSP Project Manager

Meifa Chen, P.E. – Lead Design Engineer

Bryce Bachmann – Staff Engineer

Mike Tweedel P.E. – I&C Group Leader, McKim & Creed

City's Staff:

Charles McAbee	Project Manager
Fred Hemerick	Public Utilities Assistant Manager
Jeremy J. Brown, P.E.	Engineering Manager
Richard G. Gardner, P.E.	Public Utilities Director
Michael Flanigan	Public Utilities Assistant Director

7. CORRESPONDENCE/REPORTING PROCEDURES:

Consultant's project correspondence shall be directed to:
Jeffrey Trommer, P.G. – WSP Project Manager

Cc: Scott Manahan, P.E. – Project Engineer
All City project correspondence shall be directed to:
Charles McAbee – City Project Manager
Richard Gardner, P.E. – Public Utilities Director
Michael Flanigan – Public Utilities Assistant Director

8. INVOICING/FUNDING PROCEDURES:

City Invoicing Code: 3217321-530100-96767

For work performed, invoices shall be submitted monthly to:

**ATTENTION: LELAND SIVANISH, SENIOR ACCOUNTANT
CITY OF CLEARWATER, ENGINEERING DEPARTMENT
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.

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:

1. Purchase Order, Project and Invoice Numbers and Contract Amount.
2. The time period (begin and end date) covered by the invoice.
3. A short narrative summary of activities completed in the time period.
4. Contract billing method – Lump Sum or Hourly Rate.
5. 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).
6. If Hourly Rate, hours, hourly rates, names of individuals being billed, amount due, previous amount earned, the percent completion, 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).

7. If the Work Order is funded by multiple funding codes, an itemization of tasks and invoice amounts by funding code.

10. CONSIDERATIONS:

Consultant acknowledges the following:

1. The Consultant named above is required to comply with Section 119.0701, Florida Statutes, where applicable.
2. All City directives shall be provided by the City Project Manager.
3. "Alternate equals" shall not be approved until City Project Manager agrees.
4. All submittals must be accompanied by evidence each has been internally checked for QA/QC before providing to City.
5. Consultants/Contractors are not permitted to use City-owned equipment (i.e. sampling equipment, etc.).
6. Documents posted on City website must ADA accessible.

11. ADDITIONAL CONSIDERATIONS:

All work orders should include considerations for the following:

1. Sea Level Rise and Flood Resilience, as applicable.
2. Submittal of a Critical Path Method (CPM) Schedule(s).
3. Submittal of a Project Catalog with the following items, as appropriate:
 - a. Data requests, assumptions, critical correspondence, meeting agenda, sign-in sheets, meeting minutes, document comment-response log(s), technical memorandum/reports, addenda, progress reports, regulatory correspondence, and other project-related documents.
 - b. If construction project, also include design plans, conformed plans, change orders, field orders, RFIs, work change directives, addenda, progress reports, shop drawing and progress submittals, as-builts, record drawings, and other project-related documents such as O&M manuals and warranty information.
 - c. At the conclusion of the project, ENGINEER will combine this information into a Project Catalog and submit to the City for review and comment.
4. Arc Flash labeling requirements:
 - a. All electrical designs and construction shall adhere to NFPA 70 E "Standard for Electrical Safety in the Workplace".
 - b. Updated calculations of Fault and Arc Flash, and provisions for new or updated Arc Flash equipment labeling shall be included in the contract documents.

12. SPECIAL CONSIDERATIONS:

The City is responsible for the following:

- Furnish available information about the existing facilities as requested by WSP
- Review and comment on WSP's deliverables

13. SIGNATURES:

PREPARED BY:



William S. Manahan, P.E.
Supervising Engineer
WSP-USA

May 17, 2022

Date

APPROVED BY:

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

Date

ATTACHMENT "A"**CONSULTANT WORK ORDER – PROJECT FEES TABLE**

RO2 Injection Well (IW-1) Retrofit

WSP-USA

20-0020-UT

City of Clearwater

CONSULTANT WORK ORDER

PROJECT FEES TABLE

Task	Description	Subconsultant Services	Labor	Total
VI.	Pre-Design			
6.1	Project Management		\$4,740	\$4,740
Pre-Design Total:				\$4,740
VII.	Preliminary Design			
7.1	Well Head Preliminary Design		\$6,900	\$6,900
7.2	SCADA and Electrical Preliminary Design	\$10,000		\$10,000
Design Total:				\$16,900
VIII.	Final Design Plans and Specifications			
8.1	Well Head Final Design		\$16,800	\$16,800
8.2	SCADA and Electrical Final Design	\$39,705		\$39,705
Final Design Plans and Specifications Total:				\$56,505
IX.	Bidding Phase			
9.1	Bidding Services	\$4,518	\$4,300	\$8,818
Bidding Services Total:				\$8,818
X.	Permitting Services			
10.1	Permitting		\$2,100	\$2,100
Permitting Services Total:				\$2,100
XI.	Contingency Phase			
11.1	Contingency Services (10% of Tasks 6 - 10 Total)		\$8,906	\$8,906
Contingency Services Total:				\$8,906
SUBTOTAL, LABOR AND SUB-CONTRACTORS:				\$97,969
5.0	Permit Fees			\$250
6.0	Other Direct Costs (prints, photocopies, postage, etc.) (Not applicable to lump sum Work Orders)			\$549.80
GRAND TOTAL:				\$98,768.80

CONSULTANT WORK ORDER

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.

NOTE: If approved deviations 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.