



# URS CORPORATION SOUTHERN

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## WORK ORDER INITIATION FORM for the CITY OF CLEARWATER

**Date:** October 22, 2014

**Project Number:** \_\_\_\_\_

**City Project Number:** 14-0038-UT

**Plan Set Number:** \_\_\_\_\_

**1. PROJECT TITLE:**

Resident Initiated Reclaimed Water Project - Phase II

**2. SCOPE OF SERVICES:**

The project provides for the design and bidding services for the Imperial Way subdivision reclaimed water distribution system and design and permitting of a CSX crossing in Kapok Park via jack-and-bore of an 8-inch raw water main and design and permitting of a section of the same 8-inch raw water main along SR 590 between Virginia Lane and Mission Hills Blvd. This work order is based upon the understanding that approximately 12,600 feet of reclaimed water distribution mains (4- and 6-inch) will be designed and constructed as a part of this project. This work order provides for: data collection, the development of the 60 percent plans and technical specifications, the development of the 90 percent plans and technical specifications, the development of the 100 percent plans and technical specifications, the development of final plans and technical specifications, one (1) public involvement meeting (including preparation), bidding assistance and the development of addenda required. The design plans shall be compiled using the City of Clearwater CAD standards, as attached.

## I - PRE-DESIGN PHASE

### Task 1- Kick Off Meeting

URS will convene a Kick Off Meeting with the CITY within one (1) week after the Notice to Proceed. URS will develop the agenda for the Kick Off Meeting with input from the CITY. The Kick Off Meeting will discuss and document the points of contacts within the CITY and URS, communication protocol, data requirements, the scope of work, project schedule, milestones and submittals, and other miscellaneous issues.

URS will prepare minutes of the Kick Off Meeting and will distribute them to the meeting attendees.

### Task 2- Data Collection

URS will work with the CITY of collect existing data that will benefit the project. Examples of data required are water and sewer atlases, record drawings of existing reclaimed water facilities associated with the design of the project.

## II - DESIGN PHASE

### Task 1- Survey

URS will perform the survey work required to develop the base information and the horizontal/vertical control for the design and construction plans. The approach involves field surveying of the full right-of-way.

#### A. Topographic, Tree, Utility & Jurisdiction Survey

1. Topographic Survey (12,600 L.F.)
  - a) Prepared in accordance with the minimum technical standards as set forth in Chapter 5j-17 Florida Administrative Code.
  - b) Elevations within jurisdictional areas (if any) are not included.
  - c) Spot elevations over the entire site on a 100-foot grid (approx) and in FDOT/County section 50 foot grid.
  - d) Mapping to extend full right-of-way.
  - e) Vertical datum will be **NAVD 1988**.
  - f) Right-of-way lines depicted as per tax maps, existing plats and property corners as found in the field.
  - g) No title reports will be reviewed.

- h) Right-of-way takings not shown on tax maps will need to be supplied by the client.
2. Tree Survey
- a) Trees 4 inches in diameter breast high and larger will be located showing common name and diameter.
  - b) The location of trees smaller than 4 inches or species not protected (including ornamentals) is not included.
  - c) The location of trees within jurisdictional areas (if any) is not included.
  - d) Tree canopies will be located.
3. Utility Survey
- a. Locate surface evidence of utilities i.e. water valves, manholes, storm structures, etc.
  - b. Inverts, pipe sizes and pipe material of accessible structures will be obtained.
  - c. Utility provider atlases (if available) will be obtained and utilized to depict the approximate location of underground utility services.
  - d. This utility location methodology meets the requirements of a quality level C as defined by the federal highway administration. Utilizing this method it is not unusual to find that 15 to 30 percent of the underground utilities are either omitted or are plotted two feet or more in error.

## Task 2- Geotechnical

The purpose of the geotechnical services is to provide subsurface soil conditions and relevant geotechnical engineering properties as well as to provide geotechnical recommendations to guide project design and construction. The objective of the geotechnical study will be to obtain information concerning subsurface conditions at within the project area in order to obtain data to base engineering estimates and recommendations in each of the following areas:

Suitability of materials on-site for use as backfill. Recommendations for placement and compaction of approved fill materials.

General location and description of potentially deleterious materials discovered in the borings, which may interfere with construction progress including existing

fills or surficial organics. Identification of groundwater levels and estimation of Seasonal High Groundwater Table (SHGWT) levels.

URS will review published soils and topographic information. This published information will be obtained from the appropriate Florida Quadrangle Map published by the United States Geological Survey (USGS), and the Soil Survey for Pinellas County, published by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).

URS will execute a program of subsurface exploration consisting of borings, subsurface sampling and field testing. We plan to perform up to eighteen (18) Standard Penetration Test (SPT) borings to a depth of 10 feet below existing grade along the proposed pipeline alignments. The borings will be completed at an average spacing of one boring per 500 to 1,000 linear feet of pipeline. In each SPT boring, samples will be collected and SPT resistances will be measured virtually continuously to the boring termination depth. In areas where access is limited or utilities are present that limit the use of mechanized equipment, auger borings may need to be substituted for the SPT borings.

URS will visually classify the samples in the laboratory using the American Association of State Highway and Transportation Officials (AASHTO) soil classification system. Identify soil conditions at each boring location

URS will prepare a formal engineering report in accordance with this proposal, which summarizes the course of study pursued, the field data generated, subsurface conditions encountered and our engineering recommendations in each of the pertinent topic areas.

#### Task 3- Subsurface Utility Engineering

The location of potential utility conflicts is not known at this time. It is assumed that up to **twelve (12) utility conflicts** will be encountered which will require field verification by subsurface utility evaluation.

#### Task 4- Hydraulic Modelling

In order to properly size the RCW distribution piping and confirm that all RCW connections will have adequate pressures, URS will prepare a hydraulic model for the Imperial Way subdivision. CITY will provide the connecting pressures in the existing 8" PVC RCW main running along Lakeview Rd. results from the hydraulic modeling will be summarized in a Technical Memorandum.

#### Task 5- Development of 60 Percent Plans and Technical Specifications

URS will develop the 60 percent completion level plans and technical specifications. The plans will be plan view with detail bubbles for identified areas of potential conflict or full profiles in areas that will require additional profile information (e.g. Pinellas County ROW and/or FDOT ROW). The 60 percent plans will contain: a cover sheet, general notes and index, survey data sheet, geotechnical information and typical details. The 60 percent technical specifications will include those specialty sections required for the project that are not within the CITY's standard specification sections. Also the 60 percent submittal will include a preliminary bid form, measurement and payment section, and opinion of probable construction cost.

URS will submit ten (10) sets of the 60 percent plans, technical specification sections and opinion of probable construction cost to the CITY for review and comment. URS will convene a 60 percent review meeting with the CITY to receive review comments approximately two (2) weeks after the submission of the 60 percent documents to the CITY. URS will prepare and distribute minutes (comments and responses) of the 60 percent review meeting to the attendees.

#### Task 6- Development of 90 Percent Plans and Technical Specifications

From the review of the 60 percent plans, technical specifications and opinion of probable construction cost, URS will develop the 90 percent completion level plans and technical specifications. The plans will be plan view with profile details for identified areas of potential conflict or in areas that will require additional profile information (e.g. Pinellas County ROW and/or FDOT ROW). The 90 percent plans will contain: a cover sheet, general notes and index, survey data sheet, geotechnical information and typical details. The 90 percent technical specifications will include those specialty sections required for the project that are not within the CITY's standard specification sections. Also the 90 percent submittal will include the bid form, measurement and payment section, and opinion of probable construction cost.

URS will submit ten (10) sets of the 90 percent plans, technical specification sections and opinion of probable construction cost to the CITY for review and comment. URS will convene a 90 percent review meeting with the CITY to receive review comments approximately two (2) weeks after the submission of the 90 percent documents to the CITY. URS will prepare and distribute minutes (comments and responses) of the 90 percent review meeting to the attendees.

### III - FINAL DESIGN PHASE

#### Task 1- Development of 100 Percent Plans and Technical Specifications

From the review of the 90 percent plans, technical specifications and opinion of probable construction cost, URS will develop the 100 percent completion level plans and technical specifications. The plans will be plan view with profile details for identified areas of potential conflict or in areas that will require additional profile information (e.g. Pinellas County ROW and/or FDOT ROW). The 100 percent plans will contain: a cover sheet, general notes and index, survey data sheet, geotechnical information and typical details. The 100 percent technical specifications will include those specialty sections required for the project that are not within the CITY's standard specification sections. Also the 100 percent submittal will include the bid form, measurement and payment section, and opinion of probable construction cost.

The 100 percent submittal will be used as supporting information for Pinellas County permit applications.

URS will submit ten (10) sets of the 100 percent plans, technical specification sections and opinion of probable construction cost to the CITY for review and comment. URS will convene a 100 percent review meeting with the CITY to receive review comments approximately two (2) weeks after the submission of the 100 percent documents to the CITY. URS will prepare and distribute minutes (comments and responses) of the 100 percent review meeting to the attendees.

#### Task 2- Development of Final Plans and Technical Specifications

From the review of the 100 percent plans, technical specifications and opinion of probable construction cost, URS will develop the final plans and technical specifications. The plans will be plan view with profile details for identified areas of potential conflict or in areas that will require additional profile information (e.g. Pinellas County ROW and/or FDOT ROW). The final plans and technical specifications will be ready for advertisement by the CITY for bidding by general utility contractors.

URS will submit two (2) sets of the final plans, and specifications and opinion of probable construction cost to the CITY for review and comment. URS will also submit the final plans and specifications in electronic form (AutoCAD for the final plans and Word for the final specifications) and one signed and sealed original set of plans. It is anticipated that the final plans and specifications will be used by the CITY for bidding and construction of the project.

#### IV - BIDDING PHASE

##### Task 1- Attendance at Pre-Bid Conference

URS will attend the pre-bid conference. The purpose of URS attendance is to answer technical questions with respect to the design. URS will not be responsible for questions or providing information involving the contract between the CITY and the contractor.

##### Task 2- Preparation of Addenda

URS will prepare up to two (2) addenda during the bid phase to formally answer bidder's technical questions, clarify issues or adjust the bid documents prior to the bid opening.

##### Task 3- Preparation of Addenda

From the final issued for bid plans and technical specifications, URS will prepare a Conformed Set of plans and technical specifications.

##### Task 4- Recommendation of Award

Following bid advertisement by the CITY, URS will review the bids submitted by the contractors and provide an award recommendation to the CITY.

#### V – PUBLIC INVOLVEMENT

It is anticipated that one (1) public involvement meeting will be convened during the design of the project. URS will attend the meeting if required and will prepare a MS PowerPoint presentation for each meeting. It is anticipated that the URS presentation will include project design and configuration information, anticipated schedule of design and construction activities, and other pertinent information for the public.

It is also anticipated that the CITY will conduct reclaimed water user interest surveys within the reclaimed water distribution areas to gauge potential customer connections. URS will assist the CITY with the surveys as required.

#### VI – MISSION HILLS RAW WATER MAIN

This task includes design and permitting of a CSX crossing in Kapok Park via jack-and-bore of an 8-inch raw water main and design and permitting of a section of the same 8-inch raw water main along SR 590 between Virginia Lane and Mission Hills Blvd. This task provides for: the development of the 90 percent plans and technical

specifications, the development of final plans and technical specifications, bidding assistance and the development of addenda required. The plans will be plan view with profile. Survey will be provided by the CITY.

URS will execute a program of subsurface exploration following the same scope of services as outlined in Task II above. URS will perform up to three (3) Standard Penetration Test (SPT) borings; one SPT boring to a depth of 10 feet below existing grade along the proposed pipeline alignment and two SPT borings to a depth of 30 feet below existing grade at the CSX crossing.

The location of potential utility conflicts is not known at this time. It is assumed that up to **two (2) utility conflicts** will be encountered which will require field verification by subsurface utility evaluation.

The 90 percent submittal will be used as supporting information for CSX and FDOT permit applications. City will prepare the FDEP construction permit for the raw water main. FDEP final clearance application will be a part of a separate work order.

URS will attend the pre-bid conference. The purpose of URS attendance is to answer technical questions with respect to the design. URS will not be responsible for questions or providing information involving the contract between the CITY and the contractor.

URS will prepare up to two (2) addenda during the bid phase to formally answer bidder's technical questions, clarify issues or adjust the bid documents prior to the bid opening.

From the final issued for bid plans and technical specifications, URS will prepare a Conformed Set of plans and technical specifications.

Following bid advertisement by the CITY, URS will review the bids submitted by the contractors and provide an award recommendation to the CITY.

### **3. PROJECT GOALS:**

The project goals are to design and construct new reclaimed water distribution systems for the CITY to continue to expand its reclaimed water customer base and to increase the amount of reclaimed water used to offset potable water demand for nonpotable uses. Additionally the increased use of reclaimed water within the CITY will also help to reduce the amount of treated effluent that is discharge to surface waters for disposal. In addition, the project goal is to design and construct the remaining portions of the Mission Hills 8-inch raw water main.

The work products developed will include the 60-, 90-, 100-percent plans and technical specifications, a final bidding set of plans and specifications, opinions of probable construction cost, survey electronic files, geotechnical report, regulatory permit

applications. The plans will be drafted in AutoCAD and the text documents will be MS Word documents. Any public information presentations will be in MS PowerPoint.

**4. BUDGET:**

Attachment “B” provides the fee estimate detail. This price includes all labor and expenses anticipated to be incurred by URS Corporation Southern for the completion of these tasks in accordance with Professional Services Method “A” – Cost Times Multiplier Basis, **for a fee not to exceed One Hundred and Seventy Thousand Three Hundred and Fifty Two Dollars (\$170,352.00).**

Permit application fees will be paid by the CITY.

**5. SCHEDULE:**

The design portion of the project is to be completed 180 days from issuance of notice-to-proceed for the Imperial Way RCW System and 90 days for the Mission Hills Raw Water Main. The schedule is based upon the assumption of the CITY reviews of the project work products will be completed in two (2) weeks from the date of submission. The project deliverables are to be phased as follows:

**Imperial Way RCW System**

<b>60% Plans and Technical Specifications</b>	<b>90 calendar days</b>
<b>90% Plans and Technical Specifications</b>	<b>120 calendar days</b>
<b>100% Plans and Technical Specifications</b>	<b>150 calendar days</b>
<b>Final Construction Documents</b>	<b>180 calendar days</b>
<b>Bidding Assistance</b>	<b>TBD</b>

**Mission Hills Raw Water Main**

<b>90% Plans and Technical Specifications</b>	<b>60 calendar days</b>
<b>Final Construction Documents</b>	<b>90 calendar days</b>
<b>Bidding Assistance</b>	<b>TBD</b>

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

**Officer-in-Charge:** Dana K. Tallman, P.E.  
**Project Manager:** Bozhidar Handjiev, P.E.  
**Engineer III:** Laurel Rowse, E.I.  
**Senior Designer:** Terry Sonnenberg  
**Admin Assistant:** Lisa Woodard

**7. CORRESPONDENCE/REPORTING PROCEDURES:**

ENGINEER's project correspondence shall be directed to Bozhidar Handjiev, P.E. All City project correspondence shall be directed to Khang Nguyen, E.I. with copies to others as may be 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.

**Imperial Way RCW 0315-96739-561300-533-000-0000 \$151,084**

**Mission Hills RWM 0327-96741-561300-533-000-0000 \$19,268**

**Invoice will clearly indicate what project is being billed.**

**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.

**PREPARED BY:**

\_\_\_\_\_  
**Dana K. Tallman, PE, BCEE**  
**Vice President**  
**URS Corporation Southern**

\_\_\_\_\_  
**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](mailto:tom.mahony@myclearwater.com).

Attachment "B"  
**IMPERIAL WAY RECLAIMED WATER PROJECT (XXX)**



## URS CORPORATION SOUTHERN

### WORK ORDER INITIATION FORM PROJECT BUDGET

Task	Description	Subconsultant Services	Labor	Total
<b>1</b>	<b>Pre-Design</b>			
1.1	Kick-Off Meeting		\$1,716	\$1,716
1.2	Data Collection		\$1,573	\$1,573
				<b>\$3,289</b>
<b>2</b>	<b>Design</b>			
2.1	Survey	\$48,200	\$1,650	\$49,850
2.2	Geotechnical	\$10,000	\$1,650	\$11,650
2.3	Subsurface Utility Engineering	\$8,450	\$1,650	\$10,100
2.4	Hydraulic Modelling		\$2,662	\$2,662
2.5	Development of 60 Percent Plans & Specs		\$24,497	\$24,497
2.6	Development of 90 Percent Plans & Specs		\$16,742	\$16,742
				<b>\$115,501</b>
<b>3</b>	<b>Final Design Plans and Specifications</b>			
3.1	Development of 100 Percent Plans & Specs		\$10,714	\$10,714
3.2	Development of Final Plans & Specs		\$7,524	\$7,524
				<b>\$18,238</b>
<b>4</b>	<b>Bidding</b>			
4.1	Pre-Bid Conference		\$506	\$506
4.2	Preparation of Addenda		\$2,893	\$2,893
4.3	Recommendation of Award		\$506	\$506

				<b>\$3,905</b>
<b>5</b>	<b>Public Involvement</b>			
5.1	Public Involvement		\$8,151	\$8,151
				<b>\$8,151</b>
<b>6</b>	<b>Mission Hills Raw Water Main</b>			
6.1	Geotechnical	\$4,650	\$0	\$4,650
6.2	Subsurface Utility Engineering	\$1,500	\$0	\$1,500
6.3	Development of 90 Percent Plans & Specs		\$6,529	\$6,529
6.4	Development of Final Plans & Specs		\$2,184	\$2,184
6.5	Bidding Services		\$3,905	\$3,905
				<b>\$18,768</b>
<b>Subtotal, Labor and Subcontractors</b>				<b>\$167,852</b>
<b>Other Direct Costs</b> (prints, photocopies, postage, etc.)				
<b>(Not applicable to lump sum Work Orders)</b>				<b>\$2,500</b>
<b>Grand Total</b>				<b>\$170,352</b>

## REVIEW PERIOD SUBMITTAL REQUIREMENTS

This list is intended as a guideline of the items to be completed at various levels of project completion. The specific list for each project shall be finalized in the work order.

### 30% Construction Plans

Requirements for the 30% submittal shall include the following:

- Cover Sheet,
- Legend and Abbreviations per City standards,
- Key Sheet,
- Demolition Plans indicating existing improvements, utilities, and topography, and identification of trees to be removed,
- Preliminary layout of the proposed improvements, existing right-of-way and easements, subdivision, block, and lot number, and plat book and page for adjacent parcels,
- Engineer's/Architect's preliminary opinion of probable construction cost, based on the 30 % submittal.

### 60% Construction Plans

In addition to the items in the 30% submittal, requirements for the 60% submittal shall include the following:

- General Construction Notes related to best management practices, utilities, and other conditions relevant to the project,
- Typical pavement sections shall indicate typical cross sectional slopes, median improvements, pavement requirements, right-of-way lines, sidewalks, curbs, gutters, and landscaped areas,
- Grading, Paving, and Drainage detail sheets, including standard and nonstandard stormwater management structures, retaining walls, and related notes,
- Erosion control and tree protection details, including best management practices applied to the project,
- Existing private utilities, as available, such as gas, electrical, telephone, fiber optic, and cable TV,
- Detailed Cross Sections,
- Wetland Planting Plans and Details,
- Utility Plan including utility relocation/adjustment details indicating utility conflicts, relocation design, proposed utility structures, and conflict manholes, design details, and specific profiles, if required,
- Permit Applications,
- Estimated construction quantities,
- Engineer's/Architect's updated opinion of probable construction cost and duration based on the 60% design submittal, and
- Engineer/Architect will review City's standard technical specifications and modify or supplement as necessary for the project.

## **90% Construction Plans**

The 90% construction plans shall include the design items required for the construction of the project, including the special provisions and technical specifications. In addition to the items in the 60% submittal, requirements for the 90% submittal shall include the following:

- a. Maintenance of Traffic Plan,
- b. Structural plans, details, and calculations, including design and details of shallow foundations, pedestrian bridge abutments, retaining walls, structural reinforcing, tiebacks, and stability analyses for slopes and retaining walls,
- c. Detailed construction quantities based upon 90% design,
- d. Engineer's/Architect's updated opinion of probable construction cost and duration based on the 90% design submittal, and
- e. Technical specifications and Special Provisions.

## **Final (100%) Construction Documents**

The 100% submittal shall address the City's final review comments.

Engineering Projects prepared and/or submitted shall be reviewed and checked by a civil engineer registered in the state of Florida as the Engineer of Record. The Engineer of Record shall sign, seal and date the design calculations, technical specifications and contract drawings as required by Florida law.

See Attachment "A" – Deliverables – for specific labeling requirements.