

February 4, 2014

Clece Aurelus, P.E.  
**CITY OF HOLLYWOOD**  
Department of Public Utilities  
Engineering and Construction Services Division  
Post Office Box 229045  
Hollywood, Florida 33022

City of Hollywood  
Southern Regional WWTP  
Reuse Water System Expansion Phase 2  
Pre-Design and Detailed Design

Dear Mr. Aurelus:

As requested, Hazen and Sawyer, P.C. (CONSULTANT) is pleased to offer engineering services for the Reuse System Expansion Phase 2 project at the Southern Regional Wastewater Treatment Plant (SRWWTP).

### **BACKGROUND**

Due to the salinity of the SRWWTP effluent, the City's reuse facility currently depends upon the Davie/Cooper City secondary effluent as the source water for reuse production. In order to maximize the availability of this water source, the City converted two abandoned sludge holding tanks onsite into flow equalization basins to dampen diurnal flow variations from the Davie/Cooper City effluent streams. With this project (Phase 1) now completed, replacement of the reuse distribution pumps is needed to increase system capacity so that additional reuse customers can be added. Ultimate system capacity is dependent upon customer demand schedules, customer storage capabilities, and system storage. A hydraulic model is necessary to ensure the transmission system is adequately sized to serve all customers under various scenarios prior to pump selection and electrical capacity evaluations. As a result, the following scope of services was prepared to characterize and model customer demand requirements.

### **SCOPE OF SERVICES**

#### **Task 1 – Data Collection and Compilation**

CONSULTANT shall collect available information with respect to existing reuse system and the demands of the customer base. This information shall include existing piping network, demand schedules, delivery pressure requirements and all available system flow and pressure data. Additionally, the City will provide demand schedules and delivery pressure requirements for proposed future customers.

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**Task 2 – System Hydraulic Model**

Based on the information gathered in Task 1, CONSULTANT shall update the City's existing InfoWorks-based hydraulic model for the purpose of evaluating existing and future reuse customers. A total of 15 scenarios are envisioned for modeling to describe various existing and future system operational situations for the purpose of pump sizing.

**Task 3 –Model Technical Support**

Based on the model updates made in Task 2, CONSULTANT shall provide up to 16 hrs of technical support on an as-needed basis.

**Task 4 – Technical Memorandum**

A brief technical memorandum outlining the revised system operation parameters for the present and future customer demand and delivery scenarios evaluated will be submitted to the City for review. Upon receiving City comments, a final memorandum will be submitted and the InfoWorks hydraulic model developed under Task 2 will be delivered to the City. The final memorandum will be suitable for use in future permitting efforts to justify reuse system modifications.

**Task 5 – Detailed Design**

CONSULTANT will evaluate the existing reuse pumping system for the purpose of preparing design documents suitable for bidding. The evaluation shall include mechanical, electrical and instrumentation infrastructure at the reuse pump station. It is envisioned that the hydraulic improvements outlined in Task 4 will result in pumping system upgrades requiring nominal modifications to be included in the design. Contract Documents (plans and specifications) for bidding/construction shall be prepared.

**Task 6 – Cost Opinion**

CONSULTANT shall provide a cost opinion on the project budget at the 90 percent design stage.

**Task 7 – Bid Phase Services**

CONSULTANT shall provide assistance to the City during the bidding phase for the project. Activities to be performed are as follows: attend a pre-bid conference, reply to bidders' questions, draft necessary addenda to the technical specifications and drawings for City distribution, review the Bid Proposal form, prepare a Bid Tabulation, check contractor(s) references of the lowest responsive bidder(s), and issue a recommendation of award(s). Contract document packages will be produced and sold by the City.

**KEY ASSUMPTIONS**

- Model calibration for scenarios involving the existing customer base will be performed based on existing SCADA data. No field calibration effort is envisioned.



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- Surveying services, underground utility locates and geotechnical investigations are not envisioned
- Detailed design will not address modifications to the existing reuse distribution system
- No financing plan or user charge system will be provided
- City will define customer/public/local community concerns to H&S
- Funding for implementation of the proposed project will not be addressed
- Previous plans and specifications in their present format will be used to the extent possible. City will disclose any changes made subsequent to the existing record documents.
- City of Hollywood Building Department permitting and related permitting fees are anticipated to be addressed by City staff. H&S will respond to related Hollywood Building Department RFI's prior to bidding. No other permitting is anticipated or included.
- Facility permit revisions necessary for the addition of future customers will be addressed by others as necessary
- No owner-furnished / pre-purchasing of equipment is anticipated. No prequalification of contractors or subcontractors is anticipated.
- The design approach will address minimal downtime of the existing operating facilities.
- Value engineering and other outside reviews (other than City staff review) are not anticipated
- No local minority business enterprise or local small business enterprise participation is envisioned
- The City will competitively bid the project and enter into an agreement with an outside Contractor to complete the work. No prequalification of Contractors will be performed.
- The development of conformed contract documents will be performed by others
- Services during construction will be included under a separate work order

### **COMPENSATION**

The engineering services for this project will be performed on a lump sum basis for the amount of \$98,559. A fee breakdown is attached.

### **SCHEDULE**

Engineering services concerning model development will be completed within 8 weeks from receipt of the Notice-to-Proceed and requested data. Engineering design services will be completed within 6 months of acceptance of the Technical Memorandum.

Engineering services for the project will be performed as part of our Professional Services Agreement for General Engineering Consultant Services (Agreement) dated February 2003. Services provided by Hazen and Sawyer, P.C. shall be limited to those services specifically identified in this work order.

We look forward to your reply. In the meantime, should you have any questions, please contact us.

## HAZEN AND SAWYER

*Clece Aurelus, P.E.*  
February 4, 2014

Very truly yours,

**HAZEN AND SAWYER, P.C.**

A handwritten signature in blue ink, appearing to read "J. Philip Cooke", is positioned above the printed name.

J. Philip Cooke, P.E.  
Senior Associate

*c: File No. 4321-016/1.0*

*Attachment*

CITY OF HOLLYWOOD  
SOUTHERN REGIONAL WASTEWATER TREATMENT PLANT  
Reuse Water System Expansion - Phase 2  
Fee Breakdown

<u>Tasks</u>	<u>Senior Associate</u>	<u>Senior Principal Engineer</u>	<u>Principal Engineer</u>	<u>Engineer</u>	<u>Senior Designer</u>	<u>Designer</u>	<u>Draftsman</u>	<u>Secretarial</u>	<u>Subtotal</u>	<u>Cost</u>
LABOR										
Task 1 - Data Compilation	16	0	0	12	0	0	0	0	28	\$ 5,087
Task 2 - System Hydraulic Model	16	0	0	150	0	0	0	0	166	\$ 24,528
Task 3 - Model Technical Support	0	0	0	16	0	0	0	0	16	\$ 2,254
Task 4 - Technical Memorandum	24	0	0	24	0	0	0	0	48	\$ 8,476
Task 5 - Detailed Design	8	20	40	0	40	40	100	0	288	\$ 40,131
Task 6 - Cost Opinion	2	8	6	0	0	0	0	4	26	\$ 4,269
Task 7 - Bid Phase Services	16	0	40	0	0	0	0	40	96	\$ 13,314
Subtotal	82	28	86	202	40	40	100	44	668	\$ 98,059
DIRECT EXPENSES										
Reproduction										\$ 500
Subtotal										\$ 500
<b>Total (Lump Sum)</b>										<b>\$ 98,559</b>

Maximum Hourly Raw Labor R: \$66.34 \$60.32 \$54.84 \$49.85 \$44.02 \$49.15 \$42.74 \$29.41 \$22.64  
 \* Overall multiplier = 3.2