



Hazen and Sawyer  
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**CITY OF HALLANDALE BEACH  
RFP #FY2015-2016-025**

**HAZEN AND SAWYER**

**Water Treatment Plant High Service Pumps Replacement  
Phase 1**

**BACKGROUND**

The CITY has successfully maintained the water treatment plant's high service pumps (HSPs). However, this equipment is nearing the end of useful life. The CITY previously retained CONSULTANT to complete the conceptual evaluation of the replacement of the HSPs. The CITY has decided to install four HSPs equipped with variable frequency drives as described in the conceptual evaluation and CONSULTANT's response to RFP #FY2015-2016-025. This Scope of Work presents the services CONSULTANT shall provide the CITY for the design, permitting, assistance with bidding and construction oversight assistance for the replacement of the HSPs.

**SCOPE OF SERVICES**

**TASK 1 – DESIGN**

CONSULTANT shall prepare detailed design drawings and technical specifications that detail the character and extent of the project. The key elements of the design are as follows:

- Scope Definition:
  - The design scope for the HSPs shall be as defined in the memorandum titled "High Service Pumps Evaluation" dated May 7, 2014.
  - The design documents will include removals of existing equipment, piping, electrical, and structural components as required for a complete and operable project. The design will include design of new pumps, piping, valves, controls, electrical, structural, architectural, mechanical, civil, HVAC, and any other upgrades required for a complete and operable system. Hazen will prepare plans, specification, and a construction cost estimate, and will develop prequalification criteria and prequalification form.
- 50% and 90% Submittals:
  - Plan reviews will be submitted to the CITY staff for review at the 50 percent and 90 percent stages of the design process. Three weeks will be given at each stage for the City's review. Bid specifications and related documents will be prepared by Hazen, but the final complete documents will be put together by CITY staff and in the general standard form of the CITY. Three hard copies of the plans, specifications, and related documents will be submitted at each stage and all digital files on a thumb drive.
  - Construction cost estimate at the 50 percent stage shall be Class 3 as defined by AACE Internal. Construction cost estimate at the 90 percent stage shall be Class 2 as defined by AACE Internal.
- 100% Submittal:
  - One (1) full, unbound, single-sided hard copy specification set sized to 8½" x 11", with the standard City of Hallandale Beach cover identifying the CIP number.
  - Electronic specification files in Microsoft Word format and Adobe Acrobat (PDF)
  - Five (5) full size set plans (22" x 34") signed and sealed
  - One (1) full size set scanned imaged in Adobe Acrobat (PDF)

- Electronic files in Autodesk AutoCAD DWG and DWF format
- AutoCAD drawing files will be exported out of AutoCAD using eTransmit function so that any special or custom font files, pen setting files, xrefs, etc. are included
- All electronic files will be copied to two (2) thumb drives, and the different file types (i.e., \*.dwg, \*.dwf, \*.pdf, \*.doc) will be organized into named folders (i.e., DWGs, DWFs, PDFs, DOCs)

## **TASK 2 – PERMITTING**

CONSULTANT shall coordinate and attend meetings with the following regulatory agencies to discuss the requirements for acquiring pre-bid construction permits for this project:

- Broward County Environmental Protection and Growth Management (BCEPGMD)
- Broward County Health Department (BCHD)
- City of Hallandale Beach Building Department “dry run”

CONSULTANT shall coordinate contact with these agencies. CONSULTANT shall prepare permit applications the BCEPGMD and the BCHD. Permit application submittal shall include submittal of signed and sealed drawings, specifications and completed application forms.

CONSULTANT shall prepare responses to the regulatory agencies request for additional information (RAI) regarding each permit application referenced above.

CONSULTANT shall meet with the City of Hallandale Beach Building Department to review the drawings and technical specifications. The City of Hallandale Beach Building Department will perform a “dry run” review of the 100% design documents.

CONSULTANT shall provide **responses** associated with meeting with the CITY's Building Department and responding to its requests for additional information.

## **TASK 3 – BID SERVICES**

CONSULTANT shall provide the following services during bidding:

- Pre-Qualification of Construction Bidders: CONSULTANT shall assist with the pre-qualification process of the constructions bidders. The consultant shall recommend criteria for pre-qualification process, minimum qualification and experience. CONSULTANT shall review all bidders' pre-qualifications applications and make recommendation to staff.
- Pre-bid meeting: CONSULTANT shall attend a pre-bid meeting for the construction project. The meeting shall be held at the Water Treatment Plan.
- Revisions to Scope and Addendums: CONSULTANT shall answer questions and provide any revisions to scope of work that may result through vendor inquiries during the bidding process.

CITY's responsibilities during bidding include the following:

- Reproduce and distribute bid documents to Contractors requesting documents;
- Maintain a list of plan holders;
- Issue addenda to plan holders; and
- Provide CONSULTANT with a copy of the bid tabulation prepared by the CITY.

#### **TASK 4 – CONSTRUCTION SERVICES**

The CITY will provide overall project management and coordination between the CITY, Contractor and CONSULTANT. The CITY will provide for continuous inspection services of the HSP and associated equipment installation. Services to be provided by CONSULTANT shall be as follows:

- 4.1 Pre-Construction Meeting: CONSULTANT shall chair a pre-construction meeting to be held at the Water Treatment Plant located at 630 NW 2nd Street, Hallandale Beach, Florida 33009.
- 4.2 Shop Drawings: CITY will receive and log submittals from the Contractor. CITY will forward technical submittals for CONSULTANT's review. CONSULTANT shall review technical submittals and provide CITY the technical review electronically for return to the Contractor. CITY will review other submittals that the Contractor is required to submit. This scope of services assumes up to 60 submittals will require CONSULTANT's technical review.
- 4.3 Construction Progress Meetings: CONSULTANT shall participate in bi-weekly construction meetings/inspections with the Contractor and CITY at the project site.
- 4.4 Certifications: **CONSULTANT shall provide signed and sealed completion certification statement/letters required by the Broward County Health Department to certify that the project has been completed in substantial accordance with the contract documents and request permission to place the facility into service.**
- 4.5 Request for Information Response: CONSULTANT shall provide interpretations of the contract documents, plans and specifications. CONSULTANT shall respond to contractor requests for information (RFI).
- 4.6 On-site Observations: CONSULTANT shall perform periodic site-visits by civil, mechanical, electrical, structural, and instrumentation engineers during construction to confirm that the work is in substantial compliance with the contract documents, plans and specifications.
- 4.7 Change Documentation: CONSULTANT shall develop and process field orders, work change directives, and construction contract change orders.
- 4.8 Contractor Pay Applications: CONSULTANT shall review and process contractor pay applications.
- 4.9 Startup Assistance: CONSULTANT shall provide startup assistance for field testing of the following:
  - 1) pumps;
  - 2) electrical components and
  - 3) control system.Startup assistance shall include the following:
  - Confirm instrument calibration and obtain copies of contractor calibration sheets
  - Witness signal loop checks
  - Witness control strategies tests
  - Witness proper functioning of operator work station graphic displays, including: 1) activation of alarm set points; 2) historian data collection and automatic creation of charts for run time, cumulative flow and other key data; and 3) graphic displays match approved shop drawings and specified features are functional
  - Verify function of daily, monthly, and other specified reports (pump run time)
  - Confirm electrical equipment protection settings
  - Operational testing of all pumps
- 4.10 Final Inspections and Punch Lists: CONSULTANT shall conduct final inspections to ensure compliance with the Contract Documents, plans and specifications. CONSULTANT shall prepare a

punch list of uncompleted and unsatisfactory work. The contractor will address each item. Hazen will periodically update and the issue the punch list as the contractor makes progress in addressing items on the list.

- 4.11 Certificate of Substantial Completion: CONSULTANT shall prepare and issue the certificate of substantial completion.
- 4.12 Final Contractor Payment Approval: CONSULTANT shall provide written approval of the final payment to the contractor.
- 4.13 Record Drawings. CONSULTANT shall prepare record drawings that incorporate the Contractor's redline markups. The record drawings shall be CAD files in AutoCad (.dwg) and Adobe (.pdf) formats.

## ASSUMPTIONS

The following assumptions were made in preparation of the above scope:

1. Disposition of New Pump: The new HSP recently installed by the CITY will be turned over to the CITY for spare parts.
2. Temporary Power to Existing High Service Pumps and MCC-2: The Contract Documents shall define the Contractor's responsibility for design of a temporary electrical system to allow removal of MCC-1 while maintaining power to the existing high service pumps and the equipment connected to MCC-2. The Contractor shall provide a shop drawing submittal of its design that is signed and sealed by a professional engineer registered in the State of Florida. The Contract Documents shall define the Contractor's responsibility to obtain permits for the temporary system.
3. Temporary High Service Pump Station: The Contract Documents shall define the Contractor's responsibility for design of a temporary high service pump station with a capacity sufficient to remove all existing high service pumps from service. The Contractor's design shall include temporary electrical, controls, piping, valves and site work needed for a complete and operable system. The Contractor shall provide a shop drawing submittal of its design that is signed and sealed by a professional engineer registered in the State of Florida. The Contract Documents shall define the Contractor's responsibility to obtain permits for the temporary system.
4. City Inspector: In accordance with the City's normal practice, the City of Hallandale Beach will provide an inspector during construction. The City of Hallandale Beach's inspector will document construction in daily, written reports and digital photographs. The City of Hallandale Beach will electronically transmit the daily reports to Hazen on a periodic basis.
5. Existing pad mounted transformer 2 (located near the Generator Building) is already wired to Florida Power and Light (FPL) power supply. Hence, design of a new FPL power feed is not required.
6. Permitting comments from regulatory agencies will be incorporated in the design documents after the 100% design submittal and prior to bid.
7. Broward County Environmental Protection and Growth Management Department requires a lead survey and an asbestos survey prior to the demolition. CITY will retain a specialist to perform the lead and asbestos surveys and document the findings in reports.
8. CITY will provide the 100% design documents to the Building Department for a "dry run" review.
9. The Front End documents (Contract Requirements) will be prepared by CITY.
10. CITY will incorporate Front End documents to produce Bid Documents (CONSULTANT will provide a pdf version of the technical specifications for CITY's use).
11. The CITY will pay for all permitting fees.
12. Fifteen calendar days of review time for CITY have been provided for in CONSULTANT's time of performance.
13. A survey or a geotechnical report is assumed to not be required for permitting.
14. CITY will pay for permit application fees.
15. The design documents will be prepared as a single construction project.
16. Numbering of technical specification sections shall follow CONSULTANT's normal practice.
17. A construction field office for the Engineer's use is not required under this project.
18. The CITY will maintain a hard (or digital) copy of all shop drawings at the WTP for CONSULTANT's use during construction.

19. The design of this project assumes that existing building upgrades to meet current Building Codes, outside of major design elements noted, are not required.
20. The design of this project assumes that electrical upgrades are limited to the plant high service pumping facilities.
21. CITY will review and approve payment applications by Contractor.
22. CITY will provide daily routine inspections of project. CITY will send summary email with photos to CONSULTANT.
23. CONSULTANT shall specify that the proposed high service pumps shall be factory tested and that a report be issued documenting the results of the factory testing and factory test pump curves. CONSULTANT attendance of the pump factory test is not included in the scope of services. If desired by the CITY, the CITY can witness the factory pump testing. In this case, the specification will require that the CONTRACTOR pay for the per diem, travel and lodging expenses for one person from the CITY to attend the pump factory test.
24. The manufacturer supplied equipment, valves, instruments and controls operations and maintenance manuals will be supplied by the Contractor in Adobe Acrobat PDF format.
25. The CITY will perform bacteriological clearance testing required by the Broward County Health Department.
26. Materials testing called for in the specifications, such as concrete slump testing, asphalt compaction testing, etc. shall either be performed by the CITY's laboratory or by a testing lab retained by the Contractor. The CITY will decide which approach it wants to follow.

**SCHEDULE OF COMPLETION**

The Schedule for the major work tasks is summarized below.

| Task | Description                                                                                                                                                                        | Duration for task/subtask (days) | Calendar Days From Notice To Proceed |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------|
| 1    | Design <ul style="list-style-type: none"> <li>50% Design</li> <li>City Review of 50% Design</li> <li>90% Design</li> <li>City Review of 90% Design</li> <li>100% Design</li> </ul> | 120<br>20<br>100<br>20<br>20     | 120<br>140<br>240<br>260<br>280      |
| 2    | Permitting                                                                                                                                                                         | 80                               | 360                                  |
| 3    | Bid Services                                                                                                                                                                       | 60                               | 420                                  |
| 4    | Construction Services                                                                                                                                                              | 365                              | 785                                  |

**COMPENSATION**

Compensation shall be made to CONSULTANT as indicated in the table below.

| Task                  | Description           | Compensation Type | Fee With PCard |
|-----------------------|-----------------------|-------------------|----------------|
| 1                     | Design                | Lump Sum          | \$216,197      |
| 2                     | Permitting            | Lump Sum          | \$21,630       |
| 3                     | Bid Services          | Lump Sum          | \$15,553       |
| 4                     | Construction Services | Not to Exceed     | \$146,569      |
| TOTAL (not-to-exceed) |                       |                   | \$399,949      |

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

Accepted:   
James T. Cowgill  
Vice President

Date: 2/10/2017

Fee Estimate

**Hazen**

City of Hallandale Beach

RFP #FY2015-2016-025

Water Treatment Plant High Service Pumps Replacement  
Phase 1

| Task         | Description                           | Vice President        | Senior Associate        | Associate        | Principal Engineer        | Senior Designer        | Total Hours  | Labor Cost (without P Card) | Labor Cost (with P Card 3% Administrative Fee) |
|--------------|---------------------------------------|-----------------------|-------------------------|------------------|---------------------------|------------------------|--------------|-----------------------------|------------------------------------------------|
| <b>Labor</b> |                                       |                       |                         |                  |                           |                        |              |                             |                                                |
| <b>1</b>     | <b>Design</b>                         | <b>0</b>              | <b>220</b>              | <b>340</b>       | <b>220</b>                | <b>725</b>             | <b>1,505</b> | <b>\$209,900</b>            | <b>\$216,197</b>                               |
|              | 50% Design                            | 0                     | 100                     | 200              | 80                        | 375                    | 755          | \$104,900                   |                                                |
|              | 90% Design                            | 0                     | 100                     | 120              | 120                       | 300                    | 640          | \$89,400                    |                                                |
|              | 100% Design                           | 0                     | 20                      | 20               | 20                        | 50                     | 110          | \$15,600                    |                                                |
| <b>2</b>     | <b>Permitting</b>                     | <b>0</b>              | <b>18</b>               | <b>72</b>        | <b>0</b>                  | <b>42</b>              | <b>132</b>   | <b>\$21,000</b>             | <b>\$21,630</b>                                |
|              | BCEPGMD                               | 0                     | 6                       | 24               | 0                         | 12                     | 42           | \$6,800                     |                                                |
|              | BCHD                                  | 0                     | 8                       | 24               | 0                         | 18                     | 50           | \$7,800                     |                                                |
|              | Building Dept                         | 0                     | 4                       | 24               | 0                         | 12                     | 40           | \$6,400                     |                                                |
| <b>3</b>     | <b>Bid Services</b>                   | <b>0</b>              | <b>24</b>               | <b>40</b>        | <b>0</b>                  | <b>30</b>              | <b>94</b>    | <b>\$15,100</b>             | <b>\$15,553</b>                                |
|              | Consultant Services During Bidding    | 0                     | 24                      | 40               | 0                         | 30                     | 94           | \$15,100                    |                                                |
| <b>4</b>     | <b>Construction Services</b>          | <b>0</b>              | <b>359</b>              | <b>358</b>       | <b>0</b>                  | <b>28</b>              | <b>745</b>   | <b>\$142,300</b>            | <b>\$146,569</b>                               |
| 4.1          | Pre-Construction Meeting              | 0                     | 8                       | 0                | 0                         | 0                      | 8            | \$1,700                     |                                                |
| 4.2          | Shop Drawings                         | 0                     | 83                      | 160              | 0                         | 0                      | 243          | \$46,500                    |                                                |
| 4.3          | Construction Progress Meetings        | 0                     | 44                      | 0                | 0                         | 0                      | 44           | \$8,900                     |                                                |
| 4.4          | Certifications                        | 0                     | 12                      | 0                | 0                         | 0                      | 12           | \$2,500                     |                                                |
| 4.5          | Request for Information Response      | 0                     | 16                      | 48               | 0                         | 0                      | 64           | \$12,200                    |                                                |
| 4.6          | Discipline Observations               | 0                     | 96                      | 0                | 0                         | 0                      | 96           | \$19,400                    |                                                |
| 4.7          | Change Documentation                  | 0                     | 8                       | 26               | 0                         | 0                      | 34           | \$6,500                     |                                                |
| 4.8          | Contractor Pay Applications           | 0                     | 0                       | 24               | 0                         | 0                      | 24           | \$4,500                     |                                                |
| 4.9          | Startup Assistance                    | 0                     | 40                      | 80               | 0                         | 0                      | 120          | \$23,000                    |                                                |
| 4.10         | Final Inspections and Punch Lists     | 0                     | 40                      | 0                | 0                         | 0                      | 40           | \$8,100                     |                                                |
| 4.11         | Certificate of Substantial Completion | 0                     | 4                       | 0                | 0                         | 0                      | 4            | \$900                       |                                                |
| 4.12         | Final Contractor Payment Approval     | 0                     | 4                       | 0                | 0                         | 0                      | 4            | \$900                       |                                                |
| 4.13         | Record Drawings                       | 0                     | 4                       | 20               | 0                         | 28                     | 52           | \$7,200                     |                                                |
|              | <b>TOTAL</b>                          | <b>0</b>              | <b>262</b>              | <b>452</b>       | <b>220</b>                | <b>797</b>             | <b>1,731</b> | <b>\$388,300</b>            | <b>\$399,949</b>                               |
|              |                                       |                       |                         |                  |                           |                        |              |                             |                                                |
|              | <b>Fee Rates (\$/HR)</b>              | <b>Vice President</b> | <b>Senior Associate</b> | <b>Associate</b> | <b>Principal Engineer</b> | <b>Senior Designer</b> |              |                             |                                                |
|              | average rate                          | 75.00                 | 65.00                   | 60.00            | 51.00                     | 30.00                  |              |                             |                                                |
| 3.100        | W/ Multiplier (\$/HR)                 | 232.50                | 201.50                  | 186.00           | 158.10                    | 93.00                  |              |                             |                                                |