

The services rendered pursuant to this Work Authorization No. 19 are in accordance with the terms and conditions of the Contract for Consulting / Professional Services between the City of Pompano Beach and Carollo Engineers, ORD. NO. 2016-26 adopted January 12, 2016.

**Scope and Fees
City of Pompano Beach
Transfer Pump Station Improvements -
Construction Administration Services
January 23, 2019**

Background

Carollo Engineers, Inc. (Carollo) previously completed the design and assisted with bidding for the Pompano Beach Water Treatment Plant (WTP) Transfer Pump Station Improvements Project, in accordance with Contract RLIH-51-10. The construction contract was awarded to the selected bidder.

The City has requested that Carollo provide construction administration services for the transfer pump station improvements. The scope of services for this Work Authorization is detailed as follows:

Scope of Work

Carollo will provide the following engineering services during the construction phase:

- Permit assistance (\$4,080):
 - Carollo will assist with obtaining clearance to place water facilities into service with the DEP. Carollo will witness pressure testing, witness disinfection, and review bacteriological test results. Carollo will prepare the clearance forms and coordinate for the required signatures. Carollo will submit the documents to the DEP and respond to any review comments.
 - Carollo will assist in resolving issues raised by inspectors from the Building Department.
- Construction meetings (\$21,220):
 - Attend monthly construction progress meetings. A total of 16 progress meetings are anticipated for the construction duration.
 - Attend one construction closeout meeting.
- Review Contractor's submittals (\$39,480):
 - Receive, document, review, evaluate, and distribute shop drawings, samples, test results, construction schedules, schedule of values, shut-down requests, and other data which Contractor is required to submit. Carollo's review will be for general conformance with the Contract Documents.

- Requests for Information (\$14,230):
 - Receive, document, review, evaluate, and distribute Requests for Information (RFI's) from the Contractor. Carollo will respond to the contractor to clarify and/or interpret technical or design related questions. Carollo will issue necessary interpretations and clarifications of the contract documents.
- Assistance with review of change orders (\$13,710):
 - Carollo will coordinate with the Contractor for change orders that are the result of errors or omissions in the Drawings or Specifications. Carollo will also coordinate for one (1) City initiated change order.
 - Carollo will prepare requests for proposals (RFP) for such changes. Requests will include preparation or markups of drawings and specifications for incorporation into the RFP.
 - Carollo will receive and review the Contractor's response to the request for change and will obtain such further information as is necessary to evaluate the basis for the Contractor's proposal to complete the proposed changes. Carollo will also provide to the City an Opinion of Cost on the Contractor's response to request for change.
- Payment application review (\$7,860):
 - Receive and review payment applications from the Contractor. Carollo will provide written notification to the City and Contractor on whether to approve or reject the payment application and any review comments.
 - A total of 16 payment applications are anticipated for this project.
- Site visits and inspections (\$37,080):
 - Site visits for observation of Contractor progress work will be performed by Carollo. Visits will be made for specialty inspections during the course of the work. These inspections include critical tie-ins, pressure tests, leak tests, pump setting, pump tests, and electrical installation work such as switchboards, MCC's, VFD's, and breakers.
 - Carollo will conduct an inspection for substantial completion and develop a punch list that will be provided to the City and Contractor. Carollo will also conduct an inspection for final completion.
- Witness factory testing (\$5,240):
 - Carollo will witness factory testing of the five (5) pumps. Travel expenses are to be paid by the Contractor per the specifications. Carollo will prepare a brief summary of the test results and follow-up with the Contractor to correct any deficiencies observed during the testing.
- Shut-down and start-up assistance (\$30,380):
 - Critical power shut-downs, momentary water pumping interruption and equipment start-ups will be observed by Carollo. The Contractor's shut-down and start-up plans will be reviewed in advance by Carollo.
 - A total of four (4) critical power shut-downs are anticipated for this project.

- The anticipated number of critical start-ups are as follows:
 - Two (2) for transfer pump station (TPS) switchboard,
 - One (1) for new circuit breaker at existing TU-2 switchboard,
 - Five (5) for transfer pumps and related VFDs,
 - Two (2) for Transfer Pumps PLC Controller and HMI graphics,
 - Two (2) for UFO transformer and related 480 V main circuit breakers,
 - Four (4) for new SCADA graphic screens at SCADA command center
- O&M Manuals (\$11,440):
 - Carollo will develop an Operations and Maintenance manual for the new pumping station to overview operations of the new pumps.
 - Carollo will review Contractor's and Manufacturer's Operation and Maintenance (O&M) Manuals for the electrical and mechanical systems. The following O&M Manuals are anticipated:
 - One (1) TPS switchboard,
 - One (1) TPS VFDs,
 - One (1) for level transmitters,
 - One (1) for PLC-PLC and local HMI,
 - One (1) for new transfer pumps,
 - One (1) for valves, and
 - One (1) for the HVAC system.
- Record drawings (\$11,460):

Utilizing the set of red-line as-built drawings provided by the Contractor, Carollo will prepare record drawings. Electronic and hardcopies of record drawings will be provided to the City and permit authorities as required. The native CAD files will be provided to the City.

Schedule

The following table provides the anticipated construction schedule.

Estimated Schedule for Construction Administration Services	
Phase	Duration (Months)
Preconstruction (Building Permit, Submittals, Equipment Lead Times)	4
Onsite Mobilization to Substantial Completion	11
Substantial Completion to Final Completion	1
Total Construction Duration	16

Budget and Payment

The method of payment for this project is lump sum. The City shall pay Carollo in monthly installments based on submitted invoices for services incurred. Invoices will be accompanied by a progress letter. Compensation shall be a total of \$196,190.

Subconsultants

The Carollo team will include the following subconsultants:

- Gamboa Engineers, LLC; Mario Gamboa, P.E., to provide electrical engineering services. Gamboa Engineers is a Broward County certified Small Business Enterprise. Gamboa fees are inclusive with this proposal.