



CONTRACT AMENDMENT

This amendment by and between the Contractor and the City as defined below shall be effective as of the date this Amendment is fully executed.

Contractor's Full Legal Name:	Kimley-Horn & Associates, Inc.
Solicitation No./Event ID:	20210082
Solicitation Title/Event Name:	Engineering Services to perform an Electrical Audits at 4 Water & Wastewater Treatment Facilities to include a Nutrient Analysis at Glades WWTP.
Contract Award Date:	N/A – Continuing Contract
Initial Current Contract Term:	150 calendar days
Current Contract Expiration Date:	01/13/2022
Requested Contract Expiration Date:	06/12/2022
Initial Contract Amount:	\$221,208
Current Contract Amended Amount:	\$0.00
Requested Financial Change Amount:	\$102,296.00
New Contract Amount:	\$323,504.00
Amendment No.:	1
Amendment Type:	Increase of Commodities

WHEREAS, the Contract is in effect through the Current Contract Term as defined above; and

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties do hereby agree as follows:

- A. Contract Extension. The parties hereby agree that the contract will be extended for an additional period of time as follows:

Beginning Date of Amendment # 1 Term: January 14, 2022.

End Date of Amendment # 1 Term: June 12, 2022.

- B. The parties agree the contract will expire at midnight on the date defined as the "End Date of Amendment # 1 Term" unless the parties agree to extend the contract for an additional period of time.

**Glades Wastewater Treatment Facility Nutrient Study and
Utility Systems Electrical Audit (Treatment Plants)**

AMENDMENT NO. 1 – Addition of Pump Stations

INTRODUCTION

Kimley-Horn and Associates (CONSULTANT) was authorized under Contract No. 20210082 for Engineering Services to perform an Electrical Audit at the CITY's two water and two wastewater treatment facilities, as well as a nutrient analysis at the Glades Wastewater Treatment Facility. As the project progressed, the CITY expressed a desire to add additional facilities to the electrical audit scope of work. Amendment No. 1 will add the following assets to the electrical and equipment optimization evaluation under this project:

- Southport Booster Pump Station
- Northport Booster Pump Station
- SW Water Booster Station
- Glades Booster Pump Station
- Midport Re-pump Station
- Southport Re-pump Station
- Westport Re-pump Station
- Rangeline Re-pump Station

The following amended scope of services describes the specific additional tasks to be completed to gather information, perform necessary analyses, and document the project results. The following scope of work will be performed by the CONSULTANT.

TASK 1 – PROCESS AND HYDRAULIC MODEL DEVELOPMENT

No additional services are being provided under Task 1.

TASK 2 – ELECTRICAL AUDIT AND PROCESS OPTIMIZATION

The CITY has requested that the CONSULTANT perform an electrical audit, including an equipment optimization review, at the four booster pump stations and four repump stations listed above. These audits have been deemed necessary due to aging of the infrastructure and equipment leading to sporadic electrical and operational issues. The audits are crucial in the process of developing a plan to address not only the immediate challenges facing the pump stations, but to keep pace with industry standards and best practices. This is imperative to maintain the quality of products and services Port St. Lucie residents have come to expect from the Utility Systems Department.

The proposed work will be completed in two phases. Phase 1 will include an evaluation of the existing assets, preparation of a technical memorandum (TM) summarizing findings and recommendations, and preparation of an engineer's OPCC for recommended and agreed upon improvements. Phase 2 will include design and bidding services related to the recommendations presented in the TM and will be authorized under separate cover upon completion of Phase 1 (not included in this Scope of Services). The CONSULTANT will engage Electrical Design Associates, Inc. as a subconsultant to provide the electrical evaluation (collectively referred to as the CONSULTANT in the following subtasks). This evaluation will also include a review of operational strategies and efficiencies associated with the key electrical components (to be completed by CONSULTANT's process mechanical engineer).

This task will include a review of relevant reference materials and other available supporting documents. The CONSULTANT will visit each site to make independent observations and evaluations of the electrical and mechanical systems. The CONSULTANT will make recommendations for modifying existing select electrical and mechanical systems and equipment to mitigate current issues and provide plans for more efficient/effective future operations.

Primary electrical systems/sub-systems identified for inclusion in this evaluation are as follows:

- Commercial (FPL) electrical feed voltage dips, phase issues, and intermittent outages.
- Pump station generators

- Pumps and motors
- Lightning and surge protection
- Grounding systems
- Harmonic filters (if present)
- VFDs (if present)

A summary of the specific items to be evaluated at each of the four treatment facilities is presented in **Attachment 1** to this scope of services.

Task 2.1 – Kickoff Meeting and Operational Workshop

CONSULTANT will prepare for and facilitate a kickoff meeting, on site, with representatives from the CITY's management team and electrical/operations staff for each of the eight facilities to discuss key project objectives, scope, deliverables, schedule, communication protocol, and the CITY's expectations for the Project.

Immediately following the kickoff meeting, the CONSULTANT will participate in site visits to each of the eight stations to serve as an operational workshop with operators, maintenance staff, SCADA team and engineering staff to discuss the current operating conditions at each station, historical operational issues, recommendations of prior design reports, upcoming/planned improvement projects and data needs.

Task 2.2 – Data Collection and Review

CONSULTANT will prepare a data request for each facility to collect information necessary to complete the assessment. The CONSULTANT will:

- Review historical pump/repump station documentation including costs, record drawings, specifications, and operation and maintenance manuals. CITY shall provide a list of current and future projects to be completed at each facility for electrical load evaluations and construction sequence considerations.
- Review existing record drawings for the power distribution and PLC systems from the CITY to utilize for development of Figures (single lines and PLC system architecture).
- Summarize key data from the facilities, including electrical distribution and SCADA systems and any other similar documentation available from the CITY.
- Review pertinent past studies and vendor quotes as it relates to the electrical distribution and computer systems.
- Collect nameplate data on major equipment to be included (both electrical and process-related).
- Relevant operational data as needed.

Task 2.3 – Field Investigations and Condition Assessment

The CONSULTANT will conduct a detailed site visit (independent of the operational workshop site visits outlined in Task 2.1) at each of the eight stations to record an assessment of condition for the major electrical equipment, computer equipment (PLC and HMI), and mechanical equipment (pumps/motors, etc.). Major electrical gear will include the electrical distribution system related to the 480V distribution including normal and standby power. The purpose of this task is to determine the status, condition, and functionality of the existing electrical and mechanical components including pad mounted transformers, main breakers, automatic transfer switches, switchboards, motor control centers, variable frequency drives, starters and overall power systems, pumps and motors. Deficiencies will be noted for areas where such deficiencies may adversely impact treatment process performance, facility expansion (capacity), level of service (flows/pressures) and where the remaining useful life of the station components will likely expire during a 10-year planning horizon. The purpose of the site visits is for visual observations, discussions with Operations staff to provide input on known problem areas at the booster and re-pump stations. Site visits are not intended to "as-built" the current record drawings.

1. The condition assessment results will be recorded for each major asset in the inventory that was observed during visual assessment. Confined space entry and opening/ assessment of energized panels are not included in this scope of services. Equipment condition will be documented with a photo log for all major assets surveyed.
2. The condition assessment shall be based on visual inspection only of the electrical and computer equipment, as well as the related process equipment, and will not include the use of any testing equipment. No destructive or otherwise invasive testing is proposed at this time. In the event that more detailed inspections or analysis are recommended based on the initial on-site assessments, these can be performed as supplemental service.
3. The CITY will provide representatives to allow access to facilities and equipment and provide operational input for use in the assessment.

It is anticipated that two station site visits will be completed each day, for a total of four days, including preparation, field activities, documentation of findings and travel time between stations. It is not required that the field visits be performed on consecutive days.

Task 2.4 – Power Company Coordination

In order to quantify the reliability of the utility power service to each facility, Florida Power & Light (FPL) will be contacted to review the reliability of existing service feeds to the facility. FPL will be requested to assess the condition of the existing power feeds, transformer capacity, review infrastructure, and provide information on any modifications or updates to their system including revised available fault currents including any changes to the existing service. Additionally, a billing summary will be analyzed including peak demand values over the last three years (if available) to evaluate historical usage, energy rates, and any potential savings opportunities. A load analysis of the existing and future anticipated pump station loads will be conducted to verify existing utility feeds and standby power system are sufficient to handle planned facility loading based any future additional loads.

The CONSULTANT will review electrical/SCADA pertinent information, such as memos, reports, letters, etc. available for previous power company quality issues that provide a description of the conditions leading to the event, response time to event, what course of action was taken to restore power, and any plans implemented taken to prevent any future recurrence.

The CONSULTANT will visit each site with the power company representative as necessary. It is anticipated that these site visits will be conducted over a period of two days (four stations per day). The process/mechanical engineer will not participate in the FPL site visits.

Task 2.5 – Draft Findings and Recommendations TM

Subtask 2.5.1 Electrical/PLC Recommendations and OPCC

The CONSULTANT will consider pros and cons for electrical/PLC replacement as they relate to equipment sizing requirements, design criteria requirements, system footprint or layout, safety, personnel requirements, maintenance requirements, redundancy, reliability, operational flexibility, and construction costs. Recommendations will be based on the following criteria:

1. Immediate – System failure imminent.
2. Short Term – Five (5) year upgrade plan.
3. Long Term – Ten (10) year upgrade plan.

Recommendations will be made specific to each of the eight facilities evaluated. The CONSULTANT will evaluate existing electrical systems based on the conditional assessment, reliability and standby power to develop a proposed approach for electrical system upgrades. An initial set of project recommendations will be generated and organized in terms of

criticality and timeframe for replacement. A planning-level OPCC will be provided for the recommended projects/improvements. Initial recommendations will be broken into the following key areas focusing on reliability, redundancy, and safety aspects:

1. FPL Utility Supply.
2. Standby Power Systems.
3. 480V Power Distribution.
4. Upgrade existing PLCs with new PLCs in their current locations.
5. Proposed Loads Power Distribution (where applicable based on future projects).
6. Electrical Safety and Maintenance.

The CONSULTANT shall prepare a draft TM to summarize the present state of the electrical and computer systems, identify system goals and recommended improvements. The anticipated format/content of the TM is as follows:

1. Executive Summary.
 - a. Electrical system background information and system overview.
 - b. Summary of Recommendations.
2. Power Distribution System.
 - a. Design and Reliability Criteria.
 - b. System Evaluation.
 - c. Single Line Diagrams (Existing and Proposed).
 - d. Illustrative Sketches/Plans.
 - e. Constructability and Maintenance Operations.
3. Pump Station Power Disturbances.
4. Major Electrical Equipment Conditional Assessments.
5. PLC and HMI Recommendations.
6. Planning Level OPCC (for process and electrical items).

The OPCC will be a Class 4 "Budget Level" estimate of the probable cost of construction per *Recommended Practice 18R-97 Cost Estimate Classification System for the Process Industries*, published in 2005 by AACE International. The CONSULTANT will determine replacement costs for each asset based on previous project experience, the CONSULTANT's cost database, vendor proposals (as needed) and industry standard practices. Each replacement cost will represent the total project cost, including direct and indirect cost factors that will likely be incurred in the actual replacement project, in 2021 dollars. A multiplier will be applied to account for ancillary support items that are necessary but below the level of detail required for capital projects.

Subtask 2.5.2 Mechanical Equipment Optimization Recommendations and OPCC

The CONSULTANT will include recommendations related to optimization of the mechanical equipment at each of the stations in the TM to be produced under this task. These recommendations will be specifically limited those replacements or upgrades that may lead to more efficient operation of the stations and reduced electrical demand/costs. The findings and recommendations will be summarized and included in the above referenced TM. The TM will include a planning-level OPCC for mechanical equipment-related recommendations. Three hardcopies and one electronic (PDF) file will be provided for the CITY's review. A review meeting will be held with CITY staff to discuss the recommendations, review prioritization/sequencing of implementation of the recommendations, and document CITY comments for incorporation into the Final TM.

Task 2.6 – Final Findings and Recommendations TM and OPCC

The CONSULTANT will incorporate the comments received from the CITY at the review meeting in Task 2.5 into a final TM documenting the proposed implementation schedule for the recommended improvements, as well as the budget-level OPCC for each proposed improvement. This final TM will serve as the basis of design for the preparation of design

package(s) for the resulting project(s). Design services will be provided under separate authorization for Phase 2. Three hardcopies and one electronic (PDF) copy of the final TM will be provided to the CITY.

Task 2.7 – Project Meetings and Workshops

The CONSULTANT will participate in up to two, 4-hour workshops to review findings and recommendations (to be attended by project manager, electrical engineer and mechanical engineer), in addition to the meetings outlined in the individual tasks above.

Task 2.8 – Project Management

This task will include all activities necessary to deliver the Electrical Audit on schedule and within the allocated budget. The CONSULTANT will provide monthly summary reports to accompany invoices and will include an update on work completed to date and work anticipated for the upcoming month.

This task will also include oversight and management of the electrical subconsultant throughout the duration of the project, including coordination for monthly progress reports, review of pay applications, coordination of quality control reviews and internal tracking of project schedule and budget.

ADDITIONAL SERVICES

The following services are not included in the Scope of Services for this project but may be required depending on circumstances that may arise during the execution of this project. Additional services include, but may not be limited to the following:

- Phase 2 – Design, bidding, or construction services for recommended improvements.

COMPENSATION

The services included in this amended Task 2 of this Scope of Services are based on a value of \$102,296 broken down as follows. Task 2 has been expanded to include the additional locations. Each Location listed below Task 2 will be an additional line item on the PO.

TASK	Amendment No. 1		TOTAL COST
	Consultant Subtotal	Subconsultant Subtotal	
Task 2 – Electrical Audit and Process Optimization	TOTAL \$22,504	TOTAL \$79,792	\$102,296
Southport Booster Pump Station	\$2,813	\$9,974	\$12,787
Northport Booster Pump Station	\$2,813	\$9,974	\$12,787
SW Water Booster Station	\$2,813	\$9,974	\$12,787
Glades Booster Pump Station	\$2,813	\$9,974	\$12,787
Midport Re-pump Station	\$2,813	\$9,974	\$12,787
Southport Re-pump Station	\$2,813	\$9,974	\$12,787
Westport Re-pump Station	\$2,813	\$9,974	\$12,787
Rangeline Re-pump Station	\$2,813	\$9,974	\$12,787
	Amendment No. 1		\$102,296

SCHEDULE OF DELIVERY

Time periods to perform the professional services are estimated as follows:


SCHEDULE FOR PROFESSIONAL SERVICES

Task Name	Duration
Task 1 – No additional services	N/A
Task 2 – Electrical Audit and Mechanical Optimization	150 Days

2. **SUCCESSORS AND ASSIGNS.** This Amendment shall be binding upon and inure to the benefit of the successors and permitted assigns of the parties hereto.
3. **ENTIRE AGREEMENT.** Except as expressly modified by this Amendment, the contract shall be and remain in full force and effect in accordance with its terms and shall constitute the legal, valid, binding and enforceable obligations to the parties. This Amendment and the contract (including any written amendments thereto), collectively, are the complete agreement of the parties and supersede any prior agreements or representations, whether oral or written, with respect thereto.

IN WITNESS WHEREOF, the parties have caused this Amendment to be duly executed by their authorized representatives.

CONTRACTOR

Contractor's Full Legal Name: (PLEASE TYPE OR PRINT)	Kimley-Horn and Associates, Inc.
Authorized Signature:	<small>DocuSigned by:</small> 
Printed Name and Title of Person Signing:	<small>58C56220F38D475...</small> Brian A. Good, P.E., Sr. Vice President
Date:	01/19/2022
Company Address:	445 24th Street, #200, Vero Beach, FL 32960

THE CITY OF PORT ST. LUCIE

Authorized Signature:	
Printed Name and Title of Person Signing:	Caroline Sturgis, Director, Office of Management & Budget, and Procurement
Date:	
City Address:	121 S.W. Port St. Lucie Blvd., Port St. Lucie, FL 34984