MEMORANDUM

DATE: April 21, 2021

TO: ****ORIGINAL****
City Clerk

FROM: Robyn Holder, CPPB
Procurement Management Department

SUBJECT: Record Retention

CONTRACT:	#20170132 Amendment #4
CONTRACT TITLE:	Design Services for the Westport Wastewater Treatment Plant Expansion

VENDOR NAME:	Reiss Engineering
VENDOR ADDRESS:	1016 Spring Villas Pt.
CITY & STATE:	Winter Park, FL 342708

APPROVED BY COUNCIL: February 26, 2018
7b)- Design Services for the Westport Wastewater Treatment Plant Expansion – Phase 1 Contract #20170132. Contract Period is 7/1/2019 to 2/5/2020

Amendment #1 Amount: $73,197.55

APPROVED BY COUNCIL: July 27, 2020
7h) – Design Services for the Westport Wastewater Treatment Plant Expansion – Phase 1 – Contract #20170132. Contract period 2/6/2020 to 4/28/2020.

Amendment #2 Amount: $119,772.50

APPROVED BY COUNCIL: 7/27/2020

Amendment #3 Amount: ($96,289.50) Contract end date: 3/13/2023

Amendment #4 Amount: $63,235.00 Contract end date: 9/30/2024
Council approval: N/A

"A City for All Ages"

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:	Reiss Engineering
Solicitation No./Event ID:	20170132
Solicitation Title/Event Name:	Design Services for the Westport Wastewater Treatment Plant Expansion
Contract Award Date:	2/26/2018
Initial Current Contract Term:	3/13/2018 – 3/13/2023
Current Contract Expiration Date:	3/13/2023
Requested Contract Expiration Date:	9/30/2024
Initial Contract Amount:	$3,877,175.00
Current Contract Amended Amount:	$3,974,255.75
Requested Financial Change Amount:	$63,235.00
Amendment No.:	4
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:

1. Task 16. Nutrient Reduction Study. The City of Port St. Lucie's Westport Wastewater Treatment Plant (WWTP) is a secondary treatment plant permitted to treat six (6) million gallons per day (MGD) three-month average daily flow (TMADF). The existing WWTP process includes influent screening, grit removal, biological treatment, secondary clarification, filtration, chlorine disinfection, sludge dewatering, and effluent disposal. Effluent disposal is via a 12.0 MGD deep injection well when the resource is not beneficially reused in the City's public access reuse system.

The main objective of this study is to evaluate nutrient reduction alternatives to reduce the total nitrogen (TN) in the City's effluent at the best value to the City. Options to reduce total nutrients included modifying standard operating procedures, modifying existing structures, and evaluating new treatment processes and technologies for the existing biological treatment system.

The treatment objectives established for this study were developed to consider future regulatory limitations on effluent nutrient limits. The main effluent parameter of concern for the biological treatment is TN which is described as the sum of nitrate-nitrite and total Kjeldahl Nitrogen (TKN), where TKN is the sum of ammonia and organic nitrogen. Removal of total phosphorus will be accomplished using chemical precipitation, if required. The targeted effluent concentrations are provided in **Table 1**. These limits will be used as the basis of design for the nutrient reduction alternatives.

Table 1. Targeted Effluent Concentrations

Parameter	Effluent Target	Future Target
Total Carbonaceous BOD	< 5 mg/L	< 5 mg/L
Total Suspended Solids	< 5 mg/L	< 5 mg/L
Total Nitrogen	< 10 mg/L	< 6 mg/L
Total Phosphorus	< 6 mg/L	< 1 mg/L

The City has requested the development and evaluation of four alternatives that could reduce effluent nutrient concentrations as follows:

- Alternative One: MLE Process Model (Existing Tank Dimensions for Aeration Tank)
- Alternative Two: IFAS Process Model (Existing Tank Dimensions for Aeration Tank)
- Alternative Three: Four-Stage Bardenpho Process Model (Existing Tank Dimensions for Aeration Tank)
- Alternative Four: Denitrification Filters Process Model (Additional Tanks)

SECTION 2 – PROCESS ALTERNATIVES

The City has requested the Nitrogen Reduction Study to include the following:

- Update influent loading characteristics,
- Identify existing plant operational flexibility and constraints to implement the process options,
- Conduct process modeling to evaluate the process options, and
- Provide preliminary estimates for probable construction costs and each alternative 20-year Net Present Worth Cost that includes capital costs, power, chemical and O&M costs.

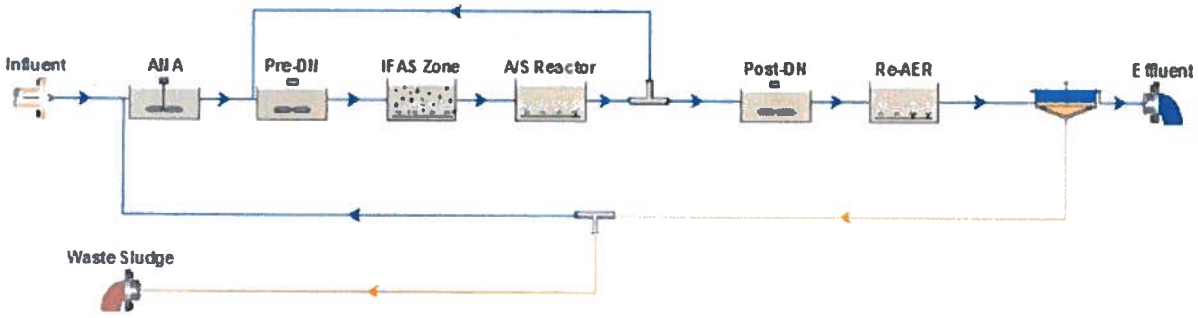
Alternative One: Existing MLE Process Evaluation (Existing Tank Dimensions for Aeration)

- Assumptions: Process to use new headworks, existing equalization tank modifications and fine bubble aeration using high speed turbo blowers
- TN Reduction: Evaluate effluent TN at both <10 mg/l and <6 mg/l. and highest removal possible.
- Provide a Preliminary Estimate of Potential Construction Costs and a 20-year present worth cost.

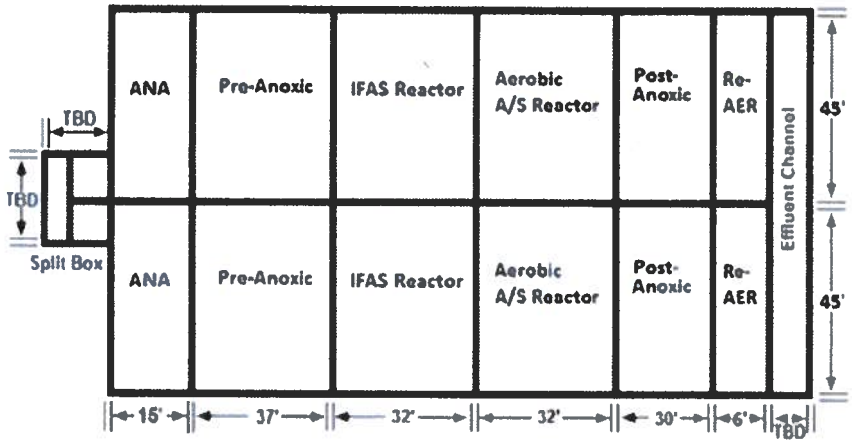
Alternative Two: IFAS Process Evaluation (Existing Tank Dimensions for Aeration Tanks)

- Assumptions: Process to use new headworks, existing equalization tank modifications, and fine bubble aeration using high speed turbo blowers
- TN Reduction: Evaluate effluent TN at both <10 mg/l and <6 mg/l and highest removal possible.
- Provide a Preliminary Estimate of Potential Construction Costs and a 20-year present worth cost.

The IFAS process shall be modeled similar to the design of the Brevard County South Central Wastewater Treatment Facility 6.0 MGD IFAS system in Viera, Florida that was constructed in 2019 and has been in operation for two years. The plant layout was designed using the BioWin model with information provided by EDI and BioChem. Unlike that design, for this evaluation no anaerobic zone will be modeled, and the biological aeration tanks shall use the dimensions of the existing tank's overall length and width. The following figure shows the BioWin process configuration and the tank dimensions that were used for the design of the Brevard County South Central Wastewater Treatment Facility 6.0 MGD IFAS system.



IFAS Process Configuration



Brevard County South Central WWTF IFAS Tank Layout

Alternative Three: Four-Stage Bardenpho Process Evaluation (Existing Tank Dimensions for Aeration)

- Assumptions: Process to use new headworks, existing equalization tank modifications, and fine bubble aeration using high speed turbo blowers.
- TN Reduction: Evaluate effluent TN at both <10 mg/l and <6 mg/l and highest removal possible.
- Provide a Preliminary Estimate of Potential Construction Costs and a 20-year present worth cost.

Alternative Four: Denitrification Filters (Additional Tanks)

- Process Evaluation Assumptions: Denitrification Filters to follow MLE process.
- TN Reduction: Evaluate effluent TN at both <10 mg/l and <6 mg/l. and highest removal possible.
- Provide a Preliminary Estimate of Potential Construction Costs and a 20-year present worth cost.

SCOPE OF SERVICES

TASK 1: General Project Administration

REI will perform general project coordination, QA/QC, and management activities, including general administrative activities for this authorization, as well as specific coordination activities with the team members, including the City's staff and other key team members.

REI will prepare and submit monthly invoices that will include progress for each task and highlight the overall progress of the study. The monthly progress reports will summarize on-going activities and pending activities. Any issues that may arise with suggestions on how they may be resolved will be addressed immediately with e-mail or telephone correspondence and will not wait until submission of a monthly progress report.

TASK 2: Additional Data Collection

REI will request any additional data needed from the City that was not collected in previous work and will update plant design loadings and effluent water quality criteria.

TASK 3: Process Modeling for Alternatives Analysis

REI will validate the preliminary model assumptions, review, and update process model for the existing plant configuration, as necessary before proceeding with the process modeling of the alternatives. Alternatives 1, 2 and 3 will be modeled to develop preliminary basis of design parameters that will be used to request design proposals from equipment suppliers. The BioWin process model does not have a module for denitrification-filters therefore literature and process equipment supplier-based design criteria will be used to develop process criteria for alternative 4. REI will hold a 1-hour virtual meeting to present the modeling results. Raw data from Biowin will be reviewed to determine if the City wishes to continue with all four options or reduce the scope, per Task 4, to further review of only two options.

TASK 4: Optional Scope Reduction Task

Upon completion of initial process modeling for alternatives analysis (Task 3), REI will meet with the City virtually to present initial model results of the four (4) alternatives. The City may opt to eliminate up to two (2) of the four (4) alternatives from further evaluation. If the City wishes to eliminate up to two (2) alternatives from a detailed alternatives analysis, a change in compensation under this scope of work will be provided to the City in the amounts of -$949.00 from Task 1, -$550.00 from Task 2, -$0 from Task 3, -$4,858.00 from

Task 5, and -$4,101.00 from Task 6. The net adjustment would be -$10,458.00 resulting in a total contract value of $52,777.00. If this optional Task 4 is executed, the schedule will be reduced by fifteen (15) days.

TASK 5: Alternatives Analysis

REI will prepare conceptual layouts, planning level estimates of material quantities (i.e., concrete, piping, and structural modifications), and major equipment costs necessary to construct/install each of the alternative modifications. The cost estimates will include budgets based on the estimated level of effort and construction sequencing that will be required to maintain plant operations during construction for each alternative. REI will develop estimates for electrical, instrumentation, and control system costs based on a percentage of construction costs. REI will estimate the associated increase and/or reduction in operation and maintenance (O&M), power, chemical, biosolids disposal, and/or labor costs for each of the alternatives over a 20-year life cycle. The O&M cost estimates will be based on City provided unit costs for these operational cost centers.

Based on the estimated capital and O&M costs changes, REI will develop a 20-year net-present-worth cost estimate for each of the plant improvement alternatives. Note: The net-present-worth (NPW) analysis will only apply to the cost impacts associated with the alternative improvements and will not represent present worth costs for the full plant operations as those existing costs are not relative to the benefit-cost analysis of the alternatives.

The alternatives analysis will also include a qualitative assessment of the indirect and non-cost impacts of each of the alternatives. Items such as impacts to current operations during construction, potential for noise and odors during and after construction, regulatory acceptance and water quality benefits to public access reuse customers will be factored into the benefit-cost analysis.

TASK 6: Study Report and Review Meeting

REI will prepare a draft and final Nitrogen Reduction Study report to present the alternatives analysis, study findings and recommendations. REI will submit the draft report (one PDF format) to the City and will participate in a review meeting with City staff to present the draft study findings and receive City comments. The meeting will be held approximately two weeks after submission of the draft report to the City. The meeting will be the forum for REI to receive and discuss City comments on the draft report. The draft report will be revised based on the City comments and a final report (one PDF format) will be submitted to the City.

Deliverables

- Draft Nitrogen Reduction Study Report
- Review Meeting
- Final Nitrogen Reduction Study Report

SECTION 3 – SCHEDULE

The actual completion dates of the project shall be dependent on the date of notice-to-proceed (NTP) is issued and as defined as follows:

Task	Commencing	Duration (Calendar Days)
Task 16.1: Project Administration	From NTP	Project Duration
Task 16.2: Additional Data Collection	From NTP	5
Task 16.3: Process Modeling of Alts.	From NTP	15
Task 16.4: Optional Scope Reduction Task	From NTP	20
Task 16.5: Alternatives Analysis	From NTP	45
Task 16.6: Draft Study Report	From NTP	60
Task16. 6: Draft Study Review Meeting	From NTP	74
Task 16.6: Final Study Report	From NTP	90

SECTION 4 – COMPENSATION

For the professional services set forth in this scope of services, the City shall compensate REI for Subtasks 1-6 on a lump sum basis as follows:

Task	Fee
Task 16.1: Project Administration	$4,323.00
Task 16.2: Additional Data Collection	$2,770.00
Task 16.3: Process Modeling of Alternatives	$11,920.00
Task 16.5: Alternatives Analysis	$21,590.00
Task 16.6: Study Report and Review Meeting	$22,632.00
Total Lump Sum Fee	**$63,235.00**

The amended contract compensation shall therefore be as follows:

Task (Part 1 and 2)	Original Fee Plus Amendment	Additional Fee	Total Amended Fee
Task 1 – Project Administration (Part 1 and 2)	$186,600.00	0	$186,600.00
Task (Part 1 – Process Improvements)	**Original Fee Plus Amendment**	**Additional Fee**	**Total Amended Fee**
Task 2 – Preliminary Engineering Services	$39,560.00	$0	$39,560.00
Surveying	$21,700.00	$0	$21,700.00
Geotech	$7,285.00	$0	$7,285.00
SUE	$1,500.00	$0	$1,500.00
Task 3 – Permitting (Part 1)	$14,530.00	$0	$14,530.00
Permit Fees	$800.00	$0	$800.00
Task 4 – Final Design (Part 1)	$180,850.00	$0	$180,850.00
Task 5 – Bidding Services (Part 1)	$19,235.00	$0	$19,235.00
Task 6 – Construction Phase Services (Part	$287,067.25	$0	$287,067.25

Task 7 – RPR Services (Part 1) (LESS REI	$169,484.00	$0	$169,484.00
Fee Total (Tasks 2 – 7)	**$742,011.25**	**$0**	**$742,011.25**

Task (Part 2 – Facility Expansion)	Original Fee Plus Amendment	Additional Fee	Total Amended Fee
Task 8 – Preliminary Engineering Services	$395,724.00	$0	$395,724.00
Geotech	$32,440.00	$0	$32,440.00
SUE	$4,000.00	$0	$4,000.00
Survey for FPL easement	$1,800.00	$0	$1,800.00
Additional Preliminary Engineering Services	$198,321.00	$0	$198,321.00
Task 9 – Permitting	$40,689.00	$0	$40,689.00
Permit Fees	$5,300.00	$0	$5,300.00
Task 9A – Operating Permit Renewal	$7,852.50	$0	$7,852.50
Task 10 – Final Design	$1,394,829.00	$0	$1,394,829.00
Task 11 – Bidding Services	$46,272.00	$0	$46,272.00
Task 12 – Construction Phase Services	$838,960.00	$0	$838,960.00
Task 13 – RPR Services	$0	$0	$0
Task 14 – Post-Construction Optimization	$21,000.00	$0	$21,000.00
Task 15 – Hydraulic Evaluation and Cost	$58,457.00	$0	$58,457.00
Task 16 – Nutrient Reduction Study	$0	$63,235.00	$63,235.00
Total Fee (Tasks 8 – 14)	**$3,045,644.75**	**$63,235.00**	**$3,108,879.75**
Grand Total Fee (Tasks 1 – 16)	**$3,974,255.75**	**$63,235.00**	**$4,037,490.75**

SECTION 5 – OTHER/ADDITIONAL CONDITIONS

The following are examples of some specific additional services that may be required and can be provided by REI:

- Additional Alternatives Analysis
- Additional Meetings
- Additional Presentations of Study Findings

These and any other City desired services can be provided, by REI, under separate Scope of Service(s) or by an amendment to this Scope of Services.

SECTION 6 – OBLIGATIONS OF THE CITY

The City is responsible for providing the following information to REI:

- Additional compliance sampling and update phosphorus analysis.
- O&M unit costs and historical costs
- Access to site and plant operations staff
    - Review submittals in a timely manner and response to project management communications

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)	Reiss Engineering, Inc.
Authorized Signature:	
Printed Name and Title of Person Signing:	C. Robert Reiss, President
Date:	4/20/2021
Company Address:	1016 Spring Villas Pt., Winter Springs, FL, 32708

THE CITY OF PORT ST. LUCIE

Authorized Signature:	
Printed Name and Title of Person Signing:	Matthew Shiver, Director of Procurement Services
Date:	04/20/2021
City Address:	121 S.W. Port St. Lucie Blvd., Port St. Lucie, FL 34984