

PROJECT AGREEMENT

between

THE CITY OF SUNRISE

and

Carollo Engineers, Inc.

for

Project Agreement No. 20-015-CE

SPRINGTREE WATER TREATMENT PLANT

BIOFILTRATION EVALUATION

Pursuant to the provisions contained in the Continuing Services Agreement between the City of Sunrise and Carollo Engineers, Inc. for General Professional Engineering Services (hereinafter referred to "CONTINUING SERVICES AGREEMENT") dated **October 27, 2010**, this Project Agreement between the City of Sunrise ("CITY") and Carollo Engineers, Inc. a foreign corporation authorized to do business in Florida, ("CONSULTANT") authorizes the CONSULTANT to provide the services as set forth below:

The CITY and the CONSULTANT agree as follows:

SECTION 1 DEFINITIONS

1.1 **Change Order**: Change Order shall mean a written order to the CONSULTANT executed by the CITY, issued after execution of a Project Agreement or other agreement, authorizing and directing an addition, deletion or revision in the Work or an adjustment in the Contract Price or Contract Times, issued on the effective date of the Agreement.

1.2 **Contract Documents**: The Contract Documents establish the Rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), Contractor's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and Engineer's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic format of text, data, graphics, and the like that may be furnished by the CITY, the CONSULTANT or the Engineer to the Contractor are not Contract Documents.

1.3 **Defective Work**: The word "Defective", when modifying the word "Work", refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by the CITY).

1.4 **Drawings**: That part of the Contract Documents prepared or approved by the CONSULTANT which graphically shows the scope, extent, and character of the Work to be performed by the Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

1.5 **Field Order**: A written order issued by the CONSULTANT which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

1.6 **Specifications**: That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

1.7 **Sub-consultant**: An entity having a direct contract with the CONSULTANT or with any other Sub-consultant for the performance of a part of the Work.

1.8 **Work**: The entire completed construction or the various separately identifiable parts thereof required to be provided under this Project Agreement. Work includes and is the result of performing or providing all labor, services, and documentation necessary to complete the Work, all as required by this Project Agreements.

SECTION 2 SCOPE OF SERVICES

2.1 The CONSULTANT shall provide engineering services to the CITY for the Project as described in the "Project Description" attached as **EXHIBIT "1"**.

2.2 The "Scope of Services" and tasks to be provided by the CONSULTANT for this Project are those services and tasks as listed in **EXHIBIT "2"**.

2.3 The CITY may request changes that would increase, decrease, or otherwise modify the Scope of Services. Such changes must be contained in a written change order executed by the parties in accordance with the provisions of the Continuing Services Agreement, prior to any deviation from the terms of the Project Agreement, including the initiation of any extra Work.

SECTION 3 DELIVERABLES

As part of the Scope of Services the CONSULTANT shall provide to the CITY the Deliverables as listed in **EXHIBIT "5"**.

SECTION 4 TERM / TIME OF PERFORMANCE / DAMAGES

4.1 **Term**. This Project Agreement shall commence on the date this instrument is fully executed by all parties and shall continue in full force and effect through **June 30, 2021**, unless otherwise terminated pursuant to Section 7 or other applicable provisions of this Project Agreement. The CITY's City Manager, in his sole discretion may extend the term of this Project Agreement through written notification to the CONSULTANT. Such extension shall not exceed **one-hundred and eighty (180)** days. No further extensions of this Project Agreement shall be effective unless authorized by the City Commission.

4.2 **Commencement**. The CONSULTANT'S services under this Project Agreement and the time frames applicable to this Project Agreement shall commence upon the date provided in a written Notification of Commencement ("Commencement Date") and receipt of a fully executed Purchase Order provided to the CONSULTANT from the CITY. The CONSULTANT shall not incur any expenses or obligations for payment to third parties prior to the issuance of the Notification of Commencement. The CONSULTANT must receive written notice from the CITY's Director of

Utilities or designee prior to beginning the performance of services in any subsequent phases of this Agreement. Prior to granting notice for the CONSULTANT to proceed to a subsequent phase, the CITY's Director of Utilities or designee may, at its sole option, require the CONSULTANT to submit the itemized deliverables/documents identified in **EXHIBIT "5"** of this Agreement for the Director's review.

4.3 **Contract Time**. Upon receipt of the Notification of Commencement and the fully executed Purchase Order, the CONSULTANT shall commence services to the CITY on the Commencement Date, and shall continuously perform services to the CITY, without interruption, in accordance with the time frames set forth in the "Project Schedule," a copy of which is attached and incorporated into this Agreement as **EXHIBIT "3"**. The number of calendar days from the Commencement Date, through the date set forth in the Project Schedule for completion of the Project or the date of actual completion of the Project, whichever shall last occur, shall constitute the Contract Time.

4.4 **No Damages for Delay**. The CONSULTANT shall not be entitled to any claim for damages including, but not limited to, loss of profits, loss of use, home office overhead expenses, equipment rental and similar costs, on account of delays in the progress of the Project from any cause whatsoever including an act or neglect of the CITY, adverse weather conditions, an act of God, strike, war or national disaster or emergency, unusual delay in deliveries, unusual delay in procuring permits, differing site conditions, unavoidable casualties or other causes beyond the CONSULTANT's control, or by delay authorized or caused by the CITY, or by other causes which the CONSULTANT determines may justify delay. The CONSULTANT's sole remedy for any such delay shall be a reasonable extension of time and a revision to the Project Schedule as determined by the CITY. The CONSULTANT will not be entitled to damages for delay, howsoever caused. However, additional costs to the CONSULTANT or delays in the CONSULTANT's performance caused by improperly timed activities shall not be the basis for granting a time extension. If the CONSULTANT wishes to make a claim for an increase in time of performance, written notice of such claim shall be made to the CITY within thirty (30) calendar days after the occurrence of the event, or the first appearance of the condition giving rise to such claim. The CITY's representative, shall determine whether or not the CONSULTANT is entitled to a time extension for the delay. The failure of the CONSULTANT to give such notice shall constitute a waiver of any claim under this section.

4.5 All limitations of time set forth in this Agreement are of the essence.

SECTION 5 AMOUNT, BASIS AND METHOD OF COMPENSATION

5.1 The basis and method of compensation to the CONSULTANT for the services rendered pursuant to this Project Agreement shall be in conformance with **EXHIBIT "E"** of the Continuing Services Agreement.

5.2 **Maximum Amount Not-To-Exceed Compensation**. (NOT USED).

5.3 **Lump Sum Compensation**. CITY agrees to pay CONSULTANT as compensation for performance of all services as related to the Project a Lump Sum of **\$59,325**. It is understood that the method of compensation is that of Lump Sum which means that CONSULTANT shall perform all services set forth for total compensation in the amount stated above. Said Lump Sum includes but is not limited to, compensation for all fees, expenses, and out-of-pocket costs of the CONSULTANT.

SECTION 6 BILLING AND PAYMENTS TO THE CONSULTANT

Billing and payments to the CONSULTANT shall be in accordance with **EXHIBIT "E"** of the Continuing Services Agreement and **EXHIBIT "4"** of this Agreement.

SECTION 7 TERMINATION / SUSPENSION

7.1 Termination shall be in accordance with Section 6 of the Continuing Services Agreement.

7.2 Suspension in accordance with Section 43 of the Continuing Services Agreement.

7.3 **Assignment Upon Termination.** Upon termination of this Project Agreement, the work product of the CONSULTANT shall become the property of the CITY and the CONSULTANT shall within ten (10) working days of receipt of written direction from the CITY, transfer to either the CITY or its authorized designee, all work product in its possession, including but not limited to, designs, specifications, drawings, studies, reports and all other documents and data in the possession of the CONSULTANT pertaining to this Project Agreement. Upon the CITY's request, the CONSULTANT shall additionally assign its rights, title and interest under any subcontractor's agreements to the CITY. All Work product provided under this Section shall be used solely for its intended purpose.

SECTION 8 PERSONNEL ASSIGNED TO PROJECT

The CONSULTANT shall assign only qualified personnel to perform any services concerning this Project Agreement. At the time of execution of this Agreement, the parties anticipate that the following named individuals will perform those supervisory or primary functions indicated:

NAME	FUNCTION
Lyle Munce, P.E.	Company Officer/ Project Manager
Jess Brown, Ph.D	Technical Expert/ Technical Advisor
Vincent Hart, P.E. (1)	Technical Expert/ Technical Advisor
Giridhar Upadhyaya, Ph. D, PE (1)	Senior Principal Professional / Project Engineer
Christopher Reinbold, P.E.	Senior Principal Professional / Project Engineer
Jennifer Nyfenneger, Ph.D, P.E.	Principal Professional/ Project Engineer
Michael Boaz, E.I.	Professional/ Staff Engineer
Meghana Prasad, E.I.	Assistant Professional/ Staff Engineer
James Keistler	Senior Designer/ CAD
Douglas Perry	Senior Designer/ CAD
Shana Woody	Secretarial
(1) Registered in a State other than Florida.	

So long as the individuals named above remain actively employed or retained by the CONSULTANT, they shall perform the functions indicated next to their names. Furthermore, the CITY reserves the right to reject any proposed substitution for any of the above named individuals, and the CITY shall have the further right to require that any individual assigned to the Project by the CONSULTANT be removed from the Project and reassigned for good cause.

SECTION 9 INCORPORATION OF CONTINUING SERVICES AGREEMENT

All terms and conditions of the "Continuing Service Agreement" between the CITY and the CONSULTANT dated, October 27, 2010 not specifically modified by this Project Agreement shall remain in full force and effect and are incorporated into and made a part of this Project Agreement by this reference as though set forth in full.

SECTION 10 SEVERABILITY

If any term or provision of this Project Agreement or its application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this Project Agreement or the application of such terms or provisions to persons or circumstances other than those to which it is held invalid or unenforceable, shall not be affected, and every other term and provision of this Project Agreement shall be deemed valid and enforceable to the extent permitted by law.

SECTION 11 GOVERNING LAW

This Agreement shall be governed by the laws of the State of Florida. Except as set forth in Sections 6.2, 14 and 32 of the Continuing Services Agreement, should the Parties be involved in legal action against each other arising under, or connected to, this Agreement, each party will be responsible for their own attorneys' fees and costs. The venue for any litigation will be Broward County, Florida. Both Parties hereby agree to waive a jury trial, and will proceed to a trial by judge if necessary.

SECTION 12 PUBLIC RECORDS

The CONSULTANT shall comply with all applicable requirements contained in the Florida Public Records Law (Chapter 119, Florida Statutes), including but not limited to any applicable provisions in Section 119.0701, Florida Statutes. To the extent that the CONSULTANT and this Project Agreement are subject to the requirements in Section 119.0701, Florida Statutes, the CONSULTANT shall:

- (a) Keep and maintain public records required by the CITY to perform the services provided hereunder.
- (b) Upon request from the CITY's custodian of public records, provide the CITY with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.
- (c) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed, except as authorized by law for the duration of the term of this Project Agreement and following completion of this Project Agreement if the CONSULTANT does not transfer the records to the CITY.
- (d) Upon completion of the Project Agreement, transfer, at no cost, to the CITY all public records in the possession of the CONSULTANT or keep and maintain public records required by the CITY to perform the service. If the CONSULTANT transfers all public records to the CITY upon completion of the Project Agreement, the CONSULTANT shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the CONSULTANT keeps and maintains public records upon completion of the Project Agreement, the CONSULTANT shall meet all applicable requirements for retaining public records. All

records stored electronically must be provided to the CITY, upon request from the CITY's custodian of public records, in a format that is compatible with the information technology systems of the CITY.

If the CONSULTANT fails to comply with the requirements in this Section 12, the CITY may enforce these provisions in accordance with the terms of this Project Agreement. If the CONSULTANT fails to provide the public records to the CITY within a reasonable time, it may be subject to penalties under Section 119.10, Florida Statutes.

IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS PROJECT AGREEMENT, THE CONSULTANT SHOULD CONTACT THE CITY'S CUSTODIAN OF PUBLIC RECORDS: THE CITY CLERK, FELICIA M. BRAVO, BY TELEPHONE (954/746-3333), E-MAIL (CITYCLERK@SUNRISEFL.GOV), OR MAIL (CITY OF SUNRISE, OFFICE OF THE CITY CLERK, 10770 WEST OAKLAND PARK BOULEVARD, SUNRISE, FLORIDA 33351).

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the respective dates under each signature: The CITY, signing by and through its Mayor, attested to by its City Clerk, duly authorized to execute same and by Carollo Engineers, Inc. by and through its Vice President, duly authorized to execute same.

CITY

CITY OF SUNRISE, FLORIDA

By: _____

Mayor Michael J. Ryan

_____ day of _____, 202 _____

AUTHENTICATION:

Felicia M. Bravo

City Clerk

(SEAL) Seal

Approved as to form:

Kimberly A. Kisslan, City Attorney

By: _____

Kimberly A. Kisslan

City Attorney

CONSULTANT

Carollo Engineers, Inc.

By: _____

Lyle Munce, P.E

Senior Vice President

_____ day of _____, 202 _____

By: _____

Chris T. Reinbold, P.E.

Vice President

_____ day of _____, 202 _____

AUTHENTICATE:

Secretary

Michael W. Barnes

Please type name of Secretary

(CORPORATE SEAL)

WITNESS 1:

WITNESS 2:

EXHIBIT "1"
TO
PROJECT AGREEMENT

SPRINGTREE WATER TREATMENT PLANT
BIOFILTRATION EVALUATION
PROJECT DESCRIPTION

The Springtree WTP is located at 4350 Springtree Drive in the City of Sunrise. The CITY desires to improve the quality of the potable water produced at this facility by enhancing the removal of dissolved organic carbon (DOC). The CITY currently plans to remove additional DOC by implementing an ion exchange (IX) treatment system that will provide the benefits of lowering formation potential of disinfection byproducts (DBPs), reducing color (and improving secondary water standards of the water), reducing chlorine demands to achieve disinfection, reducing nitrification potential of water entering the distribution system, and enhancing the overall customer experience. Prior to implementing the IX system, the CITY desires to explore another potential method for DOC reduction involving changes to the existing water filters and determine its viability through bench scale testing. A Preliminary Analysis Technical Memorandum (PATM) summarizing and interpreting the results of the biofiltration testing will be provided to document this effort.

Biofiltration Evaluation

Biofiltration has been demonstrated in the industry to remove DOC and DBP formation potential (DBPFP). Biofiltration has also been demonstrated to lower chlorine demand and enhance biological stability of the treated water. The overall objective of this biofiltration evaluation is to assess the viability of using biofiltration at the CITY's Springtree WTP. The specific objectives of the study are to:

- Determine the amount of DOC that can be removed through biofiltration.
- Quantify any associated reduction in disinfection by-product (DBP) formation.
- Quantify chlorine demands before and after biofiltration.

In order to achieve these specific objectives, bench-scale biofiltration pilot equipment will be set up at Carollo's Applied Research Center (Water ARC®) in Boise, Idaho. Parallel columns (1.5-inch diameter) will be used for the testing. These columns will be packed with granular activated carbon (GAC) and anthracite (ANT) taken from existing biofilters to achieve a bed height of approximately 8-inches. The GAC and ANT media will be collected from two existing biofilters in Florida to expedite the biological acclimation period. Springtree softened water which will be used in the testing will be collected prior to chlorination in one 55-gallon drum and shipped to Water ARC®. The Consultant will assist City Staff in the collection and shipping of the water drums.

The following tasks will be undertaken during the bench-scale study:

Task 1: Background biodegradable organic carbon (BDOC) evaluation. Before starting the bench-scale testing, the project team will coordinate with the City to collect and send softened water to an external laboratory (e.g., Eurofins Eaton Analytical) for the assessment of background biodegradable fraction of the TOC in the softened water. This will allow comparing the process efficacy after complete biological acclimation with the potential TOC removal.

Task 2: Bench-scale Testing: The bench-scale system will be operated with an empty bed contact time (EBCT) of approximately 20 min (flow rate 4.5 mL/min). The testing will include the following Phases:

Task 2.1: Biological Acclimation (~1.0 months): The objective of this phase is to establish biological activity in the column filters. When the water flows through the media bed, microorganisms present in the source water will attach and grow on the media particles. Adenosine triphosphate (ATP), TOC, DOC, and UV absorbance at 254 nm (UV254) will be regularly monitored to verify the biological acclimation. At the end of the biological acclimation, the biofilter performance is expected to be in pseudo-steady-state.

Task 2.2: Steady-state TOC/DOC Removal (2 months): This Phase will begin after the biofilters are fully biologically acclimated. The objective of this phase is to quantify TOC/DOC removal across the biofilters, along with any associated reduction in DBPFP. Chlorine residual stability will also be assessed.

DBP formation will be evaluated with the biofilter influent and effluent samples on the 3rd and 6th week of Task 2.2. For this testing, the source water and biofilter effluents will be dosed with chlorine. The chlorine contact time will be 3 minutes, 5 minutes, 10 minutes, and 25 minutes. The chlorine residual at the end of the contact time will mimic the residual free chlorine typically maintained in the plant before adding additional chlorine or ammonia to form the residual monochloramine disinfectant (not to be less than 0.2 mg/L at the end of the hold period). Residual chlorine, pH, and DBPs will be monitored at the end of the chlorine contact periods. THMs and HAA5 samples will be collected and sent to an external laboratory for quantification. The DBP formation will also be tested with water from the existing filtration process to form a comparison. For the simulated distribution system testing, separate samples of both biofilter effluent and water from the existing filtration process will be dosed with chlorine to maintain a free chlorine residual not less than 0.2 mg/L after 8 minutes (to simulate the existing disinfection strategy) then additional chlorine followed by ammonia will be added to form a monochloramine concentration of 3.8 mg/L and then held for a period of time. This time period will be based on estimated water age to be provided by the City from the recent water distribution system modeling (by others). At the end of this hold period each sample will be tested for DBP formation.

Tables 1 and 2 present the anticipated sampling plan for testing Tasks 1 and 2, respectively. Modifications to the sampling plan will be made as necessary based on system performance.

Table 1: Task 1 Preliminary Sampling Plan

Parameter	Sample Location	Frequency	Total Samples
TOC/DOC	S1, S2, S3	3/week	9/week
UV ₂₅₄	S1, S2, S3	3/week	9/week
ATP on media	Filter bed	Beginning and end of acclimation period	2 total
Temperature	S1	3/week	3/week
pH	S1	3/week	3/week
DO	S1, S2, S3	3/week	3/week

Table 2: Task 2 Preliminary Sampling Plan

Parameter	Sample Location	Frequency	Total Samples	Comment
Temperature	S1	2/week	2/week	Regular monitoring
pH	S1	2/week	2/week	
DO	S1, S2, S3	2/week	2/week	
TOC/DOC	S1, S2, S3	2/week	6/week	
UV ₂₅₄	S1, S2, S3	2/week	6/week	
Ammonia	S1, S2, S3	1/month	3/month	
Total and Free Chlorine	S1, S2, S3	2X total	4/per test DBP	
pH	S1, S2, S3	2X total	4/per test DBP	
THMs	S1, S2, S3, Existing Plant	2X total	4/per DBP	Pre-formed THM determination
HAA5	S1, S2, S3, Existing Plant	2X total	4/per DBP FP test	Pre-formed HAA determination
THMs	SDS Biofilter Effluent, SDS Existing Plant	2X total	2/per DBP	THM formation
HAA5	SDS Biofilter Effluent, SDS Existing Plant	2X total	2/per DBP	HAA determination

A PATM will be prepared, summarizing the findings from the bench-scale biofiltration pilot study. The PATM will include trend plots and water quality tables of the bench-scale results along with technical discussion and recommendations for biofiltration application at the Springtree WTP.

The schedule for completion of the documents is indicated in Exhibit 3.

Services not included:

- Electrical and instrumentation and controls services (other than those identified).

Assumptions:

- The CITY shall furnish the CONSULTANT available studies, reports and other data pertinent to the CONSULTANT's services.
- The CITY shall arrange for access to and make all provisions for the CONSULTANT to enter upon public and private property as required for the CONSULTANT and/or CONSULTANT's subconsultants to perform services hereunder.

EXHIBIT "2"

TO

PROJECT AGREEMENT

SPRINGTREE WATER TREATMENT PLANT

BIOFILTRATION EVALUATION

SCOPE OF SERVICES

SECTION 1 DESIGN SERVICES

Unless otherwise agreed in writing, the CONSULTANT shall perform the following design services in connection with the Project:

1.1 Basis of Design (Not Included).

1.2 Preliminary Consultation and Analysis. Prior to preparation of any Preliminary Design, the CONSULTANT shall first consult in detail with the CITY, and shall carefully analyze any information furnished by the CITY to understand the requirements of the Project, including but not limited to, any design, construction, scheduling, budgetary or operational requirements. The CONSULTANT shall perform and furnish to the CITY, as a Technical Memorandum entitled **Preliminary Analysis Technical Memorandum (PATM)**, a written economic and technical evaluation of feasible alternatives to the Project and shall review same with the CITY. The preliminary consultation and analysis PATM furnished by the CONSULTANT shall also include the following:

1.2.1 Not Included.

1.2.2 Not Included.

1.2.3 Not Included.

1.2.4 A written report, in the form of a technical memorandum, detailing the CONSULTANT'S understanding of the Project requirements and identifying any design, construction, scheduling, budgetary, operational, or other problems which may result from said requirements. The report shall contain schematic design documents consisting of drawings and other documents illustrating the scale and relationship of proposed Project components, layouts, sketches and conceptual design criteria. The written report of the CONSULTANT shall also include proposed solutions, including design alternatives if appropriate, addressing each of the identified problems. The CONSULTANT shall submit to the CITY an estimate of probable construction costs for the Project;

EXHIBIT "3"

TO

PROJECT AGREEMENT

SPRINGTREE WATER TREATMENT PLANT

BIOFILTRATION EVALUATION

P R O J E C T S C H E D U L E

Task/Description	Task/Completion In Weeks Following Authorization
1.2 – Preliminary Consultation and Analysis	22

EXHIBIT "4"

TO

PROJECT AGREEMENT

SPRINGTREE WATER TREATMENT PLANT

BIOFILTRATION EVALUATION

P A Y M E N T S C H E D U L E

Task/Description	Percent of Total Fee	Fee
1.2.4 – Preliminary Analysis Technical Memorandum	100.0	\$59,325
	100.0	\$59,325

EXHIBIT "5"
TO
PROJECT AGREEMENT
SPRINGTREE WATER TREATMENT PLANT
BIOFILTRATION EVALUATION
DELIVERABLES

Task/Description	Task/Completion In Weeks Following Authorization
1.2 – Preliminary Consultation and Analysis	22

The CONSULTANT shall provide eight (8) hard copies and an electronic PDF copies for all deliverables. Native files will be provided prior to completion of the project. Schedule assumes that upon receipt of deliverable, City will review and provide comments within 2 weeks. Following receipt of comments, the final deliverable will be produced within 2 weeks.