



CITY OF POMPANO BEACH
100 W Atlantic Blvd, Pompano Beach, FL 33060

WORK AUTHORIZATION NO: 12	COPBFL Project Manager: A. Randolph Brown Phone: 954-545.7043 Email: Randolph.Brown@copbfl.com COPBFL Contract Specialist: Antonio Pucci Phone: 954-786-5504 Email: Antonio.Pucci@copbfl.com
Firm Name: McCafferty Brinson Consulting, LLC 633 South Andrews Avenue, Suite 402 Ft. Lauderdale, Florida 33301	Firm's Contact Representative: Audra McCafferty Phone: (954) 797-7100 Email: (am@mccaffertybrinson.com)
In accordance with solicitation number E-23-20 , dated August 10, 2020 for Continuing Contract for Engineering Services for Water and Reuse Treatment Plant Projects , the City of Pompano Beach hereby directs the firm to perform the services for the project as detailed in the scope of work, attached hereto and made a part of this Work Authorization for the amount specified below. All terms and conditions of the Original Contract dated March 1, 2021 , and approved via Ordinance No. 2021-39 remain unchanged and in full force and effect.	
This Work Authorization, when executed, shall authorize professional engineering services to seek funding with the State of Florida, Florida Department of Environmental Protection (FDEP), Drinking Water State Revolving Fund (DWSRF) for the projects as described in the attached Work Authorization.	
Description: The City has submitted a Request for Inclusion to SRF for an Emerging Contaminant Planning/Design Phase Loan. Under this work authorization MBC will provide assistance with the preparation, submittal, and coordination of a DWSRF planning document to include: Task 1: Kick-Off Meeting, Site Visit, and Review of Record Documents Task 2: Data Collection and Definition of Treatment Goals Task 3: Evaluation of Existing Treatment Process Task 4: Identification and Evaluation of Alternative Treatment Technologies Task 5: Preliminary Opinions of Probable Project and Operating Costs Task 6: Preparation of Study Report Task 7: Review and Coordination Meetings Task 8: Assistance and Coordination with CITY Tasks and Deliverables	
Total Work Authorization Amount: <u>\$335,300 (Lump Sum)</u>	
Firm/Contractor Approval: Accepted by: <u>Audra McCafferty</u> Firm Representative Name: Audra McCafferty, P.E. Title: President Date: 7/14/23	City of Pompano Beach Approval: Accepted by: <u>S. Sibble</u> Pompano Beach Representative Name: <u>Suzelle Sibble</u> Title: <u>Acting City Manager</u> Date: <u>8/8/23</u>

Work Authorization No. 12
Contract for Consulting/Professional Services Between the
City of Pompano Beach and McCafferty Brinson Consulting, LLC
Emerging Contaminants Water Treatment Plant Upgrades
Drinking Water State Revolving Fund Planning Document
Scope of Work

The services rendered pursuant to this Work Authorization No. 12 are in accordance with the terms and conditions of the Agreement for Consulting/Professional Services between the City of Pompano Beach and McCafferty Brinson Consulting, LLC, in the Original Contract dated March 1, 2021 and approved via Ordinance No. 2021-39 remains unchanged and in full force and effect.

I. Background and General Description of Services

The City of Pompano Beach (City) owns and operates a 50 million gallon per day (mgd) water treatment plant that utilizes both conventional lime softening (LS) (40 mgd) and nanofiltration (NF) membrane (10 mgd) processes to treat raw water from the surficial Biscayne Aquifer. These treatment processes operate in parallel, and the two treated product streams are blended prior to four-log virus treatment disinfection and distribution.

The City's water sampling program has identified the presence of emerging contaminants that are currently not regulated but are listed on the United States Environmental Protection Agency's Fifth Unregulated Contaminant Monitoring Rule (USEPA's UCMR5), in the raw water that supplies the water treatment plant. Under recent USEPA action, proposed maximum contaminant levels (MCLs) have been established for PFOS and PFOA, together with a compliance deadline of December 2026.

The City is planning to evaluate alternatives for upgrades to the water treatment process(es) that may be necessary to cost-effectively comply with proposed regulations regarding emerging contaminants when those regulations become effective. Federal grant funds are available for such projects related to emerging contaminants under the Drinking Water State Revolving Fund (DWSRF) administered by the Florida Department of Environmental Protection (FDEP). The City has applied for a planning, design, and construction loan for a program that is intended to address public health and welfare of the City's drinking water customers by providing compliance with the proposed regulations related to emerging contaminants for the long term, in the most cost-effective manner possible. The DWSRF loan program requires the preparation and submittal to the FDEP of a Planning Document, including a Facilities Plan, to evaluate alternatives available for achieving the objectives of the funded project and present a recommendation on the most cost-effective alternative.

This scope of services provides for professional engineering services to prepare and submit a Planning Document, including a Treatment Technology Alternative Analysis and Facilities Plan, for improvements to the water treatment plant to comply with proposed regulations related to emerging contaminants. This document will meet DWSRF requirements for a

finished water quality goals will consider currently proposed maximum contaminant levels (MCLs) for emerging contaminants listed on the USEPA's UCMR5.

Task 3.0 – Evaluation of Existing Treatment Process

CONSULTANT shall evaluate the performance of the existing NF and LS treatment processes with respect to the removal efficiencies for the subject emerging contaminants and their abilities to meet proposed regulations regarding emerging contaminants. The objective of this evaluation is to identify deficiencies in the existing treatment process(es) that will require upgrades to comply with proposed regulations. Based on preliminary data collected to date, it appears that the existing NF process provides sufficient removal of the subject emerging contaminants (i.e., they are below detection limits in the NF permeate), while the existing LS process does not provide significant removal of the subject contaminants and will require upgrades.

Task 4.0 – Identification and Evaluation of Alternative Treatment Technologies

CONSULTANT shall conduct a desk-top literature and industry market review to identify options for alternate treatment technologies to address any deficiencies identified under Task 3.0, as necessary to achieve the CITY's treatment and water quality goals, given the current levels of emerging contaminants in the raw water, the existing plant configuration, and other relevant considerations. Alternate treatment technologies to be considered include, but may not be limited to, the following:

1. Maintaining the existing NF process and upgrading the LS process with granular activated carbon (GAC) (e.g., retrofitting the existing gravity filters with GAC or well-site treatment using activated carbon impregnated filters) as necessary to comply with the subject regulations.
2. Maintaining the existing NF process and upgrading the LS process with anion exchange (IX) (either pre-treatment or post-treatment of the LS product water), as necessary to comply with the subject regulations.
3. Decommissioning the existing LS process and increasing the capacity of the membrane process to replace the lost LS capacity, as necessary to meet demands.

CONSULTANT's evaluation will consider specific example equipment manufacturers and unit models and will include development of conceptual-level designs and layouts to provide a general, conceptual basis for preliminary opinions of probable project and operating costs, potential operating protocols, and expected treated water quality. CONSULTANT's evaluation may include pilot-scale testing of GAC and IX treatment systems at the City's water treatment plant if deemed necessary to characterize their viability (i.e., removal efficiencies for PFAS) and collect design and sizing criteria and capital and operating cost data for comparison to alternative 3, and the schedule and budget allows for such activities.

Task 8.0 – Assistance and Coordination of CITY Tasks and Deliverables

In addition to the Facilities Plan, the Planning Document will incorporate documentation of activities that will require direct participation and/or preparation by CITY management and staff, including the following:

- Public participation (with public notice and meeting minutes)
- Financial feasibility plan (business plan)
- Adopting resolution
- Site certification
- Fiscal sustainability plan.

CONSULTANT will assist the CITY in planning, scheduling, preparing, and executing the above activities, as required under the DWSRF program, for inclusion in the Planning Document. This scope of services includes up to four meetings related to these activities, as well as coordination and review of draft documentation prior to inclusion in the Planning Document.

III. Assumptions and Assistance to be Provided by City

Services and/or materials to be provided by the City and other related key assumptions include:

1. CITY staff will be available for discussions with CONSULTANT.
2. CONSULTANT will have access to the water treatment plant site.
3. CITY will provide to the CONSULTANT in a timely manner the data and record documents mentioned above and to be itemized in the CONSULTANT's data request to the CITY. Requested data will be limited to data not already contained within CONSULTANT's files.

IV. Budget

Consultant shall perform the professional services provided herein for a lump sum fee of \$335,300.00. CONSULTANT will invoice City monthly. City shall provide a written Notice to Proceed. The basis for proposed compensation is presented in Exhibit B.

CONSULTANT":

Witnesses:

C. Webster
Frank A. Brinson

McCafferty Brinson Consulting, LLC

CONSULTANT Name

Audra McCafferty
Signature

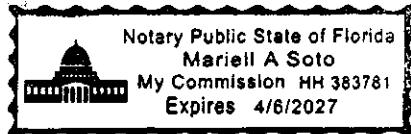
Audra McCafferty, PE., Manager

Title

STATE OF FLORIDA
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me, by means of ☐ physical presence or ☐ online notarization, this 14 day of July, 2023, by Audra McCafferty as _____ of _____, a Florida limited liability company, on behalf of the company, who is personally known to me or who has produced N/A as identification

NOTARY'S SEAL:



Mariell Soto
NOTARY PUBLIC, STATE OF FLORIDA

Mariell Soto

(Name of Acknowledger Typed, Printed or Stamped)

HH 383781

Commission Number

CONSULTANT:

Witnesses:

C. Webb
Oliver McCafferty

McCafferty Brinson Consulting, LLC

CONSULTANT Name

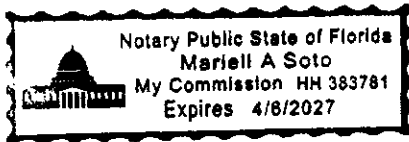
Frank A. Brinson
Signature

Frank A. Brinson, PE., Manager
Title

STATE OF FLORIDA
COUNTY OF BROWARD

The foregoing instrument was acknowledged before me, by means of ☐ physical presence or ☐ online notarization, this 14 day of JULY, 2023, by FRANK BRINSON as _____ of _____, a Florida limited liability company, on behalf of the company, who is personally known to me or who has produced N/A as identification

NOTARY'S SEAL:



Mariell Soto
NOTARY PUBLIC, STATE OF FLORIDA

(Name of Acknowledger Typed, Printed or Stamped)

HH 383781
Commission Number

"CITY":

CITY OF POMPANO BEACH

By: REX HARDIN, MAYOR

By: GREGORY P. HARRISON, CITY MANAGER

Attest:

(SEAL)
KERVIN ALFRED
CITY CLERK

Approved As To Form:

MARK E. BERMAN
CITY ATTORNEY

Exhibit A
Preliminary Document Outline
Emerging Contaminants Water Treatment Plant Upgrades
Drinking Water State Revolving Fund Planning Document

Engineer Certification

- 1.0 Executive Summary (Summary of Findings and Recommendations)
- 2.0 Introduction
 - 2.1 Background
 - 2.2 Need
 - 2.3 Scope of Study
- 3.0 Environmental Impacts
 - 3.1 Description of Planning Area
 - 3.1.1 Planning / Water Service Area
 - 3.1.2 Climate
 - 3.1.3 Topography and Drainage
 - 3.1.4 Geology, Soils, and Physiology
 - 3.1.5 Surface and Ground Water Hydrology, Quality, and Uses
 - 3.1.5.1 Surface and Ground Water Hydrology
 - 3.1.5.2 Surface and Ground Water Quality and Uses
 - 3.1.6 Source Water Protection
 - 3.1.7 Environmentally Sensitive Areas or Features
 - 3.1.7.1 Wetlands
 - 3.1.7.2 Environmentally Sensitive Lands
 - 3.1.7.3 Plant and Animal Communities (Endangered Species)
 - 3.1.7.4 Archaeological and Historical Sites
 - 3.1.8 Floodplain
 - 3.1.9 Air Quality
 - 3.2 Socio-economic Conditions
 - 3.2.1 Population
 - 3.2.2 Land Use and Development
 - 3.3 Managerial Capacity
- 4.0 Alternative Analysis
 - 4.1 General
 - 4.2 Cost Effectiveness
 - 4.3 Emerging Contaminants Water Treatment Plant Upgrades
 - 4.3.1 Alternative 1: Maintaining Existing NF Process and GAC Upgrades to LS Process
 - 4.3.2 Alternative 2: Maintaining Existing NF Process and IX Upgrades to LS Process

Exhibit B
City of Pompano Beach
Work Authorization No. 12
Emerging Contaminants Water Treatment Plant Upgrades
Drinking Water State Revolving Fund Planning Document
Engineering Budget Estimate

Task Description	Larry Adams (ela)				Kurt Kiefer (cak)				Kurt Kiefer (cak)				Total Labor		Total Budget
	Principal Engineer \$275 per hour		Construction Assoc. \$190 per hour		Senior Engineer \$200 per hour		Project Engineer \$125 per hour		Engineer Intern \$110 per hour		Project Admin. \$65 per hour				
	hours	budget	hours	budget	hours	budget	hours	budget	hours	budget	hours	budget	hours	budget	
1.0 Kick-Off Meeting, Site Visit, and Review of Record Documents	16	\$4,400	8	\$1,520	16	\$3,200	24	\$3,000	24	\$2,640	8	\$520	96	\$15,280	\$15,280
2.0 Data Collection and Definition of Treatment Goals	40	\$11,000	0	\$0	20	\$4,000	40	\$5,000	20	\$2,200	0	\$0	120	\$22,200	\$22,200
3.0 Evaluation of Existing Treatment Process	16	\$4,400	0	\$0	20	\$4,000	20	\$2,500	40	\$4,400	0	\$0	96	\$15,300	\$15,300
4.0 Identification and Evaluation of Alternative Treatment Technologies															
Granular activated carbon	40	\$11,000	0	\$0	60	\$12,000	60	\$7,500	40	\$4,400	0	\$0	200	\$34,900	\$34,900
Anion exchange	40	\$11,000	0	\$0	60	\$12,000	60	\$7,500	40	\$4,400	0	\$0	200	\$34,900	\$34,900
Membranes	24	\$6,600	0	\$0	20	\$4,000	20	\$2,500	20	\$2,200	0	\$0	84	\$15,300	\$15,300
5.0 Preliminary Opinions of Probable Project and Operating Costs															
Granular activated carbon	16	\$4,400	32	\$6,080	32	\$6,400	0	\$0	40	\$4,400	0	\$0	120	\$21,280	\$21,280
Anion exchange	16	\$4,400	32	\$6,080	32	\$6,400	0	\$0	40	\$4,400	0	\$0	120	\$21,280	\$21,280
Membranes	16	\$4,400	32	\$6,080	32	\$6,400	0	\$0	40	\$4,400	0	\$0	120	\$21,280	\$21,280
6.0 Preparation of Study Report	80	\$22,000	32	\$6,080	100	\$20,000	100	\$12,500	40	\$4,400	40	\$2,600	392	\$67,580	\$67,580
7.0 Review and Coordination Meetings	40	\$11,000	24	\$4,560	40	\$8,000	24	\$3,000	8	\$880	0	\$0	136	\$27,440	\$27,440
8.0 Assistance and Coordination with CITY Tasks and Deliverables															
Public participation (with public notice and meeting minutes)	24	\$6,600	0	\$0	40	\$8,000	20	\$2,500	0	\$0	0	\$0	84	\$17,100	\$17,100
Financial feasibility plan (business plan)	16	\$4,400	0	\$0	8	\$1,600	0	\$0	0	\$0	0	\$0	24	\$6,000	\$6,000
Adopting resolution	8	\$2,200	0	\$0	4	\$800	0	\$0	0	\$0	0	\$0	12	\$3,000	\$3,000
Site certification	8	\$2,200	0	\$0	4	\$800	0	\$0	0	\$0	0	\$0	12	\$3,000	\$3,000
Fiscal sustainability plan	12	\$3,300	0	\$0	16	\$3,200	24	\$3,000	0	\$0	0	\$0	52	\$9,500	\$9,500
Subtotals:	412	\$113,300	160	\$30,400	504	\$100,800	392	\$49,000	352	\$38,720	48	\$3,120	1,868	\$335,340	\$335,340

TOTAL LUMP SUM FEE, USE: \$335,300

