

CITY OF DELRAY BEACH

CONSULTING SERVICE AUTHORIZATION

DATE: _____

SERVICE AUTHORIZATION NO. 12-29 FOR CONSULTING SERVICES

CITY P.O. NO. _____ CITY EXPENSE CODE: _____

CITY PROJECT NO. _____ MATHEWS CONSULT. PROJECT NO. _____

TITLE: Water Treatment Plant Upgrades and Improvements

This Service Authorization, when executed, shall be incorporated in and shall become an integral part of the Contract.

TITLE: Agreement for General Consulting Engineering Services

I. PROJECT DESCRIPTION

The City of Delray Beach Water Treatment Plant (WTP) is located at 200 S.W. 6th Street, Delray Beach, Florida 33444. The treatment plant was constructed in 1972 as a 12 million gallon per day (MGD) facility that was expanded to 20.4 MGD in 1982 and to 22.4 MGD in early 1993. The WTP was re-rated in 2003 to its current capacity of 26 MGD. The plant process includes aeration, polymer flocculation, sedimentation, high rate filtration, re-carbonation, fluoridation and disinfection. Treated water is stored in a clearwell with 1.0 MG of capacity. High services pumps which have a total system capacity of 14.4 MGD (10,000 gpm) are utilized to deliver treated and disinfected water directly to the City's potable water distribution system. The City also has three (3) remote storage and re-pump facilities which are fed via a separate transmission main and a dedicated transfer pump station which is also located at the WTP site.

The City requested MC to prepare a scope of work to provide engineering design and bidding services to replace and/or rehabilitate specific process system components which are either nearing the end of their useful service life or are in need of specific maintenance.

The City has identified the following design goals and/or tasks for the current project:

- **Rehabilitation of Clarifier No. 1:** The City's WTP includes a total of four (4) Clarifiers which are utilized as lime treatment and sedimentation basins. The existing clarifiers are constructed of cast-in-place concrete and mild steel internals including the distributor hood, draft tubes, collection launders, effluent launders, etc. The City performs routine maintenance of each clarifier on an annual and rotating basis. The City has identified Clarifier No. 1 for rehabilitation as part of the current project. Rehabilitation of Clarifier No. 1 will include a condition assessment of the existing structure and internals as well as detailed design of the upgrades and improvements required to address any deficiencies

noted during the assessment. Based on input from City Staff, the complete replacement of system internals is not anticipated. As such, the scope of work and level of effort included within the proposal for this work item includes spot repairs and recoating of the existing structure and/or system internals, only.

- **Replacement of Filter Fill and Drain Valves:** The City's WTP includes a total of eight (8) rapid rate sand filtration units. The filter units are intermittently backwashed based on the hydraulic headloss across the filter bed. As part of the current project, the City has requested that the WTP upgrades and improvements include the replacement of the pneumatically operated fill and drainage valves at Filter Unit No. 1. The fill and drain valves are critical to the filter backwash process and are nearing the end of their useful service life. The City has pre-purchased the replacement valves and operators.
- **Sodium Hypochlorite Storage Tank:** The City has requested that the design of a second backup sodium hypochlorite storage tank be included in the current project. The design will include the installation of an 8,500 gallon, singled walled (XLPE with OR-100 LPE liner) storage tank, with access manway, within the existing concrete secondary containment area. The proposed improvements will also include tank fill and outlet piping and valving, vent piping and ancillary tank components including but not limited to IMFO fitting, cable tie down system, liquid level sight glass and ultrasonic level sensor and transducer.

This consulting service authorization provides for engineering design, permitting and bidding services for the proposed upgrades and improvements.

II. SCOPE OF SERVICES

Phase I – Detailed Design Phase

Consultant shall provide detailed design phase services in accordance with Article III.C of the Agreement for Engineering Services with the City, dated January 24, 2012.

Task 1.1 – Project Management: MC shall provide overall Project Management and coordination for the project.

Task 1.2 - Field Investigation: Field reconnaissance of the proposed upgrades and improvements to be completed at the City WTP site shall be performed, including photograph log walk-through. In addition, potential conflicts and constructability issues will be identified.

Task 1.3 - Design Drawings: Consultant shall prepare construction drawings which shall include: cover sheet, general notes, overall site plan drawing, mechanical, structural, electrical and instrumentation drawings, and detail sheets conforming to the requirements of the current City of Delray Beach Minimum Construction Standards. Consultant shall prepare the engineering design elements using AutoCAD Release 2013 format based on available As-Built Drawings to be provided by the City. Consultant shall coordinate with the City in order to design the proposed upgrades and improvements in accordance with

the requirements and design standards of the City. Drawings (two copies + PDF) shall be submitted for City review at 50%, 90% and 100% (Bid Set) design stages.

Task 1.4 - Specifications: Contract documents consisting of “front-end” documents and technical specifications shall be prepared and shall conform to City of Delray Beach Standards. Specifications (two copies + PDF) shall be submitted for City review at the 50%, 90% and 100% (Bid Set) design stages.

Task 1.5 - Cost Estimate: At the 50%, 90% and 100% stages, Consultant shall prepare a detailed opinion of probable construction cost based upon the level of design drawings and specifications approved by the City. The cost opinion shall reflect changes in general scope, extent or character of design requirements incorporated during the various design review stages. Opinion of probable construction cost (two copies + PDF) shall be submitted for City review at the 50%, 90% and 100% (Bidding) stages.

Task 1.6 - Meetings: Consultant shall attend kick-off meeting and two (2) design meetings with the City and provide written summary of the issues discussed.

Task 1.7 - QA/QC: Consultant shall provide internal QA/QC reviews on the 50%, 90% and 100% (Bid Set) Design Documents (e.g. drawings, specifications and cost estimates).

Task 1.8 - Final Deliverable: Consultant shall furnish two (2) sets of the 100% (Bid Set) design drawings and specifications to the City (Environmental Services Department). Additional deliverables shall be made to the Purchasing Department as listed under Phase IV below.

Phase II – Bidding/Negotiation Phase

Consultant shall provide bidding phase services in accordance with Article III.D of the Agreement for Engineering Services with the City, dated January 24, 2012.

Task 2.1 - Bid Advertisement: Consultant shall assist City in advertising for and obtaining bids or negotiating proposals for construction (including materials, equipment and labor). It is anticipated that work shall be awarded under a single construction contract. The City shall receive and process deposits for bidding documents and shall maintain a record of prospective bidders to whom bidding documents have been issued.

Task 2.2 - BidSync Bid Submittal: Consultant shall furnish the bidding information to the City in electronic format to be used in conjunction with BidSync (<https://www.bidsync.com/>). This includes one (1) set of electronic PDF files of the drawings, specification and front-end documents.

Task 2.3 - Pre-Bid Conference: Consultant shall attend pre-bid conference.

Task 2.4 - Bid Clarification: Consultant shall provide clarification information to the City to issue in addenda format and shall provide supplemental information or clarification, as appropriate, to interpret, clarify, or expand the bidding documents to all prospective bidders during the bid period.

Task 2.5 - Contract Award: Consultant shall attend the bid opening, prepare bid tabulation sheets and assist City in evaluating bids and proposals, and in assembling and awarding contract for construction. Consultant shall submit to City a written recommendation concerning contract award.

Task 2.6 - Final Deliverable: After Contract Award, Consultant shall furnish to the City the As-Bid design drawings as follows: one (1) reproducible set, one (1) set of AutoCAD (Version 2013) files and one (1) set of pdf files in electronic format on CD. Consultant shall also provide one hard copy only of the Contract Documents (i.e. front-ends and technical specifications).

Other – Permit Exemption Request (PBCHD)

At the outset of the Design Phase, the Consultant shall contact and discuss the project with the appropriate permitting agencies to determine potential permitting requirements. It is not anticipated that a formal permit will be required for the proposed upgrades and improvements since the work entails R&R work. Chapter 62-555.520, Florida Administrative Code (FAC) provides for specific exceptions for facilities and equipment which are replaced in-kind. It should be noted that systems which qualify for an exception from the formal permit submittal and approval process are still required to obtain written approval from Palm Beach County Health Department (PBCHD) prior to beginning any alterations to the existing systems. Consultant shall coordinate with PBCHD to obtain a specific exemption for the project.

The submission of a formal permit application to PBCHD is not anticipated, therefore the fees to prepare and submit the appropriate permit application formwork, including the associated permit fees, is specifically excluded from the scope of work.

Other – Electrical

Consultant shall furnish the services of a professional electrical engineer to provide electrical and process control (instrumentation) design services (construction plans, specifications and construction cost estimate) for the proposed improvements at the 50%, 90% and 100% design stages. The electrical scope of work will include the electrical and I&C systems associated with the proposed sodium hypochlorite bulk storage tank.

Electrical Subconsultant shall provide engineering services during bidding of the proposed improvements, which will include addressing questions and Requests for Information (RFI's) received by developing addendum document(s) for use by the City to issue to potential bidders. Addendum to provide corrections, supplemental information or clarification, as appropriate, to interpret, clarify, or expand the bidding documents.

ASSUMPTIONS

Work described herein is based upon the assumptions listed below. If conditions differ from those assumed in a manner that will affect schedule of Scope of Work, Consultant shall advise City in writing of the magnitude of the required adjustments. Changes in completion schedule or compensation to Consultant will be negotiated with City.

1. City will provide Consultant record drawings of all available existing facilities and proposed facilities, which shall serve as the basis of design for this project. Consultant shall prepare the base drawings for the project based on the record drawing information provided by the City. The information will be provided to Consultant within 5 calendar days of NTP.
2. City personnel will assist in field verification and review of the affected WTP process components.
3. Where required, the City is responsible for all permitting fees, including costs of public notification in local newspapers.
4. The Contract Documents will be prepared as a single contract.
5. A single bidding effort for the project is assumed. Re-bidding of the project is considered Additional Services.
6. The City will prepare and provide to MC for review prior to bidding the City's "front-end" documents in electronic format.
7. The design is to be based on the federal, state and local codes and standards in effect at the beginning of the project. Revisions required for compliance with any subsequent changes to those regulations is considered an Additional Services Item not currently included in this Authorization.
8. Material testing services are not included in this Service Authorization.

ADDITIONAL SERVICES

Consultant may provide additional engineering services that are not covered under this Service Authorization. These additional services may be required due to uncertainties discovered during implementation of the scope of services.

Services performed under this task will be on as-directed basis in accordance with a written Notice-to-Proceed from the City Manager. The Notice-to-Proceed issued shall contain the following information and requirements.

- A detailed description of the work to be undertaken.
- A budget establishing the amount of the fee to be paid in accordance with the Agreement.
- A time established for completion of the work.

III. TIME OF PERFORMANCE

The completion dates for this work will be as follows (starting at written notice-to-proceed). Refer to ***Attachment A*** for the project schedule.

<u>Engineering Services</u>	<u>Time per Phase</u>	<u>Cumulative Time</u>
Phase I – Detailed Design Phase ⁽¹⁾		
• 50% Design Submittal	60 days	60 days
• City 50% Review	7 days	67 days
• 90% Design Submittal	30 days	97 days
• City 90% Review	7 days	104 days
• 100% Design Submittal	15 days	119 days
Permit Exemption Request ⁽²⁾	14 days	119 days
Phase II – Bidding/Award	45 days	164 days

⁽¹⁾ *Field Verification will be completed during Detailed Design Phase.*

⁽²⁾ *Permit Exemption Request will be completed concurrent with the 50% Design Submittal.*

* The schedule is based upon conducting a review meeting within 7 calendar days after the City receives the design submittal. All review comments shall be provided to Consultant within 7 calendar days after the City receives the submittal. An adjustment to the overall schedule will be required in case the review meeting takes longer to be conducted and/or obtaining comments takes longer to receive.

****All Tasks will be completed by December 31, 2017***

VI. COMPENSATION

The compensation for services provided shall be billed on an hourly basis plus reimbursable expenses for each phase of work in accordance with Article VII, Method II, up to the following not to exceed cost for each phase. Refer to ***Attachment B*** for budget summary.

<u>Engineering Services</u>	<u>Estimated Fees</u>
Phase I – Detailed Design Phase	\$ 24,021.26
Phase II – Bidding Phase	\$ 4,087.56
Permit Exemption Request	\$ 579.44
Electrical	\$ 3,919.85
Out-of-Pocket Expenses	<u>\$ 1,000.00 ⁽¹⁾</u>
TOTAL PROJECT COST	\$ 33,608.11

Notes:

⁽¹⁾Out-of-Pocket Expenses include the following: printing/reproduction and postage.

DELIVERABLES

TASKS	DELIVERABLES	QUANTITY
2.2 Design Drawings	50% 90% 100%/Bid Set	<ul style="list-style-type: none">• (1) 22x34, (1) 11x17, (1) PDF• (1) 22x34, (1) 11x17, (1) PDF• (1) 22x34, (1) 11x17, (1) PDF, (1) set AutoCAD Files
2.3 Specifications	50% 90% 100%/Bid Set	<ul style="list-style-type: none">• (2) Copies, (1) PDF• (2) Copies, (1) PDF• (2) Copies, (1) PDF, (1) set Word files
2.4 Cost Estimate	50% 90% 100%/Bid Set	<ul style="list-style-type: none">• (2) Copies, (1) PDF• (2) Copies, (1) PDF• (2) Copies, (1) PDF
3. Bidding Services	Bidding Sets Addenda if required	<ul style="list-style-type: none">• (1) Set PDF files• As required

This Service Authorization is approved contingent upon the City's acceptance of and satisfaction of the completion of the services rendered in the previous phase whereas encompassed by the previous Service Authorization. If the City in its sole discretion is unsatisfied with the services provided in the previous phase or Service Authorization, the City may terminate the contract without incurring any further liability. The Consultant shall commence work upon City Commission approval and this Service Authorization to be included as part of the contract without any further notice to proceed.

Approve by:

CITY OF DELRAY BEACH:

Date: _____

Cary D. Glickstein, Mayor

MATHEWS CONSULTING, a
BAXTER & WOODMAN COMPANY

Date: 5-4-17

Rene L. Mathews, P.E., Vice President

Witness

Attest:

Approved as to Legal Sufficiency
and Form

STATE OF FLORIDA
COUNTY OF PALM BEACH

The foregoing instrument 4th was
acknowledged before me this May day of
May, 2017 by Rene Mathews,
Vice President of Mathews Consulting, a
Baxter & Woodman Company, an Illinois
corporation, on behalf of the corporation.
He/She is (personally known to me) or (has
produced identification), Florida Driver's
License _____
and (did/did not) take an oath.

Signature of person taking
Acknowledgement



WTP Upgrades and Improvements - Design, Permitting and Bidding

Project	2016		2017												2018				
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
NTP (July 1, 2017)									◆										
Detailed Design																			
50% Design Submittal (60 days)																			
City 50% Review (7 days)																			
90% Design Submittal (30 days)																			
City 90% Review (7 days)																			
100% Design Submittal (15 days)																			
Permit Exemption Coord. (14 days)																			
Bidding/Award (45 days)*																			

*All work to be completed no later than December 31, 2017



ATTACHMENT B
City of Delray Beach WTP Upgrades and Improvements

Budget Summary

Phase No.	Task Description	Labor Classification and Hourly Rates								
		Principal Engineer \$166.40	Senior Engineer \$144.86	Engineer II \$118.84	Construction Manager \$118.22	Inspector \$89.15	Senior Eng. Technician \$115.13	Clerical \$70.58	Total Labor	Sub-Consultant Services
I	Detailed Design Phase									
1.1	Project Management	2	4						\$912.24	
1.2	Field Investigation		6	6					\$1,582.20	
1.3a	Design Drawings 50%	2	16	4			36		\$7,270.60	
1.3b	Design Drawings 90%	2	12	4			12		\$3,928.04	
1.3c	Design Drawings 100%	2	6	4			8		\$2,598.36	
1.4	Specifications (50%, 90%, 100%)	1	12						\$1,904.72	
1.5	Cost Estimate (50%, 90%, 100%)	2	8	4					\$1,967.04	
1.6	Meetings	3	9						\$1,802.94	
1.7	QA/QC	4			4				\$1,138.48	
1.80	Final Deliverable	1	2				4		\$916.64	
	Subtotal	19	75	22	4	0	60	0	\$24,021.26	
II	Bidding Phase									
2.1	Bid Advertisement		2						\$289.72	
2.2	BidSync Bid Submittal	1	2				4		\$916.64	
2.3	Pre-Bid Conference		4						\$579.44	
2.4	Bid Clarification	1	4						\$745.84	
2.5	Contract Award	1	2		4				\$929.00	
2.6	Final Deliverable	1					4		\$626.92	
	Subtotal	4	14	0	4	0	8	0	\$4,087.56	
Other	Permitting Exemption Request Coord. - PBCHD		4						\$579.44	
	Electrical Sub-Consultant (EDA, Inc.)								\$0.00	\$3,563.50
	Subtotal	0	4	0	0	0	0	0	\$579.44	\$3,563.50
	Labor Subtotal Hours	23	93	22	8	0	68	0	\$28,688.26	\$3,563.50
	Labor Subtotal Costs	\$3,827.20	\$13,471.98	\$2,614.48	\$945.76	\$0.00	\$7,828.84	\$0.00		
	Labor Total Costs	\$28,688.26								
	Subconsultant Costs Total	\$3,563.50								
	Subconsultant Multiplier	1.1								
	Subconsultant Total	\$3,919.85								
	Reimbursable Expenses	\$1,000.00								
	Project Total	\$33,608.11								