

**PROFESSIONAL SERVICES AGREEMENT  
FOR  
CITY OF PFLUGERVILLE WATER TREATMENT PLANT ENGINEERING SERVICES**

**WORK AUTHORIZATION NO. 2020-3**

This WORK AUTHORIZATION is made pursuant to the terms and conditions of the Professional Services Agreement executed the 20<sup>th</sup> day of January, 2015 by and between the City of Pflugerville and DCS Engineering, LLC., hereinafter referred to as the Agreement.

The Consultant will perform the professional services as shown in Attachment A, Scope of Services, which will include the tasks to be performed, the deliverables to be provided by the Consultant, and the milestone schedule for completing the tasks and the deliverables.

Compensation to the Consultant for the services provided pursuant to this work authorization shall be in accordance with Article 4 of the Professional Services Agreement, as further detailed in Attachment A to this Work Authorization. Attachment A shall include the method and basis for determining the compensation for this work authorization. The maximum amount payable under this Work Authorization is \$55,000.00 unless amended by a Supplemental Work Authorization.

This Work Authorization does not waive any of the parties' responsibilities and obligations provided under the Professional Services Agreement.

This Work Authorization is hereby accepted, acknowledged, and is effective when fully executed below.

CITY OF PFLUGERVILLE

CONSULTANT  
DCS Engineering, LLC

BY: \_\_\_\_\_  
Public Works Director

BY: 

DATE: \_\_\_\_\_

TITLE: Principal

DATE: 2/14/2020

**City of Pflugerville Water Treatment Plant Engineering Services**  
**Work Authorization No. 2020-3**  
**Raw Water Strainer Installation**  
Attachment A

In accordance with the Professional Services Agreement for Water Treatment Plant Engineering Services between City and Engineer ("Agreement") dated January 20, 2015, City and Engineer agree that additional work shall be added to the Professional Services Agreement as follows:

1. **Specific Project Data**

- A. Title: Raw Water Strainer Installation
- B. DCS Project No.: 20101431
- C. Description:

The City and DCS understand that Zebra mussels have infested the 36" Raw Waterline to the plant. The full extent of this infestation is not known or readily obtainable due to the absence of inspection/pigging ports. Zebra mussel shells were found inside of the membrane basins last year and the sharp shells have been damaging the membranes since that time. Per your request, we are proposing to provide professional engineering services to evaluate available alternatives to prevent zebra mussel shell fragments from further damaging the membranes, evaluate implementation schedules of each option to complete prior to approximately April 1<sup>st</sup> (i.e. flows start increasing and result in shell fragments dislodging from pipe interior), evaluate expedited construction of each option based on material availability and total construction cost, provide recommendations, generate construction plans, obtain TCEQ approval of plans, and oversee construction modifications. We understand that preventing future additional damage to the membranes is of critical importance to the Surface Water Treatment Plant's ability to maintain its cryptosporidium removal rating and/or prevent train replacement at \$500,000 per train. The system is currently operating with low winter flows at about 5 mgd which should minimize the shell fragment dislocation from inside of the pipe.

Per our coordination with the City to date, the selected alternative will be the relocation of the three existing Automatic Backwash Boll Filter strainers from the City's Lake Intake Pump Station building to the 36" Raw Waterline at the existing 36"x36" tee located just before the line enters the membrane building. Upon completion of our design, bidding, oversight of field modifications, and oversight of SCADA programming modifications, water quality will be monitored as the odor/taste/color chemical control system is activated (i.e. sodium permanganate system). Modifications in this project will include physical or programming changes required to allow all the flow through the strainers and allow automatic cleaning of the filters with their existing control panels. The engineer's opinion of most probable construction cost totals \$240,000. This project work is being performed in part by City Staff. The above total cost is comprised of equipment and materials purchased by the City for about \$140,000; a third party contractor to assemble and install the proposed raw water strainer installation for about \$50,000; and Alterman's work for SCADA and electrical wiring/conduit for about \$50,000.

2. **Services of Engineer**

- A. Analyze the existing infrastructure installed at the City's Lake Intake Pumping Station and the City's Surface Water Treatment Plant (including the SCADA programming) to define the scope of work.
- B. Hold a meeting with DCS, SCADA programmer (Alterman), and City Staff to obtain buy-in on the conceptual plan.
- C. Prepare documents to make physical and programming changes required to finalize the conceptual plan for relocating the Lake Intake Pumping Station's 400 micron filters to the end of the 36" raw water transmission line to catch the zebra mussel shells once the "slow dose" of sodium permanganate begins, which will result in zebra mussel shells coming off the pipe interior. Documents shall include plans showing the proposed plan, along with any necessary cut sheet information on piping and/or equipment to be installed.
- D. Evaluate disposal of the filter's automatic debris purge system to the membrane drain channel (thus the backwash clarifier) and then conveyed to the Weiss Forcemain by the clarifier sludge pumps to the Central WWTP.
- E. Prepare, submit, and obtain approval from TCEQ the plans for the proposed strainer installation with associated SCADA controls and cut sheets.
- F. Prepare plans for the installation package to relocate the filters including piping, concrete, electrical, and SCADA modifications. Remove the five stainless steel "construction screen" in the pipe going to each membrane basin as part of these activities.
- G. Solicit bids for constructing the proposed strainer pad and activating the strainer system.



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- H. Analyze and troubleshoot the Lake Intake Pumping Station to determine issues limiting this facility to a reported maximum flow of about 13.0 mgd to the SWTP. Complete analysis and remedies no later than June 1, 2020 when peak flows begin. Potential issues may include but not be limited to: pumps; restricted pump inlet screen on vertical turbine pumps in the pump cans; SCADA; zebra mussels in 48” pipe, 36” raw water transmission line, air release valve, or static mixer; pump screens clogged on discharge header; or inline construction screen clogged prior to each membrane basin.
- I. DCS will also provide professional engineering services associated with the following tasks that has not been mentioned above:
  - Analyze and evaluate existing equipment for use in the system
  - Conduct field visit(s)
  - Develop a design including requisite calculations and analysis; equipment selection; and sizing with equipment cut sheets where applicable
  - Prepare materials list with quantities for items to be purchased by the City
  - Prepare an installation package (i.e. construction drawings/exhibits) for the City
  - Prepare a written control logic description for the SCADA programmer to implement (Alterman)
  - Respond to TCEQ review questions and provide supplemental information, as required
  - Coordinate construction with suppliers, third party contractors, the City, and Alterman as required during construction.
  - Perform construction phase services
  - Coordinate construction activities, startup, and testing
  - Monitor impacts of changes on water quality produced from SWTP after implementation; and provide process guidance for making adjustments to plant operations

**3. Owner's Responsibilities**

A. Owner shall have those responsibilities set forth in the Professional Services Agreement.

**4. Times for Rendering Services**

- A. Consultant shall have those responsibilities set forth in Article II of the Professional Services Agreement.
- B. The project’s final completion date will be by June 1, 2020. Substantial completion will be defined as the new raw water strainer installation being capable of safely, reliably, and consistently filtering water prior to it entering the SWTP’s membrane basins.

The services for the preliminary and final design (six weeks), client review (one week), and DCS response to comments (one week), soliciting three bids for assembly of the system including at least two HUB contractors (2 weeks), City issue purchase order to contractor (two weeks), and construction/installation by contractor (six weeks) will be performed over a total of about 4 months with completion dates as noted below. The period of service will be through project construction completion and project closeout.

• Start Preliminary and Final Design	January 10, 2020
• Final Design – 90% Design Submittal	February 21, 2020
• TCEQ Submittal	February 21, 2020
• Client 90% Design Review	Comments to DCS by February 28, 2020
• Final Design – 100% Design Submittal	Complete by March 6, 2020
• Start Solicited Bidding Process	March 6, 2020
• Bid Open	March 20, 2020
• City Issue Purchase Order to Contractor	April 3, 2020
• Contractor’s Notice to Proceed	April 3, 2020
• TCEQ Approval	April 21, 2020
• Substantial Construction Completion (Turn on system)	May 3, 2020
• Final Construction Completion/Close-out	May 15, 2020

**5. Deliverables:**

- A. DCS shall prepare all necessary documents to the City and TCEQ for implementation of the Raw Water Strainer Installation. These include but are not limited to submitting and obtaining approval of construction plans and/or specifications from TCEQ with associated documentation.
- B. Preparation and submittal of the installation package to the City and Alterman with any associated documents for construction completion.

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C. Preparation and distribution of the installation package to contractors including HUB contractors to obtain three quotes (min) with documentation required for the City. DCS will prepare a letter of recommendation with bid tabulation, HUB documentation via email correspondence, etc. that meet City procurement requirements for projects under \$50,000 in construction.

**6. Payments to Engineer**

A. City shall pay Engineer for services rendered as follows:

DCS Engineering, LLC will invoice monthly for services rendered the preceding month based on the percentage of services completed. City shall pay DCS Engineering, LLC within 30 days for the services rendered and invoiced.

B. Lump Sum Fee and Time & Material Fee:

We propose to provide the services described above for analysis and recommendations on a time and material basis and reimbursable fee basis as noted below. We shall obtain prior written approval from the City if this amount is to be exceeded. We propose to bill our Project Manager, Mr. Darren Strozewski, P.E., at \$165/hour and project engineers at \$110 per hour. Other staff members will be billed separately per the below Standard Hourly Rate Table by Staff Category and utilized as needed.

**Standard Hourly Rate Table**

Classification	Billing Rate		
Principal	\$215.00	-	\$275.00
Senior Project Manager	\$200.00	-	\$240.00
Project Manager	\$140.00	-	\$210.00
Design Manager	\$120.00	-	\$170.00
Senior Engineer	\$100.00	-	\$160.00
Project Engineer	\$90.00	-	\$140.00
CAD Manager	\$100.00	-	\$200.00
IT Manager	\$110.00	-	\$160.00
IT Technician	\$80.00	-	\$140.00
Senior Designer	\$90.00	-	\$160.00
Designer II	\$80.00	-	\$145.00
Designer I	\$70.00	-	\$125.00
Senior Computer Technician	\$70.00	-	\$140.00
Computer Technician II	\$50.00	-	\$125.00
Computer Technician I	\$40.00	-	\$110.00
Project Coordinator	\$45.00	-	\$110.00
Clerical	\$30.00	-	\$90.00
Document Control Clerk	\$30.00	-	\$90.00

Our proposed fees for the above scope of work are shown by task in the below table. The above referenced services will be performed within the duration discussed above. The below reimbursable fees shall not be exceeded without prior written authorization from the City of Pflugerville. DCS's liability to the Client for any cause or combination of causes is in the aggregate limited to an amount no greater than the fee earned under this agreement.



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**Fee Schedule**

<b>Task</b>	<b>Description</b>	<b>Fee</b>
500	Analysis, Design, and SCADA Control Logic	\$33,250.00
510	TCEQ Submittal and Approval	\$2,500.00
520	Troubleshoot Lake Pumping Station Low Flows	\$8,500.00
600	Bidding	\$6,500.00
700	Construction Phase Services	\$1,750.00
710	Coordinate Construction/Startup/Testing	\$5,500.00
	<b>Total Time and Material Fee =</b>	<b>\$55,000.00</b>

C. The terms of payment are set forth in Article IV of the Professional Services Agreement and Work Authorization 2020-3 – Attachment A.

7. **SubConsultants:**  
None

8. **Other Modifications to Agreement:**  
None