

**SUPPLEMENT TO  
MASTER SERVICES AGREEMENT**

**CITY OF GRIFFIN, GEORGIA  
AND  
PARAGON CONSULTING GROUP, INC.**

**THIS SUPPLEMENTAL AGREEMENT** is made as of \_\_\_\_\_  
Between City of Griffin, GA, Owner, and Paragon Consulting Group, Inc., Engineer (PCG).

**OWNER AND ENGINEER** have previously executed a Master Services Agreement dated April 3, 2003 ("Original Agreement") that defines general terms under which ENGINEER will furnish General Consulting Services and Project Engineering Services to OWNER. OWNER now wishes to engage ENGINEER to provide services in connection with a Project known as:

**POTATO CREEK WWTP DESIGN FROM 2.0 MGD TO 3.0 MGD**

This project will include the typical design, permitting, and construction management services for the expansion of Potato Creek Wastewater Treatment Plant from 2.0 to 3.0 mgd. In general such services include:

- Data gathering and a plant hydraulic analysis
- Review of the existing design and recommendations
- Structural, electrical, civil, and process mechanical design
- Geotechnical investigation and report
- Development of construction sequencing plan
- Coordination of GAEPD permitting
- Engineer's Probable Construction Cost Estimate
- Earthwork calculations
- Bidding Services
- Response to request for information
- Shop drawing review
- Resident inspection

ENGINEER has prepared a Scope of Work, attached herein as EXHIBIT A, and Basis of Compensation, attached herein as EXHIBIT B, to provide the services contemplated in this Supplemental Agreement.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

**OWNER:**

**CITY OF GRIFFIN**

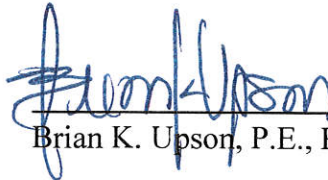
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**Attest:**

\_\_\_\_\_  
Manager

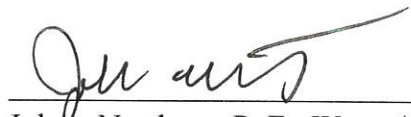
**ENGINEER:**

**PARAGON CONSULTING GROUP, INC.**

  
\_\_\_\_\_

Brian K. Upson, P.E., President

**Attest:**

  
\_\_\_\_\_  
Jolene Northrop, P. E., Water / Wastewater Sector

## **Attachment A – Scope of Services**

### **Phase 1 - Oxidation ditch**

PCG will rewrite specifications and check competitor's calculation and incorporate competitor's design dimensions to allow for competitive bid. PCG will verify oxidation ditch hydraulics and future space requirements as well as electrical and structural design elements.

### **Phase 2 – Secondary Clarifiers:**

PCG will relocate/redesign splitter box, raise walls of existing clarifiers 1 and 2, reroute piping, calculate clarifier needs for now and future, add new clarifier(s), and resize and size clarification equipment. PCG will include electrical and structural engineers in the redesign process. A Geotechnical Soils Survey will be conducted to verify soils condition and groundwater location for design purposes.

### **Phase 3 - Tertiary Filter:**

PCG will design new tertiary filter, cloth filter-type, to meet permit effluent limits. Structural and electrical engineering will be included in the design process. The new filter will be included in plant hydraulic calculations to ensure adequate head is available.

### **Phase 4 – UV Disinfection:**

PCG will modify UV disinfection to allow for a future channel and a location based on the improved plant flow pattern. PCG will explore staged-lamp UV to see if this will fit design needs. Structural and electrical engineering will be included in the design process.

### **Phase 5 – Cascade Aeration:**

PCG will design and specify cascade aeration to meet permit requirements. Structural and electrical engineering will be included in the design process.

### **Phase 6 - Headworks**

PCG will design new headworks structure with ¼-inch mechanical bar screens for peak hourly flow of 10 mgd, including screenings conveyor, vortex grit, grit removal, and appropriate appurtenances. Space will be considered for a future washer/compactor. PCG will most likely not include a splitter box but rather design a three channel split with gates – including a bypass channel. The headworks structure will be relocated to improve flow pattern of plant. PCG will include structural and electrical design of this structure.

### **Phase 7 - Influent Pump Station:**

PCG will check pump curves for compatibility with hydraulics and calculate pump loads for use in electrical portion of design.

### **Phase 8 - RAS/WAS Pump Station and Telescoping Valve Box:**

PCG will calculate flow and hydraulic requirements of the RAS/WAS pump station and the telescoping valve box and combine these structures into one if possible. Structural and electrical design verification will be included. PCG will verify pumps are accurately sized for flow and head conditions and the location of the structure will be changed to reflect the improved plant flow pattern.

**Phase 9 - Meter Vaults**

PCG will increase dimension to allow for proper pipe lengths before and after flowmeter to ensure accurate readings in meter. PCG will check sizing of influent and effluent metering devices to ensure accurate flow measurements are capable at design flow rates and with modifications to design. Meter vaults will be relocated to improve flow pattern of plant.

**Phase 10 - Chemical Feed:**

PCG will change location of water champ for Alum feed, check/calculate chemical bulk and day storage locations to allow for accurate quantities and safe chemical off-loading. PCG will verify through calculations and other means coatings, material and pump selection, quantities, and receiving ability.

**Phase 11 - Solids Handling:**

PCG will design aerobic digestion with space for future dewatering of solids. Structural and electrical engineering will be included in the design process.

**Phase 12 - Coordination of Permitting and EPD Approval:**

PCG will facilitate plan and specification approval by EPD. PCG will facilitate permitting services with necessary governmental agencies for issuance of required permitting. PCG will prepare and meet with EPD up to two times for facilitative purposes.

PCG will conduct a review of all drawings, specifications, and calculations during the design process to assure Quality Assurance/Quality Control of the design.

**Phase 13 – Construction Sequencing Plan:**

PCG will complete appropriate construction sequencing plan for inclusion in bid documents. The plan will consist of a logical progression for the construction of the new wastewater treatment plant components while the existing plant is being operated.

**Phase 14 - Engineer's Construction Cost Estimation:**

PCG will prepare an Engineer's Construction Cost Estimate for the expansion to 3.0 mgd. The draft estimate will be submitted to the OWNER with the Final Plans. The final engineer's estimate will be submitted two (2) weeks following the completion of the design and specifications.

**Phase 15 - Bidding Services:**

PCG will prepare specifications and bid information necessary for advertising and evaluating bids to make recommendations on all or portions of the project as OWNER directs. PCG will manage the bid process including fielding questions, preparing addendum, bid opening, review of bids for mathematical accuracy, bonding requirements, insurance requirements, and make recommendation on lowest and best bid.

**Phase 16 - Construction Management:**

PCG will review contractor submittals and provide clarifications to contractor for 24 months of construction phase. PCG will review shop drawings and submittals and communicate with contractor during the twenty-four (24) month construction phase.

**Phase 17 - Resident Inspection:**

PCG will provide twenty-four (24) months of on-site inspection during the twenty-four (24) month construction phase. PCG will communicate progress electronically with the OWNER on a weekly basis during the construction phase.

PCG will conduct QA/QC of all drawings, specifications, and calculations simultaneously as the OWNER and then meet with the OWNER to discuss the final design.

*Bi-weekly progress updates will be provided to OWNER by PCG electronically.*

*Deliverables will be provided in digital format including Word, Excel, PDF and any other electronic formats. These include all calculations, processes and engineering documents which become the property of the OWNER for use on this project. Reuse of these documents on other projects is solely at the risk of the OWNER.*

## **Attachment B – Basis of Compensation**

The compensation limits are based on the scope of services described in Attachment A and include EPD permitting and coordination of approval, coordination of the geotechnical field investigation and report, preparation of plans and specifications for bidding, preparation of Engineer's construction cost estimate, assistance during bidding, revision of plans and specifications to conform to addenda issued during the bidding phase, management of construction, observation of construction, preparation of operation and maintenance manual, and assistance during startup.

Phases 3, 5, 6, 7, and 9- Plant Hydraulics, Specifications, Electrical, Structural, and Geotech, respectively are apportioned to each process component and included in the cost breakdown of each task.

A schedule will be completed prior to commencement of design.

### **Design Modifications**

#### **Phase 1 Task 1 – Influent Pump Station:**

Professional Services Fee: Not to Exceed \$4,315 (reference attached man-hour and budget worksheet)

##### *Breakdown:*

*Process Engineering and Drafting - \$2,580*

*Other (1% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$1,735*

Scope of Work: Included in Attachment A

#### **Phase 1 Task 2 – Headworks:**

Professional Services Fee: Not to Exceed \$41,888 (reference attached man-hour and budget worksheet)

##### *Breakdown:*

*Process Engineering and Drafting - \$15,870*

*Other (15% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$26,018*

Scope of Work: Included in Attachment A

#### **Phase 1 Task 3 – Oxidation Ditch:**

Professional Services Fee: Not to Exceed \$35,138 (reference attached man-hour and budget worksheet)

##### *Breakdown:*

*Process Engineering and Drafting - \$9,120*

*Other (15% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$26,018*

Scope of Work: Included in Attachment A

**Phase 1 Task 4 – Clarifiers:**

Professional Services Fee: Not to Exceed \$60,493 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$17,130*

*Other (25% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$43,363*

Scope of Work: Included in Attachment A

**Phase 1 Task 5 – Telescoping Valve Box/RAS/WAS:**

Professional Services Fee: Not to Exceed \$26,315 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$8,970*

*Other (10% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$17,345*

Scope of Work: Included in Attachment A

**Phase 1 Task 6 – Chemical Addition:**

Professional Services Fee: Not to Exceed \$8,755 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$7,020*

*Other (1% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$1,735*

Scope of Work: Included in Attachment A

**Phase 1 Task 7 – Tertiary Filter**

Professional Services Fee: Not to Exceed \$28,391 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$12,780*

*Other (9% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$15,611*

Scope of Work: Included in Attachment A

**Phase 1 Task 8 – UV Disinfection:**

Professional Services Fee: Not to Exceed \$25,415 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$8,070*

*Other (10% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$17,345*

Scope of Work: Included in Attachment A

**Phase 1 Task 9 – Cascade Aeration**

Professional Services Fee: Not to Exceed \$13,004 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$7,800*

*Other (3% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$5,204*

Scope of Work: Included in Attachment A

**Phase 1 Task 10 – Meter Vaults**

Professional Services Fee: Not to Exceed \$6,205 (reference attached man-hour and budget worksheet)

*Breakdown:*

*Process Engineering and Drafting - \$4,470*

*Other (1% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$1,735*

Scope of Work: Included in Attachment A

**Phase 2 – Solids Handling**

Professional Services Fee: Not to Exceed \$23,335 (reference attached man-hour and budget worksheet)

*Process Engineering and Drafting - \$5,990*

*Other (10% of Plant Hydraulics, Specifications, Electrical, Structural, and Geotech)- \$17,345*

Scope of Work: Included in Attachment A

**Phase 4 - Earthwork:**

Professional Services Fee: Not to Exceed \$21,380 (reference attached man-hour and budget worksheet) Time Schedule: As Needed, Scope of Work: Included in Attachment A



**Phase 8 – Final Design:**

Professional Services Fee: Not to Exceed \$35,880 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

**Phase 10 – Construction Sequencing Plan:**

Professional Services Fee: Not to Exceed \$11,560 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

**Phase 11 - Coordination of Permitting and EPD Approval:**

Professional Services Fee: Not to Exceed \$13,340 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

**Phase 12 - Engineer's Construction Cost Estimation:**

Professional Services Fee: Not to Exceed \$22,620 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

**Phase 13 - Bidding Services:**

Professional Services Fee: Not to Exceed \$28,330 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

**Phase 14 - Construction Management:**

Professional Services Fee: Not to Exceed \$300,430 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

**Phase 15 - Resident Inspection:**

Professional Services Fee: Not to Exceed \$315,000 (reference attached man-hour and budget worksheet) Scope of Work: Included in Attachment A

***Sub-Total of the estimated fees from Phases 1 through 15 is \$1,021,790.***