05-16-105

CM1831-WA13

WORK AUTHORIZATION # CM1831-WA13
NASSAU COUNTY
BOARD OF COUNTY COMMISSIONERS

Consultant:	GAI Consultants, Inc.
Contract Number:	CM1831
Contact Name:	Samuel T. Ramirez, PE
Contact Number:	904-559-8107
Email:	S.Ramirez@gaiconsultants.com

CURRENT WORK AUTHORIZATION			
Project Short Title: Transmission Mains Hydraulic Modeling			
		CONTRACT OVERVIEW	
Date Submitted	11-8-2016	**Total of Previous Authorizations**	$570,911.00
Change Orders/Adjustments		**Change Orders/Adjustments**	749.10
Amount	$88,310.00	**This Work Authorization**	$88,310.00
Scheduled Completion	6 months from NTP	**Current Contract Total**	$659,970.10

This Work Authorization is to the AGREEMENT between Nassau County and the Consultant known as the Continuing Contract for Professional Engineering Services for Nassau County, Florida, dated March 21, 2012. The services to be provided under this Work Authorization are as follows:

ARTICLE 1. Services Described as:

PART 1 – PROJECT OVERVIEW

GAI will assist NAU in developing a hydraulic modeling of its transmission water mains to have the mechanism for forecasting necessary upgrades in order to maintain and to accommodate future growth.

PART 2 – SERVICES

GAI will perform a series of professional services associated with projects listed above. Details are enclosed in Exhibit A.

ARTICLE 2. Time Schedule

GAI will complete the project in six months after receiving work authorization notice to proceed (NTP) for the respective project.

ARTICLE 3. Budget

The total fee is $88,310.

ARTICLE 4. Other Provisions

See Exhibit A and B.

The Services covered by this Work Authorization will be performed in accordance with the provisions set forth in the AGREEMENT referenced above and any of its attachments or schedules. This Work Authorization will become a part of the referenced AGREEMENT when executed by both parties.

In presenting this Work Authorization, Consultant agrees that:

Unless detailed herein, all drawings, data, electronic files and other information required for this Work Authorization has been accepted by Consultant. Specifically, all electronic files have been reviewed and accepted for the purposes of this Work assignment. Any additional information, including detailed scope of services are attached.

AGREED TO BY:

BY: _____
Print Name: Kevin R Leadbetter
Title: Vice President
Date: November 11, 2016

RECOMMENDED AND APPROVED BY NASSAU COUNTY:

Public Works Director: _____
Scott Herring, Director

Board of County Commissioner, Chair: _____
~~Walter J Boatright~~, Chairman
Daniel B. Leeper

Ex-Officio Clerk: _____
~~John A. Crawford~~

County Attorney: _____
Michael Mullin

MES 12.21.16

APPROVED by the BOARD OF COUNTY COMMISSIONERS, the 21st day of December, 2016.

EXHIBIT A
SCOPE OF SERVICES
TRANSMISSION MAINS HYDRAULIC MODEL
NASSAU COUNTY, FLORIDA

I. BACKGROUND

Nassau County and Nassau Amelia Utilities (NAU) need to develop a hydraulic model of its water transmission mains to have the mechanism for planning necessary upgrades in order to maintain and to accommodate future growth.

The County will use the model of the water transmission mains to assess the present level of service and to provide a management tool for tracking additional capacities of their water transmission mains.

II. SCOPE OF SERVICES

The Transmission Mains Hydraulic Model scope of services will be managed and develop in the following tasks:

- Task 1 – Project Management
- Task 2 – Data Collection
- Task 3 – Data Assessment/Modeling
- Task 4 – Findings and Recommendations

Task 1 – Project Management

1. Kick-off Meeting: GAI will meet with NAU key personnel to introduce project team, define the project communication protocol, and review scope of service and project expectations. GAI will prepare meeting agenda and minutes.
2. Progress Meetings: GAI will host up to two review or progress meetings at the County or at GAI facilities.

Task 2 – Data Collection

1. GAI will collect production flow data at the wells and the water treatment plant (WTP) for the last ten years.
2. GAI will use the water map in AutoCAD created by the University of North Florida (UNF) that includes pipe sizes and materials. GAI will review this map with the County. GAI will update this map using any additional input from the County.
3. During the map review, the County will indicate the estimated age of the different pipelines. The age of the pipeline will be a layer added to the AutoCAD map.
4. GAI will work with the County to identify the major water users like hotels or any water master meters.
5. GAI will review and use the County's latest water rate study to assign flow demands at nodes where water distribution mains connect to the transmission mains.
6. GAI will collect data from each of the dwellings connected to the fire line served by the existing booster pump station from a limited facilities survey. Based on the survey, GAI will assign fire flow requirement for those dwellings.
7. GAI will collect with the County assistance all outstanding availability letters and FDEP permits to account for NAU outstanding water conveyance commitments.

Task 2 – Update Water Map in AutoCAD (Limited Amount Not-to-Exceed)

1. GAI will use the water map in AutoCAD created by the University of North Florida (UNF) that includes pipe sizes and materials. GAI will review this map with the County. GAI will update this map using any additional input from the County.
2. GAI will realign the existing map to real coordinates.
3. GAI will add up to ten new developments to the existing map. The County will provide the developments in AutoCAD files and GAI will added to the existing map.

Task 4 – Data Assessment/Modeling

1. GAI will plot the water production data at the wells and the WTP. Then, GAI will compare it with the water usage presented in the County's latest water rate study. Using the County's latest water rate study data and GAI's water production plot, GAI will select flows to model.
2. GAI will model the present, projected 10-year, and projected 20-year water demands. The model will include peak hourly flow and maximum daily demand plus fire flow. The model will be set in Excel as a static model. The Excel model will exclude looping and will model the three transmission main to the end of each line.
3. GAI will assess the amount storage required to meet the level of service for the present, projected 10-year, and projected 20-year water demand.
4. GAI will create a table in EXCEL to record and manage the availability letters and FDEP permits served by one of the transmission mains.
5. GAI will summarize and present the model output for the above scenarios. GAI will prepare Technical Memorandum 1 (TM 1) – Data Assessment/Modeling.

Task 5 – Findings and Recommendations

1. Based on the analysis, GAI will make comments on the energy grade line of the transmission system. GAI will make recommendations and suggestions on how NAU can meet future demands (i.e. Upgrade pump stations to increase flow or/and pressure, Upgrade transmission main sizes, Loop transmission mains)
2. GAI will draft TM 2 – Findings and Recommendations and submit for review. In this TM 2, GAI will present a capital improvement plan to meet present and future level of service.
3. GAI will host progress meeting no. 1 to discuss with the County the TM 2 draft. After the progress meeting, GAI will revise the TM 2 draft accordingly. Then, GAI will submit final TM-2.
4. GAI will provide and review with the County how to use the Excel model, progress meeting no. 2

Deliverables will be:

- Two (2) hard copies and one PDF for each TM
- Updated Map in AutoCAD
- A Hydraulic Model in Excel

III. EXCLUSIONS

1. Surveying
2. Fire flow Tests
3. Any distribution pipeline

IV. PROJECT SCHEDULE

From the date of the Notice-to-Proceed, GAI anticipates completion of the project within six (6) months

V. FEE

The total lump sum fee is **$88,310.00**.

EXHIBIT B - BUDGET TRANSMISSION MAINS HYDRAULIC MODEL	POSITION	Engineering Manager	Lead Engineer	Senior Engineer	Project Engineer	Expenses	HOURS/ TASK	TOTAL FEE/ TASK
	RATE	$ 172.70	$ 143.17	$ 120.72	$ 97.82	$		
Task 1 – Project Management								
1 Kick-off Meeting		4	4			40.00	8	$ 1,303.48
2 Progress Meetings		8	8			80.00	16	$ 2,606.96
LABOR FEE	$ 3,910.44	$ 2,072.40	$ 1,718.04	$ -	$ -	$ 120.00		$ 3,910.44
HOURS	24	12	12	0	0	-	24	
TASK 1 SUM								**$ 3,910.50**
Task 2 – Data Collection								
1 Collect flow data (wells and WTP)					20	100.00	20	$ 2,056.40
2 Indicate the estimated age of pipelines					40	200.00	40	$ 4,112.80
3 Identify the major water usages		4	10	35		245.00	49	$ 6,592.70
4 Assigned flow demands		4	10	35		245.00	49	$ 6,592.70
5 Assign fire flow requirement		4	10	35		245.00	49	$ 6,592.70
6 Collect outstanding availability letters and FDEP permits					40	200.00	40	$ 4,112.80
LABOR FEE	$ 30,060.10	$ 2,072.40	$ 4,295.10	$ 12,675.60	$ 9,782.00	$ 1,235.00		$ 30,060.10
HOURS	247	12	30	105	100	-	247	
TASK 2 SUM								**$ 30,060.10**
Task 3 – Update water map in AutoCAD (Limited Amount Not-to-Exceed)								
1 Update water map in AutoCAD		8		40	80	640.00	128	$ 14,676.00
LABOR FEE	$ 14,676.00	$ 1,381.60	$ -	$ 4,828.80	$ 7,825.60	$ 640.00		$ 14,676.00
HOURS	128	8	0	40	80	-	128	
TASK 3 SUM								**$ 14,676.00**
Task 4 – Data Assessment/Modeling								
1 Select flows to model		8	8			80.00	16	$ 2,606.96
2 Model the present, 10-year, and 20-year water demand		8			80	440.00	88	$ 9,647.20
3 Assess the amount storage required				20		100.00	20	$ 2,514.40
4 Create table in EXCEL for availability letters and FDEP permits		8		40		240.00	48	$ 6,450.40
5 Prepare Technical Memorandum 1 (TM 1)		8	8	20	10	230.00	46	$ 6,149.56
LABOR FEE	$ 27,368.52	$ 5,526.40	$ 2,290.72	$ 9,657.60	$ 8,803.80	$ 1,090.00		$ 27,368.52
HOURS	218	32	16	80	90	-	218	
TASK 4 SUM								**$ 27,368.60**

EXHIBIT B - BUDGET TRANSMISSION MAINS HYDRAULIC MODEL	POSITION	Engineering Manager	Lead Engineer	Senior Engineer	Project Engineer	Expenses	HOURS/ TASK	TOTAL FEE/ TASK
	RATE	$ 172.70	$ 143.17	$ 120.72	$ 97.82	$		
Task 5 – Findings and Recommendations								
1 Make recommendations and suggestions to meet future demands		4	8	4		80.00	16	$ 2,399.04
2 Prepare and submit draft TM 2 – Findings and Recommendations		4	8	4		80.00	16	$ 2,399.04
3 Prepare and submit final TM-2		4	4	4		60.00	12	$ 1,806.36
4 Provide and review with the County how to use the Excel model		32				160.00	32	$ 5,686.40
LABOR FEE	$ 12,290.84	$ 7,598.80	$ 2,863.40	$ 1,448.64	$ -	$ 380.00		$ 12,290.84
HOURS	76	44	20	12	0	-	76	
TASK 5 SUM								**$ 12,290.90**
TOTAL PROJECT LABOR FEE	$ 88,305.90	$ 18,651.60	$ 11,167.26	$ 28,610.64	$ 26,411.40	$ 3,465.00		$ 88,305.90
TOTAL PROJECT HOURS	693	108	78	237	270	-	693	
TOTAL PROJECT LUMP SUM								**$ 88,310.00**

gai consultants

Jacksonville Office
1301 Riverplace Boulevard
Suite 900
Jacksonville, Florida 32207

T 904.363.1110
F 904.363.1115

October 13, 2016

GAI Project No.: A120925.13

Ms. Becky Hiers-Bray, P.E.
Engineer III
Nassau County Engineering Services
96161 Nassau Place
Yulee, Florida 32097

Subject: **WORK AUTHORIZATION: CM1831-WA13**
TRANSMISSION MAINS HYDRAULIC MODELING
GAI Project No. – A120925.13

Dear Ms. Hiers-Bray:

GAI Consultants, Inc. (GAI) is pleased to provide this lump sum proposal for provision of design and post design services for the subject project.

Our proposed lump sum fee is as follows;

Modeling Lump Sum.....$88,310.00
Grand Total Lump Sum $88,310.00

Our proposed Scope and Fee are detailed in the following attached Exhibits:

Exhibit A – Scope of Service
Exhibit B – Budget

If you have any questions or need any additional information, please feel free to contact me at (904) 559-8107.

Sincerely,

GAI Consultants, Inc.

Samuel T. Ramirez, P.E.
Project Manager

Kevin R. Leadbetter, P.E.
Assistant Vice President

Enclosed.

CS-16-105

Nassau County Engineering Services Department
96161 Nassau Place
Yulee, Florida 32097

J. Scott Herring, P.E.
Public Works Director

January 25, 2017

Sent via email:
S.Richards@gaiconsultants.com

Scott Richards, P.E.
Senior Engineering Manager
GAI Consultants, Inc.
618 E. South Street, Suite 700
Orlando, Florida 32801

Subject: Notice to Proceed
NAU Transmission Mains Hydraulic Modeling
Contract No. CM1831-WA13

Dear Mr. Richards,

This letter shall serve as the official Notice to Proceed for NAU Transmission Mains Hydraulic Modeling project, Work Authorization No. 13. The effective date of the Notice to Proceed is hereby established as January 25, 2017.

All work must be conducted in accordance with the agreement referenced above.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Becky Hiers-Bray, P.E.
Engineer III

Cc: Scott Herring, Public Works Director
David Pensante, Procurement Manager
Yvonne Thomas, NAU

Phone (904) 530-6225 **Fax (904) 491-3611**