

## INDIVIDUAL PROJECT ORDER NUMBER 21

Describing a specific agreement between Kimley-Horn and Associates, Inc. (ENGINEER), and Sumter County Board of County Commissioners (BOARD) in accordance with the terms of the Master Agreement for Continuing Professional Services dated September 22, 2020, which is incorporated herein by reference.

### ***Identification of Project:***

Project: LSSA System Upgrades Analysis

Client: Sumter County Board of County Commissioners

Project Manager: Trey Clayton, P.E.

### ***Project Understanding:***

The Little Sumter Service Area (LSSA) utility is owned by Village Center Community Development District (VCCDD) "District" and located in Sumter County. The LSSA is a public utility system with infrastructure planned for a known service territory; however, with redevelopment and development of vacant properties, the existing sanitary collection system has reached capacity. The eastern portion of the LSSA service area has additional parcels available for development, however the existing infrastructure does not have available capacity to accommodate these additional flows.

The District performed two preliminary sewershed analyses of the LSSA collection system. These preliminary analyses include recommendations to upsize the existing gravity sewer, install additional force main, and implement improvements to a minimum of two lift stations (Nos. 2 and 13). The analyses caution that the improvements to Lift Station No. 2 are likely to require improvements to some, if not all, of the other eleven lift stations manifolded into the major force main. The purpose of this evaluation will be to create a hydraulic model of the LSSA manifolded force main system and use the model to evaluate multiple improvement alternatives (up to 10 alternatives) to determine the most cost effective and constructable improvements required to accommodate existing and future wastewater flows in the LSSA collection system.

The purpose of this IPO is to refine the needed improvements for the LSSA system. Once the Scope of Services is completed, the ENGINEER will prepare a separate IPO for design, permitting, and construction phase services of the identified improvements.

### ***Specific Scope of Basic Services:***

#### Task 1 – Data Collection, Survey, and Wastewater System Hydraulic Model Development

- A. ENGINEER will use the existing GIS files provided by the District to develop a hydraulic model of the pressurized collection system for the LSSA collection system.
- B. The District will provide an inventory of existing wastewater lift stations for the LSSA collection system. The inventory will consist of the following information:
  - 1) Lift station name
  - 2) Number of pumps
  - 3) Pump model
  - 4) Pump impeller diameter

- 5) Pump curves
  - 6) Force main diameters
  - 7) Wet well dimensions
  - 8) Tributary Area (Sewershed) for Lift Station
- C. ENGINEER will contract directly with a survey subconsultant to prepare a survey of the existing gravity collection system for LSSA LS No.2. The Surveyor will confirm manhole rim elevations, invert elevations, and gravity sewer sizes along Banderos Avenue and El Camino Real back to the outfall at LSSA LS No.2. The survey will be prepared in Datum NAVD 88. The purpose of the survey will be to confirm as-built data of the existing collection system and verify the capacity of the existing sanitary sewer system.
- D. ENGINEER will prepare a hydraulic model of the Districts lift station and force main network utilizing the data provided by the District. The District's gravity system will not be included in the hydraulic model, except for the section that was provided in modeled as part of the LSSA LS No.2 Gravity Evaluation.
- E. District staff will accompany ENGINEER staff to perform up to 12 Lift Station drawdown and pump performance tests. District staff will pull each of the existing pumps at each lift station during the site visits to confirm pump model and serial numbers. The District will also confirm that NPT discharge taps for pressure transducer connections are available and accessible at each site. The District shall also vacuum all grease and debris from each wet well prior to testing to confirm accurate level readings and drawdown test results.
- F. ENGINEER will provide at least two employees for each pump performance test. It is assumed that the drawdown and pump and performance tests would take up to 3 days to complete. District staff should be familiar with the site, pumps, controls, equipment, and operations of each lift station should be able to assist ENGINEER with access to wet wells and valve vaults for each pump performance test.
- G. ENGINEER will utilize the drawdown tests and pump performance tests to calibrate the hydraulic model for the LSSA lift station and force main network.
- H. In addition to the lift station drawdown results ENGINEER will also prepare a brief engineering report of each lift station summarizing the findings of each site visit, including each pump's performance, lift station condition assessment, and a list of recommended improvements for each site.

#### Task 2 – Wastewater Hydraulic Modeling and Capacity Evaluation

- A. ENGINEER will evaluate the existing flows and future flows provided by the District. The District will provide existing flows data gathered for the LSSA collection system through lift station run times and flow data that was collected as part of the LSSA Sewershed Evaluation. The District will provide future flow projections based on known future developments and existing levels of service for sanitary sewer service for the LSSA.
- B. ENGINEER will update the hydraulic model of the pressurized LSSA system with the existing and future flows provided by the District. ENGINEER will evaluate the existing capacity and future capacity of the 12 lift stations included in this study. The alternatives (up to 10 alternatives will be

performed) evaluation will include identifying the necessary improvements which be required to LS No.2 and LS No.13, as well as to the LSSA collection system to meet the future flow projections for the LSSA sewershed and any stations impacted by these improvements. Each alternative will be scored and ranked based on an evaluation of the project cost, constructability, community and environmental impacts, and criticality all while considering overall system operations and maintenance.

- C. In addition to the evaluation of the LS No.2 and LS No.13 sewershed the evaluation will also include a review of the existing LSSA manifolded forcemain system to determine if additional upgrades will be required throughout the system once the necessary pump upgrades are made to LSSA lift station No. 2.
- D. The ENGINEER will perform a tributary/flow evaluation of each station connecting to the manifolded system based on parcel and/or land use designation. The district will be responsible for providing flows and peaking factors for each land use designation. ENGINEER will compare sanitary flow data against 12-months of water billing data. The District will provide 12-months of water billing data in excel format with accompanying address and parcel numbers for each meter/customer. ENGINEER will use the sewer flows and water billing data to estimate inflow and infiltration (I&I) for each sewershed using the EPA method for estimating I&I.

#### Task 3 – Wastewater Hydraulic Modeling and Capacity Evaluation

- A. ENGINEER will prepare a technical memorandum summarizing the methodology of the alternative evaluation, the alternatives that were evaluated and performed, the recommended system improvements for the LSSA, and opinions of probable costs for each recommended system improvement to meet the projected future flows.

#### ***Additional Services if Required:***

Services requested that are not specifically included in this project order will be provided under a new and separate project order agreement or can be performed on an hourly basis upon written authorization.

#### ***Schedule:***

The ENGINEER will provide the above Scope of Services provided above as expeditiously as possible to meet a mutually agreeable schedule. A schedule will be established upon Notice to Proceed and maintained through the duration of the Project. The project schedule may be modified due to circumstances that arise during the execution of the Work if mutually agreed to by the ENGINEER and BOARD.

**Method of Compensation:**

The ENGINEER will perform the services described in the Scope of Services for a lump sum fee of \$73,550.00. A more detailed breakdown by Task is provided below and in the attached Table A.

<i>Task Description</i>	<i>Fee</i>
Task 1 – Data Collection, Survey, and Wastewater System Hydraulic Model Development	\$39,900
Task 2 – Wastewater Hydraulic Modeling and Capacity Evaluation	\$27,150
Task 3 – Technical Memorandum	\$6,500

Services provided under this will be invoiced monthly. All invoices will include a description of services provided.

Attachments: Table A

BOARD OF SUMTER COUNTY COMMISSIONERS

KIMLEY-HORN AND ASSOCIATES, INC.

BY: \_\_\_\_\_

BY:  \_\_\_\_\_

Richard V. Busche, PE

TITLE: \_\_\_\_\_

TITLE: Senior Vice President

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

DATE: March 16, 2022



**TABLE A  
FEE ESTIMATE FOR PROFESSIONAL SERVICES**

PROJECT: LSSA SYSTEM UPDGRADES ANALYSIS	FILE NO. IPO 21
CLIENT: BOARD OF SUMTER COUNTY COMMISSIONERS	DATE: MARCH 2022
KHA PM: TREY CLAYTON, P.E.	
BASIS FOR ESTIMATE: APPROVED RATES PER RFQ 030-0-2020/RS	

TASK NO.	DESCRIPTION	DIRECT LABOR (MAN-HOURS)						
		Principal Engineer	Sr. Engineer Project Manager	Project Engineer	Engineering Intern	LABOR HOURS	SUB (\$)	LABOR TOTAL
		\$ 225.00	\$ 195.00	\$ 135.00	\$ 105.00	--	--	--
1.0	DATA COLLECTION AND WW SYSTEM HYDRAULIC MODEL DEVELOPMENT	4.0	16.0	80.0	160.0	264.0	\$ 8,000	\$ 39,900
2.0	WW HYDRAULIC MODELING AND CAPACITY EVALUATION	2.0	20.0	60.0	140.0	222.0		\$ 27,150
3.0	TECHNICAL MEMORANDUM	2.0	2.0	16.0	30.0	55.0		\$ 6,500
<b>TOTALS</b>		<b>8.0</b>	<b>38.0</b>	<b>156.0</b>	<b>330.0</b>	<b>541.0</b>		<b>\$ 73,550.00</b>