

**Indian River County, Florida
Department of Utility Services
Board Memorandum**

Date: September 17, 2019

To: Jason E. Brown, County Administrator

From: Vincent Burke, PE, Director of Utility Services

Prepared By: Arjuna Weragoda, PE, Capital Projects Manager

Subject: Work Order No. 22 - Water Distribution Model, Calibration, Evaluation and Flushing Plan

Descriptions and Conditions:

On February 4, 2014, the Indian River County Board of County Commissioners (BCC) approved Work Order No. 7 for a lump sum amount of \$24,700.00 with Kimley-Horn and Associates (KHA) to evaluate modeling the existing water distribution system per the November 15, 2011, Continuing Contract Agreement for Professional Services. As part of that work order, KHA updated the existing water system hydraulic model using current Geographical Information System (GIS) data to better represent the current system configuration.

Now that the hydraulic model has been updated to better reflect the existing distribution system, the model needs to be calibrated with actual field conditions. The water demand is the quantity of water that the treatment plants must produce in order to meet all water needs in the community. Water demand includes water delivered to the system to meet the needs of consumers and businesses as well as water supply for firefighting and system flushing. In order to accurately evaluate the existing distribution system within the County, determine its strengths and weaknesses, and predict when and where additional pipeline, storage and pump station capacity is required, a good calibrated hydraulic model must be in place. Once a hydraulic model has been established for the entire County, the model can address things such as hydraulic deficiencies, water quality problems, pressure problems, fire flow requirements, and system flushing optimization while holistically accounting for peak hour demand.

Analysis:

Staff requested that KHA prepare a proposal to update the 2014 model with new infrastructure, calibrate the updated hydraulic model, and provide recommendations for future elevated storage tank operations (if necessary), infrastructure improvements and comprehensive hydrant flushing programs, if required.

The work order is provided in accordance with the Continuing Contract Agreement for Continuing Engineering Services with KHA dated April 17, 2018. The scope is more specifically described in the attached Work Order No. 22. The total negotiated cost for Work Order No. 22

is a total sum amount of \$176,988.00, separated into five (5) tasks. A basic hydraulic model network of the water system in WaterCAD v10 format with one (1) topology configuration being TODAY conditions, a report summarizing the combined water system findings including a list of recommendations, preliminary opinions of probable costs for the recommended improvements, and a technical memorandum and map of hydrant flushing locations will be part of the deliverables. All five tasks will be completed within 32 weeks from the notice to proceed.

Funding:

Funds for this project are derived from the other professional services account in the operating fund. Operating funds are generated from water and sewer sales.

Description	Account Number	Amount
Other Professional Services	47123536-033190	\$176,988.00

Recommendation:

Staff recommends the Board of County Commissioners approve Work Order No. 22 authorizing the above-mentioned professional services and authorize the Chairman to execute the Work Order No. 22 on their behalf for a sum amount of \$176,988.00 to Kimley-Horn and Associates.

Attachment(s):

1. Work Order No.22