

EXHIBIT A
CCNA-2018 WO NO. 5
FOR
INDIAN RIVER COUNTY UTILITIES
GROUNDWATER MODELING AND IMPACT EVALUATIONS IN SUPPORT
OF MODIFICATION OF WATER USE PERMIT NUMBER 10524

This Work Order, when executed, shall be incorporated in and become part of the Agreement for Professional Services (Contract #2018008) between Indian River County (OWNER), and CDM Smith Inc. (CONSULTANT), dated April 17, 2018, hereafter referred to as the Agreement.

PROJECT BACKGROUND

The OWNER owns and operates two Water Treatment Plants [WTPs], the South County WTP and North County WTP. The South County WTP withdraws groundwater from seven existing Upper Floridan Aquifer (UFA) production wells, while the North County WTP relies on groundwater from nine existing UFA production wells. OWNER'S existing Consumptive Use Permit (CUP) (10524) currently allows for a total combined groundwater withdrawal allocation of 12.838 million gallons per day [mgd], with 6.438 mgd from the North County wellfield and 6.40 mgd from the South County wellfield.

The current CUP expires on October 11, 2031. OWNER has experienced an increase in demand due to population growth and domestic self-supply users switching over to OWNER'S water supply. OWNER began a draft application requesting modification of the existing CUP to the St. Johns River Water Management District (SJRWMD) in 2016. Groundwater modeling was performed to determine if there would be impacts on the water resources, environment, or other permitted users due to the anticipated increases in OWNER withdrawals from the UFA. CONSULTANT used a modified version of the South Florida Water Management District (SFWMD) East Coast Floridan Aquifer Model (ECFM) to perform the impact analysis for the UFA. Since the ECFM did not include the Surficial Aquifer System (SAS), the SJRWMD Coupled Aquifer [COUAQ] model was used to determine the drawdown in the Surficial Aquifer System (SAS) due to increased pumping and groundwater level drawdown in the UFA. The groundwater modeling results and analysis were summarized in a report that along with the model input and output files were submitted to the SJRWMD in support of the draft CUP application. SJRWMD staff previously approved the model as the best tool available for UFA uses in the area and the results of the modeling and impact evaluations. In 2016, the primary obstacle for the OWNER in obtaining their CUP modification was impacts to existing legal users near the north wellfield. OWNER developed a mitigation plan which was accepted and approved by the Board of County Commissioners and SJRWMD.

Due to the resurgence of development, the OWNER must now modify the permit to account for the new and future demand projections. Based on actual groundwater withdrawals and an approximate 2 percent increase in demands over time (including an expanded service area), the 2050 demand was calculated to be 23.81 mgd. This is an increase from the existing EOP withdrawal of 12.838 mgd , which was used in the draft 2016 CUP application and the associated groundwater modeling and impact

analysis. Additional modeling simulations are therefore necessary to determine whether the new demand of 23.81 mgd will cause any adverse impacts to water resources, environmental resources, and other legal users.

This Work Order has been developed to provide the groundwater modeling services with the new projected 2050 demands in support of the CUP modification.

SCOPE OF WORK

The following is a description of the work to be provided under this Work Order.

TASK 1 - GROUNDWATER MODELING AND IMPACT EVALUATIONS

The CONSULTANT will perform the required groundwater modeling for inclusion in the initial permit application submittal to SJRWMD. Modeling will be performed using the modified ECFM for the increased UFA allocation and COUAQ model to determine impacts on the SAS consistent with the 2016 modeling and be required by SJRWMD for the 2020 CUP application. These models were used during previous permit modification attempt in 2016 that were initially accepted by SJRWMD.

Up to three (3) groundwater modeling simulations will be performed using the End-of-Permit (EOP) withdrawals for all permitted users, IRCU wells pumping at 0 mgd, and at the requested allocation increase of 23.81 mgd. These three simulations are listed below:

1. Simulation 1 (SIM1) – IRCU wells and other legal user wells within the model domain pumping at their current EOP withdrawal rate. The CONSULTANT has received a geodatabase from SJRWMD containing EOP withdrawals for all permitted users within the model domain.
2. Simulation 2 (SIM2) – IRCU wells pumping turned off (0 MGD) and other permitted user wells within the model domain pumping at their current EOP withdrawal rate. SJRWMD no longer uses 1995 conditions as baseline conditions and uses “pumps off” (0 mgd) for the applicant’s withdrawal for this simulation.
3. Simulation 3 (SIM3) – IRCU wells pumping at their requested withdrawal rate for 2050 (23.81 mgd) and other permitted user wells within the model domain pumping at their current EOP withdrawal rate.

These simulations are consistent with the requirements outlined by the SJRWMD in an email dated October 30, 2019. The latest EOP water use withdrawal database will be obtained from the SJRWMD for other permitted users. The wells from this database will be compared to the permitted user wells used during the previous modeling in 2016. Any wells that have been abandoned or capped since 2016, will be removed from the model while any wells that have been permitted since 2016 will be added to the model.

The distribution of the 2050 (SIM3) pumping rate between IRCU North and South wellfields will be made after consultation with the OWNER.

Model simulations will be used to determine the effects, if any, from the pumpage of the OWNER’s wellfield(s) based on the following resources evaluation criteria:

- No interference with other existing permitted uses (permitted user experiences 10 percent or greater reduction in withdrawal capability);
- Cannot induce saline water intrusion (movement in saline water interface or change in groundwater geochemistry);
- Cannot create or contribute to pollution of the water resources;
- Cannot adversely affect existing offsite land uses;
- Cannot produce impacts to wetlands; and
- No lowering minimum flow and levels for designated water bodies.

CONSULTANT will produce maps showing the anticipated cone of depression for each wellfield pumping scenario and contours of incremental and cumulative groundwater level drawdown due to pumping. These maps will be used in the evaluation of potential impacts to the resource evaluation criteria above. A modeling report describing the model that was used, a description of the simulations performed, the results of the modeling and impact evaluations including figures and tables will be submitted to the OWNER for review and comment. The CONSULTANT will review and incorporate OWNER comments and finalize the groundwater modeling memorandum. This final report will be used to support the application to renew and modify the OWNER's CUP. The groundwater modeling and impact evaluation Technical Memorandum and model input/output files will be included with the permit application package on the SJRWMD ePermitting portal.

TASK 2 - PROJECT AND QUALITY MANAGEMENT

Activities performed under this task consist of those general functions required to maintain the project on schedule, within budget, and that the quality of the work products defined within this Work Order is consistent with CONSULTANT's standards and the OWNER's requirements. Specific activities included are identified below:

Subtask 2.1 - Project Quality Management

CONSULTANT maintains a Quality Management System (QMS) on all projects. In accordance with the QMS, a project planning and scope review meeting will be conducted at the start of the project. In addition, the CONSULTANT's Technical Specialists will perform quality reviews of the deliverables identified in Task 1.

Subtask 2.2 - Project Status Reports

CONSULTANT's project manager will prepare and submit monthly written status reports with each invoice for an anticipated project duration of 4 months.

OTHER SERVICES NOT INCLUDED IN THIS WORK ORDER

This Work Order does not include the following items:

- Development of a water conservation plan
- Development of a Reuse Feasibility Study;
- Unaccounted for water use survey;

- Preparation of a Consumptive Use Permit application
- Permit application fee; or
- Modeling changes for Requests for Additional Information.

OWNER’S RESPONSIBILITIES

The OWNER will provide all available data requested by the CONSULTANT for the purpose of completing the aforementioned tasks. The data necessary for this project are, but not limited to the following:

- Projected water use demands for IRCUD in electronic format.

The OWNER will also provide a timely review of all work products.

SCHEDULE

It is anticipated that the Project will take a total of 3 months to complete, starting within two weeks of receipt of a formal notice to proceed (NTP). The groundwater modeling report with impact evaluations is estimated to be completed within 90 days of Notice-to-Proceed. CONSULTANT will prepare an updated detailed schedule within the first 10 calendar days after Notice to Proceed.

COMPENSATION AND PAYMENT

Compensation for the work described in this Work Order shall be made on the basis of a lump sum fee. The lump sum fee for Tasks 1 and 2, inclusive, is \$64,800 as shown in **Exhibits B-1** and **B-2**. CONSULTANT will invoice OWNER on a monthly basis based on percent complete. For invoice purposes only, the value of each task is as shown in the **Table 1**.

Table 1

TASK VALUE FOR INVOICE PURPOSE		
TASK	DESCRIPTION	VALUE
1	Groundwater Modeling and Impact Evaluations	\$57,390
2	Project and Quality Management	\$7,410
TOTAL WORK ORDER NO. 6 - LUMP SUM		\$64,800