WORK AUTHORIZATION NO. 10
TO THE AGREEMENT FOR REI NO. 2017-172
PROFESSIONAL ENGINEERING SERVICES
BETWEEN THE CITY OF STUART AND
THE FIRM OF KIMLEY-HORN and ASSOCIATES, INC.

PROJECT DESCRIPTION: **PUBLIC SAFETY COMPLEX PFC SITE ASSESSMENT, ADDITIONAL SAMPLING, AND GROUNDWATER MODELING**

I. PURPOSE

This is an attachment to the Master Agreement for Professional Engineering Services, REI #2017-172 dated December 11, 2017, between the City of Stuart (CITY) and the firm of Kimley-Horn and Associates, Inc., (PROFESSIONAL) and made a part thereof. The purpose of this Project Authorization is to authorize PROFESSIONAL to provide engineering services for the PFC remediation assessment, additional sampling, and groundwater modeling at the City's Fire Rescue/Public Safety facility.

II. PROFESSIONAL'S SERVICE

The PROFESSIONAL shall provide professional engineering services for the PFC assessment and modeling as outlined herein.

III. GENERAL SCOPE OF WORK

The PROFESSIONAL'S services shall include, but not be limited to, the following items:

Task 1: Response to FDEP Letter; Prepare Plan for Further Site Assessment

CONSULTANT will prepare and provide a preliminary response to FDEP's response letter. The preliminary response will summarize the City's proposed plan for additional data collection and analyses to be performed. The proposed plan will include preparation of plume, groundwater-flow and particle-tracking maps. The plan also will include additional soil sampling and analysis. Adjustments to the work scope may be necessary pending FDEP's response.

Task 2: Soil Sampling

In April 2018 Ecology and Environment, Inc. (E&E) was contracted by FDEP in part to perform soil sampling at the Fire Rescue Facility. In January 2019, CONSULTANT and CONSULTANT's subconsultant expanded on soil sampling and collected an additional 27 soil samples at nine boring locations. Sampling was collected to a depth of four feet. FDEP's letter stated that horizontal delineation of PFAS

leachability soil cleanup target levels (SCTLs) was not achieved north of the onsite retention pond. To address the horizontal delineation north of the retention pond, a minimum of two soil borings is proposed near the northeast and northwest property boundaries. FDEP may require additional soil boring locations. As such an additional two soil borings are included in this proposal to further delineate horizontally. At each boring location, samples will be collected between 0 and 6 inches below land surface (bls), between 6 inches and 2 feet bls and at 2-foot intervals thereafter down to 10 feet or until the water table is intercepted (whichever is shallower).

The FDEP letter also stated that vertical delineation was not achieved at boring locations: Pond NE-SB, Pond NW-SB, DWSB-4 and DWSB-5. To address the vertical delineation at these locations, soil borings immediately adjacent to these locations are proposed with 2-foot sample intervals between 4 feet and 10 feet bls. Due to the close proximity of locations DWSB-4 and DWSB-5, one additional soil boring is proposed midway between these locations.

A total of 7 soil borings and a total of 34 soil samples (33 samples and 1 duplicate sample) are included in this work scope. If the additional two borings are not required for horizontal delineation, a total of 21 samples will be collected. CONSULTANT will secure the services of JAEE Environmental to assist in retrieving soil samples. JAEE previously provided direct-push "Geoprobe" services during the January 2019 sampling event. Each sample will be analyzed for PFAS using EPA Method 537. One equipment rinsate blank and one trip blank also will be analyzed for PFAS using EPA Method 537. CONSULTANT will coordinate with the City and the laboratory contracted with the City for the shipment and analysis of the samples. **Please note: this work scope assumes the City will handle laboratory fees and disposal of soils (investigation derived waste)**. Soil samples will be collected using a stainless-steel hand auger. Decontamination procedures will be performed between each sample collection in accordance with FDEP Standard Operating Procedures (SOP).

Task 3: Groundwater Modeling

Utilizing the available data collected and sampled in January 2019 (21 samples at 7 locations), CONSULTANT will construct groundwater flow and transport models of the Site and surrounding area using MODFLOW-USG. Model construction will use a combination of available site-specific data, and information from databases and documents provided by entities such as the Florida WMDs, USGS, FDEP, and the City. This will also involve extracting relevant input from models developed previously to address contamination and wellfield withdrawals in the area.

Initial model development will focus on groundwater flow conditions, relying on historical water level and hydrogeologic data to update existing models as appropriate. Once the flow model is constructed and applied to simulate historical groundwater flow conditions, input needed for solute transport simulations will be incorporated into the model. This will involve identifying applicable parameters that influence transformation and migration of the chemicals of concern (COC), including partitioning between solid

and aqueous phases (e.g., porosity, bulk density, distribution coefficient, retardation factor) and historic source loadings. Input for partitioning will rely upon literature values as well as available site-specific concentrations detected in soil and groundwater samples. Recently collected soil and water quality data will be used to estimate initial conditions and possible historic COC source loadings.

The transport model will be applied to perform simulations to evaluate historic COC migration and existing and potential future concentrations and distributions. Simulation results will provide estimates of concentrations-versus-time estimates for COCs at select locations for the various scenarios evaluated. Results will also provide for estimates of the vertical and horizontal extent of COC impacts due to releases at the Safety Complex. It is anticipated that modeling results will assist with identifying preferred options for efficient and cost-effective future wellfield operations. Appropriate solute transport scenarios will be identified via input by KHA and the City following the first meeting following Task 2.

TASK 4: Site Assessment Reporting

After receiving the analytical results from soil sampling and completing groundwater modeling efforts, CONSULTANT will revise the site assessment report to address FDEP's letter. The report will include sampling procedures, analytical results, lithological boring logs, field notes, results from groundwater modeling and other miscellaneous items noted in FDEP's letter.

A site assessment plan will be prepared for submittal to FDEP. The plan will outline the proposed additional soil and groundwater sampling as described in the tasks above. CONSULTANT will assist the City in responding to questions or comments from FDEP. Adjustments to the work scope may be necessary pending FDEP's response.

CONSULTANT will provide additional evaluation of remediation techniques.

TASK 5: ¼ Mile Radius Review of Existing Groundwater Supplies

CONSULTANT will review the South Florida Water Management District (SFWMD) online database for permitted wells within a ¼-mile radius of the site, and Martin County Health Department (MCHD) will be contacted to obtain any readily available information on private wells. Groundwater wells identified with ¼-mile of the site will be tabulated and identified on a figure.

CONSULTANT will also perform a walking survey of all public streets within the review area for obvious indications of a private well, consisting of above grade plumbing/pumps, green grass, and any iron staining on houses, fences, etc. Potential private wells identified from the walking survey also will be tabulated and identified on a figure. CONSULTANT will review existing GIS files provided by City for known potable water meter connections, ruling out potential potable groundwater wells on existing properties. CONSULTANT will review literature (pamphlet, door hanger, letter,

etc.) that will be provided to residents within the review area. Performing a door-to-door survey is not included in this work scope.

It is assumed the City will provide "door-to-door" flyers requesting information on property owner supply wells. The City will furnish the results of the flyer surveys to CONSULTANT for incorporation into a summary report.

IV. WARRANTY

The PROFESSIONAL warrants that the services provided, as a result of this Work Authorization are complete, correct and suitable for the purpose intended.

V. DELIVERABLES

The PROFESSIONAL shall supply documents as requested.

VI. PLANS AND DOCUMENT OWNERSHIP

The supporting information will become the property of the CITY upon completion of this Project. Computer software using Microsoft Excel and Word (latest version) will be used in the preparation of documents. If other software is used, it is to be translated to the aforementioned software.

VII. SCHEDULES AND TIME CONSTRAINTS

PROFESSIONAL will complete review of information and attend meetings in a timely manner and mutually agreed upon schedule. It is anticipated that the following schedule to complete this work authorization will be as follows.

TASK 1 – RESPONSE LETTER TO FDEP; PREPARE PLAN FOR FURTHER SITE ASSESSMENT	**As needed**
TASK 2 – SOIL & SAMPLING	
Geoprobe sample collection	**2 weeks after NTP**
Lab sampling & Results	**4 weeks after sample collection**
TASK 3 – GROUNDWATER MODELING	**4-6 weeks after Task 2**
TASK 4 – SITE ASSESSMENT REPORTING	**After Task 2 & 3 completion**
TASK 5 - ¼ MILE REVIEW OF WELLS	**4 – 8 weeks**

VIII. COMPENSATION

Payment for all services will be in accordance with the Standard Agreement for Civil Engineering Services. Total compensation shall, based on the man hours

shown on Exhibit B, for all services, material, supplies and any other items or requirements necessary to complete the work as described herein to include actual salary costs, overhead and profit in an amount equal to 100% of actual salary cost and reimbursement of actual direct non-salary expenses shall not exceed **$84,675.00** dollars.

IX. ADDITIONAL TERMS

All exclusions and additional provisions agreed to in the original Agreement are to remain in full effect during the implementation of the project.

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

PROFESSIONAL: **KIMLEY-HORN AND ASSOCIATES, INC.**

By: _____
(Signature)

BY: ___Brian Good, P.E., Principal_
Corporate Officer Name and Title

Date: _____ ATTEST:_____

APPROVED AS TO COMPLIANCE WITH PURCHASING & CONTRACTS POLICIES AND
PROCEDURES

_____ Date _____
Holly Vath
Financial Services Assistant Director

TECHNICAL PROVISIONS OF CONTRACT AND BUDGETARY REQUIREMENTS APPROVED

_____ Date _____
David D. Peters
Director Public Works

APPROVED AS TO FORM AND LEGALILITY FOR THE USE AND BENEFIT OF STUART CITY ONLY

_____ Date _____
Michael J. Mortell
City Attorney

CITY CLERK

_____ Date _____
Mary Kindel
City Clerk

EXHIBIT A

"PROFESSIONAL'S PERSONNEL HOURLY RATE SCHEDULE"

POSITION	HOURLY BILLING RATE
Senior Principal	$255.00
Principal	$225.00
Senior Project Manager	$195.00
Construction Project Manager	$175.00
Project Manager	$160.00
Analyst	$105.00
Design / CADD Technician	$115.00
Traffic Technician	$85.00
Office Manager	$84.00
Clerical	$65.00

EXHIBIT B

ESTIMATE FOR ENGINEERING SERVICES

PROJECT: City of Stuart - PFC Remediation ASSESSMENT, ADD SAMPLING & GW MODELING							SHEET 1 OF 1				
CLIENT: CITY OF STUART PUBLIC WORKS							FILE NO.				
ESTIMATOR: MDM							DATE: 5-24-19				
BASIS FOR ESTIMATE:											
ASSESSMENTS, SAMPLING, MODELING											
DESCRIPTION:		DIRECT LABOR (MAN-HOURS)									
	ASSESSMENTS, SAMPLING, MODELING	PRIN	SR PROJ MGR	PM	DESIGN TS/NB	ANALYST	CLK	EXP SUB	Dir Exp	LINE TOTAL	
NO.	TASK										
1	**FDEP RESPONSE**										
	Prepare, submit Response to FDEP	6					4			$1,610	
	JLA							$4,089		$4,089	
											$5,699
2	**SOIL & GROUNDWATER SAMPLING**										
	Coordinate and conduct testing	6		6			4			$2,570	
	Soil sampling JLA							$5,200		$5,200	
	Groundwater sampling JLA							$10,637		$10,637	
											$18,407
3	**GROUNDWATER MODELING**										
	Conduct modeling - JLA	6					4	$31,850		$33,460	
											$33,460
4	**SITE ASSESSMENT REPORT**										
	Prepare summary report	8		8			12			$3,860	
	JLA							$7,288		$7,288	**$11,148**
5	**1/4 MILE REVIEW OF SUPPLH WELLS**										
	Review GIS Files & Info on existing water services	6		34			12			$7,570	
	JLA							$8,391		$8,391	**$15,961**
		32	0	48	0	0	36	$67,455		**$84,675**	**$84,675**
	LABOR ($/HOUR)	225	195	160	115	105	65				
	SUBTOTAL	7200	0	7680	0	0	2340	67455	0		