

PALM BEACH COUNTY  
BOARD OF COUNTY COMMISSIONERS  
AGENDA ITEM SUMMARY

Meeting Date: January 10, 2017

Consent [X]  
Public Hearing [ ]

Regular [ ]

Department: Water Utilities Department

I. EXECUTIVE BRIEF

**Motion and Title: Staff recommends motion to approve:** Consultant Services Authorization (CSA) No. 15 for the Water Treatment Plant (WTP) No. 2 Expansion Study (Project) with Kimley-Horn and Associates, Inc. in the amount of \$173,892.60.

**Summary:** On June 3, 2014, the Board of County Commissioners (BCC) approved the Water Utilities Department (WUD) Engineering/Professional Services Contract (Contract) with Kimley-Horn and Associates, Inc. (R2014-0829). CSA No. 15 provides for a conceptual study to expand WTP No. 2 from 16.4 MGD to 30 MGD. The future expansion of WTP No. 2 is necessary to maintain adequate capacity for growth, satisfy increased bulk water customer demand, and accommodate the flushing of water mains to maintain water quality. The Project will determine the treatment technology, site layout, interim improvements, and projected capital and operating costs. The WTP No. 2 expansion design began in 2016 with construction to be completed in 2023. The Small Business Enterprise (SBE) participation goal established by the SBE Ordinance (R2002-0064) is 15% overall. The Contract provides for SBE participation of 20%. CSA No. 15 includes 13.69% overall participation. The cumulative SBE participation is currently 18.04% overall and will be 17.35% once CSA No.15 is signed. Kimley-Horn and Associates, Inc. is a Palm Beach County company. The Project is included in the FY17 Capital Improvement Plan adopted by the BCC. (WUD Project No. 17-019) District 2 (MJ)

**Background and Justification:** The Water Master Plan Update was completed by Carollo Engineers, Inc. in September 2012 and recommended expansion of WTP No. 2 to 30 MGD in 2024 to maintain a 10% reserve capacity. Increased flow has occurred in the northern portion of the service area served by WTP No. 2 and WTP No. 8 due to growth, increased bulk water usage and the increased flushing of water mains to maintain water quality. The Project will establish water quality goals, compare various options for expansion of raw water supply, treatment and storage capacity, and provide recommendations for future capital planning and budgeting.

**Attachments:**

1. Location Map
2. Two (2) Original CSA No. 15

Recommended By:

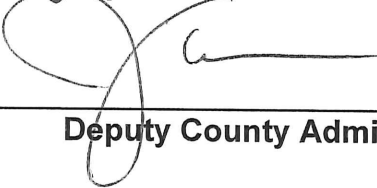


Department Director

12-9-16

Date

Approved By:



Deputy County Administrator

1-4-17

Date



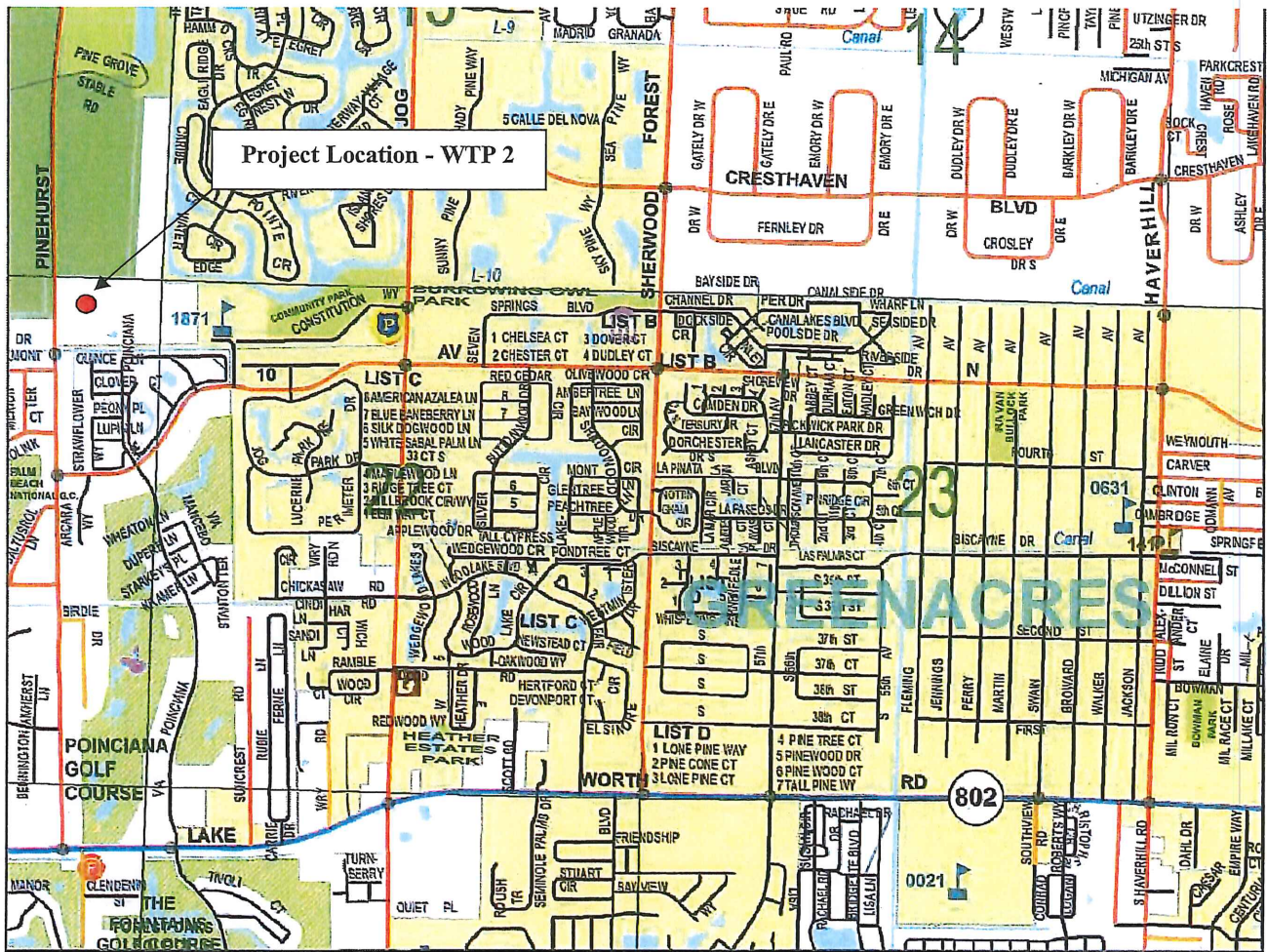
ATTACHMENT I  
Location Map

TWP  
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TWP  
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RNG 42

See pg 89

RNG 42

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WUD 17-019 WTP2 Expansion Study

**CONSULTANT SERVICES AUTHORIZATION NO. 15**

**Project Title: Water Treatment Plant No. 2 Expansion Study**

**Project No. WUD: 17-019**

**Budget Line Item No. 4001-720-2322-3120**

**District No.: 2**

**THIS AUTHORIZATION No. 15** to the Contract for Engineering/Professional Services for Water Plant & Water Resources Engineering Consulting Services dated June 3, 2014 (R2014-0829), by and between Palm Beach County and the Consultant identified herein, is for the Consultant Services described in Item 3 of this Authorization. The Contract provides for 20% SBE participation overall. This Consultant Services Authorization includes 13.69% SBE participation. The cumulative SBE participation, including this authorization is 17.35% overall.

1. CONSULTANT: Kimley-Horn and Associates, Inc.
2. ADDRESS: 1920 Wekiva Way, West Palm Beach, FL 33411
3. Description of Services to be provided by the Consultant:

Consultant will perform an Expansion Study for the future addition of a membrane treatment plant expansion at Water Treatment Plant No. 2.

**See ATTACHMENT A.**

4. Services completed by the Consultant to date (Summary and Status of Authorizations):

**See ATTACHMENT E.**

5. Consultant shall begin work promptly on the requested services.
6. The compensation to be paid to the Consultant for providing the requested services shall be:
  - A. Computation of time charges plus expenses, not to exceed \$ N/A
  - B. Fixed price of \$173,892.60
7. This Authorization may be terminated by the County without cause or prior notice. In the event of termination not the fault of the Consultant, the Consultant shall be compensated for all services performed through the date of termination, together with reimbursable expenses (if applicable) then due.

Project Title: Water Treatment Plant No. 2 Expansion Study

- 8. SBE participation is included in **Attachment D** under this Authorization. The attached **Schedule 1** defines the SBE applied to this Authorization and **Schedule 2** establishes the SBE contribution from each subconsultant (Letter of Intent to Perform as an SBE).
- 9. EXCEPT AS HEREBY AMENDED, CHANGED OR MODIFIED, all other terms, conditions and obligations of the Contract dated June 4, 2014 remain in full force and effect.

IN WITNESS WHEREOF, this Authorization is accepted, subject to the terms, conditions and obligations of the aforementioned Contract.

PALM BEACH COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA

Sharon R. Bock, Clerk & Comptroller,  
Palm Beach County

Palm Beach County,  
Board of County Commissioners

ATTEST:

Signed: \_\_\_\_\_

Signed: \_\_\_\_\_

Paulette Burdick, Mayor

Typed Name: \_\_\_\_\_

Deputy Clerk

Date

JCS

Approved as to Form and Legal  
Sufficiency

Signed: \_\_\_\_\_

Typed Name: \_\_\_\_\_

County Attorney

ATTEST:

Mark D. Miller  
\_\_\_\_\_

(Witness Signature)

MARK D. MILLER, V.P.  
\_\_\_\_\_

(Name and Title)

CONSULTANT: \_\_\_\_\_

Kevin Schanen  
\_\_\_\_\_

(Signature)

Kevin Schanen, V.P.  
\_\_\_\_\_

(Name and Title)

12/5/16  
\_\_\_\_\_

Date

Kimley-Horn and Associates, Inc.  
FULL CONTRACT SIGNING AUTHORITY  
December 17, 2015

CALIFORNIA

LOS ANGELES DT

Blume, Robert D.  
Phaneuf, Alyssa S.

LOS ANGELES SFV

Fares, Jean B.

OAKLAND

Dankberg, Adam J.  
Durrenberger, Randal R.

ORANGE

Adrian, Darren J.  
Ciandella, Serine A.  
Fares, George B.  
Hourigan, E. Vincent  
Kerry, Nicole M.  
Matson, Jason B.  
Phillips, Chad E.

PLEASANTON

Mowery, Michael C.  
Sowers, Brian E.

SACRAMENTO

Coppin, Thomas G.  
Melvin, Enda  
Squires, Christopher A.

SAN DIEGO

Barlow, Matthew T.  
Harry, Jennifer L.  
Kaltsas, Joseph D.  
Knaption, Michael J.  
Landaal, Dennis J.  
Podegracz, Anthony J.  
Ross, Michael S.

SAN JOSE

Hedayat, Leyla  
Venter Frederik J.

FLORIDA

BOCA-DELRAY

Schwartz, Michael F.  
Webber, Jason A.

CORAL GABLES

Fernandez, Jorge L.

FORT LAUDERDALE

Alam, Mudassar M.  
Barnes, Roy R.  
Capelli, Jill A.  
Kyle, Gregory S.  
Ratay, Gary R.  
Saxena, K.K.

JACKSONVILLE

Mecca, Joseph P.  
Roland, George E.

LAKELAND

Bulloch, Kelly B.  
Wilson, Mark E.

MIAMI

Baldo, Burt L.  
Buchler, Aaron E.

OCALA

Bryant, M. Lewis  
Busche, Richard V.

ORLANDO

Chau, Hao T.  
Jackson, Jay R.  
Martin, Jonathan A.  
Mingonet, Milton S.  
Thigpen, Jonathan D.

SARASOTA

Nadeau, Gary J.  
Schmid, Seth E.  
Stovall, Thomas M.

TALLAHASSEE

Barr, Richard R.  
Sewell, Jon S.

TAMPA

Campbell, David C.  
Gilner, Scott W.  
White, Wayne E.

VERO BEACH

Cave, Derrick B.  
Good, Brian A.  
Peed, Brooks H.  
Roberson, Kevin M.

WEST PALM BEACH

Atz, John C.  
Bardt, David R.  
Cherry, Paul L.  
Ingram, Jerry W.  
Jackson, Kenneth W.  
Mufleh, Marwan H.  
Rapp, Bryan T.  
Schanen, Kevin M.  
Sumislaski, James M.  
Walthall, David W.

MID-AMERICA

CHICAGO

DOWNTOWN

Dvorak, Jr., William E.  
Morton, Jr., Arthur J.

CHICAGO

SUBURBAN

Antony, Dean M.

NEW YORK

Nejad, Anush A.

NORTHERN VIRGINIA

Barber, Christopher G.  
Chavers, James T.  
Lefton, Steven E.  
Martin, Robert J.  
Murphy, Terence T.  
Sauro, Thomas J.  
Whyte, Richard D.  
Yarnal, Brian D.

RICHMOND

Brewer, Brian J.  
White, Timothy E.

TWIN CITIES

Bishop, Mark C.  
Danielson, Paul B.  
Horn, Jon B.  
Leverett, Christopher C.  
Smalkoski, Brian R.

VIRGINIA BEACH

Carter, Erica V.  
Mackey, William F.  
Marscheider, Edward A.  
Nash, William A.  
Tewksbury, Carl F.

MOUNTAIN

DENVER

Colvin, Scott W.  
Phelps, Randall J.  
Rowe, Curtis D.  
Salvagio, Robin

LAS VEGAS

Ackeret, Kenneth W.  
Colety, Michael D.

MESA

Margetts, Sterling T.  
Marin, Laura S.

PHOENIX

Conrad, John R.  
Hermann, Michael J.  
Kissinger, John C.  
Leistiko, David J.  
Mutti, Brent H.  
Noon, Lisa K.  
Omais, Ahmad A.  
Pretorius, Petrus S.  
Purtle, Vicki L.  
Schiller, Michael G.  
Walnum, Nathan C.

TUCSON

Crowther, Brent C.

SOUTHEAST

ALPHARETTA

Fanney, Lawson H.

ATLANTA

Rushing, Michael L.  
Walker, John D.  
Wilson, Deborah L.

ATLANTA MIDTOWN

Fink, Kenneth L.  
Meador, Emily H.  
Montanye, Emmeline F.  
Ross, Robert A.  
Stricklin, David L.  
Webb, Floyd C.

CARY

Adams, Richard C.  
Barber, Barry L.  
Byrd, Michael N.  
Cook, Richard N.  
Deans, Neil T.  
Dunzo, Mark W.  
Flanagan, Tammy L.  
McEntee, David L.  
Nuckols, Charles A.  
Rohrbaugh, Richard R.  
Venters, Samantha  
Voisin, William J.  
Wilson, Jon E.  
Wilson, Mark S.

CHARLOTTE

Blakley, Jr., Stephen W.  
Edwards, Matthew A.  
Hume, Robert M.  
Wilhelm, William R.

MEMPHIS

Collins, James F.  
Danley, Drake E.

NASHVILLE

Benditz, John F.  
Rhodes, Christopher D.

RALEIGH-DOWNTOWN

Burchett, Thomas F.  
Penny, H.D.

TEXAS

AUSTIN

Boecker, Brian C.  
Van Leeuwen, Andrew

DALLAS

Burns, Gregory B.  
Hall, James R.  
Henigsman, Dean A.  
Hoppers, Kevin P.  
Nathan, Aaron W.  
Smith, Eric Z.  
Swindler, Roderick P.  
Wilshire, Roy L.

FORT WORTH

Arnold, Scott R.  
Gary, Glenn A.  
James, Jeffery

FRISCO

Brignon, Brit A.  
McCracken, Paul D.

HOUSTON

Frysiner, Chris V.  
Guillory, Michael B.

LAS COLINAS

Tribble, Guy B.  
Warren, Loy F.

## LIST OF ATTACHMENTS

**Project No. WUD 17-019 Consultant Services Authorization No. 15**

**Project Title: Water Treatment Plant No. 2 Expansion Study**

ATTACHMENT - A	Scope of Work
ATTACHMENT - B	Budget Summary
ATTACHMENT - C	Project Schedule
ATTACHMENT - D	SBE Schedule 1, 2, 3a and 4
ATTACHMENT - E	Authorization Status Report - Summary and Status of Authorizations
ATTACHMENT - F	Authorization Status Report – Summary of SBE Tracking
ATTACHMENT - G	Location Map

**ATTACHMENT A**

**CONSULTANT SERVICES AUTHORIZATION NO. 15**

**PALM BEACH COUNTY WATER UTILITIES DEPARTMENT  
ENGINEERING/PROFESSIONAL SERVICES**

**SCOPE OF WORK  
FOR**

**Water Treatment Plant No. 2 Expansion Study**

**INTRODUCTION**

Palm Beach County (COUNTY) entered into an agreement entitled Contract for Engineering/ Professional Services - Palm Beach County Utilities Department Project No. WUD 14-007 (CONTRACT) with Kimley-Horn and Associates, Inc. (CONSULTANT) to provide engineering services for various general activities (Reference Document R2014-0829 dated June 3, 2014). This Consultant Service Authorization will be performed under that CONTRACT.

This Consultant Services Authorization encompasses providing services related to conducting a conceptual expansion study to determine appropriate locations and phasing of a future membrane treatment plant expansion at Water Treatment Plant No. 2 (WTP2). The study will consider the addition of an initial 10 MGD of membrane treatment capacity, while providing flexibility for the future membrane treatment, storage and related facilities to an ultimate capacity of 25 MGD, and possibly 30 MGD buildout capacity.

The CONSULTANT will base this study on information developed during the evaluation of existing treatment facilities at WTP 2 summarized under previous work prepared by others.

The CONSULTANT will use the professional services of C&W Engineering, Inc. for electrical engineering services, and JLA Geosciences, Inc. to evaluate deep injection well siting and sizing requirements.

**BACKGROUND**

Palm Beach County Water Utilities Department (PBCWUD) WTP2 has a current rated capacity of 16.4 MGD and desires to evaluate the feasibility of using membrane treatment as an alternative to the existing treatment process. The treatment process at this facility consists of 16.4 MGD of fluidized bed of magnetic anion exchange (MIEX) to reduce organics, 14.5 MGD lime softening (Unit No. 1 – 3.5 MGD and Unit No. 2 - 11.0 MGD) to reduce hardness, filtration through recently constructed dual-media sand filters, and bypass blending up to 1.9 MGD of ion exchange treated water with lime softened water. Filter backwash water is discharged to a new concrete lined basin, where decant water is recovered and returned to the head of the lime plant. Spent lime sludge is discharged to on-site lagoons for settling followed by drag-lining for drying on the ground.

Using a membrane treatment process in the future for softening and treating drinking water has several advantages over the lime softening process, particularly with regards to disinfection byproduct precursor removal. Membrane softening does not produce spent lime sludge, reduces chloride levels, reduces color significantly, reduces total organic carbon (TOC) more effectively than anion exchange, and reduces other contaminants having a high molecular weight. Selection



of a specific membrane allows the membrane softening treatment process to remove specific contaminants which is not possible with the lime softening process. Operation of the membrane treatment process is more automated and less prone to upsets than lime softening.

Membrane treatment, whether reverse osmosis to remove chloride or nanofiltration to soften, represents the treatment process of the future for drinking water. Applying membrane treatment at WTP 2 is a decision that can be made in the future. To leave that option available the site must be able to accommodate the facilities and components associated with a membrane treatment process.

**SCOPE OF SERVICES**

CONSULTANT will examine application of membrane softening at this facility. The current projected ultimate capacity of 25 MGD in 2024 with future expansion to 30 MGD for this facility will be used to identify plant components, their size, and location on the site should membrane softening be added in the future. The following key components will be considered in the study:

<u>TODAY (Existing)</u>	<u>FUTURE</u>
16 Surficial Aquifer Supply wells	17 additional Surficial Aquifer Supply wells (21 additional wells are already permitted)
No ASR well	One ASR well (already permitted)
16.4 MGD treatment capacity	10 MGD additional capacity upgrade by 2024 25 MGD total ultimate capacity 30 MGD total buildout capacity
7.5 MG total storage (One 2.5 MG and one 5.0 MG storage tank)	Space to add up to 3 new 5 MG tanks (total storage up to 22.5 MG)
	One Class I Deep Injection Well

Four distinct project phases are important to evaluate, consisting of:

1. Rehabilitation and replacement to maintain system reliability to 2024
2. Addition of Class I Deep Injection Well for disposal of the MIEX waste regenerant (brine) and future membrane treatment concentrate (byproduct).
3. Addition of raw water Surficial Aquifer Supply wells
4. Treatment plant expansion (10 MGD additional by 2024, 25 MGD total ultimate and 30 MGD buildout)

CONSULTANT shall perform the engineering Scope of Services for Phase 2 and Phase 4, including evaluation of a treatment expansion using membrane softening, as described herein.

**Task 1 - Develop WTP Site Plans**

CONSULTANT will develop one existing and three future (3) site plans of the water treatment plant for incremental application of membrane pretreatment with chemical facilities, membrane treatment, post treatment, transfer pumping, finished water storage tanks, high service pumping and disposal of the MIEX waste regenerant (brine) and future membrane treatment concentrate (byproduct) through a Class I deep injection well. Criteria for setbacks included in the Palm Beach County Unified Land Development Code (ULDC) will be applied. Any temporary and permanent easement requirements will be identified.

Using the identified treatment component capacities, CONSULTANT will develop the approximate physical size of the proposed membrane facilities and supporting systems. CONSULTANT will  
Rev. 5-27-15

prepare site plans showing all existing major facilities and proposed improvements including major pipelines and ground storage tanks.

CONSULTANT will coordinate its efforts with the ongoing generator study performed by others, Smith Engineering Consultants, Inc. CONSULTANT will develop up to three (3) future electrical site plans to identify locations of main power feeds, significant ductbanks, electrical equipment, standby generators and associated fuel storage and a concentrate wetwell and repump station to inject membrane concentrate down the deep injection well.

CONSULTANT will develop site plans to accommodate the treatment processes and components shown on the process flow diagrams (PFD's) including construction of any new facilities while maintaining operation of the existing facilities until they are no longer needed. Up to four (4) construction phasing plan options will be developed with the mindset of minimizing interruptions and impacts to operations and treatment capacity.

Siting of a new Class I deep injection well will be shown on each site plan.

## **Task 2 - Expansion Study**

CONSULTANT will prepare a report (Study) containing schematic layouts, PFD's, single line diagrams, site plans, and conceptual design criteria with appropriate exhibits to indicate the considerations involved (including applicable requirements of governmental authorities having jurisdiction), the alternative solutions available to the COUNTY and setting forth CONSULTANT findings and recommendations related to the potential application of membrane treatment at WTP2.

CONSULTANT will develop two (2) distinct Process Flow Diagrams (PFD):

1. Proposed 25 MGD ultimate capacity facility using membranes as a primary treatment process.
2. Proposed 30 MGD buildout capacity facility using membranes as a primary treatment process.

Each PFD will include equipment and pipe sizes, capacities, and engineering data. Each PFD will include the required supporting chemical systems and general sizing of each. Bypass and blend ratios will be identified, along with projected finished water quality TOC values.

Each PFD with the membrane treatment processes identified above will include MIEX treated blend water from the Surficial Aquifer Supply wells to produce drinking water meeting the finished water quality goals similar to, and as established for WTP 3 and WTP 11. Each of these PFDs will include pretreatment, membrane treatment, post treatment, clearwell and mixing, transfer pumping, finished water storage tanks, high service pumping and disposal of the MIEX waste regenerant (brine) and future membrane treatment concentrate (byproduct) through a Class I deep injection well, including a concentrate wetwell and injection well booster pumping station or the existing forcemain.

CONSULTANT will develop up to three (3) single line power diagrams for the new facility, based on conceptual electrical/motor loads, including normal and backup power requirements.

CONSULTANT will develop single line power plans for the proposed deep injection well improvements, including normal and backup power requirements, as listed in Task 3, including the need for a concentrate wetwell and repump station to inject membrane concentrate down the injection well.

CONSULTANT shall provide preliminary sizing and location of a future Class I deep injection well for the membrane treatment facilities under Task 3.

CONSULTANT will identify raw water capacity requirements based on the use of specific membrane treatment processes and an estimated recovery rate through the membrane treatment process. CONSULTANT will review blend ratios in order to maximize raw water blend and reduce operating costs without jeopardizing finish water quality.

CONSULTANT will conduct up to three jar tests with MIEX treated raw water from WTP2 and permeate from either of the existing water treatment plants WTP3 or WTP9. The disinfection byproduct formation potential will be tested in order to evaluate the optimum blend ratio of MIEX treated water and membrane permeate. Raw water influent water quality parameters and treated water quality goals will be presented and discussed in the Study.

CONSULTANT will review raw water quality as a basis for determining the type of pretreatment necessary for the membrane treatment process, and if the existing components can be used for pretreatment. It is assumed raw water quality planned to be collected under a separate CSA by others, JLA Geosciences, Inc., for the WTP2 wellfield will be available.

CONSULTANT shall identify additional standby generator capacity and fuel sizing requirements. Each of the associated components shall be located on the proposed site plans maintaining the minimum separation distances from Surficial Aquifer Supply wells and other monitor wells, as required by applicable regulations.

CONSULTANT will address anticipated construction sequencing for the implementation of potential membrane treatment expansion while continuing treatment. Discussion will also be presented to address requirements when treatment will be interrupted or discontinued to allow construction of additional capacity.

CONSULTANT will develop project schedules for each of the proposed project phases.

CONSULTANT will review the anticipated permits required to construct the intended improvements, which at a minimum may include permits from FDEP, LWDD, SFWMD, PBC Parks and Recreation, and PBC Building Department (e.g. quantify revised recharge volume flow value, from Lake Worth Drainage District (LWDD) canal to determine Riverbridge Canal recharge rate.

CONSULTANT will prepare AACE Level 5 planning level estimates of the Total Project Costs to construct the membrane treatment and related facility components. This opinion of probable costs for the project shall include the following, which will be separately itemized: Construction Cost, allowance for engineering costs and contingencies, and allowances for such other items as charges of all other professionals and consultants. Operational cost projections for existing and proposed treatment processes (e.g. MIEX, lime, membrane) associated with electrical power, chemical, labor, materials (e.g. membrane replacement) and other related maintenance expenses will be separately quantified assuming a 20-year life cycle.

CONSULTANT will prepare a draft version of the Expansion Study for review and comment by PBCWUD stakeholders. CONSULTANT will prepare a final version of the Expansion Study to incorporate review comments by PBCWUD stakeholders.

### **Task 3 – Evaluate Deep Injection Well Siting and Sizing**

CONSULTANT will evaluate siting and sizing of a new Class I deep injection well (DIW) using tubing and packer construction. The DIW is intended to be used for disposal of the MIEX waste regenerant (brine). Additionally, the DIW should be sized to include capacity for the future membrane treatment concentrate (byproduct). Therefore, the well should be sized for both flow

streams and buildout capacity. It is anticipated that an injection rate of up to 6,000 gpm peak flow will be necessary, based on 30 mgd membrane treatment capacity at 80% recovery.

The evaluation will address the following components:

- Review of existing yard piping, structures and stormwater retention areas for purpose of establishing temporary construction access and permanent access routes for routine testing and maintenance and possible future repair and rehabilitation (requiring remobilization of large equipment).
- Review of potential locations of associated dual zone monitor well (DZMW). Regulatory requirements restrict the location of a DZMW to be no greater than 150 feet from the DIW, and a distance of eighty (80) feet is a suggested minimum distance from a DIW.
- Determine viable construction, storage and future testing footprint areas for drilling equipment and material (e.g. casing) handling for both wells.
- Review the need for a concentrate wetwell and repump station to inject membrane concentrate down the injection well.

CONSULTANT will determine the necessity to request a variance of the wellfield protection program. The State wellfield protection program is governed by Chapter 62-521FAC and the intent of the program is to protect potable water wells from contamination. The wellfield protection program defines a protection radius of 500 feet around a potable water well where a Class I injection well is prohibited. However, in specific circumstances, FDEP will grant a variance to the 500-foot radial setback, if it can be clearly demonstrated that the variance is in the public's interest and will not present a danger to the public's health, safety or welfare.

CONSULTANT will determine if it is appropriate to relocate existing or proposed on-site Surficial Aquifer Supply well locations or the future ASR well within the 500 foot radial setback due to impacts of the siting of the deep injection well. The capacity of the well, including inner tubing and casing, should include disposal of MEX waste regenerant (brine) and future membrane treatment concentrate (byproduct) at the projected 30 mgd buildout capacity.

Each of the site plans prepared under Task 3 will depict the location of the DIW, including monitoring well, surge tank, ancillary equipment, and containment pad.

CONSULTANT will prepare a draft Deep Injection Well Siting Evaluation Technical Memorandum. CONSULTANT will meet with PBCWUD staff to discuss the findings included in the draft technical memorandum. CONSULTANT will finalize the technical memorandum based on discussions with PBCWUD staff.

CONSULTANT will prepare AACE Level 5 planning level estimates of the deep injection well costs and supporting equipment and systems. This opinion of probable costs for the project shall include the following, which will be separately itemized: Construction Cost, allowance for engineering costs and contingencies, and allowances for such other items as charges of all other professionals and consultants.

#### **Task 4 - Meetings**

CONSULTANT will organize and lead up to three (3) progress and three (3) workshop meetings. Meeting notes shall be distributed electronically to all attendees within three business days including identification of assigned actions and due dates.

## **INFORMATION PROVIDED BY PBCWUD**

- Current Water Use Permits
- Record drawings of site and on-going improvements at WTP2
- Raw water quality for existing wells
- Other permits (SFWMD, LWDD)
- Access to the site

## **ITEMS TO BE PROVIDED BY PBCWUD**

- Electronic AutoCAD (\*.DWG) files of existing WTP2 facilities and piping (underground and above ground).
- Existing WTP site plan approved by PZ&B in PDF and DWG.

## **DELIVERABLES**

1. Task 1 Water Plant Site Plans - Draft
2. Task 1 Water Plant Site Plans - Final
3. Task 2 Expansion Study - Draft
4. Task 2 Expansion Study – Final bound with CD including PDF files
5. Task 3 Deep Injection Well Siting Evaluation Technical Memorandum – Draft
6. Task 3 Deep Injection Well Siting Evaluation Technical Memorandum - Final

Eight (8) copies of each deliverable shall be submitted. Electronic versions of all deliverables shall be provided in both native (e.g. DOC, XLS, DWG, etc.) and PDF file formats.

## **COMPENSATION**

The services included in this CSA are based on a lump sum value of \$173,892.60.

Refer to **ATTACHMENT B** – Budget Summary for a further breakdown of the fee.

## **SBE PARTICIPATION**

### **1. SCHEDULE 3(A) – Professional Services Activity Report**

This form shall be submitted by the prime contractor with each payment application when SBE and/or M/WBE sub-consultants are utilized in the performance of the contract. This form shall contain the names of all SBE and M/WBE sub-consultants, specify the sub-consultants dollar amount for each sub-consultants and show amount drawn and payments to date issued to sub-consultants.

### **2. SCHEDULE 4 – SBE-M/WBE Payment Certification**

A **Schedule 4** for each SBE and/or M/WBE sub-consultant shall be completed and signed by the proposed SBE and/or M/WBE after receipt of payment from the prime. When applicable, the prime shall submit this form with each application submitted to the county for payment to document payment issued to a sub-consultant in the performance of the contract.

SBE participation is included in the **ATTACHMENT F** under this authorization. The attached **Schedule 1** defines the SBE applied to this CSA/Contract and **Schedule 2** establishes the SBE contribution from each subcontractor (Letter of Intent to Perform as an SBE).

## ATTACHMENT B - Budget Summary

Kimley-Horn & Associates, Inc.									
WUD 17-019		Labor Classification and Hourly Rate							
CSA No. 15		Principal	Senior	Project	Project	Engineer			Sub
Task			Pr. Engineer	Manager	Engineer	Intern/ Analyst	Support Staff	Total	Consultant JLA & C&W
Number	Task Description							Labor	Services
<b>1</b>	<b>Develop WTP Site Plans</b>								
	Existing Site Plan		5		16			\$2,862	
	Staging Plans (4)	2	16	24	10		4	\$8,806	
	Proposed Site Plan (4)	6	16	20	48		4	\$13,426	
	Review LD Codes, setbacks, wellfield protection zones	2	12		12		4	\$4,603	
	Coordinate with C&W	6	12		12		4	\$5,491	\$6,000.00
	Identify setbacks and wells on site plans	4	12	20	10			\$7,519	
	<b>Subtotal Task 1</b>	20	73	64	108	0	16	<b>\$42,706.80</b>	<b>\$6,000.00</b>
<b>2</b>	<b>Expansion Study</b>								
	Develop design criteria	4	8		16		2	\$4,523	
	Develop PFD's & Single Lines	6	12	24			40	\$10,423	
	Raw water requirements & FW quality goals	4	4	8			2	\$3,068	
	Mex jar testing		6		12			\$2,614	
	Construction sequencing (4 options)	6	10	10	18			\$6,960	
	Schedules	4	6	0	12		2	\$3,652	
	Permit review	4	8	0	12		2	\$4,067	
	OPC	4	8	0	12		2	\$4,067	
	Operating costs	4	12	24	24			\$9,715	
	Study Report (DRAFT)	4	30	40			20	\$14,616	\$6,000.00
	Study Report (FINAL)	4	20	30		30	16	\$13,647	\$6,000.00
	<b>Subtotal Task 2</b>	44	124	136	106	30	86	<b>\$77,351.40</b>	<b>\$12,000.00</b>
<b>3</b>	<b>Evaluate DIW Siting and Sizing</b>								
	OPC	4	8	0	0		2	\$2,699	
	Review siting, size, and costs for new DIW	0	6	0	4	4	10	\$2,839	\$3,414.80
	<b>Subtotal Task 3</b>	4	14	0	4	4	12	<b>\$5,538.00</b>	<b>\$3,414.80</b>
<b>4</b>	<b>Meetings</b>								
	Progress Meetings (3)	8	20	25		6	6	\$10,709	\$2,407.20
	3 workshop mtgs (3), Memo & Final comments	8	16	18	24	6	2	\$11,265	
	<b>Subtotal Task 4</b>	16	36	43	24	12	8	<b>\$21,974.40</b>	<b>2,407.20</b>
	Labor Subtotal Hours	84	247	243	242	46	122		984
	Labor Raw Costs	\$74.00	\$69.20	\$50.00	\$38.00	\$32.30	\$25.00		
	Labor Multiplier	3.0	3.0	3.0	3.0	3.0	3.0		
	Labor SubTotal	222.00	207.60	150.00	114.00	96.90	75.00		
	<b>Labor Total</b>	<b>\$18,648.00</b>	<b>\$51,277.20</b>	<b>\$36,450.00</b>	<b>\$27,588.00</b>	<b>\$4,457.40</b>	<b>\$9,150.00</b>	<b>\$147,570.60</b>	
								<b>\$147,570.60</b>	
	Subconsultant Labor Total	\$ -							\$23,822.00
	Subconsultant Multiplier								1.0
	<b>Subcontract Total</b>	<b>\$ -</b>							<b>\$23,822.00</b>
	Out of Pocket Expenses (mileage, copies, printing, etc)								\$2,500.00
	<b>PROJECT TOTAL</b>	<b>\$ -</b>							<b>173,892.60</b>

# ATTACHMENT - C

## PROJECT SCHEDULE

Following are the completion dates for the referenced services (starting from CONSULTANT'S receipt of Notice-to-Proceed).

### Engineering Services

### Completion Date from Notice to Proceed

Task 1 –Develop WTP Site Plans	60 calendar days
Task 2 – Expansion Study	90 calendar days
Task 3 – Evaluate DIW Siting & Sizing	120 calendar days
Task 4 – Meetings	120 Calendar days (as scheduled)

**NOTE:** Completion Date accounts for the submittal of draft deliverable, PBCWUD deliverable review, comment/response resolution meeting and submittal of final deliverable.



**ATTACHMENT D  
SCHEDULE 1**

**LIST OF PROPOSED SBE-M/WBE CONSULTANT/SUBCONSULTANTS**

PROJECT NAME: Water Treatment Plant No. 2 Expansion Study PROJECT NO. WUD 17-019

NAME OF PRIME CONSULTANT: Kimley-Horn and Associates, Inc. ADDRESS: 1920 Wekiva Way, Suite 200, West Palm Beach, FL 33411

CONTACT PERSON: Mark D. Miller, P.E. PHONE NO.: 561-845-0665 FAX NO. : 561-863-6392

DESCRIPTION OF SERVICES: ENGINEERING EVALUATION AND STUDY DEPARTMENT: Engineering

PLEASE LIST THE DOLLAR AMOUNT AND PERCENTAGE OF WORK TO BE COMPLETED BY THE PRIME ON THIS PROJECT.  
PLEASE ALSO LIST THE DOLLAR AMOUNT AND PERCENTAGE OF WORK TO BE COMPLETED BY ALL SUB-CONSULTANTS ON THIS  
PROJECT. IDENTIFY ALL APPLICABLE CATEGORIES OF CONSULTANT/SUBCONSULTANTS

Name, Address and Phone Number	(Check one or both Categories)		Consultant/Sub-consultant Dollar Amount and Percentage of Services				
	<u>M/WBE</u>	<u>SBE</u>	Black	Hispanic	Women	Caucasian	Other (Please Specify)
	Minority Business	Small Business					
1. C&W Engineering, Inc. 2775 Vista Parkway, G-6 West Palm Beach, FL 33411 561.642.5333	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ <u>18,000</u>	\$ _____
2. JLA Geosciences, Inc. 1907 Commerce Lane, Suite 104 Jupiter, FL 33458 561.746.0228	<input type="checkbox"/>	<input checked="" type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ <u>5,822.00</u>	\$ _____
3.	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
4.	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
PRIME CONSULTANT TO COMPLETE: <b>\$150,070.60 (86.31%)</b>	TOTAL		\$ _____	\$ _____	\$ _____	\$ <b><u>23,822.00</u></b>	\$ _____

Total Value of SBE Participation: **\$23,822.00 (13.69%)**

NOTE: 1. The percentages listed on this form must be supported by the sub-consultant included on Schedule 2 in order to be counted toward goal attainment.  
2. Firms may be certified by Palm Beach County as an SBE and/or M/WBE

**OSBA SCHEDULE 2  
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE CONSULTANT/SUBCONSULTANT**

This document must be completed by ALL SBE-M/WBE's and submitted with this CSA. Specify in detail, the particular consulting services to be performed and the dollar amount and/or percentage for each services. SBE credit will only be given for services which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: WUD 17-019 PROJECT NAME: Water Treatment Plant No. 2 Expansion Study

TO: Kimlev-Horn and Associates, Inc  
(Name of Prime Consultant)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise  Minority Business Enterprise \_\_\_\_\_  
Black \_\_\_\_\_ Hispanic \_\_\_\_\_ Women \_\_\_\_\_ Caucasian  Other (Please Specify) \_\_\_\_\_

Date of Palm Beach County Certification: \_\_\_\_\_

The undersigned is prepared to perform the following described consulting services in connection with the above project and will enter into a formal agreement for work with you, conditioned upon execution of a contract with Palm Beach County.

Additional Sheets May Be Used As Necessary

(Specify in detail the particular consulting services thereof to be performed)

Electrical and Instrumentation and Control design services associated with Water Treatment Plant No. 2, including:

1. Develop WTP Site Plans
2. Expansion study & Deep injection wells
3. Attend meetings

Total SBE-M/WBE Participation \$18,000 (10.35%)

If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE sub-consultant, please list the name of that sub-consultant and the amount below.

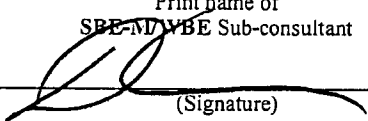
Price or Percentage \$ \_\_\_\_\_  
(Name of Sub-consultant)

The Prime Consultant affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the services with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE sub-consultant affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE sub-consultants except as noted above.

The undersigned sub-consultant understands that the provision of this form to the Prime Consultant does not prevent sub-consultant from providing quotations to other.

C&W Engineering, Inc.

Print name of  
SBE-M/WBE Sub-consultant

By:  \_\_\_\_\_  
(Signature)

Dale G. Walker, P.E., President  
Print name/title of person executing on behalf  
of SBE-M/WBE

Date: 12/1/16

**OSBA SCHEDULE 2  
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE CONSULTANT/SUBCONSULTANT**

This document must be completed by ALL SBE-M/WBE's and submitted with this CSA. Specify in detail, the particular consulting services to be performed and the dollar amount and/or percentage for each services. SBE credit will only be given for services which the SBE-M/WBE's is certified to perform. Failure to properly complete Schedule 2 will result in your SBE participation not being counted.

PROJECT NUMBER: 17-019 PROJECT NAME: Water Treatment Plant No. 2 Expansion Study

TO: Kimley Horn & Associates, Inc.  
(Name of Prime Consultant)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise  Minority Business Enterprise \_\_\_\_\_

Black \_\_\_\_\_ Hispanic \_\_\_\_\_ Women \_\_\_\_\_ Caucasian  Other (Please Specify) \_\_\_\_\_

Date of Palm Beach County Certification: April 4, 2014

The undersigned is prepared to perform the following described consulting services in connection with the above project and will enter into a formal agreement for work with you, conditioned upon execution of a contract with Palm Beach County.

Additional Sheets May Be Used As Necessary

**(Specify in detail the particular consulting services thereof to be performed)**

This Consultant Services Authorization encompasses assisting in preparation of a conceptual study for a Class I injection well system for Water Treatment Plant No. 2 Expansion Study.

**Total SBE-M/WBE Participation \$5,822.00 (3.34%)**

If undersigned intends to sub-subcontract any portion of this job to a certified SBE-M/WBE or a non-SBE sub-consultant, please list the name of that sub-consultant and the amount below.

Price or Percentage \$ \_\_\_\_\_  
(Name of Sub-consultant)

The Prime Consultant affirms that it will monitor the SBE-M/WBE listed to ensure the SBE-M/WBE perform the services with their own work force. The undersigned SBE-M/WBE Prime or SBE-M/WBE sub-consultant affirms that it has the resources necessary to perform the work listed without subcontracting to a non-certified SBE or any other certified SBE sub-consultants except as noted above.

The undersigned sub-consultant understands that the provision of this form to the Prime Consultant does not prevent sub-consultant from providing quotations to other.

ILA Geosciences, Inc.  
Print name of  
SBE-M/WBE Sub-consultant

By:   
(Signature)

James L. Andersen  
Print name/title of person executing  
on behalf of SBE-M/WBE

Date: 12/05/2016

OSBA Schedule 3(A)  
PROFESSIONAL SERVICES ACTIVITY REPORT

Project No.: WUD 17-019  
Task Authorization No: 15

REPORTING PERIOD: \_\_\_\_\_

Prime Consultant Address: Kimley-Horn and Associates, Inc.  
City/State: West Palm Beach, FL Zip 33411  
Contact Person: Mark D. Miller Phone #561-845-0665  
Contract Name: WATER PLANT & WATER RESOURCES ENGINEERING CONSULTING SERVICES  
Contract Term: 6/3/2014 to 6/2/2017 Contract Amount: \$173,892.60  
Total Percentage performed by the Prime's Firm: 86.31% SBE-M/WBE Firm: 13.69%  
Service Type: Architectural \_\_\_\_\_ Engineering X Surveying \_\_\_\_\_  
Other (Specify) \_\_\_\_\_  
Have Sub-Consultants completed work with its own workforce for this application?  
Yes X No \_\_\_\_\_

Note: If yes, complete below:

SUB-CONSULTANTS

1. Firms Name: C&W Engineering, Inc.  
Address/Tel: 2755 Vista Parkway, G-6, West Palm Beach, FL 33411  
Estimated Start Date: \_\_\_\_\_ Contract Amount: \$18,000.00  
SCOPE OF WORK: Electrical Engineering  
Percentage/Hrs Completed: \_\_\_\_\_ Amount Paid To Date \_\_\_\_\_
2. Firm's Name JLA Geosciences, Inc.  
Address//Tel: 1907 Commerce Lane, Suite 104, Jupiter, FL 33458  
Estimated Start Date: \_\_\_\_\_ Contract Amount: \$5,822.00  
SCOPE OF WORK: Hydrogeology  
Percentage/Hrs Completed: \_\_\_\_\_ Amount Paid To Date \_\_\_\_\_
3. Firm's Name: \_\_\_\_\_  
Address/Tel: \_\_\_\_\_  
Estimated Start Date: \_\_\_\_\_ Contract Amount \_\_\_\_\_  
SCOPE OF WORK: \_\_\_\_\_  
Percentage/Hrs Completed: \_\_\_\_\_ Amount Paid To Date \_\_\_\_\_

I certify that the above is true to the best of my knowledge

*Mark D. Miller*

Vice President, Senior Associate

\_\_\_\_\_  
Signature/Title



## ATTACHMENT - E

### AUTHORIZATION STATUS REPORT

#### SUMMARY AND STATUS OF REQUESTS FOR AUTHORIZATIONS

Auth. No.	Description	Status	Project Total Amount	SBE Total Amount	SBE Participation %	Approved By	Date Approved	WUD No. Assigned	Consultant's Project No.
1	WTP 11 Clearwell and Post-treatment Evaluation	Complete	\$78,082.40	\$7,000.00	8.96%	CRC	7/23/14	14-073	144849005
2	General Water Plant Engineering Services	Approved	\$25,000.00	\$0	0.0%	Bevin Beaudet	7/8/14	14-074	144849006
3	WTP 11 Distribution System Water Quality Evaluation & Corrosion Study	Approved	\$77,542.71	\$0	0.0%	CRC	10/8/2014	14-073	144849007
3.1	WTP 11 Distribution System Biofouling & Corrosion Inhibitor Evaluation	Approved	\$49,559.94	\$0	0.0%	Jim Stiles	12/18/15	14-073	144849007
4	WTP 3 Membrane Replacement Pilot Study	Approved	\$89,532.46	\$29,240.00	32.66%	CRC	2/27/2015	15-029	144840007
4.1	WTP #3 Membrane Replacement Impacts Evaluation	Approved	\$49,735.40	\$7,500	15.07%	Jim Stiles	10/20/2015	15-029	144840014
4.2	WTP #3 Membrane Replacement – Additional Membrane Pilot Testing	Approved	\$30,198.50	\$0	0.0%	Jim Stiles	5/3/2016	15-029	144840008
5	WTP 11 – Priority 1 Clearwell Improvements	Approved	\$48,394.37	\$0	0.0%	Jim Stiles	4/22/2015	14-073	144840008
6	FPL Reclaimed Water Facility at ECRWRF Safety Review	Complete	\$8,153.76	\$0	0.0%	Jim Stiles	5/21/2015	15-050	144840009
7	Water Plant 11 Well PW-11 Design and Bidding Phase Services	Approved	\$90,163.08	\$63,935.00	70.91%	CRC	9/2/2015	15-058	144840010
7.1	Water Plant 11 Well PW-11 Access Road Modifications	Approved	\$13,056.60	\$0	0%	Jim Stiles	09/26/16	15-058	144840010
8	Water Plant 11 Well Raw Watermain	Approved	\$39,010.52	\$8,100.00	20.76%	Jim Stiles	8/24/2015	15-059	144840011
8.1	Additional Testing for Water Plant 11 Well Raw Watermain	Approved	\$19,800.00	\$0	0%	Jim Stiles	6/27/2016	15-059	144840011
9	WTP #9 Sand Strainer Addition	Approved	\$32,296.12	\$3,500	10.83%	Jim Stiles	7/23/2015	15-087	144840012
10	WTP #3 Concentrate Corrosion Study	Approved	\$96,974.00	\$20,950.00	21.60%	Jim Stiles	10/21/2015	15-094	144840013
11	WTP2 Evaluation of Existing Treatment Facilities	Pending	\$92,016.20	\$20,000.00	21.73%			16-010	
12	WTP #2, 3, 8, 9 Corrosion Control Study	Approved	\$122,331.50	\$24,225.00	19.80%	Mary Lou Berger	09/13/16	16-072	144840016
13	WTP #11 Acid Elimination Evaluation	Approved	\$55,348.75	\$2,500	4.51%	CRC	06/11/2016	14-073	044110015
14	WTP #11 Membrane Replacement Pilot Study	Pending	\$98,676.00	\$2,500	2.53%			16-087	
15	WTP #2 Expansion Study	Pending	\$ 173,892.60	\$23,822.00	13.69%			17-019	
<b>Total</b>			<b>\$1,289,764.91</b>	<b>\$213,272.00</b>	<b>16.53%</b>				

# ATTACHMENT - F

## AUTHORIZATION STATUS REPORT

### SUMMARY OF SBE / MINORITY BUSINESS TRACKING

	Total	SBE
<b>Current Proposal</b>		
Value of Authorization No. 15	\$173,892.60	
Value of SBE - M/WBE Letters of Intent	\$23,822.00	\$23,822.00
Actual Percentage	13.69%	
<b>Signed Authorizations</b>		
Total Value of Authorizations	\$925,180.11	
Total Value of SBE - M/WBE Signed Subcontracts	\$166,950.00	\$166,950.00
Actual Percentage	18.04%	
<b>Signed Authorizations Plus Current Proposal</b>		
Total Value of Authorizations	\$1,099,072.71	
Total Value of Subcontracts & Letters of Intent	\$190,772.00	\$190,772.00
Actual Percentage	17.35%	17.35%
<b>GOAL</b>		20.00%

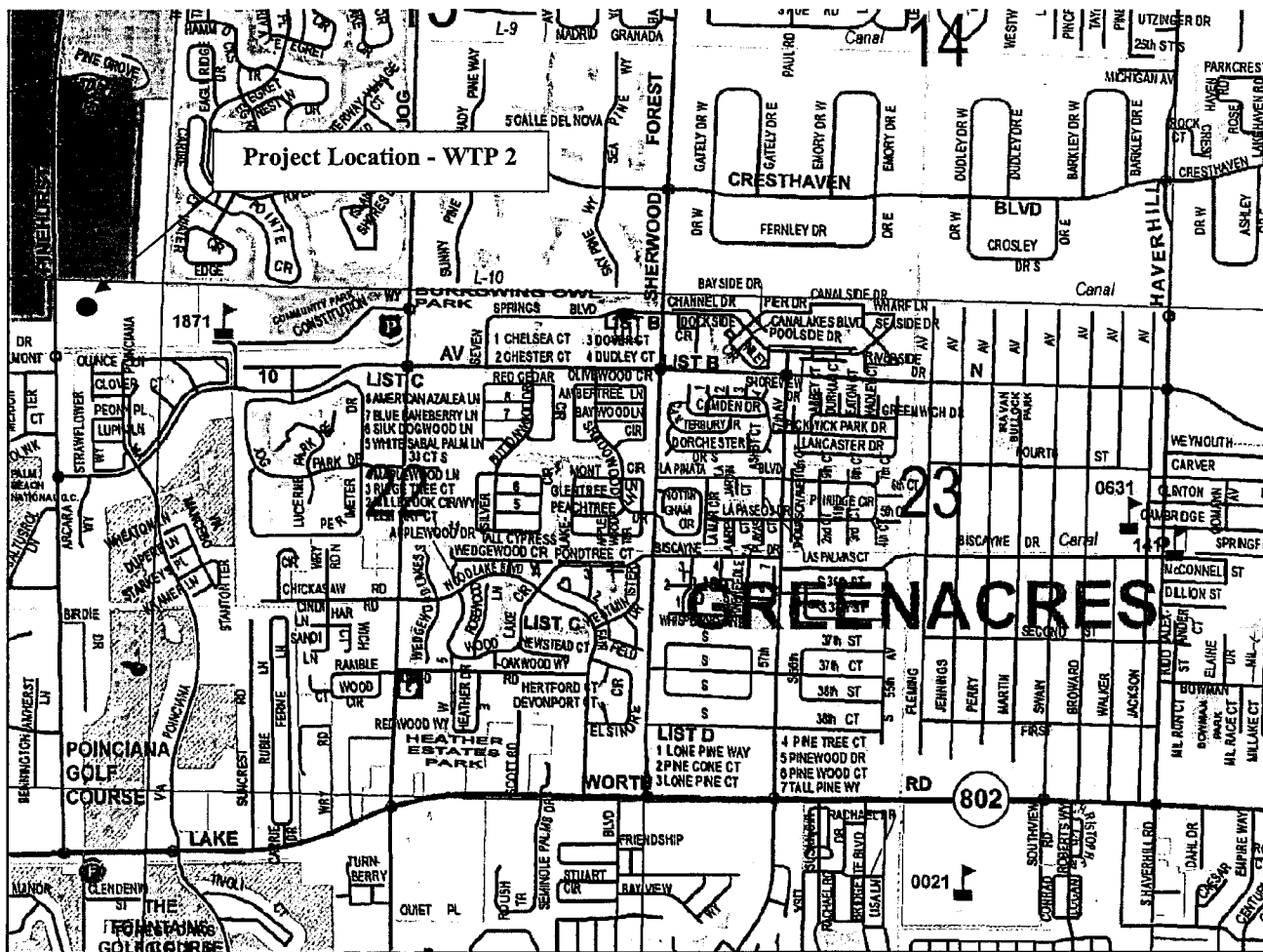
ATTACHMENT G  
Location Map

TWP  
44

23

TWP  
44

24



RNG 42

See pg 89

RNG 42

Page 79

WUD 17-019 WTP2 Expansion Study



# JLA Geosciences, Inc.

HYDROGEOLOGIC CONSULTANTS

1907 Commerce Lane, Suite 104  
Jupiter, Florida 33458  
(561) 746-0228

November 30, 2016

Electronic Submission

Mark Miller, P.E.  
Kimley-Horn & Associates, Inc.  
1920 Wekiva Way, Suite 200  
West Palm Beach, FL 33411

**RE: *PBCWUD WUD # 16-010, Water Treatment Plant #2, Conceptual Study of Class I Deep Injection Well System***

Dear Mark:

JLA Geosciences, Inc. (JLA) is pleased to have the opportunity to provide hydrogeologic services to Kimley-Horn and Associates, Inc. (KHA) and its client, Palm Beach County Water Utility Department (PBCWUD) for the above referenced project. Our proposed scope of work includes assisting KHA in the siting of one (1) Class I deep injection well (DIW), one (1) associated dual-zone monitor well (DZMW), one (1) aquifer storage and recovery well (ASR). Siting options for both the DIW and ASR systems will be limited to areas within the property boundaries of Water Treatment Plant (WTP) #2.

The following tasks identify our proposed scope of work with our associated cost for your consideration.

**1.0 DIW System Conceptual Study:**

**1.1 Siting of DIW System:** JLA will assist KHA in the evaluation of potential locations within WTP #2 to construct a Class I DIW and associated DZMW. The evaluation will address the following components:

- Review of potential locations of DIW and associated DZMW;
- Review of existing structures and stormwater retention areas for the purpose of establishing temporary construction access and permanent access routes for routine testing and maintenance and possible future repair and rehabilitation (requiring remobilization of large equipment);
- Determine viable construction, storage, and testing footprint areas for drilling equipment and material during DIW and DZMW construction phase;
- Evaluate regulatory requirements relating to setbacks established in the well field protection program.

[jlageosciences.com](http://jlageosciences.com)

- 1.2 **Conceptual Design of DIW and DZMW:** JLA will evaluate tubing and casing diameters and material of the DIW and DZMW in accordance with FDEP requirements and based on industry standards. Design criteria will be based on "non-municipal" DIW standards at a peak hour flow of 6,000 gpm.
  - 1.3 **Conceptual Schedule of DIW System:** JLA will assist KHA in providing a conceptual schedule that incorporates the design, permitting, bidding, construction and testing of the DIW system.
  - 1.4 **Conceptual Cost Estimate of DIW System:** JLA will assist KHA in providing a conceptual cost estimate of one DIW and one DZMW.
  - 1.5 **Technical Memorandum:** A DRAFT technical memorandum outlining the evaluation and findings of the DIW conceptual study, incorporating the items above, will be provided (see Task 5). CONSULTANT will meet with PBCWUD staff to discuss the findings included in the draft technical memorandum. CONSULTANT will finalize the technical memorandum based on discussions with PBCWUD staff.
- 2.0 **Project Meetings:** JLA will prepare for and attend up to three (3) project meetings with KHA and PBCWUD staff.

**TOTAL PROPOSAL LUMP SUM PRICE**

**\$5,822.00**

This proposal was prepared based on the information provided to date and our understanding of the project. If you feel that we have omitted anything or have not clearly defined the anticipated scope of work, we will gladly review additional information, and modify the scope and associated costs accordingly.

We look forward to working with KHA and PBCWUD on this important project. Thank you for this opportunity and if you have any questions please don't hesitate to call me.

Sincerely,  
JLA Geosciences, Inc.



James L. Andersen, P.G.  
Principal Hydrogeologist  
JLA:rjm

*Attachment: JLA Cost Estimate Summary  
PBCWUD Schedule 2*

## Hydrogeologic Services Estimate

### BUDGET SUMMARY

Task Number	Task Description	Labor Classification and Hourly Rate											Mileage (\$0.54/mi)	Sub-Consultant Services	TASK TOTAL	
		Prn. Hydro	Prof. Geol.	Senior Hydro II	Senior Hydro	Geol. Hydro II	Geol. Hydro I	Geol. Tech	Admin	Total Labor	ODC					
3.0	<b>DIW System Conceptual Study</b>															
	Siting, conceptual design, construction schedule and cost estimate	4	18											\$ 32.40		
	<i>Subtotal Task 3</i>	4	18	0	0	0	0	0	0	0	0	22	\$ 32.40	\$ -	\$ -	\$ 3,414.80
4.0	<b>Project Meetings</b>															
	Prepare for and attend three project meetings	3	12											\$ 97.20		
	<i>Subtotal Task 4</i>	3	12	0	0	0	0	0	0	0	0	0	\$ 97.20	\$ -	\$ -	\$ 2,407.20
	<b>Labor Subtotal Hours</b>	7	30	0	0	0	0	0	0	0	0					
	<b>Labor Hourly Billing Rates</b>	\$ 165.20	\$ 151.20	\$ 134.40	\$ 120.40	\$ 100.80	\$ 81.20	\$ 58.80	\$ 58.80							
	<b>Labor Raw Costs</b>	\$ 59.00	\$ 54.00	\$ 48.00	\$ 43.00	\$ 36.00	\$ 29.00	\$ 21.00	\$ 21.00							
	<b>Labor Multiplier</b>	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8							
	<b>Labor SubTotal</b>	\$ 1,156.40	\$ 4,536.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ 129.60			
	<b>Labor Total</b>															\$5,822.00
	<b>Subconsultant Total</b>															\$0.00
	<b>Project Total</b>															\$5,822.00

# C & W engineering

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Electrical Consultants

2775 Vista Parkway, G-6  
West Palm Beach, FL 33411  
(561) 642-5333

October 21, 2016

Mark Miller, P.E.  
Kimley-Horn & Associates, Inc.  
1920 Wekiva Way  
West Palm Beach, FL 33411

Subject: Palm Beach County Water Utilities Department, Water Treatment Plant #2,  
Expansion Study  
C&W Ref. 66392

Dear Mark:

I am pleased to submit this proposal for the Water Treatment Plant # 2  
Expansion Study. This proposal is based on the PBC WUD, WA #11 attachment.

## Task 1- Develop WTP Site Plans

- A. Provide electrical equipment development site plans. Provide site planning for the existing site and 3 future site plans.
- B. Provide assistance to Kimley-Horn and Associates for 4 construction phasing options.

## Task 2 – Expansion Study

- A. Provide the electrical portion of opinion of costs as may be required.
- B. Provide assistance to Kimley-Horn and Associates in preparing the draft and final versions of the Expansion Study Report.

## Task 3 – Meetings.

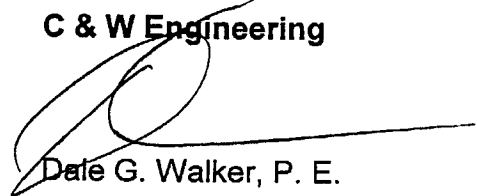
- A. Attend progress meetings, as you may require, approximately 6.
-

Electrical Engineering Fee: **\$18,000.00** lump sum

I trust the above scope and fee are in agreement with your needs and expectations. If you have questions or comments regarding the above, please call or write. Thank you for allowing C&W Engineering this opportunity to be of service.

Very truly yours,

**C & W Engineering**

A handwritten signature in black ink, appearing to read 'Dale G. Walker', is written over the company name. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Dale G. Walker, P. E.

DGW/nl

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