VILLAGE OF WELLINGTON

UTILITY ENGINEERING SERVICES WORK AUTHORIZATION

WTP Master Plan

This Work Authorization authorizes Kimley-Horn and Associates, Inc. to perform work set forth herein and is issued pursuant to the Agreement for Consulting Services, between Wellington ("Client" or "Village") and Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "Consultant"), dated February 9, 2016 ("Agreement"). All terms and conditions of said Agreement are hereby incorporated and made part of this Work Authorization.

BACKGROUND

The WTP is currently comprised of a 4.7 MGD lime softening (LS) plant and two RO plants on the same site (one rated at 4.5 MGD and one rated at 1.8 MGD, expandable to 5.4 MGD). Plans are underway that will reduce one RO plant to 4.0 MGD and increase the other to 2.7 MGD. The originally contemplated plant configuration included two RO plants (which has come to fruition) and two LS plants (only one of which exists). For capacity and water quality reasons it has been determined that a second LS may not be desired. The one existing LS plant is over 35 years old and the first RO plant is over 25 years old. The second RO plant is over 5 years old. Rehabilitation of the first RO plant is under design but LS plant replacement or rehabilitation will require implementation over the next 5 years. Water quality and other considerations will impact the decision to rehabilitate the LS plant or to select a different process. Moreover, the SFWMD Water Use Permit places restrictions on the available water supply that will impact process selection relative to by-product disposal and process efficiency. Available alternate water source decisions will also impact the process selection as well as considerations related to finished water stability. The Village wishes to explore and evaluate treatment options that consider water quality, the available water source and physical implementability, as well as, capital costs, operating costs and other known intangible considerations associated with each option. The intent is to provide a planning tool so that future projects at the facility are constructed in a fashion that is consistent with the adopted plan. The current effort is intended to be based on generally available data relative to the process performance of various options and not include pilot testing.

SCOPE

The Consultant will perform the following tasks.

1. Review historical flow records and establish/confirm flow patterns on a "per connection" basis.
2. Based on service area growth projections provided by the Village develop the probable ultimate service area water system demand (ADF and MDF) to be used for long term planning.

3. Review available water quality data with specific reference to disinfection by-products.
4. Review available information on proposed rule making relative to water quality (especially disinfection by-products and unregulateds) and compare to the ability of the current process to meet current and (known) proposed standards.
5. Secure samples and test for selected parameters that are under short term consideration for rule making. It is acknowledged that this effort is open ended and, as such, will be limited to selecting sampling locations and testing that deliver suitable information within a budgetary limitation of $7500.
6. Identify potential processes, that could be utilized to achieve the required/desired water quality and deliver the required quantity. Water quality projections will be developed for each alternative. The processes to be evaluated consist of full membrane treatment, a combination of LS and membrane (existing) and MIEX or other ion exchange.
7. Evaluate the impact of process by-product disposal associated with each alternative to be considered.
8. Resource availability may affect the viability of some processes. Each process alternative to be developed will be based on two resource scenarios; one assuming continuation of the current resource and the other will assume the addition of a Floridan Aquifer well to supplement the existing resource.
9. Prepare a conceptual site plan layout for each alternative process (including major equipment, major yard piping and significant buildings, if any).
10. Prepare conceptual opinions of probable capital cost for each alternative.
11. Prepare an estimated operating cost for each alternative.
12. Prepare a comparative present worth analysis for each alternative.
13. Identify and analyze intangible benefits or liabilities.
14. Evaluate the present worth comparative values and the intangible factors impacting process selection and system layout and recommend an approach for long term facility planning.
15. Based on "normal" reliable service life estimates and projected estimates of water quality and quantity needs, develop an implementation schedule for recommended process modification and/or process expansion implementation.
16. Summarize the findings in a results oriented report.
17. Meet with Village to review findings and report.

ADDITIONAL SERVICES

Any services not specifically provided for in the above scope, as well as any changes in the scope requested by the Village, will be considered additional services to this Work Authorization and will be performed based on subsequent Work Authorizations approved prior to performance of the additional services.

INFORMATION AND SERVICES PROVIDED BY THE VILLAGE

Kimley-Horn assumes that all information provided by the Village can be relied upon in the performance of professional services. The following information shall be provided to Kimley-Horn and/or the following services will be performed by the Village.

- Current and projected build-out number of connections and population, or equivalent, for the service area.
- Flow data from monthly operating reports for the past five years.
- Water quality data from routine and regulatory testing for the past five years.
- Current Water Use Permit and other available background data necessary to support the report development.
- Assistance with sample collection for water quality testing.

SCHEDULE

The work set forth in the Scope shall be completed within 20 weeks of receipt of an executed authorization or Purchase Order, exclusive of delays beyond the control of the Consultant.

COMPENSATION

Kimley-Horn will perform the services described in the Scope of Services forth lump sum amount of $144,300.

ESTIMATE FOR ENGINEERING SERVICES

PROJECT:	WTP Master Plan
CLIENT:	Village of Wellington
ESTIMATOR:	Reese

SHEET 1 of 1
FILE NO.
DATE: 03/01/17
ALLOCA 0.0000

DESCRIPTION: See Scope of Services	DIRECT LABOR (MAN-HOURS)													
Task Description	Principal	Sr. PM	PM	Sr. Eng	PE	EIT	Analyst	Designer	CADD	Sr. Inspector	Admin	SUBS	EXP	LINE TOTAL
MASTER PLAN														
														$0
Site Visit To Identify Required Flow Data and Service Area Information		4.0			8.0									$0
Review Growth Projections Provided by Village and Identify Build-Out Design Flows.		16.0			20.0									$1,940
Review Flow Calcs and Assumptions w/Village		4.0			12.0									$6,080
Review Proposed DBP Rule-Making Status and Compare to Existing/Known WQ		24.0			12.0									$2,500
Develop a Desired Finished WQ and Review w/Village		8.0			16.0									$6,600
Identify Process Options to Satisfy WQ Goals		16.0			8.0									$3,880
Project Finished WQ for Each Process		40.0			60.0									$4,400
For Each Process Option Quantify the By-Product Disposal Impact		6.0			16.0									$16,600
For Each Option Identify the Resource Impact (based on Water Supply Availability Provided by the Village)		12.0			24.0									$3,470
Evaluate Process Implications of Using a Floridan Source Supplement		8.0			16.0									$0
Prepare Conceptual Site Plan for Each Option		16.0			12.0			32.0						$5,820
Prepare an Operating Cost Estimate for Each Option		8.0			20.0									$3,880
Prepare an OPC for Each Option		16.0			40.0									$8,800
Develop an Implementation Schedule for Each Plan		12.0			24.0									$4,440
Identify any Intangible Factors that Impact the Option Selection		12.0												$8,880
Prepare a Present Worth Comparative Analysis to Include all Options		8.0			40.0									$5,820
Develop a Recommendation		6.0			4.0									$2,460
Prepare Report		24.0			80.0			40.0			80.0		1,000	$7,240
Meet w/Village to Discuss Report		8.0			8.0									$1,790
Make Corrections and Issue Final Copies		16.0			40.0			8.0			16.0			$28,320
Laboratory Allocation												7,500		$2,760
TOTAL HOURS	**0.0**	**264.0**	**0.0**	**0.0**	**460.0**	**0.0**	**0.0**	**80.0**	**0.0**	**0.0**	**96.0**	**7500.0**	**1000.0**	**804.0**
LABOR ($/HOUR)	**235.00**	**205.00**	**165.00**	**165.00**	**140.00**	**110.00**	**90.00**	**120.00**	**85.00**	**120.00**	**80.00**	**1.00**	**1.0**	
ALLOCATION	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
TOTALS	**0.00**	**54,120.00**	**0.00**	**0.00**	**64,400.00**	**0.00**	**0.00**	**9,600.00**	**0.00**	**0.00**	**7,680.00**	**7,500.00**	**1,000.00**	**$144,300**