



1.3.3 Technical Approach, Workload and Scheduling

Understanding of the Town's Needs in Association with Water Supply

For decades, **Kimley-Horn** has partnered with and served the Town of Palm Beach in a variety of ways. Our strong relationships with Town staff, excellent client service and thorough knowledge and understanding of the Town's facilities, procedures, and operations have resulted in many successful projects and we look forward to continuing that trend if selected to complete the Town's Water Supply Feasibility Study.

Providing exceptional client service has been and will always remain paramount in our core values and we will demonstrate this to you on this project as we have on our past projects for the Town. The Kimley-Horn team will provide a thoughtful approach to completing the Town's Water Supply Feasibility Study as further described below. This approach starts with our team members that we have selected to serve you for this assignment.

We are distinct in the diversity of the team members and their respective talents and we are unmatched in our combined length of service to the Town of Palm Beach. Project manager, **Jason Lee, P.E.**, has been serving the Town for over 16 years and has worked closely with Town staff to help deliver many successful projects. Unlike other consultants, Jason has the unique ability to call upon team members that have decades of experience serving the Town. Principal-in-Charge, **Kevin Schanen, P.E.**, has been serving the Town for nearly two decades and technical advisor, **John Potts, P.E.**, has served the Town for nearly 40 years. This experience and local knowledge of the Town's infrastructure, geography, geology, history, and community provides the Kimley-Horn team with a unique understanding of the Town's water supply needs and concerns. Some of the water supply and distribution projects that Kimley-Horn has completed over the last 25 years within the Town of Palm Beach includes the following:



- Town of Palm Beach Water Supply Consultant, 2008-2013
- Town of Palm Beach Feasibility Analysis for Reverse Osmosis Facilities
- Palm Beach Par 3 Floridan Well Design and Installation, 2009
- Palm Beach Irrigation Water System with Aquifer Storage and Recovery Report, 1995
- Southern Boulevard 16" subaqueous water main crossing relocation, 2017
- Flagler Memorial Bridge 24" subaqueous water main crossing, 2012
- Town-wide Watermain Critical Age Mapping, 2016
- Numerous watermain replacements throughout the Town, Early 1980s-Current

Many of the watermain projects listed above were funded through the user fees that are generated by Town customers as set forth in the Inter-Local Agreement between the Town and the City of West Palm Beach.



Water Supply Options

Having served as a past Water Supply Consultant to the Town, Kimley-Horn understands the Water Supply needs of the Town. We are very familiar with the terms of the Inter-Local Agreement between the City of West Palm Beach and the Town and being that you are 10 years away from expiration of this agreement, we agree that it is prudent to explore options at this time. By doing so, there is time to implement changes that would be necessary should the Town decide to provide potable water to the community in a different manner than is done today.

The Town has a maximum day demand of approximately 10 MGD, which includes both potable and irrigation water uses. The City of West Palm Beach currently owns and maintains an extensive network of pipelines, booster pumping stations, and water storage facilities throughout the Town. We understand that the Town would like to explore the following options as a part of this project:

1. Continue having the City provide water on a retail basis as is done today;
2. Take over ownership of the distribution system with the Town becoming a bulk customer of the City;
3. Becoming a customer of another local water utility;
4. Developing a Town-owned utility and the associated treatment plants to supply water to the community;
5. Entering a public-private partnership with a franchise utility to supply water to the community;
6. Developing a combined solution of several of the options above.

For Option 1, we would assume that much of the inter-local agreement would remain as it is today. However, discussions would need to be had with the Town and the City to determine if and how the existing distribution system will be transferred to the Town along with an understanding of the capital improvements necessary to replace the pipelines that have reached or are nearing the end of their useful lives. In 2016 as a part of the Undergrounding program, we developed a graphical map to illustrate the location and extent of these pipelines based on the data obtained from the Eardman-Anthony report.





For Option 2, we would recommend a review of the study that was performed nearly two decades ago where meters were installed at all of the subaqueous crossings to determine flow rates should the Town decide to become a bulk customer of the City. Costs related to installation of bulk metering facilities along with real estate needs to do so will also need to be considered. Because this option requires the Town set up a utility system to bill customers and maintain the distribution infrastructure, those costs will also need to be assessed.

For Option 3, Our team of experts will explore water supply options from utility service providers adjacent to the Town of Palm Beach, including Palm Beach County Water Utilities, City of Riviera Beach Utility Special District, City of Lake Worth Beach Utilities and their existing water supplier, the City of West Palm Beach. To assist us with this portion of the project, we have added **A. Mohammed Shammet, P.E., PMP** to our team. Mohammed has the unique experience of having conducted similar reviews, negotiations of Inter-local Agreements, and implementation of water supply options both as a consultant and as an employee of a municipal utility that relied on neighboring utilities to supplement community water supply needs.

Our team's technical diversity will allow us to analyze water quality data to determine the advantages/disadvantages for each of the potential potable service providers. We have extensive experience with providing corrosion investigations, disinfection byproducts studies and review of other quality parameters that should be considered when changing water sources. As seen recently in the news with the situation in Flint, Michigan, changing water quality parameters need to be carefully assessed to avoid internal pipeline corrosion. We know that lead joint piping still exists in the Town today and the internal pipeline scale needs to be protected to avoid allowing this lead to enter the water supply. We will review their water use permits, permitted water treatment capacities, and existing water demands to determine if there is available capacity to serve the Town, or what the costs would be to expand the plants to provide this capacity. All necessary improvements that would be required to accommodate the Town's maximum day and peak hour water demands including having adequate water for fire protection will be reviewed and incorporated into the study. Each of the potential potable service providers' distribution atlases will be reviewed to determine the extent of pump station and pipeline improvements that will be needed to deliver water to the Town. Kimley-Horn will also review the bulk rates and retail rates for each of the water utilities for the Town to better understand the financial implications of receiving water from each of the utility service providers.



We have demonstrated this expertise recently with the Utility Condition Assessment and Valuation of Indiantown Company, Inc. that we performed on behalf of Martin County Utilities. This project was very similar to the Town's Water Supply Feasibility Study and as part of the project we identified water supply, water treatment and distribution system improvements necessary for Martin County Utilities to serve Indiantown and provided cost estimates to upgrade Martin County's Tropical Farms Water Treatment Plant (WTP) capacity. We've also performed similar services for the City of Delray Beach as part of the Water Supply and Feasibility Study where we evaluated several options for new water supply and treatment capacities to prepare for future potable water demands.

For Option 4, Kimley-Horn has a detailed understanding of the requirements for developing a Town owned water source. In 2009, Kimley-Horn completed a Feasibility Analysis for Reverse Osmosis Facilities for the Town of Palm Beach. We will review and update the findings of this report which explored construction of a WTP on Town-owned property at Quadrille Boulevard and Dixie Highway (Quadrille site) and a second WTP at Phipps Ocean Park (Phipps Park site). A study of the raw water supply, treatment options, by-product (concentrate) disposal options, and site limitations for these properties



was conducted. The conclusion was that it is feasible to construct water treatment facilities with the following capacities on these properties:

- **Quadrille Site** – A 3.75-MGD water treatment plant that would treat Floridan Aquifer water using the reverse osmosis process
- **Phipps Park Site 1** – A 7.5-MGD water treatment plant that would treat Floridan Aquifer water using the reverse osmosis process
- **Phipps Park Site 2** – A 10.0-MGD water treatment plant that would treat seawater using the reverse osmosis process

In keeping with the findings of this report, when the Town needed to provide an alternative irrigation water supply for the Par 3 Golf Course Kimley-Horn provided complete groundwater modeling, design and permitting for a Floridan well that has been delivering irrigation water to the Golf Course since it was renovated. This well was constructed with the idea that it could also provide water supply to a future RO plant at the Phipps Park site while continuing to provide irrigation to the Golf Course. Costs related to the improvements required to make this conversion will be included in this analysis.

For Options 5 and 6, Kimley-Horn has the experience necessary to evaluate entering into a public-private partnership with a water provider or some combination of these options. We are prepared to provide cost estimates that may include treatment plant expansions for adjacent utilities, pump station, and pipeline improvements necessary to serve the Town. We also have relationships with several private utility providers that make it their business model to take over existing systems and provide turn key utility operations across the state and nation. We propose to meet with them to develop conceptual options and related costs regarding how they could develop a system to serve the Town. Additionally, we will review scenarios to determine if combinations of the above options would provide maximum benefit to the Town.

Water Distribution Options

Based on the age of the existing infrastructure, no matter which option is selected a capital program for renewal and replacement will need to be assessed to determine the long-term costs associated with taking over the water distribution system. Over the years, Kimley-Horn has completed numerous distribution system projects which has allowed us to gain a unique understanding of the system within the Town. Kimley-Horn has also replaced two of the subaqueous transmission mains under the ICW that serve the Town, which include the 24" subaqueous water main crossing at Flagler Memorial Bridge and the 16" subaqueous water main crossing at Southern Boulevard Bridge.

Much of the water distribution system within the Town has exceeded its service life. The City of West Palm Beach through the inter-local agreement has outlined a program for the systematic replacement of these aged watermains but the funding source for these improvements has not kept up with the replacement needs. Therefore, replacement has been performed on an opportunistic basis with the funding that is available. The Town currently collects approximately \$800,000 per year to perform such watermain replacements and several projects have recently been completed or are in the design stage. This budget has been beneficial in replacing some of the critical watermain infrastructure, particularly in areas that are being impacted by other infrastructure projects such as the undergrounding program. Kimley-Horn has completed a Watermain Map by Age as part of the Town-Wide Undergrounding of Utilities Program Master Plan, which will serve as a starting point in evaluating the most critical





improvements to the water distribution system. This will allow us to develop a capital program and assess the true costs related to replacement of these mains.

We have completed master plans for utilities that have faced similar challenges for evaluating distribution systems with alternative water source options. We have provided master planning for local municipalities such as Martin County and Indian River County where we have created and maintained hydraulic models of their water distribution and transmission system. In each of these master planning exercises we evaluated the system for deficiencies and analyzed options for expansion to meet the needs of new developments. We have summarized the costs for the necessary improvements for the Utility's use to budget for the distribution system improvements through either capital improvement plans or developer impact fees. We plan to apply this experience to this project to develop the infrastructure needs related to implementing any one, combination of several, water supply options and their associated costs for implementation.

Kimley-Horn has a reputation for client service that is unmatched, and we offer a team of experts that can assist you to complete the Town's Water Supply Feasibility Study. Our team is dedicated to meeting your schedule and budget expectations and has a solid track record of partnering with you over the years to deliver successful projects and programs. Utilizing the above approach, we will deliver the same exceptional service you have received from us in the past. We look forward to serving as your Water Supply Consultant.



Overall Workload of the Company

We are confident that we can meet the technical and staffing needs anticipated for this project. It is part of Kimley-Horn's philosophy not to operate individual offices as profit centers. Rather, we make it a practice to share our depth of resources firmwide. This ensures that we have more than enough staff and technical resources to complete every assigned project on time and to your satisfaction. The members of our team were selected using two criteria: (1) their experience with similar projects, and (2) their projected availability to assume major responsibilities for this project.

Kimley-Horn knows that complex assignments take planning, flexibility, and the experience that comes from a successful track record of managing multiple, simultaneous projects. The Town of Palm Beach can be assured of our continued responsiveness and ability to handle multiple assignments simultaneously. This is a skill that we are not just saying we can perform—we have demonstrated this to the Town for decades. We use a weekly workload forecasting technique called "cast-aheads" to ensure staff availability by office and specialty discipline. The cast-ahead system is a proprietary program that is maintained on our computer network, and it is accessible by all project managers. It is the primary means of tracking and evaluating our staffing needs. Updated monthly by the project managers, the cast-ahead system is used to define specific staffing needs for the upcoming month and for the next six months. The input required of the project managers includes individual project names, as well as requests for specific personnel to work on these projects for a certain number of weeks per month. The combined input from all project managers in the firm is compiled and distributed in the form of a report to all project managers and regional management for review and discussion at a monthly cast-ahead meeting. Work overloads or shortages for specific personnel and for individual offices are tabulated and addressed at the monthly meeting. These imbalances are resolved through shifts of personnel between offices. The objective is to balance the workload in a manner that maximizes the utilization of production staff, while ensuring that all project requirements and client deadlines are met. This tool is another example of the importance Kimley-Horn places on client service.



Palm Beach Water Supply Feasibility Study

RFQ No. 2019-36

In addition to cast-aheads, every Friday we update a milestone management form that details what each staff member will be doing for the next week. Our staff resources are then reallocated for the upcoming week if needed to keep each project on schedule. The chart below provides you with an overview of our local staff's availability to the Town over the next six months.

