



May 15, 2023

Dean Mealy
Town of Palm Beach
951 Old Okeechobee Road
Suite A
West Palm Beach, FL 33401

RE: *Wastewater Pump Station Condition Assessment*

Dear Dean,

Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "CONSULTANT") is pleased to submit this proposal to The Town of Palm Beach ("TOWN" or "CLIENT") for providing professional engineering services related to the Wastewater Pump Station Condition Assessment in the Town of Palm Beach. Our project understanding, scope of services, and fee follows.

Project Understanding

The Town of Palm Beach currently owns and maintains (21) twenty-one wastewater pump stations where (6) six stations have either been recently rehabilitated or scheduled for rehabilitation within the next year. Kimley-Horn has been requested to complete a condition assessment of each of the Town's remaining (15) fifteen wastewater pump stations. The purpose of the assessment is to review the existing pump stations and major components, note significant defects, complete a numerical condition and priority ranking, develop opinions of cost for recommended repairs/maintenance, and prepare a report that recommends improvements for each station which are prioritized for incorporation into the Town's 5-year and 10-year capital improvement plan.

The Town also owns and maintains (21) twenty-one ejector stations. Kimley-Horn has been requested to complete a condition assessment of only the E-15 ejector station. Similar to the wastewater pump stations the assessment will include a review of major components, note significant defects, complete a numerical condition and priority ranking, and develop opinions of cost for recommended repairs/maintenance. Additionally, we will prepare an opinion of cost for total replacement of the station. We will include this information in our overall condition assessment report.

Scope of Services

Task 1 - Data Collection

We will attend a kick-off meeting with the Town to discuss the project goals. At this initial meeting we will discuss past observations and known operational issues with the Town's operations staff. We will provide a list of documents to be requested from the Town following the meeting to assist with the evaluations. We will also request the Town to verify that all ports needed for pressure gauge installation are clear for taking pressure measurements.

Task 2 – A-Stations (Including S-2, A-7, A-41, A-42, and A-43)

We will visit each of the (5) five pump station sites to review the condition of each station. The items that will be reviewed include:

- Site conditions
- Building features including structural shell, roof, doors, windows, louvers, and coatings
- Mechanical systems including air conditioning, pumps, piping, ventilation system, and compressed air system
- Wetwell and drywell structures including coatings
- Electrical and instrumentation equipment

Electrical and instrumentation review and assessment will be completed by a subconsultant employed by Kimley-Horn. The initial site visit will include a condition assessment limited to observable issues of the site, structure, mechanical and electrical features. Sounding of accessible concrete surfaces for evidence of deficiencies, such as spalling and delamination, will be performed. A second site visit will be made to each pump station to conduct pump performance testing. Pump performance tests will include simultaneous flow, pressure, and input power measurements with specialized testing equipment. For the purposes of pump curve validation and where feasible, a multi-point hydraulic test will be conducted.

Condition assessments of major pump station components will be completed based on the observations noted during the field visits and pump performance testing. A numerical condition ranking from 1 to 5 will be assigned to each major pump station component along with notes regarding significant defects. We will perform a risk analysis that includes a "consequences of failure" ranking that will be combined with the condition ranking to aid in prioritizing improvements.

Kimley-Horn will prepare a draft report that will include a general description, a summary of observations and recommendations, and a Class IV opinion of probable construction cost for each pump station. Pump evaluation reports will include a summary sheet showing averaged

values of the flow rates, total dynamic head, current, voltage, input horsepower, output horsepower, and wire-to-water efficiency. The condition assessment ranking, consequences of failure ranking, and Class IV opinion of probable construction cost will be used to prioritize improvements for incorporation into the Town's 5-year and 10-year capital improvement plans.

Task 3 – E-Stations (Including E-1, E-2, E-3, E-4, E-5, E-7, E-11, E-19, G-1, and G-9)

We will visit each of the (10) ten pump station sites to review the condition of each station. The items that will be reviewed include:

- Site conditions
- Mechanical systems including pumps, visible piping, and odor control equipment (as applicable)
- Wetwell, valve vault, hatches and coatings
- Electrical and instrumentation equipment

Electrical and instrumentation review and assessment will be completed by a subconsultant employed by Kimley-Horn. The initial site visit will include a condition assessment limited to observable issues of the site, wetwell and valve vault, mechanical and electrical features. Sounding of accessible concrete surfaces for evidence of deficiencies, such as spalling and delamination, will be performed. A second site visit will be made to each pump station to conduct pump performance testing. Pump performance tests will include simultaneous flow, pressure, and input power measurements with specialized testing equipment. For the purposes of pump curve validation and where feasible, a multi-point hydraulic test will be conducted.

Condition assessments of major pump station components will be completed based on the observations noted during the field visits and pump performance testing. A numerical condition ranking from 1 to 5 will be assigned to each major pump station component along with notes regarding significant defects. We will perform a risk analysis that includes a "consequences of failure" ranking that will be combined with the condition ranking to aid in prioritizing improvements.

Kimley-Horn will prepare a draft report that will include a general description, a summary of observations and recommendations, and a Class IV opinion of probable construction cost for each pump station. Evaluation reports will include a summary sheet showing averaged values of the flow rates, total dynamic head, current, voltage, input horsepower, output horsepower, and wire-to-water efficiency. The condition assessment ranking, consequences of failure ranking, and Class IV opinion of probable construction cost will be used to prioritize improvements for incorporation into the Town's 5-year and 10-year capital improvement plan.

Task 4 – Ejector Station (E-15)

We will visit E-15 ejector station to review the condition of the station. The items that will be reviewed include:

- Site conditions
- Ejector pot, piping, and valves
- Ejector station structure, hatch, and coatings

Condition assessments of major components will be completed based on the observations noted during the field visits. A numerical condition ranking from 1 to 5 will be assigned to each major component along with notes regarding significant defects. We will perform a risk analysis that includes a “consequences of failure” ranking that will be combined with the condition ranking to aid in prioritizing improvements.

Kimley-Horn will prepare a draft report that will include a general description, a summary of observations and recommendations, and a Class IV opinion of probable construction cost for the E-15 ejector station. The condition assessment ranking, consequences of failure ranking, and Class IV opinion of probable construction cost will be used to prioritize improvements for incorporation into the Town’s 5-year and 10-year capital improvement plan. Also included will be a Class IV opinion of probable construction cost for the complete replacement of the E-15 ejector station.

Task 5 – Final Report

We will submit a draft copy of the report for review, meet with the Town to review their comments, and accommodate one round of reasonable requests for revisions by the Town after the review.

Additional Services

Any services not specifically provided for in the above scope, as well as any changes in the scope you request, will be considered additional services. These services will be performed based on proposals approved by the Town prior to the performance of those requested additional services. Additional services we can provide include, but are not limited to, the following:

- Surveying and Mapping, Construction Layout
- Record Drawing development
- Field Engineering
- Off-site improvements

- Blower performance testing
- Generator performance testing
- Repair Drawings and Specifications
- Construction Phase Services

Information and Services Provided by the Town

We shall be entitled to rely upon the accuracy of information provided by others in the performance of professional services. It is anticipated that the following items will need to be provided to Kimley-Horn by the Town during the project.

- Access to the site
- Available record drawings for each lift station site
- Pump curves for each lift station
- Provide access to the site and all panels, hatches, vaults and equipment.
- Review and provide site specific safety concerns.
- Provide one operator familiar with the site, pumps, controls, operation, equipment, and trained in confined space
- Operate valves, pumps and other equipment and assist with performance evaluations

It is assumed that each site has sufficient inflow for the necessary number of pump tests during the test period. If inflow rates are insufficient, as much data as possible will be collected during the testing we can perform. In general, test results will be more consistent and accurate if inflow rates are steady and produce between 2 and 8 pump cycles per hour.

For a complete performance and efficiency test, the wet well must have a clear opening for a level transducer, minimal grease, an operable discharge pressure gauge tap that is easily accessible, accessible motor leads terminated at the control panel, and operable hand controls for each pump. Wet wells must have a regular shape that is easily definable through measurements made without entering the wet well. Electrical tests will not be conducted on system voltages greater than 480 Volts (nominal) or where motor leads are inaccessible or unsafe to access.

Schedule

We will provide our services as expeditiously as practical to meet a mutually agreed upon schedule. It is understood assessment is desired to be completed by March of 2024.

Fee and Billing

Kimley-Horn will perform the services described in this Scope of Services on a lump sum basis in accordance with our Contract with the Town. Fees will be invoiced monthly based on a percentage of services performed as of the invoice date. It is recommended that the following budget be established for these services.

Task 1 – Data Collection	\$13,400
Task 2 – A-Stations (Including S-2)	\$61,350
Task 3 – E-Stations (Including G-1 and G-9)	\$79,700
Task 4 – Ejector Stations (E-15)	\$5,700
Task 5 – Finalize Report	\$14,950
Total	\$175,100

Closure

In addition to the matters set forth herein, our Agreement shall include and be subject to, and only to, the terms and conditions in the Professional Services Agreement between the Town of Palm Beach and Kimley-Horn and Associates, Inc, which are incorporated by reference. As used in the Agreement, the term "CONSULTANT" shall refer to Kimley-Horn and Associates, Inc., and the term "TOWN" or "CLIENT" shall refer to The Town of Palm Beach.

We appreciate the opportunity to propose these services to you.

Very truly yours,

KIMLEY-HORN AND ASSOCIATES, INC.



By: Jason Lee, P.E.
Vice President

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ESTIMATE FOR ENGINEERING SERVICES

PROJECT:		Wastewater Pump Station Condition Assessments					SHEET 1 of 1						
CLIENT:		Town of Palm Beach					FILE NO.						
ESTIMATOR:		DAC					DATE: 05/15/23						
							ALLOCA 0.0000						
DESCRIPTION:		DIRECT LABOR (MAN-HOURS)											
See Scope of Services		Principal	Chief Engineer	Senior Engineer	Senior Prof. Eng.	Eng. Prof.	Eng. Int.	Analyst	Admin/Clerical	Senior Designer	SUB	EXP	LINE TOTAL
Design Phase Services													
Kickoff Meeting			6.0			6.0							\$2,670
Data Collection (record drawings, pump curves, maintenance reports)			1.0			6.0	16.0		16.0			\$39	\$4,773
Site Visit Schedule Coordination with Town			1.0			2.0	4.0						\$1,117
Review Record Drawings			8.0			16.0							\$4,840
A Station Site Visits											2250.00		\$2,250
S-2 Pump Station													
'Pump Testing						8.0	8.0					\$750	\$3,054
'Site Observations			3.0		3.0	3.0							\$1,920
A-7 Pump Station													\$0
'Pump Testing						8.0	8.0					\$750	\$3,054
'Compressed Air System			1.0			1.0							\$445
'Site Observations			3.0		3.0	3.0							\$1,920
A-41 Pump Station													\$0
'Pump Testing						8.0	8.0					\$750	\$3,054
'Site Observations			3.0		3.0	3.0							\$1,920
A-42 Pump Station													\$0
'Pump Testing						8.0	8.0					\$750	\$3,054
'Site Observations			3.0		3.0	3.0							\$1,920
A-43 Pump Station													\$0
'Pump Testing						8.0	8.0					\$750	\$3,054
'Site Observations			3.0		3.0	3.0							\$1,920
Download and catalog field data & photos						9.0			18.0				\$3,062
A Station Report											2000.00		\$2,000
S-2 Pump Station													\$0
'Pump Station Description			1.0			2.0			1.0			\$4	\$699
'Condition Ranking			1.0			3.0	4.0		0.5				\$1,322
'Pump Testing Results			1.0			4.0			1.0				\$1,015
'Summary of Improvements			1.0			4.0			1.0				\$1,015
'Opinion of Probable Construction Cost			1.0			4.0	6.0						\$1,693
A-7 Pump Station													\$0
'Pump Station Description			1.0			2.0			1.0			\$4	\$699
'Condition Ranking			1.0			3.0	4.0		0.5				\$1,322
'Pump Testing Results			1.0			4.0			1.0				\$1,015
'Summary of Improvements			1.0			4.0			1.0				\$1,015
'Opinion of Probable Construction Cost			1.0			4.0	6.0						\$1,693
A-41 Pump Station													\$0
'Pump Station Description			1.0			2.0			1.0			\$4	\$699
'Condition Ranking			1.0			3.0	4.0		0.5				\$1,322
'Pump Testing Results			1.0			4.0			1.0				\$1,015
'Summary of Improvements			1.0			4.0			1.0				\$1,015
'Opinion of Probable Construction Cost			1.0			4.0	6.0						\$1,693
A-42 Pump Station													\$0
'Pump Station Description			1.0			2.0			1.0			\$4	\$699
'Condition Ranking			1.0			3.0	4.0		0.5				\$1,322
'Pump Testing Results			1.0			4.0			1.0				\$1,015
'Summary of Improvements			1.0			4.0			1.0				\$1,015
'Opinion of Probable Construction Cost			1.0			4.0	6.0						\$1,693

DESCRIPTION: See Scope of Services	DIRECT LABOR (MAN-HOURS)											
	Principal	Chief Engineer	Senior Engineer	Senior Prof. Eng.	Eng. Prof.	Eng. Int.	Analyst	Admin/Clerical	Senior Designer	SUB	EXP	LINE TOTAL
A-43 Pump Station												\$0
'Pump Station Description		1.0			2.0			1.0			\$4	\$699
'Condition Ranking		1.0			3.0	4.0		0.5				\$1,322
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		1.0			4.0			1.0				\$1,015
'Opinion of Probable Construction Cost		1.0			4.0	6.0						\$1,693
E Station Site Visits										2250.00		\$2,250
E-1 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-2 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-3 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-4 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-5 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-7 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-11 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
E-19 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
G-1 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0		2.0	2.0							\$1,280
G-9 Pump Station												\$0
'Pump Testing					3.0	3.0					\$750	\$1,614
'Site Observations		2.0			2.0							\$890
Download and catalog field data & photos					12.0			24.0				\$4,082
E Station Report												
E-1 Pump Station										2000.00		\$2,000
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
E-2 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
E-3 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231

DESCRIPTION: See Scope of Services	DIRECT LABOR (MAN-HOURS)											
	Principal	Chief Engineer	Senior Engineer	Senior Prof. Eng.	Eng. Prof.	Eng. Int.	Analyst	Admin/Clerical	Senior Designer	SUB	EXP	LINE TOTAL
E-4 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
E-5 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
E-7 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
E-11 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
E-19 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
G-1 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
G-9 Pump Station												\$0
'Pump Station Description		0.5			2.0			1.0			\$7	\$560
'Condition Ranking		0.5			1.0	2.0		0.5				\$604
'Pump Testing Results		1.0			4.0			1.0				\$1,015
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		0.5			2.0	6.0						\$1,231
Ejector Station Site Visit												\$0
E-15 Pump Station												\$0
'Site Observations		2.0		2.0	2.0							\$1,280
Ejector Station Report												\$0
E-15 Ejector Station												\$0
'Ejector Station Description		0.5			2.0			1.0			\$48	\$601
'Condition Ranking		0.5			1.0	2.0		1.0				\$649
'Summary of Improvements		0.5			4.0			1.0				\$873
'Opinion of Probable Construction Cost		2.0			6.0	6.0						\$2,298
												\$0
												\$0
Finalize Report												\$0
Prepare Submittal Document		2.0			8.0	16.0		8.0				\$4,619
Attend Review Meeting		6.0			6.0	6.0					\$41	\$3,479
Respond to Review Meeting Comments and Submit final report		4.0			12.0	24.0		8.0				\$6,853
												\$0
												\$0
												\$0
TOTAL HOURS	0.0	124.5	0.0	35.0	413.0	274.0	0.0	129.5	0.0	8500	\$11,473.85	\$175,100
LABOR (\$/HOUR)	\$298.33	\$285.00	\$224.36	\$195.00	\$160.00	\$128.00	\$111.21	\$90.09	\$157.43	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	
TOTALS	\$0	\$35,483	\$0	\$6,825	\$66,080	\$35,072	\$0	\$11,667	\$0	\$8,500	\$11,474	\$175,100