

**Prepared by Hazen and Sawyer for
City of Delray Beach**

April 1, 2024

**Owner's Representative for Design-Build Construction Project for New Water Treatment
Plant and Related Improvements**

RFQ No. 2022-034

Scope of Services

Progressive Design-Build Phase 1 Support Services

Work Authorization No. 02

Project Understanding

The City of Delray Beach (City) is pursuing the construction of a new membrane WTP, six Surficial aquifer system (SAS) production wells, deep injection well with associated monitor well, and rehabilitation of portions of the existing SAS wells using a Progressive Design Bid Build delivery approach. The City awarded the design build contract to CDM Smith, Inc. (Design Builder) and has been approved to negotiate the Phase 1 of the design build project that includes preliminary design, detailed design, and pre-construction activities.

The City selected Hazen and Sawyer, PC (HAZEN) as the City's representative to assist with various engineering and owner's representative services tasks. The agreement with HAZEN for engineering and owner's representative services will be implemented in intentional phases, precedent to and coincidental with the Design Build services of a separate entity. Engineering and owner's representative services will be authorized in multiple work authorizations through the completion of the project. The specific scope of services included in Work Authorization No. 2 are described herein.

Scope of Services

Task 1 Project Management

Task 1.1 Monthly Status Reports

A Status Report will be prepared and submitted within 15 days of the conclusion of each month. The Status Report will also be attached to the monthly invoice. The Status Report will provide the following information:

- Overall status of the task.
- Work performed during the month.
- Estimated completion of task and major subtasks.

In addition to the Status Report, a Monthly Status Meeting between City and HAZEN Project Manager will be held to discuss the status of all subtasks for this Work Authorization. Based on the preliminary project schedule submitted by the Design Builder, Phase 1 of the project has an anticipated duration of sixteen (16) months.

As part of this task, HAZEN will also perform the following:

- Monitor the status of budget.
- Coordinate the activities of the responsible party for each task.
- Monitor project schedules and task completion with respect to deadlines and budgets.

Deliverables (issued via electronic delivery in .pdf format):

- Monthly status report.

Task 1.2 Progress Meetings

Hazen will participate in project progress meetings scheduled bi-weekly for the project duration. A total of 32 progress meetings are assumed for this work authorization. At a minimum, one HAZEN representative will attend the progress meetings and additional staff will be available based on the specific meeting needs.

As part of this task, HAZEN will also perform the following:

- Review of project schedule submitted by the Design Builder ahead of the progress meeting
- Review and coordination of project risk register (to be updated by the Design Builder)
- Participate in biweekly progress meetings
- Review of meeting minutes

Task 1.3 Project Coordination

HAZEN, as the City's representative, will serve as the liaison between the Design Builder and the City. HAZEN will assist with overall project coordination with the Design Builder and the City.

As part of this task, HAZEN will also perform the following:

- Coordination and resolution of potential conflicts
- Monitoring of project progress and potential delays
- Monitor project scope and identify potential out-scope items
- Review of design builder progress reports
- Review of design-builder's monthly progress pay applications

Task 1.4 Public Outreach Planning and Support

HAZEN will assist the City with quarterly update reports for the City Management and the City Council on the status of the project.

As part of this Task, HAZEN will also review public outreach documents prepared by the Design Builder and provide comments as needed. When (and if) needed, HAZEN will coordinate review comments with the City.

Task 2 Funding Assistance

Subtask 2.1 – Clean Water State Revolving Fund (CWSRF) Facilities Plan Development

HAZEN will assist the City with the CWSRF approval of the planning document or Facilities Plan. This task includes the following:

A. General

- a. HAZEN will prepare a consolidated application package using the information provided by the Design-Builder team to submit to the Florida Department of Environmental Protection (FDEP). The consolidated document will provide:
 - Identify where the project is located.
 - A description of the existing and recommended facilities and estimated capital costs.
 - Project justification.

B. Public Participation

- a. HAZEN will assist the City in the preparation of materials for a public meeting upon completion of the Facilities Plan. HAZEN will prepare the documents to provide evidence that a public meeting was held to explain the proposed project, the capital cost and the long-term financial impact on the customers, including a discussion whether the public participated in evaluating the project alternatives.
- b. HAZEN assumes advertisement will be performed by the City for a period as required by the local requirements.
- c. Response to the comments from the public meeting

C. Financial Feasibility

- a. A completed capital financing plan worksheet signed by the chief financial officer or the authorized representative.
- b. A Fiscal Sustainability Plan or Asset Management Plan or certification that a fiscal sustainability plan was developed and is being implemented.

D. Project Implementation

- a. List any proposed service agreements or local contracts necessary to implement the selected alternative and describe the status of each agreement or contract.

- b. List any DEP permits needed to implement the selected alternative and the status of the permit(s).

E. Disbursement Request Packages

- a. HAZEN will assist in the preparation of disbursement request packages to be submitted to FDEP for reimbursement of funds.
- b. HAZEN will coordinate with FDEP and assist with the of these requests and answer to any requests for additional information.
- c. HAZEN assumes a total of 10 packages will be prepared and submitted for approval by FDEP.

Subtask 2.2 – Additional Funding Assistance

HAZEN will provide assistance to the City on an as-needed basis up to the limits of this task. Services provided under this task shall be related to new potential funding opportunities for the City's new WTP. If new funding opportunities become available, HAZEN will notify the City of this potential opportunities and determine their feasibility and requirements for compliance. Level of effort associated with the preparation of the application is unknown and therefore not included in this work authorization.

Deliverables (issued via electronic delivery in .pdf format):

- Facilities Plan

Task 3 Engineering Services During Predesign Phase

Subtask 3.1 – Assessment of Existing Well System

The Design Builder scope includes the review of existing record drawings and inspection of the existing 30 surficial aquifer system (SAS) supply wells to develop recommendations for improvements to eliminate potential sources of air in the raw water main. HAZEN will review the technical memorandum summarizing the proposed recommendations and provide comments and/or additional recommendations (as needed) prior to approval by the City.

Upon approval of the recommendations for improvement, HAZEN will assist in the review of proposed construction costs for use of the Allowance amount established under the Design Builder's contract for Phase 1 services.

Subtask 3.2 – SAS Supply Wells - Membrane Pilot Testing

The Design Builder is responsible for developing and implementing a pilot testing program to confirm and optimize the proposed process and membrane selections and generate design required for the design of the full-scale facility.

As part of this task, HAZEN will also perform the following:

- Review of the pre-pilot testing characterization documents and provide input based on historical experience with the Biscayne Aquifer. HAZEN will provide input including additional testing and/or constituents to be sampled. The Design-Builder will be responsible for performing all raw water quality characterization tests and analyses.
- Review of the Design Builder's proposed Pilot Testing Plan. HAZEN will provide input based on previous experience and provide recommendations.
- Oversee the mobilization and start-up of the pilot plant, including the installation of the raw water, permeate, and concentrate lines.
- The Design Builder will be in charge of the operation and maintenance of the pilot plant and the anticipated duration of the pilot testing program is six (6) months. HAZEN will assist with the monitoring of the pilot testing program, frequent review of the data collection and operation of the pilot plant. For purposes of this work authorization, HAZEN assumes biweekly visits to monitor operations and review available data.
- Participate in monthly Pilot Testing Program status updates and provide feedback as needed.
- Review Pilot Testing Report. HAZEN will coordinate/discuss the results, review comments and/or recommendations with City staff prior to issuing to the Design Builder.

Subtask 3.3 – Floridan Aquifer Storage and Recovery (ASR) Well Condition Assessment

HAZEN will review the Design Builder condition assessment findings and recommendations for improvements, anticipated construction costs, and proposed pilot plan. HAZEN will review the findings of this task with the City and provide review comments/additional recommendations (as needed) for improvements and potential approach for implementation.

Subtask 3.4 – Corrosion Control

The Design Builder will develop a desktop corrosion control study and pipe loop testing for Optimal Corrosion Control Treatment (OCCT). HAZEN will review the report summarizing the findings and recommendations for corrosion control and provide recommendations/comments (as needed) based on historical experience in southeast Florida. HAZEN will provide input regarding parameters to be tested.

Task 4 – Phase 1 Detailed Design

The Design Builder is responsible for the development of the conceptual and detailed design documents, including geotechnical investigation, survey, design calculations, drawings, specifications, and cost estimates.

Subtask 4.1 – Conceptual Design (10% Design)

HAZEN will review the 10% design package as defined in the Design Builder's scope of work and will coordinate review comments and/or recommendations with City staff. The 10% package is anticipated to

include multiple technical memoranda summarizing the conceptual design for the following design elements:

1. Membrane System
2. Pre and Post Treatment Systems
3. Production wells
4. Deep injection well
5. Dual-zone monitoring well
6. Yard piping
7. Site civil
8. Buildings and structures
9. Support disciplines (electrical and instrumentation and controls)
10. Review of site conditions and constraints
11. Applicable regulatory requirements
12. Assessment of membrane effluent and lime softening blending. This assessment will include blending limits and alternatives for PFAS removal.
13. New SAS production wells and yard piping modifications
14. Assessment of the Floridan ASR well
15. Conceptual hydraulic profile
16. Draft early work packages
17. City direct purchase packages

Subtask 4.2 — Review of Design Packages (30% and Basis of Design, 60%, 90%, and 100%)

The Design-Builder will submit design packages for review by the City and HAZEN at the different phases of the design. As defined in the Design Builder scope of work, design packages will be submitted at 30% and Basis of Design, 60%, 90%, and 100% design milestones. Design packages are expected to include design drawings, technical specifications, and opinion of probable construction costs (OPCC).

In accordance with the Agreement, City must return all review comments within 2 weeks upon issuance by the Design Builder. HAZEN will review the documents within seven (7) business days of receipt of the submittal. HAZEN will provide review comments and coordinate with City to incorporate any additional comments for the completion of the review within the 2-week contractual requirement. HAZEN will assist the City and issue the review package to the Design Builder.

Subtask 4.3 — Review of Permit Submittals

The Design-Builder will submit permit submittals for review by the City and HAZEN prior to submission to the permitting agencies. In accordance with the Agreement, City must return all review comments within 2 weeks upon issuance by the Design Builder. HAZEN will review the documents within seven (7)

business days of receipt of the submittal. HAZEN will provide review comments and coordinate with City to incorporate any additional comments for the completion of the review within the 2-week contractual requirement. HAZEN will assist the City and issue the review comments to the Design Builder.

HAZEN assumes a total of 10 permitting packages will be submitted for review.

Task 5 – Schedule and Cost Review

Subtask 5.1 —Schedule Reviews and Schedule Support

HAZEN will review the Design-Builder baseline schedules and schedule updates monthly. HAZEN will provide comments based on contract requirements and industry best practices to ensure quality and reliability of each schedule submittal.

The baseline review will include review of phasing, schedule logic, activities, their durations and relationships, constraints, floats, calendars, resources, and critical paths in accordance with the Scope of Work and the Agreement. An accepted baseline will form the basis for review of progress updates.

The review of the updates will include a narrative of the Project status, changes to critical path, activity durations, sequence logic, floats, progress or lack thereof and identify potential issues and schedule impacts. HAZEN will participate in schedule review meetings, provide analysis, and recommend resolution of issues and mitigation solutions. Additionally, HAZEN will review all schedule related change requests and time impact analysis support.

Subtask 5.2 —Cost Model, Cost Updates, and GMP Reviews

HAZEN will review and provide comments on the Design-Builder's proposed cost model for use in for subsequent cost estimates. HAZEN will also review the cost estimates that will be submitted for the 10% Design PER, the 30% design milestone and 60% design milestone as part of the Guaranteed Maximum Price Proposal.

Task 6 – Additional Engineering Services

This Task is for Additional Engineering Services that could be required to perform additional work due to unforeseen assistance that City might request. Services provided under this Task shall be billed on an hourly basis up to the specified amount as authorized by the City, subject to the limits set in the agreement. Services performed under this Task must be initiated by an email authorization issued by the City.

Assumptions

The following assumptions were used to develop the scope and fee for this Work Authorization.

1. All deliverables will be electronic unless otherwise noted.

2. Level of effort is based on Design-Builder's Version 2 Schedule with a 16 months duration from NTP to GMP development.
3. No construction management or administration is included in this Work Authorization. This will be included as part of a future Work Authorization.

Schedule

HAZEN will perform the services identified in this Work Authorization along the 16 months presented in the Design-Builder Version 2 schedule. This duration was from notice-to-proceed to the development of a Guaranteed Maximum Price.

Compensation

Compensation for Tasks 1 – 5 will be for a lump sum amount of \$472,957.08 as each task from 1 to 5 will be paid as a percent complete from its associated lump sum dollar amount regardless of number of hours or any other expenses incurred by HAZEN. In addition, a budget of \$50,000.00 is established for Task 6 for Hourly Not-to-Exceed Allowances. The total for this Work Authorization is a not-to-exceed of \$522,957.08.

Attachment A presents a detailed breakdown of the estimated hours and compensation for the Scope of Services. HAZEN will submit invoices based on percent complete activities for each lump sum task. The lump sum percent complete will be discussed with City during each monthly coordination meeting.

Task	Description	Method of Payment	Amount
1	Project Management	Lump Sum	\$150,814.40
2	Funding Assistance	Lump Sum	\$58,001.55
3	Engineering Services During Predesign Phase	Lump Sum	\$73,104.10
4	Phase 1 Detailed Design	Lump Sum	\$139,609.00
5	Schedule and Cost Review	Lump Sum	\$51,428.03
Lump Sum Subtotal			\$472,957.08
6	Additional Engineering Services (Contingency Allowance)	Hourly Not-to-Exceed	\$50,000
Hourly Not-to-Exceed Allowances Subtotal			\$50,000.00
Total Work Authorization No. 2			\$522,957.08

Authorization



Orlando J. Castro, PE
Associate Vice President
Hazen and Sawyer, P.C

ATTACHEMENT A
CITY OF DELRAY BEACH
OWNER'S REPRESENTATIVE FOR DESIGN-BUILD CONSTRUCTION PROJECT FOR NEW WATER TREATMENT PLANT AND RELATED IMPROVEMENTS
WORK AUTHORIZATION NO. 2 - PROGRESSIVE DESIGN-BUILD PHASE 1 SUPPORT SERVICES

Labor Category		Vice President/ Associate Vice President		Senior Associate		Associate		Senior Principal Engineer/Scientist		Principal Engineer		Total Hours	Labor Cost
Labor Rate (/hr)		\$279		\$258		\$211		\$201		\$149			
Sub-Task No	Task Title	Hours											
1	Project Management	83	\$ 23,157	380	\$97,850.00	0	\$0.00	0	\$0.00	200	\$29,807.40	663	\$ 150,814.40
2	Funding Assistance	4	\$1,116.00	52	\$13,390.00	100	\$21,140.00	0	\$0.00	150	\$22,355.55	306	\$58,001.55
3	Engineering Services During Predesign Phase	32	\$8,928.00	152	\$39,140.00	0	\$0.00	46	\$9,238.18	106	\$15,797.92	336	\$ 73,104.10
4	Phase 1 Detailed Design	74	\$20,646.00	384	\$98,880.00	0	\$0.00	100	\$20,083.00	0	\$0.00	558	\$ 139,609.00
5	Schedule and Cost Review	36	\$10,044.00	82	\$21,115.00	0	\$0.00	0	\$0.00	136	\$20,269.03	254	\$ 51,428.03
	Subtotal Costs Lump Sum	229	\$ 63,891	1050	\$ 270,375	100	\$ 21,140	146	\$ 29,321	592	\$ 88,230	2405	\$ 472,957.08
6	Additional Engineering Services (Contingency Allowance)												\$ 50,000.00
	Subtotal Costs Allowances												\$ 50,000.00
TOTAL COSTS													\$ 522,957.08