CITY OF MIRAMAR
PROPOSED CITY COMMISSION AGENDA ITEM

Meeting Date: October 13, 2021

Presenter's Name and Title: Ronnie S. Navarro, Assistant Director of Utilities, on behalf of the Utilities Department and Alicia Ayum, Director of Procurement on behalf of the Procurement Department

Prepared By: Ronnie S. Navarro, Assistant Director of Utilities

Temp. Reso. Number: 7496

Item Description: Temp Reso. No. 7496, APPROVING THE AWARD OF REQUEST FOR LETTERS OF INTEREST, RLOI 21-02-14, ENTITLED: "WATER DISTRIBUTION SYSTEM HYDRAULIC MODEL & MASTER PLAN" TO THE HIGHEST EVALUATION SCORING, RESPONSIVE AND RESPONSIBLE PROPOSER, STANTEC CONSULTING SERVICES INC; AUTHORIZING THE CITY MANAGER TO EXECUTE THE PROPOSED PROJECT AGREEMENT FOR PROFESSIONAL SERVICES WITH STANTEC CONSULTING SERVICES, INC., FOR THE PROPOSED UTILITY SERVICES IN AN AMOUNT NOT-TO-EXCEED $346,381 (Utilities Director Roy Virgin and Procurement Director Alicia Ayum)

Consent ☒ Resolution ☐ Ordinance ☐ Quasi-Judicial ☐ Public Hearing ☐

Instructions for the Office of the City Clerk: none

Public Notice – As required by the Sec. ___ of the City Code and/or Sec. ___, Florida Statutes, public notice for this item was provided as follows: on _____ in a _____ ad in the _____; by the posting the property on _____ and/or by sending mailed notice to property owners within ____ feet of the property on _____ (fill in all that apply)

Special Voting Requirement – As required by Sec. _____, of the City Code and/or Sec. ____, Florida Statutes, approval of this item requires a _____ (unanimous, 4/5ths etc.) vote by the City Commission.

Fiscal Impact: Yes ☒ No ☐

REMARKS: This project is part of Utilities Collection and Distribution System Improvements (Master Plan and Subsequent Construction). Funding is available under FY21 - CIP-Plan/Design/Eng 410-55-813-533-000-606502-52091 in the amount of $400,000.00

Content:

- Agenda Item Memo from the City Manager to City Commission
- Resolution TR No. 7496
- Exhibit A: Proposed Project Agreement with STANTEC CONSULTING SERVICES INC
- Attachment 1: Request for Letters of Interest (RLOI 21-02-14)
- Attachment 2: Evaluation & Scoring Sheet
- Attachment 3: Vendor's Proposal/Scope of Services

CITY OF MIRAMAR
INTEROFFICE MEMORANDUM

TO: Mayor, Vice Mayor, & City Commissioners

FROM: FOR Vernon E. Hargray, City Manager

BY: Roy L. Virgin, Ph.D., Director of Utilities

DATE: October 7, 2021

RE: Temp. Reso. No. 7496, Proposed Project Agreement with STANTEC Consulting Services, Inc.

RECOMMENDATION: The City Manager recommends approval of Temp. Reso. No. 7496 approving the final ranking and award of Request for Letters of Interest (the "RLOI") No. 21-02-14," entitled: "Water Distribution System Hydraulic Model and Master Plan," to the highest evaluation scoring, most qualified, responsive and responsible proposer whose proposal is most adventageous to the City, STANTEC Consulting Services, Inc. (the "Consultant"); and authorizing the City Manager to execute the proposed Professional Services Agreement with the Consultant for the provision of professional services in an amount not-to-exceed $346,381.

ISSUE: City Commission approval is required for purchases exceeding the $75,000 per vendor limit, in accordance with Section 2-412(a)(1) of the City Code.

BACKGROUND: The City of Miramar operates and maintains a network of about 441 miles of water distribution system with over 4,500 fire hydrants; and added to this complexity are the high service pumps from our treatment plants and remote ground water tanks. To effectively manage this complex system of pumps and pipelines, an integrated master plan is necessary. In order to effectively develop a master plan, a good and well-calibrated hydraulic model is a prerequisite. This master plan will provide the fundamental principles and guidelines for how the Utilities Department will achieve its goals and objectives.

The purpose of a master plan is to provide an assessment of the current situation and, in the light of known and assumed conditions, provide a framework for future actions. The specific objectives for this undertaking are to preserve the public's trust in our water

systems through compliance with state and federal water quality, water management; to guide strategic long-term planning; and to demonstrate leadership in the stewardship of our limited natural resources. The masterplan will likewise identify capital improvement projects that will meet these stated purpose and objectives.

PROCUREMENT: On February 11, 2021, the City's Procurement Department issued a RLOI No. 21-02-14. On the due date, the City received proposals from four (4) firms.

City staff evaluated the proposals in accordance with the criteria set forth in the RLOI and STANTEC Consulting Services, Inc., was evaluated as the highest evaluation scoring, most qualified, responsive, responsible proposer whose proposal is in the best interest of the City.

The City and the Consultant have negotiated the fees for professional utility services in the amount not-to-exceed $346,381.

Temp. Reso. No. 7496
9/23/21
10/5/21

CITY OF MIRAMAR
MIRAMAR, FLORIDA

RESOLUTION NO. _____

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF MIRAMAR, FLORIDA, APPROVING THE FINAL RANKING AND AWARD OF REQUEST FOR LETTERS OF INTEREST, RLOI 21-02-14, ENTITLED: "WATER DISTRIBUTION SYSTEM HYDRAULIC MODEL & MASTER PLAN" TO THE HIGHEST EVALUATION SCORING, RESPONSIVE AND RESPONSIBLE PROPOSER, STANTEC CONSULTING SERVICES, INC.; AUTHORIZING THE CITY MANAGER TO EXECUTE THE PROPOSED PROJECT AGREEMENT FOR PROFESSIONAL SERVICES WITH STANTEC CONSULTING SERVICES, INC., FOR THE PROPOSED UTILITY SERVICES IN AN AMOUNT NOT-TO-EXCEED $346,381; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Miramar owns and operates an extensive water distribution system composed of 441 miles of pipelines, fire hydrants, valves, and pumps; and

WHEREAS, the City serves 96% of the City's population with potable water;

WHEREAS, a well-calibrated and updated hydraulic model is an integral part of the decision-making process for planning, designing, and operating the City's water distribution system; and

WHEREAS, the hydraulic model will provide transparency to decision makers regarding capital improvements, short- and long-term planning, fire flow evaluations, operational strategies and alternatives, and water quality monitoring and sampling; and

WHEREAS, a master plan will be generated based on the hydraulic model; and

WHEREAS, at project completion, the City will own and maintain the hydraulic model and be able to update the master plan periodically based on needs; and

WHEREAS, on February 11, 2021, the City's Procurement Department issued a Request for Letters of Interest, RLOI 21-02-14; and

WHEREAS, on March 22, 2021, a selection committee comprised of City staff evaluated, scored and ranked all submittals based on the criteria contained in the RLOI, and determined STANTEC Consulting Services, Inc. (the “Consultant”) to be the highest evaluation scoring, most qualified responsive and responsible proposer whose proposal is most advantageous to the City; and

WHEREAS, the City and the Consultant have negotiated the fees for the Utility engineering services in an amount not-to-exceed $346,381; and

WHEREAS, the City Manager recommends that the City Commission approve the final ranking and award the RLOI to STANTEC Consulting Services, Inc., and to authorizer the City Manager to execute the proposed Project Agreement, in an amount not-to-exceed $346,381, in the form attached hereto as Exhibit “A”; and

WHEREAS, the City Commission deems it to be in the best interest of the citizens and residents of the City of Miramar to approve the final ranking and award of the RLOI to

STANTEC Consulting Services, Inc.; and authorization for the City Manager to execute the proposed Project Agreement, in an amount not-to-exceed $346,381, in the form attached hereto as Exhibit “A”.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF MIRAMAR, FLORIDA AS FOLLOWS:

Section 1: That the foregoing **“WHEREAS”** clauses are hereby ratified and confirmed as being true and correct and are hereby made a specific part of this Resolution.

Section 2: That it approves the award of the RLOI No. 21-02-14 to STANTEC Consulting Services, Inc.

Section 3: That the City Manager is authorized to execute the proposed Project Agreement with STANTEC Consulting Services, in an amount not-to exceed $346, 381, in the form attached hereto as Exhibit “A”, together with such non-substantive changes as are deemed acceptable to the City Manager and approved as to form and legal sufficiency by the City Attorney.

Section 4: That the appropriate City officials are authorized to do all things necessary and expedient in order to carry out the aims of this Resolution.

Section 5: That this Resolution shall take effect immediately upon adoption.

PASSED AND ADOPTED this _____ day of _____, _____.

_____
Mayor, Wayne M. Messam

_____
Vice Mayor, Yvette Colbourne

ATTEST:

_____
City Clerk, Denise A. Gibbs

I HEREBY CERTIFY that I have approved
this RESOLUTION as to form:

_____
City Attorney,
Austin Pamies Norris Weeks Powell, PLLC

Requested by Administration	**Voted**
Commissioner Winston F. Barnes	_____
Commissioner Maxwell B. Chambers	_____
Vice Mayor Yvette Colbourne	_____
Commissioner Alexandra P. Davis	_____
Mayor Wayne M. Messam	_____

PROJECT AGREEMENT
FOR PROFESSIONAL SERVICES
BETWEEN
THE CITY OF MIRAMAR
AND
STANTEC CONSULTING SERVICES, INC.

THIS PROJECT AGREEMENT (the "Agreement") is made and entered into this _____ day of _____, 2021 between the **CITY OF MIRAMAR, FLORIDA,** a Florida municipal corporation with its principal offices located at 2300 Civic Center Place, Miramar, Florida 33025 (the "City"), and **STANTEC CONSULTING SERVICES, INC.,** a Florida foreign profit corporation, (the "Consultant"), with its principal offices located at 370 Interlocken Boulevard, Suite 300, Broomfield Colorado 80021.

WITNESSED:

WHEREAS, on January 16, 2019, by the adoption of Resolution No. 19-52, the City Commission approved a new pool of Architectural and Engineering Consultants to provide professional services to the City on an as needed basis; and

WHEREAS, the Consultant is a member of the new pool under the subcategories of Civil and Utilities Engineering and has executed a Continuing Services Agreement applicable to the provision of such professional services; and

WHEREAS, the Consultant responded to the City's Request for Letter of Interest #21-02-14 ("RLOI"), and has been chosen by the City to provide Utilities Engineering Services (the "Services") for Water Distribution System Master Plan and Hydraulic Modeling (the "Project" or the "Scope of Services") and the parties, through mutual negotiation, have agreed upon the Scope of Services.

NOW, THEREFORE, in consideration of the foregoing recitals, which are incorporated herein, and the mutual covenants, terms and conditions provided below, the Consultant and the City agree as follows:

1. **Contract Documents**
The Contract Documents referred to in this Agreement shall be comprised of the following:

1.1 This Agreement (the "Specific Projects" or "Project Agreement") in the Continuing Services Agreement between the parties, including any

General Terms and Conditions, Supplementary Conditions, Statement of Work or any other provisions contained within this Agreement;

1.2 A Scope of Services request completed by the Consultant and accepted by the City, attached hereto as **Attachment "A"**;

1.3 The Continuing Services Agreement dated March 27, 2019, between the City and Consultant, the terms and conditions of which shall apply to the provision of Services under this Agreement;

1.4 Any and all applicable addenda, proposals executed and submitted by the Consultant and accepted by the City, specifications and insurance certificates; and

1.5 All amendments mutually agreed to after execution of this Agreement.

These Contract Documents comprise the entire agreement for the Services agreed to herein between the parties, and incorporated into and made a part of this Agreement as if attached to this Agreement or repeated herein. In the event of a conflict between this Agreement and any other Contract Document(s), this Agreement shall prevail.

2. The Work

Consultant shall furnish all labor, materials and equipment necessary to provide professional Services as specified in the Scope of Services request completed by the Consultant and accepted by the City.

3. Period of Service

The Consultant shall begin work promptly after receipt of a fully executed copy of this Agreement and a letter of Notice to Proceed from the City and shall complete the Project within the time mutually agreed upon, as specified in the Scope of Services request accepted by the City.

4. Compensation

Compensation (the "Contract Sum") for performing the Services related to the Project shall be the fee of Three Hundred Forty-Six Thousand Three Hundred Eighty-One Dollars ($346,381.00) specified in the Scope of Services request accepted by the City.

5. Payments

5.1 The City shall pay the Contract Sum to the Consultant subject to the completion of tasks as specified in the Attachment A. The City shall pay the Consultant for work performed subject to the specifications of the job and any additions and deductions by subsequent change order provided in the Contract Documents. All payments shall be governed by the Florida Prompt Payment Act, Chapter 218, Part VII, Florida Statutes.

5.2: The Consultant shall provide periodic invoices to the City upon completion of a substantial amount of Services relating to the Scope of Services contained within this Agreement. Payment shall be made to the Consultant upon approval of submitted invoices to the City.

6. Termination

This Agreement may be terminated by the City for convenience upon thirty (30) calendar days' written notice to the Consultant. In the event of such termination, any Services performed by the Consultant under the this Agreement shall, at the option of the City, become the City's property, and the Consultant shall be entitled to receive compensation for any work completed pursuant to this Agreement to the satisfaction of the City up through the date of termination. Under no circumstances shall City make payment for Services that have not been performed.

This Agreement may be terminated by either party for cause upon five calendar days' written notice to the other should such other party fail to perform in accordance with its material terms through no fault of the party initiating the termination. In the event the Consultant abandons this Agreement or causes it to be terminated by the City, the Consultant shall indemnify and save the City harmless against loss pertaining to this termination. In the event that the Consultant is terminated by the City for cause and it is subsequently determined by a court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a termination for convenience and the provisions in the paragraph above shall apply.

7. Default:

In the event of a default by Consultant, the default provisions contained in the Continuing Services Agreement between the parties shall govern.

8. Anti-lobbying/No Contingent Fee:

The provisions of Section 11 of the Continuing Services Agreement shall apply to this Agreement.

9. Warranties and Guarantees:

9.1 The Consultant warrants that its Services are to be performed within the limits prescribed by the City and with the usual thoroughness and competence of the Consultant's architectural and/or engineering profession.

9.2 The Consultant shall be responsible for technically deficient designs, reports or studies due to negligent acts, errors or omissions. The Consultant shall, upon the request of the City, promptly correct or replace all deficient work due to negligent acts, errors or omissions without cost to the City.

10. Binding Effect:

This Agreement shall bind and the benefits thereof shall inure to the respective parties hereto, their legal representatives, executors, administrators, successors and assigns.

11. Amendments and Modification:

No amendments and/or modifications of this Agreement shall be valid unless in writing and signed by each of the parties to the Agreement.

12. Merger; Amendment:

This Agreement, including the referenced Contract Documents, and any attachments, constitute the entire agreement between Consultant and City, and all negotiations and oral understandings between the parties are merged herein. This Agreement may be supplemented and/or amended only by a written document executed by both Consultant and City.

13. Nonassignability:

Consultant shall not assign, subcontract or transfer any rights or delegate any duties arising under this Agreement without prior written consent of the City, which consent may be withheld by the City in its sole discretion.

14. Notices:

Whenever either party desires to give notice to the other, it shall be given by written notice, sent by certified United States mail, with return receipt requested, addressed to the party for whom it is intended, at the place last specified, and the place for giving of notice in compliance with the provisions of this paragraph. For the present, the parties designate the following as the respective places for giving of notice, to-wit:

FOR CONSULTANT:

Stantec Consulting Services, Inc.
Ramon Castella, P.E.
1551 Sawgrass Corporate Parkway,
Suite 440
Sunrise, Florida 33323
Telephone: 305-445-2900
Facsimile: 305-445-0863

FOR CITY:

City of Miramar
Vernon E. Hargray
City Manager
2300 Civic Center Place
Miramar, FL 33025
Telephone: 954-602-3115
Facsimile: 954-602-3672

With Copy to:

Austin Pamies Norris Weeks
Powell, P.L.L.C., City Attorney
401 NW 7th Avenue
Ft. Lauderdale, FL 33311
Telephone: 954-768-9770
Facsimile: 954-768-9790

15. Severability; Waiver:

Any provision in this Agreement that is prohibited or unenforceable under Florida or federal law shall be ineffective to the extent of such prohibitions or unenforceability without invalidating the remaining provisions hereof. Also, the non-enforcement of any provision by either party to this Agreement shall not constitute a waiver of that provision nor shall it affect the future enforceability of that provision or the remainder of this Agreement.

16. Public Records:

The Consultant shall comply with The Florida Public Records Act as follows:

16.1 Keep and maintain public records in the Consultant's possession or control in connection with the Consultant's performance under this Agreement, that ordinarily and necessarily would be required by the City in order to perform the service.

16.2 Upon request by the City's records custodian, provide the City with a copy of requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

16.3 Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of this Agreement, and following completion of this Agreement until the records are transferred to the City.

16.4 Upon completion of this Agreement or in the event of termination of this Agreement by either party, any and all public records relating to this Agreement in the possession of the Consultant shall be delivered by the Consultant to the City, at no cost to the City, within seven (7) days. All records stored electronically by the Consultant shall be delivered to the City in a format that is compatible with the City's information technology systems. Once the public records have been delivered to City upon completion or termination of this Agreement, the Consultant shall destroy any and all duplicate public records that are exempt or confidential and exempt from public record disclosure requirements.

16.5 The Consultant's failure or refusal to comply with the provisions of this Section shall result in the immediate termination of this Agreement by the City.

16.6 IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT 954-602-3011, dagibbs@miramarfl.gov OR BY MAIL: City Of Miramar – City Clerk's Office, 2300 Civic Center Place, Miramar, FL 33025.

17. Ownership Of Documents:

17.1 All original construction Drawings and Specifications produced by Consultant under this Agreement shall remain the property, and shall remain in the custody and possession, of Consultant, who shall retain them in confidence. Copies of all Drawings and Specifications (both in electronic form, clearly marked as copies, and in the form of reproducible hard copies) shall be furnished to the City, along with copies (or originals to the extent permitted by Florida Regulations governing the practice of Consultants) of any drafts, Work papers, samples, prototypes, models, sketches, conceptual or schematic Drawings, master plan documents, and other work product produced in connection with this Agreement or the Project which is the subject of this Agreement, regardless of the state of completion of the Work, and regardless of the source (collectively, Consultant's "Work") that Consultant has retained in its possession. City may reuse the concepts, themes, ideas, and expression reflected or embodied in the Drawings and Specifications and may, if it wishes, retain another licensed design professional to incorporate said concepts, themes, ideas, and expression into other plans and Specifications. All Consultant's Work other than one set of original construction Drawings, line Drawings, Specifications, and computer disks prepared by the Consultant shall be the property of the City and may be used by the City as the City sees fit. The original physical Drawings and Specifications retained by City may be used for occupying the Project, completing or modifying the Project, the building, the site for which they were prepared, but not for the construction of another project on another site. All original construction Drawings, line Drawings, Specifications, and computer disks shall remain in the possession, care, custody and control of Consultant. Consultant's Work shall be deemed "work for hire" commissioned by the City to the fullest extent permitted by the copyright Laws of the United States and by Florida Law. To the

fullest extent permitted by federal and Florida Law, Consultant hereby transfers to the City, for good and valuable consideration, all copyright, trademark, and patent rights in and to Consultant's Work, and agrees to sign any and all further documents deemed necessary by the City to protect the City's copyright rights therein at the conclusion of the Project. Consultant agrees not to share, reveal, or advertise any of the Work, or the concepts, themes or ideas reflected therein, with or to any third parties absent City's prior written consent, and further agrees not to reuse same for any purpose without City's prior written consent. Consultant expressly acknowledges that, to the extent the concepts and themes for a given Project were initially conceived by the City, they shall remain the property of the City, and the City may reuse them as it sees fit. Upon the completion or termination of Consultant's involvement on a given Project, any and all documents, information or use rights provided to the Consultant for purposes of or in connection with the Consultant's performance of this Agreement in connection with the Project, or otherwise related to the Project, shall be returned to the City, without Consultant retaining any copies except that Consultant shall retain copies of documents or information furnished by the City which were influential in Consultant's production of the Work so long as the Consultant holds same in confidence and does not disseminate them or share them with any other third parties.

17.2 When the City requests that the Consultant provide to it certain plans, Specifications, or other documents in electronic form ('Electronic Documents'), the Project Consultant will do so subject to the terms of this provision. The City recognizes that Electronic Form Documents are not intended to be used for construction, are not Contract Documents under the terms of the Construction Contract, may be revised by others without the knowledge or consent of the Consultant, and, when plotted, may result in variances or corrupt other files of the user. City agrees not to use the Electronic Form Documents for any purposes other than the Project for which they were prepared. Consultant will provide to the City only a working copy of the Electronic Form Documents. Said working copy of the Electronic Form Documents shall have removed from the electronic display all indices of the Consultant's ownership, professional name, and/or involvement in the Project. Any use of any kind and/or changes to the Electronic Form Documents will be at the sole risk of the user and without liability, risk, or legal exposure to the Consultant.

18. Other Provisions:

18.1 Titles and paragraph headings are for convenient reference and are not a part of this Agreement.

18.2 In the event of conflict between the terms of this Agreement and any terms or conditions contained in any attached or referenced Contract Documents, the terms in this Agreement shall prevail.

18.3 No waiver or breach of any provision of this Agreement shall constitute a waiver of any subsequent breach of the same or any other provision, and no waiver shall be effective unless made in writing.

19. Scrutinized Companies:

19.1 Contractor certifies that it and its subcontractors are not on the Scrutinized Companies that Boycott Israel List. Pursuant to Section 287.135, F.S., the City may immediately terminate this Agreement at its sole option if the Contractor or its subcontractors are found to have submitted a false certification; or if the Contractor, or its subcontractors are placed on the Scrutinized Companies that Boycott Israel List or is engaged in the boycott of Israel during the term of the Agreement.

19.2 If this Agreement is for more than one million dollars, the Contractor certifies that it and its subcontractors are also not on the Scrutinized Companies with Activities in Sudan, Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria as identified in Section 287.135, F.S. Pursuant to Section 287.135, F.S., the City may immediately terminate this Agreement at its sole option if the Contractor , its affiliates, or its subcontractors are found to have submitted a false certification; or if the Contractor, its affiliates, or its subcontractors are placed on the Scrutinized Companies with Activities in Sudan List, or Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or engaged with business operations in Cuba or Syria during the term of the Agreement.

19.3 The Contractor agrees to observe the above requirements for applicable subcontracts entered into for the performance of work under this Agreement.

19.4 As provided in Subsection 287.135(8), F.S., if federal law ceases to authorize the above-stated contracting prohibitions then they shall become inoperative.

Consultant's failure or refusal to comply with the provisions of this Section shall result in the immediate termination of this Agreement by the City.

20. E-Verify Program

In accordance with Florida Statutes §448.095, the Consultant, prior to commencement of services or payment by the City, will provide to the City proof of participation/enrollment in the E-Verify system of the Department of Homeland Security. Evidence of participation/enrollment will be a printout of the Company's "Company Profile" page from the E-Verify system. Failure to be continually enrolled and participating in the E-Verify program will be a breach of contract which will be grounds for immediate termination of the contract by the City. The Consultant will not hire any employee who has not been vetted through E-Verify. The Consultant may not subcontract any work for the City to any subconsultant that has not provided an affidavit stating that the subconsultant does not employ, contract with or subcontract with an unauthorized alien."

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed by their respective duly authorized representatives the day and year written below.

FOR CITY:

ATTEST:

CITY OF MIRAMAR

_____
Denise Gibbs, City Clerk

By:_____
Vernon E. Hargray,
City Manager

Dated: _____

Approved as to form and legal sufficiency for the use of and reliance by the City of Miramar only:

_____
City Attorney
Austin Pamies Norris Weeks Powell, PLLC

FOR CONSULTANT:

WITNESS:

STANTEC CONSULTING SERVICES, INC.

_____

By: _____
Jeffrey Stone, Vice President

Print Name: _____

Date: _____

Corporate Seal:

ATTACHMENT "A"

Stantec

Stantec Consulting Services Inc.
1551 Sawgrass Corporate Parkway, Suite 440
Sunrise, Florida 33323

August 24, 2021

Attention: Ronnie Navarro, PE
City of Miramar
Utilities Department, Assistant Director
13900 Pembroke Road
Miramar, FL 33027

Reference: City of Miramar Utilities Department
Professional Services – Water Distribution System Master Plan & Hydraulic Modeling

Dear Mr. Navarro,

Stantec is pleased to present our Scope of Work for professional engineering services to prepare the City's Water Distribution and Transmission System Master Plan and update the existing Hydraulic Model.

Background

The City of Miramar (City) water service area has a customer base of approximately 96% of the City's population. The remaining residents are serviced by Broward County Water and Wastewater Services (BCWWS) in BCWWS service area 3BC. Potable water is provided by the City's two water treatment plants, East Water Treatment Plant and West Water Treatment Plant.

East WTP (EWTP) was originally constructed in the 1950s and has undergone several upgrades. The lime softening process was replaced with a nanofiltration process, and currently operates at 6MGD capacity.

West WTP, built in 1996, had an initial capacity of 4.5MGD using a nanofiltration process. The plant was expanded over the years to its 11.75MGD capacity. The plant now utilizes both a low-pressure membrane softening process (nanofiltration) and a medium pressure brackish water reverse osmosis process and blends the two (2) permeate streams.

Water supply wellfield sources consists of eight primary Biscayne aquifer shallow production wells and two Floridan aquifer system deep wells. The City also proposes one additional Floridan aquifer system production well.

This proposal presents the scope to update and calibrate the existing water system hydraulic model to be used as a tool for system evaluation and develop a master plan for future water distribution system improvements. Stantec will update the hydraulic model utilizing Bentley's WaterGEMS Software.

A good hydraulic model can be an integral part of the decision-making process for planning, designing, and operating water distribution system. The model can provide transparency to decision makers regarding capital improvements, developer contributions, operational strategies, and water quality monitoring and sampling. The application of hydraulic models in utility management are generally planning, engineering design, system operations, and water quality improvement. As such, the model results can be highly dependent on model construction, model controls (or lack thereof), input data quality, model validation, pipe connectivity, etc.

In conclusion, a hydraulic model can be a powerful tool to help a utility's strategic planning for evaluating operational strategies, water quality modeling, or capacity evaluation of critical infrastructure. However, a model that is not representative of the actual system operations and conditions can be misleading and be of

limited use. A hydraulic model that is validated, calibrated, and has the confidence of the utility can be a valuable tool for long-range planning, water quality evaluation, fire flow evaluations, optimization, alternatives evaluation, resiliency studies, emergency planning, and asset management.

Stantec is pleased to offer a proposal of services to help serve the City of Miramar with updating the Water Distribution Hydraulic Model and developing a Master Plan. We understand that the City wants to proceed on a task-by-task sequence as funds become available and at the direction of the City of Miramar. We've structured this proposal to facilitate this approach.

Scope of Services

Generally, the scope of the project includes the following:

- Water Distribution System Hydraulic Model Update & Master Plan
  - Update model to include all existing tanks and pumps, as well as key valves.
  - Assign demand curves to model nodes (i.e., residential).
  - Adding fire hydrants to the model.
  - Develop hydrant testing plan and identify the testing locations.
  - Perform model validation and calibration.
  - Witnessing field testing such as flow monitoring and pump testing.
  - Perform various simulations and identify system deficiencies.
  - Conducting a water age and trace analysis.
  - Evaluate Existing Distribution System Performance.
  - Future Distribution System Evaluation.
  - Recommend Water Distribution System Improvements.
  - Develop Water Distribution System Master Plan Report.
  - Provide software training and on-call support.

The following tasks provide the detailed scope of services:

TASK 1 – Water Distribution System Model Update, Calibration and Assessment

The potable water model will consist of all pipes within the potable water service territory that are 4-inch in diameter and larger. The model will be updated using Bentley's WaterGEMS Software.

Task 1.1 Data Collection and Analysis

City of Miramar will provide the current WaterGEMS water system hydraulic model, planning documents and the planned near-term projects for Stantec to review. Examples of the information that is pertinent to this water distribution system hydraulic model update and application are:

- Up-to-date water system GIS database including water mains (potable water), fittings, hydrants, and valves.
- Potable main layer should have the following attributes: diameter, length, installation year and material, interconnects, lining (some pipes are concrete lined to prolong life), Zone (pressure boundary).
- Nodes (fittings, hydrants) should have elevation data, zone (pressure boundary).

- Valves – type, status, settings, diameter, elevation, location of boundary valves.
- Potable water SCADA data report for a recent 2-year period that represents typical current operations (report should include flow and pressure/level data at all monitoring points in the system).
- SCADA data output reports for Maximum day and Peak hour period, pumping data from the high service pumps, and low pressure transfer (i.e., flow, pump status on or off and suction and discharge pressure), storage tank level data, PRV data (i.e., flow, status, and suction and discharge pressure (if available)), discharge pressure and flow from the City's Water Treatment Plants (WTP).
- Up to 10 years of historical production and billing data in geodatabase GIS point coverage format, if available. If it is not available, billing data (location/volume demands) in MS EXCEL, and GIS street layers will be necessary.
- Facility information (i.e., storage tanks, high service pumps and pressure reducing valves): Capacity, available controls, pipe layout, elevation, dimensions, volumes, and as-builts. Storage tank information should include the in-service year, elevation, maximum operating height, overflow height, and minimum operating range. Pump curves, elevation, operating set points (switch ON/OFF levels), pipe connectivity, valves, available controls, available VFD/constant speed controls - do they look at downstream pressure/tank level - and available pump test data.

Stantec will review information collected and identify potential data gaps and conflicts between the information collected and the existing model, and identify missing information. Stantec will seek input from City staff to resolve data conflicts, identify data gaps that need to be addressed, and will document information inconsistencies, data gaps and resolution results in a memorandum to the City. Based on the information received, Stantec will determine which missing elements can be resolved by adopting planning assumptions for incorporation into the model.

Task 1.2 Develop Calibration Approach and Field Data Collection

Stantec will use the updated model and create one Extended Period Simulation (EPS) and compare tank levels, pressure, and flow recorded over a 24-hour period to the simulation results reflecting the same conditions. This information will be used by Stantec to compare and identify significant differences in operational logic and facility (i.e. pump stations) set points between the existing model and actual operations. Based on the difference, Stantec will determine areas where field testing is necessary.

Stantec will develop calibration requirements that are based on the level of confidence from available data, anticipated model usage, and industry best practices (i.e. AWWA M32). Working with City, Stantec will identify locations for fire flow and pump tests, identify SCADA data to be gathered and document the testing protocol. Based on the information collected in this task, Stantec will develop a plan for City forces to conduct fire flow tests. Pump test procedures will include gathering data for a single operating point at each pump or pump station to confirm model pump curves.

City to supply testing equipment such as radios, wrenches, mobile flow meters, diffusers, and data loggers. One representative of Stantec will be present to witness and record results of fire flow field tests. City to provide all other testing personnel (Approx. four people).

Task 1.3 Water Distribution Networks Model Update

Stantec will update the potable water distribution model pipe networks using GIS information or, if needed, from as-built drawings. It is assumed that a majority of the pipe network is available in electronic format and that minimal supplemental as-built data will be needed. Major capital projects (up to 3 capital projects) that were constructed after the last GIS update will be incorporated into the model.

Task 1.4 Incorporate Water Demands into Water Networks Model

City will provide water demand data to Stantec for incorporation into the hydraulic model. To begin, the model will be prepared for demand allocation under seasonal conditions. The demand sets will be created for peak hour, average day, maximum day, maximum day plus fire flow, and minimum month demands. A database query will be created to quickly identify demand nodes. Junctions will be identified and flagged in the database as demand nodes or non-demand nodes.

Water demands will be added to the model's demand database using the selected model's demand allocation tools. Use is anticipated to require a GIS point coverage of water customer meters and their calculated water use for each demand condition (i.e. maximum day, average annual and seasonal). Stantec will assist with reviewing and updating the City existing GIS coverage. This will be accomplished by correlating as many customer accounts addresses as possible to the City's parcel coverage. The remaining account addresses will be related to street or meter route mapping.

Stantec will sort individual customer demands contained in the data collected from Task 1.1. If possible, recommendations will be made to integrate the customer database in the GIS.

Task 1.5 Assign Fire Flows

Fire flows will be assigned to various existing model fire flow junctions for use in evaluating "maximum day plus fire flow" for each maximum day scenario. Fire flows for future areas will be assigned to future demand nodes. Fire flows will be based on requirements typical to each land use area as discussed and agreed to by the City. Individual large fire flows identified by the City's Utilities Department will be added separately.

Task 1.6 Incorporate Current Operations into Model

Stantec will incorporate the facilities' standard operating practices (SOPs), provided by City, into the updated hydraulic model. Stantec will review the SCADA data and compare them with SOPs and will identify any operation discrepancy and SOP and report them to City.

Task 1.7 Model Calibration

Model Calibration is the process of validating the model by comparing field data to simulated model results under the same boundary conditions and adjusting model parameters until the model results reflect actual field conditions (+/- 10% tolerance should be acceptable). This process will include collecting and comparing field data to model results for static conditions, normal flow conditions, and for one selected EPS. Data for dynamic model calibration will be extracted from 24-hour flow, level, and status information from the SCADA data. The data will be summarized to facilitate comparison with model results.

Stantec will create two steady-state model scenarios. One will reflect the system conditions before the flow testing (i.e., static conditions), and one will reflect the system conditions during the flow testing (i.e., residual conditions). Stantec will adjust water demand for each pressure zone to equal supply, set the boundary conditions (i.e. facility operation and tank levels), and apply the hydrant test flows to the appropriate locations in the model.

Stantec will first perform the steady-state static model simulation, compile, and review model results, identify data issues, review poor validation results, and confirm acceptable validation results. Stantec will evaluate facility flow, pressure, and pressure zone demands for the poor validation results for further adjustment in the model. Stantec will iteratively test, verify, and update the model to improve validation. The process steps will

be documented.

A model scenario will be developed to simulate a 24-hour period. The results will be compared with the extracted data. Stantec will use this comparison to verify modeled operational logic and facility set points for average day demand conditions. Stantec will adjust pressure zone demand to equal supply and set the boundary conditions (i.e., facility operation and tank levels). Average day diurnal demand patterns for each pressure zone will be developed, using available SCADA data. Stantec will compare these diurnal patterns to the maximum day diurnal patterns.

Operational settings and controls in the model will be adjusted until satisfactory model results are obtained. Model representation of facilities and the pipe network will be further verified during this process. Stantec will perform the EPS model simulation, compile, and review model results, identify corrupt data, review poor validation results, and confirm acceptable validation results for the water system models. Stantec will iteratively test, verify, and update the model (i.e., operation logic, demand, supply flow and pressure, network connectivity, and C-Factors) to improve performance. If Stantec identifies discrepancies that cannot be adequately resolved with the available data and iterations, Stantec will notify City and provide written suggestions for future steps that may improve calibration at that location.

Stantec will develop one 24-hour scenario to check the operation representation in the model against maximum day conditions using SCADA data collected during the summer months. The maximum day comparison will rely on the SCADA data collected and will not incorporate supplemental monitoring data.

Task 1.8 Evaluate Existing System Capacities and System Improvements

The potable water systems will be evaluated using the calibrated hydraulic model to determine its capacity to deliver water under maximum day, peak hour, and maximum day plus fire flow demand conditions. Stantec will evaluation of existing hydraulic conditions within the two water treatment facilities (East and West). The consultant should evaluate the conditions and capacities of the High Service Pumps and the Header Pipelines. Also, Stantec, using the WaterGEMS model, will conduct a water age and trace analysis to better understand the how water from the East WTP and West WTP systems blend in the system to determine the percentage of water from a given source and if there are any areas of concern with degradation of chlorine residual. The following system infrastructure will be evaluated for capacity-related deficiencies:

- Storage tanks
- Header pipelines
- High Service Pumps
- Pipelines
- Pressure relief valves (PRVs)
- Flow control valves (FCVs) and SNWA ROFCs as applicable

The following model criteria will be evaluated:

- Average and maximum day demands
- Peak hour demands (during maximum day)
- Maximum day demand plus fire flow (evaluated at fire flow junctions)
- Pipe velocities and head loss
- Water blend ratio between East and West Plant

- Water age in the system
- Surge Analysis

An existing potable water system hydraulic schematic will be developed, and this schematic will be used to illustrate the hydraulic relationship between supply, storage tanks, pipelines, pumps, and control valves. Storage and supply capacities will be reviewed to see that they meet operational and regulatory requirements.

Task 1.9 Hydraulic Model Update and Assessment Technical Memorandum

Under this Task, Stantec will prepare a brief Hydraulic Model Update and Assessment Technical Memorandum. The TM will summarize the preparation of the model, model assumptions, initial findings, system deficiencies, recommended projects for the CIP, and water age/blending assessment.

Task 1.10 Training

Stantec will prepare and conduct software training for up to (three City staff). We anticipate a one-day session. City shall purchase the required licenses/leases and provide necessary hardware for the participants. This session will follow Stantec's typical modular style of delivery, which is designed to distill complex modeling task into smaller, more manageable incremental units that promote understanding and allow participants to take notes that can be reviewed at a later date. The modular approach also provides flexibility to accommodate staff with different levels of experience. Topics to be covered: Using Bentley's WaterGEMS software, model simulations, model calibration, and model results.

Task 1.11 On-Call Engineering Support

Stantec will provide water distribution modeling and engineering support to the City on an as-needed basis. The services to be provided will be assigned on an as-needed basis at the direction of the City. The specific scope and schedule for individual tasks will be developed by the City and the Consultant as the tasks arise. Fees will be billed on a time and material basis.

Deliverables – Task 1:

- Technical memorandum summarizing efforts from Task 1.1 – 1.8
- Updated hydraulic model
- Two results workshops with notes
- Provide all electronic data associated with model used for distribution system performance analysis
- Provide electronic data associated distribution system performance evaluation
- Provide electronic hydraulic model files (not including hydraulic modeling software)

Meetings and Workshops:

- Model calibration result meeting (Virtual)
- Two workshops to discuss the updated potable water hydraulic model and recommended improvements
- Bentley WaterGEMS training session

TASK 2 – Water Distribution System Master Plan

Task 2.1 Develop Water Distribution System Improvements

Proposed water main distribution improvements to expand the system and eliminate existing deficiencies will be evaluated and ranked once the system has been modeled and the system operation is understood. Stantec will develop a "flexible master plan" to allow City staff to upgrade the master plan and the hydraulic model, as necessary. Locations and sizes for pipelines, hydraulic control stations, and storage and pumping facilities will be identified. The alternatives evaluation will take into consideration a number of factors, some of which include:

- Operation and maintenance
- Environmental and permitting
- Compliance with Regulatory requirements
- Potential for pipeline failure
- Non-revenue water evaluation
- Phasing potential and flexibility
- Water quality blending optimization
- Potential to eliminate existing deficiencies by looping or paralleling existing development with new pipelines to serve future growth

Comparisons will be developed for consideration by the City staff. Input and discussions with City planning, engineering, and operations staff will be important during this phase of the work as the improvements are formulated.

The rationale for the project and scoring will be developed with City's input. Cost estimates will be based on similar projects which we or the City have had prior experience and estimated based on planning level assumptions. Contingencies will be added to account for uncertainties along with estimates for environmental/permitting, administration, engineering, and construction administration to provide the full cost of the project for planning future revenue requirements.

Stantec will document the regulatory aspects associated with City's water distribution system. The facilities will be reviewed for regulatory compliance and impacts that future regulations might have on the existing water facilities. Any recommendations for improvements to meet future regulatory requirements will be summarized and included. No regulatory permitting of facilities or improvements will be included as part of this scope of work.

Task 2.2 Capital Improvement Program (CIP) and Master Plan for Water Distribution System

The CIP will be the culmination of the results of the water distribution system evaluations and address existing deficiencies and improvements necessary to provide additional conveyance, and supply capacity to accommodate future growth. The CIP will be developed in collaboration with City staff. CIP will be presented in the Master Plan along with recommendations to address existing deficiencies, as well as future improvements. The information will be summarized and presented graphically using maps and a tabular format along with costs. Information will be drawn from previous Tasks, which will identify, compare, and rank the various improvements.

Stantec will develop a phasing plan showing a logical progression of improvements based on growth and prioritization of existing needs for current, 5-year, 10-year, and 20-year conditions. Expansion scenarios will

be presented on scaled maps showing the pipeline location relative to major land features, roadways, and anticipated development projects. Existing deficiencies such as undersized pipes or non-revenue water priorities or other problems will be identified with the costs and phasing recommendations.

Deliverables – Task 2:

- Transmission, Distribution and High Service Pump CIP Ranking and Prioritization
- CIP Projects cost estimate
- Master Plan draft version for City review
- Review meeting with City staff
- Master Plan Final report
- Reference material to be provided as an appendix
- Include documentation of assumptions

Project Assumptions and Exclusions

The following assumptions provide the basis for Stantec's project understanding and budgeting:

1. City is expected to furnish Stantec with full information, including any special or extraordinary considerations for the Project or special services needed. Client is also expected to make available any pertinent documentation or information relevant to the project. This information was included in tasks listed herein. This information includes, but not limited to available SCADA data, existing hydraulic model, and pump on/off conditions for all pump stations, near term growth information, operating data as noted herein.
2. City will make staff available with adequate permissions and data ownership to accomplish the required tasks.
3. Transient and surge analysis and development of any mitigation measures are excluded from this scope of work.
4. City has adequate hardware and hydraulic modeling licensing for its staff. No hardware or software will be purchased under this scope of services.
5. City will provide field investigation equipment to support model updates and calibration. This includes, but not limited to:
    a. Hydrant testing to support model calibration. City to supply hydrant flow meters, diffusers, and data loggers. Stantec will provide a hydrant testing plan and identify the testing locations.
    b. Other tests not specifically noted in herein, and field verification of information is not provided in this scope.
6. City will provide comments and input on submittals to Stantec's Project Manager within 2 weeks of receipt of submittals. The City's Project Manager will address differences between comments provided by City staff and provide one consolidated copy of comments to Stantec.
7. Optional tasks not included in this scope of work, but may be negotiated as additional tasks:
    a. Conduct desktop criticality assessment
    b. Identify optimization opportunities inside WTP process
    c. Pipe condition analysis and recommendation

SCHEDULE

Stantec can begin work within one week after a Notice to Proceed is Issued. The individual tasks are expected to be complete within the duration listed below.

Task	Task Description	Duration
1.1	Data Collection and Analysis	4 weeks
1.2	Develop Calibration Approach and Field Data Collection	4 weeks
1.3	Water Distribution Networks Model Update	4 weeks
1.4	Incorporate Water Demands into Water Networks Model	3 weeks
1.5	Assign Fire Flows	2 weeks
1.6	Incorporate Current Operations into Model	2 weeks
1.7	Model Calibration	2 weeks
1.8	Evaluate Existing System Capacities and System Improvements	6 weeks
1.9	Hydraulic Model Update and Assessment TM	4 weeks
1.10	Training	1 week
1.11	On-Call Engineering Support	On Going
2.1	Develop Water Distribution System Improvements	4 weeks
2.2	CIP & Master Plan for Water Distribution System	4 Weeks

COMPENSATION

Compensation for the above scope of work will be performed on a lump sum fee basis and will be invoiced monthly based on the percent complete, except Task 1.11. The City will issue notice-to-proceed for approved tasks. The following table shows the fee by task.

Task	Task Description	Fee
1.1	Data Collection and Analysis	$8,232
1.2	Develop Calibration Approach and Field Data Collection	$11,766
1.3	Water Distribution Networks Model Update	$14,268
1.4	Incorporate Water Demands into Water Networks Model	$12,934
1.5	Assign Fire Flows	$5,994
1.6	Incorporate Current Operations into Model	$11,064
1.7	Model Calibration	$18,784
1.8	Evaluate Existing System Capacities and System Improvements	$23,982
1.9	Hydraulic Model Update and Assessment TM	$18,211
1.10	Training	$5,604
1.11	On-Call Engineering Support	$50,000
2.1	Develop Water Distribution System Improvements	$61,984
2.2	CIP & Master Plan for Water Distribution System	$103,558
	TOTAL	**$346,381**

Thank you,

Stantec Consulting Services Inc.

Ramon Castella, P.E., LEED AP
Vice President
Tel: 305-445-2900
Fax: 305-445-0869
ramon.castella@stantec.com

CITY OF MIRAMAR
REQUEST FOR LETTERS OF INTEREST
FOR
A WATER DISTRIBUTION SYSTEM MASTER PLAN
AND HYDRAULIC MODELING

RLOI # 21-02-14

INTRODUCTION:
The City of Miramar ("City") Requests Letters of Interest ("RLOI") and updated statements of qualifications for consulting services from the list of pre-qualified firms awarded under City Resolution #19-52, in the categories of Civil Engineering and Utilities Engineering. This is not a solicitation for services. This is a request for firms ("Respondents") to provide updated information, express interest and credentials to assist the City in obtaining subsequent proposal(s) for Civil and Utilities Professional Services.

BACKGROUND: The City of Miramar is seeking proposals from qualified consultants to provide engineering services to prepare a master plan and update/upgrade the existing water distribution system hydraulic model of the City. The successful consulting firm must have extensive experience working in South Florida on the master planning of water distribution system for public utilities. The qualified consulting firm shall have a strong working knowledge of the most current version of Bentley's WaterGEMS for water modeling.

The City owns and operates a water distribution system that serves the City's residents within the City's municipal boundaries, except homes and businesses within the Broward County Water and Wastewater Services (BCWWS) service area 3BC for potable water. Potable water is provided by the City's two water treatment plants, East Water Treatment Plant and West Water Treatment Plant. The East Water Treatment Plant has recently been renovated with nanofiltration softening processes while the West Water treatment Plant uses both nanofiltration and reverse osmosis softening treatment processes. There are two remote storage tanks, one on the east side on Douglas Road, and one on the west side of I-75. The distribution system is interconnected (between east and west service areas), but can be isolated along Palm Avenue.

Previously, the City developed a hydraulic model and analysis to improve the system performance. Subsequently, a multi-year capital improvement program was

implemented to upgrade the distribution system with construction of new distribution pipelines and fire hydrants. The purpose of this project is to update the hydraulic model and develop a master plan for future improvements.

SCOPE OF SERVICES:
Update/calibrate the existing hydraulic model to include all existing water distribution pipelines within the City's Water service area. Note: The existing hydraulic model was developed in WaterCAD. This model needs to be updated and calibrated in most current version of Bentley's Water GEMS for water modeling.

SITE OF PROJECT:
City of Miramar Utilities Department, 13900 Pembroke Road, Miramar, Florida 33027.

BASIC INSTRUCTIONS:

DUE TO COVID-19, THE CITY OF MIRAMAR REMAINS CLOSED TO THE PUBLIC. NO PROPOSALS WILL BE ACCEPTED PERSONALLY OR BY DELIVERY CARRIER.

Letters of Interest should state the Respondent's name, RLOI title and number on the cover page, and must be submitted no later than 2:00 p.m. on Thursday, February 25, 2021, to the following dropbox address:

https://www.dropbox.com/request/x6UHtzJzTO7j6T8ebwpU

PREFERRED QUALIFICATIONS:
The contracted firm ("Consultant") shall provide Civil and Utilities Professional Services for the complete execution of the project and in-house staff experience is preferred in the following areas:

1. Completion of similar scope projects of same size and complexity. All work will be prepared in accordance with the State of Florida Standards. Please provide an updated reference list showing relevant experience in these areas.

2. A listing of Personnel to include, Civil Engineers and other professionals needed to complete the project scope.

LETTER OF INTEREST FORMAT:
The information requested below will assist City staff in the review process. Kindly provide the following in a letter format in the order listed below:

1. Brief updated description of experience and qualifications and the specific local office personnel that will be assigned to this project (resumes preferred). (30 pts).

2. Demonstration of your understanding and approach to complete the assigned tasks of the project. (30 pts).
3. References of similar water distribution system master plan and modeling services provided to other utilities; list descriptions of service provided and reference contact information. Failure to provide references may deem your firm non-responsive. (30 pts).
4. Delivery Schedule and project timeline (10 points).
5. Proof of valid Florida professional/occupational licensure and insurance (i.e., Errors and Omissions, General Liability and Workers Compensation).

REVIEW / RANKING PROCESS:
A selection committee will review and rank submittals based on the above mentioned criteria. A presentation may be requested. The top ranked firm will be asked to develop a scope and proposal, and any existing plans will be made available for those purposes.

CONTACT INFORMATION:
Questions, explanations or other requests regarding the RLOI must be addressed in writing to the City's Procurement Department, ATTN: Brenda Martin, (954) 602-3311, or Email: bamartin@miramarfl.gov.

CITY'S RIGHTS RESERVED:
The City reserves the right to waive any informalities or irregularities in this RLOI. The City reserves the right to reject any and all letters of interest as they may deem to be in the best interest of the City's residents and as may affect this project.

REFERENCES

1. **FIRM'S NAME:** _____

CONTACT NAME: _____

STREET ADDRESS: _____

CITY, STATE, ZIP CODE: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

2. **FIRM'S NAME:** _____

CONTACT NAME: _____

STREET ADDRESS: _____

CITY, STATE, ZIP CODE: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

3. **FIRM'S NAME:** _____

CONTACT NAME: _____

STREET ADDRESS: _____

CITY, STATE, ZIP CODE: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

RLOI NO. 21-02-14

Water Distribution System Master Plan and Hydraulic Modeling Evaluation and Scoring

Ranking

3/22/2021 @ 1:00pm

	RATERS			TOTAL	RANKNG
Firms	**1**	**2**	**3**		
BROWN & CALDWELL	81	67	71	219	3
CPH, INC.	66	51	82	199	4
KIMLEY-HORN	83	56	89	228	2
STANTEC	89	73	93	255	1

ATTACHMENT 3

Stantec Consulting Services Inc.
1551 Sawgrass Corporate Parkway, Suite 440
Sunrise, Florida 33323

August 24, 2021

Attention: Ronnie Navarro, PE
City of Miramar
Utilities Department, Assistant Director
13900 Pembroke Road
Miramar, FL 33027

Reference: City of Miramar Utilities Department
Professional Services – Water Distribution System Master Plan & Hydraulic Modeling

Dear Mr. Navarro,

Stantec is pleased to present our Scope of Work for professional engineering services to prepare the City's Water Distribution and Transmission System Master Plan and update the existing Hydraulic Model.

Background

The City of Miramar (City) water service area has a customer base of approximately 96% of the City's population. The remaining residents are serviced by Broward County Water and Wastewater Services (BCWWS) in BCWWS service area 3BC. Potable water is provided by the City's two water treatment plants, East Water Treatment Plant and West Water Treatment Plant.

East WTP (EWTP) was originally constructed in the 1950s and has undergone several upgrades. The lime softening process was replaced with a nanofiltration process, and currently operates at 6MGD capacity.

West WTP, built in 1996, had an initial capacity of 4.5MGD using a nanofiltration process. The plant was expanded over the years to its 11.75MGD capacity. The plant now utilizes both a low-pressure membrane softening process (nanofiltration) and a medium pressure brackish water reverse osmosis process and blends the two (2) permeate streams.

Water supply wellfield sources consists of eight primary Biscayne aquifer shallow production wells and two Floridan aquifer system deep wells. The City also proposes one additional Floridan aquifer system production well.

This proposal presents the scope to update and calibrate the existing water system hydraulic model to be used as a tool for system evaluation and develop a master plan for future water distribution system improvements. Stantec will update the hydraulic model utilizing Bentley's WaterGEMS Software.

A good hydraulic model can be an integral part of the decision-making process for planning, designing, and operating water distribution system. The model can provide transparency to decision makers regarding capital improvements, developer contributions, operational strategies, and water quality monitoring and sampling. The application of hydraulic models in utility management are generally planning, engineering design, system operations, and water quality improvement. As such, the model results can be highly dependent on model construction, model controls (or lack thereof), input data quality, model validation, pipe connectivity, etc.

In conclusion, a hydraulic model can be a powerful tool to help a utility's strategic planning for evaluating operational strategies, water quality modeling, or capacity evaluation of critical infrastructure. However, a model that is not representative of the actual system operations and conditions can be misleading and be of

limited use. A hydraulic model that is validated, calibrated, and has the confidence of the utility can be a valuable tool for long-range planning, water quality evaluation, fire flow evaluations, optimization, alternatives evaluation, resiliency studies, emergency planning, and asset management.

Stantec is pleased to offer a proposal of services to help serve the City of Miramar with updating the Water Distribution Hydraulic Model and developing a Master Plan. We understand that the City wants to proceed on a task-by-task sequence as funds become available and at the direction of the City of Miramar. We've structured this proposal to facilitate this approach.

Scope of Services

Generally, the scope of the project includes the following:

- Water Distribution System Hydraulic Model Update & Master Plan
  - Update model to include all existing tanks and pumps, as well as key valves.
  - Assign demand curves to model nodes (i.e., residential).
  - Adding fire hydrants to the model.
  - Develop hydrant testing plan and identify the testing locations.
  - Perform model validation and calibration.
  - Witnessing field testing such as flow monitoring and pump testing.
  - Perform various simulations and identify system deficiencies.
  - Conducting a water age and trace analysis.
  - Evaluate Existing Distribution System Performance.
  - Future Distribution System Evaluation.
  - Recommend Water Distribution System Improvements.
  - Develop Water Distribution System Master Plan Report.
  - Provide software training and on-call support.

The following tasks provide the detailed scope of services:

TASK 1 – Water Distribution System Model Update, Calibration and Assessment

The potable water model will consist of all pipes within the potable water service territory that are 4-inch in diameter and larger. The model will be updated using Bentley's WaterGEMS Software.

Task 1.1 Data Collection and Analysis

City of Miramar will provide the current WaterGEMS water system hydraulic model, planning documents and the planned near-term projects for Stantec to review. Examples of the information that is pertinent to this water distribution system hydraulic model update and application are:

- Up-to-date water system GIS database including water mains (potable water), fittings, hydrants, and valves.
- Potable main layer should have the following attributes: diameter, length, installation year and material, interconnects, lining (some pipes are concrete lined to prolong life), Zone (pressure boundary).
- Nodes (fittings, hydrants) should have elevation data, zone (pressure boundary).

- Valves – type, status, settings, diameter, elevation, location of boundary valves.
- Potable water SCADA data report for a recent 2-year period that represents typical current operations (report should include flow and pressure/level data at all monitoring points in the system).
- SCADA data output reports for Maximum day and Peak hour period, pumping data from the high service pumps, and low pressure transfer (i.e., flow, pump status on or off and suction and discharge pressure), storage tank level data, PRV data (i.e., flow, status, and suction and discharge pressure (if available)), discharge pressure and flow from the City's Water Treatment Plants (WTP).
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City to supply testing equipment such as radios, wrenches, mobile flow meters, diffusers, and data loggers. One representative of Stantec will be present to witness and record results of fire flow field tests. City to provide all other testing personnel (Approx. four people).

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Stantec will sort individual customer demands contained in the data collected from Task 1.1. If possible, recommendations will be made to integrate the customer database in the GIS.

Task 1.5 Assign Fire Flows

Fire flows will be assigned to various existing model fire flow junctions for use in evaluating "maximum day plus fire flow" for each maximum day scenario. Fire flows for future areas will be assigned to future demand nodes. Fire flows will be based on requirements typical to each land use area as discussed and agreed to by the City. Individual large fire flows identified by the City's Utilities Department will be added separately.

Task 1.6 Incorporate Current Operations into Model

Stantec will incorporate the facilities' standard operating practices (SOPs), provided by City, into the updated hydraulic model. Stantec will review the SCADA data and compare them with SOPs and will identify any operation discrepancy and SOP and report them to City.

Task 1.7 Model Calibration

Model Calibration is the process of validating the model by comparing field data to simulated model results under the same boundary conditions and adjusting model parameters until the model results reflect actual field conditions (+/- 10% tolerance should be acceptable). This process will include collecting and comparing field data to model results for static conditions, normal flow conditions, and for one selected EPS. Data for dynamic model calibration will be extracted from 24-hour flow, level, and status information from the SCADA data. The data will be summarized to facilitate comparison with model results.

Stantec will create two steady-state model scenarios. One will reflect the system conditions before the flow testing (i.e., static conditions), and one will reflect the system conditions during the flow testing (i.e., residual conditions). Stantec will adjust water demand for each pressure zone to equal supply, set the boundary conditions (i.e. facility operation and tank levels), and apply the hydrant test flows to the appropriate locations in the model.

Stantec will first perform the steady-state static model simulation, compile, and review model results, identify data issues, review poor validation results, and confirm acceptable validation results. Stantec will evaluate facility flow, pressure, and pressure zone demands for the poor validation results for further adjustment in the model. Stantec will iteratively test, verify, and update the model to improve validation. The process steps will

be documented.

A model scenario will be developed to simulate a 24-hour period. The results will be compared with the extracted data. Stantec will use this comparison to verify modeled operational logic and facility set points for average day demand conditions. Stantec will adjust pressure zone demand to equal supply and set the boundary conditions (i.e., facility operation and tank levels). Average day diurnal demand patterns for each pressure zone will be developed, using available SCADA data. Stantec will compare these diurnal patterns to the maximum day diurnal patterns.

Operational settings and controls in the model will be adjusted until satisfactory model results are obtained. Model representation of facilities and the pipe network will be further verified during this process. Stantec will perform the EPS model simulation, compile, and review model results, identify corrupt data, review poor validation results, and confirm acceptable validation results for the water system models. Stantec will iteratively test, verify, and update the model (i.e., operation logic, demand, supply flow and pressure, network connectivity, and C-Factors) to improve performance. If Stantec identifies discrepancies that cannot be adequately resolved with the available data and iterations, Stantec will notify City and provide written suggestions for future steps that may improve calibration at that location.

Stantec will develop one 24-hour scenario to check the operation representation in the model against maximum day conditions using SCADA data collected during the summer months. The maximum day comparison will rely on the SCADA data collected and will not incorporate supplemental monitoring data.

Task 1.8 Evaluate Existing System Capacities and System Improvements

The potable water systems will be evaluated using the calibrated hydraulic model to determine its capacity to deliver water under maximum day, peak hour, and maximum day plus fire flow demand conditions. Stantec will evaluation of existing hydraulic conditions within the two water treatment facilities (East and West). The consultant should evaluate the conditions and capacities of the High Service Pumps and the Header Pipelines. Also, Stantec, using the WaterGEMS model, will conduct a water age and trace analysis to better understand the how water from the East WTP and West WTP systems blend in the system to determine the percentage of water from a given source and if there are any areas of concern with degradation of chlorine residual. The following system infrastructure will be evaluated for capacity-related deficiencies:

- Storage tanks
- Header pipelines
- High Service Pumps
- Pipelines
- Pressure relief valves (PRVs)
- Flow control valves (FCVs) and SNWA ROFCs as applicable

The following model criteria will be evaluated:

- Average and maximum day demands
- Peak hour demands (during maximum day)
- Maximum day demand plus fire flow (evaluated at fire flow junctions)
- Pipe velocities and head loss
- Water blend ratio between East and West Plant

- Water age in the system
- Surge Analysis

An existing potable water system hydraulic schematic will be developed, and this schematic will be used to illustrate the hydraulic relationship between supply, storage tanks, pipelines, pumps, and control valves. Storage and supply capacities will be reviewed to see that they meet operational and regulatory requirements.

Task 1.9 Hydraulic Model Update and Assessment Technical Memorandum

Under this Task, Stantec will prepare a brief Hydraulic Model Update and Assessment Technical Memorandum. The TM will summarize the preparation of the model, model assumptions, initial findings, system deficiencies, recommended projects for the CIP, and water age/blending assessment.

Task 1.10 Training

Stantec will prepare and conduct software training for up to (three City staff). We anticipate a one-day session. City shall purchase the required licenses/leases and provide necessary hardware for the participants. This session will follow Stantec's typical modular style of delivery, which is designed to distill complex modeling task into smaller, more manageable incremental units that promote understanding and allow participants to take notes that can be reviewed at a later date. The modular approach also provides flexibility to accommodate staff with different levels of experience. Topics to be covered: Using Bentley's WaterGEMS software, model simulations, model calibration, and model results.

Task 1.11 On-Call Engineering Support

Stantec will provide water distribution modeling and engineering support to the City on an as-needed basis. The services to be provided will be assigned on an as-needed basis at the direction of the City. The specific scope and schedule for individual tasks will be developed by the City and the Consultant as the tasks arise. Fees will be billed on a time and material basis.

Deliverables – Task 1:

- Technical memorandum summarizing efforts from Task 1.1 – 1.8
- Updated hydraulic model
- Two results workshops with notes
- Provide all electronic data associated with model used for distribution system performance analysis
- Provide electronic data associated distribution system performance evaluation
- Provide electronic hydraulic model files (not including hydraulic modeling software)

Meetings and Workshops:

- Model calibration result meeting (Virtual)
- Two workshops to discuss the updated potable water hydraulic model and recommended improvements
- Bentley WaterGEMS training session

TASK 2 – Water Distribution System Master Plan

Task 2.1 Develop Water Distribution System Improvements

Proposed water main distribution improvements to expand the system and eliminate existing deficiencies will be evaluated and ranked once the system has been modeled and the system operation is understood. Stantec will develop a "flexible master plan" to allow City staff to upgrade the master plan and the hydraulic model, as necessary. Locations and sizes for pipelines, hydraulic control stations, and storage and pumping facilities will be identified. The alternatives evaluation will take into consideration a number of factors, some of which include:

- Operation and maintenance
- Environmental and permitting
- Compliance with Regulatory requirements
- Potential for pipeline failure
- Non-revenue water evaluation
- Phasing potential and flexibility
- Water quality blending optimization
- Potential to eliminate existing deficiencies by looping or paralleling existing development with new pipelines to serve future growth

Comparisons will be developed for consideration by the City staff. Input and discussions with City planning, engineering, and operations staff will be important during this phase of the work as the improvements are formulated.

The rationale for the project and scoring will be developed with City's input. Cost estimates will be based on similar projects which we or the City have had prior experience and estimated based on planning level assumptions. Contingencies will be added to account for uncertainties along with estimates for environmental/permitting, administration, engineering, and construction administration to provide the full cost of the project for planning future revenue requirements.

Stantec will document the regulatory aspects associated with City's water distribution system. The facilities will be reviewed for regulatory compliance and impacts that future regulations might have on the existing water facilities. Any recommendations for improvements to meet future regulatory requirements will be summarized and included. No regulatory permitting of facilities or improvements will be included as part of this scope of work.

Task 2.2 Capital Improvement Program (CIP) and Master Plan for Water Distribution System

The CIP will be the culmination of the results of the water distribution system evaluations and address existing deficiencies and improvements necessary to provide additional conveyance, and supply capacity to accommodate future growth. The CIP will be developed in collaboration with City staff. CIP will be presented in the Master Plan along with recommendations to address existing deficiencies, as well as future improvements. The information will be summarized and presented graphically using maps and a tabular format along with costs. Information will be drawn from previous Tasks, which will identify, compare, and rank the various improvements.

Stantec will develop a phasing plan showing a logical progression of improvements based on growth and prioritization of existing needs for current, 5-year, 10-year, and 20-year conditions. Expansion scenarios will

be presented on scaled maps showing the pipeline location relative to major land features, roadways, and anticipated development projects. Existing deficiencies such as undersized pipes or non-revenue water priorities or other problems will be identified with the costs and phasing recommendations.

Deliverables – Task 2:

- Transmission, Distribution and High Service Pump CIP Ranking and Prioritization
- CIP Projects cost estimate
- Master Plan draft version for City review
- Review meeting with City staff
- Master Plan Final report
- Reference material to be provided as an appendix
- Include documentation of assumptions

Project Assumptions and Exclusions

The following assumptions provide the basis for Stantec's project understanding and budgeting:

1. City is expected to furnish Stantec with full information, including any special or extraordinary considerations for the Project or special services needed. Client is also expected to make available any pertinent documentation or information relevant to the project. This information was included in tasks listed herein. This information includes, but not limited to available SCADA data, existing hydraulic model, and pump on/off conditions for all pump stations, near term growth information, operating data as noted herein.
2. City will make staff available with adequate permissions and data ownership to accomplish the required tasks.
3. Transient and surge analysis and development of any mitigation measures are excluded from this scope of work.
4. City has adequate hardware and hydraulic modeling licensing for its staff. No hardware or software will be purchased under this scope of services.
5. City will provide field investigation equipment to support model updates and calibration. This includes, but not limited to:
    a. Hydrant testing to support model calibration. City to supply hydrant flow meters, diffusers, and data loggers. Stantec will provide a hydrant testing plan and identify the testing locations.
    b. Other tests not specifically noted in herein, and field verification of information is not provided in this scope.
6. City will provide comments and input on submittals to Stantec's Project Manager within 2 weeks of receipt of submittals. The City's Project Manager will address differences between comments provided by City staff and provide one consolidated copy of comments to Stantec.
7. Optional tasks not included in this scope of work, but may be negotiated as additional tasks:
    a. Conduct desktop criticality assessment
    b. Identify optimization opportunities inside WTP process
    c. Pipe condition analysis and recommendation

SCHEDULE

Stantec can begin work within one week after a Notice to Proceed is Issued. The individual tasks are expected to be complete within the duration listed below.

Task	Task Description	Duration
1.1	Data Collection and Analysis	4 weeks
1.2	Develop Calibration Approach and Field Data Collection	4 weeks
1.3	Water Distribution Networks Model Update	4 weeks
1.4	Incorporate Water Demands into Water Networks Model	3 weeks
1.5	Assign Fire Flows	2 weeks
1.6	Incorporate Current Operations into Model	2 weeks
1.7	Model Calibration	2 weeks
1.8	Evaluate Existing System Capacities and System Improvements	6 weeks
1.9	Hydraulic Model Update and Assessment TM	4 weeks
1.10	Training	1 week
1.11	On-Call Engineering Support	On Going
2.1	Develop Water Distribution System Improvements	4 weeks
2.2	CIP & Master Plan for Water Distribution System	4 Weeks

COMPENSATION

Compensation for the above scope of work will be performed on a lump sum fee basis and will be invoiced monthly based on the percent complete, except Task 1.11. The City will issue notice-to-proceed for approved tasks. The following table shows the fee by task.

Task	Task Description	Fee
1.1	Data Collection and Analysis	$8,232
1.2	Develop Calibration Approach and Field Data Collection	$11,766
1.3	Water Distribution Networks Model Update	$14,268
1.4	Incorporate Water Demands into Water Networks Model	$12,934
1.5	Assign Fire Flows	$5,994
1.6	Incorporate Current Operations into Model	$11,064
1.7	Model Calibration	$18,784
1.8	Evaluate Existing System Capacities and System Improvements	$23,982
1.9	Hydraulic Model Update and Assessment TM	$18,211
1.10	Training	$5,604
1.11	On-Call Engineering Support	$50,000
2.1	Develop Water Distribution System Improvements	$61,984
2.2	CIP & Master Plan for Water Distribution System	$103,558
	TOTAL	**$346,381**

Thank you,

Stantec Consulting Services Inc.

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