EXHIBIT A
SCOPE OF SERVICES
Proposal to Riviera Beach Utility Special District for Water Use Permit Modification

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BACKGROUND AND OBJECTIVES

Brown and Caldwell (BC or Consultant) is pleased to submit this proposal for renewal of the District's Water Use Permit. The City's existing Water Use Permit (WUP) expires on February 27, 2031. However, demand projections published by the South Florida Water Management District in its 2018 Lower East Coast Water Supply Plan (LECWSP) indicate the current allocated supply could potentially be exceeded prior to permit expiration (potentially as early as 2025). Furthermore, the City has established the goal of modernizing its water treatment system by migrating from the use of lime softening to nanofiltration technology. While nanofiltration represent the best available technology that can produce a finished water of superior quality, the process inherently requires approximately 15% more raw water supply than a typical lime softening process. An increased permitted allocation is also required for withdrawal of this increased raw water supply needed to maintain current treatment demands.

To meet its long-term water supply demand, it is anticipated that the City will be required to diversify its supply to additionally develop the brackish Floridan aquifer to supplement its existing surficial supply. Consequently, this permit renewal process will seek to secure the future water supplies required for the next 20-year (minimum) period, establish the allocation from each source that will be available to the city. Once the long-term supplies are established, the City can complete planning and subsequent design development for its new WTP.

Based on the foregoing needs, the purpose of this task order is to complete the permitting process to secure adequate water supplies for a 20-year period based on forecasted system growth. Floridan aquifer system modeling required to support the permitting process as well as determining recommended well siting required to support the City's requested allocation will be conducted.

Scope of Services

This scope of services includes the following tasks:

1. Project Coordination and Administration (Task 1)
2. Preliminary Permitting Activities (Task 2)
3. Updated Water Demand Forecasts (Task 3)
4. Well Siting Analysis (Task 4)
5. Groundwater Modeling (Task 5)
6. Permit Application Process (Task 6)
7. 10-Year Water Supply Facilities Work Plan (Task 7)

Task 1. Project Coordination and Administration

This task includes project coordination and management activities that will continue for the assumed project duration of 12 months. Activities include:

1. General project communication and coordination;
2. Project kickoff teleconference;
3. Consultant shall prepare and submit a list of supplemental information required from the City to support permitting process;
4. Monitoring and management of budget, schedule and resource commitments

Task 2. Preliminary Pre-Application Permitting Activities

Objective: This task provides for preliminary activities to develop the permitting strategy and to support initial engagement with the City and SFWMD.

Activities - This task includes the following activities:

1. Review available historical permitting information, supporting reports, , parameters and assumptions that formed the basis for the approval prior water use permit and base condition water use (defined as maximum moving annual average use between 2001 and 2006).
2. Coordinate with USD for development, review and clarification of District-furnished documents inclusive of GIS mapping of identified system features, updated water conservation practices, and other pertinent information deemed necessary.
3. Conduct pre-application teleconferences with the SFWMD (and/or USD) to discuss and refine approach and key considerations to guide focus of activities. Up to two (2) pre-application teleconference calls are anticipated.

Deliverables:

1. SFWMD Meeting Summaries
2. Tabulation of expansion scenarios to be modeled
3. GIS maps of hydrogeologic featured associated with each modeled scenario

Task 3. Water Demand Forecast

Objective: Updated 20-year water demand forecast is required to support the permitting process. The City's existing demand forecast will be coordinated with the City's Planning Department and updated to be consistent with forecasting protocols established by the SFWMD's Permitting Applicant's Handbook.

Activities - this task includes:

1. Determine population projections (for three scenarios) for City's service area and entities it serves (e.g. West Palm Beach, Town of Palm Beach Shores)

2. Review City's historical non-revenue water performance and estimation protocols with the goal of identifying opportunities to enhance accounting of water use. The goal is to conduct a high-level review to establish improvement priorities for subsequent action.
3. Review historical raw and finished water demand for the past 10-year period for which water use data are available.
4. Determine per capita water demand and establish the most current forecast of service population for areas served by the utility
5. Prepare updated 20-year demand forecast to be used for permitting purposes

Task 4. Well Siting Analysis

Objective: To meet future demand scenarios, it is anticipated that supplemental well sites will be required for new Floridan aquifer wells (potentially 4 to 6 well sites). This task assumes no major modification will be required to the location of existing surficial aquifer wells and that any relocated wells will be kept in the general vicinity of any wells that are identified to be abandoned. This task will inventory and preliminarily screen potential sites for location of future Floridan wells. Potential future Floridan aquifer well sites will be used to model potential scenarios identified in Task 2.

Activities - this task includes:

1. Conduct a GIS review of properties owned by the City as well as right of way (ROW) corridors that may be used for siting future Floridan wells. Floridan well sites (or ROW corridors) located at the proposed WTP as well as in close proximity (park, city hall site, etc.) to the plant will be prioritized. The number and spacing of future wells will be consistent with typical criteria for the area
2. Conduct a screening workshop with the City to review and prioritize candidate sites for consideration.
3. Prepare a memorandum that summarizes the key findings and recommendations from this analysis. Conduct a review teleconference with the City to discuss and receive feedback.

Deliverable:

Well siting Technical Memorandum.

Task 5. Groundwater Floridan Modeling

Objective: Conduct uncalibrated analytical modeling of the proposed Floridan wells to assess the impact of proposed withdrawals on existing users and document the results of the analysis. modeling aligned with the scenarios developed in Task 2 will be conducted. Groundwater modeling of the Floridan aquifer system using an uncalibrated MODFLOW model. This task assumes the City does not intend to pursue increased withdrawals from the surficial aquifer so modeling of the surficial aquifer system is not included.

Activities - this task includes:

1. Develop an uncalibrated MODFLOW model of the Floridan aquifer system (FAS). The model will be developed and executed consistent with criteria described in Section 3.1.2 of the

"Applicant's Handbook (AH) for Water Use Permit Applications within the South Florida Water Management District, September 2015."

2. Develop and evaluate withdrawal scenarios, based on potential well sites, consistent with the Basis of Review for Water Use Permit Applications within the SFWMD. Goals include setting the spacing of wells and withdrawals to minimize stresses on the aquifer that can impact long term water quality as well as drawdown impacts on existing legal users.
3. Documentation of the modeling process and results in a Letter Report suitable for review by SFWMD to support modification of the WUP.

Deliverable:

1. Groundwater model Letter Report

Task 6. Permit Application Process

Objective: This task includes permit application preparation together with supporting documentation, review of SFWMD issued request for additional information (RAI) and preparation of one (1) written RAI response. The permit application will be prepared based on the preferred expansion and operating scenario modeled in Task 5.

Activities - This task includes the following:

1. Based on the results of the modeled scenarios (Task 5), a teleconference will be held with the District to review the results and agree on the preferred expansion/ operating scenario on which to base the WUP modification.
2. Prepare/complete forms that are required as part of the application package.
3. Compile and summarize supporting information/reports from the USD that are required as part of the permit application submittal. Pertinent information includes the District's existing conservation program.
4. Prepare a complete draft permit application submittal package for review by the USD. Participate in one teleconference call with the USD to discuss any comments. Update the application package based on comments received, coordinate the appropriate signatures and submit to the SFWMD for its review.
5. Review anticipated RAI from the SFWMD and prepare a letter response providing clarification and supplemental information that may be required. This activity includes two teleconference meetings with the City and/or SFWMD to discuss the RAI and agree on appropriate response. Should supplemental information require additional modeling or investigation that extends beyond the scope of readily available information, an additional authorization will be required.

Deliverables:

1. Draft and Final WUP Application
2. Meeting Summaries
3. Letter response to RAI

Task 7. 10-Year Water Supply Facilities Work Plan

Objective: The District is required to prepare a 10-year Water Supply Plan (WSFWP) that defines forecasted water supply needs, facility requirements, system characterization, alignment with regional water supply considerations, and cost estimate for identified improvements. The WSFWP is due 18 months from the date the SFWMD's 2018 Lower East Coast Water Supply Plan was finalized and is currently overdue. This task will rely on existing available studies and reports, including the updated demand projections identified in Task 2, to prepare the WSFP.

Activities – The WSFWP will be prepared to include the following sections, pursuant to guidance criteria published by the SFWMD:

1. Local Government Overview – general overview of government history, land use, development trends,
2. Data and Analysis – summarize the data and analysis that must be provided to state planning and regulatory agencies.
3. Relevant Regional Issues – summarize overarching regional considerations with water supply impacts
4. Planning Horizon and Population Projection – refer to Task 3
5. Current and Future Service Area Boundaries - municipal and service area boundaries, interconnects with neighboring systems
6. Potable Water Demand Projections – refer to Task 3
7. Level of Service Standards – relationship between capacity and demand
8. Water Supply Sources and Projects – adequacy of supplies to meet demands, commitment to conservation, water reclamation, reliance on other suppliers, capacity expansion plans - refer to Task 6
9. Review Existing Conservation and Reuse Programs – refer to Task 6
10. Intergovernmental Coordination for WS Planning
11. Update Water Supply Capital Improvement Plan – determine anticipated schedule and budget to support WS expansion program
12. Review Alignment with Comprehensive Plan – review limited to identifying areas of the Comprehensive Plan that requires updating (this task does not include incorporating updates to the City's Comprehensive Plan).
13. Prepare and submit the draft WSFP for review by the City (USD and Planning). Participate in two review meetings prior to finalizing the plan.
14. Prepare a presentation overview of the WSFP process and recommendations for delivery in public meetings. Participation in public meetings will be performed under Supplemental Support Services, Task 8.

Deliverable:

1. 10-Year Water Supply Facilities Plan
2. Meeting Summaries
3. PowerPoint Presentation

Schedule

Tasks 1 to 7 of the project will be completed within nine (9) months of authorization to proceed. This assumes timely receipt of requested project information and no delays in the SFWMD's approval. Preliminary completion milestones from notice to proceed (NTP) for Tasks 1 to 7 include the following:

- Task 1 – Project Coordination & Administration: Twelve (9) months from NTP
- Task 2 – Pre-Application Activities: Three (3) months from NTP
- Task 3 – Water Demand Forecast: Three (3) months from NTP
- Task 4 – Well Siting Assessment: Three (3) months from NTP
- Task 5 – Groundwater Modeling: Three (2) months from Completion of Task 2
- Task 6 – Permit Application: Four (4) months from Completion of Task 5
- Task 7 – 10-yr Water Supply Facility Plan: Four (4) months from NTP

Budget

The project will be conducted on a unit rate basis for a total fee not to exceed $196,540.00. The allocation of the proposed budget is indicated below.

Task/ Subtask	Description	Fee
1	**Project Coordination and Administration**	**$17,650.00**
2	**Preliminary Pre-Application Permitting Activities**	**$3,830.00**
3	**Water Demand Forecast**	**$17,220.00**
4	**Well Siting Assessment**	**$15,250.00**
5	**Groundwater Modeling**	**$3,690.00**
6	**Permit Application Preparation**	**$14,590.00**
7	**10-Yr Water Supply Facility Plan**	**$49,280.00**
	Other Direct Costs	
	a. Permit Application Fee	**$11,500**
	b. Subconsultant	**$57,530.00**
	c. Expenses	**$6,000.00**
	TOTAL	**$196,540.00**

Assumptions

1. A condition assessment and need for upgrades to the City's existing wellfield and/or raw water transmission is not included.
2. The USD will prepare and furnish GIS maps that define select attributes of its existing wellfield, city-owned property and other pertinent features. GIS base files will be used by Consultant to develop mapping to characterize scenarios to be modeled.
3. Where meetings are indicated, Consultant participation shall be via teleconference, where appropriate.
4. Consultant shall rely on data furnished by the USD (and assume it to be accurate) inclusive of GIS maps and other District furnished data/information referenced in the scope of services.
5. USD will be responsible for electronic submittal of the permit application. Consultant shall be responsible for the payment of the permit fee (to be reimbursed by USD).
6. The modeling will be conducted using district-provided files that represent the most resent application of groundwater modeling for the District's Floridan aquifer system supply.
7. The City will compile and furnish all available historical data and reports to support the specified work.
8. The review of the non-revenue water assessment history will not entail a detailed assessment or program development but rather a gap assessment with the objective of establishing priorities for future action by the City.

Agreement

The proposed work will be implemented under the existing General Engineering Consultant Services Agreement, dated August 21st, 2018, between the City of Riviera Beach and Brown and Caldwell.

SUBMITTED FOR APPROVAL BY:

Albert Perez, P.E., Vice President
BROWN AND CALDWELL

PREPARED BY:

Nigel Grace, P.E., Vice President
BROWN AND CALDWELL