DATE: 5/10/22

TO: Robert Gleason, Director of Purchasing

THRU: Susan Bodmann, Director, Water Management Division

FROM: Michael Zygnerski, Environmental Program Supervisor, Water Management Division

PROJECT TITLE: BC Water Control Districts Future Needs Assessment Modeling

REQUISITION NO.: WMA0000555

SOLE SOURCE/SOLE BRAND REQUEST

I. REQUEST: Provide a description of the features of the product/service or Scope of Work.

The Water Management Division (WMD) needs consultant services to run computer simulations of canal system flow to ensure a continued high level of service for both water conveyance and storage under changing climate conditions. WMD maintains over 90 miles of canals and 50 plus structures that are used for water storage during the dry season and flood protection during the wet season. Broward County's Resilient Environment Department has cautioned that climate change may bring an increased occurrence of extreme events such as frequent and prolonged droughts during the dry season and heavier than normal rainfall events during the wet season. Hydrologic modeling is necessary to simulate these potential future conditions so that risk mitigation can be incrementally put in place to maintain adequate levels of service to the community. Adaptive measures can be simulated to determine cost effective options for future budget and grant requests. This work also benefits upcoming water use permitting requirements with State agencies. It is important to WMD to coordinate model development and results with on-going efforts by the County's Resilient Environment Department and the South Florida Water Management District (SFWMD) to maintain the continuity of the primary and secondary canal systems and inform the County's resiliency efforts.

II. JUSTIFICATION: Please check all boxes that describe your reason(s) for determining that only one source or brand is reasonably available.

Only Sole Source/Uniqueness

Proprietary Item - this vendor/ source has the only rights to provide this service or commodity. A letter from the manufacturer or authorizing entity is included in this request.

Technology Improvements - updates or upgrades to an existing system, software, software as a service (SaaS), hardware purchases.

Engineering Direction - engineering drawing or specification identifies product; "no substitutes or equivalents will be acceptable."

Only qualified supplier - reliability and maintainability of the product or service would be degraded unless specified supplier is used; may void warranty. This request includes a copy of the current warranty information.

Other – the County requires this sole source, sole brand purchase for the following reasons:

Operational Compatibility - replacement parts from alternate suppliers are not interchangeable with original part and causes equipment incompatibility. Previous findings and/or documentation is included with this request.

Ease of Maintenance - maintenance or retooling prohibits competition. Section III, Comparative Market Research includes estimated costs associated with changing current source and/or brand.

■ Follow-On - potential for continued development or enhancement with same supplier and eliminates costs incurred by using different supplier. Section III, Comparative Market Research includes estimated costs for replacing current or existing system.

Complies with existing community and safety standards, and/or laws, rules, and regulations.

Exempted from the Procurement Code – per Section 21.5 of Broward County Administrative Code.

■ Other/or additional information – using this sole source, sole brand purchase benefits the County for the following reasons:

Broward County's Resilient Environment Department recently completed a highly detailed hydrologic model based on the MIKE SHE model platform. This model was originally developed in the early 1990s and updated in the 2000s to address concerns of water overuse during a period of increased urbanization. This same model was then provided to the Federal Emergency Management Agency (FEMA) to be updated and used as the preferred model for the 2014 Flood Insurance Rate Map. The 2014 FEMA version of the model was again updated and used to establish the Broward County's own 100-Year Future Conditions Flood map in June 2020. The Future Conditions Flood Mapping Project cost approximately $720,000 in May of 2018 (RFP R2114367P1). During the two years of project work, Geosyntec Consultants, Inc. was the lead consultant with all modeling performed by the subcontractor Taylor Engineering. Most recently, the model was again requested by the SFWMD to carry out its Flood Protection Level of Service (FPLOS) program for the primary canal system in Broward County. The mission of this program is to identify and prioritize long-term infrastructure improvement needs, and to develop an implementation strategy to assure that each drainage basin can maintain its designated FPLOS. The FPLOS program cost is estimated at $2 million a year for studies and another $2 million per year for mitigation project development. Taylor Engineering is the lead modeler for this project and has recently completed phase 1 of 3.

III. COMPARATIVE MARKET RESEARCH: Provide a detailed source or market analysis for justification of sole source/brand or most reasonable source (attach extra sheets as needed).

Estimated project value: $ 525,000.00 Contract length (if applicable): 2 years

Expenses to date: $713,847.26

Has this commodity been previously provided to the County? ✓ Yes _____ No

If yes, when and by whom? Geosyntec with modeling subcontracted to Taylor Engineering, Inc.

How was item/service procured? Competitive bid

What is the current contract (MA) or purchase order number? R2114367P1, PO ENV1800061

If this is a sole brand, is there an "authorized" dealers list? _____ Yes ✓ No

Cost/Benefit Analysis: What would the cost be to utilize an alternate vendor or source? This explanation should include the savings and/or additional costs to the County by not using the preferred vendor or source. Attach additional sheets if needed.

WMD has developed a scope of services for model simulation of four County water control district secondary canal systems. This scope of services will use the MIKE SHE model platform developed for the County and SFWMD to simulate a finer level of operation and develop an assessment of level of services during both wet and dry conditions. It is WMD's assertion that Taylor Engineering is the most reasonable consultant selection to provide the services required. Taylor engineering and their team is uniquely positioned to give added value based on their recent experience and expertise with the Broward County MIKE SHE model. Use of another similarly qualified consulting firm that specializes in model simulations would result in additional costs while that firm reviewed previous work and performed rework to determine how the model platform responded to inputs. The below points highlight areas of added value when Taylor Engineering is selected.

- Four plus years' experience working specifically with MIKE SHE model platform for the Broward County, Florida area.
- Knowledge, experience, and understanding of how the Broward County MIKE SHE model simulates the complex system of approximately 400 canals, 800 culverts, 100 bridges, 65 pumps, and 80 gated structures.
- Knowledge, experience, and understanding of the operational rules applied to structures and pumps throughout the area as represented in the model for both wet and dry conditions.
- Active knowledge, experience, and understanding of the output data set from MIKE SHE model simulations for both Broward County and the SFWMD.
- Authorship of numerous tools to effectively input new data and efficiently process output results in a manner that is easily understandable and acceptable to the County and the SFWMD.
- Skilled in the application of future conditions to model data set development, having created many of them to simulate the impacts of climate change for the County and SFWMD.

The primary advantage of selecting Taylor Engineering to perform WMD's needs assessment modeling is the coordination and integration of concurrent and parallel flood study model simulations. The SFWMD FPLOS study for Broward County focuses on the primary canal system only and makes assumptions for the secondary canal system. WMD's focus will be the four water control districts that make up a portion of the northern Broward County secondary canal system. The model simulation will assess the four County water control districts to arrive at recommended adaptive measures. By using Taylor Engineering, the secondary canal system adaptive measures modeled can be fed back to the SFWMD and Broward County models in a compatible format as model data sets, thus integrating and updating primary and secondary canal system improvements in County and State modeling efforts under multiple climate change conditions.

There is considerable time and cost savings that can be achieved by utilizing Taylor Engineering for the proposed WMD needs assessment project. It is estimated that approximately six or more months would be needed to on-board a new consultant to take on the model platform at an estimated cost of $500,000. Time and cost would likely be incurred to bring a new consultant to a level of familiarity and competency with the model platform, to develop input/output analysis tools, and communicate results out to other agencies. Taylor Engineering has been working with the same model platform for four consecutive years with at least two other agencies (one of which is the County's Resilient Environment Department), has developed a grab-bag of tools for analysis, understands the County's goals and objectives and can provide a consistency of analyses and results between agencies. Use of Taylor Engineering as the selected consultant for the WMD needs assessment project will ensure that WMD is using the most current model inputs and developed adaptive strategies that are available.

CERTIFICATION: I have thoroughly researched the sole source or sole brand justification and fully understand the implications of Section 838.22 of the Florida Statutes:

(2) "It is unlawful for a public servant, with corrupt intent to obtain a benefit for any person or to cause unlawful harm to another, to circumvent a competitive bidding process required by law or rule by using a sole source contract for commodities or services."

(5) "Any person who violates this section commits a felony of the second degree, punishable as provided in s. 775.082, s. 775.083, or s. 775.084"

	Michael R Zygnerski Digitally signed by Michael R Zygnerski Date: 2022.05.10 15:17:18 -04'00'	5/10/22
REQUESTOR/EVALUATOR (PRINT)	REQUESTOR/EVALUATOR (SIGN)	DATE
	Susan Bodmann Digitally signed by Susan Bodmann Date: 2022.05.10 15:49:29 -04'00'	5/10/22
DEPT./DIV. DIRECTOR OR DESIGNEE (PRINT)	DEPT./DIV. DIRECTOR OR DESIGNEE (SIGN)	DATE

The Purchasing Agent has reviewed the request and has completed the required due diligence per the Procurement Code Section(s) 21.25 and 21.26. The Purchasing Agent recommends the following:

☐ Sole Source Sole Brand ■ Reasonable Source ■ RFI attached Rejected

☐ Request Authorization to Negotiate

Additional Information:

In accordance with Procurement Code, Section 21.25, Notice of Intent to Designate Sole Source/Sole Brand was publicly advertised under Request for Information (RFI) No. GEN2124875F1 to determine if other vendors were able to provide the requested services. The RFI was issued on July 27, 2022, and closed on August 4, 2022, with three (3) responses received. One (1) vendor subsequently withdrew its response. There were 32 views, no vendor questions were asked, and 19,104 vendors were successfully invited.

The Purchasing Agent, after reviewing the supporting documentation provided by the using agency and the RFI (attached), recommends the approval of the Reasonable Source designation for Taylor Engineering to provide consulting services for the Broward County Water Control Districts Future Needs Assessment Modeling project.

Purchasing Agent Signature: LATOYA T. CLARK-FORBES Digitally signed by LATOYA T. CLARK-FORBES Date: 2022.08.25 17:44:19 -04'00' Date:

Purchasing Manager: CONSTANCE S. MANGAN Digitally signed by CONSTANCE S. MANGAN Date: 2022.09.08 11:24:32 -04'00'

APPROVAL AUTHORITY

REASON/SUGGESTED ACTION (IF DISAPPROVED):

Approved based on concurrence w/analysis/recommendation of Purchasing Agent and Mgr.

Signature: Robert Gleason Digitally signed by Robert Gleason Date: 2022.09.09 07:52:43 -04'00' Date:

Public Works Department
WATER MANAGEMENT DIVISION
2555 W. Copans Road • Pompano Beach, Florida 33069 • 954-831-0751 • FAX 954-831-3285

Latoya Clark-Forbes
Purchasing Agent, Senior

August 9, 2022

SUBJECT: Evaluation of Consultant Responses to:
RFI No. GEN2124875F1, BC Water Control Districts Future Needs Assessment Modeling

Dear Ms. Clark-Forbes:

The Broward County Water Control Districts Future Needs Assessment Modeling bid [RFI] was active from July 27, 2022, 11:42 AM through August 4, 2022, 2:00:00 PM. There were 3 parties that expressed interest in the project and asserted meeting the requirements of experience with the Broward MIKE SHE Hydrologic model, South Florida Water Management District Flood Protection Level of Service (SFWMD FPLOS) project, and experience with adaptation/mitigation modeling.

I, Michael Zygnerski, reached out to the points of contacts for the three firms on Monday August 8th and requested the following information:

- Final report(s) for the work listed using the Broward MIKE SHE model within the last 3-5 years
- Final report(s) for the work listed for SFWMD FPLOS projects within the last 3-5 years
- List of project managers from the contracting entity and contact information
- Confirmation of project status as “Completed” or a percentage complete and an estimate of time remaining

All three firms returned responded promptly and my evaluations on each are as follows:

Lago Consulting & Services (Lago Consulting): Marcelo Lago replied and stated that Lago Consulting had not worked with the Broward MIKE SHE Model in over 10 years but had worked with other MIKE SHE Projects. Mr. Lago also stated that Lago Consulting had not worked on any SFWMD FPLOS projects. It is recommended that Lago Consulting be disqualified as not meeting the requirements.

Collective Water Resources, LLC (Collective Water Resources): Elizabeth Perez replied and stated that Collective Water Resources is withdrawing their response to the bid [RFI].

Chen Moore and Associates (Chen Moore): Leigh Barron replied and provided information on Chen Moore’s use of the Broward MIKE SHE model in a basis of design report for the City of North Lauderdale and the progress of their efforts with the C2, C3W, C5, and C6 Watersheds FPLOS project for the SFWMD.

Broward MIKE SHE Use: The MIKE SHE model was used by Chen Moore on a limited basis in an analysis that involved the changing of a single control structure in multiple runs. There was no analysis against varying hydrologic condition nor was there any calibration of the model performed. This is a very limited use of the model in a very small area that is outside of our proposed project location.

SFWMD FPLOS: Chen Moore does currently hold a contract for SFWMD FPLOS work for an area in Miami. This project is estimated to be between 65-75% complete with Phase 1, out of a total of 3 phases. The current level of service report is in draft form and has not yet been delivered to the SFWMD for review. Chen Moore has not started the future condition analysis which is the most critical portion of this project, and is not estimated to be completed before January 2023. Based on my knowledge of and experience with the MIKE SHE and FPLOS modeling, Chen Moore has not yet acquired the required level of experience with analysis of these models to provide the level of coordination with the state and county for our selected model area.

Overall Recommendation:
In my professional opinion none of the firms met the criteria for a reasonable source and would not be able to provide the level of service that the recommended consultant, Taylor Engineering, can provide. Taylor Engineering currently holds the contracts for the SFWMD FPLOS studies of Regional Canals in Broward County and the C8/C9 basins. Taylor Engineering has completed their Phase 1 study for both areas and has begun the Phase 2 work for C8/C9. Taylor Engineering will use the lessons learned from C8/C9 to complete the Phase 2 analysis for Regional Canals in Broward County providing an opportunity for coordination. The WMD proposed study will mimic many of the SFWMD analyses in terms of identifying problem areas and flooding and addressing these areas through adaptive strategies. The SFWMD study of the primary canals and the WMD study of the secondary canals in Broward County done concurrently with the same consultant will be able to address the cumulative effects that adaptive strategies in both service areas may have. The use of Taylor Engineering on both projects would eliminate the need to reanalyze system changes from multiple consultants working independently.

Michael R Zygnerski

Digitally signed by Michael R Zygnerski
Date: 2022.10.07 14:48:17 -04'00'

Michael Zygnerski
Michael Zygnerski, Project Manager
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