100 East Erie Street
Chicago, IL 60611

Metropolitan Water Reclamation District of Greater Chicago

Legislation Details (With Text)

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Title:	Issue a purchase order and enter into an agreement with Microvi Biotech Inc., for Professional Engineering Services for MicroNiche™ Biocatalyst Technology Research Project Study at the O'Brien Water Reclamation Plant, in an amount not to exceed $50,300.00, Account 201-50000-612430, Requisition 1478118 (Deferred from the November 16, 2017 Board Meeting)		
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12/7/2017	1	Board of Commissioners	Approved	Pass
12/7/2017	1	Committee of the Whole	Recommended	Pass
11/16/2017	1	Board of Commissioners	Deferred	
11/16/2017	1	Committee of the Whole	Deferred	

TRANSMITTAL LETTER FOR BOARD MEETING OF DECEMBER 7, 2017

COMMITTEE ON PROCUREMENT

Mr. David St. Pierre, Executive Director

..Title
Issue a purchase order and enter into an agreement with Microvi Biotech Inc., for Professional Engineering Services for MicroNiche™ Biocatalyst Technology Research Project Study at the O'Brien Water Reclamation Plant, in an amount not to exceed $50,300.00, Account 201-50000-612430, Requisition 1478118 (Deferred from the November 16, 2017 Board Meeting)
..Body

Dear Sir:

Authorization is requested to issue a purchase order and enter into an agreement with Microvi Biotech Inc. (Microvi), for professional engineering services for MicroNiche™ Biocatalyst Technology Research Project Study at the Terrence J. O'Brien (O'Brien) Water Reclamation Plant (WRP).

The MicroNiche™ technology is a suite of products that target specific pollutants for removal by way of biocatalysts that are self-contained stable communities of mature organisms. The goal of the MicroNiche™ technology is to remove biochemical oxygen demand (BOD), ammonia, phosphorus, and nitrogen in a manner that provides numerous benefits over the traditional activated sludge process and Enhanced Biological Phosphorus Removal (EBPR) processes. Anticipated benefits include accomplishing phosphorus uptake in a tank volume much less than that required for the traditional EBPR process. If proven successful, this technology could be applied at the O'Brien WRP, which may not have sufficient aeration tank capacity for the traditional EBPR process. In addition, laboratory-scale research has shown that this technology removes BOD and ammonia in a much smaller tank volume, and with less air requirements, than conventional activated sludge, leading to a potential 35 percent reduction in energy costs. MicroNiche™ operates with 95

percent less secondary solids production than the existing activated sludge process, which could have multiple benefits if applied at the O'Brien WRP, including lower solids loading on the final clarifiers during stressed periods, less impact on the aging sludge force main, and a significant savings in solids processing costs at the Stickney WRP. Implantation of MicroNiche™ could likely be accomplished through repurposing the existing aeration tanks with a modest amount of modifications.

This technology was brought to the Metropolitan Water Reclamation District of Greater Chicago's (District) attention, with a recommendation for pilot testing, after review and preparation of a techno-economic evaluation by Current Innovation, NFP, a Chicago area research consortium of which the District is a founding member. Pilot testing of this technology will allow the District to verify the stated benefits of this technology and develop a basis of design, if it is determined to be a viable technology for full-scale implementation.

Microvi has submitted a proposal to investigate this technology through a pilot system at the O'Brien WRP. The goals of the project are as follows: (1) validate that the technology can achieve effluent requirements relative to the future O'Brien WRP NPDES permit with respect to BOD, ammonia, and phosphorus; (2) quantify reduction in operating costs and solids production; (3) assess ease of operation of the system; and (4) establish design and economic parameters that will enable the District to prepare a life-cycle analysis of the feasibility and economics of a full-scale application at the O'Brien WRP.

The time for completion of the research project is 12 months after award of the contract. There are no provisions in the agreement for the extension of time, except for such reasonable period as may be agreed upon between parties. The deliverables to be provided under this agreement include:

a. MicroNiche™ Biocatalysts under a lease arrangement
b. Conceptual design of the pilot system
c. Pilot system operating protocols and parameters
d. Summary report on the operational results, operating parameters, design criteria that can be used to establish full scale design, estimated operating and maintenance costs, and estimated capital costs.

The pilot facility will be designed in-house by the Monitoring and Research (M&R) Department, using the basis of design provided by Microvi, and constructed by District trades with equipment procured by the M&R Department. The day-to-day operation of the pilot system will be run by the M&R Department and maintained by the Maintenance and Operations Department on an as-needed basis. The M&R Department will perform all laboratory analysis. Microvi will provide their services, including conceptual design and expert advice during startup and operation, free of charge. Microvi will lease the MicroNiche™ biocatalyst technology to the District for the duration of the research study. In addition, the District will reimburse Microvi for travel costs.

In addition, the District will be responsible for providing the pilot unit which will consist of several small (2,000 gallon +/-) tanks, pumps, mixers, piping, and instrumentation. The pilot unit will be fabricated either using in-house trades, or through a bid contract. It is estimated that the pilot plant equipment, which is not a part of this transmittal letter will cost approximately $250,000.00.

The components of the total fee for the agreement are as follows:

1.	Lease of MicroNiche™ Biocatalyst Technology	$30,000.00	
2.	Travel Reimbursement		$20,300.00
Total Fee (Not to Exceed)			$50,300.00

Microvi is the sole-provider of the MicroNiche™ Biocatalyst Technology and possesses a high degree of professional skill, and has submitted prices for the services required. Inasmuch as Microvi is the only source of supply for the services required, nothing would be gained by advertising for bids (Section 11.4 of the Purchasing Act).

Microvi is not registered to transact business in the State of Illinois, but has submitted a certificate of good standing from the State of California. The Director of Monitoring and Research has given approval to move forward with the recommendation to issue.

The Multi-Project Labor Agreement is not applicable due to the specialized nature of the services required.

In view of the foregoing, it is recommended that the Director of Procurement and Materials Management be authorized to issue a purchase order and enter into an agreement with Microvi in an amount not to exceed $50,300.00.

Funds are being requested in 2018, in Account 201-50000-612430, and are contingent on the Board of Commissioners' approval of the District's budget for that year.

Requested, Edward P. Podczerwinski, Director of Monitoring and Research, EWP:KMB:RA:TK:ae
Recommended, Darlene A. LoCascio, Director of Procurement and Materials Management
Respectfully Submitted, Barbara J. McGowan, Chairman Committee on Procurement
Disposition of this agenda item will be documented in the official Regular Board Meeting Minutes of the Board of Commissioners for December 7, 2017