



# Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street  
Chicago, IL 60611

## Legislation Details (With Text)

**File #:** 15-0829 **Version:** 1  
**Type:** Agenda Item **Status:** Adopted  
**File created:** 7/22/2015 **In control:** Procurement Committee  
**On agenda:** 8/6/2015 **Final action:** 8/6/2015  
**Title:** Issue a purchase order and enter into an agreement with Northwestern University, for a Laboratory Study of Two Mainstream Shortcut Biological Nitrogen Removal Approaches, in an amount not to exceed \$532,671.00, Account 201-50000-601170, Requisition 1400739

**Sponsors:**

**Indexes:**

**Code sections:**

**Attachments:**

Date	Ver.	Action By	Action	Result
8/6/2015	1	Board of Commissioners	Approved	Pass
8/6/2015	1	Committee of the Whole	Recommended	Pass

### TRANSMITTAL LETTER FOR BOARD MEETING OF AUGUST 6, 2015

#### COMMITTEE ON PROCUREMENT

Mr. David St. Pierre, Executive Director

Issue a purchase order and enter into an agreement with Northwestern University, for a Laboratory Study of Two Mainstream Shortcut Biological Nitrogen Removal Approaches, in an amount not to exceed \$532,671.00, Account 201-50000-601170, Requisition 1400739

Dear Sir:

Authorization is requested to issue a purchase order and enter into an agreement with Northwestern University, according to the terms and conditions of the Master Agreement, to complete a Laboratory Study of Two Mainstream Shortcut Biological Nitrogen Removal (SCBNR) Approaches. This project will be administered by the Environmental Monitoring and Research Division of the Monitoring and Research Department. The purchase order will expire on August 31, 2018.

The principal investigator for this project will be George Wells, Ph.D., who is the Louis Berger Junior Professor of Civil and Environmental Engineering at Northwestern University in Evanston, Illinois, where he runs the Environmental Biotechnology and Microbial Ecology Laboratory. Dr. Wells is a reputable scientific investigator and researcher in his field.

This laboratory research is imperative to meet the Metropolitan Water Reclamation District of Greater Chicago's (District) goals of phosphorus removal and energy neutrality as significant energy saving mechanisms. Laboratory bioreactors would be operated as two different mainstream SCBNR approaches and investigated to assess the feasibility of the approaches, determine optimal operating conditions, calculate competition of nitrite oxidizing bacteria, evaluate strategies for retention of anammox biomass and activity, and assess performance and stability of the SCBNR process options under dynamic conditions expected at District

facilities, such as low temperatures. Given the success and information derived from this research, SCBNR technology may be applied at District facilities to reduce aeration energy, meet phosphorus effluent limits, and reduce total nitrogen in the effluent. This work will be done as a three-year project, and the two SCBNR approaches will be studied concurrently.

Dr. Wells has extensive experience in shortcut nitrogen removal bioprocesses, sustainable biological wastewater treatment, molecular microbial ecology of activated sludge, and resource and energy recovery from waste. Also, Dr. Wells has more than ten years of experience characterizing, developing, and optimizing biological nutrient removal processes, and more than seven years of experience focused on shortcut nitrogen removal bioprocesses. For his postdoctoral research, he clarified differences in performance and stability, population dynamics, and aggregate architecture between deammonification process variations. This effort involved design, construction, operation, and optimization of a bench scale moving bed and three suspended growth deammonification bioreactors.

Northwestern University, the expert provider to perform the SCBNR evaluation, has submitted pricing for the services required. Inasmuch as Northwestern University is the expert provider for the services, nothing would be gained by advertising for bids (Section 11.4 of the Purchasing Act).

Northwestern University is a non-profit educational institution and is, therefore, not required to register with the State of Illinois.

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 Northwestern University in an amount not to exceed \$532,671.00.

Funds for the 2015 expenditure, in the amount of \$180,802.00, are available in Account 201-50000-601170. The estimated expenditure for 2016 is \$134,369.00, 2017 is \$145,979.00, and 2018 is \$71,521.00. Funds for the 2016, 2017 and 2018 expenditures are contingent on the Board of Commissioners' approval of the District's budget for those years.

Requested, Dr. Thomas C. Granato, Director of Monitoring and Research, TCG:MPC:KB:mh  
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 August 6, 2015