REQUEST FOR INFORMATION PACKAGE
FOR

LAKE JESUP: IN-LAKE PHOSPHORUS REDUCTION ADVANCED TECHNOLOGY REVIEW

FOR
THE GOVERNING BOARD OF THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

REQUEST FOR INFORMATION NUMBER 35601

RESPONSES DUE:
5:00 P.M., JUNE 12, 2020

INVITATION TO SUBMIT RESPONSES TO THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

The Governing Board of the St. Johns River Water Management District (District) requests that interested parties respond to the solicitation below by 5:00 p.m., June 12, 2020. Further information is available through DemandStar at *Demandstar.com* [(800) 711-1712], Vendor Registry at *Vendorregistry.com*, or the District's website at *sjrwmd.com*. Information packages may be obtained from DemandStar, Vendor Registry, or the District by contacting Carol Taylor Miller, Senior Procurement Specialist, at cmiller@sjrwmd.com or at (386) 329-4170.

REQUEST FOR INFORMATION NUMBER 35601
LAKE JESUP: IN-LAKE PHOSPHORUS REDUCTION
ADVANCED TECHNOLOGY REVIEW

The District is investigating phosphorus (P) removal processes to decrease the water column concentration of total phosphorus (TP) in Lake Jesup. The purpose of this project is to investigate treatment technologies that will reduce water column TP concentrations in the lake and gather information for a subsequent comparative review of TP reduction methods and technologies. The goal for these technologies is to implement cost-effective TP reduction measures to achieve a 1 – 2.3 metric tons/year reduction in the Lake Jesup water column TP mass. For the purpose of this Request for Information (RFI), water column TP refers to that phosphorous dissolved, adsorbed or incorporated in the lake water and its associated biological or inorganic suspended solids (including phytoplankton), fish or floating aquatic vegetation.

You are invited to provide information that will support your process for TP removal associated with Lake Jesup. All technologies will be evaluated for their cost per pound of TP removed, proven performance in similar natural systems and the overall reduction anticipated from the Lake. This supporting information should include the general process by which the technology operates. Information should be provided regarding which forms of phosphorus (inorganic or organic, particulate or dissolved) are removed and associated loads for each form. In addition, information should be provided that indicates from which part of the lake the different forms and TP is proposed to be removed (i.e. from water column or sediment). Although no financial award or contract will result from this RFI, the information may be used to assess options for future projects in Lake Jesup.

This is for information purposes only; therefore, the District is under no obligation to purchase any services or products based on the information submitted. The information provided to the District may be used to develop a project scope for a future assessment and/or procurement.

Special accommodations for disabilities may be requested through Carol Taylor Miller at (386) 329-4170 or by calling (800) 955-8771 (TTY), at least five (5) business days before the date needed.

REQUEST FOR INFORMATION (RFI) NUMBER 35601
LAKE JESUP: IN-LAKE PHOSPHORUS REDUCTION
ADVANCED TECHNOLOGY REVIEW

I. INTRODUCTION

The St. Johns River Water Management District (District) is issuing this RFI to interested respondents for investigating phosphorus (P) removal processes to decrease the water column concentration of total phosphorus (TP) in Lake Jesup. The goal for any considered alternatives is to implement cost-effective TP reduction measures to achieve a 1 – 2.3 metric tons/year reduction in the Lake Jesup TP water column mass. For the purpose of this RFI water column TP refers to that phosphorous that is dissolved, adsorbed or incorporated in the lake water and its associated biological or inorganic suspended solids (including phytoplankton) fish or floating aquatic vegetation.

Interested respondents are invited to provide information that will support your process for TP removal for Lake Jesup. Such information will not obligate the District in any procurement. The information provided may be used in the development of the project scope for a future assessment and/or procurement. Respondent should be willing to have their treatment technology evaluated in a laboratory bench pilot study. If selected, respondent would be willing to provide a sample of their product and recommended doses for evaluation.

II. OBJECTIVES

The objective of this RFI is to gather information to investigate biological, chemical and/or physical processes to achieve TP reductions. All technologies will be evaluated for their cost per pound of TP removed, proven performance in similar natural systems and the overall reduction anticipated from Lake Jesup. Because phosphorus can be partitioned into different chemical forms of varying uptake preference for algae, it would be beneficial if the information provided described the technology's success (e.g. performance efficiency) removing more bioavailable forms. Although no financial award or contract will result from this RFI, the information may be used to assess options for future projects in Lake Jesup.

III. BACKGROUND INFORMATION

The Middle St. Johns River Basin is a Surface Water Improvement and Management (SWIM) waterbody, and project opportunities within this basin are under consideration for nutrient reduction sought by the Lake Jesup Total Maximum Daily Load (TMDL) and Basin Management Action Plan (BMAP). Lake Jesup is one of the largest lakes in the Middle St. Johns River Basin and ranges from 4,047 – 6,475 hectares and maintains an average depth of 1.3 meters. The TMDL was developed and approved by the Florida Department of Environmental Protection (FDEP) in 2006 for both TP and total nitrogen (TN) and a BMAP approved in 2010. Target concentrations of 0.096 mg/L TP and 1.27 mg/L TN were determined to be appropriate for the assimilative capacity within the lake. The average Lake TP and TN concentrations from 2000 – 2010 is 0.17 mg/L and 2.7 mg/L respectively.

In 2018 the BMAP was amended as a supplement to the 2010 BMAP (FDEP, 2019). The amended BMAP included updates to loading estimates from both the watershed and in-lake sources, and updates to load allocations for stakeholders. Since the approval of the Cycle 1 BMAP, many stakeholder projects have been implemented to address external nutrient loads to

the lake. However, stakeholders recognize that without remediation projects to address internal P loading associated with the lake's sediment flux, the achievement of water quality goals will be delayed.

It has been estimated that sediment flux (i.e. release of nutrients from the sediments into the water column via diffusion and/or resuspension processes) may contribute significantly to the TP concentration in the water column (Harper 2013). However, studies conducted by the District indicate that the TP concentrations associated with resuspended sediment are lower than TP concentrations in the lake's water column (Anderson 2011) and the thickness of the unconsolidated sediment layer has decreased by ~50% since 1996 (Harper 2014 revised 2015). These results suggest that sediment removal as a water quality improvement process may not be the most effective or cost-efficient approach at this time. Therefore, reducing TP concentration in the lake's water column will hasten meeting TMDL target concentrations.

IV. TIME FRAMES

Responses must be received by Carol Taylor Miller, Senior Procurement Specialist, St. Johns River Water Management District. These responses must be submitted by email as pdf attachments to cmiller@sjrwmd.com no later than 5:00 p.m., June 12, 2020.

V. SUBMITTAL REQUIREMENTS:

In order to assist with the District's review process, the information package shall be prepared utilizing the following format AND must be submitted as a pdf attachment to cmiller@sjrwmd.com. The RFI #35601 must be in the subject line of the email. Each of the required sections is to begin a new page and be separately tabbed or identified. If the documents are too large to send as a pdf, please send multiple documents, or contact Carol Taylor Miller at cmiller@sjrwmd.com or (386) 329-4170 to determine the best approach to sending.

Respondents are encouraged to include as much pertinent data and information under each section as necessary to ensure proper evaluation of the information. The format is as follows:

Section 1. **Title Page** – Show the Request for Information subject, the name of your company, address, telephone number, email address, name of contact person, and the date.

Section 2. **Table of Contents** – Clearly identify material by section and page number.

Section 3. **Letter of Transmittal** – Limit to two (2) pages. Briefly describe your company's understanding of the purpose of this Request for Information.

Section 4. **Marketing Documents** – Provide brochures, promotional materials showing plans and coverages and locales of no coverage.

Section 5 **Product Overview** – Provide a brief description of the technology pre-treatment requirements, land needed to implement treatment process, proprietary restrictions associated with treatment technology, ability to recover and market any sequestered P, regeneration capability of the product, minimal by-product, space, other water quality changes and energy requirements, application process and function performance (capping, inactivation etc.), proven performance in similar natural systems, overall removal anticipated to Lake Jesup and technology cost effectiveness (cost per pound of TP removed). Technology performance claims and

cost effectiveness claims should be supported by documentation. Information should be provided that indicates from which part of the lake the different P forms and TP is proposed to be removed (i.e. from water column or sediment). Product Description should specify which P fractions are targeted by their technology and anticipated loads removed by each fraction.

- Particulate phosphorus – quantified as TP-T – TP-D.
- Particulate phosphorus includes algae and non-algal organic and mineral suspended solids.
- Dissolved inorganic phosphorus – quantified as PO4-D.
- Dissolved organic phosphorus – quantified as TP-D – PO4-D

Section 6. **Price Range** – Provide pricing for cost per pound of TP removed and if possible, a price per area (acre) treated in similar natural systems.

VI. INQUIRIES

Further questions regarding this RFI shall be directed to Carol Taylor Miller, Senior Procurement Specialist, cmiller@sjrwmd.com or (386) 329-4170.

JESUP BASIN MAP