

## Community Issue Performance Evaluation

1. State Agency: Florida Department of Agriculture and Consumer Services (FDACS) – Office of Agricultural Water Policy (OAWP)

2. State Program (or Type of Program): Office of the Commissioner & Division of Administration – Agricultural Water Policy Coordination

3. Project Title: Deployment of Hybrid Wetland Chemical Treatment Technology

4. Recipient name and address: Watershed Technologies, LLC., 3208 Westchester Drive, Cocoa, FL 32926

Location county/counties: Projects are located in Okeechobee and St. Lucie Counties within the Northern Everglades and Estuaries Protection Area

5. Is the recipient a governmental entity, a private non-profit entity, or a private for-profit entity: Private for-profit entity.

6. <u>FUNDING:</u> FY 2012-13 Recurring General Revenue	FY 2012-13 Recurring Trust Funds	FY 2012-13 Recurring TOTAL FUNDS	GAA Specific Appropriation Number (ch. 2012-118, L.O.F.)
\$3,000,000	\$0	\$3,000,000	1398A

7. FY 2012-13 GAA proviso specifically associated with the project (if any): From the funds in Specific Appropriation 1398A, \$3,000,000 in recurring general revenue funds is provided for the operation and maintenance of existing hybrid wetland/chemical treatment projects and \$2,000,000 in nonrecurring general revenue funds is provided for the completion of hybrid wetland/chemical treatment projects within the Northern Everglades pursuant to section 373.4595 (3) (b), Florida Statutes.

8. Project Purpose/Description: The purpose of this project is to cost effectively reduce total phosphorus (P) and nitrogen (N) in the Northern Everglades watershed through the treatment of waters at six locations employing the patented Hybrid Wetland Treatment Technology (HWTT). In 2007-2008 four HWTT nutrient removal facilities and one test bed were deployed in the Northern Everglades Watershed. In 2008-2009 two additional facilities were deployed. In 2010-2011, five of the existing HWTT systems were operated and construction of one additional modified 10 cfs facility on Taylor Creek was completed. In 2011-2012 all of the sites were operated and systems were improved to increase performance and reduce operating costs. In addition, capacity at the Taylor Creek site was increased by 10 cfs. The current year contract consists of \$3,000,000 for the operation and maintenance of the existing HWTT systems and \$2,000,000 to increase the capacity at the Taylor Creek site to 30 cfs (additional 10 cfs).

The continuing appropriation request of \$3,000,000 would allow for the continued operation and maintenance of the six HWTT facilities in the Northern Everglades and Estuaries watershed.

9. Number of years this project has received state funding: Six (6) years. For fiscal years 2007-2008 through 2010-2011, FDACS OAWP received funding from the South Florida Water Management District to implement the HWTT projects. In fiscal years 2011-2012 and 2012-2013 FDACS OAWP received funding via direct appropriation from the state.

10. Does this project align with the core missions of the agency or the program area in which it is funded? (Explain): Yes. The core mission of the (OAWP) is "To Help Ensure The Future of Florida Agriculture While Conserving The State's Natural Resources." To this end the OAWP has participated in complementary efforts by the Florida Department of Environmental Protection (FDEP) and the South Florida Water Management District (SFWMD) to manage pollutant loading within the Northern Everglades and Estuaries Watershed. Collaboratively, these agencies have designed an approach to reduce pollutant loads that includes improving the management of pollutant sources within the watershed through implementation of regulations and development and implementation of best management practices (BMPs) focusing on nitrogen (N) and phosphorus (P). Utilization of alternative and innovative nutrient control technologies such as HWTT is one of the tools that is being utilized to meet the pollutant reduction goals as part of the ongoing restoration efforts for Lake Okeechobee and the coastal estuaries.

11. Does the program meet a demonstrated need in the community that is not otherwise being met? (Explain): Yes. Stormwater discharge from landowners around Lake Okeechobee is limited in the concentrations of phosphorus and nitrogen by the Lake Okeechobee Total Maximum Daily Load adopted by FDEP and EPA. This program achieves these limits for the stormwater that is treated at five of the six sites. Also, the projects are an integral part of the South Florida Water Management District and FDACS program to achieve the phosphorus loading limits to Lake Okeechobee as required by FDEP Rule.

12. What are the intended outcomes/impacts and benefits of the project? Provide efficient alternative for treatment of storm-water runoff for removal of phosphorus and other nutrients; achieve legally mandated phosphorus limits on average for tributaries north of Lake Okeechobee; assist in restoration of the Northern Everglades; and provide environmental benefits via wetland and wildlife habitat restoration and creation. The technology employed minimizes the amount of land that is taken out of agricultural production.

13. What performance data does the agency/entity regularly collect and report that demonstrates the value of the program to the State of Florida?  
X Output data (e.g., number of clients served, students educated, units produced); Enumerate: Phosphorus (P) removed; quantity of water treated; measurement of other water quality parameters; operating data; other  
X Outcome data (data on the effectiveness or quality of services, e.g., percentage of clients successfully completing treatment); Enumerate: P removal rate; % operational days; Cost/Benefit analysis; other  
X Unit cost data (e.g., cost per unit produced); Enumerate: Unit cost benefit calculations  
X Other (Explain): Replacement costs; variable and fixed costs; sensitivity analyses

14. How is program data collected and has it been independently validated for accuracy and completeness?

Data is collected primarily by recipient and limited outside vendors; sampling methods and laboratory data independently validated by split sample collection by the South Florida Water Management District; program data independently evaluated by South Florida Water Management District; compliance data independently evaluated by the Florida Department of Environmental Protection.

15. Is there an executed contract between the agency and the recipient? Yes.

16. If there is a contract, are the outputs, measures and costs specified in a contract between the agency and the recipient? Yes. The contract is based on specific deliverables. Each deliverable has a cost associated with it.

17. How do the unit costs compare to those of comparable or alternative projects or services? (EXPLAIN AND SPECIFY): Unit cost comparisons are difficult due to varying methodologies employed, limited availability of comparable projects and projects reporting actual results versus desk-top studies. Many factors should be considered which significantly affect cost/benefit including: 1) phosphorus concentrations to be treated; 2) variability in other water quality characteristics and flow; and retrofitting and/or pre-existing constraints of existing sites. A cost benefit analysis for the current project based on present value full capacity utilization over 50 years indicates a range of \$30 to \$163 per pound phosphorus removed (combining two side-by-side facilities). In the report "Compilation of Benefits and costs of STA and Reservoir Projects in the South Florida Water Management District" (Hazen and Sawyer July 2011. FL.), the author summarized cost benefit values for wetland treatment projects under a 50 year useful life. The calculated per unit costs ranged from \$111 to \$336 per pound of phosphorus removed. An Agreement between the St. Johns River Water Management District and Aquafiber Technologies Corporation for phosphorus removal in Lake Jesup compensates the contractor \$500,000 per metric ton of phosphorus removed, which equates to \$227 per pound. Cost benefit calculations must also consider numerous factors including phosphorus and other nutrient removal rates, as well as public goals associated with a project. For example, at least two of the current projects with higher per unit costs include wetland restoration goals as a primary factor.

18. Based on performance data, is this project meeting the expected outputs and having the intended outcomes? (Explain): Yes. Tributary TMDL met on average for 5 of 6 sites; stringent Lake TMDL met on average for 4 of 6 sites; effective P removal rate maintained; environmentally beneficial by providing flow to downstream wetlands; wetland and wildlife habitat created and restored; relatively small land footprint utilized; effective nitrogen removal rate provided; reuse of floc material practiced.

19. Describe how the information upon which the answer above is based was obtained and validated: Data is collected primarily by recipient and limited outside vendors; laboratory data independently validated by split sampling by third party; performance measurements independently evaluated by South Florida Water Management District; compliance data independently evaluated by the Florida Department of Environmental Protection.

20. How much additional funding or matching funding from non-state sources is available for this project and what are the sources? Land provided by private parties for three sites; limited utility service provided by private parties for two sites.

21. List any audits or evaluative reports that have been published for this project (including website links, if available): Interim and Final Reports describing project performance including numerous output and outcome measures, detailed operational reports and summaries, time series analyses and unit costs. Reports are independently reviewed by the South Florida Water Management District. Final and Compliance Reports are also independently reviewed by the Florida Department of Environmental Protection.

22. Provide any other information that can be used to evaluate the performance of this project: Monthly operational reports are provided and independently reviewed by the South Florida Water Management District.

Department of Financial Services Contract Management Reviews for State Fiscal Years 2010-2011 and 2011-2012. [http://www.myfloridacfo.com/aadir/auditing\\_activity.htm](http://www.myfloridacfo.com/aadir/auditing_activity.htm)

23. CONTACT INFORMATION for person completing this form:

Name: Rich Budell

Title: Director, Office of Agricultural Water Policy

Phone number and email address: (850) 617-1704 rich.budell@freshfromflorida.com

Date: December 20, 2012

## Community Issue Performance Evaluation

1. State Agency: Florida Department of Agriculture and Consumer Services (FDACS) – Office of Agricultural Water Policy (OAWP)

2. State Program (or Type of Program): Office of the Commissioner & Division of Administration – Agricultural Water Policy Coordination

3. Project Title: Sensor Based Nutrient Management & Irrigation Monitoring Tools – Best Management Practices

4. Recipient name and address: - Praxsoft, Inc. 4700 Millenia Blvd. Ste 175, Orlando FL 32839.  
Companion contract with University of Florida, Gainesville FL 32611

Location county/counties: St. Johns and Collier Counties.

5. Is the recipient a governmental entity, a private non-profit entity, or a private for-profit entity:  
Praxsoft, Inc. - private for-profit entity. University of Florida - Governmental entity

6. <u>FUNDING:</u> FY 2012-13 Recurring General Revenue	FY 2012-13 Recurring Trust Funds	FY 2012-13 Recurring TOTAL FUNDS	GAA Specific Appropriation Number (ch. 2012-118, L.O.F.)
\$4,000,000	\$0	\$4,000,000	1398A

7. FY 2012-13 GAA proviso specifically associated with the project (if any): No proviso language in FY 2012-13.

8. Project Purpose/Description: To better manage fertilizer and irrigation scheduling.

9. Number of years this project has received state funding: Five (5) years.

10. Does this project align with the core missions of the agency or the program area in which it is funded? (Explain): Yes. The core mission of the (OAWP) is "To help ensure the future of Florida agriculture while conserving the state's natural resources." OAWP has participated in partnership efforts along with other state and local agencies including the Florida Department of Environmental Protection (FDEP), the Water Management Districts, University of Florida, and private landowners related to achieve this core mission. This includes projects like this one, which helps evaluate technologies that could be capable of improving overall crop fertilization management on farms.

11. Does the program meet a demonstrated need in the community that is not otherwise being met? (Explain): Yes. There is a need to better manage fertilizer in farm-like settings, because that will not only translate into savings for the farmer, but it will also help minimize fertilizer loads to the water bodies of the state.

12. What are the intended outcomes/impacts and benefits of the project? Improved fertilizer and irrigation management, which leads to reduction of nutrient loads to water bodies.

13. What performance data does the agency/entity regularly collect and report that demonstrates the value of the program to the State of Florida?

Output data (e.g., number of clients served, students educated, units produced); Enumerate:

Outcome data (data on the effectiveness or quality of services, e.g., percentage of clients successfully completing treatment); Enumerate: Sensor results were within one standard deviation of samples analyzed by both the University of Florida and an independent commercial laboratory.

Unit cost data (e.g., cost per unit produced); Enumerate:

Other (Explain):

14. How is program data collected and has it been independently validated for accuracy and completeness?

Data is collected and validated with companion contract with the University of Florida, Institute of Food and Agricultural Science.

15. Is there an executed contract between the agency and the recipient? Yes.

16. If there is a contract, are the outputs, measures and costs specified in a contract between the agency and the recipient? Yes. The contract is based on specific deliverables. Each deliverable has a cost associated with it.

17. How do the unit costs compare to those of comparable or alternative projects or services? (EXPLAIN AND SPECIFY): Unit costs for this contract are based on the University of Florida being the leading University in the state that can provide the required outputs and measures.

18. Based on performance data, is this project meeting the expected outputs and having the intended outcomes? (Explain): Yes. Testing to date has indicated the sensors provide accurate data for experimental field use to support better nutrient and irrigation management for agricultural use.

19. Describe how the information upon which the answer above is based was obtained and validated: Data has been collected and validated by a companion contract with the University of Florida, Institute of Food and Agricultural Science.

20. How much additional funding or matching funding from non-state sources is available for this project and what are the sources? None

21. List any audits or evaluative reports that have been published for this project (including website links, if available): Department of Financial Services Contract Management Reviews for State Fiscal Years 2010-2011 and 2011-2012. [http://www.myfloridacfo.com/aadir/auditing\\_activity.htm](http://www.myfloridacfo.com/aadir/auditing_activity.htm)

22. Provide any other information that can be used to evaluate the performance of this project:

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