

**PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY**

Meeting Date: January 11, 2011

Consent ☒ Regular ☐
Public Hearing ☐

Submitted By: Water Utilities Department
Submitted For: Water Utilities Department

I. EXECUTIVE BRIEF

Motion and Title: Motion and Title: Staff recommends motion to approve:

A) a Co-Funding Agreement with the WaterReuse Research Foundation (WRRF) which includes a one-time payment of \$10,000 to WRRF to evaluate potential nutrient impacts related to Florida's water reuse program; and

B) a one-time payment to the Water Environment Research Foundation (WERF) in the amount of \$2,000 to participate in the collaborative effort to develop information on nitrogen sources, water quality impacts and control strategies.

Summary: In November 2010 the US Environmental Protection Agency (EPA) promulgated new and very stringent water quality criteria on nutrients in Florida water bodies. These criteria have a significant potential impact on Palm Beach County Water Utilities Department (PCWUD) and its customers depending on how EPA and Florida Department of Environmental Protection (FDEP) implement these new standards. Of particular concern is PBCWUD's future ability to continue to operate its reclaimed water system which saves millions of gallons a day of fresh water. EPA delayed implementation of the criteria for one year to obtain input from impacted parties and to work closely with stakeholders on implementation guidelines. The data and information to be developed by WRRF and WERF is critical toward helping EPA and FDEP implement meaningful and practical guidelines. Both WRRF and WERF are non-profit scientific and technical research foundations which are implementing large-scale projects to obtain Florida specific data by pooling money from numerous Florida entities. Our cost using this approach is a fraction of the cost of gathering this data on our own by hiring consultants. Countywide (MJ)

Background and Justification: The WaterReuse Research Foundation and Water Environment Research Foundation studies emanated from the proposed development of numeric nutrient criteria for the State of Florida. In short, the United States Environmental Protection Agency (EPA) has established numeric water quality criteria pertaining to nutrient concentrations to protect aquatic life in lakes and flowing waters, including canals, within the state of Florida. In addition, EPA is proposing regulations to help Florida develop restoration standards for impaired waters. Florida has had nutrient water quality standards for many years; however, standards previously established by Florida Department of Environmental Protection were "narrative" in nature and not numeric. It is often difficult to determine the actual source of nutrient loading leading to the impairment of a water body. This is particularly true of nutrients from reclaimed water that may take many routes, be diluted many times and intermix with other sources of nutrients such as fertilizers. Both of the above agreements will cost-effectively add to the body of knowledge on the relative impact of reclaimed water on receiving water bodies and help US EPA and FDEP develop meaningful implementation guidelines for the nutrient rule.

Attachments:

- 1) Co-funding Agreement
- 2) Invoice Request

Recommended By: _____

Department Director

12/29/10
Date

Approved By: _____

Assistant County Administrator

12/30/10
Date

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:

Fiscal Years	2011	2012	2013	2014	2015
Operating Expenditures	\$ 12,000.00	0	0	0	0
External Revenues	0	0	0	0	0
Program Income (County)	0	0	0	0	0
In-Kind Match County	0	0	0	0	0
NET FISCAL IMPACT *	\$ 12,000.00	0	0	0	0
# ADDITIONAL FTE POSITIONS (Cumulative)	0	0	0	0	0
Budget Account No.:	Fund 4001	Agency 720	Org. 1110	Object 5412	

Is Item Included in Current Budget? Yes X No

Reporting Category

B. Recommended Sources of Funds/Summary of Fiscal Impact:

*

Water Utility Department User Fees

C. Department Fiscal Review: _____

III. REVIEW COMMENTS

A. OFMB Fiscal and/or Contract Development and Control Comments:

N. Diaz 1/3/2011
OFMB
11/3/10 11/3/11

Don J. Jacoby 1/4/11
Contract Development and Control

B. Legal Sufficiency:

[Signature] 1/4/11
Assistant County Attorney

C. Other Department Review:

Department Director

This summary is not to be used as a basis for payment.

Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program

WRF Project Number: WRF-09-08

CO-FUNDING AGREEMENT

Between

**PALM BEACH COUNTY WATER UTILITIES DEPARTMENT
8100 Forest Hill Boulevard
Post Office Box 16097
West Palm Beach, Florida 33416**

and

**THE WATERREUSE RESEARCH FOUNDATION
1199 N. Fairfax Street, Suite 410
Alexandria, VA 22314**

This Co-Funding Agreement (hereafter "Agreement") is entered into between Palm Beach County, a political subdivision of the State of Florida, c/o its Water Utilities Department (hereafter "Palm Beach"), whose principal place of business is 8100 Forest Hill Boulevard, West Palm Beach, Florida 33416 and the WaterReuse Research Foundation (hereafter referred to as "WaterReuse"), a California non-profit corporation whose principal place of business is 1199 N. Fairfax Street, Suite 410, in Alexandria, VA 22314.

Article 1: Responsibilities

- 1.1 WaterReuse, on behalf of the parties, have entered into Project Funding Agreement WaterReuse Project Number WRF-09-08 with MWH Americas, Inc (hereafter the "Contractor") to conduct a Collaboration Project titled, *Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program* (hereafter the "Collaboration Project"). A copy of this Project Funding Agreement is attached hereto as Exhibit 2, which by this reference is made an integral part of this Agreement. This Agreement between WaterReuse and Palm Beach defines the roles and responsibilities of the parties in accomplishing the tasks of the Collaboration Project described in the Project Description in the attached Exhibit 1, which by this reference is made an integral part of this Agreement.

The Palm Beach Project Manager on this project is **Hassan Hadjimiry**. The WaterReuse Project Manager on this project is Caroline Sherony.

- 1.2 Palm Beach shall provide co-funding for the Work in Accordance with the provisions of Section 2.1 below. The provision of the co-funding by Palm Beach shall be Palm Beach's sole responsibility under this Agreement.

Article 2: Co-funding/Payment

- 2.1 Palm Beach agrees to pay WaterReuse an amount of \$10,000 in United States currency for costs associated with the Collaboration Project. WaterReuse's share will be \$150,000 in cash funding towards this project. WaterReuse will invoice Palm Beach at the above address for \$10,000 upon signing this Agreement. The invoices will be sent to the attention of **Bevin Beaudet**, Palm Beach County Water Utilities Department, Post Office Box 16097, West Palm Beach, Florida 33416.
- 2.2 WaterReuse will be solely responsible for payment to the Contractor on a cost reimbursement basis. In the event that the Collaboration Project is terminated or this Agreement is terminated in accordance with its terms, WaterReuse shall return to Palm Beach within a reasonable time, any payments or part of payments made to WaterReuse by Palm Beach that have not been paid to the Contractor or reasonably incurred by the Contractor up to the date of termination.
- 2.3 Payment to WaterReuse should be made by check within 30 days of the invoice date and sent to: WaterReuse Research Foundation, 1199 N. Fairfax Street, Suite 410, in Alexandria, VA 22314; phone (703) 548-0880. The project number 'WRF-09-08' should be indicated on the check.

Article 3: Project Management/Reports

- 3.1 The Work will be conducted under the direction of WateReuse in coordination with a Project Advisory Committee (PAC) defined as expert volunteers selected by WateReuse to provide technical review, assistance, and/or expertise to WateReuse regarding the project.
- 3.2 Copies of all Interim and Final Project Deliverables furnished to WateReuse by the Contractor shall timely be furnished to Palm Beach by WateReuse.
- 3.3 WateReuse shall provide the Final Report to Palm Beach in PDF format and one (1) hard copy at no extra charge upon publication. Additional hard copies shall be provided at cost upon request by Palm Beach.

Article 4: Intellectual Property Rights

- 4.1 Parties intend that WateReuse shall own all U.S. and world-wide copyright in the Interim, Draft Final and Final Deliverables as defined in Exhibit 2. The Foundation hereby grants Palm Beach a royalty-free, nonexclusive license to reproduce, distribute, and prepare Derivative Works based upon, and publicly display and perform the Foundation's Intellectual Property for educational purposes only. In the event that WateReuse publishes these deliverables, no changes will be made to the reports, software, and deliverables including but not limited to the front cover, back cover, title pages, and the body and contents of the reports, software, and deliverables.

Article 5: Intent to Publish

- 5.1 Palm Beach understands that the purpose of this project is to further knowledge in the area of research covered by this project. It is likely that information concerning Palm Beach will result from the project and may be published in the project deliverables. Palm Beach will have the right to review the project deliverables and provide the Contractor with the reasonable opportunity to correct or respond to, any problems or difficulties uncovered by the data, information, or test results, all of which must occur prior to the publication or use of such information.

Article 6: Indemnification

- 6.1 WateReuse shall defend, indemnify and hold harmless Palm Beach and its elected officials, officers, directors, employees, agents and representatives, from and against any and all liability, loss, expense, attorney's fees, or claims, for injury arising out of the performance of this Agreement.

Article 7: Disclaimer

7.1 The Final Report shall contain the following disclaimer to include reference to and disclaim the liability of Palm Beach:

This report was co-funded by Palm Beach County, Florida ("PBC"). PBC assumes no responsibility for the content reported in this publication or for the opinions or statements of facts expressed in the report. The mention of trade names of commercial products does not represent or imply the approval or endorsement of PBC. This report is published solely for informational purposes.

Article 8: Termination

8.1 Any party may at any time by written notice terminate this Agreement or suspend its performance without liability for compensation or damages if one of the other Parties fails to comply with any of its obligations under this Agreement and such failure, if capable of being remedied, remains un-remedied for 30 days after being brought to its attention by written notice from the party not in default.

8.2 In the event that the PAC concludes that the Collaboration Project is not progressing satisfactorily, WateReuse will consult and take into consideration the views and recommendations of the PAC in considering whether to terminate the Collaboration Project.

Article 9: Insurance

9.1 WateReuse shall require the Contractor to provide the insurance coverage as set forth in Exhibit 2.

Article 10: Time Frame

10.1 This Agreement shall commence on upon Agreement execution and end on the End Date of the agreement with the Contractor.

Article 11: Miscellaneous

11.1 This Agreement represents the entire agreement of the parties, and there are no promises or understandings other than those stated herein.

11.2 None of the provisions, terms, and conditions contained in this Agreement may be added to, modified, superseded or otherwise altered, except by written instrument executed by the parties hereto.

11.3 This Agreement shall be construed and interpreted in accordance with the laws of the State of Florida. Any and all legal action necessary to enforce this Agreement will be held in Palm Beach County.

11.4 Any notice given pursuant to the terms of this Agreement shall be in writing and sent to:

For Palm Beach: Bevin Beaudet, 561-493-6001, bbeaudet@pbewater.com.

For WaterReuse: Caroline Sherony, 703-548-0880, csherony@watereuse.org.

11.5 Palm Beach has established the Office of the Inspector General, Ordinance R2009-049 which is authorized and empowered to review past, present and proposed Palm Beach contracts, transactions, accounts and records. All consultants and parties doing business with the Palm Beach and receiving Palm Beach funds shall fully cooperate with the Inspector General including receiving access to records relating to this contract. The Inspector General has the power to subpoena witnesses, administer oaths, require the production of records, and audit, investigate, monitor, and inspect the activities of the consultant, its officers, agents, employees, and lobbyists in order to ensure compliance with contract specifications and detect corruption and fraud.

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IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives, effective as of the date of the last signature below.

Research
WATERREUSE FOUNDATION

By: *G. Wade Miller*
G. Wade Miller
Executive Director

Date: *12/17/10*

ATTEST:

Clerk & Comptroller (or Deputy Clerk)

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY

By: _____
County Attorney

PALM BEACH COUNTY, FLORIDA
BY ITS BOARD OF COMMISSIONERS

By: _____
Karen T. Marcus, Chair

APPROVED AS TO TERMS AND
CONDITIONS

By: *Bruce Ben*
Department Director

Attachments:
Exhibit 1 –WateReuse-Contractor Agreement WRF-09-08
Exhibit 2 – Project Description

Exhibit 1

PROJECT FUNDING AGREEMENT (WRF-09-08)

**Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse
Program**

BETWEEN

**THE WATERREUSE FOUNDATION
1199 North Fairfax Street, Suite 410
Alexandria, VA 22314**

and

**MWH AMERICAS, INC.
300 N. Lake Avenue
Suite 1200
Pasadena, CA 91101**

April 17, 2009

Project Title (WRF-09-08)

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This Project Funding Agreement (hereafter referred to as the "Agreement") for the project titled *Project Title (WRF-09-08)* is effective as of [Date Signed] by and between WateReuse Foundation (hereafter referred to as the "Foundation"), a California nonprofit corporation whose principal place of business is located at 1199 North Fairfax Street, Suite 410, Alexandria, Virginia 22314 and MWH Americas, Inc. (hereafter referred to as the "Contractor"), located 300 N. Lake Avenue, Suite 1200, Pasadena, CA 91101.

* * *

The parties hereby agree to the following:

I. DEFINITIONS

For purposes of this Agreement, the terms and definitions detailed below and throughout this Agreement shall control:

A. The term "Derivative Work" is defined as a work of authorship that is based on any pre-existing written report, study, test result or other work of authorship, and that modifies, transforms, or recasts that pre-existing work so as to alter it in any way.

B. The term "Educational Purpose" is defined as use of the Foundation's Intellectual Property that is primarily noncommercial and non-profit in nature including, but not limited to, using the Foundation's Intellectual Property (i) to conduct research, or (ii) to inform the water reuse community, water reuse utility personnel and the general public of the outcome of this Project.

C. The "Foundation" was established in 1993 to advance the science of water reuse and to increase public awareness and understanding of water recycling, reuse and reclamation. The Foundation shall be defined to include all officers, directors, employees, volunteers, Project Advisory Committee, Research Advisory Committee, affiliates, agents and related entities of the Foundation.

D. The term "Foundation's Intellectual Property" shall be defined as the intellectual property owned by the Foundation as set forth in Art. II, Paragraph 14a.

E. The "Contractor" shall be defined as MWH Americas, Inc including its trustees, officers, directors, employees and agents.

F. The "Principal Investigator" shall be defined as the Contractor's employee, as specifically designated herein, with primary responsibility for ensuring that all terms and conditions of this Agreement are met and to whom notice of insufficiencies shall be given by the Foundation.

G. The "Project" shall be defined as the work to be completed by the Contractor and any Subcontractors, as defined in Art. I, Paragraph J, pursuant to this Agreement and as described more specifically in the Project Proposal, as discussed in Art. II, Paragraph 1.

H. The "Project Advisory Committee" or "PAC" shall be defined as a group of volunteers assembled by the Foundation to provide technical review, guidance, assistance and expertise to the Foundation during the course of the Project.

I. The "Project Manager" shall be defined as the Foundation's employee(s), as specifically designated herein, with responsibility for reviewing all actions taken by the Contractor and who has authority to communicate all Foundation decisions concerning the process, procedures, scheduling requirements, funding requirements and deliverables generated by the Contractor.

J. A "Subcontractor" shall be defined as any individual or entity, with whom the Contractor shall separately contract to complete one or more specific tasks required by the Project and which the Foundation has approved.

II. AGREEMENT

1. Project Proposal. The "Project Proposal" shall be defined as the initial request by the Contractor for funding and shall include all relevant correspondence and/or other written communications subsequent to that request but prior to the execution of this Agreement. The Contractor shall perform research and prepare written reports concerning that research as detailed by the Project Proposal attached as Exhibit A to this Agreement.

2. Scope of Work. The Contractor shall prepare a Scope of Work document, which may be a Derivative Work of the Project Proposal. It shall be submitted to the Foundation within thirty (30) days of the execution of this Agreement. The Scope of Work shall be used by the Foundation for informational and outreach purposes. In the event any conflict exists between this Agreement and the Project Proposal or the Scope of Work, the terms of this Agreement shall control.

3. Project Personnel. The Contractor Principal Investigator shall be **Dr. Joseph Jacangelo**. No changes or substitutions for this position shall be made for any reason without the prior written approval of the Foundation including, but not limited to, sabbatical or other extended absences. Further, changes in any essential personnel (co-investigators, subcontractors, etc.) identified in the Project Proposal, require prior written approval from the Foundation.

The Foundation's Project Manager shall be **Caroline Sherony** (703-548-0880 x107). The Foundation, however, may change the Project Manager as deemed necessary without the Contractor's approval. All technical, contractual, or administrative communications by the Contractor to the Foundation shall be conducted through the Principal Investigator and shall be directed to the Project Manager.

4. Time of Performance. All Project tasks, reports and other obligations shall be completed by the Contractor as detailed on Exhibit B to this Agreement unless amended by the mutual written agreement of the parties.

5. Surveys. Any and all questionnaires and/or survey instruments to be used in this Project must be submitted to the Foundation for review and approval prior to distribution.

6. Progress Reports. "Progress Reports" shall include "Status" and "Budget" Information and shall include "Outreach" Information as necessary. Progress Reports shall be defined as written summaries submitted **quarterly** throughout the Project by the Contractor and to the Foundation pursuant to the schedule detailed in Exhibit B. The Contractor shall provide one

copy of the Report by email on the due date to the Project Manager. The format (e.g., paper, electronic) for additional copies of the Progress Reports shall be determined by the Project Manager in conjunction with the Contractor in order to determine the most appropriate format(s) for distribution to the PAC. Each Progress Report shall include Status Information, Budget Information and Outreach Information (as applicable) as discussed in Art II Paragraphs 6.a, 6.b and 6.c. respectively. Progress Reports must provide sufficient information to allow the PAC and Foundation staff to evaluate, at their reasonable discretion, the progress and quality of the work completed as detailed by Art. II, Paragraphs 6.a and 6.b. The Progress Report shall follow the format shown in Exhibit F.

a. Status Information. The purpose of the Status Information in the Progress Report is to record the work completed and document the execution of the tasks and activities described in this Agreement. The Status Information shall describe the progress of the Project, document the tasks accomplished, detail any problems encountered by the Contractor and provide a brief overview of the next period's work to be completed. The report shall include a technical summary of methods and materials, results, analyses of data, significant findings, and discussion regarding the applicability of results to the water reuse industry. Progress reports shall address Foundation, including PAC, comments on previous Progress Reports. Extensive data or supporting information should be reported as an appendix. The report must be sufficiently detailed to allow the Foundation to monitor the Contractor's performance on the Project. The Status Information shall include a one (1) page summary of the Progress Report suitable for distribution by the Foundation to its Subscribers on the Internet. The one page summary should be provided via electronic mail or on a computer disk using Microsoft Word® word processing format.

b. Budget Information. The Budget Information of the Progress Report, which is not an invoice (as discussed in Art. II Paragraph 12a), shall include the form detailed by Exhibit C to this Agreement. Any changes in budget line item(s) as described in Exhibit C of whichever is less, either greater than ten percent (10%) of the line item or more than one thousand dollars (\$1,000), must be approved in writing by the Foundation. All expenses, whether for cash or in-kind services, must be detailed in these Reports. The Budget Information submitted in the Final Progress Report must reconcile all payments made, Project costs incurred and all in-kind contributions as detailed in the Project Proposal and subsequent correspondence.

c. Outreach Information. The purpose of the Outreach Information in the Progress Report is to provide information related to the Project including but not limited to presentations, papers and reports. A comprehensive list of presentations made or papers, reports, etc. submitted during the course of the Project, including a copy of any such presentation, paper, or report must be included in this section and updated for each period including information on where and when presented or submitted.

7. Project Reports and other Deliverables. The Contractor shall submit all Draft, Revised, Final Reports, and other deliverables pursuant to the schedule detailed by Exhibit B.

a. Format. The Draft, Revised, and Final Reports shall follow the Foundation's *Style Guide for Research Reports* as edited and updated.

b. Draft and Revised Draft Reports. The Contractor shall submit a Draft Report and Revised Draft Reports for review, in the format detailed by Art. II, Paragraph 7.a,

pursuant to the schedule detailed in Exhibit B. The Contractor shall submit an electronic copy of the entire report in Microsoft Word of the Draft Report and Revised Draft Reports. Additional drafts of this report may be required by the Foundation pursuant to Art. II, Paragraph 9 of this Agreement, in order to address the Foundation's comments and questions.

c. Final Report. The Final Report shall be the acceptable revised Draft Report. For the Final Report, the Contractor shall provide an electronic copy of the entire report in Microsoft Word and two (2) unbound camera-ready copies, pursuant to the schedule detailed in Exhibit B, and with all the explanations and revisions requested by the Foundation pursuant to Art II, Paragraph 9 of this Agreement.

d. Published Report. The Foundation reserves the right to determine which of several processes shall be used to publish the Final Report.

e. Other Deliverables. The Contractor will submit other deliverables or hold events as listed in Exhibit B pursuant to the schedule in Exhibit B.

8. Project Profile. The Project Profile shall be provided to the Foundation in the format detailed by Exhibit D. This two (2) page profile will be edited and formatted for inclusion in the Foundation's Project Profile Notebook. The parties agree that the target audience for this Project Profile is the water reuse community. As a result, the profile must include a clearly identified section explaining the practical benefits of the Project results to water reuse projects.

9. Review of all Written Materials and Changes. All Draft, Revised Draft and Final Reports shall be reviewed by the Foundation. The Foundation shall have the right to require the Contractor to respond to the Foundation's technical review of written material, including the PAC review, either by providing explanations of technical information or by responding to reasonable requests for revisions. The Foundation shall also have the right to require grammatical, stylistic or syntax revisions in any versions of technical reports submitted to the Foundation. The Foundation shall comment within two months time from the date of receipt of the deliverable to the Contractor unless a delay outside the control of the Foundation occurs. In this case the Contractor will be notified and the parties will establish a new deadline. Furthermore, the Contractor agrees to respond to all technical and/or editorial comments made by the Foundation within the time periods detailed on Exhibit B of this Agreement. In the event that the Foundation requests that the Contractor make changes to any document detailed in Exhibit B, the Contractor shall be required to submit another draft of the requested document, with the requested changes, within six (6) weeks of any such request. Whether a new draft is required shall be determined after discussions between the Contractor and the Project Manager at the sole discretion of the Project Manager.

10. Accuracy of Testing. The Contractor shall use its best efforts to ensure that all data developed during the course of this Agreement and data, information and beliefs included, or relied upon, in the Project are accurate to the best of its knowledge. Environmental measurements shall be made in accordance with recognized quality assurance protocols, where applicable. In the event the Contractor obtains any data or information derived from such data, or other information to be included in the Project from in-kind or funding contributors or any Subcontractor, the Contractor shall utilize reasonable and customary efforts to ensure the quality and accuracy of this information.

11. Participating In-Kind or Funding Contributor Review. The Contractor shall, with each participating contributor, be responsible for (a) describing in full the understanding of the parties for entering into a cooperative relationship for purposes of this Project, (b) granting participating contributors the right to review the Project deliverables, (c) providing participating contributors copies of Progress Reports, and (d) provide participating contributors with the reasonable opportunity to correct, or if correction will take an unreasonably long time, to respond to any problems or difficulties uncovered by the data and/or information, all of which must occur prior to the completion of the Final Report.

The Contractor shall be responsible for providing a letter(s) confirming that the contributors have reviewed the Draft, Revised Draft, and Final Reports. Letter(s) of confirmation must be received by the Foundation prior to submittal of the Final Report and must include the signature of a representative for the participating contributors. The contractor shall not be compensated in accordance with Paragraph 12(a) if letter(s) of confirmation are not submitted with the Final Report as described in Article II, Paragraph 7.

12. Compensation. The total to be paid by the Foundation to the Contractor for completing the scope of work in accordance with Art. II, Paragraph 2 shall be **One Hundred and Fifty Thousand Dollars (\$150,000)** in United States currency. In no event shall compensation exceed this amount. All disbursements shall be utilized solely for the purposes detailed by this Agreement. The Contractor agrees to provide **Two Hundred Forty Thousand Six Hundred and Thirty Seven Dollars (\$240,637)** of in-kind services and cash contributions for the Project. All disbursements to the Contractor shall be mailed to the following address:

*Joan Oppenheimer
MWH
618 Michillinda Avenue, Suite 200
Arcadia, CA 91007*

a. Payments. Subject to the withholding provisions described in the next paragraph, payments shall be based on submission of **monthly** invoices that track with the Progress Reports as discussed see Art. II, Paragraph 6, which detail work efforts performed and summarize expenses in the budget line items in Exhibit C. The Contractor shall identify and document in-kind contributions in the invoice, and the Contractor may also identify and document in-kind contributions in the Budget Information of the Progress Report as discussed in Art. II Paragraph 6b. The Contractor is responsible to secure all in-kind funding for the project. The Foundation is responsible for invoicing participant organizations for their in-kind cash contributions to the project, but is not responsible to secure this funding. The Contractor will invoice the Foundation for the in-kind cash contributions. The Contractor shall submit invoices for payment by the **15th day of each month** for the previous month's services. Payment may be held by the Foundation unless and until Progress Reports are received and accepted as detailed by Art. II, Paragraphs 6.a, 6.b, and 6.c. Payment shall be disbursed to the Contractor within thirty (30) business days. The final request for payment must reconcile all payments made, costs incurred and in-kind services and cash contributions.

The Foundation shall withhold the final twenty percent (20%) of the total compensation from disbursement to the Contractor and shall disburse this final twenty percent (20%) based on the delivery of the Draft Report and the Final Report. The Foundation shall

make payments for the first eighty percent (80%) of the total compensation based on the Contractor's invoices. The Foundation shall make payments for the final twenty percent (20%) based on the following schedule: 1) once the Draft Report is submitted, the Foundation shall make payments for an additional ten percent (10%), based on the Contractor's invoices; and 2) once the Final Report is submitted and Contractor has performed all tasks as detailed in this Agreement, the Foundation shall make payments for the second ten percent (10%), based on the Contractor's invoices.

b. Payment of Subcontractors. Payment for services of any and all Subcontractors shall be the Contractor's sole obligation and responsibility. The Contractor hereby agrees to defend, indemnify and hold harmless the Foundation, its officers, directors, employees and volunteers from any and all liability concerning any such Subcontractor payment(s).

c. Property/Equipment. No equipment, material, or test apparatus shall be purchased with Foundation funds, nor shall any improvement, modification or construction of real or personal property be made with Foundation funds, unless such purchase or expenditure has been specifically approved in writing by the Foundation.

13. Accounting. The Contractor and all Subcontractors shall maintain accurate accounting information and financial records regarding the Project in conformity with generally accepted accounting principles. The Foundation and/or its agents shall have access to such records at any reasonable time during normal business hours during the entire course of this Agreement and for a reasonable period thereafter.

14. Intellectual Property. The Foundation's primary purpose in funding the Contractor is to further scientific and technological knowledge in the area of research covered by this Project.

a. Foundation's Intellectual Property. Parties intend that the Foundation shall own all U.S. and worldwide copyrights for the Scope of Work, all Progress Reports, the Project Profile, the format sample, the Draft Report, Revised Draft Report(s), and Final Report, all drafts of these deliverables, all computer software and electronic files developed as deliverables for this Project, and all other deliverables pursuant to this Agreement and that such items shall be considered works for hire. Such property is hereafter referred to as the "Foundation's Intellectual Property." None of the Foundation's Intellectual Property shall be distributed by the Contractor without the prior written approval of the Foundation except as otherwise required by law. The Contractor shall execute whatever documents are required in order to comply with this Paragraph, including, but not limited to, assignments as necessary for any worldwide copyright protection. In addition:

(1) The Foundation hereby grants the Contractor a royalty-free, nonexclusive license to reproduce, distribute, and prepare Derivative Works based upon, and publicly display and perform the Foundation's Intellectual Property for Educational Purposes as defined in Art. I, Paragraph B above. Such license does not extend to the use of the Foundation's name, logo, or service or trademarks.

(2) Except as specified in Art. II, Paragraph 14.a(1) above, any reproduction, distribution, presentation, performance, or publication of the Foundation's Intellectual Property or preparation of Derivative Works based upon the Foundation's Intellectual Property may not occur without the prior written authorization of the Foundation.

b. Contractor shall have the right to publish, disclose, disseminate and use, in whole or in part, data and information developed by Contractor under this Research Agreement.

c. **Assignment.** To assure the Foundation's ownership of the Intellectual Property above, the Contractor hereby assigns all right, title and interest in and to any and all of the documents detailed in Art. II, Paragraph 14.a above to the Foundation, including, but not limited to, the right to apply for registration of any copyright with the United States Copyright Office or similar official repositories world-wide. The Contractor agrees to execute whatever documents are required in order to comply with this Agreement.

d. **Publications and Presentations.** The Foundation encourages the Contractor to publish based on this Project and to utilize Foundation's Intellectual Property for Educational Purposes as detailed in Art. I, Paragraph B. Any publication of Foundation Intellectual Property must comply with the requirements of Art. II, Paragraph 14.a(1) and (2) above. The Contractor agrees to comply with the following steps prior to such distribution, presentation, or publication:

(1) The Contractor hereby agrees to provide to the Foundation copies of any such publication or presentation at least three (3) weeks prior to submission of such publication or presentation.

(2) The Contractor agrees and understands that it shall not dispose of or injure the Foundation's rights to the Foundation's Intellectual Property, including, but not limited to, any computer software, by any presentation or publication of such property and shall take all steps necessary to preserve such rights of the Foundation.

(3) **Contractor's Acknowledgment.** Any public presentation or publication by the Contractor, including a student writing a thesis, dissertation, or report, based on the Project of the Foundation's Property, shall include the following, or a similar, statement acknowledging the Foundation and it's funding partner U.S. Bureau of Reclamation for providing financial and administrative support: *The [Contractor] gratefully acknowledges that the WateReuse Foundation's financial, technical, and administrative assistance in funding and managing the project through which this information was discovered.*

(4) **Copyright Transfer.** When submitting a manuscript or presentation for publication based on the Foundation's Property as a result of this Project, the Contractor shall include the following language in any copyright transfer agreement so as not to injure the Foundation's Property as specified in Art. II, Paragraph 14.d(2): *The submitted manuscript [publication][presentation] has been made possible through funding from the WateReuse Foundation. The information contained herein is based upon Intellectual Property which is jointly owned by the _____ and the Foundation. The Foundation retains the ongoing right to publish, produce, reproduce, adapt, revise, prepare derivative works, and/or distribute the Jointly Owned Intellectual Property in part or in its entirety without limitation and/or penalty.*

e. **Student Thesis.** In the event a college or graduate student is employed by Contractor to work on the Project contemplated by this Agreement and that student

completes a thesis, dissertation or report relating to this Project, solely for Educational Purposes, the student shall own the copyright in that thesis or report. In the event a portion of the Foundation's Intellectual Property is included in that thesis or report, the Foundation hereby grants the student a limited, revocable, nonexclusive license to utilize the Foundation's Intellectual Property for the specific thesis or report only.

f. Disclaimer. All publications and presentations utilizing the Foundation's Intellectual Property shall include the following disclaimer: *The comments and views detailed herein may not necessarily reflect the views of the WasteReuse Foundation, its officers, directors, employees, affiliates or agents.*

g. Subcontracts. All subcontracts shall include provisions acceptable to the Foundation to implement the provisions of Art. II, Paragraph 14.

15. Publicity/Press Releases. No publicity releases, including news releases as advertising, relating to this Agreement and the Project shall be issued by the Contractor or by any Subcontractor without the prior written approval of the Foundation. Such approval shall not be unreasonably withheld. Any inquiry the Contractor receives from news media concerning this Agreement shall be referred to the Foundation for coordination prior to response. The Foundation, in turn, will not present or publish any data before the completion date without first informing the Contractor.

16. Originality. The Contractor shall warrant that it, and its Subcontractors, is (are) the sole creator(s) and originator(s) of all the Foundation's Intellectual Property and Contractor's Intellectual Property as defined herein and none of those rights have been bargained, sold, or conveyed in any other manner to any person or entity, except as detailed and permitted by this Agreement. Further, the Contractor shall use its best efforts to ensure that no portion of this Project, including any portion completed by Subcontractors, infringes upon the Intellectual Property rights of any other person or entity or violates the common law or statutory right, title, or interest of any person or entity.

17. Termination. This Agreement, except for those provisions which, by their own terms, extend beyond the life of this Agreement, shall terminate upon the Foundation's approval of the final report and the completion of all scheduled events as detailed in Exhibit B or upon the Contractor's receipt of a Notice to Stop Work, whichever comes earlier. The Termination Date shall be the date upon which all scheduled events have occurred and no further work remains to be completed pursuant to this Agreement. This Agreement, however, may be terminated earlier if both parties agree that the Project is no longer technically feasible or if the Contractor has failed to comply with the terms and conditions of this Agreement.

a. Breach/Below standard performance. If the Foundation reasonably determines that the Contractor, or any Subcontractor, is not in compliance with its contractual obligations under this Agreement, the Foundation may so notify the Contractor in writing at any time.

b. Failure to cure. If upon written notice from the Foundation the Contractor fails to eliminate problems detailed by the Foundation, or fails to cure a breach of this Agreement by the Contractor or subcontractors, within thirty (30) days of the Foundation's notice, this Agreement may be terminated by the Foundation. The Termination Date shall be the date on which the thirtieth (30th) day falls. At such time,

any obligations on the part of the Foundation to make further payments under this Agreement shall terminate.

18. Return of Property. In the case of early termination for any reason, the Contractor shall return anything owned by the Foundation prior to the execution of this Agreement which was being utilized for the specific purpose of the research conducted in accordance with the scope of work incorporated in this Agreement, including, but not limited to, all Foundation's Intellectual Property and Foundation's proprietary or confidential information, data, or documentation.

19. Survival. The responsibilities detailed by this Agreement to protect the parties' respective Intellectual Property rights and proprietary and confidential information, data and documents shall continue throughout this Agreement and shall remain in effect after its termination.

20. Indemnification. In addition to the responsibilities detailed elsewhere in this Agreement, each of the parties shall have the responsibilities detailed below:

a. Foundation Indemnification. The Foundation shall defend, indemnify and hold harmless the Contractor, its officers, directors, employees and authorized agents from and against any and all claims, actions, causes of action, judgments, liabilities, losses, damages, penalties, expense (including reasonable attorneys' fees and court costs), or claims for injuries or damages to persons or property arising out of or related to the performance of this Agreement but only in proportion to and to the extent such claims, actions, causes of action, judgments, damages, penalties, liabilities, losses, expenses, attorneys' fees, or claims for injury or damages to persons or property are caused by or result from the negligent acts or omissions of the Foundation, its officers, directors, authorized agents, or employees.

b. Contractor Indemnification. Contractor shall defend, indemnify and hold harmless the Foundation, its officers, directors, employees, and authorized agents from and against any and all claims, actions, causes of action, judgments, liabilities, losses, expenses (including reasonable attorneys' fees and court costs), or claims for injuries or damages to persons or property arising out of or related to the Contractor's performance and/or its subcontractors of this Agreement but only in proportion to and to the extent such claims, actions, causes of action, judgments, liabilities, losses, expenses, attorneys' fees, or claims for injuries or damages to persons or property are caused by or result from the negligent or intentional acts or omissions of Contractor, its officers, directors, employees, and authorized agents.

c. Responsibilities of the Foundation. In the event of any liability, obligation, damage, loss, cost, claim, lawsuit, cause of action, judgments, penalties, or demands whatsoever of any kind or nature against the Foundation, its officers, directors, employees, authorized agents, and volunteers arising from any actions taken by or failure to act on the part of the Contractor, or its Subcontractors, pursuant to this Agreement, the Foundation's responsibility shall be limited to providing the Contractor with the notice of a claim.

d. Responsibilities of Contractor. At all times, all obligations performed by Contractor or by any Subcontractors pursuant to this Agreement shall be performed in a manner consistent with reasonable standards of care and performance governing such services.

e. Insurance. The Contractor shall, at its sole cost and expense, maintain a program of self-insurance or commercially purchased comprehensive general liability insurance covering unfair competition claims and all reckless, intentional and negligent actions or omissions of any and all of Contractor's officers, directors, employees, agents and independent contractors and/or Subcontractors in the amount of one million dollars (\$1,000,000). The Foundation shall be listed on any such insurance as a third-party insured. Proof of such insurance shall be presented to the Foundation pursuant to the schedule detailed by Exhibit B.

f. Worker's Compensation. The Contractor shall, at its sole cost and expense, maintain Worker's Compensation insurance which complies with the applicable state laws. Proof of such insurance shall be presented to the Foundation pursuant to the schedule detailed by Exhibit B. In the event Contractor utilizes Subcontractors during the course of this Project, the Contractor shall obtain proof that such Subcontractors maintain Worker's Compensation, which proof shall be provided to the Foundation as well.

g. Subcontractor Acceptance of Agreement. Contractor shall require any and all Subcontractors to comply with the following Paragraphs of Article II of this Agreement prior to working on the Project in any manner: 5. Surveys; 10. Accuracy of Testing; 13. Accounting; 14. Intellectual Property; 15. Publicity/Press Releases; 16. Originality; 20. Indemnification; 22. Equal Opportunity; and 26. Governing Law. Contractor shall inform any and all Subcontractors of the following Paragraphs of Article II of this Agreement between the Contractor and the Foundation prior to working on the Project in any manner: 4. Time of Performance; 11. Participating In-Kind or Funding Contributor Review; 12. Compensation; 17. Termination; 21. Breach/Damages; 23. Relationship of the Parties; 24. Modification in Writing; 25. Transferability; and 27. Exhibits. The Contractor shall execute a statement, as detailed by Exhibit E, ensuring that all Subcontractors have executed an agreement with the Contractor regarding such compliance. Copies of all executed Subcontractor Agreements shall be provided to the Foundation promptly upon the Contractor engaging the services of any Subcontractor.

21. Breach/Damages. The specific remedies detailed in this Agreement shall not operate as a waiver of any and all other rights and remedies available to the Foundation at law or equity. In the event the Contractor fails to comply with this Agreement, or one of the Contractor's Subcontractors fails to comply with its agreement with the Contractor, and thus causes a breach of this Agreement, the Foundation may, in its reasonable discretion, remove that Contractor from eligibility for receiving any and all funding for future research projects.

22. Equal Opportunity. The Foundation is an equal opportunity employer and, as such, does not discriminate on the basis of age, sex, race, religion, color, national origin, physical or mental disability or veteran status. Upon execution of this Agreement, the Contractor agrees to: (a) support the Foundation's nondiscrimination policy and requires all Subcontractors to support this policy; and (b) abide by all laws, rules, and executive orders governing equal employment opportunity. The Contractor also agrees to make available to the Foundation, upon reasonable request, proof of its efforts, as well as all Subcontractors' efforts, to comply with this Paragraph.

23. Relationship of the Parties. The Parties agree that the Contractor is an independent contractor with respect to the Foundation. Nothing in this Agreement shall be construed to make the Parties partners or joint ventures or to create an employment relationship between the Parties. Any and all relationships created relating to Subcontractors shall be between the Contractor and

such Subcontractors only, and shall not create any relationship between such Subcontractors and the Foundation.

24. Modification in Writing. This Agreement may not be modified or amended, nor may any term or provision be waived or discharged, including this particular Paragraph, except in writing, signed and executed by both parties. Any modification must be executed by both the Foundation and the Contractor to be effective.

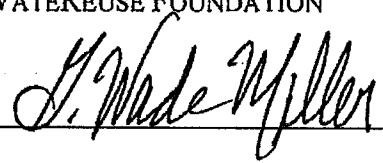
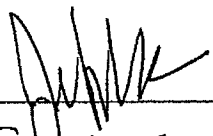
25. Transferability. This Agreement shall not be assignable by the Contractor without the prior written authorization of the Foundation.

26. Governing Law. This agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia, excluding choice of law provisions.

27. Exhibits. All Exhibits attached to or made part of this Agreement are incorporated and agreed upon by the parties. In the event a conflict occurs between the terms of an Exhibit and this Agreement, the terms of this Agreement shall control.

28. Authority. The individuals executing this Agreement on behalf of their respective parties hereby represent and warrant that they have the right, power, legal capacity, and appropriate authority to enter into this Agreement on behalf of the entity for which they sign below.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed as of the day and year as indicated below.

WATEREUSE FOUNDATION  By: G. Wade Miller Title: Executive Director Date: <u>June 2, 2009</u> Federal I.D. #: 680309391	CONTRACTOR'S NAME  By: <u>Joseph G. Jacangelo</u> Title: <u>Vice President</u> Date: <u>May 14, 2009</u> Federal I.D. #: <u>95-1878805</u>
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**Exhibit A
Project Scope
Page 1 of 1**

**Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
(WRF-09-08)**

The following materials are incorporated by reference:

- February 2009, MWH Tailored Collaboration Proposal, *Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program*, to the WaterReuse Foundation
- March 19, 2009, WaterReuse Foundation Award Memorandum to Dr. Jacangelo.
- March 20, 2009, Acceptance Response Memo to WaterReuse Foundation Award Memorandum from Dr. Jacangelo.
- All related subsequent correspondence

**Exhibit B
Project Schedule
Page 1 of 1**

**Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
(WRF-09-08)**

Task	Due Date
Begin Project	June 1, 2009
Contractor presents Proof of Insurance(s) or Certificate of Self Insurance (II.20.e) and Proof of Worker's Compensation Insurance (II.20.f)	July 1, 2009
Foundation receipt of all Subcontractors' approvals of Project Agreement (II.20.g)	June 1, 2009
Scope of Work (II.2)	July 1, 2009
Progress Report #1 encompassing the time period June 1, 2009 through August 31, 2009 (II.6)	September 1, 2009
Subsequent Quarterly Progress Reports (II.6) <ul style="list-style-type: none"> - Progress Report #2 - Progress Report #3 - Progress Report #4 - Progress Report #5 - Progress Report #6 - Progress Report #7 	December 1, 2009 March 1, 2010 June 1, 2010 September 1, 2010 December 1, 2011 March 1, 2011
Draft Report (II.7)	May 1, 2011
Revised Draft Report and Draft Project Profile (II.7 and II.8)	July 1, 2011
Final Report and Final Project Profile (II.7 and II.8)	September 1, 2011
Execution of Assignment Documents for Foundation Intellectual Property (II.14.c)	September 1, 2011
Completion Date (II.17)	September 1, 2011

**Exhibit C
Project Budget**

**Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
(WRF-09-08)**

Please Refer to Attached Spreadsheet

Exhibit C: Project Budget
Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
Project Number WRF-09-08

Personnel (Prime Contractor)						Contract Budget		
Name	Project Role	Hours	Rate (\$/hour) ¹	Fringe Benefits		Total Cost	In-Kind	WRF Cost
Joe Jacanagelo, Ph.D.	Principal Investigator	216	250.00	Included in Rate		62,000	37,000	25,000
Joan Oppenheimer, MSPH	Project Manager	320	200.00	Included in Rate		66,000	36,000	30,000
M. Badruzzaman, Ph.D.	Project Engineer	480	135	Included in Rate		64,800	24,800	40,000
Florida Staff	Project Staff	190	125	Included in Rate		23,750	0	23,750
Phil Waller, PE	TAC Chair	40	250	Included in Rate		10,000	0	10,000
Natalie Flores	Administrative Support	16	85	Included in Rate		1,360	1,360	0
Subtotal						227,910	99,160	128,750
Other Direct Costs (Use Additional Pages if Itemization is Necessary)						Total Cost	In-Kind	WRF Cost
Equipment						0	0	0
Subtotal						0	0	0
Supplies								
Shipping and Supplies for Field Sampling						8000	0	8000
Water Quality Laboratory Analysis						85000	85000	0
Water Quality Laboratory Analysis (FDEP In-kind cash)						20000	20000	0
Subtotal						113,000.00	105,000.00	8,000.00
Subcontracts						0	0	0
Subtotal						0	0	0
Disadvantaged Business						0	0	0
Subtotal						0	0	0
Travel								
TAC/PAC Meeting and Sampling Trips						4,000	0	4,000
Subtotal						4,000	0	4,000
Other Costs								
Associated Project Costs (computers, telecommunications, faxing, copying, etc.) (1262 hrs @ \$8.50/hr)						10,727	1,477	9,250
In-kind Services						35,000	35,000	0
Subtotal						45,727	36,477	9,250
¹ Hourly rates include direct costs								
² Total third party cash contribution will be \$145,100								
Note: Contractor shall invoice WRF for a total of \$295,100 which includes WRF funds (\$150,000) and Participants' In-kind cash contributions (\$145,100). Refer to 12a. of contract.								
Total Direct Cost						390,637	240,637	150,000
Total Indirect Cost							Included Above	
Fee (if applicable)						0	0	0
TOTAL ²						390,637	240,637	150,000

**Exhibit D
Project Profile
Page 1 of 3**

**Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
(WRF-09-08)**

Preparing Project Profile

The Foundation requires that the Principal Investigator provide a Project Profile as detailed in Article II, Paragraph 8.

The purpose of a profile for each WaterReuse Foundation research report is to assist water professionals in deciding the usefulness of the full report. Profiles of all reports are made available to all subscribing utilities, consultants, and manufacturers.

The Principal Investigator submits a completed Project Profile Form with the revised draft final project report. Please note that the report itself will still contain an Executive Summary. In writing the Project Profile, the Principal Investigator uses few abbreviations, symbols or equations. However, if such terms are used, their definitions are clearly stated the first time the terms are mentioned.

The Profile is no more than two (2) pages of text in the format shown on the Project Profile Form on the following pages.

Project Profile Information Form

Project Title: Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program

Project Number: WRF-09-08

Principal Investigators:

Objectives (State the relevant objectives of the project; *75 words or less.*)

Background (Provide background information; *75 words or less.*)

Highlights (Provide "at a glance" the main findings of the research [minimum of three]; *100 words or less.*)

Project Profile (Page 2 of 2)

Approach (Describe the research approach for this project. May use subject subheads; 125 words or less.)

Results/Findings (Describe the results/findings of the research. May use subject subheads; 200 words or less.)

Plain Language Summary (Describe the relevant impacts that the research results may have using a plain language summary. Such a summary should be readable and understandable by the general public at large; 150 words or less.)

Participating Utilities (if applicable; maximum of five)

Exhibit E
Subcontractor Agreement
Page 1 of 1

Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
(WRF-09-08)

Each Subcontractor to **MWH Americas, Inc.** on this project agrees to comply with the following Paragraphs of Article II of the Project Funding Agreement between **MWH Americas, Inc.** and the WaterReuse Foundation prior to working on the project in any manner:

- 5. Surveys;
- 10. Accuracy of Testing;
- 13. Accounting;
- 14. Intellectual Property;
- 15. Publicity/Press Releases;
- 16. Originality;
- 20. Indemnification;
- 22. Equal Opportunity; and
- 26. Governing Law.

Each Subcontractor also agrees to read and be aware of the following Paragraphs of Article II of the Project Funding Agreement prior to working on the project in any manner:

- 4. Time of Performance;
- 11. Participating In-Kind or Funding Contributor Review;
- 12. Compensation;
- 17. Termination;
- 21. Breach/Damages;
- 23. Relationship of the Parties;
- 24. Modification in Writing;
- 25. Transferability; and
- 27. Exhibits.

MWH Americas, Inc. will return copies of this form signed and dated by each Subcontract.

Subcontractor:

Signature: _____

Name [Print]:

Title:

Date:

Address:

Exhibit F
Quarterly Progress Report Format
Page 1 of 1

Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program
(WRF-09-08)

- 1. Title Page – 1 page**
 - Project Title and Number
 - Principal Investigator and Organization
 - Participating Utilities and Organizations
 - Quarterly Progress Report Number (1, 2, ...)
 - Date
- 2. Status Summary**
 - Summary of tasks completed and accomplishments in reporting period
 - Assessment of actual versus planned progress for each task
 - Tasks proposed to be completed in upcoming period
 - Problems encountered
 - Rationale for propose changes (if any) to the scope of work
 - Technical summary (use appendix for extensive data or supporting information):
 - o Response to Foundation's (including the PAC) questions and comments on previous progress reports
 - o Methods and materials
 - o Data and analysis
 - o Significant findings
- 3. Budget Summary**
 - Updated Exhibit C from contract (this can also be submitted with invoices)
 - Reporting of in-kind services (this must also be reported in invoices)
- 4. Outreach Summary**
 - Presentations, paper, and reports
 - o List of submitted/published reports
 - o Copy of submitted/published reports and presentations

Exhibit 2

Evaluation of Potential Nutrient Impacts Related to Florida's Water Reuse Program

WaterReuse Foundation Tailored Collaboration Project

Nitrogen and phosphorous loading into Florida waterways from point and non-point sources is an ecological concern. The rise in nutrient levels in Floridian waterways, leading to waterbody impairment from designated beneficial uses, frequently occurs in tandem with escalating urbanization. To date, there are very limited analytical reconnaissance techniques that can directly assist in elucidating the origins of the nutrients contributing to the impairment of Floridian waterways.

Florida is considered a national leader in water reuse with a total reuse system permitted capacity exceeding 1.4 billion gallons per day – about 58 percent of the state's total permitted capacity of all domestic wastewater treatment facilities. Effective control measures to minimize nutrient loading from beneficial reuse of treated wastewater requires the development and validation of nutrient markers that can serve as tools in identifying nutrient loading sources. This information can then be used to establish appropriate reuse water treatment needs and loading rates in order to minimize nutrient loading into waterways.

The WaterReuse Foundation, a global leader in water reuse research, has funded this tailored collaboration project with contributions from Southwest Florida Management District, South Florida Water Management, St. Johns River Water Management District, Florida Department of Environmental Protection, Miami-Dade Water and Sewer Department, JEA, Orange County Utilities Department, City of Pompano Beach and MWH, who is serving as the Principal Investigator.

The overall objective of this study is to provide a more perspicuous understanding of the contribution of nutrient loading from water reuse facilities. This two-year project will be conducted in three distinct phases. Phase 1 will bring together all the necessary background material needed to ensure a successful outcome for all of the stakeholders through performance of a literature review and a workgroup meeting. The literature review will summarize current knowledge on the relative contribution of nutrient loading in Florida waterways from reclaimed water and other potential sources and identify suitable nutrient markers/tools and their applicability toward the present study. The workgroup meeting will solicit additional input and synthesize consensus from the project team and project advisors on nutrient markers and field study site locations. Phase 2 will evaluate short-listed nutrient marker candidates through bench-scale testing designed to fill critical knowledge gaps identified during the Phase 1 literature review and workshop while validating adequate performance of the markers for subsequent field experiments. During Phase 3, field sampling will be conducted to evaluate the application of the tools/markers to assess phosphorous and nitrogen mass loadings discharged from one or two small Florida sub-basins.

The findings from this project will benefit Florida as well as other water scarce states of the nation that heavily rely upon water reuse to supplement insufficient water supplies. Development of appropriate nutrient markers as tools to assess contributions from reclaimed water applications will greatly aid in developing cost-effective and appropriate water reuse policies throughout the country.

ATTACHMENT 1



Water Environment Research Foundation
Collaboration. Innovation. Results.

TCR Invoice

Date: August 4, 2010

Invoice: TCR-20008660-10-2

Terms: Net 30

To: Mr. Thomas Miller
Legislative Affairs Manager
Palm Beach County Water
8100 Forest Hill Boulevard
West Palm Beach, FL 33413

Description: WERF3C10: "Linking Receiving Water Impacts to Sources and to Water Quality Management Decisions: Using Nutrients as an Initial Case Study."

Bill Amount: \$2,000

Amount Past Due

\$0.00

+

Current

\$2,000.00

=

Balance Due

\$2,000.00

WERF Tax ID #: 54-1511635

Make checks payable to the Water Environment Research Foundation. Remit payment to Water Environment Research Foundation, P.O. Box 95000-2285, Philadelphia, PA 19195. To ensure proper credit, return copy of this invoice with your payment. This invoice is due within 30 days of receipt. Please call (571) 384-2100 with any questions.