



AGENDA REPORT
April 10, 2018

SUBJECT:

Task order with Applied Ecology, Inc RE: Save Our Indian River Lagoon Project Plan
Community Groundwater Monitoring

FISCAL IMPACT:

Fiscal Impact: \$199,194 to Fund 1260, the Save Our Indian River Lagoon Trust Fund

DEPT/OFFICE:

Natural Resources Management

REQUESTED ACTION:

It is requested that the Board of County Commissioners: (1) Authorize the Chairman to execute Task Order No. 271010-14-001-003 with Applied Ecology to measure the performance of a subset of project types funded by the Save Our Indian River Lagoon Project Plan, and (2) Authorize the County Manager to execute change orders, if needed.

SUMMARY EXPLANATION and BACKGROUND:

Groundwater seepage appears to be a substantial conduit of upland pollution to the Indian River Lagoon; although, little data is available for quantifying the specific sources of groundwater pollution. Septic effluent has been shown to be a significant source of groundwater pollution in other areas of Florida; however, the amount contributed by other sources, such as reclaimed irrigation water and compromised sewer lines is undocumented. Brevard County is specifically interested in monitoring the effectiveness of projects funded by the Save Our Indian River Lagoon Project Plan (SOIRLPP) to reduce groundwater pollution.

Brevard County will work with Applied Ecology Inc. (AEI) to investigate nutrient levels in groundwater of communities where SOIRLPP projects are implemented. Fifteen (15) groundwater monitoring wells will be installed in communities with either septic, sewer, or sewer combined with reclaimed water. Groundwater testing will be performed monthly for eighteen (18) months. More expensive parameters will be collected every other month.

The project will measure the performance of SOIRLPP projects directed at reducing pollution in groundwater in an effort to quantify the cost-effectiveness of various project types. The data can be used to check the assumed nutrient removal efficiencies of the various project types. Results will also be used to help calibrate the state-approved model for septic load estimating in Brevard County. This model can then be used to select the best neighborhoods to connect to sewer service or upgrade to advanced nutrient reducing On-site Sewage Treatment and Disposal Systems (OSTDS). This information will inform annual updates of the Save Our Indian River Lagoon Project Plan to improve the efficiency and effectiveness of Lagoon Trust Fund investments.

Virginia Barker 321-633-2106/Brandon Smith 321-633-2016

CLERK TO THE BOARD INSTRUCTIONS:

Execute 2 originals of the task order with Applied Ecology, Inc.

ATTACHMENTS:

Description

- ▢ **Exhibit A: Applied Ecology Scope of Work**
- ▢ **Attachment B: Fee Schedule**
- ▢ **AO-29 form**
- ▢ **Task Order**

INITIAL CONTRACT REVIEW AND APPROVAL FORM

SECTION I - GENERAL INFORMATION

1. Contractor: Applied Ecology, Inc	
2. Fund/Account #: 1260/271010 IO 515437	3. Department Name: Natural Resources Management
4. Contract Description: Save Our Indian River Lagoon Project Plan Community Groundwater Monitoring Task Order	
5. Contract Monitor: Raleigh Berry	7. Contract Type: CONSULTANT
6. Dept/Office Director: Virginia Barker	

SECTION II - REVIEW AND APPROVAL TO ADVERTISE

COUNTY OFFICE	APPROVAL		SIGNATURE	DATE
	YES	NO		
User Agency	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
Risk Management	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____
County Attorney	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____

SECTION III - REVIEW AND APPROVAL TO EXECUTE

COUNTY OFFICE	APPROVAL		SIGNATURE	DATE
	YES	NO		
User Agency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Brandon Smith <small>Digitally signed by Brandon Smith Date: 2018.03.26 16:43:56 -0400</small>	03/26/2018
Risk Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Matt Lairsey <small>Digitally signed by Matt Lairsey Date: 2018.03.28 10:00:00 -0400</small>	03/28/2018
County Attorney	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Chas Valdes</i>	3/29/18

SECTION IV - CONTRACTS MANAGEMENT DATABASE CHECKLIST

CM DATABASE REQUIRED FIELDS	Complete ✓
Department Information	<input type="checkbox"/>
Department	<input type="checkbox"/>
Program	<input type="checkbox"/>
Contact Name	<input type="checkbox"/>
Cost Center, Fund, and G/L Account	<input type="checkbox"/>
Vendor Information (SAP Vendor #)	<input type="checkbox"/>
Contract Status	<input type="checkbox"/>
Contract Title	<input type="checkbox"/>
Contract Type	<input type="checkbox"/>
Contract Amount	<input type="checkbox"/>
Storage Location (SAP)	<input type="checkbox"/>
Contract Approval Date	<input type="checkbox"/>
Contract Effective Date	<input type="checkbox"/>
Contract Expiration Date	<input type="checkbox"/>
Contract Absolute End Data (No Additional Renewals/Extensions)	<input type="checkbox"/>
Material Group	<input type="checkbox"/>
Contract Documents Uploaded in CM database (Initial Contract Form with County Attorney/ Risk Management Approval; Signed/Executed Contract)	<input type="checkbox"/>
"Right To Audit" Clause Included in Contract	<input type="checkbox"/>
Monitored items: Uploaded to database (Insurance, Bonds, etc.)	<input type="checkbox"/>

I.D.1
Repl.
4.10.18



Tammy Rowe, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

Telephone: (321) 637-2001
Fax: (321) 264-6972
Tammy.Rowe@brevardclerk.us

April 11, 2018

MEMORANDUM

TO: Virginia Barker, Natural Resources Management Director

RE: Item II.A.1., Task Order with Applied Ecology, Inc. for Save Our Indian River Lagoon Project Plan Community Ground Water Monitoring

The Board of County Commissioners, in regular session on April 10, 2018, authorized the Chair to execute Task Order No. 271010-14-001-003 with Applied Ecology, Inc. to measure the performance of a subset of project types funded by the Save Our Indian River Lagoon Project Plan; and authorized the County Manager to execute change orders if needed. Enclosed are three executed Task Orders.

Upon execution by Applied Ecology, Inc., please return a fully-executed Task Order to this office for inclusion in the official record.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK

Tammy Rowe, Deputy Clerk

/kp

Encls. (3)

cc: County Manager

AGREEMENT TO FURNISH PROFESSIONAL
ENVIRONMENTAL SERVICES

Save Our Indian River Lagoon Project Plan Community Groundwater Monitoring
Task Order No. 271010-14-001-003

This Agreement made this 10 day of April, 2018 by Applied Ecology, Inc. hereinafter referred to as the CONSULTANT and the BOARD OF COUNTY COMMISSIONERS OF BREVARD COUNTY, FLORIDA, hereinafter referred to as the COUNTY.

WHEREAS, on February 7, 2014, the CONSULTANT and the COUNTY entered into an AGREEMENT, wherein the CONSULTANT agreed to furnish environmental services to the COUNTY as referred to in the AGREEMENT; and

WHEREAS under SECTION 1 of the AGREEMENT, the CONSULTANT agrees to provide certain professional environmental services which shall be implemented by Task Orders;

NOW, THEREFORE, the parties do mutually agree as follows:

I. PURPOSE

The purpose of the task order is to provide environmental services to the Brevard County Natural Resources Management Department (County) to provide Performance Measurement and Monitoring Services called for in the Respond component (Section 4.4) of the Save Our Indian River Lagoon Project Plan (SOIRLPP). This task measures the change in groundwater pollution concentrations in response to several project types included in the SOIRLPP and funded by the Save Our Indian River Lagoon Trust Fund. The project types that will be measured by this task order include upgrade of Reclaimed Water Treatment, Septic to Sewer Conversion, Leaky Septic Lateral Repair and Septic Upgrade projects.

II. SCOPE OF SERVICES

The specific scope of services for this Task Order is described in Exhibit 'A', attached hereto and made a part of this Task Order.

III. COMPENSATION

For services described in Exhibit "A", and by the table, 'fee schedule', shown as Exhibit "B", the COUNTY shall pay the CONSULTANT a total labor cost and reimbursables not to exceed \$199,194.

IV. TASK ORDER SCHEDULE

The specific scope of services for this Task Order is described in Exhibit "A" attached hereto and made a part of this Task Order. All services in this Task Order shall be completed prior to 24 months from date of execution of the Task Order unless an extension is authorized by a written Change Order executed by the County.

V. OTHER TERMS AND CONDITIONS

All of the terms and conditions of the Agreement shall apply to this Task Order as if fully set out herein unless such terms and conditions are specifically superseded by the terms and conditions of this Task Order.

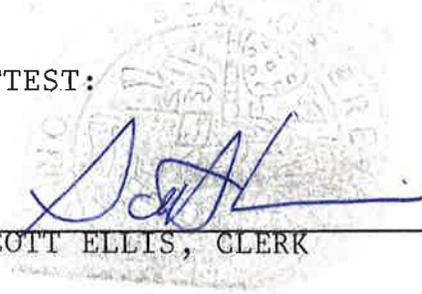
set out herein unless such terms and conditions are specifically superseded by the terms and conditions of this Task Order.

VI. EFFECTIVE DATE AND AUTHORIZATION TO PROCEED

This Task Order shall be effective on the date the CONSULTANT receives a written authorization to proceed from the COUNTY'S designated representative.

IN WITNESS WHEREOF, the parties hereto have, through their duly authorized representatives approved and executed this Amendment as of the date set forth below.

ATTEST:



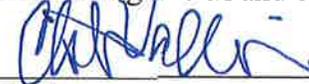

SCOTT ELLIS, CLERK

BOARD OF COUNTY COMMISSIONERS
BREVARD COUNTY, FLORIDA

By: 

Rita Pritchett, Chair
as approved by the Board on 4/10/, 2018

Review for legal form and content

By: 

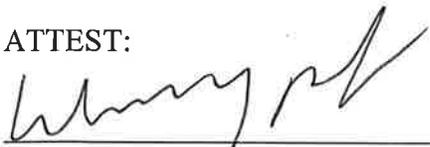
Christine Valliere, Assistant County Attorney

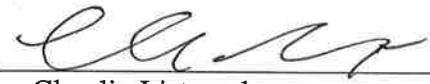
By: 

Virginia Barker, Director
Natural Resources Management Department

Applied Ecology, Inc.

ATTEST:



By: 

Claudia Listopad

Title: Principal Scientist

Date: 05/11, 2018



Exhibit A: Scope of Work

March 16, 2018

Virginia Barker
Director, Brevard County Natural Resources Management Office
2725 Judge Fran Jamieson Way, Bldg. A
Viera, Florida 32940

Scope of Work and Fees for the monitoring of the groundwater water quality of four communities for potential retrofit under the Save Our Indian River Lagoon Project Plan (SOIRLPP), Brevard County

Dear Virginia,

Thank you for providing Applied Ecology, Inc. (AEI) the opportunity to assist the Brevard County SOIRLPP with the referenced services. This scope of work includes the well installation, groundwater monitoring, data analysis, and reporting for five distinct communities within Brevard County. The specific communities were selected based on the high potential for retrofit under the SOIRLPP and include the following: a septic community located in Merritt Island (Canaveral Subdivision), a septic community in Suntree (Indian River Isles), a sewerred community in Satellite Beach (several under selection), a reclaimed and sewerred community in Titusville (Plantation Oaks), and a sewerred community in Titusville near Plantation Oaks (for comparison). The costs for well installation, monitoring, and reporting are provided in separate tasks. Please refer to Appendix A for a detailed description of level of effort and costs by subtask.

Task 1 – Well Siting and Installation

Three shallow groundwater wells will be installed in each of the four communities, for a total of 12 wells. The selection of well locations will be based on soil data, groundwater flow modeling, availability of easements, and willing participants in the research projects. Final decision on well placement will be taken in consultation with County staff. This task includes recruitment of homeowner or HOAs for well installations and obtaining homeowner agreements for every well installation.

Each shallow well will be likely installed using a geoprobe to minimize impact to the property owner's lawn and will be up to 30' in length and composed of 1.5" pvc with pre-pack and manway cover with concrete pad. This task includes the required well construction permits, abandonment permits, abandonment effort, and soil boring logs.

Total Task 1 Cost: \$40,572

Task 2 – Groundwater Data Collection and Laboratory Analysis

Eighteen monthly sampling events of the 15 groundwater wells will take place under this task. Sampling will initiate as soon as the new wells are installed and prepared for sampling, in May or June 2018 (depending on NTP). Well sampling must be in compliance with FDEP groundwater and general sampling protocols and delivered within hold times to a certified NELAC laboratory when possible.

Beyond field parameters (pH, temperature, conductivity, and turbidity), the following laboratory parameters will be analyzed in a NELAC certified lab: fecal coliform, NH-3-N, NOX-N, TKN, TN (calculated), OrthoP, and TP. A total of 270 samples and 27 blank/duplicates are included in the scope of work for all parameters with exception of TP, which will only be analyzed every other month (a total of 135 samples and 14 blanks/duplicates). This task also includes an additional 547 samples for OrthoP and 367 for TP collected in nearby communities (over 30 wells) used for comparison to the communities of interest. In addition, four communities (the Suntree, Merritt Island, and both of the Titusville communities) will also be sampled and prepared for isotopic analysis of nitrate-nitrite at the UC Davis Laboratory, for comparison with other adjacent community results. A total of 216 samples and 22 reruns/duplicates are included for nitrate isotopic analysis under this task.

Field and laboratory data is entered and quality assured monthly. Summary data tables are updated monthly for quality control.

Task 2 Labor: \$71,244

Expenses associated with Task 2 include laboratory analyses of standard water quality parameters and isotopes, field supplies and equipment, and travel expense.

Total Task 2 (labor + expenses) Cost: \$71,244 + \$61,738 or a total of \$132,982

Task 3 – Data Analysis and Reporting

Data from all available sites will be analyzed for trends over time for each of the parameters taking into account when changes to the project area (i.e. potential connection to central sewer, upgrading in WW treatment) occur. Summary statistics and seasonality will also be examined for

the nitrogen species and fecal coliform for all available well data. Isotopic results will be also be analyzed and compared against the nearby communities with isotopic data.

A final draft project report will be prepared to include all the laboratory and field collected data, summary data, graphical representations of trends, and any relevant statistical analysis. This task includes time for coordination and one in-person meeting to discuss the monitoring results, as well as time to incorporate one set of comments in the final report

Total Task 3 Cost: \$25,640

PROJECT DELIVERABLES

The project will include the following deliverables:

Task 1

- Updated GIS file with the location of all the installed wells (15 wells)
- Maps of well locations for each of the five project areas (in PDF format)
- Well installation logs
- Copies of well installation permits

Task 2

- Quarterly summary data reports of monitoring activities that includes dates sampling was conducted, final laboratory reports, and sampling logs with purge data, field, and weather data recorded, as well as summary data tables.

Task 3

- Final draft report that described the well location, well installation information, summary of field and lab data, any relevant statistical analysis results, and data interpretation
- Final report which incorporates one set of comments received from County staff

PROJECT SCHEDULE

The project is expected to initiate within 2 weeks from NTP. Well siting will take place within 4-6 weeks after initiating the project and typically well installation takes place in the subsequent month, pending no difficulties with receiving authorization to install wells. Task 2 (groundwater monitoring), is initiated within the first week after well installation (a minimum of 48 hours after well installation). Subsequent events will take place every four weeks from initial sampling event. Task 3 (data analysis and reporting) will be completed within 3 months after the last sampling event.

PROJECT BUDGET

Total project cost, including all the expenses, is \$199,194.

I look forward to working with you for these services. If you have any questions, please do not hesitate to contact me at 321.848.1272 or clistopad@appliedecologyinc.com.

Sincerely,



Claudia M. Listopad, Ph.D., GISP
Principal Scientist
Applied Ecology, Inc.



Exhibit B: Fee Schedule

Appendix A. Tasks and subtasks with associated effort and cost for the groundwater monitoring of five communities.

Task	Subtask	Description	Principal Scientist	Env. Scientist	Junior Tech	Total Hrs	Driller Total Cost	MRC Total Cost	Total Cost
			\$135.00	\$55.00	\$35.00				
Site Selections, Well Installation & Abandonment	1	Site selection, obtain Permission/ User Agreement for Well Installation	32	16	0	48	\$0	\$2,967	\$8,167
	2	Install 15 wells, each up to 30', 1.5" pvc permanent type with geoprobe (5 days)	0	0	0	0	\$9,500	\$0	\$9,500
	3	Well materials	0	0	0	0	\$5,775	\$0	\$5,775
	4	Well construction permits and completion (@250/well)	0	0	0	0	\$3,750	\$0	\$3,750
	5	Soil sampling and boring logs (4 days)	24	0	0	24	\$2,750	\$0	\$5,990
	6	Well abandonment permit (@30\$/permit)	0	0	0	0	\$450	\$0	\$450
	7	Well abandonment (10\$/ft)	0	0	0	0	\$4,500	\$0	\$4,500
	8	Project management (coordination with GW installation, meetings)	16	0	0	16	\$280	\$0	\$2,440
WELL INSTALLATION TASK TOTAL			72	16	0	88	\$27,005	\$2,967	\$40,572
Groundwater Sampling	1	Sampling effort for 18 monthly events for Merritt Island (3 wells)	0	0	54	54	\$0	\$8,323	\$10,213
	2	Sampling effort for 18 monthly events (Suntree, 3 wells)	0	99	153	252	\$0	\$0	\$10,800
	3	Sampling effort for 18 monthly events (Satellite Beach, 3 wells)	0	132	162	294	\$0	\$0	\$12,930
	4	Sampling effort for 18 monthly events (Titusville, 6 wells)	0	234	324	558	\$0	\$0	\$24,210
	5	Compilation and Reporting of Lab Results and Field Parameters	16	72	0	88	\$0	\$0	\$6,120
	6	Project management (coordination with sampling effort, lab results, meetings)	40	0	0	40	\$0	\$1,571	\$6,971
GW SAMPLING TASK TOTAL			56	537	693	1286	\$0	\$9,894	\$71,244
Reporting	1	Data Analysis	60	80	0	140	\$0	\$3,324	\$15,824
	2	Project Report (Draft and Final), includes 1 in-person meeting	40	40	0	80	\$0	\$2,216	\$9,816
REPORTING TASK TOTAL			100	120	0	220	\$0	\$5,540	\$25,640
Project Subtotal (Labor Only)							\$137,456		
Expenses (Labs, Field Equipment and Disposables, Travel - Lab Express Transport)							\$61,738		
Project Total with Expenses							\$199,194		