

RESOLUTION NO. 2012-85

A RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, APPROVING THE TERMS, PROVISIONS, CONDITIONS, AND REQUIREMENTS OF A COST SHARE AGREEMENT BETWEEN ST. JOHNS COUNTY, FLORIDA, AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, FOR THE WATER CONSERVATION COST SHARE PROGRAM FOR A RELIABILITY AND PERFORMANCE TESTING OF NEW LANDSCAPE IRRIGATION TECHNOLOGY PREVIOUSLY APPROVED BY THE COUNTY BY RESOLUTION 2011-199, AUTHORIZING THE CHAIRMAN OF THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA TO EXECUTE THE FIRST AMENDMENT TO THE AGREEMENT ON BEHALF OF ST. JOHNS COUNTY AND RECOGNIZING AND APPROPRIATING THE ADDITIONAL \$50,000 WITHIN THE FISCAL YEAR 2012 UTILITY SERVICES BUDGET.

WHEREAS, the waters of the state of Florida are among its basic resources and it has been declared to be the policy of the Legislature to promote the conservation, development, and proper utilization of surface and ground water;

WHEREAS, the District has determined that providing cost-share funding to Recipient for the purposes provided for herein will benefit the management of the water resources;

WHEREAS, the parties have agreed to jointly fund the following project to benefit the water resources in accordance with the funding formula further described in the Statement of Work, Attachment A-1 (hereafter "the Project"). The St. Johns County Utility Department shall install up to 150 remotely monitored smart irrigation controllers with moisture sensors into existing homes and monitor usage for a period of three (3) years in accordance with Attachment B-1, Scope of Services. The new system and turf conditions will be evaluated against previous water use and conditions;

WHEREAS, the Board approved the original project by Resolution 2011-199;

WHEREAS, the District has contacted the County and wishes to increase their funding by an additional \$50,000 due to increased funding availability;

WHEREAS, the Cost Share Agreement between the County, and the District establishes the rights, duties, and responsibilities of both the County and the District with respect to conducting the Scope of Work noted in the Agreement;

WHEREAS, the County has reviewed the terms, provisions, conditions, and requirements of the Cost Share Agreement (attached hereto, and incorporated herein); and

WHEREAS, the County has determined that accepting the terms of the amended Cost Share Agreement, and entering into said Agreement will serve the interests of the County.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, AS FOLLOWS:

Section 1. The above Recitals are hereby incorporated into the body of this Resolution, and are adopted as Findings of Fact.

Section 2. The Board of County Commissioners hereby approves the terms, provisions, conditions, and requirements of the amended Cost Share Agreement between St. Johns County, Florida, and the St. Johns River Water Management District, and authorizes the Chairman of the Board of County Commissioners of St. Johns County, Florida to execute the amended Cost Share Agreement on behalf of St. Johns County and recognizes and appropriates the additional \$50,000 within the FY 2012 Utility Services Fund.

Section 3. To the extent that there are typographical and/or administrative errors that do not change the tone, tenor, or concept of this Resolution, then this Resolution may be revised without subsequent approval by the Board of County Commissioners.

PASSED AND ADOPTED by the Board of County Commissioners of St. Johns County, Florida, this 20<sup>th</sup> day of March, 2012.

BOARD OF COUNTY COMMISSIONERS OF  
ST. JOHNS COUNTY, FLORIDA

Attest:

*Ann Helterman*  
Deputy Clerk

By:

*Mark P. Miner*  
Mark P. Miner, Chair

RENDITION DATE 3/22/12



**FIRST AMENDMENT TO THE AGREEMENT BETWEEN  
THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT  
AND ST. JOHNS COUNTY FOR  
RELIABILITY AND PERFORMANCE TESTING OF  
NEW LANDSCAPE IRRIGATION TECHNOLOGY PROJECT**

THIS AMENDMENT is entered into by and between the GOVERNING BOARD of the ST. JOHNS RIVER WATER MANAGEMENT DISTRICT ("District"), whose mailing address is 4049 Reid Street, Palatka, Florida 32177, and ST. JOHNS COUNTY ("Recipient"), whose address is 4020 Lewis Speedway, St. Augustine, Florida 32095, and is effective on the date the last party has executed same.

WHEREAS, the parties entered into Agreement No. 26573 on August 9, 2011, for Reliability and Performance Testing of New Landscape Irrigation Technology Project ("Agreement"), and

WHEREAS, the parties desire to amend the Agreement.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, and for other good and valuable consideration, the parties hereby agree to the following amendments:

1. Paragraph 1(a) TERM; WITHDRAWAL OF OFFER: delete this paragraph and replace it with the following paragraph:
  - (a) The term of this Agreement is from the date upon which the last party has dated and executed the same ("Effective Date") until September 30, 2015 ("Completion Date"). Recipient shall not commence the Project until any required submittals are received and approved. Recipient shall commence performance within fifteen (15) days after the Effective Date and shall complete performance in accordance with the time for completion stated in the Statement of Work. Time is of the essence for every aspect of this Agreement, including any time extensions. All provisions of this Agreement that by their nature extend beyond the Completion Date shall survive the termination or expiration of this Agreement.
2. Paragraph 4(a) and (b) – FUNDING OF AGREEMENT: Delete and replace with the following:
  - (a) For satisfactory performance of the Project, the District agrees to pay Recipient an additional \$50,000, which increases the District's total not to exceed cost-share amount to \$200,000. This revised amount is fifty percent (50%) of the estimated total cost of the Project. The District cost-share is not subject to modification based upon price escalation in implementing the Project during the term of this Agreement. Recipient shall be responsible for payment of all costs necessary to ensure completion of the Project. Recipient shall notify the District's Project Manager in writing upon receipt of any additional external funding for the Project not disclosed prior to execution of this Agreement.
  - (b) Recipient agrees to provide at least \$200,000 in the form of matching funds, in-kind services, or both for the Project, as further described in the Statement of Work, which shall count toward Recipient's cost-share obligation. If Project costs exceed the estimated Project cost so as to reach the not-to-exceed amount of the District cost-share, then Recipient shall provide any additional funding required to complete the Project. If the Project is cancelled by Recipient prior to completion, Recipient shall reimburse the District all funds received from the District pursuant to this Agreement. Recipient's in-kind labor services (i.e. labor from Recipient) will be calculated based upon the base salary times a 1.5 fixed multiplier.

3. Attachment A, STATEMENT OF WORK, is hereby modified as follows:

The current Statement of Work is hereby deleted and replaced with the Statement of Work attached hereto as Attachment A-1.

4. All other terms and conditions of the original Agreement, including any subsequent amendments, are hereby ratified and continue in full force and effect.

IN WITNESS WHEREOF, the parties hereto have duly executed this amendment on the date set forth below.

ST. JOHNS RIVER WATER  
MANAGEMENT DISTRICT

ST. JOHNS COUNTY

By: \_\_\_\_\_  
Hans G. Tanzler III, Executive Director (or designee)

By: \_\_\_\_\_

\_\_\_\_\_  
Typed Name and Title

Date: \_\_\_\_\_

Date: \_\_\_\_\_

APPROVED BY THE OFFICE  
OF GENERAL COUNSEL

\_\_\_\_\_  
Stanley J. Niego, Sr. Assistant General Counsel

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Last updated: 8-29-11

ATTACHMENTS

Attachment A-1 – Revised Statement of Work  
Attachment B-1 – Recipient's Revised Scope of Services

**ATTACHMENT A-1 – REVISED STATEMENT OF WORK  
ST JOHNS COUNTY  
RELIABILITY AND PERFORMANCE TESTING OF  
NEW LANDSCAPE IRRIGATION TECHNOLOGY PROJECT**

**I. INTRODUCTION/BACKGROUND**

The St. Johns River Water Management District (District) created the Water Conservation and Demand Management Program (the Program) in FY2008-2009 as a cost share program to develop and implement innovative water conservation initiatives and to develop and analyze metrics to demonstrate the effectiveness of water conservation planned or implemented by the District.

On October 11, 2011 the District's Governing Board approved increasing the funding for St. Johns County (Recipient) Reliability And Performance Testing of New Landscape Irrigation Technology Project (Project) from \$150,000 to \$200,000.

**II. OBJECTIVES**

The objective of this contract is to provide cost share dollars that will enable the Recipient to complete a pilot project that will evaluate the use of smart irrigation controllers with soil moisture sensors (SMS), and remote monitoring to encourage the reduction of water use among those homeowner groups with high consumption.

**III. SCOPE OF WORK**

Recipient shall complete this project by performing the tasks in the Task Identification section of this Statement of Work. Attachment B-1, the Recipient's Revised Scope of Services, provides additional details for each of these Tasks.

**IV. TASK IDENTIFICATION**

**Task 1 – Water Use Analysis and Identification of Pilot Project Participants**

The Recipient shall identify up to fourteen (14) existing communities to participate in the Project. Demand data shall be reviewed within the selected communities and analyzed for potential participant installation sites. The Recipient has methods in place for establishing outdoor water use for all their customer properties that will be utilized. The results of this task will be to establish the outdoor water use on a monthly basis for future comparison.

**Task 2 – Public Education Program**

The Recipient shall schedule, as necessary, Town Hall style meetings with the communities that expressed interest in potentially participating in the project. At the meetings, the benefits of water conservation, how the proposed program will work, and proper irrigation practices shall be described, in order to gain acceptance of this water conservation pilot program. After installation of the smart controller, the homeowner will be provided with instruction of how the equipment works.

**Task 3 – Independent Audit**

The Recipient shall retain the services of a professional independent irrigation contractor (third party auditor) to audit the selected home sites and verify their suitability for participation in the project. This independent company will review the information developed in Task I of this Statement of Work and prepare a technical memorandum reflecting concurrency or suggested modifications, in accordance with this Agreement.

**Task 4 – Installation and Homeowner Participation**

Once the homeowners are identified, the Recipient shall establish a schedule for installation. The Recipient shall conduct an initial meeting with the homeowners to document existing conditions at the home and schedule the installation. Details of the project will be discussed with the homeowners at that time. Installation of the new system will be completed by an irrigation contractor. Participation by the homeowner will be documented as well as project status.

**Task 5 – Monitoring Activities**

The Recipient shall monitor the project and document smart irrigation controller system malfunctions, broken irrigation lines, run time averages, hot line calls, moisture values as determined by SMS and customer satisfaction.

**Task 6 – Project Analysis and Reporting**

The Recipient shall provide data collection and comparison analysis in quarterly status reports and provide annual account level water use data as described in Section V. Recipient shall provide deliverables specified in each task in Attachment B-1, the Recipient's Revised Scope of Services, and updates on the progress of the project within the quarterly reports.

**V. TIME FRAMES AND DELIVERABLES**

The project shall be completed no later than September 30, 2015. All work shall be completed in accordance with tasks described above and consistent with Attachment B-1 – Recipient's Revised Scope of Services. The Recipient shall submit quarterly reports to the District's Project Manager detailing the progress of each Task.

Recipient shall deliver a minimum of two (2) years of monthly account level water use data recorded prior to the implementation of this project and up to three (3) years of monthly account level water use data recorded after the implementation of this project for all affected connections. All account level consumption data delivered shall be joined to parcels through the use of a unique ID. At a minimum, the consumption table must include a unique ID, water use type, consumption amount for the month in gallons and the consumption month for each affected connection. Account level consumption data shall be delivered to the District Project Manager annually, with the new consumption data appended to the consumption table each year. All data collected in association with work performed under this agreement shall be provided to the District's Project Manager in a digital format approved by the District's Project Manager. All analysis performed under this agreement shall be documented and provided to the District's Project Manager in a final summary report.

The required account level billing data deliverable must be joined with the county appraiser data available from the District. This can be coordinated with the District's Project Manager or performed by the Recipient.

**VI. BUDGET/COST SCHEDULE**

For satisfactory completion of the Project, the District shall pay Recipient fifty percent (50%) of the estimated total cost of the Project, but in no event shall the District's cost-share exceed \$200,000. Recipient shall invoice the District quarterly based on labor and materials used for this project. Recipient's in-kind labor services shall be calculated based upon the base salary times a 1.5 fixed multiplier.

Recipient agrees to provide at least \$200,000 in the form of matching funds, in-kind services, or both, for this project. If Project costs exceed the estimated Project cost so as to reach the not-to-exceed amount of the District cost-share, then Recipient shall provide any additional funding required to complete the Project.

Cost Schedule for Tasks 1-6

Task 1	Water Use Analysis and Identification of Pilot Project Participants	\$15,924
Task 2	Public Education Program	\$16,900
Task 3	Independent Audit	\$9,650
Task 4	Installation and Homeowner Participation	\$312,396
Task 5	Monitoring Activities	\$9,750
Task 6	Project Analysis and Reporting	\$35,380
	Total Estimated Project Cost:	\$400,000
	<b>District's 50% Cost Share:</b>	<b>\$200,000</b>

**Water Conservation Cost Share Program  
Scope of Services  
King Engineering Associates, Inc.  
10/20/2011**

**Background**

On April 13th, the 2010, St. Johns River Water Management District (SJRWMD) selected the St. Johns County Utility Department (SJCUD) to participate in their Water Conservation Cost Share Program. This Program provides fifty percent (50%) reimbursable grant funding to political subdivisions in support of innovative water conservation practices. SJCUD has proposed a pilot project to field verify the use of smart irrigation controllers with soil moisture sensors, and remote monitoring to encourage the reduction of water use among those homeowner groups with high consumption (the Project).

It is expected that these smart irrigation controllers will be installed in up to one hundred fifty (150) homes in or near the SJCUD service area. Each irrigation system will be remotely monitored in accordance with the requirements of the "Water Conservation Cost-Share Agreement by and Between the St. Johns River Water Management District and St. Johns County Utility Department," (Cost-Share Agreement). Controllers shall be monitored for a minimum of two (2) years from the date of installation. The new irrigation system and turf conditions will be evaluated against previous water use and conditions. Approximately one-third of the participating home sites will be equipped with a single soil moisture sensor, one-third with two soil moisture sensors and one-third with up to five soil moisture sensors. This will allow the Project to examine the effectiveness of multiple soil moisture sensors versus single soil moisture sensor installation.

The project will utilize the WaterOptimizer® smart irrigation controller, a leading device in the field of remotely monitored smart irrigation controllers which meets the requirements of District Rule 40C-2.042(2), *Florida Administration Code*. When installed in conjunction with one or more moisture sensors, the WaterOptimizer® will control the irrigation system to water only when necessary.

**The Team**

SJCUD will lead a team of consultants to implement this project, including King Engineering Associates, Inc. (KING) and two other consultants that will work directly for SJCUD. The first of these will be a Public Relations Consultant (PR Consultant) and the second will be an irrigation contractor to perform third party audit services (third party auditor). KING will work as part of the Team and provide materials and labor in accordance with "KING, St. Johns County Conservation Cost Share-Spread Sheet, Exhibit A".

The following describes the proposed scope of services that KING, and their sub-consultants, will perform.

**I. Water Use Analysis and Pilot Project Participants**

SJCUD has identified high water use areas within St. Johns County using the existing County automatic meter reading (AMR) software. The County will identify up to fourteen (14) existing communities to participate in the subject Project. SJCUD will take advantage of their very advanced mapping tools and advanced customer billing and account information to assist in this task.

This demand data will be reviewed by KING within the selected communities and analyze them for potential participant installation sites. A technical memorandum will be prepared with King's suggestions and findings on a preferred participant selection.



There are no individual irrigation meters within the SJCUD. SJCUD already has methods in place for establishing outdoor water use for all their customer properties which will be utilized here. The results of this task will be to establish the outdoor water use on a monthly basis for future comparison.

SJCUD with input and assistance from the PR Consultant will develop a project website. The website will explain the project, its purpose, benefits and the qualifications of SJCUD and the Team. As the project matures, the web site will add a "results" section.

## **II. Public Education Program**

The Team will schedule, as necessary, Town Hall style meetings with the communities that expressed interest in potentially participating in the project. At the town hall meeting, the benefits of water conservation, how the proposed program will work and proper irrigation practices will be described, in order to gain acceptance of this water conservation pilot program.

After installation of the smart controller, the homeowner will be provided with instruction of how the equipment works.

## **III. Independent Audit**

SJCUD will retain the services of a professional independent irrigation contractor (third party auditor) to audit the selected home sites and verify their suitability for participation in the project. The professional independent irrigation contractor will audit the selected home sites and verify their suitability for participation in the project, in accordance with the Cost-Share Agreement.

This independent company will review the information developed in Task I above and prepare a technical memorandum reflecting concurrency or suggested modifications, in accordance with the Cost-Share Agreement. KING will meet with SJCUD and the auditor to review the Technical Memorandum.

## **IV. Installation and Homeowner Participation**

Once the homeowners are identified, KING will establish a schedule for installation. The Team process will consist of the following activities:

### **A. Initial Homeowner Meeting, Sketch Development and Integrity Testing**

1. Initial photographs of property
  - Photos of the property will be taken as a record of existing conditions. Photos will be cataloged for easy reference.
2. Create Sketch of Property
  - A general field sketch will be drawn of the property, highlighting landscape beds, and potential problem areas. This sketch will show the proposed location of the soil moisture sensors and the proposed smart irrigation controller. This sketch will be used as the basis for the irrigation subcontractors to formulate their bid proposals for installation of the system.
3. Integrity Testing
  - The irrigation system will be tested and any additional issues with system components or uniformity will be documented, for subsequent repair, if necessary.
4. Document Existing Equipment Settings
  - Existing controller settings; run-times and days of the week will be documented.
5. Locate Soil Moisture Sensor Placement

- Location(s) will be determined based on property configuration and landscaping. Certain properties will be designated for a single soil moisture sensor (about one-third), some will be designated for two soil moisture sensors (about one-third) and some will be designated for up to five soil moisture sensors (about one-third). Soil Moisture Sensor locations will be marked with a flag and included on the sketch of the property.
6. Schedule Installation
    - Installation of the controller and soil moisture sensors will be scheduled with the homeowner.
  7. The Team will answer any questions from the customer.

## **B. Installation**

The main purpose of the second meeting with the homeowner is to install the new controller and its components. The installation will be performed by an irrigation contractor working as a subcontractor to KING. KING will receive bids from qualified irrigation contractors to install the irrigation controller and the soil moisture sensors in accordance with the sketches. The following activities will be undertaken by KING and their installation subcontractor.

1. Existing Controller Replacement and Soil Moisture Sensor Installation
  - Establish a time with the homeowner for the installation.
  - Assure that all necessary permits are obtained by the irrigation subcontractor
  - Disconnection of the existing irrigation controller by the irrigation subcontractor.
  - Installation of new smart irrigation controller and soil moisture sensor(s) by the irrigation subcontractor.
  - Initial testing and correction of defects by the irrigation subcontractor.
2. Run New System Initially as "Run Time"
  - System will initially be run without soil moisture sensors turned on, then gradually transitioned using soil moisture sensors
3. Establish Maximum Field Capacity
4. Adjustments and transition to New Water Conservation Settings
  - The controller will be set to adhere to local irrigation regulations.

KING will establish and maintain the overall installation schedule as well as coordinate and oversee the irrigation subcontractor's work. KING will process periodic payment requests from the irrigation subcontractors on a pay when paid basis. At the conclusion of the installation KING will contact the homeowner to verify satisfaction. After installation of the smart irrigation controller, the irrigation subcontractor will provide the homeowner a one-on-one tutorial on how to operate the controller, and furnish them with a written description of the program and how the equipment works, on a laminated card mounted within the controller. King will assist SJCUD with troubleshooting and hotline assistance as appropriate.

Installation of the WaterOptimizer® makes the participating home(s) eligible for an Administrative Variance from SJRWMD watering restrictions. If eligible, the Team will prepare the necessary application, to be signed by the appropriate applicant, to apply for this Administrative Variance.

## **C. Follow Up**

1. Document Homeowner Participation and Project Status

- The owner's participation will be documented. This will include the initial public education program, as well as ongoing training and troubleshooting as the project goes on. We expect to track all interactions with the client owner and their resolution. At the conclusion of the test period the owner interaction can be categorized by theme, which can be used to guide other large scale deployments of this type of equipment.

**V. Monitoring Activities**

The Team will monitor the project and prepare monthly reporting that covers the following.

- Smart Irrigation Controller System Malfunctions
- Broken Irrigation Lines
- Run Time Averages
- Hot Line Calls
- Moisture Values as determined by Soil Moisture Sensor
- Customer Satisfaction

**VI. Project Analysis and Reporting**

**A. Data Collection**

In accordance with the requirements of the Cost-Share Agreement, controllers shall be monitored for a minimum of two (2) years from the date of installation. Over the course of the project, data will be remotely collected from each home as well as from baseline examples. The irrigation controller will be set consistent with State Law, and the following data will be collected.

1. Account-level baseline data from separate irrigation meter or calculation.
  - Data from baseline example will be gathered and used in the analysis.
2. Logging of water application.
  - Water usage will be documented from SJCUD billing technology.
3. Collection of localized weather data.
  - SJCUD has an established network of rain gauges to record rainfall across the county.
4. Actual soil moisture content.
  - This can be obtained through the WaterOptimizer® monitoring software.
5. Turf grass quality.
  - Visual inspections will be performed to determine customer satisfaction.
6. Experimental design and statistical analysis.

This data will be summarized in an easy to read format with appropriate graphics, and submitted to SJCUD to meet the requirements of the SJRWMD Water Conservation Cost Share Program.

**B. Comparison Analysis**

An analysis will be performed to compare the following:

1. Water savings and turf grass quality of the time-based treatments;
2. District irrigation rule treatment versus soil moisture system treatment.

#### **VII. Schedule**

The Pilot Program will be implemented in a phased approach so that the process can be refined as we move into the subsequent phases.

#### **VIII. Compensation**

This work will be performed on a time and materials basis with upper limits in accordance with "KING, St. Johns County Conservation Cost Share-Spread Sheet, Exhibit A". It is understood that because of the unique issues related to installing this equipment in homes, that are currently not identified and may be of different size and location, the costs described in this proposal are approximate. It may be necessary as the project proceeds that this cost ceiling may need to be renegotiated as well as the number of units to be installed adjusted.

#### **IX. Liability**

KING's liability will be limited to equipment initially installed as part of this project. KING will warrant against manufacturing defects for the new irrigation controller and new soil moisture sensor(s) for a period of three years from that date of installation. KING will not be liable for existing equipment problems or failures. KING will not be liable for problems with lawns, plant materials or other home appurtenances.