

**RESOLUTION NO. 21-12-124**

**A RESOLUTION OF THE VILLAGE COUNCIL OF ISLAMORADA, VILLAGE OF ISLANDS, FLORIDA, APPROVING A RENEWAL OF THE AGREEMENT BETWEEN ISLAMORADA, VILLAGE OF ISLANDS AND E SCIENCES, INC. FOR WATER QUALITY AND BENTHIC VEGETATION MONITORING IN VILLAGE CANALS; AUTHORIZING VILLAGE OFFICIALS TO IMPLEMENT THE TERMS AND CONDITIONS OF THE AGREEMENT; AUTHORIZING THE VILLAGE MANAGER TO EXPEND BUDGETED FUNDS; AUTHORIZING THE VILLAGE MANAGER TO EXECUTE THE RENEWAL; AND PROVIDING FOR AN EFFECTIVE DATE.**

**WHEREAS**, on August 20, 2020, the Village Council of Islamorada, Village of Islands (the "Village Council"), passed and adopted Resolution No. 20-08-75, thereby approving a project agreement between the Village and E Sciences, Inc., attached hereto as Exhibit "A"; and

**WHEREAS**, the purpose of the agreement is to provide continued testing and monitoring of water quality and benthic vegetation in Village canals and nearshore waters, as described in Appendix "A" thereto; and

**WHEREAS**, the Agreement took effect on October 5, 2020, for an initial one-year term, with renewal provisions for four (4) additional one-year periods by the mutual written agreement of the Parties; and

**WHEREAS**, the Agreement is scheduled to expire on December 31, 2021, with four (4) eligible annual renewals remaining; and

**WHEREAS**, the Village and E Sciences both desire to enter into a first renewal term as provided for in the Agreement attached as Exhibit "A" hereto.

**NOW THEREFORE, BE IT RESOLVED BY THE VILLAGE COUNCIL OF ISLAMORADA, VILLAGE OF ISLANDS, FLORIDA, AS FOLLOWS:**

**Section 1. Recitals.** The above recitals are true and correct and incorporated into this Resolution by this Reference.

**Section 2. Approval of Renewal of Agreement.** The Village Council hereby approves renewal of the Agreement between the Village and E Sciences to provide water quality and benthic vegetation testing and monitoring, a copy of which is attached as Exhibit "A," together with such non-material changes as may be acceptable to the Village Manager and approved as to form and legality by the Village Attorney.

**Section 3. Authorization of Village Officials.** The Village Manager and/or his designee and the Village Attorney are hereby authorized to take all actions necessary to implement the terms and conditions of the Agreement.

**Section 4. Authorization of Fund Expenditure.** Notwithstanding the limitations imposed upon the Village Manager pursuant to the Village's Purchasing Procedures Ordinance, the Village Manager is authorized to expend budgeted funds to implement the terms and conditions of the Agreement.

**Section 5. Execution of Agreement.** The Village Manager is authorized to execute the renewal on behalf of the Village, to execute any required agreements and/or documents to implement the terms and conditions of the agreement and to execute any extensions and/or amendments to the agreement, subject to the approval as to form and legality by the Village Attorney.

**Section 6. Effective Date.** This Resolution shall take effect immediately upon adoption.

Motion to adopt by Councilman David Webb seconded by Councilman Joseph B. Pinder III.

**FINAL VOTE AT ADOPTION**

**VILLAGE COUNCIL OF ISLAMORADA, VILLAGE OF ISLANDS**

Mayor Pete Bacheler	YES
Vice Mayor Henry Rosenthal	YES
Councilman Mark Gregg	YES
Councilman Joseph B. Pinder III	YES
Councilman David Webb	YES

**PASSED AND ADOPTED THIS 16<sup>TH</sup> DAY OF DECEMBER, 2021.**

  
\_\_\_\_\_  
PETE BACHELER, MAYOR

ATTEST:

  
\_\_\_\_\_  
KELLY TOTH, VILLAGE CLERK

APPROVED AS TO FORM AND LEGALITY  
FOR THE USE AND BENEFIT OF  
ISLAMORADA, VILLAGE OF ISLANDS:

  
\_\_\_\_\_  
ROGET V. BRYAN, VILLAGE ATTORNEY

# Exhibit A

## **PROJECT AGREEMENT**

Between

**ISLAMORADA, VILLAGE OF ISLANDS**

And

**E Sciences, INC.**

For

### **Water Quality and Benthic Vegetation Monitoring in Village Canals**

This Project Agreement between ISLAMORADA, VILLAGE OF ISLANDS (hereinafter referred to as "VILLAGE") and E Sciences, INC. (hereinafter referred to as "CONSULTANT"), hereby authorizes the CONSULTANT to provide the services as set forth below:

The VILLAGE and CONSULTANT agree as follows:

#### **SECTION 1. SCOPE OF SERVICES**

1.1 The CONSULTANT shall provide environmental services to the VILLAGE for the Project as described in the "Scope of Work" and "Project Approach" attached as Exhibit "1."

1.2 The "Scope of Services" and tasks to be provided by the CONSULTANT for this Project are those services and tasks as listed in Exhibit "1."

1.3 The VILLAGE may request changes that would increase, decrease, or otherwise modify the Scope of Services. Such changes must be contained in a written change order executed by the parties, prior to any deviation from the terms of the Project Agreement, including the initiation of any extra work.

#### **SECTION 2. DELIVERABLES**

As part of the Scope of the work the CONSULTANT shall provide to the VILLAGE the following Deliverables within 60 days following the end of each bi-annual sampling period (October 31<sup>st</sup> & April 30<sup>th</sup>):

- *A letter report confirming completion of field sampling activities, noting the dates each canal was sampled and any issues the CONSULTANT encountered carrying out the work plan*
- *An interpretive report that notes dates of sampling events, summarizes field activities, details the results of the sampling event and compares results to historical values*

- *A geo-referenced map of sampling locations*
- *Water quality and biologic benthic data in standard spreadsheet format*

The Village's project manager is to be notified prior to commencement of each bi-annual field sampling event and is to be notified once it is completed. On occasion the CONTRACTOR will be asked to present project results to the Village Council and the Water Quality Improvement Citizens Advisory Committee.

Unless otherwise stated, the CONSULTANT will provide draft and site plans, and other materials prepared for the PROJECT in both paper and electronic formats as appropriate, excluding material that is available only as photocopy to the VILLAGE. The VILLAGE shall be provided copies of all correspondence from CONSULTANT to any public or private entity or individual that is not employed by or contracted with CONSULTANT and all correspondence received by the CONSULTANT for the PROJECT.

### **SECTION 3. TERM/TIME OF PERFORMANCE/DAMAGES**

3.1 **Term.** This Project Agreement shall commence on the date this Agreement is fully executed by all parties and shall continue in full force and effect through, **December 31, 2021** unless otherwise terminated pursuant to Section 6 or other applicable provisions of this Project Agreement. The Village Manager may extend the term of this Agreement each year for up to four (4) additional years by mutual written agreement of the VILLAGE and CONSULTANT. No further extensions of this Agreement shall be effective unless authorized by the Village Council.

3.2 **Commencement.** The CONSULTANT'S services under this Project Agreement and the time frames applicable to this Project Agreement shall commence upon the date provided in a written Notice to Proceed ("Commencement Date") provided to the CONSULTANT from the Village Manager. The CONSULTANT shall not incur any expenses or obligations for payment to third parties prior to the issuance of the Notice to Proceed of Commencement.

3.3 **Contract Time.** Upon receipt of the Notice to Proceed, the CONSULTANT shall commence services to the VILLAGE on the Commencement Date, and shall continuously perform services to the VILLAGE, without interruption, in accordance with the time frames set forth in the "Project Schedule," a copy of which is attached and incorporated into this Agreement within Exhibit "1." The number of calendar days from the Commencement Date, through the date set forth in the Project Schedule for completion of the Project shall constitute the Contract Time.

3.4 All limitations of time set forth in this Agreement are of the essence.

3.5 CONSULTANT will perform all services hereunder using that degree of skill and care ordinarily exercised under similar conditions by reputable members of CONSULTANT'S profession practicing in the same or similar locality at the time the Services are performed. NO OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE OR INTENDED.

#### **SECTION 4. AMOUNT, BASIS AND METHOD OF COMPENSATION**

4.1 **Lump Sum Compensation.** VILLAGE agrees to pay CONSULTANT an amount not to exceed Fifty-Two Thousand Dollars **(\$52,000.00)** for the first year of the Project, Fifty Thousand Dollars **(\$50,000.00)** for years two (2) – four (4) if renewed and Fifty-Two Thousand Dollars **(\$52,000.00)** for year five (5) if renewed as compensation for performance of all services related to the Project. It is understood that the method of compensation is that of lump sum which means that CONSULTANT shall perform all services set forth for total compensation in the amount stated above. Said lump sum includes but is not limited to, compensation for all fees, expenses, and out-of-pocket costs of the CONSULTANT.

4.2 **Reimbursables.** It is acknowledged and agreed to by CONSULTANT that the lump sum amount set forth in Section 4.1 includes Direct Expenses and describes the maximum extent of, VILLAGE'S obligation to reimburse CONSULTANT for direct, non-salary expenses, but does not constitute a limitation, of any sort, upon CONSULTANT'S obligation to incur such expenses in the performance of services hereunder.

#### **SECTION 5. BILLING AND PAYMENTS TO THE CONSULTANT**

##### **5.1 Invoices.**

5.1.1 **Lump Sum Compensation.** CONSULTANT shall submit invoices which are identified by the specific project number on a bi-annual basis and in a timely manner following the approval of deliverables by the Village's project manager. An invoice shall be submitted following the completion of each sampling event and following the completion of each data/interpretive report. Completion of the sampling effort will be communicated to the Village project manager in a letter report noting the dates each canal was sampled and any issues the CONSULTANT encountered carrying out the work plan. These invoices shall identify the nature of the work performed, the phase of work, and the estimated percent of work accomplished in accordance with the Payment Schedule as shown on Exhibit "1", attached hereto and made a part of this Agreement. Invoices for each phase shall not exceed the amounts allocated to said phase. The statement shall show a summary of fees with accrual of the total and credits for portions paid previously.

5.1.2 **Disputed Invoices.** In the event all or a portion of an invoice submitted to the VILLAGE for payment to the CONSULTANT is disputed, or additional backup documentation is required, the Village Manager shall notify the CONSULTANT within fifteen (15) working days of receipt of the invoice of such objection, modification or additional documentation request. The CONSULTANT shall provide the VILLAGE with a written response and any additional information requested by the VILLAGE within five (5) working days of the date of the VILLAGE'S notice. The VILLAGE may request additional information, including but not limited to, all invoices, time records, expense records, accounting records, and payment records of the CONSULTANT. The

VILLAGE, at its sole discretion, may pay to the CONSULTANT the undisputed portion of the invoice.

5.2 Suspension of Payment. In the event that the VILLAGE becomes credibly informed that any representations of the CONSULTANT, provided pursuant to Subparagraph 5.1, are wholly or partially inaccurate, or in the event that the CONSULTANT is not in compliance with any term or condition of this Project Agreement, the VILLAGE may withhold payment of sums then or in the future otherwise due to the CONSULTANT until the inaccuracy, or other breach of Project Agreement, and the cause thereof, is corrected to the VILLAGE'S reasonable satisfaction.

5.3 Retainage. No retainage is required under this Project Agreement.

5.4 Final Payment. Submission of the CONSULTANT'S invoice for final payment and reimbursement shall constitute the CONSULTANT'S representation to the VILLAGE that, upon receipt from the VILLAGE of the amount invoiced, all obligations of the CONSULTANT to others, including its Subconsultants, incurred in connection with the Project, shall be paid in full. The CONSULTANT shall deliver to the VILLAGE all documents and computer files requested by the VILLAGE evidencing payment to any and all subcontractors, and all final specifications, plans or other documents as dictated in the Scope of Services and Deliverables. Acceptance of final payment shall constitute a waiver of all claims against the VILLAGE by the CONSULTANT.

## SECTION 6. TERMINATION/SUSPENSION

6.1 For Cause. This Agreement may be terminated by either party upon three (3) calendar days written notice to the other for breach of any material term or condition of this Agreement. In the event that CONSULTANT abandons this Agreement or causes it to be terminated by the VILLAGE, the CONSULTANT shall indemnify the VILLAGE against any loss pertaining to this termination. In the event that the CONSULTANT is terminated by the VILLAGE for cause and it is subsequently determined by a court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a termination for convenience under Section 6.2 and the provisions of Section 6.2 shall apply.

6.2 For Convenience. This Agreement may be terminated by the VILLAGE for convenience upon five (5) calendar days written notice to the CONSULTANT. In the event of such a termination, the CONSULTANT shall incur no further obligations in connection with the Project and shall, to the extent possible terminate any outstanding subconsultant obligations. The CONSULTANT shall be compensated for all services performed to the satisfaction of the VILLAGE and reimbursable expenses incurred prior to the date of termination. In such event, the CONSULTANT shall promptly submit to the VILLAGE its invoice for final payment and reimbursement which invoice shall comply with the provisions of Paragraph 5.1. Under no circumstances shall the VILLAGE make payment of profit to the CONSULTANT for services which have not been performed.

6.3 Assignment Upon Termination. Upon termination of this Project Agreement, the work product of the CONSULTANT shall become the property of the VILLAGE and the CONSULTANT shall, within ten (10) working days of receipt of written direction from the VILLAGE, transfer to either the VILLAGE or its authorized designee, all work product in its possession, including but not limited to, designs, specifications, drawings, studies, reports and all other documents and digital data in the possession of the CONSULTANT pertaining to this Project Agreement. Upon the VILLAGE'S request, the CONSULTANT shall additionally assign its rights, title and interest under any subcontractor's agreements to the VILLAGE.

6.4 Suspension for Convenience. The VILLAGE shall have the right at any time to direct the CONSULTANT to suspend its performance, or any designated part thereof, for any reason whatsoever, or without reason, for a cumulative period of up to five (5) calendar days. If any such suspension is directed by the VILLAGE, the CONSULTANT shall immediately comply with same. In the event the VILLAGE directs a suspension of performance as provided herein, through no fault of the CONSULTANT, the VILLAGE shall pay the CONSULTANT as full compensation for such suspension the CONSULTANT'S reasonable costs, actually incurred and paid, of demobilization and remobilization.

#### SECTION 7. PERSONNEL ASSIGNED TO PROJECT

7.1 The CONSULTANT shall assign only qualified personnel to perform any services concerning this Project. At the time of execution of this Agreement, the parties anticipate that the following named individuals will perform those supervisory or primary functions indicated:

<u>NAME</u>	<u>FUNCTION</u>
<u>Nadia Locke</u>	<u>Project Manager</u>
<u>Patricia Gertenbach</u>	<u>Technical Advisor</u>
<u>James J. Orioles</u>	<u>Quality Assurance Manager</u>
<u>Rachel E. Vitek</u>	<u>GIS &amp; Data Management</u>
<u>Jennifer Savaro</u>	<u>Field Assessment Lead</u>
<u>Matthew White</u>	<u>Field Assistant</u>

So long as the individuals named above remain actively employed or retained by the CONSULTANT, they shall perform the functions indicated next to their names. Furthermore, the VILLAGE reserves the right to reject any proposed substitution for any of the above-named individuals, and the VILLAGE shall have the further right to require that any individual assigned to the Project by the CONSULTANT be removed from the Project and reassigned for good cause.

#### SECTION 8. SEVERABILITY

If any provision of this Project Agreement or its application to any person or situation shall to any extent, be invalid or unenforceable, the remainder of this Project Agreement, and the



application of such provisions to persons or situations other than those to which it shall have been held invalid or unenforceable shall not be affected thereby, and shall continue in full force and effect, and be enforced to the fullest extent permitted by law.

IN WITNESS WHEREOF, the parties have executed this Agreement on the respective dates under each signature: The VILLAGE, signing by and through its Village Manager, attested to by its Village Clerk, duly authorized to execute same, and by CONSULTANT, by and through its President, duly authorized officer to execute same.

**VILLAGE**

ISLAMORADA, VILLAGE OF ISLANDS, FLORIDA

By: Maria J Bassett  
Maria Bassett, Acting Village Manager / Finance Director

The 5<sup>th</sup> day of October, 2020.

AUTHENTICATION:

Kelly S. Toth  
Kelly Toth, Village Clerk

(SEAL)

APPROVED AS TO FORM AND LEGALITY  
FOR THE USE AND BENEFIT OF ISLAMORADA,  
VILLAGE OF ISLANDS, FLORIDA, ONLY

[Signature]  
Roget V. Bryan, Village Attorney

**CONSULTANT**

E SCIENCES, INC.

By: Peter Pantlow

Print Name: Peter Pantlow

Title: President

The 28<sup>th</sup> day of September, 2020

AUTHENTICATE:

[Signature]  
Secretary  
James Bassett  
Print Name

(CORPORATE SEAL)

WITNESSES:

[Signature]  
Print Name: Sarah Walcott

[Signature]  
Print Name: Liliana Arguello

## **Appendix A**

### **Scope of Work & Project Approach**

**(Updated November 10, 2021)**

Incorporates additional services noted in the attached Proposal No. 7-0505-P02 (revised)

#### **SCOPE OF WORK**

Water quality and benthic vegetation are to be sampled in conjunction, twice a year, from five canals within Islamorada. Sampling is to be conducted once in the wet season (September-October) and once in the dry season (March-April). Canals to be sampled, labeled here with their County ID, are numbers 114, 118, 120, 145, 152. Three of these canals are located on Plantation Key and two are located on Lower Matecumbe Key. This scope follows methodology and protocols established and carried out since the establishment of the program.

#### **Water Quality Sampling**

During each seasonal sampling event, water samples are to be collected at ~~one~~ two fixed stations within each of the five canals. At each of these fixed stations, there is to be a 'bottom' and a 'top' collection. Bottom samples are to be collected at a depth of 1 to 3 feet above the bottom and top samples from 1 to 3 feet below the water surface. Water samples are to be tested for the following chemical variables: Chlorophyll a (CHLa), Ammonium (NH<sub>4</sub>), Nitrate+Nitrite (NO<sub>x</sub>), Nitrite (NO<sub>2</sub>), Soluble Reactive Phosphorous (SRP), Total Nitrogen (TN), Total Phosphorous (TP), Total Organic Carbon (TOC) and Enterococci. A bottom and top measurement of the following physicochemical parameters are also to be performed from the same fixed location in each canal: depth (m), salinity (psu), specific conductivity, temperature (°C), dissolved oxygen (mg/l & % saturation), pH, and turbidity (NTU).

#### **Benthic Habitat Monitoring**

During each seasonal sampling event, ten sampling sites evenly distributed from the canal mouth to the rear of the canal are to be surveyed for benthic plants and animals within each of the five canals. At each of these sites, three 0.25 m<sup>2</sup> quadrats are to be haphazardly placed on the sediment and all species of plants, macroalgae and animals are to be recorded, along with a classification of surface sediment type, a sediment depth measurement, and a canopy height. Density of seagrass, algae and benthic animal species are to be measured using a modified Braun-Blanquet scale or a comparable percent coverage method. Monitoring is to be continued outside each canal where densities of benthic species and sediment type are to be surveyed at 0m, 10m, 50m, 100m and 250m outside the canal mouth using the same methods.

CONSULTANT will be responsible for the collection and laboratory processing of the physicochemical and chemical parameters. CONSULTANT will be responsible for reporting all information collected in the field to the Village, which will include the physicochemical, chemical, and benthic parameters.

Following each bi-annual sampling event, the CONSULTANT will be responsible for a deliverable which documents the results of the sampling event. Reporting will include a summary of field activities, dates of sampling events, production of a geo-referenced station map, data in standard spreadsheet format, and an interpretive report which details the results of the sampling event and compares results to historical values. The CONSULTANT will be responsible for ensuring the results are compiled and a complete data set is submitted to the Village's project manager within a time period specified in this agreement.

The CONSULTANT will be responsible for supplying all equipment necessary to perform the studies. The CONSULTANT will be responsible for obtaining any necessary permits to complete the field studies and be aware of any natural resource protection measures that need to be applied.

Supplemental water quality monitoring may also be requested of the CONSULTANT to be performed in additional canals as they become candidates for or are selected for canal restoration projects. Contractual obligations for this supplemental work would be determined as they arise and do not currently form part of this agreement.

### **Project Schedule**

The project will commence after the execution of this agreement. Field sampling is to be conducted once in the wet season (September-October) and once in the dry season (March-April). The first field work activities will be for the 2020 wet season sampling event. Field work is to be scheduled and completed at the CONSULTANT'S convenience. There are no set dates on when the field work is to be performed; however, it needs to be completed between September 1 - October 31 for the wet season sample and March 1 – April 30 for the dry season sample. During each bi-annual sampling event the Village's project manager is to be notified prior to field activities taking place and is to be notified once they are completed.

This agreement between the VILLAGE and the CONSULTANT is for a one-year term with renewal provisions for four (4) additional one-year periods by the mutual written agreement of both parties. According to this agreement, one year of work will entail one wet and one dry season sample.

### **PROJECT APPROACH**

**Provide in detail the methods that will be utilized to perform the field work portion of this project.**

There will be two monitoring events per year, one during the wet season (September-October) and one in the dry season (March-April). E Sciences will perform the field work for both the benthic resources surveys and water quality sampling during the same field event. Prior to arrival for each event, we will contact the laboratory to have the bottles and coolers ready for our pickup upon arrival. The following provides our general field work strategy.

- Day 1** Our field staff will mobilize to Lower Matecumbe early on the first day and engage a local captain who lives on Canal 152 (and his boat resides at his dock) to mobilize to Canal Numbers 145 and 152 on Lower Matecumbe Key. We will collect the water quality samples at Canal Number 152. We will then collect the surface water quality samples at Canal Number 145 and courier them to the laboratory before 2:00 pm that day so that all required sample holding times are met. The rest of the day will be dedicated to conducting the benthic surveys at Canal Number 145 and then back to 152.
- Day 2** On the second day, we will conduct the benthic surveys and water quality sampling in the same manner for the Bay side canals, Canal Numbers 118 and 120. We will utilize a local boat captain from Anchors Away Boat Rental. Water quality samples will be preserved on ice and delivered to the laboratory by 2:00 pm.
- Day3** Our staff will complete the field work on the third day by conducting the benthic and water quality monitoring on Canal Number 114. Water quality samples will be collected first and transported to the local laboratory in an ice filled cooler by 2:00 pm.
- Day 4** We have built in an additional day in our schedule, as we understand that we have presented a fairly optimistic approach that does not account for unforeseen circumstances.

The following provides a more prescriptive approach the monitoring process that we would implement.

Prior to sampling, high and low tide times will be obtained. To determine the presence of a thermocline and/or halocline, the following field measurements will be collected at each sampling site at the surface and at the bottom and recorded:

- water depth (meters)
- salinity (practical salinity units),
- specific conductivity
- temperature (°C)
- dissolved oxygen (milligrams per liter and % saturation),
- pH
- turbidity (nephelometric turbidity units)

These measurements will be collected using our in-house meters and a weighted measuring tape. Tides will be documented. The presence of thermoclines and haloclines will be evaluated. Field measurements and samples will be collected one to three feet below the water surface and bottom measurements and samples will be collected one to three feet above the canal bottom. Samples will be collected using a Van Dorn or similar sampler. Field measurements and water samples will be collected from a vessel. Measures to avoid sediment disturbance in the immediate area of the sample will be taken. Water samples will be collected in a manner consistent with the FDEP SOPs for surface water sample collection. Samples will be placed in containers provided to us by the laboratory and stored in an ice filled cooler until delivery to the



laboratory. Proper chain of custody protocols will be followed from sample collection until delivery to the laboratory. The laboratory will analyze the samples for the following parameters:

- Chlorophyll a (CHLa)
- Ammonium (NH<sub>4</sub>)
- Nitrate + Nitrite (NO<sub>x</sub>)
- Nitrite (NO<sub>2</sub>)
- Soluble Reactive Phosphorous (SRP)
- Total Nitrogen (TN)
- Total Phosphorous (TP)
- Total Organic Carbon (TOC)
- Enterococci

Two E Sciences' divers will conduct benthic (seagrass, coral and algae) surveys at each of the five canals during each seasonal sampling event. Prior to the surveys, ten evenly spaced transects perpendicular to shore and distributed through the canal (i.e. canal mouth to the rear of the canal). These locations will be determined in ArcGIS in advance of the field work and uploaded into a Global Positioning System (GPS) to be used in the field. Once in the field, a transect tape will be deployed using the predetermined GPS coordinates for the first site of the canal. Diver one will haphazardly place a 0.25 m<sup>2</sup> quadrat along the transect while Diver two haphazardly places a second 0.25 m<sup>2</sup> quadrat along the same transect. After the first diver is complete with their quadrat, a third 0.25 m<sup>2</sup> quadrat will be haphazardly placed along the same transect. Each quadrat will be monitored using the modified Braun-Blanquet scale. Data sheets will be prepared prior to the field visit with each of the possible sessile functional that could be observed. Estimate percent cover will be measured from a bird's eye view of the quadrat. Functional groups that would be included in the data sheets include sediment, macroalgae, sponge, octocoral, hard coral, tunicate, seagrass and other. Representative photographs will be taken at each quadrat. Seagrass will be identified to the species level. Macroalgae and octocoral will be identified to the genus level. Sponges will be identified to their morphology and corals will be identified to the species level. Additionally, individual coral, octocoral and sponge size (i.e. length and width for coral and height for octocoral), percent mortality and condition for each individual will be recorded. Sediment depths will be collected at the center of each quadrat. Next, E Sciences divers will place three quadrats haphazardly along transects located at 0m, 10m, 50m, 100m and 250m outside of the canal mouth. Benthic species and sediment type will be surveyed using the same methods. These survey methods will be repeated for each of the five canals.

### **Describe in detail how the water samples are to be processed including proposed laboratory facilities**

We have selected Flowers Chemical Laboratories' Marathon laboratory for this project. This will allow us to meet the requisite hold times. We will request three coolers and six sets of sample bottles (one extra in case of breakage) ahead of time so that we have the opportunity to ensure that the correct containers are provided and so that we can partially pre-label them for

efficiency. Ice will be purchased in advance of sample collection so that samples never exceed appropriate storage temperatures. Water samples will be collected in the containers provided to us by the laboratory in advance of the field work. Samples will be placed in the laboratory containers, labeled individually, and sealed. Chain of custody forms will be completed for each sample event. We will prearrange each day with the laboratory so that the samples can be processed within the required holding times.

**Describe available equipment and field gear to be utilized for this project, including vessel(s) and ability to tow and launch a vessel.**

We will use our inhouse equipment to collect salinity, specific conductivity, temperature, dissolved oxygen and pH. We own YSI 556 Water Quality Multimeters and Lamotte Turbidity 2020E meters. A weighted tape measure will be used measure the depth of the canals. A Van Dorn or similar sampler will be used to collect the water samples. Additional equipment required includes sample bottles, ice, coolers, datasheets, clipboards, field notebook, pens, Deionized water and gloves.

During the on-water work, life vests, first aid kits, and a VHF radio will be available for field staff. The following equipment will be utilized during the benthic surveys: vessel dive flag, dive flag buoy, SCUBA equipment, GPS, clipboards, datasheets, pencils, rulers, underwater cameras, location map, transect tapes, and 0.25 m<sup>2</sup> quadrats.

E Sciences has evaluated several options for vessel use. E Sciences owns a 16-foot tracker boat that we frequently use for conducting benthic surveys and sampling. We also maintain three vehicles that are capable of towing the boat safely to the survey locations. The staff we have proposed for this project are experienced in trailering this boat with our vehicles. However, due to the short hold time for water quality samples, we acknowledge that it is imperative for us to collect water quality samples early each day so that we can have them delivered to the laboratory each day by 2:00 pm. To address this critical path task, we have determined that it will be more efficient for us to use local boats that will be at a dock and ready to launch first thing in the morning. We have identified boats and captains at Lower Matecumbe Key and Tavernier Creek that we intend to use. During the first monitoring period, we will evaluate this process and consider if trailering and launching the E Sciences boat would improve the project and adjust accordingly if appropriate.

**Describe the ability to enter, analyze, interpret and report the data to the Village as described in the Scope of Work.**

In addition to our water quality and benthic survey expertise, E Sciences implements a QA/QC program that includes using FDEP-adopted SOPs for field work and sampling. Our staff regularly use GIS to produce geo-referenced maps in our reports. All of our documents are produced in accordance with our QA/QC program that includes robust reviews and sign-off of documents by senior technical staff of all reports, tables, figures and graphs. This ensures you will receive quality bi- annual reports summarizing field activities, dates of sampling events, data results presented in



tabular format, graphs, GIS maps, and a narrative interpretation of the sampling results that includes comparison of current water quality monitoring and benthic surveying results to historical values.

### **PAYMENT SCHEDULE**

<b>% Work Complete</b>	<b>Deliverable</b>	<b>Timeframe</b>	<b>Invoice/ Payment Amount</b>
25	Letter report confirming completion of wet season field sampling event	Within one week following completion of wet season field sampling event	<del>\$13,000</del> <u>\$16,250</u>
50	Interpretive report and data from wet season sampling event	Within 60 days following the end of the wet season sampling period	<del>\$13,000</del> <u>\$16,250</u>
75	Letter report confirming completion of dry season field sampling event	Within one week following completion of dry season field sampling event	<del>\$13,000</del> <u>\$16,250</u>
100	Interpretive report and data from dry season sampling event	Within 60 days following the end of the dry season sampling period	<del>\$13,000</del> <u>\$16,250</u>



**ENGINEERING  
ENVIRONMENTAL  
ECOLOGICAL**

November 11, 2021

Peter Frezza  
Environmental Resources Manager  
Islamorada, Village of Islands  
86800 Overseas Highway, 3<sup>rd</sup> Floor  
Islamorada, FL 33036

**Subject: Proposal for Additional Water Quality Monitoring  
Five Residential Canals  
Islamorada, Monroe County, Florida  
E Sciences Proposal Number 7-0505-P02 (revised)**

Dear Mr. Frezza:

E Sciences, Inc. (E Sciences) is pleased to submit this proposal to provide additional water quality monitoring to support the on-going water quality and benthic vegetation monitoring being performed for Islamorada, Village of Islands (the Village). Included, and incorporated as part of this proposal, is an outline of the project background, the proposed scope of services, our fee, the proposed schedule, and authorization procedures including the terms and conditions governing the project. This proposal has been revised to reduce the scope to meet budgetary constraints.

## **BACKGROUND INFORMATION**

E Sciences' understanding of the project is based upon email communications with you and services being provided to under an existing agreement. The following summarizes our understanding of the project:

E Sciences issued a report summarizing the Spring 2021 monitoring event on July 30, 2021, that outlined the services that we had performed for the Village under project number 7-0505-001. Under this agreement E Sciences performed water quality and benthic vegetation monitoring and reporting. In our report, we outlined the following recommendations:

E Sciences has the following recommendations for the Village to consider during the next monitoring event:

1. A second water sampling location in the middle of each canal would provide a better understanding of the water quality in the canals. The sampling point established by FIU represents the water quality at the terminus of the canal.
2. A background sample to be collected 500 meters from the mouth of the canal would allow us to better interpret some of the data, as some of the state water quality thresholds utilize background conditions to assess water quality. This would also allow us to

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evaluate the data relative to background conditions.

3. If abnormal measurements are observed while obtaining field parameters, these locations will be monitored again at a later time during the monitoring event to verify these results.
4. The 250 meters transect from Canal 114 will be removed from the benthic monitoring based upon the presence of a mangrove forest.
5. We recommend limiting the data being collected outside of Canals 114 and 145 due to the presence of boat traffic.
6. We recommend incorporating data from other studies to compare the results of future data collections to water quality monitoring data being collected in the Keys by other public agencies.

Of these recommendations, item numbers 1, 2 and 6 would require additional labor and/or laboratory costs. Item 3 would not result in additional cost to the Village. Items 4 and 5 would reduce labor efforts for the next monitoring event. This proposal was prepared to incorporate the item numbers 1, 3, 5 and 5 as appropriate.

## **PROPOSED SCOPE OF SERVICES**

E Sciences will establish a second water sampling location near the middle of each canal system. Samples will be collected in accordance with the Florida Department of Environmental Protection Standard Operating Procedures. Field measurements will be collected using YSI ProDSS Meter and a Hach 2100Q Turbidimeter, or similar equipment. Data will be recorded on site specific sampling logs. Calibration checks will be conducted prior to sample collection and calibrations as needed. Field parameters to be collected are outlined as follows:

- water depth;
- salinity;
- specific conductivity;
- temperature;
- dissolved oxygen;
- pH; and
- turbidity.

Laboratory samples will be placed in containers provided by the laboratory to be used for this project, Flowers Chemical Laboratories (Flowers) in Marathon, Florida. Flowers is a NELAC-accredited laboratory. The laboratory will analyze the water quality samples for the following parameters:

Laboratory Analytical Parameters	
Parameter Analyzed	Test Method
Ammonium (NH <sub>4</sub> )	EPA350.1
Chlorophyll-a (CHL-a)	SM10200 H
<i>Enterococci</i>	ENTEROLERT
Nitrate + Nitrite (NO <sub>x</sub> )	EPA353.2
Soluble Reactive Phosphorous (SRP)	EPA365.1
Total Nitrogen (TN)	TotNit
Total Phosphorous (TP)	EPA365.1
Total Organic Carbon (TOC)	SM5310 C

## FEE

We will provide the above scope items for the following lump sum fee of \$7,500 per event. This task will be invoiced with the work being conducted under our existing agreement. If unforeseen conditions should require services beyond the scope of services described herein, E Sciences will notify you of additional costs necessary to complete the project, prior to proceeding. Services beyond those described herein would be invoiced in accordance with our standard schedule of fees at the applicable rates. Please note that payment of our invoice is due upon receipt.

## SCHEDULE

Sampling activities will be incorporated into the schedule for the benthic and water quality monitoring already being performed for the Village starting in 2022.

## **AUTHORIZATION**

As our written authorization, please provide an amendment to our existing agreement referencing this proposal.

We appreciate the opportunity to offer our professional services on this project. If you have any questions concerning this proposal, please contact us at (954) 484-8500.

Sincerely,  
**E SCIENCES, INCORPORATED**



Jennifer Savaro  
Project Scientist



Nadia Locke, PE, LEED AP  
Senior Associate