



**Request for Proposal (RFP) for
Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid**

Solicitation Number:	10089746-21-W
Solicitation Issue Date:	February 1, 2021
Questions and Comments Due:	February 5, 2021 @ 12:00 p.m.
Proposal Due Date and Time (Closing Date):	February 23, 2021 @ 2:00 p.m.
Contract Terms:	Three (3) years from Effective Date, with two (2) additional one (1) year periods, as defined in Article I, Section 1.2 of the City's General Contract Terms and Provisions.
City Contact:	Michael Warner Senior Procurement Contracting Officer 1200 Third Avenue, Suite 200 San Diego, CA 92101 MWarner@sandiego.gov (619) 236-6154
Submissions:	Respondent is required to provide One (1) original and one (1) electronic copy (e.g. thumb drive or CD) of their response as described herein. Completed and signed RFP signature page is required, with most recent addendum listed as acknowledgement of all addenda issued. Note: Emailed submissions will not be accepted. Due to COVID-19, electronic copies submitted through PlanetBids will be accepted. Instructions for electronic submissions are provided as an attachment in PlanetBids.

**CONTRACT RESULTING FROM REQUEST FOR PROPOSAL NUMBER 10089746-21-W,
Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid**

This Contract (Contract) is entered into by and between the City of San Diego, a municipal corporation (City), and the successful proposer to Request for Proposal (RFP) # 10089746-21-W, Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid (Contractor).

RECITALS

On or about 2/1/2021, City issued an RFP to prospective proposers on services to be provided to the City. The RFP and any addenda and exhibits thereto are collectively referred to as the "RFP." The RFP is attached hereto as Exhibit A.

City has determined that Contractor has the expertise, experience, and personnel necessary to provide the Goods and Services.

City wishes to retain Contractor to provide automated in-water quality monitoring services as further described in the Scope of Work, attached hereto as Exhibit B. (Goods and Services).

For good and valuable consideration, the sufficiency of which is acknowledged, City and Contractor agree as follows:

**ARTICLE I
CONTRACTOR SERVICES**

1.1 Scope of Work. Contractor shall provide the Goods and Services to City as described in Exhibit B which is incorporated herein by reference. Contractor will submit all required forms and information described in Exhibit A to the Purchasing Agent before providing Goods and Services.

1.2 General Contract Terms and Provisions. This Contract incorporates by reference the General Contract Terms and Provisions, attached hereto as Exhibit C.

1.3 Contract Administrator. The Public Utilities Department (Department) is the Contract Administrator for this Agreement. Contractor shall provide the Services under the direction of a designated representative of the Department as follows:

Fabiola Amarillas, Associate Engineer - Civil
9192 Topaz Way, San Diego, CA 92123
619-533-5437
FAmarillas@sandiego.gov

Maria Corazon Ventura, Assistant Engineer
9192 Topaz Way, San Diego, CA 92123
858-614-4557
MVentura@sandiego.gov

**ARTICLE II
DURATION OF CONTRACT**

2.1 Term. This Contract shall be for a period of three (3) years beginning on the Effective Date. City may, in its sole discretion, extend this Contract for two (2) additional one (1) year period(s) beginning on the Effective Date. The term of this Contract shall not exceed five years unless approved by the City Council by ordinance.

2.2 Effective Date. This Contract shall be effective on the date it is executed by the last Party to sign the Contract, and approved by the City Attorney in accordance with San Diego Charter Section 40.

ARTICLE III COMPENSATION

3.1 Amount of Compensation. City shall pay Contractor for performance of all Services rendered in accordance with this Contract in an amount not to exceed \$ 1,000,000.00.
(The not to exceed amount will be added in this final Contract prior to the final execution of the Contract by the City, with the Contractor's initials indicating acceptance.)

DUM
6/2/21

ARTICLE IV WAGE REQUIREMENTS

4.1 By submitting a response to this RFP, Contractor certifies that he or she is aware of, and agrees to comply with, the wage provisions described in Exhibit D, Wage Requirements, which is incorporated herein by reference, before commencing Services.

ARTICLE V CONTRACT DOCUMENTS

5.1 Contract Documents. The following documents comprise the Contract between the City and Contractor: this Contract and all exhibits thereto, the RFP; the Notice to Proceed; and the City's written acceptance of exceptions or clarifications to the RFP, if any.

5.2 Contract Interpretation. The Contract Documents completely describe the Goods and Services to be provided. Contractor will provide any Goods and Services that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for or identified in the Contract Documents. Words or phrases which have a well-known technical or construction industry or trade meaning and are used to describe Goods and Services will be interpreted in accordance with that meaning unless a definition has been provided in the Contract Documents.

5.3 Precedence. In resolving conflicts resulting from errors or discrepancies in any of the Contract Documents, the Parties will use the order of precedence as set forth below. The 1st document has the highest priority. Inconsistent provisions in the Contract Documents that address the same subject, are consistent, and have different degrees of specificity, are not in conflict and the more specific language will control. The order of precedence from highest to lowest is as follows:

- 1st Any properly executed written amendment to the Contract
- 2nd The Contract
- 3rd The RFP and the City's written acceptance of any exceptions or clarifications to the RFP, if any
- 4th Contractor's Pricing

5.4 Counterparts. This Contract may be executed in counterparts which, when taken together, shall constitute a single signed original as though all Parties had executed the same page.

5.5 Public Agencies. Other public agencies, as defined by California Government Code section 6500, may choose to use the terms of this Contract, subject to Contractor's acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

Soundnine Inc

Proposer
11863 124th Ave NE

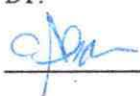
Street Address
Kirkland, WA 98034

City
866-388-7277

Telephone No.
darius@soundnine.com

E-Mail

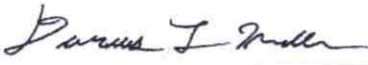
CITY OF SAN DIEGO
A Municipal Corporation

BY: 

Print Name: Chudra C. Parra
Director, Purchasing & Contracting Department

October 13, 2021

Date Signed

BY: 

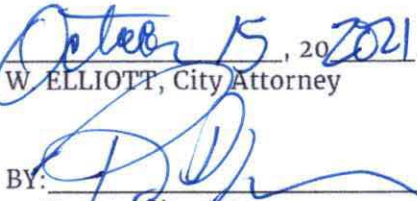
Signature of
Proposer's Authorized
Representative
Darius Miller

Print Name
president, Soundnine Inc

Title
3/11/21

Date

Approved as to form this 15th day of

October 15, 2021. MARA

W. ELLIOTT, City Attorney
BY: _____
Deputy City Attorney

**EXHIBIT A
PROPOSAL SUBMISSION AND REQUIREMENTS**

A. PROPOSAL SUBMISSION

1. Timely Proposal Submittal. Proposals must be submitted as described herein to the Purchasing & Contracting Department (P&C).

1.1 Reserved.

1.2 Paper Proposals. The City will accept paper proposals in lieu of eProposals. Paper proposals must be submitted in a sealed envelope to the Purchasing & Contracting Department (P&C) located at 1200 Third Avenue, Suite 200, San Diego, CA 92101. The Solicitation Number and Closing Date must be referenced in the lower left-hand corner of the outside of the envelope. Faxed proposals will not be accepted.

1.3 Proposal Due Date. Proposals must be submitted prior to the Closing Date indicated on the eBidding System. E-mailed and/or faxed proposals will not be accepted.

1.4 Pre-Proposal Conference. No pre-proposal conference will be held for RFP.

1.4.1 Reserved.

1.5 Questions and Comments. Written questions and comments must be submitted electronically via the eBidding System no later than the date specified on the eBidding System. Only written communications relative to the procurement shall be considered. The City's eBidding System is the only acceptable method for submission of questions. All questions will be answered in writing. The City will distribute questions and answers without identification of the inquirer(s) to all proposers who are on record as having received this RFP, via its eBidding System. No oral communications can be relied upon for this RFP. Addenda will be issued addressing questions or comments that are determined by the City to cause a change to any part of this RFP.

1.6 Contact with City Staff. Unless otherwise authorized herein, proposers who are considering submitting a proposal in response to this RFP, or who submit a proposal in response to this RFP, are prohibited from communicating with City staff about this RFP from the date this RFP is issued until a contract is awarded.

2. Proposal Format and Organization. Unless electronically submitted, all proposals should be securely bound and must include the following completed and executed forms and information presented in the manner indicated below:

Tab A - Submission of Information and Forms.

2.1 Completed and signed Contract Signature Page. If any addenda are issued, the latest Addendum Contract Signature Page is required.

2.2 Exceptions requested by proposer, if any. The proposer must present written factual or legal justification for any exception requested to the Scope of Work, the Contract, or the Exhibits thereto. Any exceptions to the Contract that have not been accepted

by the City in writing are deemed rejected. The City, in its sole discretion, may accept some or all of proposer's exceptions, reject proposer's exceptions, and deem the proposal non-responsive, or award the Contract without proposer's proposed exceptions. The City will not consider exceptions addressed elsewhere in the proposal.

2.3 The Contractor Standards Pledge of Compliance Form.

2.4 Equal Opportunity Contracting forms including the Work Force Report and Contractors Certification of Pending Actions.

2.5 Reserved.

2.6 Reserved.

2.7 Reserved.

2.8 Additional Information as required in Exhibit B.

2.9 Reserved.

Tab B - Executive Summary and Responses to Specifications.

2.10 A title page.

2.11 A table of contents.

2.12 An executive summary, limited to one typewritten page, that provides a high-level description of the proposer's ability to meet the requirements of the RFP and the reasons the proposer believes itself to be best qualified to provide the identified services.

2.13 Proposer's response to the RFP.

Tab C - Cost/Price Proposal (if applicable). Proposers shall submit a cost proposal in the form and format described herein. Failure to provide cost(s) in the form and format requested may result in proposal being declared non-responsive and rejected.

3. Proposal Review. Proposers are responsible for carefully examining the RFP, the Specifications, this Contract, and all documents incorporated into the Contract by reference before submitting a proposal. If selected for award of contract, proposer shall be bound by same unless the City has accepted proposer's exceptions, if any, in writing.

4. Addenda. The City may issue addenda to this RFP as necessary. All addenda are incorporated into the Contract. The proposer is responsible for determining whether addenda were issued prior to a proposal submission. Failure to respond to or properly address addenda may result in rejection of a proposal.

5. Quantities. The estimated quantities provided by the City are not guaranteed. These quantities are listed for informational purposes only. Quantities vary depending on the demands of the City. Any variations from the estimated quantities shall not entitle the proposer to an adjustment in the unit price or any additional compensation.

6. Quality. Unless otherwise required, all goods furnished shall be new and the best of their kind.

6.1 Items Offered. Proposer shall state the applicable trade name, brand, catalog, manufacturer, and/or product number of the required good, if any, in the proposal.

6.2 Brand Names. Any reference to a specific brand name in a solicitation is illustrative only and describes a component best meeting the specific operational, design, performance, maintenance, quality, or reliability standards and requirements of the City. Proposer may offer an equivalent or equal in response to a brand name referenced (Proposed Equivalent). The City may consider the Proposed Equivalent after it is subjected to testing and evaluation which must be completed prior to the award of contract. If the proposer offers an item of a manufacturer or vendor other than that specified, the proposer must identify the maker, brand, quality, manufacturer number, product number, catalog number, or other trade designation. The City has complete discretion in determining if a Proposed Equivalent will satisfy its requirements. It is the proposer's responsibility to provide, at their expense, any product information, test data, or other information or documents the City requests to properly evaluate or demonstrate the acceptability of the Proposed Equivalent, including independent testing, evaluation at qualified test facilities, or destructive testing.

7. Modifications, Withdrawals, or Mistakes. Proposer is responsible for verifying all prices and extensions before submitting a proposal.

7.1 Modification or Withdrawal of Proposal Before Proposal Opening. Prior to the Closing Date, the proposer or proposer's authorized representative may modify or withdraw the proposal by providing written notice of the proposal modification or withdrawal to the City Contact via the eBidding System. E-mail or telephonic withdrawals or modifications are not permissible.

7.2 Proposal Modification or Withdrawal of Proposal After Proposal Opening. Any proposer who seeks to modify or withdraw a proposal because of the proposer's inadvertent computational error affecting the proposal price shall notify the City Contact identified on the eBidding System no later than three working days following the Closing Date. The proposer shall provide worksheets and such other information as may be required by the City to substantiate the claim of inadvertent error. Failure to do so may bar relief and allow the City recourse from the bid surety. The burden is upon the proposer to prove the inadvertent error. If, as a result of a proposal modification, the proposer is no longer the apparent successful proposer, the City will award to the newly established apparent successful proposer. The City's decision is final.

8. Incurred Expenses. The City is not responsible for any expenses incurred by proposers in participating in this solicitation process.

9. Public Records. By submitting a proposal, the proposer acknowledges that any information submitted in response to this RFP is a public record subject to disclosure unless the City determines that a specific exemption in the California Public Records Act (CPRA) applies. If the proposer submits information clearly marked confidential or proprietary, the City may protect such information and treat it with confidentiality to the extent permitted by law. However, it will be the responsibility of the proposer to provide to the City the specific legal grounds on which the City can rely in withholding information requested under the CPRA should the City choose to withhold such information. General references to sections of

the CPRA will not suffice. Rather, the proposer must provide a specific and detailed legal basis, including applicable case law, that clearly establishes the requested information is exempt from the disclosure under the CPRA. If the proposer does not provide a specific and detailed legal basis for requesting the City to withhold proposer's confidential or proprietary information at the time of proposal submittal, City will release the information as required by the CPRA and proposer will hold the City, its elected officials, officers, and employees harmless for release of this information. It will be the proposer's obligation to defend, at proposer's expense, any legal actions or challenges seeking to obtain from the City any information requested under the CPRA withheld by the City at the proposer's request. Furthermore, the proposer shall indemnify and hold harmless the City, its elected officials, officers, and employees from and against any claim or liability, and defend any action brought against the City, resulting from the City's refusal to release information requested under the CPRA which was withheld at proposer's request. Nothing in the Contract resulting from this proposal creates any obligation on the part of the City to notify the proposer or obtain the proposer's approval or consent before releasing information subject to disclosure under the CPRA.

10. Right to Audit. The City Auditor may access proposer's records as described in San Diego Charter section 39.2 to confirm contract compliance.

B. PRICING

1. Fixed Price. All prices shall be firm, fixed, fully burdened, FOB destination, and include any applicable delivery or freight charges, and any other costs required to provide the requirements as specified in this RFP. The lowest total estimated contract price of all the proposals that meet the requirements of this RFP will receive the maximum assigned points to this category as set forth in this RFP. The other price schedules will be scored based on how much higher their total estimated contract prices compare with the lowest:

$$\left(1 - \frac{(\text{contract price} - \text{lowest price})}{\text{lowest price}}\right) \times \text{maximum points} = \text{points received}$$

For example, if the lowest total estimated contract price of all proposals is \$100, that proposal would receive the maximum allowable points for the price category. If the total estimated contract price of another proposal is \$105 and the maximum allowable points is 60 points, then that proposal would receive $(1 - ((105 - 100) / 100)) \times 60 = 57$ points, or 95% of the maximum points. The lowest score a proposal can receive for this category is zero points (the score cannot be a negative number). The City will perform this calculation for each Proposal.

2. Taxes and Fees. Taxes and applicable local, state, and federal regulatory fees should not be included in the price proposal. Applicable taxes and regulatory fees will be added to the net amount invoiced. The City is liable for state, city, and county sales taxes but is exempt from Federal Excise Tax and will furnish exemption certificates upon request. All or any portion of the City sales tax returned to the City will be considered in the evaluation of proposals.

3. Escalation. An escalation factor is not allowed unless called for in this RFP. If escalation is allowed, proposer must notify the City in writing in the event of a decline in

market price(s) below the proposal price. At that time, the City will make an adjustment in the Contract or may elect to re-solicit.

4. Unit Price. Unless the proposer clearly indicates that the price is based on consideration of being awarded the entire lot and that an adjustment to the price was made based on receiving the entire proposal, any difference between the unit price correctly extended and the total price shown for all items shall be offered shall be resolved in favor of the unit price.

C. EVALUATION OF PROPOSALS

1. Award. The City shall evaluate each responsive proposal to determine which proposal offers the City the best value consistent with the evaluation criteria set forth herein. The proposer offering the lowest overall price will not necessarily be awarded a contract.

2. Sustainable Materials. Consistent with Council Policy 100-14, the City encourages use of readily recyclable submittal materials that contain post-consumer recycled content.

3. Evaluation Process.

3.1 Process for Award. A City-designated evaluation committee (Evaluation Committee) will evaluate and score all responsive proposals. The Evaluation Committee may require proposer to provide additional written or oral information to clarify responses. Upon completion of the evaluation process, the Evaluation Committee will recommend to the Purchasing Agent that award be made to the proposer with the highest scoring proposal.

3.2 Reserved.

3.3 Reserved.

3.4 Discussions/Negotiations. The City has the right to accept the proposal that serves the best interest of the City, as submitted, without discussion or negotiation. Contractors should, therefore, not rely on having a chance to discuss, negotiate, and adjust their proposals. The City may negotiate the terms of a contract with the winning proposer based on the RFP and the proposer's proposal, or award the contract without further negotiation.

3.5 Inspection. The City reserves the right to inspect the proposer's equipment and facilities to determine if the proposer is capable of fulfilling this Contract. Inspection will include, but not limited to, survey of proposer's physical assets and financial capability. Proposer, by signing the proposal agrees to the City's right of access to physical assets and financial records for the sole purpose of determining proposer's capability to perform the Contract. Should the City conduct this inspection, the City reserves the right to disqualify a proposer who does not, in the City's judgment, exhibit the sufficient physical and financial resources to perform this Contract.

3.6 Evaluation Criteria. The following elements represent the evaluation criteria that will be considered during the evaluation process:

	MAXIMUM EVALUATION POINTS
A. Responsiveness to the RFP.	20
1. Requested information included and thoroughness of response;	
2. Understanding of the project and ability to deliver as outlined in the Scope of Work;	
3. Technical Aspects	
B. Staffing Plan.	30
1. Qualifications of personnel adequate for requirement;	
2. Availability/Geographical location of personnel for required tasks;	
3. Clearly defined Roles/Responsibilities of personnel;	
4. Documentation proof for Staff who have passed/cleared any security background checks	
C. Firm's Capability to provide the services and expertise and Past Performance.	40
1. Relevant experience of the Firm and any subcontractors;	
2. Previous relationship of firm and subcontractors on similar projects;	
3. Specific experience with SIMC and telemetry relay technology;	
4. Other pertinent experience;	
5. Past/Prior Performance;	
6. Capacity/Capability to meet The City of San Diego needs in a timely manner	
7. Reference checks	
D. Price.	10
SUB TOTAL MAXIMUM EVALUATION POINTS:	100
E. Participation by Small Local Business Enterprise (SLBE) or Emerging Local Business Enterprise (ELBE) Firms*	12
FINAL MAXIMUM EVALUATION POINTS INCLUDING SLBE/ELBE:	112

*The City shall apply a maximum of an additional 12 percentage points to the proposer's final score for SLBE OR ELBE participation. Refer to Equal Opportunity Contracting Form, Section V.

D. ANNOUNCEMENT OF AWARD

1. Award of Contract. The City will inform all proposers of its intent to award a Contract in writing.

2. Obtaining Proposal Results. No solicitation results can be obtained until the City announces the proposal or proposals best meeting the City's requirements. Proposal results may be obtained by: (1) e-mailing a request to the City Contact identified on the eBidding System or (2) visiting the P&C eBidding System to review the proposal results. To ensure an accurate response, requests should reference the Solicitation Number. Proposal results will not be released over the phone.

3. Multiple Awards. City may award more than one contract by awarding separate items or groups of items to various proposers. Awards will be made for items, or combinations of items, which result in the lowest aggregate price and/or best meet the City's requirements. The additional administrative costs associated with awarding more than one Contract will be considered in the determination.

E. PROTESTS. The City's protest procedures are codified in Chapter 2, Article 2, Division 30 of the San Diego Municipal Code (SDMC). These procedures provide unsuccessful proposers with the opportunity to challenge the City's determination on legal and factual grounds. The City will not consider or otherwise act upon an untimely protest.

F. SUBMITTALS REQUIRED UPON NOTICE TO PROCEED. The successful proposer is required to submit the following documents to P&C **within ten (10) business days** from the date on the Notice to Proceed letter:

1. Insurance Documents. Evidence of all required insurance, including all required endorsements, as specified in Article VII of the General Contract Terms and Provisions.

2. Taxpayer Identification Number. Internal Revenue Service (IRS) regulations require the City to have the correct name, address, and Taxpayer Identification Number (TIN) or Social Security Number (SSN) on file for businesses or persons who provide goods or services to the City. This information is necessary to complete Form 1099 at the end of each tax year. To comply with IRS regulations, the City requires each Contractor to provide a Form W-9 prior to the award of a Contract.

3. Business Tax Certificate. Unless the City Treasurer determines a business is exempt, all businesses that contract with the City must have a current business tax certificate.

4. Reserved.

5. Reserved.

The City may find the proposer to be non-responsive and award the Contract to the next highest scoring responsible and responsive proposer if the apparent successful proposer fails to timely provide the required information or documents.

EXHIBIT B SCOPE OF WORK

A. OVERVIEW

The primary goal of this Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) project is to contract out the design, installation, operation, service and maintenance of the Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) to monitor the dynamics and quality of water at the Miramar Reservoir during construction activities (Pure Water Pipeline tunnel entry into the reservoir and the Subaqueous Pipeline project).

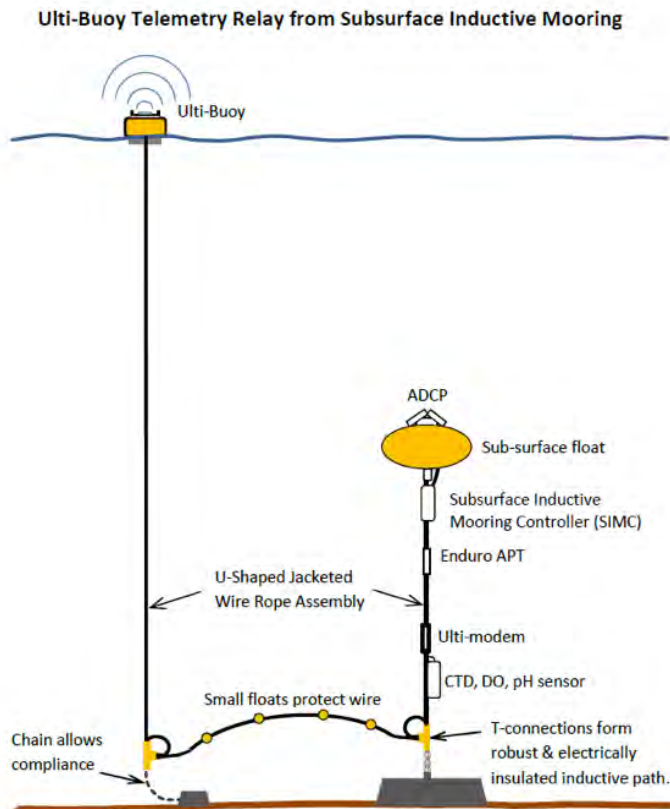
B. BACKGROUND

The automated in-water quality monitoring system includes a telemetry relay buoy, sub surface float, sub-surface inductive mooring controller (SIMC), mooring system and weights assemblies for water quality monitoring in Miramar Reservoir. It will be installed in Miramar Reservoir at location near the West end of the reservoir near the dam and outlet tower (Latitude: 32.9133° Longitude: -117.1042°; see location map below).

The system will be operated and maintained by the Proposer in coordination with Pure Water staff. The system consists of three (3) moored buoys and suspended string of sensors that will measure temperature, dissolved oxygen, pH, electrical conductivity [yields TDS], and turbidity. Sensors will be located at the surface of the reservoir (0.2 m deep) and at fixed elevations corresponding to the level of each reservoir outlet. The water surface elevation in the reservoir ranges from 713 to 695. A total of 6 sensor arrays will be required at depths of 1.5', 10', 25', 40', 54' and 91'+/- (10' off bottom). Measurements will be made at set intervals, typically every 15 minutes. An on-board datalogger will record data which will be automatically transferred via a radio-link to a central repository for assessment, action, and archive. Within the datalogger and data transfer system, alarm levels will be established for turbidity corresponding to the 1.9 NTU Numerical Action Limits (NAL) and 2.23 NTU Numerical Exceedance Limits (NEL).

C. DESIGN, FABRICATE, BUILD, AND INSTALLATION OF AIWQMS

1. The Proposer shall design, fabricate, build, and install a three-unit sub surface float and mooring system with SIMC, data recorder, modem, temperature, dissolved oxygen, pH, electrical conductivity [yields TDS], and turbidity sensors, T-connections and electrically insulated inductive path system settings, weights and chains assemblies, as shown in the Ulti-Buoy Telemetry Relay from Subsurface Inductive Mooring described picture below (*Note: While the picture shows an ADCP, an ADCP is not needed*):

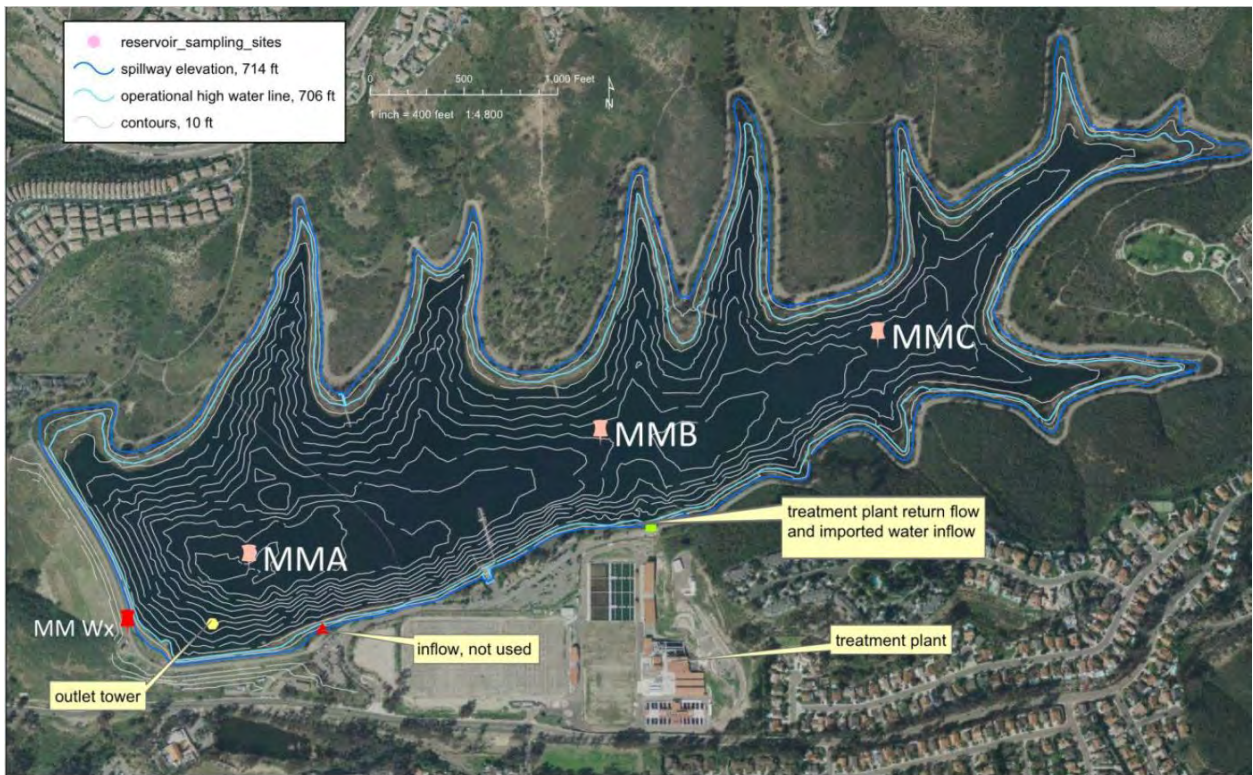


2. The Proposer shall provide the hardware, labor, and services associated with the system installation, operation, maintenance, and calibration of instruments.

The Proposer shall provide recommended telemetry relay, SIMC, data recorder, modem temperature, dissolved oxygen, pH, electrical conductivity [yields TDS], and turbidity; T-connections and electrically insulated inductive path system settings, weights, and chains assemblies.

3. The Proposer shall provide design instrument integration, testing, and data system development which include but not limited to:
 - a. Develop data management system;
 - b. Conduct initial data processing and data verification;
 - c. Host data and post data to the Pure Water site;
 - d. Maintain data management system: such as the server, modems and cell phone plans for the mooring real-time capabilities;
 - e. Provide training to City Pure Water staff on retrieving data from associated software and assist with data requests and analysis.

4. The Proposer shall perform the system start up, operation, and maintenance. Tasks include but not limited to:
 - a. Logistics and planning for the initial testing and system operation;
 - b. Provide operations manual and best monitoring practices;
 - c. Review and provide support to resolve common troubleshooting practices.
5. The Proposer shall provide the City of San Diego Pure Water staff with training and technical support on the telemetry relay technology management and relevant analyses. The training shall be a combination of one-time classroom training with the training manuals and a week of field training.
6. Miramar Reservoir Monitoring Location Map:



D. REFERENCES

Proposer must demonstrate that they are properly equipped to perform the work as specified in this RFP. The City reserves the right to contact references not provided by the Proposer. References shall be provided in accordance with the attached form.

Proposer is required to provide a minimum of three (3) references to demonstrate successful performance for work of similar size and scope as specified in this contract during the past seven (7) years. References shall be submitted on the Contractor Standards Pledge of Compliance form attached to this RFP. Proposer cannot provide a current City of San Diego

staff member as a reference. If a City staff member is provided, the Proposer will be required to provide an additional reference.

Proposer is required to state all subcontractors to be used in the performance of the proposed contract, and what portion of work will be assigned to each Subcontractor on the form attached to this RFP.

The City shall rely on references as part of the evaluation process. The City reserves the right to take any or all of the following actions: reject a proposal based on an unsatisfactory reference(s), to contact any person or persons associated with the reference, to request additional references, to contact organizations known to have used in the past or currently using the services supplied by the Proposer or the Proposer’s Subcontractors (as listed in Contractor Standards Pledge of Compliance form attached to this RFP), and to contact independent firms for additional information about the Proposer or the Proposer’s Subcontractors.

E. DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER. Per Section II.A.9:

	Registration No.	Expiration Date	Name
DIR Registration No.	PW-LR-1000756752	6/30/2022	Soundnine, Inc.

F. CERTIFICATIONS/LICENSES/PERMITS

To perform the work described in this solicitation, Contractor shall, without additional expense to the City, secure and maintain in force such certifications, licenses and permits as are required by law, in connection with performance to a City contract resulting from this solicitation. Examples of certifications that may be required include but not limited to:

- Restricted Surface Supplied Air Diver Certification with Occupational SCUBA Diver Endorsement, issued by the Diver Certification Board
- Association of Dive Contractors International (ADCI) Entry Level Tender/Diver – International Endorsement Certification
- First Aid, CPR, A.E.D. and Oxygen Provider
- Job Safety Analysis (JSA) Certificate
- Qualified Rigger API (RP-2D) (REV-7)
- Level I Liquid Penetrant Testing 4-hour Initial Training Certificate (NDT) & Level II Magnetic Particle Testing 20-hour Initial Training Certificate (NDT)
- Underwater diving and welding certificate

G. PRICING SCHEDULE

The estimated quantities provided by the City are not guaranteed. The quantities may vary depending on the demands of the City. Any variations from these estimated quantities shall not entitle the Contractor to an adjustment in the unit price or to any additional compensation and in no case shall exceed \$3 million without City Council approval.

Bidders shall complete the pricing schedule in its entirety to be considered responsive. The prices stated on the Price pages shall be submitted as a flat rate for performance of all specifications in this RFP; fully burdened, firm, fixed price and shall include the complete service and/or material, and be inclusive of any and all related charges and costs, including,

but not limited to labor, travel, transportation, training, overhead, administrative costs, profit, etc. The City shall evaluate pricing for this FRP solely based upon proposers submitted flat rate, as specified in the Pricing page below.

Unit prices shall be based on the unit of measure (u/m) as specified on the pricing page(s). Any changes to the unit of measure made by the bidder may be cause for the item to be rejected as non-responsive.

Prices quoted shall be FOB Destination. Prices shall include all delivery and freight charges and any/all required fees. The City is subject to sales taxes. Applicable taxes should not be included in pricing pages.

PURE WATER Automatic In-Water Monitoring System Project

Item No.	Description of Service	Qty.	U/M	Unit Price	Ext. Price
1	Design, fabricate, build, and install a three-unit sub surface float and mooring system with SIMC, data recorder, modem, temperature, dissolved oxygen, pH, electrical conductivity [yields TDS], and turbidity sensors, T-connections and electrically insulated inductive path system settings, weights and chains assemblies	1	LS	\$388,018.00	\$388,018.00
2	Hardware, labor, and services associated with the system installation, operation, maintenance, and required calibration for the instruments/sensors	1	LS	\$148,117.00	\$148,117.00
3	Instrument integration, testing, and data system development	1	LS	\$19,460.00	\$19,460.00
4	System start-up, operation, and maintenance.	1	LS	\$158,400.00	\$158,400.00
5	Perform quarterly preventative maintenance	20	EA	\$4,022.00	\$80,440.00
6	As-Needed Corrective Maintenance – Labor	1 *	HR	\$120.00	
7	Training and technical support on the telemetry relay technology management and relevant analyses.	1	LS	\$56,100.00	\$56,100.00
8	Permitting and Licensing as required	1	LS	\$30,500.00	\$30,500.00

**Note: Line item used to establish an hourly rate.*

Note: Below pricing will not be considered in proposal award.

Discount off manufacturer’s price list for parts required in support of either preventative or corrective maintenance: 5 %

CITY OF SAN DIEGO

PURCHASING & CONTRACTING DEPARTMENT
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195
Fax: (619) 236-5904

ADDENDUM A

Request for Proposal (RFP) 10089746-21-W

Revised Closing Date: **March 4, 2021**
@ 2:00 p.m.

Proposal for furnishing the City of San Diego with a **Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid.**

The following changes to the specifications are hereby made effective as though they were originally shown and/or written:

1. Remove the original cover sheet and replace with the attached Addendum A cover sheet. (**NOTE:** Bid due date has changed from February 23, 2021 to March 4, 2021.)
2. Remove the original RFP, Signature Page (pg 3 of 10) and replace with the attached Addendum A, Signature Page.
3. Remove the original Exhibit B, Scope of Work, page 5 and replace with the attached Addendum A, Exhibit B, Scope of Work, page 5. (**NOTE:** Changes are made in bold font.)
4. Add two (2) pages “Questions and Answers”. (**NOTE:** The questions and answers are being provided for informational purposes only, and are not part of any resulting contract from this ITB.)

CITY OF SAN DIEGO PURCHASING & CONTRACTING DEPARTMENT

Michael Warner

Michael Warner
Senior Procurement Contracting Officer
(619) 236-6154

February 18, 2021



**Request for Proposal (RFP) for
Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid
Addendum A**

Solicitation Number:	10089746-21-W
Solicitation Issue Date:	February 1, 2021
Questions and Comments Due:	February 5, 2021 @ 12:00 p.m.
Revised Proposal Due Date and Time (Closing Date):	March 4, 2021 @ 2:00 p.m.
Contract Terms:	Three (3) years from Effective Date, with two (2) additional one (1) year periods, as defined in Article I, Section 1.2 of the City's General Contract Terms and Provisions.
City Contact:	Michael Warner Senior Procurement Contracting Officer 1200 Third Avenue, Suite 200 San Diego, CA 92101 MWarner@sandiego.gov (619) 236-6154
Submissions:	Respondent is required to provide One (1) original and one (1) electronic copy (e.g. thumb drive or CD) of their response as described herein. Completed and signed RFP signature page is required, with most recent addendum listed as acknowledgement of all addenda issued. Note: Emailed submissions will not be accepted. Due to COVID-19, electronic copies submitted through PlanetBids will be accepted. Instructions for electronic submissions are provided as an attachment in PlanetBids.

5.4 Counterparts. This Contract may be executed in counterparts which, when taken together, shall constitute a single signed original as though all Parties had executed the same page.

5.5 Public Agencies. Other public agencies, as defined by California Government Code section 6500, may choose to use the terms of this Contract, subject to Contractor's acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

CITY OF SAN DIEGO
A Municipal Corporation

Proposer

BY:

Street Address

Print Name: _____
Director, Purchasing & Contracting Department

City

Date Signed

Telephone No.

E-Mail

BY:

Approved as to form this ____ day of

Signature of
Proposer's Authorized
Representative

_____, 20____. MARA
W. ELLIOTT, City Attorney

Print Name

BY: _____
Deputy City Attorney

Title

Date

but not limited to labor, travel, transportation, training, overhead, administrative costs, profit, etc. The City shall evaluate pricing for this FRP solely based upon proposers submitted flat rate, as specified in the Pricing page below.

Unit prices shall be based on the unit of measure (u/m) as specified on the pricing page(s). Any changes to the unit of measure made by the bidder may be cause for the item to be rejected as non-responsive.

Prices quoted shall be FOB Destination. Prices shall include all delivery and freight charges and any/all required fees. The City is subject to sales taxes. Applicable taxes should not be included in pricing pages.

PURE WATER Automatic In-Water Monitoring System Project

Item No.	Description of Service	Qty.	U/M	Unit Price	Ext. Price
1	Design, fabricate, build, and install a three-unit sub surface float and mooring system with SIMC, data recorder, modem, temperature, dissolved oxygen, pH, electrical conductivity [yields TDS], and turbidity sensors, T-connections and electrically insulated inductive path system settings, weights and chains assemblies	1	LS	\$	\$
2	Hardware, labor, and services associated with the system installation, operation, maintenance, and required calibration for the instruments/sensors	1	LS	\$	\$
3	Instrument integration, testing, and data system development	1	LS	\$	\$
4	System start-up, operation, and maintenance.	1	LS	\$	\$
5	Perform quarterly preventative maintenance	20	EA	\$	\$
6	As-Needed Corrective Maintenance – Labor	1 *	HR	\$	\$
7	Training and technical support on the telemetry relay technology management and relevant analyses.	1	LS	\$	\$
8	Permitting and Licensing as required	1	LS	\$	\$

**Note: Line item used to establish an hourly rate.*

Note: Below pricing will not be considered in proposal award.

Discount off manufacturer’s price list for parts required in support of either preventative or corrective maintenance: _____ %

**RFP 10089746-21-W, Miramar Reservoir Automated In-Water Quality Monitoring System
(AIWQMS) Rebid
Questions and Answers**

Question 1: What license classification does the bidder must possess at bidding/contract time?

Response: While there are no specific licenses identified in the RFP, prospective Proposers are required to secure and maintain in force such certifications, licenses and permits as are required by law, in connection with performance to a City contract in accordance with Exhibit B (Scope of Work), Section F (Certifications/Licenses/Permits) and Exhibit C (General Contract Terms and Provisions), Section 5.15 (Licenses and Permits).

Question 2: How much is the engineers' estimation?

Response: The City doesn't have an estimated Contract value.

Question 3: Does the bidder require a pre-qualification before submitting proposal?

Response: There is no pre-qualification process associated with this RFP.

Question 4: Solicitation Paragraph F. CERTIFICATIONS/LICENSES/PERMITS states in part, "Contractor shall, without additional expense to the City, secure and maintain in force such certifications, licenses and permits as are required by law, in connection with performance to a City contract resulting from this solicitation." Must the prime contractor possess the required licenses or can a qualified subcontractor possess them instead?

Response: While there are no specific licenses identified in the RFP, should a license be required by law in connection with the performance of work outlined in Exhibit B (Scope of Work), the license would be required by whichever activity is performing the work. If the Prime Contractor is performing the work, then the Prime Contractor would be required to hold any license as required by law. If the Sub Contractor is performing the work, then the Sub Contractor would be required to hold any license as required by law.

Question 5: Is the data system required to respond to in-situ measurements made by other parties? For example, does the data system need to apply drift corrections to real time data in response to monthly measurements taken manually near the buoys?

Response: Drift corrections should be applied according to manual readings by the City on a monthly basis. (Measurements shall be made every 15 minutes and uploaded at a minimum daily. Any exceedance shall trigger an alarm signal).

Question 6: Some items in the Price Schedule are not well bounded in time -- like Price Schedule item 2. Hardware and services for this single line item will be delivered over a five year period. With this in mind, what is the payment schedule for Price Schedule item numbers 2,3,4,7 and 8?

Response: The line items with the Unit of Measure as Lump Sum (LS) are associated with the requirements for the design, fabricate, build, installation, system start-up and training of the Automated In-Water Quality Monitoring System (AIWQMS). The line items associated with the remaining duration of the contract terms are covered under lines 5 and 6 of the Pricing Page. Additionally, refer to the Addendum A, Exhibit B, Scope of Work, page 5 which adds a section at the bottom of the page to account for parts required over the contract terms in support of either preventative or corrective maintenance. Following the release of a Purchase Order, the payment process will be in accordance with Exhibit C (General Contract Terms and Provisions), Article III (Compensation), Sections 3.1 (Manner of Payment) and 3.2 (Invoices).

Question 7: What is the required delivery date for Price Schedule item 1 (system deployment)? This directly affects design choices and cost estimates.

Response: The required delivery date for Price Schedule item 1 (system deployment) is July 12, 2021.

Question 8: Are we importing data into Pure Water site or just dropping files onto a directory on that the city of San Diego will import?

Response: Drop files onto a City directory. Measurements shall be made every 15 minutes and uploaded at a minimum daily. Any exceedance shall trigger an alarm signal.

Question 9: What file format is needed for importing into the Pure Water database (XML, SHEF, CSV, etc.)?

Response: XML or CSV.

Question 10: Does the pure water site have FTP established for us to drop files off?

Response: FTP will be established at a later date. Public Utilities Department is currently working with the Department of Information Technology to determine access and permissions.

Question 11: Why was the original bid cancelled and issued again for rebid?

Response: Original RFP was cancelled for corrective action.

Question 12: Can you give an example/details of a data string or input for communication with the server that posts data the Pure Water site?

Response: Examples/details of a data string or input for communication with the server are not currently available.

CITY OF SAN DIEGO

PURCHASING & CONTRACTING DEPARTMENT
1200 Third Avenue, Suite 200
San Diego, CA 92101-4195
Fax: (619) 236-5904

ADDENDUM B

Request for Proposal (RFP) 10089746-21-W

Revised Closing Date: **March 12, 2021**
@ 2:00 p.m.

Proposal for furnishing the City of San Diego with a **Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid.**

The following changes to the specifications are hereby made effective as though they were originally shown and/or written:

1. Remove the original cover sheet and replace with the attached Addendum B cover sheet. (**NOTE:** Bid due date has changed from March 4, 2021 to March 12, 2021.)
2. Remove the original Addendum A, Signature Page (pg 3 of 10) and replace with the attached Addendum B, Signature Page.

CITY OF SAN DIEGO PURCHASING & CONTRACTING DEPARTMENT

Michael Warner

Michael Warner
Senior Procurement Contracting Officer
(619) 236-6154

March 4, 2021



**Request for Proposal (RFP) for
Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid
Addendum B**

Solicitation Number: 10089746-21-W

Solicitation Issue Date: February 1, 2021

Questions and Comments Due: February 5, 2021 @ 12:00 p.m.

Revised Proposal Due Date and Time (Closing Date): March 12, 2021 @ 2:00 p.m.

Contract Terms: Three (3) years from Effective Date, with two (2) additional one (1) year periods, as defined in Article I, Section 1.2 of the City's General Contract Terms and Provisions.

City Contact: Michael Warner
Senior Procurement Contracting Officer
1200 Third Avenue, Suite 200
San Diego, CA 92101
MWarner@sandiego.gov
(619) 236-6154

Submissions: Respondent is required to provide One (1) original and one (1) electronic copy (e.g. thumb drive or CD) of their response as described herein.

Completed and signed RFP signature page is required, with most recent addendum listed as acknowledgement of all addenda issued.

Note: Emailed submissions will not be accepted. Due to COVID-19, electronic copies submitted through PlanetBids will be accepted. Instructions for electronic submissions are provided as an attachment in PlanetBids.

5.4 Counterparts. This Contract may be executed in counterparts which, when taken together, shall constitute a single signed original as though all Parties had executed the same page.

5.5 Public Agencies. Other public agencies, as defined by California Government Code section 6500, may choose to use the terms of this Contract, subject to Contractor's acceptance. The City is not liable or responsible for any obligations related to a subsequent Contract between Contractor and another public agency.

IN WITNESS WHEREOF, this Contract is executed by City and Contractor acting by and through their authorized officers.

CONTRACTOR

CITY OF SAN DIEGO
A Municipal Corporation

Proposer

BY:

Street Address

Print Name: _____
Director, Purchasing & Contracting Department

City

Date Signed

Telephone No.

E-Mail

BY:

Approved as to form this ____ day of

Signature of
Proposer's Authorized
Representative

_____, 20____. MARA
W. ELLIOTT, City Attorney

Print Name

BY: _____
Deputy City Attorney

Title

Date



THE CITY OF SAN DIEGO
GENERAL CONTRACT TERMS AND PROVISIONS
APPLICABLE TO GOODS, SERVICES, AND CONSULTANT CONTRACTS

ARTICLE I SCOPE AND TERM OF CONTRACT

1.1 Scope of Contract. The scope of contract between the City and a provider of goods and/or services (Contractor) is described in the Contract Documents. The Contract Documents are comprised of the Request for Proposal, Invitation to Bid, or other solicitation document (Solicitation); the successful bid or proposal; the letter awarding the contract to Contractor; the City's written acceptance of exceptions or clarifications to the Solicitation, if any; and these General Contract Terms and Provisions.

1.2 Effective Date. A contract between the City and Contractor (Contract) is effective on the last date that the contract is signed by the parties and approved by the City Attorney in accordance with Charter section 40. Unless otherwise terminated, this Contract is effective until it is completed or as otherwise agreed upon in writing by the parties, whichever is the earliest. A Contract term cannot exceed five (5) years unless approved by the City Council by ordinance.

1.3 Contract Extension. The City may, in its sole discretion, unilaterally exercise an option to extend the Contract as described in the Contract Documents. In addition, the City may, in its sole discretion, unilaterally extend the Contract on a month-to-month basis following contract expiration if authorized under Charter section 99 and the Contract Documents. Contractor shall not increase its pricing in excess of the percentage increase described in the Contract.

ARTICLE II CONTRACT ADMINISTRATOR

2.1 Contract Administrator. The Purchasing Agent or designee is the Contract Administrator for purposes of this Contract, and has the responsibilities described in this Contract, in the San Diego Charter, and in Chapter 2, Article 2, Divisions 5, 30, and 32.

2.1.1 Contractor Performance Evaluations. The Contract Administrator will evaluate Contractor's performance as often as the Contract Administrator deems necessary throughout the term of the contract. This evaluation will be based on criteria including the quality of goods or services, the timeliness of performance, and adherence to applicable laws, including prevailing wage and living wage. City will provide Contractors who receive an unsatisfactory rating with a copy of the evaluation and an opportunity to respond. City may consider final evaluations, including Contractor's response, in evaluating future proposals and bids for contract award.

2.2 Notices. Unless otherwise specified, in all cases where written notice is required under this Contract, service shall be deemed sufficient if the notice is personally delivered or deposited in the United States mail, with first class postage paid, attention to the Purchasing Agent. Proper notice is effective on the date of personal delivery or five (5) days after deposit in a United States postal mailbox unless provided otherwise in the Contract. Notices to the City shall be sent to:

Purchasing Agent
City of San Diego, Purchasing and Contracting Division
1200 3rd Avenue, Suite 200
San Diego, CA 92101-4195

ARTICLE III COMPENSATION

3.1 Manner of Payment. Contractor will be paid monthly, in arrears, for goods and/or services provided in accordance with the terms and provisions specified in the Contract.

3.2 Invoices.

3.2.1 Invoice Detail. Contractor's invoice must be on Contractor's stationary with Contractor's name, address, and remittance address if different. Contractor's invoice must have a date, an invoice number, a purchase order number, a description of the goods or services provided, and an amount due.

3.2.2 Service Contracts. Contractor must submit invoices for services to City by the 10th of the month following the month in which Contractor provided services. Invoices must include the address of the location where services were performed and the dates in which services were provided.

3.2.3 Goods Contracts. Contractor must submit invoices for goods to City within seven days of the shipment. Invoices must describe the goods provided.

3.2.4 Parts Contracts. Contractor must submit invoices for parts to City within seven calendar (7) days of the date the parts are shipped. Invoices must include the manufacturer of the part, manufacturer's published list price, percentage discount applied in accordance with Pricing Page(s), the net price to City, and an item description, quantity, and extension.

3.2.5 Extraordinary Work. City will not pay Contractor for extraordinary work unless Contractor receives prior written authorization from the Contract Administrator. Failure to do so will result in payment being withheld for services. If approved, Contractor will include an invoice that describes the work performed and the location where the work was performed, and a copy of the Contract Administrator's written authorization.

3.2.6 Reporting Requirements. Contractor must submit the following reports using the City's web-based contract compliance portal. Incomplete and/or delinquent reports may cause payment delays, non-payment of invoice, or both. For questions, please view the City's online tutorials on how to utilize the City's web-based contract compliance portal.

3.2.6.1 Monthly Employment Utilization Reports. Contractor and Contractor's subcontractors and suppliers must submit Monthly Employment Utilization Reports by the fifth (5th) day of the subsequent month.

3.2.6.2 Monthly Invoicing and Payments. Contractor and Contractor's subcontractors and suppliers must submit Monthly Invoicing and Payment Reports by the fifth (5th) day of the subsequent month.

3.3 Annual Appropriation of Funds. Contractor acknowledges that the Contract term may extend over multiple City fiscal years, and that work and compensation under this Contract is contingent on the City Council appropriating funding for and authorizing such work and compensation for those fiscal years. This Contract may be terminated at the end of the fiscal year for which sufficient funding is not appropriated and authorized. City is not obligated to pay Contractor for any amounts not duly appropriated and authorized by City Council.

3.4 Price Adjustments. Based on Contractor's written request and justification, the City may approve an increase in unit prices on Contractor's pricing pages consistent with the amount requested in the justification in an amount not to exceed the increase in the Consumer Price Index, San Diego Area, for All Urban Customers (CPI-U) as published by the Bureau of Labor Statistics, or 5.0%, whichever is less, during the preceding one year term. If the CPI-U is a negative number, then the unit prices shall not be adjusted for that option year (the unit prices will not be decreased). A negative CPI-U shall be counted against any subsequent increases in the CPI-U when calculating the unit prices for later option years. Contractor must provide such written request and justification no less than sixty days before the date in which City may exercise the option to renew the contract, or sixty days before the anniversary date of the Contract. Justification in support of the written request must include a description of the basis for the adjustment, the proposed effective date and reasons for said date, and the amount of the adjustment requested with documentation to support the requested change (e.g. CPI-U or 5.0%, whichever is less). City's approval of this request must be in writing.

ARTICLE IV SUSPENSION AND TERMINATION

4.1 City's Right to Suspend for Convenience. City may suspend all or any portion of Contractor's performance under this Contract at its sole option and for its convenience for a reasonable period of time not to exceed six (6) months. City must first give ten (10) days' written notice to Contractor of such suspension. City will pay to Contractor a sum equivalent to the reasonable value of the goods and/or services satisfactorily provided up to the date of suspension. City may rescind the suspension prior to or at six (6) months by providing Contractor with written notice of the rescission, at which time Contractor would be required to resume performance in compliance with the terms and provisions of this Contract. Contractor will be entitled to an extension of time to complete performance under the Contract equal to the length of the suspension unless otherwise agreed to in writing by the Parties.

4.2 City's Right to Terminate for Convenience. City may, at its sole option and for its convenience, terminate all or any portion of this Contract by giving thirty (30) days' written notice of such termination to Contractor. The termination of the Contract shall be effective upon receipt of the notice by Contractor. After termination of all or any portion of the Contract, Contractor shall: (1) immediately discontinue all affected performance (unless the notice directs otherwise); and (2) complete any and all additional work necessary for the orderly filing of

documents and closing of Contractor's affected performance under the Contract. After filing of documents and completion of performance, Contractor shall deliver to City all data, drawings, specifications, reports, estimates, summaries, and such other information and materials created or received by Contractor in performing this Contract, whether completed or in process. By accepting payment for completion, filing, and delivering documents as called for in this section, Contractor discharges City of all of City's payment obligations and liabilities under this Contract with regard to the affected performance.

4.3 City's Right to Terminate for Default. Contractor's failure to satisfactorily perform any obligation required by this Contract constitutes a default. Examples of default include a determination by City that Contractor has: (1) failed to deliver goods and/or perform the services of the required quality or within the time specified; (2) failed to perform any of the obligations of this Contract; and (3) failed to make sufficient progress in performance which may jeopardize full performance.

4.3.1 If Contractor fails to satisfactorily cure a default within ten (10) calendar days of receiving written notice from City specifying the nature of the default, City may immediately cancel and/or terminate this Contract, and terminate each and every right of Contractor, and any person claiming any rights by or through Contractor under this Contract.

4.3.2 If City terminates this Contract, in whole or in part, City may procure, upon such terms and in such manner as the Purchasing Agent may deem appropriate, equivalent goods or services and Contractor shall be liable to City for any excess costs. Contractor shall also continue performance to the extent not terminated.

4.4 Termination for Bankruptcy or Assignment for the Benefit of Creditors. If Contractor files a voluntary petition in bankruptcy, is adjudicated bankrupt, or makes a general assignment for the benefit of creditors, the City may at its option and without further notice to, or demand upon Contractor, terminate this Contract, and terminate each and every right of Contractor, and any person claiming rights by and through Contractor under this Contract.

4.5 Contractor's Right to Payment Following Contract Termination.

4.5.1 Termination for Convenience. If the termination is for the convenience of City an equitable adjustment in the Contract price shall be made. No amount shall be allowed for anticipated profit on unperformed services, and no amount shall be paid for an as needed contract beyond the Contract termination date.

4.5.2 Termination for Default. If, after City gives notice of termination for failure to fulfill Contract obligations to Contractor, it is determined that Contractor had not so failed, the termination shall be deemed to have been effected for the convenience of City. In such event, adjustment in the Contract price shall be made as provided in Section 4.3.2. City's rights and remedies are in addition to any other rights and remedies provided by law or under this Contract.

4.6 Remedies Cumulative. City's remedies are cumulative and are not intended to be exclusive of any other remedies or means of redress to which City may be lawfully entitled in case of any breach or threatened breach of any provision of this Contract.

ARTICLE V ADDITIONAL CONTRACTOR OBLIGATIONS

5.1 Inspection and Acceptance. The City will inspect and accept goods provided under this Contract at the shipment destination unless specified otherwise. Inspection will be made and acceptance will be determined by the City department shown in the shipping address of the Purchase Order or other duly authorized representative of City.

5.2 Responsibility for Lost or Damaged Shipments. Contractor bears the risk of loss or damage to goods prior to the time of their receipt and acceptance by City. City has no obligation to accept damaged shipments and reserves the right to return damaged goods, at Contractor's sole expense, even if the damage was not apparent or discovered until after receipt.

5.3 Responsibility for Damages. Contractor is responsible for all damage that occurs as a result of Contractor's fault or negligence or that of its' employees, agents, or representatives in connection with the performance of this Contract. Contractor shall immediately report any such damage to people and/or property to the Contract Administrator.

5.4 Delivery. Delivery shall be made on the delivery day specified in the Contract Documents. The City, in its sole discretion, may extend the time for delivery. The City may order, in writing, the suspension, delay or interruption of delivery of goods and/or services.

5.5 Delay. Unless otherwise specified herein, time is of the essence for each and every provision of the Contract. Contractor must immediately notify City in writing if there is, or it is anticipated that there will be, a delay in performance. The written notice must explain the cause for the delay and provide a reasonable estimate of the length of the delay. City may terminate this Contract as provided herein if City, in its sole discretion, determines the delay is material.

5.5.1 If a delay in performance is caused by any unforeseen event(s) beyond the control of the parties, City may allow Contractor to a reasonable extension of time to complete performance, but Contractor will not be entitled to damages or additional compensation. Any such extension of time must be approved in writing by City. The following conditions may constitute such a delay: war; changes in law or government regulation; labor disputes; strikes; fires, floods, adverse weather or other similar condition of the elements necessitating cessation of the performance; inability to obtain materials, equipment or labor; or other specific reasons agreed to between City and Contractor. This provision does not apply to a delay caused by Contractor's acts or omissions. Contractor is not entitled to an extension of time to perform if a delay is caused by Contractor's inability to obtain materials, equipment, or labor unless City has received, in a timely manner, documentary proof satisfactory to City of Contractor's inability to obtain materials, equipment, or labor, in which case City's approval must be in writing.

5.6 Restrictions and Regulations Requiring Contract Modification. Contractor shall immediately notify City in writing of any regulations or restrictions that may or will require Contractor to alter the material, quality, workmanship, or performance of the goods and/or services to be provided. City reserves the right to accept any such alteration, including any resulting reasonable price adjustments, or to cancel the Contract at no expense to the City.

5.7 Warranties. All goods and/or services provided under the Contract must be warranted by Contractor or manufacturer for at least twelve (12) months after acceptance by City, except automotive equipment. Automotive equipment must be warranted for a minimum of 12,000 miles or 12 months, whichever occurs first, unless otherwise stated in the Contract. Contractor is responsible to City for all warranty service, parts, and labor. Contractor is required to ensure that warranty work is performed at a facility acceptable to City and that services, parts, and labor are available and provided to meet City's schedules and deadlines. Contractor may establish a warranty service contract with an agency satisfactory to City instead of performing the warranty service itself. If Contractor is not an authorized service center and causes any damage to equipment being serviced, which results in the existing warranty being voided, Contractor will be liable for all costs of repairs to the equipment, or the costs of replacing the equipment with new equipment that meets City's operational needs.

5.8 Industry Standards. Contractor shall provide goods and/or services acceptable to City in strict conformance with the Contract. Contractor shall also provide goods and/or services in accordance with the standards customarily adhered to by an experienced and competent provider of the goods and/or services called for under this Contract using the degree of care and skill ordinarily exercised by reputable providers of such goods and/or services. Where approval by City, the Mayor, or other representative of City is required, it is understood to be general approval only and does not relieve Contractor of responsibility for complying with all applicable laws, codes, policies, regulations, and good business practices.

5.9 Records Retention and Examination. Contractor shall retain, protect, and maintain in an accessible location all records and documents, including paper, electronic, and computer records, relating to this Contract for five (5) years after receipt of final payment by City under this Contract. Contractor shall make all such records and documents available for inspection, copying, or other reproduction, and auditing by authorized representatives of City, including the Purchasing Agent or designee. Contractor shall make available all requested data and records at reasonable locations within City or County of San Diego at any time during normal business hours, and as often as City deems necessary. If records are not made available within the City or County of San Diego, Contractor shall pay City's travel costs to the location where the records are maintained and shall pay for all related travel expenses. Failure to make requested records available for inspection, copying, or other reproduction, or auditing by the date requested may result in termination of the Contract. Contractor must include this provision in all subcontracts made in connection with this Contract.

5.9.1 Contractor shall maintain records of all subcontracts entered into with all firms, all project invoices received from Subcontractors and Suppliers, all purchases of materials and services from Suppliers, and all joint venture participation. Records shall show name, telephone number including area code, and business address of each Subcontractor and Supplier, and joint venture partner, and the total amount actually paid to each firm. Project relevant records, regardless of tier, may be periodically reviewed by the City.

5.10 Quality Assurance Meetings. Upon City's request, Contractor shall schedule one or more quality assurance meetings with City's Contract Administrator to discuss Contractor's performance. If requested, Contractor shall schedule the first quality assurance meeting no later than eight (8) weeks from the date of commencement of work under the Contract. At the quality assurance meeting(s), City's Contract Administrator will provide Contractor with feedback, will note any deficiencies in Contract performance, and provide Contractor with an opportunity to address and correct such deficiencies. The total number of quality assurance meetings that may be required by City will depend upon Contractor's performance.

5.11 Duty to Cooperate with Auditor. The City Auditor may, in his sole discretion, at no cost to the City, and for purposes of performing his responsibilities under Charter section 39.2, review Contractor's records to confirm contract compliance. Contractor shall make reasonable efforts to cooperate with Auditor's requests.

5.12 Safety Data Sheets. If specified by City in the solicitation or otherwise required by this Contract, Contractor must send with each shipment one (1) copy of the Safety Data Sheet (SDS) for each item shipped. Failure to comply with this procedure will be cause for immediate termination of the Contract for violation of safety procedures.

5.13 Project Personnel. Except as formally approved by the City, the key personnel identified in Contractor's bid or proposal shall be the individuals who will actually complete the work. Changes in staffing must be reported in writing and approved by the City.

5.13.1 Criminal Background Certification. Contractor certifies that all employees working on this Contract have had a criminal background check and that said employees are clear of any sexual and drug related convictions. Contractor further certifies that all employees hired by Contractor or a subcontractor shall be free from any felony convictions.

5.13.2 Photo Identification Badge. Contractor shall provide a company photo identification badge to any individual assigned by Contractor or subcontractor to perform services or deliver goods on City premises. Such badge must be worn at all times while on City premises. City reserves the right to require Contractor to pay fingerprinting fees for personnel assigned to work in sensitive areas. All employees shall turn in their photo identification badges to Contractor upon completion of services and prior to final payment of invoice.

5.14 Standards of Conduct. Contractor is responsible for maintaining standards of employee competence, conduct, courtesy, appearance, honesty, and integrity satisfactory to the City.

5.14.1 Supervision. Contractor shall provide adequate and competent supervision at all times during the Contract term. Contractor shall be readily available to meet with the City. Contractor shall provide the telephone numbers where its representative(s) can be reached.

5.14.2 City Premises. Contractor's employees and agents shall comply with all City rules and regulations while on City premises.

5.14.3 Removal of Employees. City may request Contractor immediately remove from assignment to the City any employee found unfit to perform duties at the City. Contractor shall comply with all such requests.

5.15 Licenses and Permits. Contractor shall, without additional expense to the City, be responsible for obtaining any necessary licenses, permits, certifications, accreditations, fees and approvals for complying with any federal, state, county, municipal, and other laws, codes, and regulations applicable to Contract performance. This includes, but is not limited to, any laws or regulations requiring the use of licensed contractors to perform parts of the work.

5.16 Contractor and Subcontractor Registration Requirements. Prior to the award of the Contract or Task Order, Contractor and Contractor's subcontractors and suppliers must register with the City's web-based vendor registration and bid management system. The City may not award the Contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified by the City, the City reserves the right to rescind the Contract award and to make the award to the next responsive and responsible proposer of bidder.

ARTICLE VI INTELLECTUAL PROPERTY RIGHTS

6.1 Rights in Data. If, in connection with the services performed under this Contract, Contractor or its employees, agents, or subcontractors, create artwork, audio recordings, blueprints, designs, diagrams, documentation, photographs, plans, reports, software, source code, specifications, surveys, system designs, video recordings, or any other original works of authorship, whether written or readable by machine (Deliverable Materials), all rights of Contractor or its subcontractors in the Deliverable Materials, including, but not limited to publication, and registration of copyrights, and trademarks in the Deliverable Materials, are the sole property of City. Contractor, including its employees, agents, and subcontractors, may not use any Deliverable Material for purposes unrelated to Contractor's work on behalf of the City without prior written consent of City. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City, without the prior written consent of the City.

6.2 Intellectual Property Rights Assignment. For no additional compensation, Contractor hereby assigns to City all of Contractor's rights, title, and interest in and to the content of the Deliverable Materials created by Contractor or its employees, agents, or subcontractors, including copyrights, in connection with the services performed under this Contract. Contractor

shall promptly execute and deliver, and shall cause its employees, agents, and subcontractors to promptly execute and deliver, upon request by the City or any of its successors or assigns at any time and without further compensation of any kind, any power of attorney, assignment, application for copyright, patent, trademark or other intellectual property right protection, or other papers or instruments which may be necessary or desirable to fully secure, perfect or otherwise protect to or for the City, its successors and assigns, all right, title and interest in and to the content of the Deliverable Materials. Contractor also shall cooperate and assist in the prosecution of any action or opposition proceeding involving such intellectual property rights and any adjudication of those rights.

6.3 Contractor Works. Contractor Works means tangible and intangible information and material that: (a) had already been conceived, invented, created, developed or acquired by Contractor prior to the effective date of this Contract; or (b) were conceived, invented, created, or developed by Contractor after the effective date of this Contract, but only to the extent such information and material do not constitute part or all of the Deliverable Materials called for in this Contract. All Contractor Works, and all modifications or derivatives of such Contractor Works, including all intellectual property rights in or pertaining to the same, shall be owned solely and exclusively by Contractor.

6.4 Subcontracting. In the event that Contractor utilizes a subcontractor(s) for any portion of the work that comprises the whole or part of the specified Deliverable Materials to the City, the agreement between Contractor and the subcontractor shall include a statement that identifies the Deliverable Materials as a “works for hire” as described in the United States Copyright Act of 1976, as amended, and that all intellectual property rights in the Deliverable Materials, whether arising in copyright, trademark, service mark or other forms of intellectual property rights, belong to and shall vest solely with the City. Further, the agreement between Contractor and its subcontractor shall require that the subcontractor, if necessary, shall grant, transfer, sell and assign, free of charge, exclusively to City, all titles, rights and interests in and to the Deliverable Materials, including all copyrights, trademarks and other intellectual property rights. City shall have the right to review any such agreement for compliance with this provision.

6.5 Intellectual Property Warranty and Indemnification. Contractor represents and warrants that any materials or deliverables, including all Deliverable Materials, provided under this Contract are either original, or not encumbered, and do not infringe upon the copyright, trademark, patent or other intellectual property rights of any third party, or are in the public domain. If Deliverable Materials provided hereunder become the subject of a claim, suit or allegation of copyright, trademark or patent infringement, City shall have the right, in its sole discretion, to require Contractor to produce, at Contractor’s own expense, new non-infringing materials, deliverables or works as a means of remedying any claim of infringement in addition to any other remedy available to the City under law or equity. Contractor further agrees to indemnify, defend, and hold harmless the City, its officers, employees and agents from and against any and all claims, actions, costs, judgments or damages, of any type, alleging or threatening that any Deliverable Materials, supplies, equipment, services or works provided under this contract infringe the copyright, trademark, patent or other intellectual property or proprietary rights of any third party (Third Party Claim of Infringement). If a Third Party Claim

of Infringement is threatened or made before Contractor receives payment under this Contract, City shall be entitled, upon written notice to Contractor, to withhold some or all of such payment.

6.6 Software Licensing. Contractor represents and warrants that the software, if any, as delivered to City, does not contain any program code, virus, worm, trap door, back door, time or clock that would erase data or programming or otherwise cause the software to become inoperable, inaccessible, or incapable of being used in accordance with its user manuals, either automatically, upon the occurrence of licensor-selected conditions or manually on command. Contractor further represents and warrants that all third party software, delivered to City or used by Contractor in the performance of the Contract, is fully licensed by the appropriate licensor.

6.7 Publication. Contractor may not publish or reproduce any Deliverable Materials, for purposes unrelated to Contractor's work on behalf of the City without prior written consent from the City.

6.8 Royalties, Licenses, and Patents. Unless otherwise specified, Contractor shall pay all royalties, license, and patent fees associated with the goods that are the subject of this solicitation. Contractor warrants that the goods, materials, supplies, and equipment to be supplied do not infringe upon any patent, trademark, or copyright, and further agrees to defend any and all suits, actions and claims for infringement that are brought against the City, and to defend, indemnify and hold harmless the City, its elected officials, officers, and employees from all liability, loss and damages, whether general, exemplary or punitive, suffered as a result of any actual or claimed infringement asserted against the City, Contractor, or those furnishing goods, materials, supplies, or equipment to Contractor under the Contract.

ARTICLE VII INDEMNIFICATION AND INSURANCE

7.1 Indemnification. To the fullest extent permitted by law, Contractor shall defend (with legal counsel reasonably acceptable to City), indemnify, protect, and hold harmless City and its elected officials, officers, employees, agents, and representatives (Indemnified Parties) from and against any and all claims, losses, costs, damages, injuries (including, without limitation, injury to or death of an employee of Contractor or its subcontractors), expense, and liability of every kind, nature and description (including, without limitation, incidental and consequential damages, court costs, and litigation expenses and fees of expert consultants or expert witnesses incurred in connection therewith and costs of investigation) that arise out of, pertain to, or relate to, directly or indirectly, in whole or in part, any goods provided or performance of services under this Contract by Contractor, any subcontractor, anyone directly or indirectly employed by either of them, or anyone that either of them control. Contractor's duty to defend, indemnify, protect and hold harmless shall not include any claims or liabilities arising from the sole negligence or willful misconduct of the Indemnified Parties.

7.2 Insurance. Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or

in connection with the performance of the work hereunder and the results of that work by Contractor, his agents, representatives, employees or subcontractors.

Contractor shall provide, at a minimum, the following:

7.2.1 Commercial General Liability. Insurance Services Office Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

7.2.2 Commercial Automobile Liability. Insurance Services Office Form Number CA 0001 covering Code 1 (any auto) or, if Contractor has no owned autos, Code 8 (hired) and 9 (non-owned), with limit no less than \$1,000,000 per accident for bodily injury and property damage.

7.2.3 Workers' Compensation. Insurance as required by the State of California, with Statutory Limits, and Employer’s Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.

7.2.4 Professional Liability (Errors and Omissions). For consultant contracts, insurance appropriate to Consultant’s profession, with limit no less than \$1,000,000 per occurrence or claim, \$2,000,000 aggregate.

If Contractor maintains broader coverage and/or higher limits than the minimums shown above, City requires and shall be entitled to the broader coverage and/or the higher limits maintained by Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to City.

7.2.5 Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:

7.2.5.1 Additional Insured Status. The City, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of Contractor including materials, parts, or equipment furnished in connection with such work or operations. General liability coverage can be provided in the form of an endorsement to Contractor’s insurance (at least as broad as ISO Form CG 20 10 11 85 or if not available, through the addition of both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 if a later edition is used).

7.2.5.2 Primary Coverage. For any claims related to this contract, Contractor's insurance coverage shall be primary coverage at least as broad as ISO CG 20 01 04 13 as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, employees, or volunteers shall be excess of Contractor's insurance and shall not contribute with it.

7.2.5.3 Notice of Cancellation. Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to City.

7.2.5.4 Waiver of Subrogation. Contractor hereby grants to City a waiver of any right to subrogation which the Workers' Compensation insurer of said Contractor may acquire against City by virtue of the payment of any loss under such insurance. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the insurer.

7.2.5.5 Claims Made Policies (applicable only to professional liability). The Retroactive Date must be shown, and must be before the date of the contract or the beginning of contract work. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of the contract of work. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a Retroactive Date prior to the contract effective date, Contractor must purchase "extended reporting" coverage for a minimum of five (5) years after completion of work.

7.3 Self Insured Retentions. Self-insured retentions must be declared to and approved by City. City may require Contractor to purchase coverage with a lower retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or City.

7.4 Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A-VI, unless otherwise acceptable to City.

City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State of California and is included on the List of Approved Surplus Lines Insurers (LASLI list). All policies of insurance carried by non-admitted carriers are subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7.5 Verification of Coverage. Contractor shall furnish City with original certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by City before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive Contractor's obligation to provide them. City reserves the right to require complete, certified copies of all required insurance policies, including endorsements required by these specifications, at any time.

7.6 Special Risks or Circumstances. City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

7.7 Additional Insurance. Contractor may obtain additional insurance not required by this Contract.

7.8 Excess Insurance. All policies providing excess coverage to City shall follow the form of the primary policy or policies including but not limited to all endorsements.

7.9 Subcontractors. Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that City is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a format at least as broad as the CG 20 38 04 13 endorsement.

ARTICLE VIII BONDS

8.1 Payment and Performance Bond. Prior to the execution of this Contract, City may require Contractor to post a payment and performance bond (Bond). The Bond shall guarantee Contractor's faithful performance of this Contract and assure payment to contractors, subcontractors, and to persons furnishing goods and/or services under this Contract.

8.1.1 Bond Amount. The Bond shall be in a sum equal to twenty-five percent (25%) of the Contract amount, unless otherwise stated in the Specifications. City may file a claim against the Bond if Contractor fails or refuses to fulfill the terms and provisions of the Contract.

8.1.2 Bond Term. The Bond shall remain in full force and effect at least until complete performance of this Contract and payment of all claims for materials and labor, at which time it will convert to a ten percent (10%) warranty bond, which shall remain in place until the end of the warranty periods set forth in this Contract. The Bond shall be renewed annually, at least sixty (60) days in advance of its expiration, and Contractor shall provide timely proof of annual renewal to City.

8.1.3 Bond Surety. The Bond must be furnished by a company authorized by the State of California Department of Insurance to transact surety business in the State of California and which has a current A.M. Best rating of at least "A-, VIII."

8.1.4 Non-Renewal or Cancellation. The Bond must provide that City and Contractor shall be provided with sixty (60) days' advance written notice in the event of non-renewal, cancellation, or material change to its terms. In the event of non-renewal, cancellation, or material change to the Bond terms, Contractor shall provide City with evidence of the new source of surety within twenty-one (21) calendar days after the date of the notice of non-renewal, cancellation, or material change. Failure to maintain the Bond, as required herein, in full force

and effect as required under this Contract, will be a material breach of the Contract subject to termination of the Contract.

8.2 Alternate Security. City may, at its sole discretion, accept alternate security in the form of an endorsed certificate of deposit, a money order, a certified check drawn on a solvent bank, or other security acceptable to the Purchasing Agent in an amount equal to the required Bond.

ARTICLE IX CITY-MANDATED CLAUSES AND REQUIREMENTS

9.1 Contractor Certification of Compliance. By signing this Contract, Contractor certifies that Contractor is aware of, and will comply with, these City-mandated clauses throughout the duration of the Contract.

9.1.1 Drug-Free Workplace Certification. Contractor shall comply with City's Drug-Free Workplace requirements set forth in Council Policy 100-17, which is incorporated into the Contract by this reference.

9.1.2 Contractor Certification for Americans with Disabilities Act (ADA) and State Access Laws and Regulations: Contractor shall comply with all accessibility requirements under the ADA and under Title 24 of the California Code of Regulations (Title 24). When a conflict exists between the ADA and Title 24, Contractor shall comply with the most restrictive requirement (i.e., that which provides the most access). Contractor also shall comply with the City's ADA Compliance/City Contractors requirements as set forth in Council Policy 100-04, which is incorporated into this Contract by reference. Contractor warrants and certifies compliance with all federal and state access laws and regulations and further certifies that any subcontract agreement for this contract contains language which indicates the subcontractor's agreement to abide by the provisions of the City's Council Policy and any applicable access laws and regulations.

9.1.3 Non-Discrimination Requirements.

9.1.3.1 Compliance with City's Equal Opportunity Contracting Program (EOCP). Contractor shall comply with City's EOCP Requirements. Contractor shall not discriminate against any employee or applicant for employment on any basis prohibited by law. Contractor shall provide equal opportunity in all employment practices. Prime Contractors shall ensure that their subcontractors comply with this program. Nothing in this Section shall be interpreted to hold a Prime Contractor liable for any discriminatory practice of its subcontractors.

9.1.3.2 Non-Discrimination Ordinance. Contractor shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring or treatment of subcontractors, vendors or suppliers. Contractor shall provide equal opportunity for subcontractors to participate in subcontracting opportunities. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result

in Contract termination, debarment, or other sanctions. Contractor shall ensure that this language is included in contracts between Contractor and any subcontractors, vendors and suppliers.

9.1.3.3 Compliance Investigations. Upon City's request, Contractor agrees to provide to City, within sixty calendar days, a truthful and complete list of the names of all subcontractors, vendors, and suppliers that Contractor has used in the past five years on any of its contracts that were undertaken within San Diego County, including the total dollar amount paid by Contractor for each subcontract or supply contract. Contractor further agrees to fully cooperate in any investigation conducted by City pursuant to City's Nondiscrimination in Contracting Ordinance. Contractor understands and agrees that violation of this clause shall be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.4 Equal Benefits Ordinance Certification. Unless an exception applies, Contractor shall comply with the Equal Benefits Ordinance (EBO) codified in the San Diego Municipal Code (SDMC). Failure to maintain equal benefits is a material breach of the Contract.

9.1.5 Contractor Standards. Contractor shall comply with Contractor Standards provisions codified in the SDMC. Contractor understands and agrees that violation of Contractor Standards may be considered a material breach of the Contract and may result in Contract termination, debarment, and other sanctions.

9.1.6 Noise Abatement. Contractor shall operate, conduct, or construct without violating the City's Noise Abatement Ordinance codified in the SDMC.

9.1.7 Storm Water Pollution Prevention Program. Contractor shall comply with the City's Storm Water Management and Discharge Control provisions codified in Division 3 of Chapter 4 of the SDMC, as may be amended, and any and all applicable Best Management Practice guidelines and pollution elimination requirements in performing or delivering services at City owned, leased, or managed property, or in performance of services and activities on behalf of City regardless of location.

Contractor shall comply with the City's Jurisdictional Urban Runoff Management Plan encompassing Citywide programs and activities designed to prevent and reduce storm water pollution within City boundaries as adopted by the City Council on January 22, 2008, via Resolution No. 303351, as may be amended.

Contractor shall comply with each City facility or work site's Storm Water Pollution Prevention Plan, as applicable, and institute all controls needed while completing the services to minimize any negative impact to the storm water collection system and environment.

9.1.8 Service Worker Retention Ordinance. If applicable, Contractor shall comply with the Service Worker Retention Ordinance (SWRO) codified in the SDMC.

9.1.9 Product Endorsement. Contractor shall comply with Council Policy 000-41 which requires that other than listing the City as a client and other limited endorsements, any advertisements, social media, promotions or other marketing referring to the City as a user of a product or service will require prior written approval of the Mayor or designee. Use of the City Seal or City logos is prohibited.

9.1.10 Business Tax Certificate. Unless the City Treasurer determines in writing that a contractor is exempt from the payment of business tax, any contractor doing business with the City of San Diego is required to obtain a Business Tax Certificate (BTC) and to provide a copy of its BTC to the City before a Contract is executed.

9.1.11 Equal Pay Ordinance. Unless an exception applies, Contractor shall comply with the Equal Pay Ordinance codified in San Diego Municipal Code sections 22.4801 through 22.4809. Contractor shall certify in writing that it will comply with the requirements of the EPO.

9.1.11.1 Contractor and Subcontract Requirement. The Equal Pay Ordinance applies to any subcontractor who performs work on behalf of a Contractor to the same extent as it would apply to that Contractor. Any Contractor subject to the Equal Pay Ordinance shall require all of its subcontractors to certify compliance with the Equal Pay Ordinance in its written subcontracts.

ARTICLE X CONFLICT OF INTEREST AND VIOLATIONS OF LAW

10.1 Conflict of Interest Laws. Contractor is subject to all federal, state and local conflict of interest laws, regulations, and policies applicable to public contracts and procurement practices including, but not limited to, California Government Code sections 1090, *et. seq.* and 81000, *et. seq.*, and the Ethics Ordinance, codified in the SDMC. City may determine that Contractor must complete one or more statements of economic interest disclosing relevant financial interests. Upon City's request, Contractor shall submit the necessary documents to City.

10.2 Contractor's Responsibility for Employees and Agents. Contractor is required to establish and make known to its employees and agents appropriate safeguards to prohibit employees from using their positions for a purpose that is, or that gives the appearance of being, motivated by the desire for private gain for themselves or others, particularly those with whom they have family, business or other relationships.

10.3 Contractor's Financial or Organizational Interests. In connection with any task, Contractor shall not recommend or specify any product, supplier, or contractor with whom Contractor has a direct or indirect financial or organizational interest or relationship that would violate conflict of interest laws, regulations, or policies.

10.4 Certification of Non-Collusion. Contractor certifies that: (1) Contractor's bid or proposal was not made in the interest of or on behalf of any person, firm, or corporation not identified; (2) Contractor did not directly or indirectly induce or solicit any other bidder or proposer to put in a sham bid or proposal; (3) Contractor did not directly or indirectly induce or

solicit any other person, firm or corporation to refrain from bidding; and (4) Contractor did not seek by collusion to secure any advantage over the other bidders or proposers.

10.5 Hiring City Employees. This Contract shall be unilaterally and immediately terminated by City if Contractor employs an individual who within the twelve (12) months immediately preceding such employment did in his/her capacity as a City officer or employee participate in negotiations with or otherwise have an influence on the selection of Contractor.

ARTICLE XI DISPUTE RESOLUTION

11.1 Mediation. If a dispute arises out of or relates to this Contract and cannot be settled through normal contract negotiations, Contractor and City shall use mandatory non-binding mediation before having recourse in a court of law.

11.2 Selection of Mediator. A single mediator that is acceptable to both parties shall be used to mediate the dispute. The mediator will be knowledgeable in the subject matter of this Contract, if possible.

11.3 Expenses. The expenses of witnesses for either side shall be paid by the party producing such witnesses. All other expenses of the mediation, including required traveling and other expenses of the mediator, and the cost of any proofs or expert advice produced at the direct request of the mediator, shall be borne equally by the parties, unless they agree otherwise.

11.4 Conduct of Mediation Sessions. Mediation hearings will be conducted in an informal manner and discovery will not be allowed. The discussions, statements, writings and admissions will be confidential to the proceedings (pursuant to California Evidence Code sections 1115 through 1128) and will not be used for any other purpose unless otherwise agreed by the parties in writing. The parties may agree to exchange any information they deem necessary. Both parties shall have a representative attend the mediation who is authorized to settle the dispute, though City's recommendation of settlement may be subject to the approval of the Mayor and City Council. Either party may have attorneys, witnesses or experts present.

11.5 Mediation Results. Any agreements resulting from mediation shall be memorialized in writing. The results of the mediation shall not be final or binding unless otherwise agreed to in writing by the parties. Mediators shall not be subject to any subpoena or liability, and their actions shall not be subject to discovery.

ARTICLE XII MANDATORY ASSISTANCE

12.1 Mandatory Assistance. If a third party dispute or litigation, or both, arises out of, or relates in any way to the services provided to the City under a Contract, Contractor, its agents, officers, and employees agree to assist in resolving the dispute or litigation upon City's request. Contractor's assistance includes, but is not limited to, providing professional consultations,

attending mediations, arbitrations, depositions, trials or any event related to the dispute resolution and/or litigation.

12.2 Compensation for Mandatory Assistance. City will compensate Contractor for fees incurred for providing Mandatory Assistance. If, however, the fees incurred for the Mandatory Assistance are determined, through resolution of the third party dispute or litigation, or both, to be attributable in whole, or in part, to the acts or omissions of Contractor, its agents, officers, and employees, Contractor shall reimburse City for all fees paid to Contractor, its agents, officers, and employees for Mandatory Assistance.

12.3 Attorneys' Fees Related to Mandatory Assistance. In providing City with dispute or litigation assistance, Contractor or its agents, officers, and employees may incur expenses and/or costs. Contractor agrees that any attorney fees it may incur as a result of assistance provided under Section 12.2 are not reimbursable.

ARTICLE XIII MISCELLANEOUS

13.1 Headings. All headings are for convenience only and shall not affect the interpretation of this Contract.

13.2 Non-Assignment. Contractor may not assign the obligations under this Contract, whether by express assignment or by sale of the company, nor any monies due or to become due under this Contract, without City's prior written approval. Any assignment in violation of this paragraph shall constitute a default and is grounds for termination of this Contract at the City's sole discretion. In no event shall any putative assignment create a contractual relationship between City and any putative assignee.

13.3 Independent Contractors. Contractor and any subcontractors employed by Contractor are independent contractors and not agents of City. Any provisions of this Contract that may appear to give City any right to direct Contractor concerning the details of performing or providing the goods and/or services, or to exercise any control over performance of the Contract, shall mean only that Contractor shall follow the direction of City concerning the end results of the performance.

13.4 Subcontractors. All persons assigned to perform any work related to this Contract, including any subcontractors, are deemed to be employees of Contractor, and Contractor shall be directly responsible for their work.

13.5 Covenants and Conditions. All provisions of this Contract expressed as either covenants or conditions on the part of City or Contractor shall be deemed to be both covenants and conditions.

13.6 Compliance with Controlling Law. Contractor shall comply with all applicable local, state, and federal laws, regulations, and policies. Contractor's act or omission in violation of applicable local, state, and federal laws, regulations, and policies is grounds for contract

termination. In addition to all other remedies or damages allowed by law, Contractor is liable to City for all damages, including costs for substitute performance, sustained as a result of the violation. In addition, Contractor may be subject to suspension, debarment, or both.

13.7 Governing Law. The Contract shall be deemed to be made under, construed in accordance with, and governed by the laws of the State of California without regard to the conflicts or choice of law provisions thereof.

13.8 Venue. The venue for any suit concerning solicitations or the Contract, the interpretation of application of any of its terms and conditions, or any related disputes shall be in the County of San Diego, State of California.

13.9 Successors in Interest. This Contract and all rights and obligations created by this Contract shall be in force and effect whether or not any parties to the Contract have been succeeded by another entity, and all rights and obligations created by this Contract shall be vested and binding on any party's successor in interest.

13.10 No Waiver. No failure of either City or Contractor to insist upon the strict performance by the other of any covenant, term or condition of this Contract, nor any failure to exercise any right or remedy consequent upon a breach of any covenant, term, or condition of this Contract, shall constitute a waiver of any such breach of such covenant, term or condition. No waiver of any breach shall affect or alter this Contract, and each and every covenant, condition, and term hereof shall continue in full force and effect without respect to any existing or subsequent breach.

13.11 Severability. The unenforceability, invalidity, or illegality of any provision of this Contract shall not render any other provision of this Contract unenforceable, invalid, or illegal.

13.12 Drafting Ambiguities. The parties acknowledge that they have the right to be advised by legal counsel with respect to the negotiations, terms and conditions of this Contract, and the decision of whether to seek advice of legal counsel with respect to this Contract is the sole responsibility of each party. This Contract shall not be construed in favor of or against either party by reason of the extent to which each party participated in the drafting of the Contract.

13.13 Amendments. Neither this Contract nor any provision hereof may be changed, modified, amended or waived except by a written agreement executed by duly authorized representatives of City and Contractor. Any alleged oral amendments have no force or effect. The Purchasing Agent must sign all Contract amendments.

13.14 Conflicts Between Terms. If this Contract conflicts with an applicable local, state, or federal law, regulation, or court order, applicable local, state, or federal law, regulation, or court order shall control. Varying degrees of stringency among the main body of this Contract, the exhibits or attachments, and laws, regulations, or orders are not deemed conflicts, and the most stringent requirement shall control. Each party shall notify the other immediately upon the identification of any apparent conflict or inconsistency concerning this Contract.

13.15 Survival of Obligations. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with this Contract, as well as all continuing obligations indicated in this Contract, shall survive, completion and acceptance of performance and termination, expiration or completion of the Contract.

13.16 Confidentiality of Services. All services performed by Contractor, and any sub-contractor(s) if applicable, including but not limited to all drafts, data, information, correspondence, proposals, reports of any nature, estimates compiled or composed by Contractor, are for the sole use of City, its agents, and employees. Neither the documents nor their contents shall be released by Contractor or any subcontractor to any third party without the prior written consent of City. This provision does not apply to information that: (1) was publicly known, or otherwise known to Contractor, at the time it was disclosed to Contractor by City; (2) subsequently becomes publicly known through no act or omission of Contractor; or (3) otherwise becomes known to Contractor other than through disclosure by City.

13.17 Insolvency. If Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, Contractor agrees to furnish, by certified mail or electronic commerce method authorized by the Contract, written notification of the bankruptcy to the Purchasing Agent and the Contract Administrator responsible for administering the Contract. This notification shall be furnished within five (5) days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of City contract numbers and contracting offices for all City contracts against which final payment has not been made. This obligation remains in effect until final payment is made under this Contract.

13.18 No Third Party Beneficiaries. Except as may be specifically set forth in this Contract, none of the provisions of this Contract are intended to benefit any third party not specifically referenced herein. No party other than City and Contractor shall have the right to enforce any of the provisions of this Contract.

13.19 Actions of City in its Governmental Capacity. Nothing in this Contract shall be interpreted as limiting the rights and obligations of City in its governmental or regulatory capacity.

EXHIBIT D

WAGE REQUIREMENTS: SERVICE AND MAINTENANCE CONTRACTS EXECUTED ON OR AFTER JANUARY 1, 2015

By signing this Contract, Bidder certifies that he or she is aware of the wage provisions described herein and shall comply with such provisions before commencing services.

A. PREVAILING WAGES. Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding \$25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding \$15,000, Bidder and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below. This requirement is in addition to the requirement to pay Living Wage pursuant to San Diego Municipal Code Chapter 2, Article 2, Division 42. Bidder must determine which per diem rate is highest for each classification of work (i.e. Prevailing Wage Rate or Living Wage Rate), and pay the highest of the two rates to their employees. Living Wage applies to workers who are not subject to Prevailing Wage Rates.

1. Compliance with Prevailing Wage Requirements. Pursuant to sections 1720 through 1861 of the California Labor Code, Bidder and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.

1.1. Copies of such prevailing rate of per diem wages are on file at the City of San Diego's Equal Opportunity Contracting Department and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Bidder and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.

1.2. The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date

of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.

2. Penalties for Violations. Bidder and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed. This shall be in addition to any other applicable penalties allowed under Labor Code sections 1720 – 1861.

3. Payroll Records. Bidder and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Bidder shall require its subcontractors to also comply with section 1776. Bidder and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Bidder is responsible for ensuring its subcontractors submit certified payroll records to the City. Bidder and its subcontractors shall also furnish the records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required in Labor Code section 1771.4.

4. Apprentices. Bidder and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Bidder shall be held responsible for their compliance as well as the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.

5. Working Hours. Bidder and its subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on design professionals and subcontractors of \$25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections 1810 through 1815.

6. Required Provisions for Subcontracts. Bidder shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.

7. Labor Code Section 1861 Certification. Bidder in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Bidder certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."

8. Labor Compliance Program. The City has its own Labor Compliance Program authorized in August 2011 by the DIR. The City will withhold contract payments when

payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has been established after an investigation by the City or other governmental entity that underpayment(s) have occurred. For questions or assistance, please contact the City of San Diego's Equal Opportunity Contracting Department at 619-236-6000.

9. Contractor and Subcontractor Registration Requirements. This project is subject to compliance monitoring and enforcement by the DIR. A Bidder or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or enter into any contract for public work, as defined in this chapter of the Labor Code unless currently registered and qualified to perform the work pursuant to Section 1725.5. In accordance with Labor Code section 1771.1(a), “[i]t is not a violation of this section for an unregistered contractor to submit a bid that is authorized by Section 7029.1 of the Business and Professions Code or by Section 10164 or 20103.5 of the Public Contract Code, provided the contractor is registered to perform public work pursuant to Section 1725.5 at the time the contract is awarded.”

9.1. A Bidder's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in a response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered contractor pursuant to Public Contract Code section 4107.

9.2. A Contract entered into with any Bidder or subcontractor in violation of Labor Code section 1771.1(a) shall be subject to cancellation, provided that a Contract for public work shall not be unlawful, void, or voidable solely due to the failure of the awarding body, Bidder, or any subcontractor to comply with the requirements of section 1725.5 of this section.

9.3. By submitting a bid or proposal to the City, Bidder is certifying that he or she has verified that all subcontractors used on this public works project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Bidder shall provide proof of registration for themselves and all listed subcontractors to the City at the time of bid or proposal due date or upon request.

10. Stop Order. For Bidder or its subcontractor(s) engaging in the performance of any public work contract without having been registered in violation of Labor Code sections 1725.5 or 1771.1, the Labor Commissioner shall issue and serve a stop order prohibiting the use of the unregistered Bidder or unregistered subcontractor(s) on ALL public works until the unregistered Bidder or unregistered subcontractor(s) is registered. Failure to observe a stop order is a misdemeanor.

11. List of all Subcontractors. The City may ask Bidder for the most current list of subcontractors (regardless of tier), along with their DIR registration numbers,

utilized on this contract at any time during performance of this contract, and Bidder shall provide the list within ten (10) working days of the City's request. Additionally, Bidder shall provide the City with a complete list of all subcontractors utilized on this contract (regardless of tier), within ten working days of the completion of the contract, along with their DIR registration numbers. The City shall withhold final payment to Bidder until at least 30 days after this information is provided to the City.

12. Exemptions for Small Projects. There are limited exemptions for installation, alteration, demolition, or repair work done on projects of \$25,000 or less. The Bidder shall still comply with Labor Code sections 1720 et. seq. The only recognized exemptions are listed below:

12.1. Registration. The Bidder will not be required to register with the DIR for small projects. (Labor Code section 1771.1).

12.2. Certified Payroll Records. The records required in Labor Code section 1776 shall be required to be kept and submitted to the City of San Diego, but will not be required to be submitted online with the DIR directly. The Bidder will need to keep those records for at least three years following the completion of the contract. (Labor Code section 1771.4).

12.3. List of all Subcontractors. The Bidder shall not be required to hire only registered subcontractors and is exempt from submitting the list of all subcontractors that is required in section 11 above. (Labor Code section 1773.3).

B. Living Wages. This Contract is subject to the City's Living Wage Ordinance (LWO), codified in San Diego Municipal Code Chapter 2, Article 2, Division 42. Bidder agrees to require all of its subcontractors, sublessees, and concessionaires subject to the LWO to comply with the LWO and all applicable regulations and rules.

1. Payment of Living Wages. Pursuant to San Diego Municipal Code section 22.4220(a), Bidder and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the required minimum hourly wage rates and health benefits rate unless an exemption applies.

1.1 Copies of such living wage rates are available on the City website at <https://www.sandiego.gov/purchasing/programs/livingwage/>. Bidder and its subcontractors shall post a notice informing workers of their rights at each job site or a site frequently accessed by covered employees in a prominent and accessible place in accordance with San Diego Municipal Code section 22.4225(e).

1.2 LWO wage and health benefit rates are adjusted annually in accordance with San Diego Municipal Code section 22.4220(b) to reflect the Consumer Price Index. Service contracts, financial assistance agreements, and City facilities agreements must include this upward adjustment of wage rates to covered employees on July 1 of each year.

2. Compensated Leave. Pursuant to San Diego Municipal Code section 22.4220(c), Bidder and its subcontractors shall provide a minimum of eighty (80)

hours per year of compensated leave. Part-time employees must accrue compensated leave at a rate proportional to full-time employees.

3. Uncompensated Leave. Bidder and its subcontractors must also permit workers to take a minimum of eighty (80) hours of uncompensated leave per year to be used for the illness of the worker or a member of his or her immediate family when the worker has exhausted all accrued compensated leave.

4. Enforcement and Remedies. City will take any one or more of the actions listed in San Diego Municipal Code section 22.4230 should Bidder or its subcontractors are found to be in violation of any of the provisions of the LWO.

5. Payroll Records. Bidder and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Bidder is responsible for ensuring its subcontractors submit certified payroll records to the City.

5.1 For contracts subject to both living wage and prevailing wage requirements, only one submittal will be required. Submittals by a Bidder and all subcontractors must comply with both ordinance requirements.

6. Certification of Compliance. San Diego Municipal Code section 22.4225 requires each Bidder to fill out and file a living wage certification with the Living Wage Program Manager within thirty (30) days of Award of the Contract.

7. Annual Compliance Report. Bidder and its subcontractors must file an annual report documenting compliance with the LWO pursuant to San Diego Municipal Code section 22.4225(d). Records documenting compliance must be maintained for a minimum of three (3) years after the City's final payment on the service contract or agreement.

8. Exemption from Living Wage Ordinance. Pursuant to San Diego Municipal Code section 22.4215, this Contract may be exempt from the LWO. For a determination on this exemption, Bidder must complete the Living Wage Ordinance Application for Exemption.

C. Highest Wage Rate Applies. Bidder is required to pay the highest applicable wage rate where more than one wage rate applies.

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SOUNDNINE INC

Tools for Real-time Marine
Research and Monitoring

AIWQMS

10089746-21-W

TAB A

Acknowledgement: Business Tax Certificate

We understand if our proposal is accepted Soundnine Inc must obtain a Business Tax Certificate prior to award of a contract.

Acknowledgement: Dept. of Industrial Relations Registration

Soundnine Inc believes it is not required to have a DIR registration prior to bidding according to Section 20103.5 of the Public Contract Code. We understand if our proposal is accepted Soundnine Inc must complete DIR registration prior to award of a contract.

The local subcontractor (Kinnetic Laboratories) has a current DIR registration.

City of San Diego
CONTRACTOR STANDARDS
Pledge of Compliance

The City of San Diego has adopted a Contractor Standards Ordinance (CSO) codified in section 22.3004 of the San Diego Municipal Code (SDMC). The City of San Diego uses the criteria set forth in the CSO to determine whether a contractor (bidder or proposer) has the capacity to fully perform the contract requirements and the business integrity to justify the award of public funds. This completed Pledge of Compliance signed under penalty of perjury must be submitted with each bid and proposal. If an informal solicitation process is used, the bidder must submit this completed Pledge of Compliance to the City prior to execution of the contract. All responses must be typewritten or printed in ink. If an explanation is requested or additional space is required, Contractors must provide responses on Attachment A to the Pledge of Compliance and sign each page. Failure to submit a signed and completed Pledge of Compliance may render a bid or proposal non-responsive. In the case of an informal solicitation or cooperative procurement, the contract will not be awarded unless a signed and completed Pledge of Compliance is submitted. A submitted Pledge of Compliance is a public record and information contained within will be available for public review except to the extent that such information is exempt from disclosure pursuant to applicable law.

By signing and submitting this form, the contractor is certifying, to the best of their knowledge, that the contractor and any of its Principals have not within a five (5) year period – preceding this offer, been convicted of or had a civil judgement rendered against them for commission of a fraud or a criminal offense in connection with obtaining, attempting to obtain or performing a public (Federal, State or local) contract or subcontract.

“Principal” means an officer, director, owner, partner or a person having primary management or supervisory responsibilities within the firm. The Contractor shall provide immediate written notice to the Procurement Contracting Officer handling the solicitation, at any time prior to award should they learn that this Representations and Certifications was inaccurate or incomplete.

This form contains 10 pages, additional information may be submitted as part of *Attachment A*.

A. BID/PROPOSAL/SOLICITATION TITLE:

B. BIDDER/PROPOSER INFORMATION:

Legal Name		DBA	
Street Address	City	State	Zip
Contact Person, Title	Phone	Fax	

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103). Use additional pages if necessary.

* The precise nature of the interest includes:

- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the transaction,
- the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and
- any philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:

- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City, or
- directing or supervising the actions of persons engaged in the above activity.

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	
Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	
Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

C. OWNERSHIP AND NAME CHANGES:

1. In the past five ten (5) years, has your firm changed its name?
Yes **No**

If **Yes**, use Attachment A to list all prior legal and DBA names, addresses, and dates each firm name was used. Explain the specific reasons for each name change.

2. Is your firm a non-profit?
Yes **No**

If **Yes**, attach proof of status to this submission.

3. In the past five (5) years, has a firm owner, partner, or officer operated a similar business?
Yes **No**

If **Yes**, use Attachment A to list names and addresses of all businesses and the person who operated the business. Include information about a similar business only if an owner, partner, or officer of your firm holds or has held a similar position in another firm.

D. BUSINESS ORGANIZATION/STRUCTURE:

Indicate the organizational structure of your firm. Fill in only one section on this page. Use Attachment A if more space is required.

Corporation Date incorporated: _____ State of incorporation: _____

List corporation's current officers: President: _____
Vice Pres: _____
Secretary: _____
Treasurer: _____

Type of corporation: C Subchapter S

Is the corporation authorized to do business in California: **Yes** **No**

If **Yes**, after what date: _____

If required we will register as a foreign corporation in CA

Is your firm a publicly traded corporation? **Yes** **No**

If **Yes**, how and where is the stock traded? _____

If **Yes**, list the name, title and address of those who own ten percent (10 %) or more of the corporation's stocks:

Do the President, Vice President, Secretary and/or Treasurer of your corporation have a third party interest or other financial interests in a business/enterprise that performs similar work, services or provides similar goods? **Yes** **No**

If **Yes**, please use Attachment A to disclose.

Please list the following: **Authorized** **Issued** **Outstanding**

- a. Number of voting shares: _____
- b. Number of nonvoting shares: _____
- c. Number of shareholders: _____
- d. Value per share of common stock:

Par	\$	_____
Book	\$	_____
Market	\$	_____

Limited Liability Company Date formed: _____ State of formation: _____

List the name, title and address of members who own ten percent (10%) or more of the company:

Partnership Date formed: _____ State of formation: _____

List names of all firm partners:

Sole Proprietorship Date started: _____

List all firms you have been an owner, partner or officer with during the past five (5) years. Do not include ownership of stock in a publicly traded company:

Joint Venture Date formed: _____

List each firm in the joint venture and its percentage of ownership:

Note: To be responsive, each member of a Joint Venture or Partnership must complete a separate *Contractor Standards form*.

E. FINANCIAL RESOURCES AND RESPONSIBILITY:

1. Is your firm preparing to be sold, in the process of being sold, or in negotiations to be sold?
Yes No

If **Yes**, use Attachment A to explain the circumstances, including the buyer's name and principal contact information.

2. In the past five (5) years, has your firm been denied bonding?
Yes No

If **Yes**, use Attachment A to explain specific circumstances; include bonding company name.

3. In the past five (5) years, has a bonding company made any payments to satisfy claims made against a bond issued on your firm's behalf or a firm where you were the principal?
Yes No

If **Yes**, use Attachment A to explain specific circumstances.

4. In the past five (5) years, has any insurance carrier, for any form of insurance, refused to renew the insurance policy for your firm?
Yes No

If **Yes**, use Attachment A to explain specific circumstances.

5. Within the last five years, has your firm filed a voluntary petition in bankruptcy, been adjudicated bankrupt, or made a general assignment for the benefit of creditors?
Yes No

If **Yes**, use Attachment A to explain specific circumstances.

6. Are there any claims, liens or judgements that are outstanding against your firm?
Yes No

If **Yes**, please use Attachment A to provide detailed information on the action.

7. Please provide the name of your principal financial institution for financial reference. By submitting a response to this Solicitation Contractor authorizes a release of credit information for verification of financial responsibility.

Name of Bank: _____

Point of Contact: _____

Address: _____

Phone Number: _____

8. By submitting a response to a City solicitation, Contractor certifies that he or she has sufficient operating capital and/or financial reserves to properly fund the requirements identified in the solicitation. At City's request, Contractor will promptly provide to City

a copy of Contractor's most recent balance sheet and/or other necessary financial statements to substantiate financial ability to perform.

9. In order to do business in the City of San Diego, a current Business Tax Certificate is required. Business Tax Certificates are issued by the City Treasurer's Office. If you do not have one at the time of submission, one must be obtained prior to award.

Business Tax Certificate No.: _____ Year Issued: _____

F. PERFORMANCE HISTORY:

1. In the past five (5) years, has your firm been found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for defaulting or breaching a contract with a government agency?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

2. In the past five (5) years, has a public entity terminated your firm's contract for cause prior to contract completion?

Yes No

If **Yes**, use Attachment A to explain specific circumstances and provide principal contact information.

3. In the past five (5) years, has your firm entered into any settlement agreement for any lawsuit that alleged contract default, breach of contract, or fraud with or against a public entity?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

4. Is your firm currently involved in any lawsuit with a government agency in which it is alleged that your firm has defaulted on a contract, breached a contract, or committed fraud?

Yes No

If **Yes**, use Attachment A to explain specific circumstances.

5. In the past five (5) years, has your firm, or any firm with which any of your firm's owners, partners, or officers is or was associated, been debarred, disqualified, removed, or otherwise prevented from bidding on or completing any government or public agency contract for any reason?

Yes No

If **Yes**, use *Attachment A* to explain specific circumstances.

6. In the past five (5) years, has your firm received a notice to cure or a notice of default on a contract with any public agency?

Yes No

If **Yes**, use Attachment A to explain specific circumstances and how the matter resolved.

7. Performance References:

Please provide a minimum of three (3) references familiar with work performed by your firm which was of a similar size and nature to the subject solicitation within the last five (5) years.

Please note that any references required as part of your bid/proposal submittal are in addition to those references required as part of this form.

Company Name: _____

Contact Name and Phone Number: _____

Contact Email: _____

Address: _____

Contract Date: _____

Contract Amount: _____

Requirements of Contract: _____

Company Name: _____

Contact Name and Phone Number: _____

Contact Email: _____

Address: _____

Contract Date: _____

Contract Amount: _____

Requirements of Contract: _____

Company Name: _____

Contact Name and Phone Number: _____

Contact Email: _____

Address: _____

Contract Date: _____

Contract Amount: _____

Requirements of Contract: _____

G. COMPLIANCE:

1. In the past five (5) years, has your firm or any firm owner, partner, officer, executive, or manager been criminally penalized or found civilly liable, either in a court of law or pursuant to the terms of a settlement agreement, for violating any federal, state, or local law in performance of a contract, including but not limited to, laws regarding health and safety, labor and employment, permitting, and licensing laws?
Yes No

If **Yes**, use Attachment A to explain specific circumstances surrounding each instance. Include the name of the entity involved, the specific infraction(s) or violation(s), dates of instances, and outcome with current status.

2. In the past five (5) years, has your firm been determined to be non-responsible by a public entity?
Yes No

If **Yes**, use Attachment A to explain specific circumstances of each instance. Include the name of the entity involved, the specific infraction, dates, and outcome.

H. BUSINESS INTEGRITY:

1. In the past five (5) years, has your firm been convicted of or found liable in a civil suit for making a false claim or material misrepresentation to a private or public entity?

Yes **No**

If **Yes**, use Attachment A to explain specific circumstances of each instance. Include the entity involved, specific violation(s), dates, outcome and current status.

2. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a crime, including misdemeanors, or been found liable in a civil suit involving the bidding, awarding, or performance of a government contract?

Yes **No**

If **Yes**, use Attachment A to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

3. In the past five (5) years, has your firm or any of its executives, management personnel, or owners been convicted of a federal, state, or local crime of fraud, theft, or any other act of dishonesty?

Yes **No**

If **Yes**, use Attachment A to explain specific circumstances of each instance; include the entity involved, specific infraction(s), dates, outcome and current status.

4. Do any of the Principals of your firm have relatives that are either currently employed by the City or were employed by the City in the past five (5) years?

Yes **No**

If **Yes**, please disclose the names of those relatives in Attachment A.

I. BUSINESS REPRESENTATION:

1. Are you a local business with a physical address within the County of San Diego?

Yes **No**

2. Are you a certified Small and Local Business Enterprise certified by the City of San Diego?

Yes **No**

Certification # _____

3. Are you certified as any of the following:

- a. Disabled Veteran Business Enterprise Certification # _____
- b. Woman or Minority Owned Business Enterprise Certification # _____
- c. Disadvantaged Business Enterprise Certification # _____

J. WAGE COMPLIANCE:

In the past five (5) years, has your firm been required to pay back wages or penalties for failure to comply with the federal, state or local **prevailing, minimum, or living wage laws**? **Yes** **No** If **Yes**, use Attachment A to explain the specific circumstances of each instance. Include the entity involved, the specific infraction(s), dates, outcome, and current status.

By signing this Pledge of Compliance, your firm is certifying to the City that you will comply with the requirements of the Equal Pay Ordinance set forth in SDMC sections 22.4801 through 22.4809.

K. STATEMENT OF SUBCONTRACTORS & SUPPLIERS:

Please provide the names and information for all subcontractors and suppliers used in the performance of the proposed contract, and what portion of work will be assigned to each subcontractor. Subcontractors may not be substituted without the written consent of the City. Use Attachment A if additional pages are necessary. If no subcontractors or suppliers will be used, please write "Not Applicable."

Company Name: _____

Address: _____

Contact Name: _____ Phone: _____ Email: _____

Contractor License No.: _____ DIR Registration No.: _____

Sub-Contract Dollar Amount: \$_____ (per year) \$_____ (total contract term)

Scope of work subcontractor will perform: _____

Identify whether company is a subcontractor or supplier: _____

Certification type (check all that apply): DBE DVBE ELBE MBE SLBE WBE Not Certified

Contractor must provide valid proof of certification with the response to the bid or proposal to receive participation credit.

Company Name: _____

Address: _____

Contact Name: _____ Phone: _____ Email: _____

Contractor License No.: _____ DIR Registration No.: _____

Sub-Contract Dollar Amount: \$_____ (per year) \$_____ (total contract term)

Scope of work subcontractor will perform: _____

Identify whether company is a subcontractor or supplier: _____

Certification type (check all that apply): DBE DVBE ELBE MBE SLBE WBE Not Certified

Contractor must provide valid proof of certification with the response to the bid or proposal to receive participation credit.

L. STATEMENT OF AVAILABLE EQUIPMENT:

A full inventoried list of all necessary equipment to complete the work specified may be a requirement of the bid/proposal submission.

By signing and submitting this form, the Contractor certifies that all required equipment included in this bid or proposal will be made available one week (7 days) before work shall commence. In instances where the required equipment is not owned by the Contractor, Contractor shall explain how the equipment will be made available before the commencement of work. The City of San

Diego reserves the right to reject any response, in its opinion, if the Contractor has not demonstrated he or she will be properly equipped to perform the work in an efficient, effective matter for the duration of the contract period.

M. TYPE OF SUBMISSION: This document is submitted as:

Initial submission of *Contractor Standards Pledge of Compliance*

Initial submission of *Contractor Standards Pledge of Compliance* as part of a Cooperative agreement

Initial submission of *Contractor Standards Pledge of Compliance* as part of a Sole Source agreement

Update of prior *Contractor Standards Pledge of Compliance* dated _____.

Complete all questions and sign below.


Under penalty of perjury under the laws of the State of California, I certify that I have read and understand the questions contained in this Pledge of Compliance, that I am responsible for completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Purchasing Agent within five (5) business days if, at any time, I learn that any portion of this Pledge of Compliance is inaccurate. Failure to timely provide the Purchasing Agent with written notice is grounds for Contract termination.

I, on behalf of the firm, further certify that I and my firm will comply with the following provisions of SDMC section 22.3004:

- (a) I and my firm will comply with all applicable local, State and Federal laws, including health and safety, labor and employment, and licensing laws that affect the employees, worksite or performance of the contract.
- (b) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of receiving notice that a government agency has begun an investigation of me or my firm that may result in a finding that I or my firm is or was not in compliance with laws stated in paragraph (a).
- (c) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of a finding by a government agency or court of competent jurisdiction of a violation by the Contractor of laws stated in paragraph (a).
- (d) I and my firm will notify the Purchasing Agent in writing within fifteen (15) calendar days of becoming aware of an investigation or finding by a government agency or court of competent jurisdiction of a violation by a subcontractor of laws stated in paragraph (a).
- (e) I and my firm will cooperate fully with the City during any investigation and to respond to a request for information within ten (10) working days.

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Pledge of Compliance is submitted.

Name and Title


Signature

Date

City of San Diego
CONTRACTOR STANDARDS
Attachment "A"

Provide additional information in space below. Use additional Attachment "A" pages as needed. Each page must be signed.
Print in ink or type responses and indicate question being answered.

I have read the matters and statements made in this Contractor Standards Pledge of Compliance and attachments thereto and I know the same to be true of my own knowledge, except as to those matters stated upon information or belief and as to such matters, I believe the same to be true. I certify under penalty of perjury that the foregoing is true and correct.

Print Name, Title

Signature

Date

AA. CONTRACTORS CERTIFICATION OF PENDING ACTIONS

As part of this Contract, the Contractor must provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Contractor in a legal or administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.


- The undersigned certifies that within the past 10 years the Contractor has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers.
- The undersigned certifies that within the past 10 years the Contractor has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Contractor discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/ REMEDIAL ACTION TAKEN

Contractor Name: Soundnine Inc

Certified By Darius Miller Title president

Name



Date January 19, 2021

Signature

EQUAL OPPORTUNITY CONTRACTING (EOC)

1200 Third Avenue, Suite 200 • San Diego, CA 92101
Phone: (619) 236-6000 • Fax: (619) 236-5904

BB. WORK FORCE REPORT

The objective of the *Equal Employment Opportunity Outreach Program*, San Diego Municipal Code Sections 22.3501 through 22.3517, is to ensure that contractors doing business with the City, or receiving funds from the City, do not engage in unlawful discriminatory employment practices prohibited by State and Federal law. Such employment practices include, but are not limited to unlawful discrimination in the following: employment, promotion or upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation, and selection for training, including apprenticeship. Contractors are required to provide a completed *Work Force Report (WFR)*.

**NO OTHER FORMS WILL BE ACCEPTED
CONTRACTOR IDENTIFICATION**

Type of Contractor: Construction Vendor/Supplier Financial Institution Lessee/Lessor
 Consultant Grant Recipient Insurance Company Other

Name of Company: Soundnine Inc

ADA/DBA: _____

Address (Corporate Headquarters, where applicable): 11863 124th Ave NE

City: Kirkland County: King State: WA Zip: 98034

Telephone Number: 866-388-7277 Fax Number: 866-388-7277

Name of Company CEO: Darius Miller

Address(es), phone and fax number(s) of company facilities located in San Diego County (if different from above):

Address: none

City: _____ County: _____ State: _____ Zip: _____

Telephone Number: _____ Fax Number: _____ Email: _____

Type of Business: Corporation Type of License: _____

The Company has appointed: Darius Miller

As its Equal Employment Opportunity Officer (EEOO). The EEOO has been given authority to establish, disseminate and enforce equal employment and affirmative action policies of this company. The EEOO may be contacted at:

Address: 11863 124th Ave NE; Kirkland WA, 98034

Telephone Number: 866-388-7277 Fax Number: 866-388-7277 Email: darius@soundnine.com

- One San Diego County (or Most Local County) Work Force - Mandatory
- Branch Work Force *
- Managing Office Work Force

Check the box above that applies to this WFR.

*Submit a separate Work Force Report for all participating branches. Combine WFRs if more than one branch per county.

I, the undersigned representative of Soundnine Inc

(Firm Name)

King, Washington hereby certify that information provided

(County)

(State)

herein is true and correct. This document was executed on this 19th day of January, 2021



(Authorized Signature)

Darius Miller

(Print Authorized Signature Name)

WORK FORCE REPORT – Page 2

NAME OF FIRM: Soundnine Inc DATE: 1/19/2021

OFFICE(S) or BRANCH(ES): main COUNTY: King County, WA

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- (1) Black or African-American
- (2) Hispanic or Latino
- (3) Asian
- (4) American Indian or Alaska Native
- (5) Native Hawaiian or Pacific Islander
- (6) White
- (7) Other race/ethnicity; not falling into other groups

Definitions of the race and ethnicity categories can be found on Page 4

ADMINISTRATION OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Management & Financial												1		
Professional												1		
A&E, Science, Computer														
Technical					1									
Sales												1		
Administrative Support														
Services														
Crafts														
Operative Workers														
Transportation														
Laborers*														

*Construction laborers and other field employees are not to be included on this page

Totals Each Column					1							3		
--------------------	--	--	--	--	---	--	--	--	--	--	--	---	--	--

Grand Total All Employees 4

Indicate by Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled														
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Non-Profit Organizations Only:

Board of Directors														
Volunteers														
Artists														

WORK FORCE REPORT – Page 3

NAME OF FIRM: Soundnine Inc

DATE: 1/19/2021

OFFICE(S) or BRANCH(ES): main

COUNTY: King County, WA

INSTRUCTIONS: For each occupational category, indicate number of males and females in every ethnic group. Total columns in row provided. Sum of all totals should be equal to your total work force. Include all those employed by your company on either a full or part-time basis. The following groups are to be included in ethnic categories listed in columns below:

- (1) Black or African-American
- (2) Hispanic or Latino
- (3) Asian
- (4) American Indian or Alaska Native
- (5) Native Hawaiian or Pacific Islander
- (6) White
- (7) Other race/ethnicity; not falling into other groups

Definitions of the race and ethnicity categories can be found on Page 4

TRADE OCCUPATIONAL CATEGORY	(1) Black or African American		(2) Hispanic or Latino		(3) Asian		(4) American Indian/ Nat. Alaskan		(5) Pacific Islander		(6) White		(7) Other Race/ Ethnicity	
	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)	(M)	(F)
Brick, Block or Stone Masons														
Carpenters														
Carpet, Floor & Tile Installers Finishers														
Cement Masons, Concrete Finishers														
Construction Laborers														
Drywall Installers, Ceiling Tile Inst														
Electricians														
Elevator Installers														
First-Line Supervisors/Managers														
Glaziers														
Helpers; Construction Trade														
Millwrights														
Misc. Const. Equipment Operators														
Painters, Const. & Maintenance														
Pipelayers, Plumbers, Pipe & Steam Fitters														
Plasterers & Stucco Masons														
Roofers														
Security Guards & Surveillance Officers														
Sheet Metal Workers														
Structural Metal Fabricators & Fitters														
Welding, Soldering & Brazing Workers														
Workers, Extractive Crafts, Miners														

Totals Each Column														
--------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Grand Total All Employees 0

Indicate By Gender and Ethnicity the Number of Above Employees Who Are Disabled:

Disabled														
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--



SOUNDNINE INC

Tools for Real-time Marine
Research and Monitoring

**AIWQMS Rebid
10089746-21-W**

TAB B

Soundnine Inc Proposal for Miramar Reservoir Automated In-Water Quality
Monitoring System (AIWQMS) Rebid # 10089746-21-W

Prepared by Soundnine Inc
2021-03-01



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Executive Summary

Soundnine Inc proposes to serve as the prime contractor for AIWQMS with subcontractor Kinnetic Laboratories Inc. and vendor or subcontractor Caribbean Wind LLC. Soundnine Inc will perform all design, integration, fabrication, calibration, instrument maintenance, and data management tasks at our facility in Kirkland Washington. Kinnetic Laboratories will provide vessel and personnel to perform all on-site installation and maintenance tasks with assistance and instruction from Soundnine. Doug Wilson of Caribbean Wind LLC will monitor data quality and correction of data in response to manual readings. All parties will contribute to training curriculum development and participate in training of city personnel.

Our proposal uses the specific technological approach specified in the RFP and includes significant investment in data review, customer service, and training.

Our proposal benefits from the efficiency of an instrument manufacturer serving as the contractor. This allows lower overhead, faster performance, and greater flexibility. We can leverage nearly a decade of investment in sensors, inductive communications, buoys, telemetry, cloud computing, user software and customer support with systems designed to work together. We also have ability to modify these critical components to meet project requirements efficiently.

As the manufacturer of the Ulti-buoy, Ulti-Modem, SIMC, and a variety of products and sensors supporting inductive communication, Soundnine Inc is uniquely qualified to design, deploy, and maintain the requested AIWQMS systems. Darius Miller, president of Soundnine Inc, has unique and extensive experience with design, test, and deployment of inductive communication systems in both fresh and sea water both at Soundnine and at Sea-Bird Electronics over the last 17 years.

Our employees have combined experience of more than 75 years working with environmental sensors of the highest quality, both at Soundnine and at Sea-Bird Electronics, including experience designing, deploying, and servicing inductive moorings.

Kinnetic Laboratories has experience deploying buoys and subsurface floats with inductive communications systems using components designed by Darius Miller. Doug Wilson of Caribbean Wind has experience both with deployment of the Ulti-buoy, SIMC, subsurface floats, and CTDO sensors and with retrieval, analysis and analysis and presentation of data collected from these systems.



Response

Soundnine Inc proposes to serve as the prime contractor for AIWQMS with subcontractor Kinnetic Laboratories Inc. and vendor or subcontractor Caribbean Wind LLC (subject to determination of compliance questions). Please note the attached letters of support from Kinnetic Laboratories and Caribbean wind.

Soundnine Inc is primarily a manufacturer of modems, instruments, and buoys and provider of data management services including cloud servers and data retrieval & analysis software. There is a valid perspective that the AIWQMS project is out of the normal scope of our activities. We are confident this project is well within our capabilities.

The AIWQMS project resembles multiple projects we have provided hardware, programming, service, and data management to over the years. The major difference is we propose to serve as a contractor to the end customer instead of in our typical role as a vendor to a contractor. Our experience suggests this will result in greater efficiency, better customer service, and a more successful project. It does expose us to additional administrative and compliance requirements; we are confident we can navigate these efficiently. We believe we have the right combination of expertise with the Kinnetic Laboratories and Doug Wilson to complete this project quickly and efficiently, despite the short time schedule. With a deployment date of July 12, we anticipate the project will require about 50% of our capacity prior to deployment.

Soundnine Inc Qualifications

As the manufacturer of the Ulti-buoy, SIMC, and a variety of products supporting inductive communication Soundnine Inc is uniquely qualified to design, deploy, and maintain AIWQMS systems using components of this type. Our current products, server software, and user software are the result of continuous investment over the last ten years. Our record includes published results in trade magazines including Sea Technology, Ocean News & Technology and ECO Magazine, including an article in the February 2021 issue of Sea Technology describing our collaboration with Caribbean Wind, LLC and Precision Measurement Engineering on an EPA funded test deployment of the Ulti-buoy with our new CT-DO sensor. Please refer to www.soundnine.com/downloads for links to some of these articles.

Our employees have combined experience of more than 75 years working with environmental sensors of the highest quality, both at Soundnine and at Sea-Bird Electronics, including experience designing, deploying, and servicing inductive moorings.

Our controllers and inductive communications products are installed in successful projects worldwide, including the United States, China, Middle East, Antarctica, Europe, Australia, and Russia.

We have numerous cloud servers in data centers worldwide supporting customers with both cellular and satellite telemetry and data management needs, including data quality assurance, automated threshold warnings, automated real time calculation of derived parameters, and data distribution through email, ftp, MySQL, html, S9Vis software and other common interfaces.

We have on-site calibration facilities adequate to calibrate all sensors required, including precision temperature and conductivity calibration baths with stability of 0.0005C.

We have an on-site machine shop and manufacturing facility adequate to fabricate the required mooring components.



Kinnetic Labs Qualifications

Generally, Kinnetic Laboratories, Inc. provides oceanographic and environmental science services carrying out field and laboratory studies associated with applied projects. Kinnetic Laboratories' core business is providing scientific, quantitative environmental and marine studies on key issues to support applied projects for engineering design, permitting, monitoring, and compliance purposes. To successfully provide these services, Kinnetic Laboratories has maintained extensive field capabilities, including logistical equipment, instrumentation, and specialized sampling equipment. Instruments and equipment include work vessels owned to facilitate overwater sampling, including harbor and coastal marine environments.

Kinnetic laboratories has experience deploying and recovering inductive moorings on the Southwest Ocean Outfall Project (see attached project summary) using components from Sea-bird Electronics and RD Instruments, both of which use inductive communications technology designed by Darius Miller.

Caribbean Wind LLC (Doug Wilson) Qualifications

Doug Wilson, principal of of Caribbean Wind, LLC, has extensive experience over 38 years as an oceanographer with NOAA and as a consultant. Please refer to his attached CV. He recently worked with Soundnine on two successful projects:

Subsurface mooring with SIMC and sensors from Soundnine and sensors from Sea-Bird Electronics for University of the Virgin Islands. A summary of this project was published in Ocean News & Technology, October, 2019.

Hypoxia monitoring demonstration with Soundnine Ulti-buoy telemetry relay and CTD-DO sensors with inductive communication for Chesapeake Bay Trust. Please refer to the attached report, Chesapeake Bay Hypoxia Profiling Buoy. This project is also presented in an editorial feature in the February 2021 issue of Sea-Technology Magazine (see <https://lsc-pagepro.mydigitalpublication.com/publication/?m=60787&i=693703&p=8>).

Division of Responsibilities

Soundnine Inc Responsibilities

Soundnine Inc will perform all design, integration, fabrication, calibration, instrument maintenance, system testing and data management tasks at our facility in Kirkland Washington.

Soundnine staff will participate in pre-deployment testing and training with staff from Kinnetic Laboratories and will advise and participate in person (to extent permissible by safety and compliance issues) in system deployment.

All portions of scope of work not specifically assigned to Kinnetic Laboratories or Caribbean Wind LLC are the responsibility of Soundnine Inc.

All parties will contribute to training curriculum development and participate in training of city personnel.



Kinnetic Laboratories Responsibilities

Kinnetic Laboratories will serve as a subcontractor and will:

1. Receive shipments and provide short term secure storage of equipment prior to deployment and maintenance activities.
2. Provide a secure staging area to assemble and test components and procedures prior to deployment and maintenance activities.
3. Provide vessel and personnel to perform all on-site installation and quarterly maintenance tasks with assistance and instruction from Soundnine.
4. Ensure compliance with all relevant laws and regulations relating to the assets provided and activities performed, including proper training and certification of staff participating in these activities.
5. Maintain insurance required for these activities.
6. Pack and ship equipment for return to Soundnine after maintenance activities.

Doug Wilson / Caribbean Wind LLC Responsibilities

Doug Wilson of Caribbean Wind LLC will assist with data quality, interpretation, training, and planning for deployment and maintenance. Specifically:

1. Initial assessment-- review data collection shortly after deployment and compare to manual data collected and any data available from the city around time of deployment.
2. Monitor data quality and correction of data monthly in response to manual readings.
3. Prepare brief monthly calibration reports with summary of sensor calibration corrections advised.
4. Prepare quarterly reports on sensor status with recommendations for quarterly maintenance activities.
5. Assist with training curriculum, especially data interpretation and best practices.
6. Participate in training of city staff (to the extend practical with compliance issues)
7. Assist with customer service regarding data interpretation

Key Personnel

Please refer to the attached resumes / CV's for the following key personnel:

Darius Miller, Soundnine Inc

Tim Flemming, Kinnetic Laboratories

Doug Wilson, Caribbean Wind LLC

Delivery Schedule

Soundnine can perform required design and testing and deliver the required hardware 16 weeks after finalizing contracts and coordinate with the local service provider to deploy all systems July 12.



Components

Ulti-buoy Relay Buoy

Soundnine Inc UB-45 hull with bird block kit. Soundnine UBC-SC controller with integrated solar charging system, GPS, cellular modem, amber nav light. Total weight less than 40 pounds. See Ultibuoy brochure attached.

Sensor Payload

Each sensor node will have two sensor packages to complete the required measurements. One is a CT-DO sensor, the other is a Soundnine Inc SIMC or SIMC-PCH integrated with turbidity and pH sensor. Long term stability is a significant goal. Short term stability is required.

Conductivity, Temperature, and Dissolved Oxygen

We propose Soundnine Inc XIM-CTDO. This is our existing CT sensor integrated with the MicroDOT optical dissolved oxygen sensor from Precision Measurement Engineering. We prototyped and tested this integrated sensor on an EPA funded hypoxia monitoring demonstration project in Chesapeake Bay in 2020, please refer to the attached report: Chesapeake Bay Hypoxia Profiling Buoy.

Turbidity

We propose integrating the Soundnine SIMC or SIMC-PCH with the Seapoint STM turbidity sensor set to 25NTU full scale.

pH

We propose integrating the Soundnine SIMC, SIMC-PCH and or XIM-CTD with one or more of:

- A) a ruggedized glass pH probe like Sensorex S651CD
- B) isFET pH probe based sensors like Honeywell DuraFET (SBE SeaFET)
- C) Colorimetric pH instrument like Sunburst Sensors πSAMI-pH
- D) S-series sensor from ANB Sensors

We may use different sensor technologies at different depths. We anticipate application of drift corrections to the pH readings to find a cost-effective balance between instrumentation expense and field performance. Short term stability is a priority – if pH decreases suddenly we will have confidence the signal is real and not a sensor stability issue.

Deployment & Recovery

Our proposed system can be deployed and recovered by two people in a small boat in minutes. Soundnine Staff will travel to the site to participate in initial deployment.

To deploy we pass a loop of line through the shackle on the main anchor, hang it over the side and hand lower the smaller anchor until the chain is tight. We put the buoy in the water and let it drift away as we uncoil the



mooring cable. We pass a line through the shackle under the subsurface float and tie it off. Then we use the line on the main anchor to lower both anchors to the bottom. Last we pull the line on the subsurface float to slowly drag the small anchor away from the large anchor so the surface and subsurface sections do not tangle.

For recovery we use a 'follower' – a small cylindrical chain catcher on the end of a nylon line. The follower fits around the Ulti-buoy mooring cable and slides down to the chain at the bottom. We pull the line to invert the follower and catch the chain, then use a small capstan to raise the two anchors. When the main anchor reaches the surface, we tie it to a cleat and haul the smaller anchor by hand. With both anchors tied off the sensors can be safely accessed for cleaning or replacement.

Key Performance Features

Reliability

- System has no actively moving components. This maximizes reliability.
- GPS and telemetry antennas are internal in pressure housing rated for short term exposure to 15 meters depth.
- Ulti-buoy has nothing attractive to steal, vandalize, or tie small craft to and has minimal vulnerability to recreational boaters. The one component which could be stolen contains a GPS tracking system.

Sensor Flexibility

If any sensor technology does not perform adequately, the system can be switched to an alternate technology from a different manufacturer with minimal difficulty.

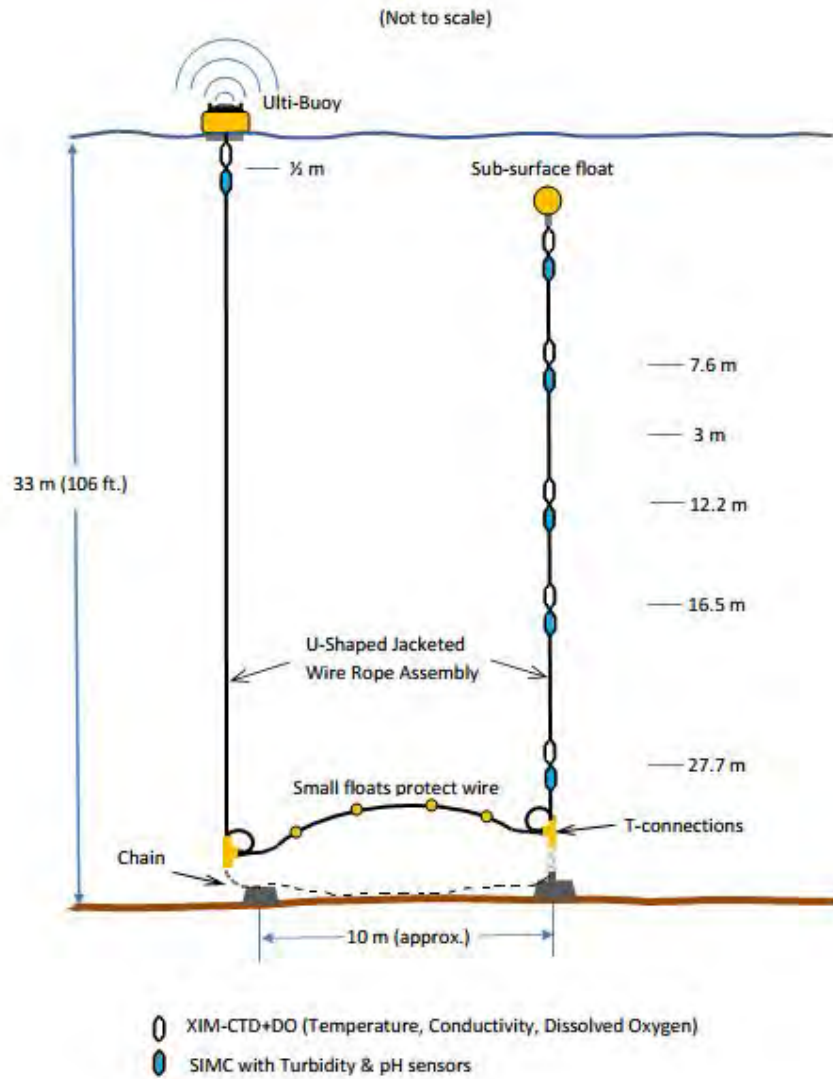
Simultaneous Sampling

Our system samples all sensors at the same time within few seconds, does not disturb the water column, and will not have measurement errors due to varying sensor response times.

Sample Rate Flexibility

Our approach can simultaneously sample all sensors and retrieve data through inductive communications as often as every two minutes. Sampling up to every five minutes may add very little additional cost.

Preliminary Mooring Diagram





Training

Soundnine staff will prepare manuals, curriculum, and training materials for training of city staff and organize a one-week field training event. Staff from Kinnetic Laboratories will participate. Doug Wilson will participate to the extent practical given compliance requirements. In-person and field training may be subject to unforeseeable restrictions depending on state and national COVID regulations.

Curriculum will include:

- all maintenance and deployment tasks
- data access, management, quality assurance
- creating and configuring automated thresholds and warnings
- remote communication with and configuration of Ulti-buoy, SIMC and other components through cellular connection with S9Vis software.

Permits and Licenses

We will research what licenses and permits are required. We may rely on an external compliance organization. Soundnine believes this is a private non-navigable waterway with no jurisdiction by Coast Guard or Army Corps of Engineers. We include costs for research and potential buoy permit or license requirements and insurance which may be required to maintain these licenses.

Modifications from Initial Bid

We modified our current bid in several ways from the initial bid:

1. Modified calibration schedule and calibration expenses (included in item 2) to include calibration services and shipping costs for full five-year term.
1. Increased customer service and training expectation, especially Doug Wilson participation in items 4 and 7 including his monthly and quarterly reporting over five years.
2. Reinterpreted meaning of Pricing Schedule items, especially, 1-4, in response to answers to questions in addendum.
3. Increased estimate for spare sensors (included in item 1)
4. Increased insurance and compliance estimates.
5. Reevaluated project management expectations for specified deployment date.

Support Letter

Miramar Reservoir Mooring Deployments

March 3, 2021

Number: KLI-210303-3

Darius Miller
Soundnine, Inc.

Mr. Miller,

Kinnetic Laboratories, Inc (KLI) is committing to supporting Soundnine, Inc. to provide water quality mooring deployment and maintenance services for the City of San Diego Miramar Reservoir Automated In-Water Quality Monitoring System Project (AIWQMS) Rebid 10089746-21-W. All conditions remain the same as stated in Proposal # KLI-210121-2.

Sincerely,



Timothy A. Fleming
Project Manager
Kinnetic Laboratories, Inc.

Proposal & Quotation

Miramar Reservoir Mooring Deployments

January 21, 2021

Proposal #: KLI-210121-2

Darius Miller
Soundnine, Inc.

Dear Mr. Miller,

Kinnetic Laboratories, Inc. (KLI) is pleased to present this proposal and quotation to provide water quality mooring deployment and maintenance services for the City of San Diego Miramar Reservoir Automated In-Water Quality Monitoring System Project.

KLI is a California SBE firm specializing in environmental and oceanographic science services. KLI has been in business for over 45 years and has a track record of excellence on thousands of oceanographic and environmental projects both large and small. KLI's core business is providing scientific, quantitative environmental and marine studies on key issues to support applied projects for engineering design, permitting, monitoring, and compliance purposes

KLI maintains full insurance coverage including general liability, professional liability, workers compensation and L&H coverage for marine operations, diving, etc.

Scope of Work

KLI proposes to offer support in mooring deployment, training and maintenance services for the Miramar Reservoir project. Support including personnel, vessels and equipment will be staged out of the Carlsbad office location. Services are based on a daily rate for buoy deployment and maintenance. All other services will be based on hourly rates attached to this proposal.

Assumptions:

- Deployment of three monitoring buoys
 - The monitoring buoys will be complete and ready to install when received by KLI.
 - Installation will be able to be performed on our 17' Boston Whaler with 2 KLI personnel.
 - Quarterly maintenance of monitoring buoys.
 - KLI will provide 2 KLI personnel with a 17' whaler or other comparable vessel
 - The maintenance is for changing out sensors and shipping back to Soundnine, Inc. for calibration.
 - Shipping will be billed as an additional cost
 - This assumes only one day on the water every 3 months.
 - Training the personnel of the Miramar Reservoir to use the monitoring systems.
 - KLI will provide support to Soundnine, Inc. for training with 2 KLI personnel and a vessel
 - Soundnine, Inc. will provide training curriculum for KLI to use with the Staff at Miramar Reservoir.
 - The goals of training will be specified by Soundnine, Inc.
-

Costs

Costs for the Scope of Work are provided in the table that follows. Please note that the costs below are only estimates and additional days for deployment of maintenance will be bill at the daily rate. KLI will provide a vessel and two personnel for the completion of these proposed services. The supplied vessel will be in good operating condition. The work shall be performed in accordance with safe practices and procedures, taking all reasonable precautions to protect personnel and property.


All insurance, safety and working day rates will be applicable for services provided beyond the described work scope. In addition:

- This cost quote is based on the requirements provided by Soundnine, Inc. via phone call of January 19, 2021.
- The quotation assumes that KLI's Health and Safety procedures are satisfactory to the client and sufficient for the work. Any additional requirements will be evaluated, and subsequent cost charged to the client at the specified rates.
- Soundnine, Inc. will make all notification to the reservoir authorities and otherwise to gain access to the buoy locations.
- The Daily Rate below is based on a maximum of 8 hours/day, and assumes timely and reasonable access to buoy locations. Longer days will be bill based on the attached rate schedule
- This project will be billed as a Daily Rate for deployment and maintenance of buoy systems. Training hours have been approximated as 40 hours per year. All other tasks will be at a time and material bases using the attached rate schedule.
- Subject to a mutually agreeable contract.

Description	Quantity	Unit	Unit Price	Total
Vessel Day Rate	1	Per Day	\$2,822.00	\$2,822.00
Maintenance	20	Per Day	\$2,822.00	\$56,440.00

Please let me know if you have any questions and thank you for considering KLI.

Sincerely,



Timothy A. Fleming
Project Manager
Kinnetic Laboratories, Inc.

**KINNETIC LABORATORIES, INC.
2021 RATE SCHEDULE**

<u>PROFESSIONAL CATEGORY</u>	<u>HOURLY RATE</u>
SCIENTIST V / PRINCIPAL / LEAD SCIENTIST	\$213.00
SCIENTIST IV / PROJECT MANAGER / SENIOR SCIENTIST II	\$174.00
SCIENTIST III / SENIOR SCIENTIST I	\$153.00
SCIENTIST II / STAFF SCIENTIST	\$131.00
SCIENTIST I / JUNIOR SCIENTIST	\$104.00
TECHNICIAN	\$87.00

<u>SHIPPING AND TRAVEL</u>	<u>RATES</u>
Postage/Shipping	Actual
Vans/Pick-Up Trucks	\$150/Day
Vehicle Miles	Government Rate
Lodging	Actual
Per Diem	Government Rate
Parking/Tolls	Actual
Airfare	Actual
Rental Vehicles	Actual

<u>VESSELS</u>	<u>DAILY RATES</u>
34' Research Vessel: D.W. Hood	\$1,450.00
30' Research Vessel: Prophecy	\$1,300.00
Research Vessel: North Forty	\$1,250.00
20 ft x 12ft Pontoon Barge	\$1,100.00
30 ft x 16 ft Pontoon Barge	\$1,400.00
22' Pontoon Vessel	\$850.00
17' Boston Whaler	\$250.00
14' Jon Boat	\$100.00
15 hp Outboard Engine	\$75.00
A-Frame w/ Puller Motor, for Whaler & Zodiac	\$50.00



CARIBBEAN WIND LLC
OCEANOGRAPHIC CONSULTING SERVICES

W. Douglas Wilson
President

206 Taplow Road
Baltimore, MD 21212
410.507.8587

doug@coastaloceanobs.com

2 March 2021

Darius Miller
Soundnine Inc.
Kirkland, WA 98033
Re: Proposal # 10089746-21-W

To whom it may concern:

Regarding the City of San Diego Miramar Reservoir Automated In-Water Quality Monitoring System (AIWQMS) Rebid (#10089746-21-W): Doug Wilson and Caribbean Wind LLC is willing to support Soundnine Inc as a vendor and/or consultant assisting with data quality analysis, interpretation, presentation, and system deployment and maintenance training.

Doug Wilson founded Caribbean Wind LLC in 2012 after 31 years of service as an Oceanographer with the US National Oceanographic and Atmospheric Administration (NOAA). CWLLC has since provided support for all aspects of marine data collection and analysis for clients including NOAA Chesapeake Bay Office; NOAA Ocean Acidification Program; Rutgers University; the University of the Virgin Islands; Washington College (Maryland); Virginia Commonwealth University; SeaBird Scientific; RPS Applied Science Associates; AXYS Technologies; Weatherflow, Inc.; and the Chesapeake Bay Trust.

CWLLC has worked closely with Soundnine Inc on instrument and platform designs, and has partnered with Soundnine Inc. recently on successful moored data collection projects in the Chesapeake Bay and US Virgin Islands. We are very familiar with use and maintenance of Soundnine instruments and systems, and available and willing to support this project.

Sincerely,

William Douglas Wilson
Oceanographer and President
Caribbean Wind LLC

Darius Miller
Electrical / Firmware Engineer

Employment

Dec 2011 to present	<p>Soundnine Inc (9 years) Owner / principal Responsible for business management, all technical development and limited marketing. Soundnine manufactures buoy controllers and oceanographic sensors with inductive communications for applications requiring real-time data.</p>
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Dec. 2004 to Aug. 2009	<p>Sea-Bird Electronics (6 years) Principal Engineer Reported to John Backes (Vice President), worked closely with Nordeen Larson (President) Primary responsibilities:</p> <ul style="list-style-type: none"> • Design of extremely precise oceanographic sensors, data loggers, inductive modem systems and software tools. • Relationships with key customers. • Project planning, supervision and mentorship of engineers. <p>Secondary responsibilities:</p> <ul style="list-style-type: none"> • Development of new sensors and measurement technologies • Design and supervision of automated electrical test system, including custom database and client / server software tracking production boards, test results, failure rates and repairs to monitor and raise overall quality.
Dec. 2003 to Dec. 2004	<p>Senior Electrical Engineer Responsible for design of analog and digital electronic systems.</p>

June 2001 to Dec. 2003	<p>DM Design (2 years) Home-based engineering consultancy providing design, prototyping and software/firmware development services.</p>
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Oct. 1995 to June 2001	<p>TechnoFrolics (5 years) Vice President Started as a part-time technician, continued as a full-time engineer during my time away from MIT. Responsible for electronic design, product development, business planning and limited marketing.</p>
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Summer 1995, Summer 1996	<p>Lockheed-Martin Infra-Red and Imaging Systems Temporary Part-Time Co-op Technician MIT internship program.</p>
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Education

Jan. 2002 to May 2003, Aug. 1993 to Feb. 1996	<p>Massachusetts Institute Of Technology Bachelor of Science in Electrical Engineering (voluntary withdrawal 1996, resumed 2002, completed 2003)</p>
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Darius Miller
Electrical / Firmware Engineer

Technical Strengths

- Broad mathematical and scientific background
- Analog and digital electronics
- Embedded systems
- Software / firmware design
- Printed circuit design
- Very low power electronic design
- Communications systems
- High-reliability systems
- Extensive programming experience in C, Java, basic, Matlab, Scilab, HTML
- Mechanical design / fabrication / manual and CNC machining
- Oceanographic sensing technology, especially extreme precision in temperature, conductivity and pressure measurements.

I am driven to expand my understanding as required to achieve goals, regardless of the disciplines involved. My motivation and broad experience allow me to achieve many goals efficiently. In my career I have consistently generated new and creative ideas and performed beyond expectations while thoroughly enjoying the process.

TIMOTHY A. FLEMING

Project Manager

Years of Experience: 18

Tim Fleming, B.S., M.S. serves as a KLI Project Manager working out of our local Carlsbad office. He is currently is managing the County of San Diego As-Needed Water Quality Monitoring Project Consulting Services Project. Mr. Fleming is coordinating operations on the current Lower Los Angeles River, Los Cerritos Channel, Lower San Gabriel River, and City of Los Angeles CIMP and IMP monitoring programs. He is also managing the instrumentation and field sampling tasks for the LWA CIMP for the Upper San Gabriel River Watershed.

Mr. Fleming was part of the previous fifteen-year City of Long Beach MS4 stormwater monitoring program carried out under the old permits, and has been very active in the current CIMP programs in the Los Angeles area designed and implemented by KLI. He is thus very experienced in large stormwater monitoring programs, including carrying out both wet weather and dry weather monitoring field studies. These efforts include Non-Storm Water (NSW) source surveys to inventory and test outfalls in order to detect sources of significant dry weather flow. Multiple and periodic surveys are done as required by the new permits, and a complete database of outfall locations, sizes and descriptions was assembled, is updated, and reported as part of the Water Management Plan to guide BMP decisions. For storm events, he coordinates field crews for various project, and in particular functions as the project manager for the San Diego County As-Needed contract.

Mr. Fleming has led early field operations associated with the installations of flow-composited stormwater monitoring stations required by the CIMP and IMP programs. Siting, design drawings, permits, and field installations all have been accomplished with KLI field staff, especially under initial tight time constraints after CIMP/IMP approvals by the Regional Board. Instrumentation components suitable to each given site are selected, particularly with regard to obtaining good flow measurements to enable good load determinations to be obtained. Though generally using available standard components, KLI monitoring stations are independently controlled by specially programmed controllers/dataloggers that allow each station to be remotely controlled by our Storm Control system. Thus, each station can be checked out, remotely set up, and programmed suitable to predicted rainfalls, turned on and then monitored throughout storm events, with the field crews needing to visit only if necessary. This Storm Control system has been very successful and effective, especially with respect to high data quality and full storm capture, but also very cost effective with less field hours during sampling events.

As a senior scientist for KLI, Mr. Fleming functions as a project manager, sediment and water quality specialist, and a marine biologist with emphasis on coastal field studies. He is responsible for project management, sediment sampling, water quality sampling, biological sampling, primary client contact, and reporting. He also serves as Captain of KLI work vessels. Mr. Fleming has 18 years of experience in the environmental field specializing in water quality, sediment sampling, environmental dredging, marine survey projects, and aquaculture. He has managed numerous projects involving water and sediment quality, including environmental studies necessary for dredging projects including vibracore sampling field operations. Mr. Fleming also has taken

hundreds of sediment cores by using a number of different types of core sampling equipment. Recently he vibracored for a sediment remediation project in Long Beach, California that required the collection of 33 core samples in Colorado Lagoon. These cores were described and analyzed to guide remediation efforts.

At KLI, Mr. Fleming has also carried out a many sediment sampling programs for the USACE, USCG, and ports and harbors throughout the west coast of the United States. Projects have included the water quality program for the U.S. Army Corps of Engineers for the Lower Snake and Clearwater dredging programs. Mr. Fleming also managed the construction and monitoring of the Montezuma Estuarine Wetland Restoration Project (Collinsville), one of the largest estuarine wetland restoration projects in California (1800 acres) which was restored utilizing dredge materials determined suitable for burial and suitable for cover materials. He performed compliance monitoring for sediments and water quality, constructed vernal pools and containment levees, and monitored the upland disposal of contaminated dredge spoils. Mr. Fleming has managed or been involved with coring projects that have spanned the states of California, Hawaii, Minnesota, Ohio, Louisiana, and Texas. Key project examples are the Transbay Power Cable Survey and Vibracore Investigation in the San Francisco Bay Area, completing 60 sq. nautical miles of side scan and sub-bottom profiling along with 150 twenty-foot pneumatic vibracores; Duluth Harbor, Minnesota coring, completing 90 cores up to 20 feet long; and Colorado Lagoon, Long Beach, California, a contaminated (Pb) sediment project requiring 33 core samples to be collected and analyzed for proper sediment disposal by burial at the Port of Long Beach. Mr. Fleming has also managed the Castro Cove Sediment Remediation Project, Richmond California where he was responsible for the dredging of 100,000 cubic yards of heavily contaminated sediments from San Pablo Bay into an upland disposal site at the Chevron Refinery. In addition, he managed the recirculation of discharge water back into Bay. At the Lower Snake and Clearwater maintenance-dredging project in Idaho he directed 15 employees working 24/7 in four consecutive winter months monitoring twenty different water quality sondes that collected over 1.6 million data points.

EDUCATION

M.S. Biological Sciences, California State University, San Marcos,
B.A., Marine Biology (Minor Degrees in Mathematics and Chemistry), Sonoma State University

Licensures/Certifications:

40 Hour Hazardous Waste Site Operations Training in accordance with 29 CFR 1910.120 and Cal/OSHA CCR Title 8 GISO 5192 (initial training 2005).
U.S. Coast Guard 100 TON Masters License #1100073.

William Douglas Wilson

Caribbean Wind LLC
206 Taplow Road
Baltimore, MD 21212

Professional Interests

Integrated Ocean Observing Systems; coastal, estuarine, and ocean observations; moorings, autonomous platforms, and instrument development; Offshore Wind Data Collection Platforms and Operational Support; Ocean data management and visualization systems; Ocean circulation and heat transport; Oceanography of the Caribbean Sea, western tropical Atlantic, and Gulf of Mexico; western boundary currents; equatorial ocean dynamics; Chesapeake Bay and estuarine dynamics, water quality, and ecological monitoring and forecasting;

Professional Experience

June 11, 2012 – **Consultant**: Ocean observing system design, implementation, and management; marine instrument and sensor development and integration; environmental data management and product and application development; Physical Oceanography.

Chief Science Officer, OCOVI (Ocean and Coastal Observing – Virgin Islands)

Courtesy Professor, University of the Virgin Islands, Marine and Environmental Science

Project Coordinator, IOCARIBE-GOOS Regional GOOS Alliance (1998 – 2018)

Senior Oceanographer, RPS ASA(2012-2018)

2001 – June 8, 2012 **Oceanographer** (Program Manager, Integrated Coastal Observations Program; Project Manager, Chesapeake Bay Interpretive Buoy System; Director, NCBO Coastal Prediction Center) NOAA Chesapeake Bay Office, Annapolis, MD

1982 - 2001 **Research Physical Oceanographer**, NOAA Atlantic Oceanographic and Meteorological Laboratory

Recent Awards

- American Meteorological Society Francis W. Reichelderfer Award, 2013
'...In recognition of distinguished contributions to the provision of operational environmental services to the public.'
- National Ocean Partnership Program Excellence in Partnership Award 2013, "Long-term in situ chemical sensors for monitoring nutrients". Research Team Member
- CSIRO (Government of Australia) Frohlich Fellowship, 2012
- NOAA Administrator's Award, 2007, 2009
- Co-Author, NOAA OAR Outstanding Scientific Paper Award, 2000: *The arrival of recently formed Labrador Sea Water in the Deep Western Boundary Current at 26.5E N*
- U.S Department of State, Meritorious Service Award, White Water to Blue Water Initiative, 2004

Recent Contracts and References, Caribbean Wind LLC

AXYS Technologies, Inc.

Project Support, US East Coast Projects Coordinator (2016-present), Project Integrator , Business Development
P.S. Reilly psreilly@axys.com

Rutgers University

Principal Investigator, Mid-Atlantic Coastal Ocean Observing Regional Association
Chesapeake Bay Interpretive Buoy System (NOAA Chesapeake Bay Office)
Chesapeake Bay Ocean Acidification Buoy (NOAA Ocean Acidification Program)
Challenger Glider Mission 2020 – Hurricane Gliders in the Caribbean

Scott Glenn glenn@marine.rutgers.edu

University of the Virgin Islands

Deployment and Maintenance of EPSCOR Ocean Buoy
Deployment of a Real-time Current and Wind Measurement System
Integration and Deployment of a Real-Time Subsurface Thermistor Mooring
Courtesy Professor, Center for Marine and Environmental Studies

Paul Jobsis pjobsis@live.uvi.edu

Chesapeake Bay Trust, Annapolis, MD

Award 2019 – 2020

Chesapeake Bay dissolved oxygen profiling using a lightweight, low-powered real-time inductive CTDO2 mooring with sensors at multiple vertical measurement levels

Applied Science Associates

Associate: Senior Oceanographer

Project Manager: Mid-Atlantic Acoustic Telemetry Observing System

Eoin Howlett ehowlett@asascience.com

Sea-Bird Scientific

Consultant: Engineering, System Design, and Business Development

Lea Ann Zuellig LZuellig@hach.com

University of Puerto Rico

Development of a web-based ocean observing system visualization and data access system for CariCOOS and IOCARIBE-GOOS – P.I.

Ocean and Coastal Observing – Virgin Islands (OCOVl) co-PI

Julio Morell julio.morell@upr.edu

IOC Subcommission for the Wider Caribbean Region

IOCARIBE-GOOS Project Coordinator

Cesar Toro c.toro@unesco.org

Global Science and Technology

GEO Regional Water Quality Pilot Project for the Caribbean

Paul DiGiacomo Paul.DiGiacomo@noaa.gov

Science and Technology Corporation, Columbia, MD

Deputy Program Manager, NOAA PROTECH OCEANS

Krish Narasimhan narasimhan@stcnet.com

Advanced Monitoring Methods

Installation of Lake Mead Weather Buoys

Tom Brauch Tom Brauch tom@adv2.com

OEA Technologies

Development and Establishment of a Regional Marine Monitoring and Forecasting System for the OECS

Brian Whitehouse bwhitehouse@oatech.com

Recent Contracts and References, Caribbean Wind LLC **continued**

Washington College, Chestertown Maryland
Projects Related to Development of the Chester River Watershed Observatory
Doug Levin dlevin2@washcol.edu

Chesapeake Research Consortium
Chesapeake Bay Interpretive Buoy System Support
Kevin Sellner sellnerk@si.edu

Current and Past Professional Committees:

- Vice President, Sections, Marine Technology Society (2016-2018)
- Joint Technical Commission for Oceanography and Marine Meteorology Task Team for Integrated Marine Meteorological and Oceanographic Services within WIS (TT-MOWIS)
- Technical Program Chairman, MTS/IEEE OCEANS '15 Washington DC
- Panelist, Final Review, *Caribbean Research, A Multi-Disciplinary Approach*, Netherlands Organisation for Scientific Research
- Mid-Atlantic Coastal Ocean Observing Regional Association (MARACOOS) Board of Directors, 2010-present
- Co-Chair and Regional Project Coordinator, IOC IOCARIBE-GOOS Steering Committee, 1998 - 2019
- Steering Committee, Our Global Estuary Project
- (Chair, Working Group 2 (Sea Level), Intergovernmental Coordination Group, Caribbean Tsunami and Coastal Hazards Warning System)
- Interagency Ocean Observation Committee, Regional Integration Coordinating Entity Certification Workgroup
- United Nations World Ocean Assessment Pool of Experts
- Founding Steering Committee, U.S. Caribbean Observing System Regional Association (CaRA US- IOOS)
- IOCARIBE Tsunami Group of Experts
- IOC GLOSS Group of Experts
- Co-Chair, Steering Committee, Chesapeake Bay Observing System
- Steering Committee, Chesapeake Community Modeling Project
- (Steering Committee, US White Water to Blue Water Initiative)
- (Executive Committee, Intra-Americas Sea Initiative)
- NOS-COOP OSTEP Advisory Board Member
(WOCE Data Products Committee (ADCP))
- Marine Technology Society, Buoy Technology Committee
- IEEE, Current Meter Technical Committee

Education

B.S. Florida Institute of Technology; Melbourne FL; Physical Oceanography; 1977; Bachelor, Honors; 3.3 GPA, 4 Point Scale; 637 Quarter Hours

M.S., University of Miami; Coral Gables FL; Meteorology and Physical Oceanography; 1981; Master; 3.5 GPA, 4 Point Scale; 45 Semester Hours

Selected Publications

Wilson, D., and D. Miller, 2021. Innovative Hypoxia Measurement: Collaboration with CTDO Sensors, UltiBuoy in Chesapeake Bay. *Sea Technology*, v. 62 (2), February 2021, pp. 8-10.

Wilson, D., and D. Bennett, 2019. Inductive telemetry and innovative mooring design enables cost-effective coral reef monitoring system. *Ocean News and Technology*, October 2019, pp. 14-15.

Wilson, W.D., D. Velasco, D. Shumuk, L. Fiorentino, R. Heitsenrether, 2019. Improving Current Measurements from Wave Buoys: Results from a Successful Five-Year Collaborative Development Project. . *OCEANS '19*, Seattle, Proceedings, Institute of Electrical and Electronics Engineers, in press.

Testor, P, B, DeYoung, D. Rudnick, S. Glenn, D. Hayes, C. Lee, C. B. Pattiaratchi, K. L. Hill, E. Heslop, V. Turpin, P. Alenius, C. Barrera, J. Barth, N. Beaird, G. Becu, A. Bosse, F. Bourrin, A. Brearly, Y. Chao, S. Chen, J. Chiggiato, L. Coppola, R. Crout, J. Cummings, B. Curry, R. Curry, R. Davis, K. Desai, Steven DiMarco, Catherine Edwards, Sophie Fielding, Ilker Fer, Eleanor Frajka-Williams, Hezi Gildor, Gustavo Goni, Dimitri Gutierrez, Stephanie Hanson, Peter Haugan, David Hebert, Joleen Heiderich, Karen J. Heywood, Patrick Hogan, Loïc Houpert, Sik Huh, Mark Edward Inall, Masso Ishii, Schin-ichi Ito, Sachihiko Itoh, Sen Jan, Jan Kaiser, Johannes Karstensen, Barbara Kirkpatrick, Jody Klymak, Josh Kohut, Gerd Krahmman, Marjolaine Krug, Sam McClatchie, Frederic Marin, Elena Mauri, Avichal Mehra, Michael P. Meredith, Travis Miles, Julio Morell, Laurent Mortier, Sarah Nicholson, Joanne O'Callaghan, Diarmuid O'Conchubhair, Peter Robin Oke, Enric Pallàs Sanz, Matthew Palmer, JongJin Park, Leonidas Perivoliotis, Pierre-Marie Poulain, Ruth Perry, Bastien Queste, Luc Rainville, Eric Rehm, Moninya Roughan, Nicholas Rome, Tetjana Ross, Simon Ruiz, Grace Saba, Amandine Schaeffer, Martha Schonau, Katrin Schroeder, Yugo Shimizu, Bernadette Marie Sloyan, David Smeed, Derrick P Snowden, Yumi Song, Sebastiaan Swart, Miguel Tenreiro, Andrew F Thompson, Joaquin Tintore, Robert E Todd, Cesar Toro, Hugh Venables, Stephanie Waterman, Roy Watlington and **Doug Wilson**. 2019. OceanGliders: A component of the Integrated GOOS. *Front. Mar. Sci.* doi: 10.3389/fmars.2019.00422

Heitsenrether, R, D. Velasco, W.D. Wilson, L. Fiorentino. 2018. Evaluating performance of acoustic Doppler current profilers on small, dynamic surface buoys. *OCEANS '18*, Charleston, Proceedings, Institute of Electrical and Electronics Engineers, in press.

Shumuk, D, B. Michael, D. Velasco, W.D. Wilson, 2018. The Next Generation of Buoys integrated with Current Profilers. *OCEANS '18*, Charleston, Proceedings, Institute of Electrical and Electronics Engineers.

Velasco, D, **D. Wilson**, S. Nylund, 2018. Enhancing the Accuracy of Current Profiles from Surface Buoy-Mounted Systems. *OCEANS '18*, Kobe, Proceedings, Institute of Electrical and Electronics Engineers.

Barbara A. Block, Christopher M. Holbrook, Samantha E. Simmons, Kim N. Holland, Jerald S. Ault, Daniel P. Costa, Bruce R. Mate, Andrew C. Seitz, Michael D. Arendt, John C. Payne, Behzad Mahmoudi, Peter Moore, James M. Price, J. Jacob Levenson, **Doug Wilson** and Randall E. Kochevar (2016). Toward a national animal telemetry network for aquatic observations in the United States. *Animal Biotelemetry*, (2016) 4:6.

Wilson, W. D., R. Heitsenrether, N. Holcomb, 2016. A Comparison of Current Profiles Collected from Bottom- and Buoy-Mounted Instruments, *OCEANS '16* Monterey, Proceedings, Institute of Electrical and Electronics Engineers.

Wilson, W.D., R. Heitsenrether, G. Gray. N. Holcomb, C. Teng, 2015. NOAA's Recent Field Testing of Current and Wave Measurement Systems, Part II. *2015 IEEE/OES 10th Current, Waves and Turbulence Measurements, Proceedings*, Institute of Electrical and Electronics Engineers.

Heitsenrether,, R., **W. D. Wilson**, G. Gray. N. Holcomb, C. Teng, 2015. NOAA's Recent Field Testing of Current and Wave Measurement Systems, Part I. *2015 IEEE/OES 10th Current, Waves and Turbulence Measurements, Proceedings*, Institute of Electrical and Electronics Engineers.

E. Howlett, R. P. Signell, D. Wilson, D. P. Snowden and K. R. Knee, 2014. Data management update for the Integrated Ocean Observing System (IOOS®), *2014 Oceans - St. John's*, St. John's, NL, 2014, pp. 1-10. doi: 10.1109/OCEANS.2014.7003284

L. Wan, H. Zhou, **D. Wilson**, J. Hanson, S. Zhou, and Z. Shi, 2014. Analysis of Underwater OFDM Performance During a Two-Month Deployment in Chesapeake Bay. *Marine Technology Society Journal*, vol 48, no. 6, Nov/Dec 2014.

Wilson, W. D., 2012. The Chesapeake Bay Interpretive Buoy System: An IOOS estuarine archetype. *Oceans' 12 MTS/IEEE Proceedings*, Institute of Electrical and Electronics Engineers. . DOI 10.1109/OCEANS.2012.6405120

Boicourt, W.C, M. Li, N. Nidziko, A. Blumberg, N. Georgas, E. J. Kelley, T.G. Updyke, **W. D. Wilson**, 2012. Observing the urban estuary: Review and prospect. OCEANS 12, Hampton Roads, *MTS/IEEE Proceedings*, Institute of Electrical and Electronics Engineers. DOI 10.1109/OCEANS.2012.6405120

Wilson, D., 2011. Current and Wave Measurements in Support of the Chesapeake Bay Interpretive Buoy System. *2011 IEEE/OES 10th Current, Waves and Turbulence Measurements, Proceedings*, Institute of Electrical and Electronics Engineers, pp. 94---99.

Wilson, D., 2011. Autonomous Water Quality Profiling With A Wetlabs Mini---Amp. *Oceans' 11 MTS/IEEE KONA, Proceedings*, Institute of Electrical and Electronics Engineers, pp. 1797---1805.

Wilson, D., 2009. The Chesapeake Bay Interpretive Buoy System: Recent Expansion and Advances. OCEANS 2009, MTS/IEEE Biloxi --- Marine Technology for Our Future: Global and Local Challenges, Proceedings, Institute of Electrical and Electronics Engineers.

Green, D.; Uccellini, L.; Colton, M.; Turner, E.; Scheurer, D.; Valette---Silver, N.; Matlock, G.; Brown, C.; **Wilson, D.**; Towards a Marine Ecological Forecasting System. OCEANS 2009, MTS/IEEE Biloxi --- Marine Technology for Our Future: Global and Local Challenges, Proceedings, Institute of Electrical and Electronics Engineers.

Wilson, D., 2008. The Chesapeake Bay Interpretive Buoy System. OCEANS 2008, Proceedings, Institute of Electrical and Electronics Engineers.

Wilson, D., and E. Siegel, 2008. Evaluation of Current and Wave Measurements from a Coastal Buoy. OCEANS 2008, Proceedings, Institute of Electrical and Electronics Engineers.

Joshua I. Henson, F. Muller-Karger, M. Luther, C. Kranenburg, **D. Wilson**, S. Morey, G. Maul, 2006. Strategic geographic positioning of sea level gauges to aid in early detection of tsunamis in the Intra---Americas Sea. *Science of Tsunami Hazards*, 25 (3), pp. 173 – 207.

Stamey, et al. (including **D. Wilson**), 2006. Chesapeake Inundation Prediction System (CIPS): A Regional Prototype for a National Problem. OCEANS 2007, MTS/IEEE Vancouver, Proceedings, Institute of Electrical and Electronics Engineers, DOI: 10.1109/OCEANS11213.2007

Sigurdsson, H., S. Carey, and **D. Wilson**, 2006. Debris Avalanche Formation at Kick 'em Jenny Submarine Volcano. In *Caribbean Tsunami Hazard*, pp. 66---67, Mercado and Liu ed., World Scientific Publishing Co., Singapore

Lindsay, Jan M., J. B. Shepherd, and **D. Wilson**, 2005. Volcanic and Scientific Activity at Kick 'em Jenny Submarine Volcano 2001 – 2002: Implications for Volcanic Hazard in the Southern Grenadines, Lesser Antilles, *Natural Hazards*, 34: 1---24.

Watlington, R., **W.D. Wilson**, W.E. Johns, and C. Nelson., 2003. Updated Bathymetric Survey of Kick `em Jenny Submarine Volcano, *Marine Geophysical Researches*, in press.

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- Wilson, W.D.**, and W. E. Johns, 1997. Velocity Structure and Transport in the Windward Island Passages, *Deep---Sea Research I*, v. 44, No. 3, pp. 487 --- 520.
- Ffield, A., J. Toole, and **D. Wilson**, 1997. Seasonal Circulation in the South Indian Ocean. *Geophysical Research Letters*, v 24, No. 22, pp 2772 --- 2776.
- Chereskin, T. K., **W. D. Wilson**, H. L. Bryden, A. Ffield, J. Morrison, 1997. Observations of the Ekman balance at 8E30' N in the Arabian Sea during the 1995 southwest monsoon. *Geophysical Research Letters*, v 24, No.21, pp 2541 --- 2544.
- Gordon, A. L., S. Ma, D. B. Olson, P. Hacker, A. Ffield, L. D. Talley, **D. Wilson**, M. Baringer, 1997. Advection and diffusion of Indonesian through flow water within the Indian Ocean South Equatorial Current. *Geophysical Research Letters*, v 24, No. 21, pp 2473 --- 2576.
- Hacker, P., E. Firing, **W.D. Wilson**, and R. Molinari, 1996. Direct Observations of the Current Structure east of the Bahamas, *Geophysical Res. Letters*, v. 23, 10, pp. 1127---1130.
- Wilson, D.**, 1994. Deep Ocean Current Profiling with a Broadband Acoustic Doppler Current Profiler. *OCEANS'94: Proceedings*, Institute of Electrical and Electronics Engineers, NY, NY, pp. 660 --- 665
- Wilson, D.**, E. Johns and R. Molinari, 1994. Upper layer circulation in the western tropical North Atlantic Ocean during August 1989. *J. Geophys. Res.*, v. 99, C11, pp. 22,513---22,523.
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SOUTHWEST OCEAN OUTFALL PROJECT (Kinnetic Laboratories)

Two strings of oceanographic instruments were moored off the end of the Southwest Ocean Outfall which is located approximately 3 miles offshore in approximately 90 feet of water. Mooring locations were selected to be away from the discharge plume so that ambient conditions were measured for use in the plume modeling efforts. Other than the normal oceanographic environment of wind and waves at this site, the biggest concern were fishing boats (draggers) that still work this area, large barges towed by tugs that might cut the corner on their way in and out of San Francisco Bay, and other ship traffic.

Our approach utilized a well-lighted (Strobe Light) surface buoys whose locations were published by the Coast Guard in their Notice to Mariners. Each mooring had an upward facing Acoustic Doppler Current Profiler (ADCP) at the bottom of each mooring string to provide velocity data at selected depth intervals within the water column, and to provide tidal data. Each mooring had five conductivity/temperature sensors and loggers deployed at selected depths along a secondary mooring cable fixed to a subsurface buoy. Depths for the conductivity/temperature sensors were selected based upon available density stratification data available for the site from past studies. These depths were slightly different on the two redundant moorings in order to interleave depths where these data were collected to furnish greater resolution of density stratifications present at the discharge site.

Each of the moored instruments recorded every 15-minute time-series data of current velocity and direction, depth, conductivity, and temperature. These data were also transferred via inductive modem technology to a datalogger housed in the surface buoy. Datalogger data in turn were electronically transferred through the Verizon cellular network to a computer located in Kinnetic Laboratories' Santa Cruz office. This configuration allowed us to check daily that the moorings were in place and that all instruments were working properly. Both instrument functionality and drift can be assessed continuously and corrective actions can be conducted in a timely manner. Data were reviewed for quality and then made available to the City on the project website.

Originally the plan was to modify one of the ADCPs to collect wave data. However, wave data from two ocean buoys, located in the vicinity of the outfall, were available. Both were located west of the entrance to San Francisco Bay and north of the outfall discharge point. The National Data Buoy Center (NDBC) website (<http://www.ndbc.noaa.gov>) has real time and historical data available for these two sites. The closest, Station 46237- San Francisco Bar, is in 15.2 meters of water and approximately five miles NW ($37^{\circ}46'53''$ N $122^{\circ}35'56''$ W at a bearing 346 degrees relative) of the outfall discharge point. The second buoy, Station 46026 – San Francisco, is in 55 meters of water and approximately 14.4 miles NW of the outfall discharge point ($37^{\circ}45'32''$ N $122^{\circ}50'0''$ at a bearing of 283 degrees relative). Station 46237 is a Datawell directional buoy and is operated by Scripps Institution of Oceanography. Data for this site (as station 142) is also available through The Coastal Data Information Program (CDIP) website (<http://cdip.ucsd.edu>). This station only supplies wave data and water temperature every half hour. CDIP offers more wave data products and processing for this buoy than does NDBC. Station 46026 is owned and maintained by NDBC. It is a 3-meter Discus buoy with an AMPS (Advance Modular Payload System) payload (i.e. onboard processors). This station supplies standard meteorological data in

addition to wave data every hour. The wave data that is supplied by NDBC for both buoys consists of the following parameters: significant wave height, swell height, swell period, swell direction, wind wave height, wind wave period, wind wave direction, wave steepness, and average wave period. Also, a spectral density plot of wave energy versus frequency and period is available.

Instrumentation specified below has been selected to minimize problems with marine fouling upon the accuracy of the sensors (primarily conductivity) so that frequent (monthly) service was not necessary. Vertical temperature/conductivity profiles were taken during each visit to the moorings to assure that sensor drift is not occurring. Full instrumentation maintenance was taken quarterly. Emplacement and retrieval were carried out from the 50-foot RV Shana Rae and maintenance visits were carried out from the 30-foot RV Prophesy.

INSTRUMENTATION AND MOORING DESIGN

Precision and accuracy were necessary for both the current velocity/direction data and for the conductivity/temperature data. Dilution models depend heavily on density stratification of the water column and seasonal temperatures and freshwater discharges from the Golden Gate will have significant impacts. Good time-series measurements of currents within the water column were also necessary. For these reasons we have selected Sea-Bird electronics conductivity/temperature instruments and Teledyne RD Instruments ADCPs for this mooring application.

The Sea-Bird SBE 37 MicroCAT is a high-accuracy conductivity and temperature recorder designed for moorings or other long duration deployments. Accuracy and stability were important but fouling must also be considered and this was addressed by the Sea-Bird option of a pumped conductivity cell. This pump sensor will minimize fouling and allow long deployments without degradation of the conductivity readings. Trapped water between pumped readings is treated with an antifouling device. The RD Instruments ADCP is a highly reliable and accurate bottom mounted current meter ideally suited for this application and is fitted with an internal data logger/controller as well as other optional features, including depth readings and the ability to read data for telemetry.

Data transfers was accomplished via underwater-to-surface data transmission by use of inductive modems that conduct all signals up a steel, rubber-jacketed mooring cable. These instruments and modems clamp onto the outside of the main mooring cable with no electrical connections and thus can be taken on and off the cable during mooring emplacements or retrievals making operations easier. The Sea-Bird SBE 37 MicroCAT instruments and also the RD Instruments ADCPs used these clamps on modems to transmit data to the surface where it can be transferred over the cellular network.

Figure 1 illustrates the planned mooring design which has been refined from the original concept in order to minimize the potential for inductive cable connector strain at the surface buoy attachment and the potential for the chain on the surface buoy to interact with the subsurface float. Each instrument string was anchored with a 600-pound stainless-steel and concrete anchor designed not to interfere with the ADCP compasses. Four MicroCAT CT loggers equipped with pumped conductivity sensors and inductive modems was attached to a ¼-inch jacketed inductive

modem cable attached to the anchor and kept elevated and taunt by a 30-inch diameter subsurface buoy. Two moorings were specified to provide redundant data but the positions of the four CT loggers was staggered between moorings to cover more depth intervals. A fifth MicroCAT CT logger was attached to the bottom of the surface buoy just below the termination of the inductive modem cable. The ADCPs was mounted at the bottom of each instrument string in a specially designed instrument cage. The main change from the previous mooring design is that the surface buoys will now be anchored with two offsetting 1000-pound anchors constructed from 950-pound used railroad wheels. One leg of this dual anchor system will consist of an inductive modem cable to bring data from the instrument string to the surface buoy. A series of jumper cables and specially designed cable terminations will complete the inductive modem cable circuit. A dual anchor system was chosen to prevent excessive spinning of the surface buoy and thus twisting of the inductive modem cables, and to prevent entanglement of the instrument string with surface buoy ballast chain. The surface buoys were 48 inches in diameter and 24 inches thick and be built by Mooring Systems, Inc. Each buoy was equipped with an aluminum tower for cellular and GPS antennas, small solar panels, a strobe light, radar reflector, and a 12-inch diameter watertight central well. Batteries, a Campbell Scientific data logger/controller, inductive modem interface electronics, and a cellular modem was housed in the central well.

The necessary equipment for both mooring systems is summarized in the attached cost estimate and in Figure 1. In addition to the deployed equipment, there was two MicroCAT CT loggers as backup.

MAINTENANCE

Mooring and instrument maintenance were conducted on a quarterly basis. During each maintenance visit, divers from Underwater Resources will retrieve and bring the ADCPs and all the CT recorders to the surface where they were cleaned and purged of data. Batteries and antifouling devices may also be changed at this time. During instrument servicing, the divers will clean the mooring hardware of any excessive biological growth, check for excessive corrosion, replace spent zinc anodes, and make any necessary repairs. Once the instruments have been serviced, the divers will reattach the instruments to the inductive modem cables. Tests was conducted to verify that each instrument is talking to the surface buoy CPU and data is successfully being transmitted over the cellular network. Included with the cost estimate were two additional service visits to cover unforeseen problems with the equipment and moorings.

DATA MANAGEMENT

Data was recorded at three redundant locations: 1) the surface buoy dataloggers, 2) an office computer, and 3) in the instruments themselves. Data was downloaded to the Santa Cruz office computer four times a day or more frequently if desired. Data representing conditions at the time of the data downloads was made available on a project website. All downloaded data was checked daily for problems including sensor drift. GPS units integral to the surface buoys will provide buoy location data. Alarms was triggered by the office computer communication software if a buoy begins to drift from its set location.

All data qualified under a detailed quality assurance/quality control check to ensure all data meets project specifications. Statistical evaluations were conducted to validate that the data were robust and represent actual field conditions. Data was compared to periodic water column profiles from calibrated field meters. All outliers and data gaps were identified.

All validated raw data was reduced, formatted and compiled for subsequent input to the dilution modeling and assessment phase.

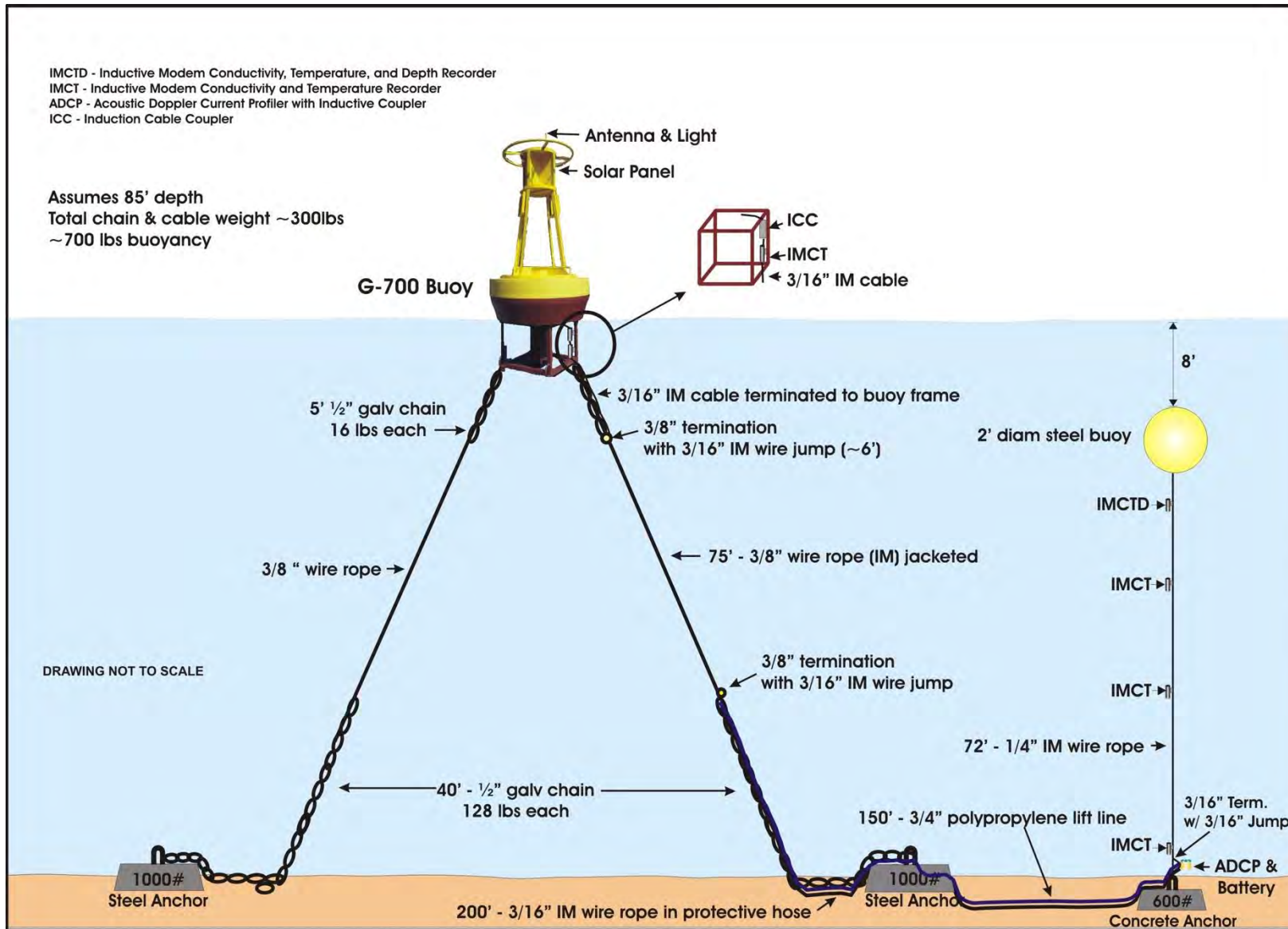


Figure 1. San Francisco Southwest Ocean Outfall Instrument Mooring

Chesapeake Bay Hypoxia Profiling Buoy

Test Deployment 2

Deployed 13 September 2020 1700 UTC

38 33.3600 N 76 23.4870 W 22 m



Doug Wilson
Caribbean Wind LLC

doug@coastaloceanobs.com
410 507 8587

DEPLOYMENT

The Chesapeake Bay Trust – CBP GIT Hypoxia mooring was re-deployed on 13 September at station location CB 4.3 E in 22 m of water.

For this deployment there were inductively real-time reporting SoundNine CTD_O2 sensors at 1 and 7 meters and SBE37 IM CTDO2 sensors at 13 and 20 meters.

In addition there were internally recording sensors placed at 4 (PME MiniDOT), 10 (PME MiniDOT), and 16 (YSI 600) meters.

Conditions were calm (see opening photo), first in-water data point was recorded at 1640 a record start time of 1700 Z was used.

Three CTD casts to full water depth (22 m) were recorded (next page).

Intention was to leave in for a month but system had to be recovered on October 8.

We did not activate the web site for this deployment but may do a future test on the archived data to finalize it prior to future deployments.

Data were

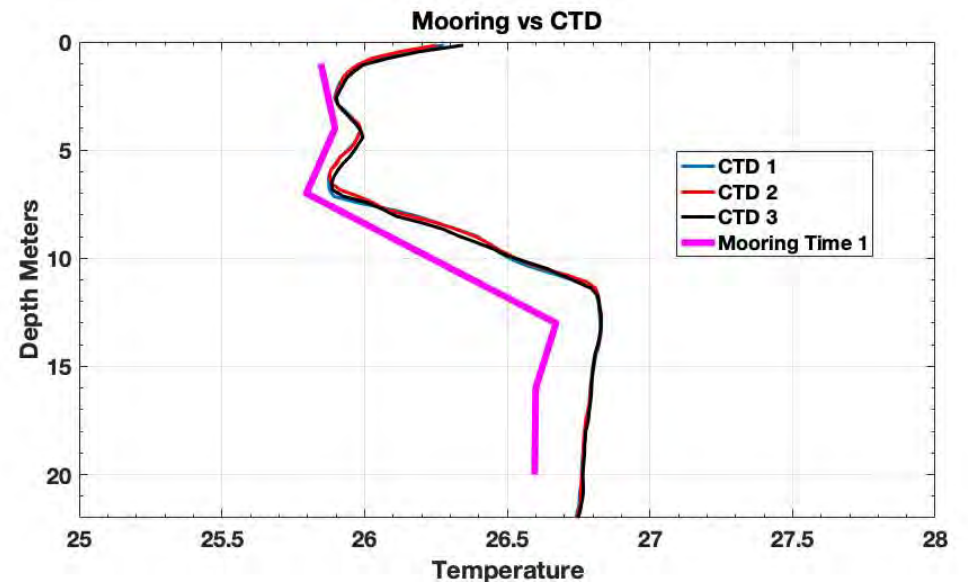
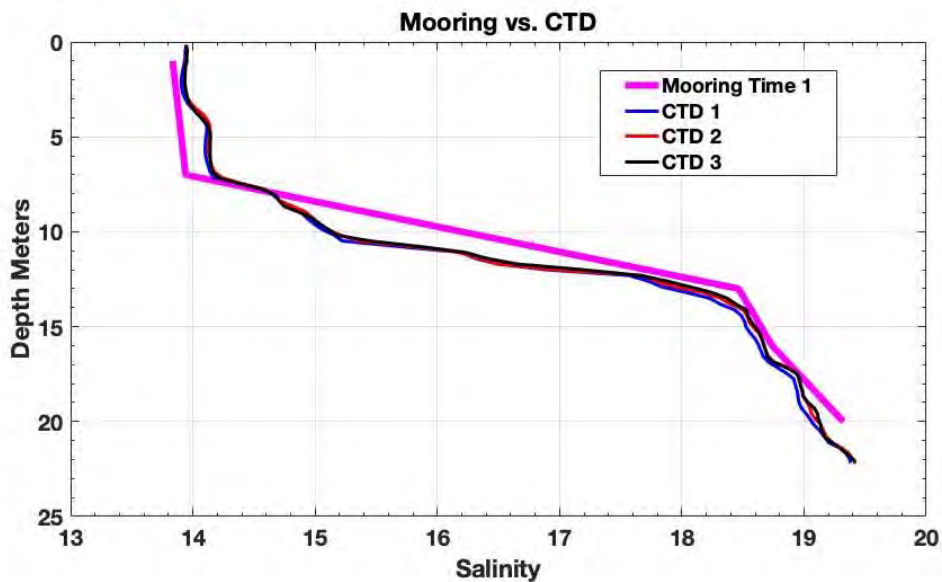
- Requested (UltBuoy controller sends transmit command)
- Received (by the UltiBuoy controller)
- Transmitted (via cellular service to SoundNine server)
- Logged (internally in controller and in SoundNine data base)

at 10 minute intervals, along with UltiBuoy status and GPS data.

Conditions at Deployment

Figures below show Temperature and Salinity profiles from CTD casts (three, taken at 1647 Z -1653 Z) compared to the linearly interpolated 1700 Z vertical profile created by averaging all available (real-time AND internally recording) T (6 points) and S (5 points) moored instrument values. Values agree to within 0.2 degrees C and 0.2 PSU, with T slightly biased (CTD warmer - need to check calibrations on both CTD and instruments).

At this point in the summer, the water column is very nearly isothermal (actually, slightly increasing with depth), with density stratification all due to salinity structure. Bottom waters are still hypoxic, but this is a fairly unstable vertical profile, and we expected that the bottom hypoxia would soon be disappearing.

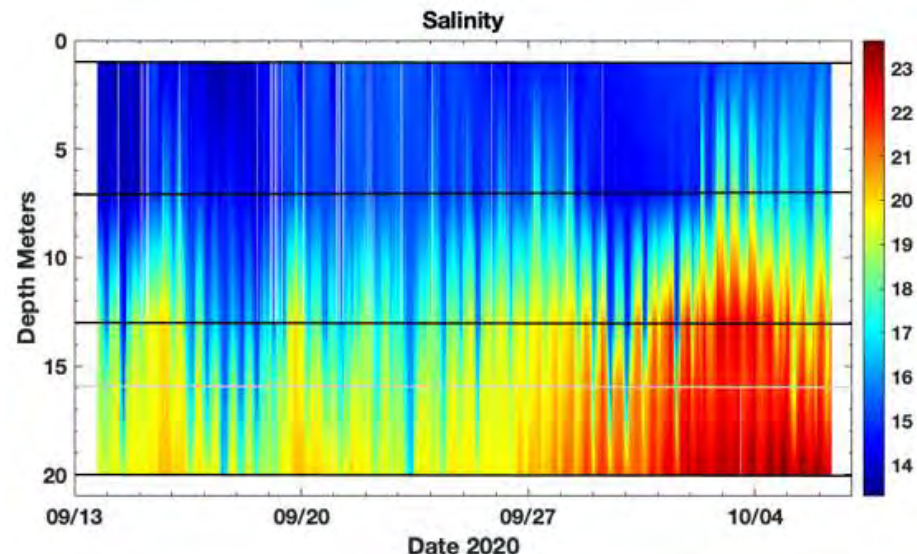
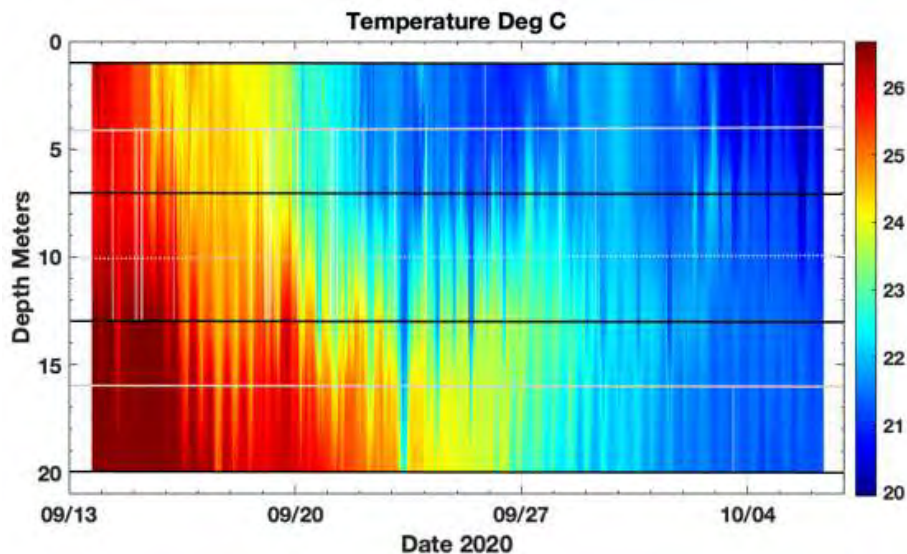
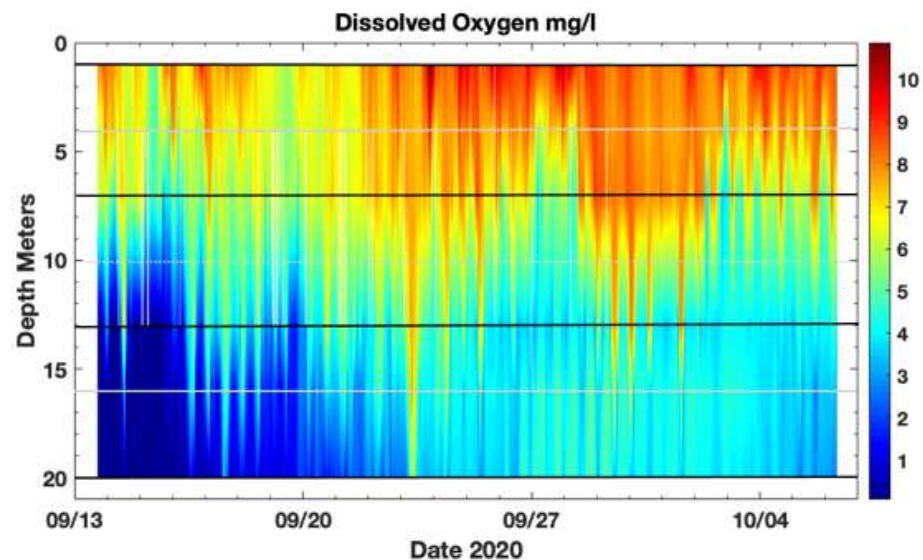


Data Time Series (1)

Figures show data as recorded at 10 minute intervals, with 1 meter linear vertical interpolation between surface (1 m) and bottom (20 m) sensors. Black lines are locations of intermediate real-time sensors, and grey lines are locations of internally recording sensors. PME O₂ sensor at 10 m did not record (user error).

Hypoxia, uniformly present in the lower half of the water column at the outset, was impacted by semidiurnal (tidal?) vertical mixing events as surface waters cooled (BWI T_{min} = 5 deg C on 22 September). Higher surface DO later in the record likely reflects higher saturation concentrations in colder water.

Notable that after about 27 September – after deep water stabilized at non-hypoxic levels – it showed intrusion of higher salinity water not previously seen at this location during the deployment.

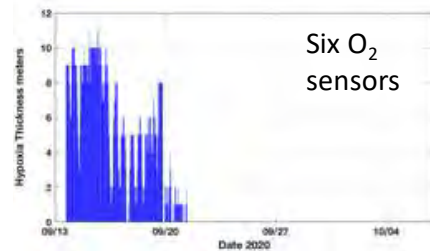
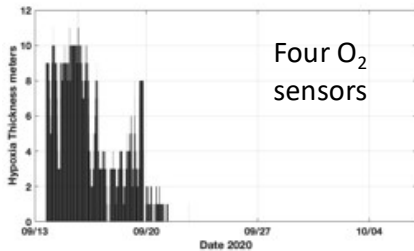
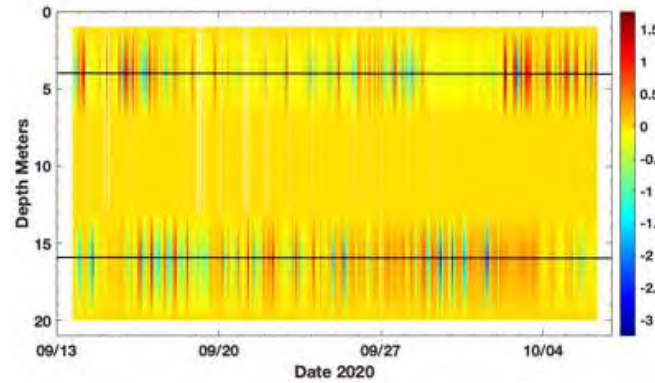
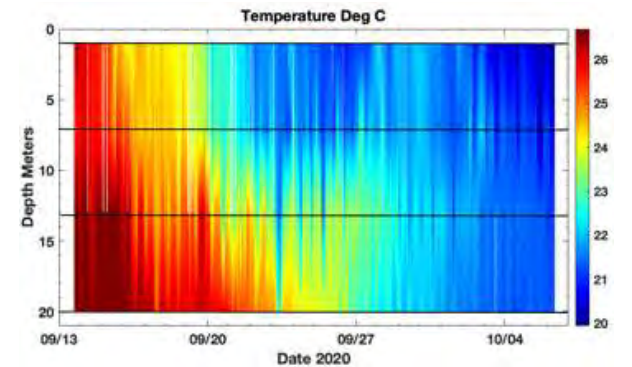
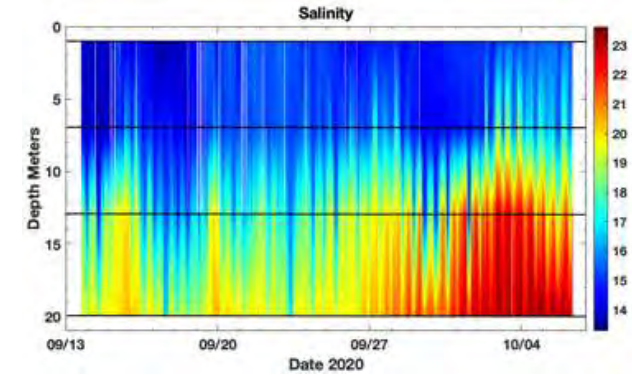
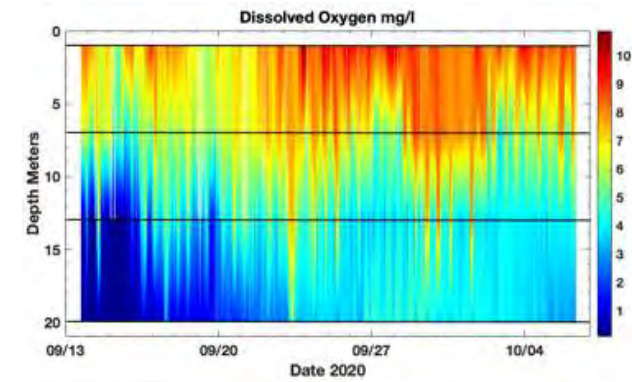


Data Time Series (2)

Figures at right show data as recorded at 10 minute intervals, with 1 meter linear vertical interpolation between surface (1 m) and bottom (20 m) sensors. Black lines are locations of intermediate real-time sensors. These plots are based on only the four real-time sensors.

How does a four-sensor mooring compare to a six-sensor one? Qualitatively, it captures the major features. Quantitatively, the figure below right shows the difference between the series, localized around the additional sensors. The differences average out rather quickly in time, with the long-term mean differences 0.09 mg/l at 4 m and 0.06 mg/l at 16 m.

The figures below compare the estimates of hypoxic volume derived from the six- and four-sensor arrays, using the vertical space (in meters) with dissolved oxygen concentration less than 2.0 mg/l. Both show hypoxic condition ending on the same date, with the time-integrated totals differing by about 6%. These small levels of difference show positive proof of concept and point out some areas of research prior to operational deployments. Arguably, a considerable amount of the difference might be attributable to something as basic as the need for better pre- and post-deployment sensor calibrations.



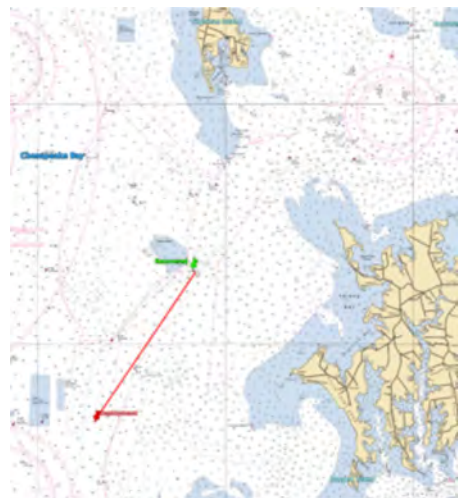
Recovery

During the 25 day deployment, the 4-instrument mooring showed a 99.6% (14100/14164 instrument records) data return, with all sensors reporting all variables for the entire time.

The intent was to leave the mooring out through October, but on 06 October around 0900Z, data transmission was interrupted, resuming about 3 hours later, 3.75 nm NNE of the deployment site. We were notified on 7 October that the buoy had been run over by the Atlantic Surveyor, a vessel on hydrographic survey contract to NOAA, entangled in a side scan sonar cable, and released and left near the entrance to the Choptank River channel. This dragged the mooring from 22 m depth to approximately 14 m depth, at a speed of over 1 knot. While the buoy did not transmit or receive GPS data during this time – it was likely underwater – it did still continue to collect data from the sensors. The buoy was recovered, fully intact and operational except for damage to the urethane foam float covering, on 8 October.



Pre Deployment



Buoy journey



Post Recovery



Urethane Damage

Lessons Learned and Next Steps

The two 2020 summer test deployments proved conclusively that hypoxia can be successfully monitored *'using a lightweight, low-powered, real-time inductive CTDO₂ mooring with sensors at multiple vertical measurement levels'*, as proposed.

During the project, we developed a new, low low cost instrument by integrated optical dissolved oxygen measurement technology into an inductive conductivity-temperature sensor, and successfully tested it in expected (and extreme) environmental conditions. Three of the proposed six sensors were used, with the remaining to be delivered with improvements based on experience. Details on performance will be in the final report.

Data were collected using inductive communications from a SoundNine UltiBuoy. The communications pipeline was robust (note the 99.5 % + return rate on second deployment), and we developed a [bonus!] web site for real-time data display.

We are developing a small, integrated LED navigation light for the UltiBuoy for future deployments.

Profiling using sensors at multiple levels did a good job of capturing the vertical structure and variability of dissolved oxygen (and other parameters) at the test location, supporting the preliminary analysis in the proposal. Further analysis , recommendations for best practices, and suggestions for deployments at other locations will be in the final report.

Doug Wilson 15 October 2020



SOUNDNINE INC

Helping build successful monitoring systems

SIMC

Subsurface Inductive Mooring Controller

The SIMC is a battery powered submersible controller with a built-in inductive modem. It incorporates elements of S9's well proven DANTE Buoy Controller and Ulti-modem and is ideal for applications where a surface telemetry buoy is either impractical or must be separated from the subsurface mooring by some distance.

The SIMC is ideal for controlling one or two ADCP's on a bottom platform or subsurface float and relaying data through inductive modem or acoustic modem to a nearby buoy or station for real-time transmission.

Inductive communications can operate over both vertical and horizontal sections of wire rope. This allows a subsurface float with a SIMC controlling multiple ADCP's to relay data to a nearby Ultibuoy for immediate transmission to shore.



Batteries

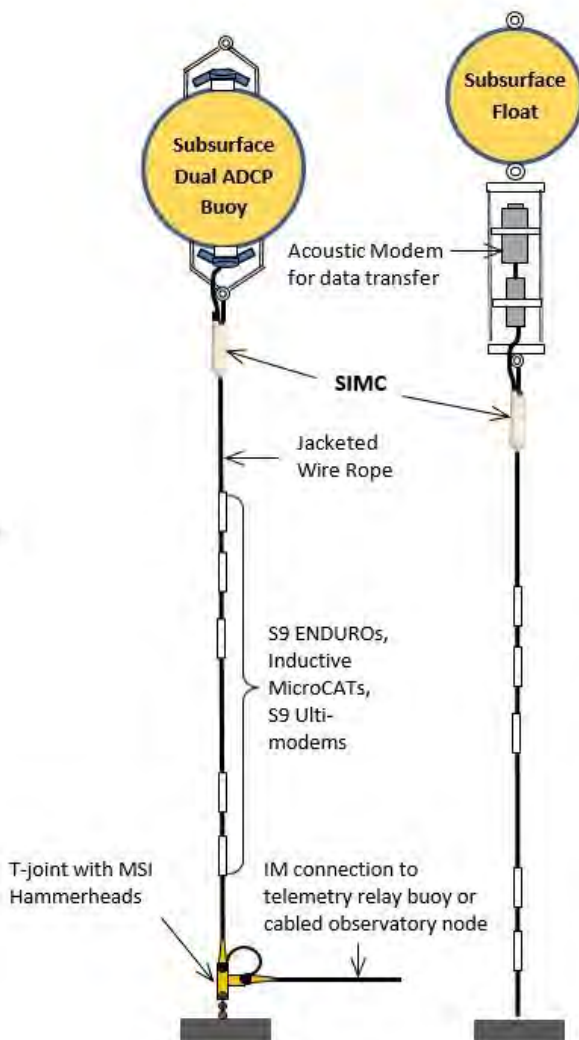
The SIMC has an internal backup battery and an external battery pack. The external pack is attached to the main housing by captive screws and power is coupled inductively to the electronics, enabling underwater replacement by a diver. All instrument data are recorded to an SDHC card.

Serial Ports

The SIMC includes two serial ports and allows an optional third port. Either port may be used to communicate with and program the SIMC. Both ports may be used to log data and control serial instruments such as an ADCP or acoustic modem. The third serial port option requires a six or eight pin connector and a Y splitter cable.

Internal Sensors

The SIMC includes an internal humidity sensor, 3-axis accelerometer, magnetometer and battery voltage and current monitors. Internal sensor data is logged and transmitted.



Soundnine Inc
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Kirkland, WA 98034 USA

www.soundnine.com
Tel: 866-388-7277
info@soundnine.com

Specifications

Power: 6-18 VDC Input
<25 micro amps quiescent
~6 milliamps operating
~12 milliamps during IM transmit

Serial Sensor Interfaces:
2 or 3 (RS-232)

Inductive Modem Interface:
S9 Ulti-modem - 1200, 4800 baud
Sea-Bird – 1200 only

Memory:
8 MB Flash
8-32 GB Micro SD card

Dimensions: 26 cm x 12 cm x 9 cm

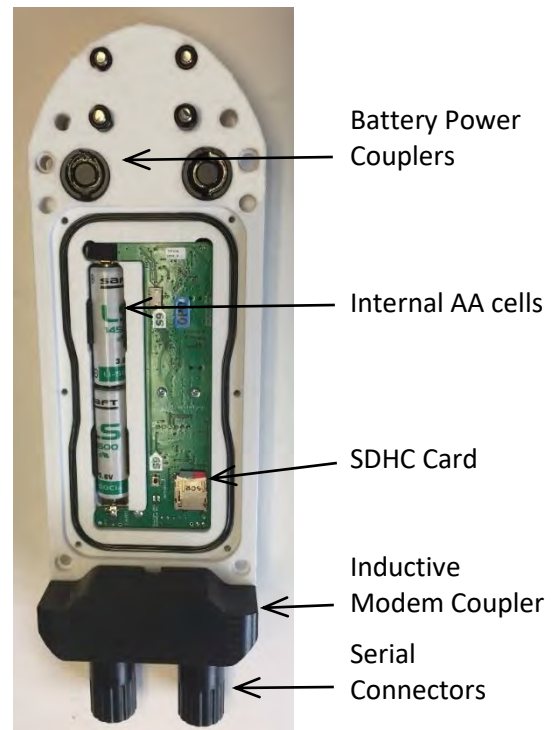
Weight: 2.0 kg in air

Materials: PET, PE, Titanium

Environmental:

Operating Temperature: -25 to +50°C

Depth Rating: 1000 meters



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CTD Cleaning and Calibration

About Soundnine Conductivity Sensors

The Soundnine conductivity sensor is a three-electrode internal field glass cell. Internal field means the electrical current used to measure the conductivity of the water is confined to the area inside the glass tube and there are no electrical fields created outside the glass tube. The area inside the glass tube is referred to as the cell. The three electrodes are the points where electrical current moves into or out of the water. The two outer electrodes are kept at the same electrical potential; this prevents external electrical currents. These electrodes are visible when looking into the cell – they are the black areas at each end. Never touch or mechanically clean the electrodes; doing so may damage the black platinum coating and significantly reduce accuracy.

The electrical current measures the resistance of the water in the conductivity cell. This measurement, combined with calibrated measurements of the geometry of the cell, allows calculation of the conductivity of the water within the cell. Any change to the geometry of the cell or presence of anything other than water within the cell creates an error in the measurement.



Figure 1: Always remove copper mesh before cleaning

About Salinity

Salinity is a parameter calculated from the conductivity, temperature and pressure of the water. Any error in either conductivity, temperature, or pressure will create a salinity error. Pressure has a relatively small effect in this calculation, it may be ignored for shallow sensors and applications with low accuracy requirements.

Calibration Guidelines

In situ performance of the conductivity sensor is highly dependent on the deployed environment and antifouling efforts. Deployments in cold arctic water may see performance better than 0.05 PSU for a year or more. Deployments in productive coastal waters with spawning barnacles and severe fouling may see errors of 0.1 PSU within a few weeks.

Signs Calibration is required

- Visible barnacles, algae, or objects inside the cell not removed by cleaning procedures below
- More than one year deployed (in any environment)
- More than three years since last calibration, even when not deployed.
- Visible damage to the cell such as cracked or chipped glass
- Visible damage to the electrodes or the black platinum coating on the electrodes. Damage may cause the electrode surface to appear silver instead of black. Some visible silver or grey on the edges of the electrodes is normal.
- Lower than expected conductivity or salinity values or sudden decreases in measured values. If the cell is fouled its resistance will increase. When cell resistance increases due to fouling the conductivity and salinity outputs read low.

Cleaning the CTD

Basic Cleaning

This should be performed every time the sensor is recovered from deployment. Ideally this cleaning should be performed before the sensor dries off after recovery.

1. Remove any copper mesh
2. Spray lightly with water and gently brush off any visible external fouling
3. Soak the entire instrument in a solution of 5% household bleach mixed with water (this makes approximately 0.5% sodium hypochlorite solution) for at least 15 minutes. Be sure the conductivity cell is filled with the cleaning solution and does not contain a large air bubble. The easiest way to do this is to orient the sensors vertically in a 5-gallon bucket about half-filled with cleaning solution.
4. Remove and rinse the sensor with clean fresh water, allow water to flow through the conductivity cell for at least ten seconds to remove any cleaning solution.
5. Used cleaning solution is generally considered nonhazardous and can be poured down the drain in most areas. It will decompose into saltwater over time. Do not mix the cleaning solution with any other chemicals or detergents, doing so may allow chemical reactions releasing hazardous chlorine gas.



Figure 2: Cell with newly spawned barnacles; requires cleaning

Cleaning Barnacles (after basic cleaning)

1. Thoroughly rinse the sensor to remove any bleach solution.
2. Soak the sensor in a solution of 10% vinegar mixed with water (this makes a solution of 0.5 to 0.8% acetic acid) for 1-4 hours. Make sure the conductivity cell is filled with the cleaning solution.
3. Remove and rinse the sensor with clean fresh water, allow water to flow through the conductivity cell for at least ten seconds to remove any cleaning solution.
4. It is possible to run a small pipe cleaner through the center of the cell to help remove barnacles, but never touch or attempt to mechanically clean the black electrodes – doing so will reduce the accuracy of the cell.





The XIM-CTD+DO is a remarkably low-cost sensor that accurately measures conductivity, temperature, dissolved oxygen, depth (optional) and tilt, and delivers real time data via inductive communications.

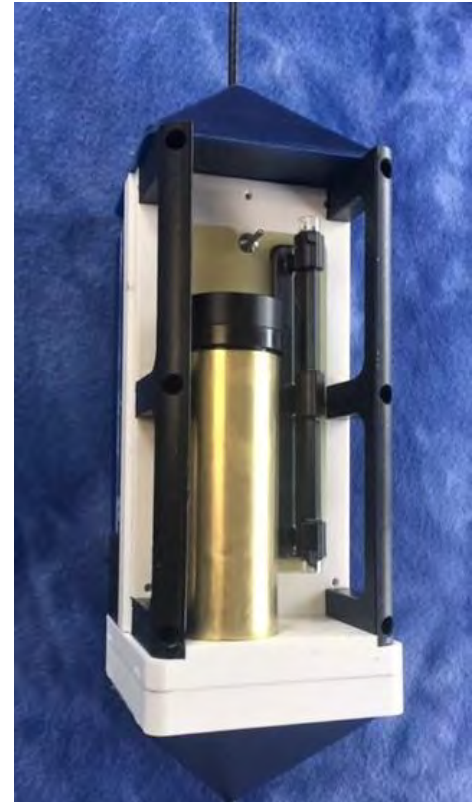
Conductivity is measured with a modernized oscillator-based sensor using a coated glass three electrode cell, similar in principle to conductivity sensors from Sea-Bird. Its free-flushed response to changing conductivity is both fast and accurate over the full measurement range. It performs consistently in very fresh or very salty water. Unlike other CTDs, there is no loss of resolution in fresh water.

Temperature is measured with a highly accurate and stable thermistor, and an optional silicon strain gauge sensor measures pressure. Dissolved Oxygen is measured by a well-proven optical (luminescence quenching) sensor..

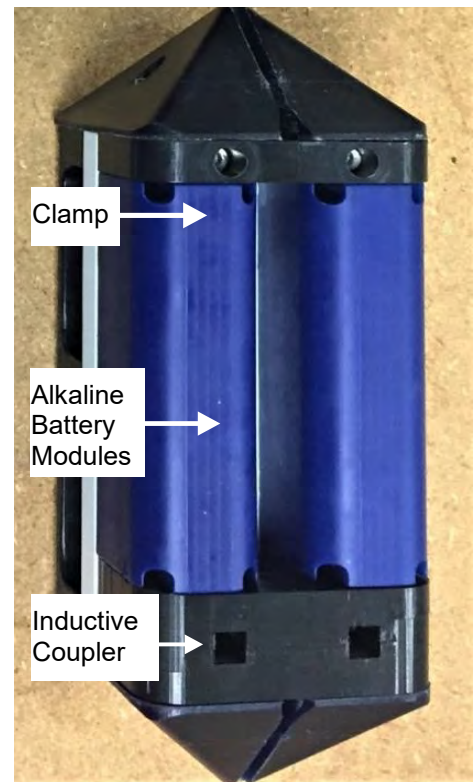
The XIM-CTD+DO mounts concentrically on on plastic-jacketed wire rope with provided clamps. The tapered ends reduce impact and snagging from nets, lines, and debris. Replaceable copper mesh provides bio-fouling protection and with care, users can clean the inside cell walls without damaging the electrodes.

The XIM series sensors incorporate Soundnine’s new high speed (4800 baud) inductive telemetry protocol (first introduced on version 2 XTP sensors) allowing, fast, power-efficient, simultaneous sampling and data collection from multiple sensors with a single command. Integrated error detection codes eliminate communication errors from your dataset.

XIM-CTD sensors are typically integrated with moored or drifting real-time buoys, but can also be used on non-real time moorings using a jacketed wire rope to carry the inductive communications between sensors and S9’s Subsurface Inductive Mooring Controller (SIMC), which coordinates sample polling and records data to SD card for later retrieval. The SIMC, installed at the top of the IM string, can be swapped underwater by a diver or the mooring can be lifted several meters to access the SIMC.

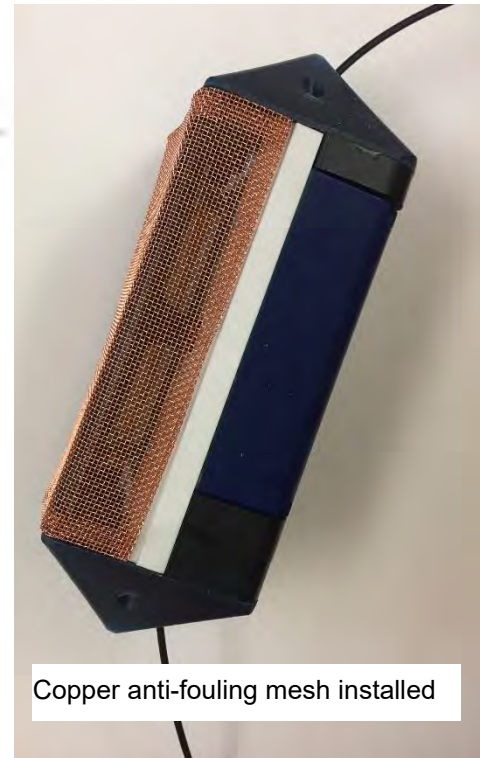
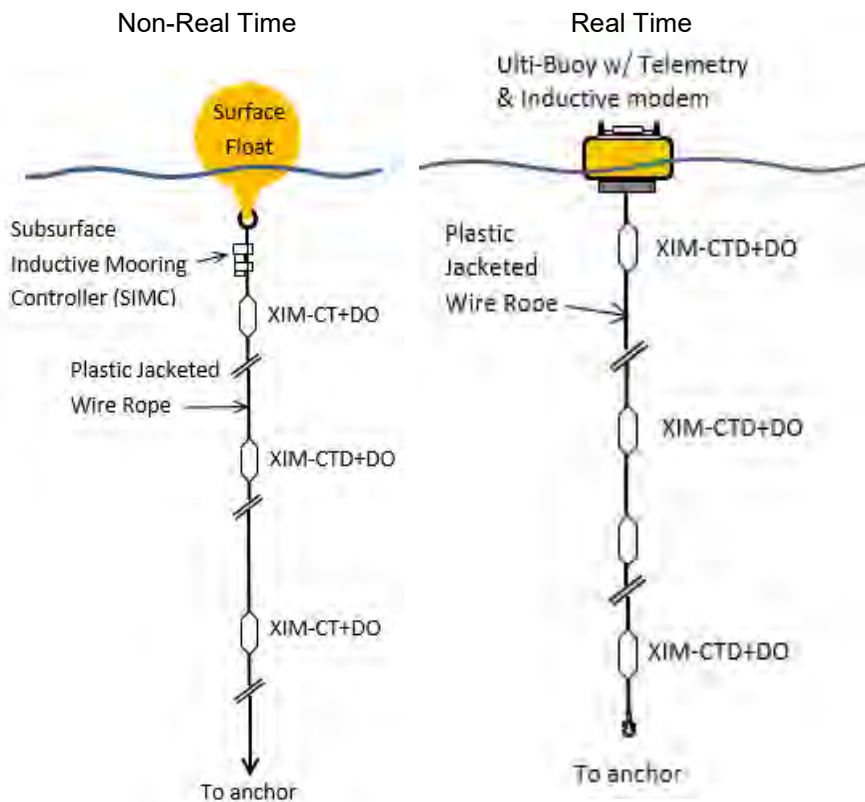


XIM-CTD+DO (copper mesh removed)





Typical Applications



Specifications:	Range	Accuracy	Resolution
------------------------	-------	----------	------------

Conductivity (S/m):	0- 9	±0.005	0.0001
Temperature (° C):	-5 to + 45	±0.005	0.00001
Pressure (dbar): (optional)	100 or 250	± 0.5%	0.01%

Dissolved Oxygen

Range:	0 - 150% saturation
Accuracy:	+/- 5% or +/- 0.3 mg/l whichever is larger
Resolution:	0.01 mg/l
Response Time:	30 seconds (approx.)

Pressure rating:	300 dbar
Dimensions:	9.5 cm x 9.5 cm x 23 cm
Weight in Air:	3.9lb
Weight in Water:	1.7lb
Battery:	Alkaline 6V, Capacity for at about 5 years
Allowable Cable Size:	3 to 11 mm (jacket outer diameter)



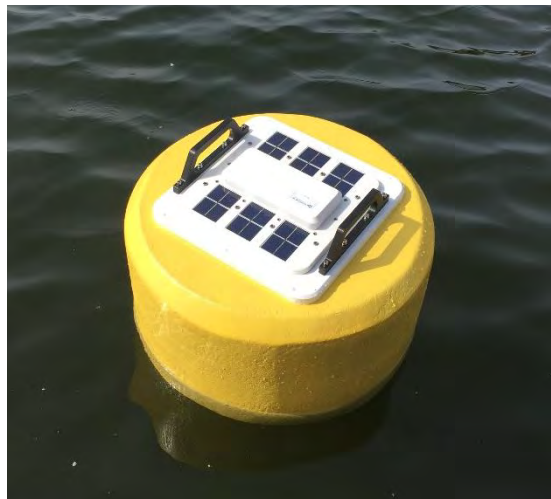


The Ulti-Buoy offers reliable cost effective solutions for projects requiring real-time subsurface sensor data. This simple rugged buoy with its advanced low-power controller serves as a stand-alone sensor platform or as a telemetry node for subsurface sensors.

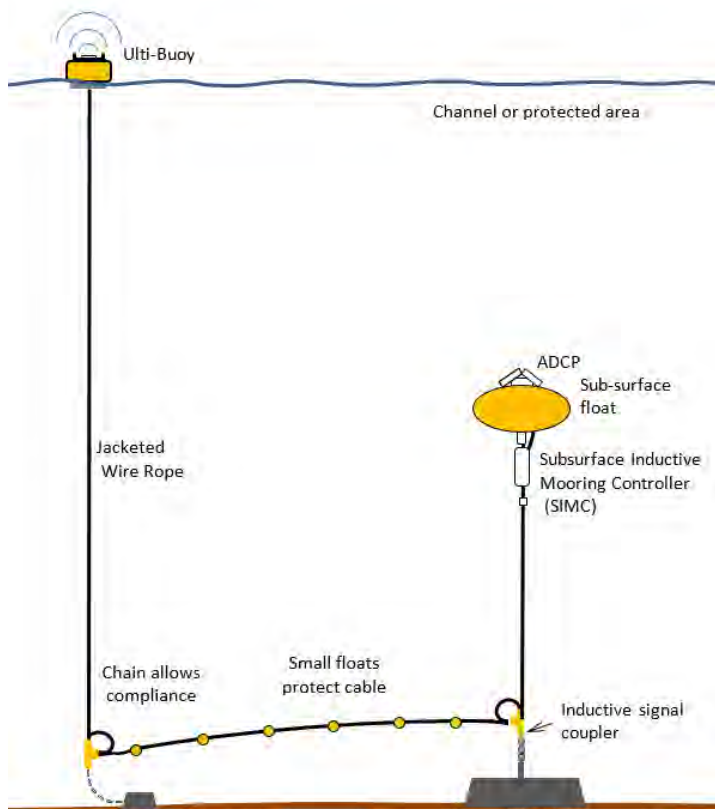
S9 inductive communications technology allows communication through plastic jacketed wire rope to subsurface sensors.

- Small and light
- Fully submersible buoy and controller
- Minimal hazard for navigation
- Radiused and protected tether connection to hull
- Reliable connection for inductive modem communications
- Buoy, controller and 10 high accuracy (0.005C) temperature sensors costs under \$20K

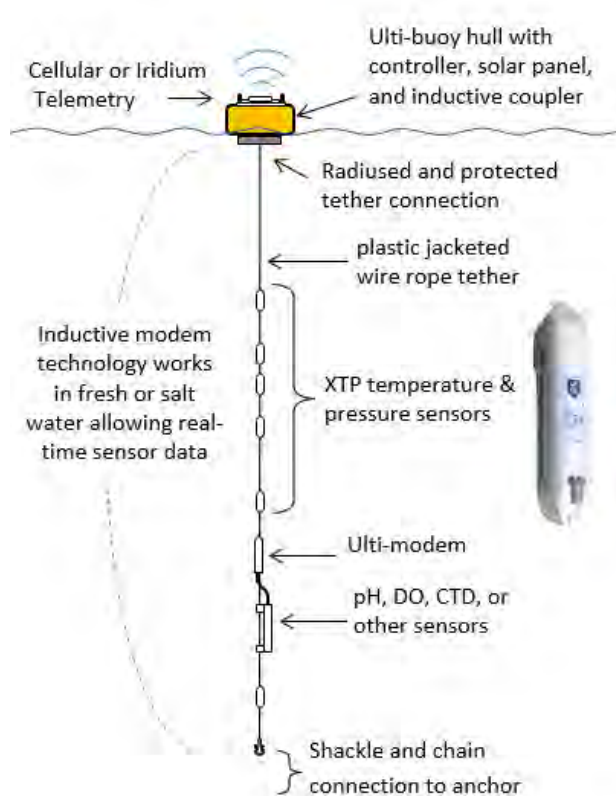
70 cm Diameter Ulti-Buoy



Ulti-Buoy ADCP Relay



Typical Ulti-Buoy Temperature Array





Specifications:

Power: 7.2V, 5.2 Ah, Rechargeable Li-ion battery; optional solar panel with charge controller.

Or alkaline primary battery pack (6-cell standard)

Or lithium primary battery pack (shipping restrictions apply)

Endurance: 20000 XTP measurements plus 2000 cellular reports (Li-ion or alkaline)

Sensors: S9 XTP Temperature, Pressure, and Tilt sensors with inductive telemetry

Third Party RS-232 Sensors with S9 Underwater Ulti-modem

Compatible with IM sensors from Sea-Bird Electronics

GPS: 5 meter typical accuracy, WAAS & EGNOS support

Accelerometer, Gyroscope and Digital Compass

Materials: HDPE, HDPE foam, PET, hot-dip galvanized steel

Buoy Dimensions:	Diameter	Gross Displacement
UB40	40 cm	45 liters
UB45	45 cm	56 liters
UB50	50 cm	70 liters
UB55	55 cm	84 liters
UB60	60 cm	100 liters

Max weight 25Kg





Pricing Schedule

PURE WATER Automatic In-Water Monitoring System Project

Item No.	Description of Service	Qty.	U/M	Unit Price	Ext. Price
1	Design, fabricate, build, and install a three unit sub surface float and mooring system with SIMC, data recorder, modem, temperature, dissolved oxygen, pH, electrical conductivity [yields TDS], and turbidity sensors, T-connections and electrically insulated inductive path system settings, weights and chains assemblies	1	LS	\$388018	\$388018
2	Hardware, labor, and services associated with the system installation, operation, maintenance, and required calibration for the instruments/sensors	1	LS	\$148117	\$148117
3	Instrument integration, testing, and data system development	1	LS	\$19460	\$19460
4	System start-up, operation, and maintenance.	1	LS	\$158400	\$158400
5	Perform quarterly preventative maintenance	20	EA	\$4022	\$80440
6	As-Needed Corrective Maintenance – Labor	1 *	HR	\$120	
7	Training and technical support on the telemetry relay technology management and relevant analyses.	1	LS	\$56100	\$56100
8	Permitting and Licensing as required	1	LS	\$30500	\$30500

**Note: Line item used to establish an hourly rate.*

Note: Below pricing will not be considered in proposal award.

Discount off manufacturer’s price list for parts required in support of either preventative or corrective maintenance: 5 %

Note: Item 2 includes calibration requirements for five year term.

Doug Wilson, Caribbean Wind participation: \$93000; included in items 4 and 7 above.

Kinnetic Laboratories subcontract: \$107742; included in items 2,5, and 7 above.