



**PERFORMANCE WORK STATEMENT
FOR
OPERATIONAL SUPPORT AND MAINTENANCE
OF THE
COMBINED GREAT LAKES OBSERVATION
STATIONS**

DRAFT

PERFORMANCE WORK STATEMENT

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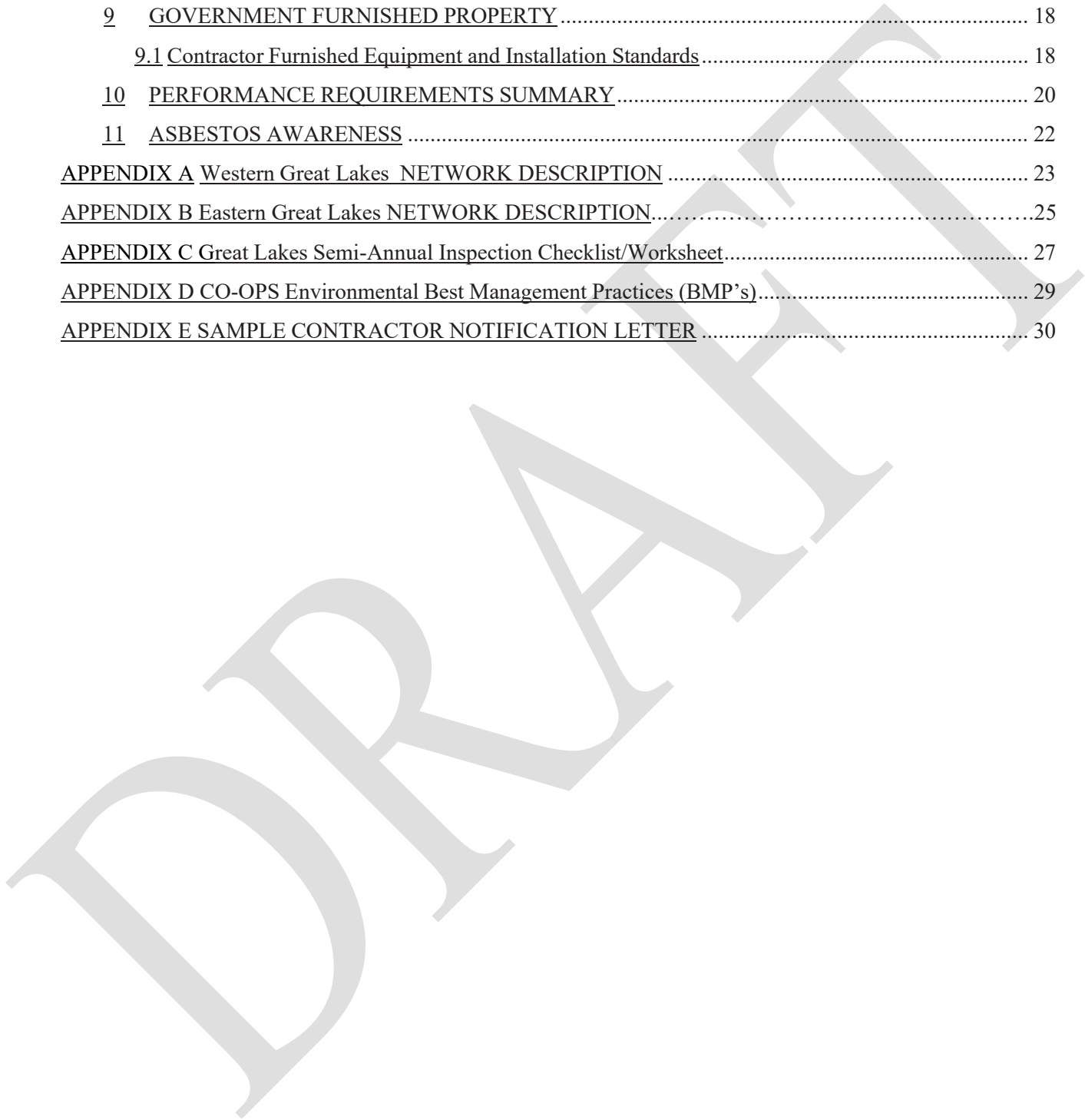
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PERFORMANCE WORK STATEMENT

1 INTRODUCTION

The National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Center for Operational Oceanographic Products and Services (CO-OPS), operates water level stations in the Great Lakes and their connecting channels as part of the National Water Level Observation Network (NWLON). The CO-OPS, Field Operations Division (FOD) operates and maintains these stations, which provides data for water resource management and safe navigation. The data are used by international federal agencies, state, local, city, private engineers and surveyors for hydrographic surveys, regulation, forecasting, construction and maintenance activities as well as many other environmental applications.

This PWS describes the operation and maintenance (O&M) activities for the 26 stations listed in Appendix A.

The Contractor that is selected to conduct the operations and maintenance of the Great Lakes' Stations listed in Appendix A must have expertise in the technology implemented, including, shaft angle encoders, pressure sensors, microwave water level (MWWL) sensors, meteorological sensors, water temperature sensors, line-of-sight and satellite data telemetry systems, and data acquisition and dissemination systems. Contractor must also have experience with electronic test equipment, troubleshooting at the component level, use of personal computers and relevant software.

2 MAINTENANCE DEFINITIONS and PERFORMANCE MANAGEMENT

Three types of maintenance station visits are covered by this PWS:

- **Semi-Annual Inspection (SAI)** at water level stations– Activities performed on a semi- annual basis at water level stations to maintain system integrity. These are specified in *Section 4.2 Sub Task 1 Semi-Annual Water Level Measurement Station Inspection*.
- **Semi-Annual Inspection (SAI)** at current meter stations - Activities performed on a semi - annual basis at each current meter station to maintain system integrity. These are specified in *Section 4.3 Sub Task 2 Semi-Annual Current Meter Inspection*.
- **Unscheduled Repair** – Activities undertaken as needed to restore operational status of station components. These activities are described in *Section 4.4 Sub Task 3 Unscheduled Repair*.

The Contractor shall comply with all applicable state and Federal safety and health standards and regulations applicable to this work, including, but not limited to, the Occupational Safety and Health Act, 29 U.S.C § 651 et seq. When the Contractor relies on subcontractors in executing this work, the Contractor has sole responsibility for ensuring the subcontractors are qualified, appropriately trained and outfitted, and that the subcontractors comply with all applicable safety and health standards and regulations.

The Contractor shall adhere to the delivery schedule for Semi-Annual Inspections (SAI) and deliverables specified in this PWS and as confirmed upon during the Contract Kick-Off Meeting. The time frame for unscheduled repair is agreed upon when a resource estimate for the specific activity is accepted by the Government. Any changes or modifications to the schedule for any type of maintenance

visit or deliverable must be reviewed and agreed to in advance by the Government. Late deliverables are a reflection on performance and may serve as the basis of non-award for future tasks based on past performance.

If a station experiences an equipment failure within 72 hours immediately following any type of Contractor maintenance visit, and this failure is attributed to the Contractor's performance, the Contractor shall be responsible for returning to the station and remedying the issue at the Contractor's expense.

2.1 Environmental Compliance Best Management Practices (EC-BMP)

In order to minimize potential environmental impacts under this Contract, the Contractor shall implement the following CO-OPS Environmental Compliance Best Management Practices (BMPs) for all fieldwork:

- 1) If the work requires use of a vessel, the Contractor shall use a designated lookout to spot marine mammals and endangered species and maintain safe distances from them while the vessel is underway to avoid harassing or harming the species. The Contractor shall:
 - a) Stop the vessel if a marine mammal or endangered species is within 100 meters, and resume once it has departed;
 - b) All in-water work shall be postponed or halted when marine mammals or endangered species are within 45 meters of the proposed work area, and shall only resume after the animals have voluntarily departed the area. If marine mammals or endangered species are noticed within 45 meters of the proposed work area after work has already begun, that work may continue only if the activity does not adversely affect the animal(s). For example, divers performing surveys or underwater work would likely be permissible, whereas operation of heavy equipment is likely not.
 - c) If the work is going to be delayed by more than 1 hour due to marine mammal or endangered species presence within 100 m of the work area, the Contractor should contact the COR and request additional time.
- 2) When using spray, sealant, degreaser, SimpleGreen[®], or similar substances, the Contractor shall place paper towels or other disposable absorbent material under work area when using these substances close to the marine environment to prevent spills.
- 3) The Contractor shall safely remove and dispose of potential toxic substances, including, but not limited to, the following:
 - a) desiccant from DCP box
 - b) batteries
 - c) old plastic zip ties
 - d) hazardous waste

- 4) The Contractor shall complete and submit the CO-OPS Environmental Compliance Best Management Practices (BMPs) Table as listed in Appendix C along with all other required station documentation.

3 OBSERVING SYSTEM COMPONENTS

The following sensors are components of an NOS standard observing system in the Great Lakes. Appendices A and B provides information about the sensors installed at each of the Great Lakes stations covered by this PWS. CO-OPS' mention and use of particular systems does not constitute an endorsement of these systems or their manufacturers, nor does it indicate disapproval of other manufacturer's systems. Mention of any system or product hereafter is indicative of equipment that has been thoroughly tested and used operationally by CO-OPS, and is for informational purposes only. Instrumentation similar to or the same as described in this section may be installed at Great Lakes stations. The information provided below is meant to aid in the development of quotes for this PWS.

3.1 BEI Absolute Shaft Angle Encoder Model # MT-40D

BEI shaft angle encoder consists of a float and counterweights system which is installed in a protective well or sump. The data is acquired, averaged and transmitted using a Sutron Xpert DCP. The BEI system is most often used as the primary water level measurement sensor for NOS systems in the Great Lakes.

3.2 Xylem WaterLOG Shaft Angle Encoder Model # H-344-2N

The WaterLOG shaft angle encoder consists of a float and counter-weight system which is installed in a protective well or sump. The data is acquired, averaged and transmitted using a Sutron DCP. The WaterLOG system is most often used as a backup water level measurement sensor for NOS systems in the Great Lakes.

3.3 Radar Water Level Measurement Systems

Radar water level measurement systems consist of a primary water level radar sensor (WaterLOG[®] H-3611-I or Nile 502) which is installed with a clear, unobstructed view of the water surface. This sensor is also called the Microwave Water Level sensor (MWWL). The data are acquired and processed using a Sutron Xpert DCP.

3.4 Pressure Water Level Measurement Systems

Pressure water level measurement systems consist of a single or dual orifice Paroscientific intelligent pressure sensor(s) tied into a gas purged bubbler system. The data are acquired and processed using a Sutron Xpert DCP. The Druck pressure sensor/bubbler system is sometimes utilized as a backup water level measurement system.

3.5 Meteorological Sensors

The meteorological sensors, where installed, are attached to the Sutron Xpert DCP. The anemometer is generally the R.M. Young Model 05103 Wind Monitor as the primary wind sensor and the backup up is generally an R.M Young Alpine model or Vaisala heated ultrasonic unit. The barometer is

generally a Sutron Accubar[®] Barometric Pressure Sensor. The air temperature is measured with a Yellow Springs Instrument (YSI) thermistor probe housed in a multi-plate radiation shield. Some stations have a combined Vaisala RH/AT sensor which measures relative humidity and air temperature. Water temperature sensor is a sealed YSI thermistor probe.

3.6 RDI Acoustic Doppler Current Profiler (ADCP)

RDI horizontal ADCP's are deployed at several locations in the Great Lakes (See Appendices A and B) Data is collected with a Sutron data logger and transmitted via GOES, IP or iridium.

4 OBSERVING SYSTEM MANAGEMENT, OPERATION, and MAINTENANCE

The activities and requirements for successfully executing Semi-Annual Water Level Measurement Station Inspection, Semi-Annual Current Meter Inspection, and Unscheduled Repair at CO-OPS Great Lakes NWLON stations and Current Meter stations are described below.

4.1 Management and Operation Requirements

In order to successfully execute this PWS the **Contractor shall**:

- Arrange for secure and appropriate storage of all spare components, to serve as a staging area for field operations. This location will require telephone and power utilities.
- Furnish all vehicles, vessels, equipment, tools, materials, and supplies necessary to perform the tasks specified in this PWS.
- Conduct all work in accordance with standard CO-OPS practices (see Section 6 References), unless otherwise specified.
- Maintain a suitable quantity of Contractor provided maintenance consumable parts and supplies, as described in Section 9.1- Contractor Furnished Equipment and Installation Standards. The Contractor shall maintain this inventory as necessary to ensure the availability of these items at all times throughout the period of performance.
- Use CO-OPS standard forms to request Government Furnished Equipment (GFE), to return GFE to CO-OPS, and to provide the status of GFE inventory held by the Contractor. These forms will be provided to the Contractor at the time contract is awarded.
- Return all removed GFE to CO-OPS or its designated depot or repair facility within a specified timeframe agreed upon by the COR and Contractor.
- Bench and throughput test all systems/sensors prior to use in the field.
- Maintain a physical property inventory report of the spare components and other GFE.
- Staff each field team with the appropriate number of qualified personnel to accomplish the tasks specified in this PWS. This includes all professional, technical, and support personnel, along with their travel and transportation expenses to and from the place of performance.
- Designate an operator (or operators) to perform the following local duties:
 - Provide quick initial and follow-up response support as required to rapidly diagnose problems and thus minimize system down time;
 - Schedule maintenance activities and ensure that they are conducted according to CO-OPS specifications to minimize downtime;
 - To the extent the Contractor relies on subcontractors in executing this work, the Contractor shall have sole responsibility for ensuring the subcontractors are qualified, appropriately trained and outfitted, and that the subcontractors comply with all applicable contract terms and conditions to include but not limited to safety and health

- o terms and conditions to include but not limited to safety and health standards and regulations.
- o Interact, in a professional manner, with NOAA; U.S. Coast Guard; U.S. Army Corp. of Engineers; local Port Authorities; other federal agencies; ship pilots and masters; ferry, tug and tow operators; companies engaged in maritime commerce; environmental agencies; the general public; and others as required. Contractors act on NOAA's behalf as per contract requirements only and do not represent NOAA or CO-OPS on programmatic issues nor policy or science agendas. Contractors should be cautious of creating the impression that they represent NOAA or CO-OPS during required interactions with the aforementioned entities.

4.2 Sub Task 1 - Semi-Annual Water Level Measurement Station Inspection

This section describes the tasks required to perform Semi-annual inspection of water level measurement stations in the Great Lakes.

The Contractor shall perform Semi-Annual Inspection (SAI), generally in the fall and spring. The specific dates will be coordinated with the COR to minimize overlap with FOD field crews Scheduled Inspections.

The Contractor shall request and participate in a Pre-Trip Meeting with the Configuration and Operational Engineering Team (COET) at least forty-five (45) days prior to the beginning of the field trip for each station, or group of stations. The Contracting Officer's Representative (COR) will also participate in each Pre-Trip Meeting. The meeting is a necessary means of coordination and ensures that all equipment requests are submitted in a timely manner and that the Contractor is informed of the most up-to-date status of sensors and station components. Prior to any site visits, the Contractor shall notify the COR forty-five (45) days in advance of all Semi-Annual inspections, and again at least three (3) business days prior to the routine visit. If assistance from the Chesapeake Instrument Lab (CIL) is required during the maintenance visit the Contractor shall also notify CIL (3) business days prior to the routine visit. Requests for after-hours support from CIL should be submitted to CIL with a copy to the COR at least 48 hours prior to the time the support is required.

If GFE is needed to perform a semi-annual inspection, the Contractor shall submit equipment request forms at least forty-five (45) days prior to the inspection date. Equipment requests shall be submitted to the Chesapeake Instrument Lab (CIL) and the COR.

During each SAI the Contractor shall:

- Contact and inform CO-OPS Continuous Operational Real-Time Monitoring System (CORMS) prior to the beginning of any maintenance action.
- Use the Great Lakes Semi-Annual Inspection checklist / Worksheet, appendix C, as provided by COR, during each inspection. The completed Inspection checklist shall be submitted as one of the deliverables (see 5.2 Deliverables and Schedule).
- Clean and inspect all components of the station (e.g., enclosures, locks, antennas, mounts, meteorological towers, poles and standoffs; conduit, cables, connectors, roof, doors, vent,

grounding system, foundation, paint, and brick and mortar). The Contractor shall repair and replace components as necessary. The exterior shall be pressure washed every other visit.

- Inspect and clean all interior components of the station (e.g., Heater, thermostat, sump lamps, ETG Tape, Floats, Gauge table, batteries, AC power, DCPs, and sensors). The Contractor shall repair and replace components as necessary.
- Immediately notify the COR and Tech Rep (TR) if the Contractor observes any issue, failure, damage, or situation that could be beyond the scope of the task. The COR, Tech Rep, and the Contractor will jointly discuss potential solutions. The COR will determine the course of action. Depending on the circumstances, the COR or TR may request a resource estimate for the Contractor to perform additional work. The COR will issue any final decision regarding the plan to proceed.
- Apply weed killer and pesticides inside and outside as applicable.
- Calibrate the barometer as per the *Sutron Barometer Calibration Procedure*.
- Perform real time sensor checks as outlined in the Semi-Annual Checklist,
- Notify CORMS promptly after completion of maintenance action.

If the Contractor cannot complete all semi-annual inspection requirements during a planned site visit, the Contractor shall return and complete all requirements within seven (7) days of the beginning of the original station visit.

Following each station visit, the Contractor shall:

- Complete and submit a preliminary eSite Report within one (1) calendar day of inspection
- Complete and submit the complete station documentation package within ten (10) calendar days of inspection.
- Communicate any issues that may need major maintenance immediately to the COR, Technical Rep (TR) and COET.
- Include photos and drawings as determined by the deliverables (Section 5).
- Return, within two (2) weeks of replacement, all removed or failed equipment to the CO-OPS' Chesapeake Instrument Lab(CIL) at the following address:

NOAA/NOS/CO-OPS/CIL
672 Independence Parkway
Chesapeake, VA 23320-5177

4.3 Sub Task 2 – Semi-Annual Current Meter Inspection

This section describes the tasks required to perform semi-annual inspection of current meter systems in the Great Lakes.

The specific dates will be coordinated with the COR.

The Contractor shall request and participate in a Pre-Trip Meeting with the Configuration and Operational Engineering Team (COET) at least forty-five (45) days prior to the beginning of the field trip for each station, or group of stations. The Contracting Officer's Representative (COR) and Technical Representative (TR) will also participate in each Pre-Trip Meeting. The meeting is a necessary means of coordination and ensures that all equipment requests are submitted in a timely manner and that the Contractor is informed of the most up-to-date status of sensors and station components. Prior to any site visits, the Contractor shall notify the COR forty-five (45) days in advance of all annual inspections, and again at least three (3) business days prior to the routine visit. If assistance from the Chesapeake Instrument Lab (CIL) is required during the maintenance visit the contractor shall also notify CIL (3) business days prior to the routine visit. Requests for after-hours

support from CIL should be submitted to CIL with a copy to the COR at least 48 hours prior to the time the support is required.

If GFE is needed to perform an annual inspection, the Contractor shall submit equipment request forms at least forty-five (45) days prior to the inspection date. Equipment requests shall be submitted to the Chesapeake Instrument Lab (CIL) and the COR.

During each Current meter SAI the Contractor shall:

- Contact and inform CO-OPS Continuous Operational Real-Time Monitoring System (CORMS) prior to the beginning of any maintenance action.
- Use the Real Time Current Station Report provided by the COR, during each inspection. The completed Report shall be submitted as one of the deliverables (see 5.2 Deliverables and Schedule).
- Raise the unit out of the water to clean and inspect the cable, sensor, and I-beam. Provide photo documentation before and after cleaning and ensure that meter is lowered to original position.
- Pressure wash structure exterior and inspect and clean all components of the station (e.g., enclosures, locks, antennas, mounts, poles and standoffs; conduit, cables, connectors, roof, doors, vent, grounding system, foundation, paint, and brick and mortar). The Contractor shall repair and replace components as necessary.
- Inspect and clean all interior components of the station (e.g., Heater, thermostat, Gauge table, batteries, AC power, DCPs, and sensors). The Contractor shall repair and replace components as necessary.
- Immediately notify the TR if the Contractor observes any issue, failure, damage, or situation that could be beyond the scope of the task. The TR and the Contractor will jointly discuss potential solutions. The TR and COR will determine the course of action. Depending on the circumstances, the COR may request a resource estimate for the Contractor to perform additional work. The COR will issue any final decision regarding the plan to proceed.
- Apply weed killer and pesticides inside and outside as applicable.
- Notify CORMS promptly after completion of maintenance action.

If the Contractor cannot complete all annual inspection requirements during a planned site visit, the Contractor shall return and complete all requirements within seven (7) days of the beginning of the original station visit.

Following each station visit, the Contractor shall:

- Complete and submit the Real Time Current Station Report within one (1) working day of inspection.
- Communicate any issues that may need major maintenance, via email promptly to the COR, TR and COET.
- Include photos and drawings as determined by the deliverables (Section 5).
- Return, within two (2) weeks of replacement, all removed or failed equipment at the Contractor's cost, to the CO-OPS' Chesapeake Instrument Lab(CIL) at the following address:
NOAA/NOS/CO-OPS/CIL
672 Independence Parkway
Chesapeake, VA 23320-5177

4.4 Sub Task 3 - Unscheduled Repair (Time-and-Materials)

Attentive response to observing system issues is critical to maintaining reliable delivery of timely and accurate data to CO-OPS user communities. The Contractor shall conduct an unscheduled repair visit to systems/sensors to correct problems or repair failures as directed by CO-OPS and as agreed upon by

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approval of estimate. Unscheduled repair includes emergency maintenance and major maintenance. Examples of unscheduled repairs may range from simply replacing batteries or flipping breakers to more complex repairs such as: (1) flushing out water level intake pipes, (2) replacement of MET Towers, (3) replacement of roofs and doors, (4) multiple repairs required after storm damage, (5) seasonal gauge work, or (6) leveling services.

The process for initiating and executing unscheduled repair is as follows:

- The COR will relay any issue or failed system component to the Contractor via e-mail or phone.
- The COR will determine the course of action. If the COR requests a resource estimate for the Contractor to perform an unscheduled repair visit, the Contractor shall provide the resource estimate within 24 hours of request or request additional time if needed.
- The Contractor shall submit a request for GFE to CIL with a copy to the COR and TR, if needed, and indicate the unscheduled repair nature of the site visit.
- It is the Contractor's responsibility to bench and throughput test all systems/sensors prior to use in the field.
- The Contractor shall complete the unscheduled repair within 72 hours of the approval of the quote and the receipt of any requested GFE. Components requiring vessel support for access and repair shall be serviced within five (5) days of notification of approval of the repair.
- The Contractor shall contact and inform CORMS immediately prior to beginning any maintenance action.
- If, upon arrival at the site, the Contractor observes any issue, failure, damage, or situation that could be beyond the scope of the task, the Contractor shall immediately notify the COR. The COR and the Contractor will jointly discuss potential solutions. The COR will determine the course of action. Depending on the circumstances, the COR may request a resource estimate for the Contractor to perform additional work. The COR will issue any final decision regarding the plan to proceed.
- Notify CORMS (and the COR) immediately after completion of an unscheduled repair action.

Following each unscheduled repair visit, the Contractor shall:

- Complete and submit a preliminary eSite Report within one (1) calendar day of repairs.
- Complete and submit the complete station documentation package within five (5) calendar days of repairs.
- Communicate any issues that may need major maintenance, via eSite report promptly to the COR, TR, and COET.
- Include photos and drawings as needed.
- Return, within two (2) weeks of replacement, all removed or failed equipment to the CIL at the following address:

NOAA/NOS/CO-OPS/CIL
672 Independence Parkway
Chesapeake, VA 23320-5177

5 DELIVERABLES

5.1 Monthly Report

The Contractor shall prepare a monthly report. Monthly reports shall be provided to CO-OPS via the Deliverable and Documentation Delivery Information System ((DADDIS), CO-OPS' electronic deliverables submission, acceptance, and tracking system) by the 10th of the month following the month for which the report was prepared (e.g., the May report is due June 10).

The format and scope of this monthly report shall be negotiated between CO-OPS and the Contractor and shall include elements such as the following:

- Executive summaries of site visits
- Maintenance and repair actions taken
- Summaries of interactions with users
- Schedule of upcoming events
- GFE inventory with serial numbers and bar code numbers
- Identification of potential problems or long-term issues relating to the operations, maintenance, use, and development of the system
- Other information as appropriate

5.2 STATION DOCUMENTATION

5.2.1 One Day Preliminary Site Report

The Contractor is required to submit a preliminary eSite report within 24 hours of completing any site visit. Critical information required as part of the preliminary eSite report are:

- Station Number and Name
- Installation Date
- Latitude/longitude
- Platform ID, transmit time, channel
- Serial numbers of all DCPs, and sensors
- Level abstract with Steel-tape measurement(s) (if applicable)
- Sensor offset C1 (SNS) and Datum Offset C2 (DAT) as entered in the DCP for acoustic sensor or MWWL sensor; and orifice offset(s) for pressure sensors.

5.2.2 Final Documentation for Semi-Annual Inspection

The Contractor is required to submit a Final documentation package including final eSite Report to CO-OPS within ten (10) calendar days of semi-annual inspection. The final documentation that is required by CO-OPS is outlined below. All station documentation files shall be submitted in digital format via DADDIS. If the file size of the combined package of station maintenance documentation is greater than the allowed file size in DADDIS, the Contractor shall arrange an alternate means of submitting the documentation package with the COR and submit a PDF report to DADDIS describing how CO-OPS personnel shall retrieve the package. Acceptable means of submission include secure FTP transfer, mail

delivery of a CD, etc. File transmission must comply with applicable DOC IT Security Program Policy as described in Section (8.2). Paper documentation that cannot be translated into a digital version shall be scanned and submitted to CO-OPS via DADDIS. CO-OPS will evaluate the final documentation within twenty (20) working days and then inform the Contractor via DADDIS of any corrective actions.

The standard water level station documentation package includes the following:

- 1) eSite Report, or Water Level Station Xpert Site Report if the eSite is already in use for the station, (eSite report in web based electronic format, Water Level Station Xpert Site Report in Microsoft Excel format)
- 2) Great Lakes Semi-Annual Inspection checklist / Worksheet
- 3) Agreements, MOU, contract documents, utilities/pier agreements, etc., if applicable (PDF format)
- 4) Other information as appropriate, or as specified in the contract (PDF format)
- 5) Water level data download in specified format
- 6) Photos taken
- 7) Environmental Compliance Checklist

Any original paper documentation shall be scanned and sent to the COR via DADDIS. The Contractor shall retain a copy of all completed reports, which will be made available to CO-OPS upon request.

5.2.3 Unscheduled Repair Documentation

Following each station visit for an unscheduled repair, the Contractor shall complete and submit an eSite Report to CO-OPS describing the maintenance and repair action performed within five (5) calendar days of completion.

For any repairs, the Contractor shall photograph physical damage to station components or supporting infrastructure, due to vandalism, environmental damage, etc., prior to performing repairs. The Contractor shall also photograph completed repairs performed at the station, and shall submit all photographs with the site report.

CO-OPS will evaluate the final documentation within twenty (20) working days and then inform the Contractor via DADDIS of any corrective actions.

5.2.4 Schedule of Deliverables

Table 1 Schedule of Deliverables

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#	Item	Description	Qty.	Due Date	Deliver to	Ref.
1	Monthly Report	Per CAR 1352.237-74 Reports: The Contractor shall submit, to the Government, a progress report monthly after the effective date of the contract, and monthly thereafter during the period of performance. The Contractor shall prepare a progress report advising of the work completed during the performance period, the work forecast for the following period, and the names and titles, including officials of the Contractor. The report shall also include any additional information--including findings and recommendations --that may assist the Government in evaluating progress under this contract. The first report shall include a detailed work outline of the project and the Contractor's planned phasing of work by reporting period.	1 per month - 1 EA Electronic Copy via DADDIS	Monthly	COR, TR	CAR 1352.237-74, PWS Section 0
2	One Day eSite Report	Provide critical information in regards to the site and maintenance performed.	1 EA Electronic Copy via eSite	Within 24 hours of completing site visit	COR, COET	PWS Section 5.2.1
3	Final Documentation for Scheduled Maintenance	Provide before and after digital photos or video during cleaning and inspection, and all other documentation as listed in Section 5.2.2.	1 EA Electronic Copy	Within 10 calendar days of station maintenance or annual inspection	COR,	PWS Section 0
4	Unscheduled Repair Documentation	<ul style="list-style-type: none"> The date and time, Activities performed, The serial numbers of all the equipment, 	1 EA Electronic Copy	Due within 5 days of completion	COR,	PWS Section 0
5	Kick-Off Meeting	<ul style="list-style-type: none"> Kick-Off Meeting to review award and POC's 	1	Within 30 Days of Award	COR/TR	CAR 1352.242-70, PWS Section 2.0
6	Sexual Assault and Sexual Harassment Training Certificate	Certificates of successful completion of training required by NOAA, NOS, or CO-OPS, including but not limited to sexual assault and sexual harassment training.	1 EA Electronic Copy	Within 30 Days of Award	COR, CS*	NAM 1330-52.222-70
7	Insurance Coverage	Provide evidence of required Insurance Coverage.	1 EA Electronic Copy	Within 30 Days of Award	COR, CS	CAR 1352.228-70
8	Restrictions Against Disclosure	Provide signed acknowledgement of the provisions.	1 EA Electronic Copy	Within 5 Days of Award	COR, CS	CAR 1352.209-72

9	Notification of Organizational Conflict of Interest	Provide notification of Organizational Conflict of Interest.	1 EA Electronic Copy	As required under CAR 1352.209-74	COR, CS	CAR 1352.209-74
10	NOAA Contractor Training	Complete all mandated NOAA Contractor Training as assigned.	1 EA Electronic Copy	As Assigned	COR, CS	As Assigned

***Contract Specialist (CS)**

6 REFERENCES

In addition to references mentioned in the body of this PWS please refer to the following documents for information regarding the installation, operation and maintenance of CO-OPS observation stations.

These references and others are publicly accessible in [CO-OPS Field Library \(https://tidesandcurrents.noaa.gov/fieldlibrary/Welcome\)](https://tidesandcurrents.noaa.gov/fieldlibrary/Welcome).

6.1 Data Collection Platform (DCP) References

- Next Generation Water Level Measurement System (NGWLMS) Site Design, Preparation, and Installation Manual
- Sutron Xpert Data Logger Operations and Maintenance Manual
- Sutron Xpert2 Data Logger Operations and Maintenance Manual
- Sutron 9210 XLite Operations and Maintenance Manual
- Sutron 9210B XLite Operations and Maintenance Manual
- Sutron Satlink 2 Logger & Transmitter Operations and Maintenance Manual
- Xpert and Xpert Dark Internal Battery Replacement
- NGWLMS GOES Message Formatting for Hourly Transmissions
- Attachment of Conduits to Enclosures
- EB 10-002 Standardize Battery Type for CO-OPS Water Level and Meteorological Stations with Photovoltaic Charging Systems
- Xpert Log Size
- Correct GOES Flag for Backup Battery Voltage
- Satlink Upgrade Procedure
- Sutron Xpert Upgrade

6.2 Sensor References

- Waterlog H334 Shaft Angle Encoder Manual
- Field Installation Procedures for Design Analysis WaterLog H3611i Microwave Radar Water Level Sensor Using the Sutron Data Collection Platform, Ver 1.0
- MWWL Sensor Annual Inspection Checklist
- Vaisala Ultrasonic Wind Sensors WS425 Users Guide
- Sutron Accubar Barometric Pressure Multiple Interface Sensor Operations & Maintenance Manual
- Sutron Barometer Calibration Procedure

- RM Young Model 05103 Wind Monitor User Manual
- Wind Sensor Alignment Procedures for the R.M. Young Wind Monitor
- On-site Verification of Water Temperature Readings

6.3 Maintenance Specifications and References

- Standing Project Instructions for Coast and Great Lakes Water Level Stations.
- Review Protocol for Contractor Submitted Deliverables from the Installation and Maintenance of CO-OPS Water Level and PORTS® Stations
- Upgrading an Existing Station or Installing a New Water Level Station
- CO-OPS Evaluation Criteria for Water Level Station Documentation
- Annual Inspection Pre-trip Coordination Meeting.
- Procedure to Establish a Meteorological Sensor Reference Mark and to Measure Meteorological Sensor Heights
- Guide for Declaring Newly Installed Meteorological and Physical Oceanographic Sensors and Stations Operational
- CO-OPS Water Level and Meteorological Site Reconnaissance Procedures
- CO-OPS Meteorological Reconnaissance Form
- Requirements and Guidelines for Equipment Shipping
- [CO-OPS eSite User's Guide](#)
- CO-OPS Equipment Return Form
- CO-OPS Equipment Request Form

6.4 Safety References

- [Department of Commerce Occupational Safety and Health Manual](#)
- [NOAA Safety Policy, NAO 209-1](#)
- [NAO xxx-xxx NOAA Charter Vessel Safety \(rev.1\)](#)
- [OSHA Diving Safety Regulations](#)

7 COMMUNICATION

CO-OPS has designated a specific Contracting Officer's Representative, as stated below. The Contractor shall only accept technical instructions from the COR. When communicating to CO-OPS, the Contractor shall convey all deliverables to the COR.

The Contracting Officer (CO) is the only person who can authorize changes in scope. Schedule changes that do not change scope or deliverables may be authorized by the COR. The COR has the authority to provide technical direction for unscheduled and unplanned actions.

7.1 Contact Information for the Contracting Officer's Representative (COR)

a) Adam Treen is hereby designated as the Contracting Officer's Representative (COR). The COR may be changed at any time by the Government without prior notice to the Contractor by a unilateral modification to the contract. The COR is located at:

Adam Treen
1315 East-West Highway
SSMC III floor 7
Silver Spring, MD 20910
adam.treen@noaa.gov
Phone: 240-232-6270

7.2 Responsibilities and Limitations of the COR

a) The COR is responsible for the technical aspects of the contract and serves as technical liaison with the Contractor. The COR is also responsible for the final inspection and acceptance of all deliverables and such other responsibilities as may be specified in the contract.

b) The COR is not authorized to make any commitments or otherwise obligate the Government or authorize any changes which affect the contract price, terms or conditions. Any Contractor request for changes shall be referred to the Contracting Officer directly or through the COR. No such changes shall be made without the express written prior authorization of the Contracting Officer. The Contracting Officer may designate assistant or alternate COR(s) to act for the COR by naming such assistant/alternate(s) in writing and transmitting a copy of such designation to the Contractor.

All invoices shall be sent to the CO and the COR via the Department of Treasury's Invoice Processing Platform (IPP). Upon receipt, the invoices will be digitally date stamped and reviewed within 5 business days. The contractor must register for IPP use at <https://www.ipp.gov/knowledge-center/vendors/getting-started> if not already enrolled.

8 SECURITY REQUIREMENTS

8.1 Physical Security

The Contractor shall be responsible for safeguarding all government property provided for Contractor use. At the close of each work period, government facilities, equipment, and materials shall be secured.

8.2 IT Security

The Contractor is required to meet the [DOC IT Security Program Policy](#).

The Certification and Accreditation or Assessment and Authentication requirements of Clause 48 CFR 1352.239-72 do not apply, and a Security Accreditation Package is not required. The Contractor must consider IT Security controls throughout the lifecycle of this contract as outlined in [NIST Special Publication 800-64](#). The Contractor shall guarantee strict confidentiality of the information/data that it is provided by the Government during the performance of the PWS. The Government has determined that the information/data that the Contractor will be provided during the performance of the contract is

of a sensitive nature. Disclosure of the information/data, in whole or in part, by the Contractor can only be made after the Contractor receives prior written approval from the Contracting Officer. Whenever the Contractor is uncertain with regard to the proper handling of information/data under the contract, the Contractor shall obtain a written determination from the Contracting Officer.

9 GOVERNMENT FURNISHED PROPERTY

The Government will provide the following item(s) of Government property to the Contractor. The Contractor shall be accountable for, and have stewardship of, the property in the performance of this contract. This property shall be used and maintained by the contractor in accordance with provisions of the “Government Property” clause included in this contract.

Table 2 Government Furnished Property

Item Number	Description	Quantity	Delivery Date	Property/Tag No. (if applicable)
1	Water level sensors (Primary and Backup); associated cabling and components	As Needed	As Needed	To be Determined
2	Waterway current measurement sensors (Horizontal, Bottom Mount and Buoy Mount), associated cabling,	As Needed	As Needed	To be Determined
3	Meteorological sensors and associated cabling and components	As Needed	As Needed	To be Determined
4	Data collection and support systems	As Needed	As Needed	To be Determined
5	Remote communications systems (Satellite, cellular, radio, and phone). To include the associated antennas,	As Needed	As Needed	To be Determined
6	Equipment enclosures, batteries and stands	As Needed	As Needed	To be Determined
7	Wind sensor mast/tower with T-bar and weatherhead	As Needed	As Needed	To be Determined

9.1 Contractor Furnished Equipment and Installation Standards

The Contractor shall furnish all vehicles, vessels, equipment, tools, materials, and supplies necessary to perform the required work, other than the GFE specified in this task. This may include, but is not limited to; trucks, trailers, boats, diving equipment, climbing equipment, earth digging machinery, cutting and welding equipment, bench mark installation equipment, GPS and digital surveying equipment, and safety equipment.

Other equipment includes, but is not limited to the following:

- All test and diagnostic equipment, barometer calibration, compasses, and handheld GPS necessary to perform the required work. The handheld barometers shall be calibrated to National Institute of Standards and Technology (NIST) standards.
- Conduits (rigid and flexible types), junction boxes, and stainless steel clamps.
- The necessary stainless steel hardware for mounting clamps, brackets, masts, and conduit required to install an acoustic sensor protective well, DCP, solar panels, and antenna.
- Consumables which include, but are not limited to: cleaning materials and supplies, lubricants, glues, sealants, adhesives, caulks, contact cleaners, wire ties, wire connectors, fuses, light bulbs,

electrical wire, miscellaneous screws and fasteners, etc.

- All material necessary to perform routine maintenance repairs to the instrument shelters, sensors, and their support structures as needed to ensure the quality of the data, to maintain the structural integrity of the station, and to assure the safety of personnel at the station. These materials shall adhere to CO-OPS standards and practices, and shall be comparable to those used in the original design and installation.
 - All replacement fasteners, brackets, and clamps shall be 316L stainless steel.
 - Only marine quality lumber and fasteners (stainless steel or hot-dipped galvanized) may be used in the marine environment (e.g., pilings, stringers, cross braces). Ground contact treated lumber may be used above the water line (e.g., pier stringers, decking, handrails, shelter platforms, stairs, etc.).
 - All replacement wiring and sensor cabling shall be encased in either ¾ in. or 1½ in. PVC or metallic conduit with appropriately spaced pull-boxes and access covers.
 - Any deviation from these requirements must be previously approved by the CO-OPS COR.

At a minimum, all materials and installation practices shall conform to the following standards:

- All applicable State and Local building codes
- American Association of State Highway and Transportation Officials (AASHTO) “Standard Specification for Highway Bridges”
- American Concrete Institute ACI 31/-05 “Building Code Requirements for Structural Concrete and Commentary”
- American National Standards Institute/American Institute of Steel Construction 350-05 “Specification for Structural Steel Buildings”
- American National Standards Institute/American Forest & Paper Association (ANSI/AF&PA) National Design Specification (NDS) for Wood Construction
- American Welding Society:
 - AWS-D1.1/D1.1M: 2025 “Structural Welding Code-Steel”
 - AWS-D1.4/D1.4M: 2018 “Structural Welding Code – Reinforcing Steel”
 - AASHTO/AWS-D1.5/D1.5M: 2025 “Bridge Welding Code”
 - AWS-D1.6/D1.6M: 2017 “Structural Welding Code – Stainless Steel”
- US Army Corps of Engineers Engineering Manual (EM):
 - EM 1101-2-1100 “Coastal Engineering Manual (CEM)”
 - EM 1101-2-1612 “Engineering and Design – Ice Engineering”, 2002
- American Society of Civil Engineers (ASCE):
 - ASCE 7-05 “Minimum Design Loads for Buildings and Other Structures”
 - Manuals and Reports on Engineering Practice No. 50 “Planning and Design Guidelines for Small Craft Harbors” 2000 Revised Edition
- The Aluminum Association “Aluminum Design Manual”
- American Wood Protection Association (AWPA) Use Category System Standards U1 and T1

10 PERFORMANCE REQUIREMENTS SUMMARY

This contract includes a Performance Requirements Summary (PRS). The PRS plays an integral role in the administration of the contract. In addition to any applicable inspection clauses or other related terms and conditions contained in the contract, the PRS shall serve as a primary tool for inspection and acceptance of services as facilitated by the COR. Evaluation of the Contractor’s overall performance shall be in accordance with the performance standards set forth in the PRS, and will be conducted by the COR. The PRS constitutes a material aspect of the contract and will not be changed or otherwise modified without prior written approval of the Contracting Officer.

The PRS establishes key elements of Contractor performance that represent “mission essential” service requirements, which are identified in the table below in the “Required Service” column. The “Performance Standard” column represents the standard against which Contractor performance will be measured in relation to accomplishment of the corresponding service output. The performance objective or “standard” describes the minimum acceptable level of service by the Contractor for satisfactory performance. The Government uses these standards to determine Contractor performance and shall compare Contractor performance to the Acceptable Quality Level.

Required Service	Performance Standard		Monitoring Method	
	Measurement	Metric Goal	Method	Reporting
a. PWS SECTION 2.0, MAINTENANCE DEFINITIONS AND PERFORMANCE MANAGEMENT	A-1) Meeting agreed deadlines	4. >=90 % of all products delivered during the evaluation period. 3. 85 % - 89 % 2. 80 % - 84 % 1. < 80 % *Any score less than a 3 is unacceptable	Direct Observations	Monthly Progress Reports
	A-2) Quality of Work	4. Average score of 3.8 to 4.0 on all direct observations completed during the evaluation period. 3. “ 3.3 – 3.8 2. “ 3.0 – 3.3 1. < 3.0 *Any score less than a 3 is unacceptable	Direct Observations	Monthly Progress Reports

<p>b. Contracting Officers Representative's Overall Evaluation of Contractor Performance</p>	<p>B-1) Contractor's ability to consistently meet quality requirements</p>	<p>4. The Contractor met and often exceeded requirements with regard to the following performance factors: a) the Contractor was proactive in adding value to the products and services provided, through the infusion of creative best practices and artistic and technical ingenuity; b) the Contractor's interaction with the COR and all users is consistently professional and respectful; c) the Contractor consistently and effectively managed multiple projects and demonstrated effective use of system and personnel resources; d) the Contractor's overall knowledge and awareness of the CO-OPS environment, the current needs, and future needs 3. The Contractor met, but did not or rarely exceed requirements with regard to a) – c) above. 2. The Contractor usually met, but occasionally failed to meet requirements with regard to a) – c) above. 1. The Contractor often failed to meet the requirements.</p>	<p>Contracting Officers Representative's Evaluation</p>	<p>Contractor Performance Assessment Reporting System (CPARS)</p>
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11 ASBESTOS AWARENESS

11 CO-OPS water level stations in the Western Great Lakes were built with insulation that is presumed to have asbestos-containing building materials (ACBM) (Appendix A page 22, “Measurement Systems at Each Station”). Each site has been inspected, cleaned, wiped down, sealed and had air samples collected by a licensed asbestos company. All post-cleanup air samples were rated satisfactory and below the Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL). These sites also have clearly visible caution labels. Details of test results and CO-OPS’ asbestos program O&M procedures can be found in the following google folder (Please request access if unable to view):

<https://drive.google.com/drive/folders/1sHim5ZKgme0XM3YQPA86VCJBvvlvwxRO?usp=sharing>

Contractor will be informed by the Government of the locations of asbestos on the property by means of a “Contractor Notification Letter” (sample provided in Appendix D). The Contractor is required to complete and submit acknowledgement of the notification letter within two (2) business days of receipt.

APPENDIX A. Western Great Lakes NETWORK DESCRIPTION

26 Water Level Station Locations:

Station ID	Station Name	Latitude	Longitude
9075002	Lakeport, MI	43 8 25.1	82 29 38.0
9075014	Harbor Beach, MI	43 50 46.5	82 38 35.3
9075035	Essexville, MI	43 38 27.6	83 50 47.1
9075065	Alpena, MI	45 3 46.8	83 25 42.9
9075080	Mackinaw City, MI	45 46 38.9	84 43 15.5
9075099	De Tour Village, MI	45 59 33.1	83 53 53.8
9076024	Rock Cut, MI	46 15 51.5	84 11 28.3
9076027	West Neebish Island, MI	46 17 4.7	84 12 35.2
9076032	Little Rapids, MI	46 29 9.0	84 18 6.1
9076060	U.S. Slip, MI	46 30 3.1	84 20 25.1
9076070	S.W. Pier, MI	46 30 4.8	84 22 21.1
9087023	Ludington, MI	43 56 50.6	86 26 29.4
9087031	Holland, MI	42 46 24.0	86 12 46.0
9087044	Calumet Harbor, IL	41 43 47.5	87 32 18.3
9087057	Milwaukee, WI	43 0 7.1	87 53 15.9
9087068	Kewaunee, WI	44 27 50.3	87 30 3.8
9087069	Kewaunee, Met	44 27 54.0	87 29 45.6
9087072	Sturgeon Bay Canal, WI	44 47 40.8	87 18 50.1
9087077	Green Bay East, WI	44 32 20.5	88 0 4.1
9087088	Menominee, MI	45 5 45.2	87 35 24.5
9087096	Port Inland, MI	45 58 11.7	85 52 17.2
9099004	Point Iroquois, MI	46 29 4.5	84 37 51.0
9099018	Marquette C.G., MI	46 32 44.0	87 22 43.3
9099044	Ontonagon, MI	46 52 27.7	89 19 27.2
9099064	Duluth, MN	46 46 31.4	92 5 31.1
9099090	Grand Marais, MN	47 44 55.4	90 20 29.4

Measurement Systems at Each Station:

Station ID	Station Name	BEI Encoder (Primary)	Waterlog Encoder (Backup)	Pressure Sensor (Backup)	Winds (Primary)	Winds (Backup)	Air Temp	Water Temp	Water Temp (2nd)	Baro	RH	MWWL	ACBM
9075002	Lakeport, MI	X	X										X
9075014	Harbor Beach, MI	X	X		X	X	X	X	X	X	X		X
9075035	Essexville, MI	X	X										X
9075065	Alpena, MI	X	X		X	X	X	X		X	X		
9075080	Mackinaw City, MI	X	X		X	X	X	X		X	X		
9075099	De Tour Village, MI	X	X		X	X	X	X		X	X		X
9076024	Rock Cut, MI	X	X	X	X	X		X		X			
9076027	West Neebish Island, MI	X	X		X	X	X	X		X	X		
9076032	Little Rapids, MI	X	X		X	X	X	X		X	X		
9076060	U.S. Slip, MI	X	X										
9076070	S.W. Pier, MI	X	X	X	X	X	X	X		X			
9087023	Ludington, MI	X	X		X	X	X			X	X		X
9087031	Holland, MI	X	X		X	X	X	X	X	X	X		
9087044	Calumet Harbor, IL	X	X		X	X	X			X	X		X
9087057	Milwaukee, WI	X	X										X
9087068	Kewaunee, WI	X		X									
9087069	Kewaunee Met				X	X	X			X			
9087072	Sturgeon Bay Canal, WI	X	X										X
9087077	Green Bay East, WI			X	X							X	
9087088	Menominee, MI	X	X		X	X	X	X		X	X		
9087096	Port Inland, MI	X	X		X	X	X	X		X	X		
9099004	Point Iroquois, MI	X	X		X	X	X	X		X	X		X
9099018	Marquette C.G., MI	X	X		X	X	X			X	X		X
9099044	Ontonagon, MI	X	X										
9099064	Duluth, MN	X	X		X	X	X	X		X	X	X	
9099090	Grand Marais, MN	X	X				X			X	X		X

APPENDIX B Eastern Great Lakes NETWORK DESCRIPTION**28 Water Level Station and 2 Current Meter Locations:**

Station ID	Station Name	Latitude	Longitude
8311030	Ogdensburg, NY	44 42 5.8	75 29 38.5
8311062	Alexandria Bay, NY	44 19 52.7	75 56 3.4
9014070	Algonac, MI	42 37 16.1	82 31 36.2
9014080	St Clair State Police, MI	42 48 44.3	82 29 8.3
9014087	Dry Dock, MI	42 56 43.1	82 26 36.6
9014090	Mouth of the Black River	42 58 28.8	82 25 7.8
9014096	DUNN PAPER, MI	43 0 11.4	82 25 20
9014098	FORT GRATIOT, MI	43 0 24.6	82 25 20.8
9034052	St Clair Shores, MI	42 28 24.1	82 52 45.2
9044020	Gibraltar, MI	42 5 28.1	83 11 9.7
9044030	Wyandotte, MI	42 12 8.5	83 8 51.3
9044036	Fort Wayne, MI	42 17 56.2	83 5 33.5
9044049	Windmill Point, MI	42 21 27.5	82 55 47.6
9052000	Cape Vincent, Lake Ontario	44 7 49.1	76 19 55.1
9052030	Oswego, NY	43 27 52.1	76 30 41.2
9052058	Rochester, NY	43 16 9.6	77 37 33.8
9052076	Olcott, NY	43 20 18.	78 43 38.7
9063007	Ashland Ave., NY	43 5 59.8	79 3 35.7
9063009	American Falls, NY	43 4 52.7	79 3 39.7
9063012	Niagara Intake, NY	43 4 36.8	79 0 50.5
9063020	Buffalo, NY	42 52 39.2	78 53 25.6
9063028	Sturgeon Point, NY	42 41 28.4	79 2 51.5
9063038	Erie, PA	42 9 14.2	80 4 33.4
9063053	Fairport, OH	41 45 35.1	81 16 51.8
9063063	Cleveland, OH	41 32 26.7	81 38 6.6
9063079	Marblehead, OH	41 32 37.4	82 43 53.2
9063085	Toledo, OH	41 41 36.7	83 28 20.2
9063090	Fermi Power Plant, MI	41 57 35.9	83 15 25.0
gl0101	Cuyahoga River Current Meter, OH	41 29 40.1	81 42 10.5
gl0201	Maumee River Current Meter, OH	41 37 44.9	83 31 48.8

Measurement Systems at Each Station:

Station ID	Station Name	BEI Encoder (Primary)	Waterlog Encoder (Backup)	Pressure Sensor (Backup)	Winds (Primary)	Winds (Backup)	Air Temp	Water Temp	Water Temp (2nd)	Baro	RH	MWWL	Current Meter	ACBM
8311030	Ogdensburg, NY	X	X				X	X		X		X		X
8311062	Alexandria Bay, NY	X	X	X				X	X	X				
9014070	Algonac, MI	X	X				X	X		X				
9014080	St Clair State Police, MI	X	X											X
9014087	Dry Dock, MI	X		X										X
9014090	Mouth of the Black River, MI	X	X				X			X				
9014096	DUNN PAPER, MI	X	X	X										
9014098	FORT GRATIOT, MI	X	X		X	X	X			X	X			X
9034052	St Clair Shores, MI	X	X											X
9044020	Gibraltar, MI	X	X											X
9044030	Wyandotte, MI	X	X											X
9044036	Fort Wayne, MI	X	X											X
9044049	Windmill Point, MI	X	X											X
9052000	Cape Vincent, Lake Ontario	X		X										
9052030	Oswego, NY	X	X		X	X	X			X	X			X
9052058	Rochester, NY	X	X				X			X				X
9052076	Olcott, NY	X	X											X
9063007	Ashland Ave., NY	X	X	X										X
9063009	American Falls, NY	X		X										X
9063012	Niagara Intake, NY	X	X				X			X				X
9063020	Buffalo, NY	X	X		X	X	X	X		X	X			X
9063028	Sturgeon Point, NY	X	X				X			X				X
9063038	Erie, PA	X	X		X	X								
9063053	Fairport, OH	X	X		X	X	X	X		X	X			
9063063	Cleveland, OH	X	X		X	X	X	X		X	X			X
9063079	Marblehead, OH	X	X	X	X	X	X	X		X	X	X		
9063085	Toledo, OH	X	X		X	X	X	X		X	X			X
9063090	Fermi Power Plant, MI	X	X											X
g/0101	Cuyahoga, OH													X
g/0201	Maumee, OH													X

IV. OBSERVATIONS											
	SN	INITIAL READING AT ARRIVAL		FINAL READING BEFORE DEPARTURE		GEARS		FLOATS		GEAR GUARDS INSTALLED	
		TIME (GMT)	VALUE (0.000 M)	TIME (GMT)	VALUE (0.000 M)	CYCLED	CLEANED	SAE	SAE PULLY	RSAE	RSAE PULLY
ETG	XXXXXX					N/A	N/A	N/A	N/A	N/A	N/A
BEI											
WATER LOG											
DIFFERENCE:	BEI - ETG		BEI - ETG								
DIFFERENCE:	WATER LOG - ETG		WATER LOG - ETG								

V. POWER SYSTEM												
	Battery			Battery Charger		Surge Protection				AC Power		
	Type/Model	Initial Voltage	Voltage after 1 hr	Date on Batt	Model	Voltage Output	Model	Ground OK	Power/Protection OK	Line Fault	Unsafe Voltage	Voltage Output
DCP 1								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DCP 2								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DCP 3								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RH/AT								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
CORS								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
IP								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

- Check voltage and then remove A/C and solar power and check voltage again after a minimum of 1 hour of transmit load. If the battery voltage has dropped below 11.7 volts than replace it.
- Reconnect Power

Barometer Check		Handheld Calibration Date	
Accubar (mbar)	<input type="text"/>		Comments/Notes
Handheld Baro (mbar)	<input type="text"/>		
Difference (mbar)	<input type="text"/>		
New Offset	<input type="text"/>		

[Barometer Test Procedure](#)

Set handheld barometer to "sea" mode and ensure it is reading in mbar. Set barometer elevation and temperature (rel to MSL). Take measurement with handheld barometer at the center of installed barometer (not from the end of the tube leading away from the installed barometer). In the "Sensors" tab of the xpert highlight "Baro" and click measure to take a measurement. If values are within 0.6 mbar of each other make no changes. If values are 0.6 to 1.0 mbar apart click "Calibrate" and enter value from handheld baro and click ok. After the xpert is done "thinking", click on "Properties" and record the offset. If value is greater than 1, replace barometer and repeat.

HEATER SETTINGS			
SPACE HEATER		HEAT LAMP BULBS	VENT CLOSED
ON/OFF	TEMP SETTING (I)	ON/OFF	TEMP SETTING (I)
<input type="checkbox"/>		<input type="checkbox"/>	

RH/AT CHECK		
	RH %	AT (Deg F)
Operational Unit		
Handheld Unit		
Difference		

Comments/Notes

Cycling Gears

While the float tape is off of the encoder gear and pulley, spin the encoder shaft to represent both a 2 meter increase and a 2 meter decrease in the readings from the present reading. Then match the reading with the ETG reference and reset the tape back on the gear and pulley. NOTE: - this test should only be performed during the time period that the DCP is not calculating the water level reading. This time period, for computing the water level reading, is 90 seconds before and after the allotted 6 minute interval.

VI. COMMUNICATIONS

NWLON Land Line # NWLON IP ADDRESS

- Communication to DCP1 & DCP2 confirmed by CIL

CORS IP ADDRESS # CONFIRM WITH NGS THAT CORS IS WORKING

VII. PRE-DEPARTURE

- Exterior Pressure Washed
- Weed Control Applied
- Pesticide Control Applied
- Serial numbers recorded for all replaced parts.
- Notify CORMS inspection is complete. (301) 713-2540 Or Email
- Notify CIL, COR & TR inspection is complete.

PERFORMANCE WORK STATEMENT

APPENDIX D. CO-OPS Environmental Best Management Practices (BMP's)

	CO-OPS ENVIRONMENTAL BEST MANAGEMENT PRACTICES (BMP'S)	Version 1.5, March 2020
CHECKLIST FOR STATION MAINTENANCE		

Date of proposed visit:

Name station(s) covered by this form:

		COMMENTS
ARE THERE ANY PERMITS REQUIRED? <i>If yes, please list in comments.</i>	<input type="checkbox"/>	
ANY FEDERAL/STATE/TRIBAL AGENCY COORDINATION REQUIRED? <i>If yes, please list in comments.</i>	<input type="checkbox"/>	
PROTECTION OF MARINE MAMMALS AND/OR MARINE SPECIES. <i>Is there a designated lookout assigned during ops? Please list any encounters in comments.</i>	<input type="checkbox"/>	
DIVE SAFETY. <i>Did divers employ precautions to prevent unnecessarily disturbing biota and fauna?</i>	<input type="checkbox"/>	
GEAR STERILIZATION. <i>Was dive gear rinsed and/or sterilized? If yes, select method(s), and if no, please explain.</i> <input type="checkbox"/> Freshwater Rinse <input type="checkbox"/> ENVIROGUARD 64° Solvent Rinse <input type="checkbox"/> Other (Describe in comments section)	<input type="checkbox"/>	
SENSOR EQUIPMENT MAINTENANCE. <i>Were precautions taken to avoid chemicals entering bodies of water?</i> 1. <i>Equipment was cleaned away from the water/marina/boat basin.</i> 2. <i>Sprays, sealants, degreasers, and cleaning agents (like Simple Green®) were isolated from the water/marina/basin</i> 3. <i>Paper towels (or some type of barrier) were used under work area when close to the water/marina/boat basin.</i>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
SAFE DISPOSAL. 1. <i>Bagged and loose desiccant were disposed of properly.</i> 2. <i>Large batteries were removed and returned to the lab for safe disposal.</i> 3. <i>Zip ties and all other waste created by the team, was disposed of properly.</i>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
OTHER. <i>If yes, please describe and explain in comments.</i>	<input type="checkbox"/>	

Additional Comments:

APPENDIX E. SAMPLE CONTRACTOR NOTIFICATION LETTER

**SAMPLE CONTRACTOR NOTIFICATION
LETTER**

RE: Notification of Asbestos-Containing

Material Dear:

This correspondence is intended to inform you of the locations of asbestos-containing materials and presumed asbestos-containing materials at the above-referenced property. This information is provided on the enclosed attachment, which is located in the property's written Asbestos Management Plan.

Your signature below is acknowledgment that you have received the information, and pledge to pass it on to your employees who work at the property before they do work there that might disturb asbestos-containing materials or presumed asbestos-containing materials. Also, you are required to pass on any information concerning asbestos at this property to your subcontractors, if any, who may do work at this property. Please return a signed copy of this letter to my office at your earliest convenience.

If you have any questions, please do not hesitate to contact me. Sincerely,

Designated Person

(Signature of Authorized Official)

(Job Title of Authorized Official)

(Date)

Attachment: Asbestos Material Inventory Form

cc: *O&M Correspondence and Memoranda File*

	CLIN Description	Total Extended Price
CLIN 0001 (FFP)	Combined Great Lakes Operation and Maintenance (O&M) - Base Period - Firm-Fixed-Price O&M of up to 54 stations. Scheduled maintenance includes scheduled visits per year in accordance with Attachment A Performance Work Statement and Attachment B Pricing Schedule.	
CLIN 0002 (T&M)	Combined Great Lakes Unscheduled Repair (U.R.) - Base Period - Time-and-Materials U.R. of up to 54 stations in accordance with Attachment A Performance Work Statement and Attachment B Pricing with Contracting Officer's Representative (COR) approval.	
Base Period (June 1, 2027 - May 31, 2028)		
CLIN 1001 (FFP)	Combined Great Lakes Operation and Maintenance (O&M) - Base Period - Firm-Fixed-Price O&M of up to 54 stations. Scheduled maintenance includes scheduled visits per year in accordance with Attachment A Performance Work Statement and Attachment B Pricing Schedule.	
CLIN 1002 (T&M)	Combined Great Lakes Unscheduled Repair (U.R.) - Base Period - Time-and-Materials U.R. of up to 54 stations in accordance with Attachment A Performance Work Statement and Attachment B Pricing with Contracting Officer's Representative (COR) approval.	
Option Period 1 (June 1, 2028 - May 31, 2029)		
CLIN 2001 (FFP)	Combined Great Lakes Operation and Maintenance (O&M) - Base Period - Firm-Fixed-Price O&M of up to 54 stations. Scheduled maintenance includes scheduled visits per year in accordance with Attachment A Performance Work Statement and Attachment B Pricing Schedule.	
CLIN 2002 (T&M)	Combined Great Lakes Unscheduled Repair (U.R.) - Base Period - Time-and-Materials U.R. of up to 54 stations in accordance with Attachment A Performance Work Statement and Attachment B Pricing with Contracting Officer's Representative (COR) approval.	
Option Period 2 (June 1, 2029 - May 31, 2030)		
CLIN 3001 (FFP)	Combined Great Lakes Operation and Maintenance (O&M) - Base Period - Firm-Fixed-Price O&M of up to 54 stations. Scheduled maintenance includes scheduled visits per year in accordance with Attachment A Performance Work Statement and Attachment B Pricing Schedule.	
CLIN 3002 (T&M)	Combined Great Lakes Unscheduled Repair (U.R.) - Base Period - Time-and-Materials U.R. of up to 54 stations in accordance with Attachment A Performance Work Statement and Attachment B Pricing with Contracting Officer's Representative (COR) approval.	
Option Period 3 (June 1, 2030 - May 31, 2031)		
CLIN 4001 (FFP)	Combined Great Lakes Operation and Maintenance (O&M) - Base Period - Firm-Fixed-Price O&M of up to 54 stations. Scheduled maintenance includes scheduled visits per year in accordance with Attachment A Performance Work Statement and Attachment B Pricing Schedule.	
CLIN 4002 (T&M)	Combined Great Lakes Unscheduled Repair (U.R.) - Base Period - Time-and-Materials U.R. of up to 54 stations in accordance with Attachment A Performance Work Statement and Attachment B Pricing with Contracting Officer's Representative (COR) approval.	
Option Period 4 (June 1, 2032 - May 31, 2033)		
		Total Price