

ANNEX A: STATEMENT OF WORK / TECHNICAL REQUIREMENTS

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APPENDICES

Appendix A Reference documents:

- A.1 *Example of historical outage statistic data*
- A.2 *Example of Buoy Data Sheet*
- A.3 *Example of Buoy Service Report (B.S.R.)*
- A.4 *Example of material spare list*
- A.5 *Guidelines for safe handling of buoys.*

Appendix B Buoy Information Drawing/ Data

Appendix C List of Buoys by Contract areas.

- C.1 *Western Region, W-1 to W-4*
- C.2 *Central & Arctic Region, C-1 to C-45*
- C.3 *Atlantic Region, A-1 to A-76*

1.0 SCOPE

- The scope of the contract services includes the commissioning, servicing and decommissioning of floating aids to navigation (buoys) in the contract area(s). The contractor must also provide operational plans, reports and asset information in accordance with these specifications. In addition, the Contractor must communicate with appropriate Coast Guard authorities to report outages and/or to report when services have been restored.
- Canadian Coast Guard will supply all equipment (buoys, mooring, anchors etc.) to be installed for the contract, as well as spares and replacements for worn components. Note that at the contract start date, all buoys will be in-situ on the water. The Contractor will be provided with some spare materials to restore services – these will require a small storage area, adequate to hold approximately 1% of complete inventory; lanterns must be stored indoors, all other materials can be stored outside in a secure compound.
- For transportation of all materials and winter storage of seasonal buoy equipment, potential bidders should provide comparable costs as well as any comments, on 2 options:
 - Option 1: Materials to be stored at CCG's depot; contractor is to transport all materials from CCG depot to Contractor staging areas for deployment and return worn materials to CCG depot for disposal. Contractor would retain minimal spare materials for outage response.
 - Option 2: All materials to be transported by CCG to Contractor's secure storage area for storage during complete duration of contract.

2.0 BUOY TENDING ACTIVITIES

2.1 Commissioning

Commissioning is the term for the activity or activities carried out at the start of the operational season, typically in spring. The required activity varies by region, depending on local conditions and the type of service. In areas which are free of ice conditions, or where the operational season is year-round, commissioning activities may not be required.

Refer to Sect.7.1 for descriptions of Commissioning activities. Refer to Appendix D for activities which are included for each Contract Area and for specific buoys within each Contract Area.

2.2 Decommissioning

Decommissioning is the term for the activity or activities carried out at the end of the operational season, typically in fall or winter. The required activity varies by region, depending on local conditions and the type of service. In areas which are free of ice conditions, or where the operational season is year-round, decommissioning activities may not be required.

Refer to Sect.7.2 for descriptions of Decommissioning activities. Refer to Appendix D for activities which are included for each Contract Area and for specific buoys.

2.3 Servicing, unscheduled

An unscheduled servicing activity on a floating aid including the following unplanned work:

- Replacing a buoy which has been lost
- Checking and/or re-positioning a buoy which is reported to be off station;
- Checking and/or replacing the light (for lit buoys);
- Retrieving a lost buoy within the contract area(s)

2.4 Servicing, scheduled

A scheduled activity on a floating aid includes the following planned work:

- Completing planned cyclical checks and replacements of buoy moorings.

3.0 REPORTING REQUIREMENTS

3.1 Annual Work Plan

- The Contractor will be required to provide a plan for all annual planned work showing the scheduled dates for aids to navigation commissioning, servicing and decommissioning. This plan will be submitted, at the latest, one month before the first planned commissioning date or March 1st of each year, whichever is earlier.

3.2 Operational Reporting

- The Contractor shall keep the CCG representative informed daily during normal working hours on the status of commissioning/decommissioning activities.
- During the periods of commissioning and decommissioning activities, the Contractor will be responsible for advising, on a daily basis, the Marine Communications and Traffic Services office (MCTS) either on channel 16 VHF or by calling the applicable 1-800 number, of the progress of commissioning/decommissioning activities for each buoy or contract area. The MCTS officer will issue a notice to shipping (NOTSHIP) to advise mariners as required.

3.3 Inventory

- The contractor is responsible for the inventory management of all spare parts, consumables and assets, including recording and reporting requirements.
- The Contractor shall maintain a listing of all spare materials (chains, shackles, lights, etc.) and update the list as materials are consumed. The updated list is to be provided to Coast Guard at the end of the contract period and biannually during the contract period: at the end of the operational season and at the start of the following operational season. The listing

shall also track where and when spare materials are used and the disposal process (i.e. return to Coast Guard or other).

- See Appendix A.4, for example of spares listing /report.

3.4 Buoy Service Reports

- Whenever any on-water work is completed at a buoy (being established, replaced, moved, inspected etc.) the Contractor shall complete a “Buoy Service Report” (BSR) for each buoy. The form shall be duly signed by the Contractor and forwarded to the CCG representative. The data can be provided in hardcopy or by utilising a ‘mobile’ version of Canadian Coast Guard’s data system (SIPA).
 - See Appendix A.3, for example of a Buoy Service Report (B.S.R.).

4.0 MANDATORY REQUIREMENTS

- All vessels used for this contract shall be vessels registered in Canada in accordance with the Canada Shipping Act 2001.
- If more than 15 gross tonnage, the vessel shall be registered as a workboat or tug and have a valid ship inspection certificate issued by Transport Canada for the duration of this contract. If using a crane it must pass stability requirements.
- If less than 15 gross tonnage, it must be registered as a small commercial vessel and meet the applicable regulatory requirements for non-pleasure craft for the duration of this contract. If using a crane it must pass stability requirements. ***Only vessels enrolled in the Transport Canada ‘Small Vessel Compliance Program’ (SVCP) will be eligible to bid on the Request for Proposal (RFP).***
- The authorized representative and/or master of the vessel (s) used in the performance of this Contract warrants that such vessel (s) will have and maintain current throughout the contract period, certificates for crew and vessel and lifesaving carriage equipment requirements as defined by the applicable regulations and sections of the Canada Shipping Act 2001 (CSA 2001). All navigational signals and equipment shall be in an operational order as required by the Collision Regulations of the CSA 2001.
- Proof of ownership of vessels to be used, or written permission for their use on a 24 hour, 7 days per week basis, from the owner during the life of the contract.

5.0 BUOY POSITIONING METHODS

5.1 Primary Positioning Method

- The positioning of aids to navigation shall always be made using DGPS (where available). If DGPS is not available, other positioning methods must be approved by CCG.
- Vessels using DGPS shall carry the appropriate equipment and the crew will be trained in its use. The equipment shall provide a positioning accuracy of the order of 5 m. The Contractor shall carry professional marine navigation type equipment.

5.2 Alternative Positioning Methods

- If DGPS is not available or appropriate, GPS in combination with one or more secondary methods must be used. The method to be used is indicated in the Buoy Data Card
 - See Appendix A.2, for example of a Buoy Data Card
- Secondary methods include soundings, radar bearings, compass bearings, local knowledge or other methods.
- Local knowledge is information about a waterway that local mariners and/or CCG personnel have developed with experience and which is usually not contained in official nautical documents.
- Any method of positioning other than those prescribed above must be approved by CCG prior to its use.

6.0 PLANNING & SCHEDULING

6.1 Commissioning

- In some areas, buoys form systems that are linked to other areas, and therefore must be commissioned in an orderly and systematic fashion. In addition, for Commercial aids in areas subject to ice, the commissioning date is dependent on ice free conditions and will vary each year. The contractor will liaise with the appropriate Coast Guard office to determine the priorities and order of commissioning prior to commencing operations each spring.
- Typically, for recreational aids, aids to navigation shall be checked, maintained and repaired as required before May 15th of each year.
 - See Appendix D, Overview page for specific annual commissioning and decommissioning dates by Contract Area.

6.2 Outage response

6.2.1 Performance Levels

- It is the Contractor's responsibility to ensure that the maintenance and fault/failure restoration of all buoys is implemented to achieve the availability times listed below. Per IALA standards, availability is calculated over a 36 month service period using the following formula:

$$A \text{ (Availability)} = (\text{Total time} - \text{Down Time}) / \text{Total time}$$

'Down time' is measured from the issuance to cancellation of the NOTSHIPS related to the service outage.

The required performance levels are related to 'aid importance' categories as follows:

Importance Category 1

Availability: 99.8%

Time to Repair: Two (2) Days

Importance Category 2

Availability: 99.0%

Time To Repair: Four (4) Days

Importance Category 3

Availability: 97.0%

Time to Repair: Six (6) Days

- Time to repair – time from notification of outage to restoration of full service

6.2.2 Outage Monitoring

- Canadian Coast Guard issues Notices to Shipping (NOTSHIPS) in order to advise the marine public of hazards to navigation, defective aids to navigation and other important navigational information. These are published on CCG's webpage.
- The Contractor is expected to monitor the NOTSHIP page for his area of operation on a continuous basis and respond to outages which are advertised by NOTSHIP without additional direction from CCG.
- Notwithstanding above, the Contractor may receive notification of a discrepancy from one or more of the following prior to issuance of a NOTSHIP: the Coast Guard Operations Centre, a Coast Guard Base, a Coast Guard Radio Station or other Coast Guard representative.

6.2.3 Outage Response Availability

- The contractor must maintain a standby posture at all times during the life of the contract such that he is able to respond to discrepancies within the prescribed response time, as identified in 6.2.1.
- If the Contractor is unable to respond within the prescribed timeframe (due to adverse weather conditions or other circumstance) he shall advise the CCG representative, during

normal working hours, and provide information on when he will be able to proceed with the servicing.

- The contractor is expected to have a means of contact on a 24hr/day, 7day/week basis.
- The contractor is expected to have a means of contact for his vessel(s) when it is involved in any activity that could be deemed part of this contract.

7.0 WORK SPECIFICATIONS

7.1 Commissioning

7.1.1 ‘Year round’ buoys:

- A ‘year-round’ buoy is operational and considered to be ‘in-service’ year round, therefore it is not commissioned.

7.1.2 ‘Seasonal buoys’:

- For a buoy which was replaced with a winter spar, verify buoy position. Buoys found to be off station shall be immediately placed on station. Remove winter spar and replace with summer buoy.
- For a buoy which was completely lifted, place buoy in position and verify position is correct.

7.1.3 ‘Seasonal buoys’ in place year round

- For buoys left in the water in the non-operational season and where applicable, verify buoy position. Buoys found to be off station shall be immediately placed on station.
- Inspect retro-reflective tape and numbers and verify that buoy colour is not obscured by dirt, debris or guano. Clean buoy and replace damaged lettering and/or retro-reflective material as required.

7.1.4 Lighted buoys:

- All buoy lanterns are self-contained units that include a solar panel, battery and light.
- As applicable, lanterns will be placed on the appropriate buoys during the commissioning process. Lanterns will be tagged and identified by buoy number when given to the contractor.
- Contractor will ensure that solar panel and lantern lens are free from dirt or other debris.
- Contractor shall ensure that after being placed on the buoy, the lantern is operating (cover sun switch) and displaying the proper flash characteristic.

7.1.5 Stakes and bushes:

- Contractor to supply timber posts (‘stakes’) and attach day targets provided by Canadian Coast Guard. Place stakes at Commissioning by embedding in mud bottom.

7.2 DECOMMISSIONING

7.2.1 ‘Year round’ buoys:

- A ‘year-round’ buoy is operational and considered to be ‘in-service’ year round, therefore it is not decommissioned.

7.2.2 ‘Seasonal buoys’:

- As applicable, summer buoy may be replaced with winter spar or lifted completely.

7.2.3 ‘Seasonal buoys’ in place year round

- If buoy is equipped with a lantern, the contractor shall check that it is operating properly and then remove it from the buoy. The lantern is to be cleaned with soapy water and checked visually for any damages. The lantern is to be tagged with the buoy number and returned to the appropriate storage location for off-season period.
- For unlit buoys, no action is required at season end.

7.3 SERVICING, UNSCHEDULED: OUTAGES AND DISCREPENCIES

7.3.1 Buoy off position:

- Restore buoy to correct position.

7.3.2 Buoy off position and lost:

- If a buoy is reported off position and is lost, replace buoy with complete assembly in correct position.

7.3.3. Buoy low / partially submerged or leaning:

- If a buoy is reported or found to be low in the water the buoy is to be inspected visually for a possible leak and for the presence of marine growth. If it appears that water is entering the hull of the buoy, the buoy will be replaced and returned to the Coast Guard. If marine growth is causing the fault, the contractor shall clean the buoys and equipment as soon as possible with brushes and/or water sprayer.

7.3.4 Buoy in place but difficult to see:

- If an aid’s light or daytime colour characteristic are obscured by bird guano or other debris. The contractor shall replace plastic buoys if discrepancies are detected that can alter their visual performance or floatability. Replace worn or damaged lettering.

7.3.5 Buoy lantern extinguished:

- Replace lantern with spare lantern. Check operation and confirm that characteristic is correct. Tag and return lantern to CCG Base.

7.3.6 Stakes & Bushes:

- If damaged, moved or removed by vessel or storm damage during the season, replace stakes as required.

7.4 SERVICING, SCHEDULED: MOORING INSPECTION / REPLACEMENT

- Scheduled mooring inspection and replacement programs are performed on all buoy assemblies on a cyclical basis – the cycle varies depending on ice, water and current conditions. Note that buoys which are completely lifted each winter will be inspected onshore by Coast Guard during winter layover; all other work is completed on the water.
- A mooring inspection requires a complete lifting of the buoy assembly, including the mooring and anchor, out of the water. Mooring chains or ropes, shackles, other fittings,

counterweights and anchor blocks are inspected visually and/or measured with a template provided by Coast Guard. Components will be reused or replaced depending on condition. Worn items are returned to the Coast Guard.

- If buoys are replaced due to damage, a mooring inspection will be conducted and recorded at the same time.

8 MATERIAL HANDLING / TRANSPORTATION

8.1 Material Handling

- The Contractor will provide labour, material and equipment required to handle, transport buoys and equipment from the wharf / storage site to the location where work will be executed.
- Ground transportation shall be executed in compliance with any applicable provincial and municipal acts respecting (weight, width, height, and other requirements).

8.2 Material Storage

In the case that the Contractor provides the storage area for materials (Option 2, Sect. 1.0), the following requirements must be satisfied:

- Buoys and equipment shall be placed in adequate and easily accessible locations. Inside storage is required for lanterns, however outside storage for buoys, chains, sinkers and shackles, is permitted. Any outside storage area shall be flat and well drained. Outside storage areas must be fenced with minimum height of 1.8m, equipped with locked gates.
- Buoys shall be stored in a secure location to prevent vandalism and theft.