Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government Services Canada/Réception des soumissions Travaux publics et Services gouvernementaux Canada
Pacific Region
401 - 1230 Government Street
Victoria, B.C.
V8W 3X4
Bid Fax: (250) 363-3344

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet
Fabricate & Deliver 7.5m RIB

Solicitation No. - N° de l'invitation
5P404-151022/A

Date
2016-06-01

Client Reference No. - N° de référence du client
5P404-151022

GETS Reference No. - N° de référence de SEAG
PW-$XLV-166-6986

File No. - N° de dossier
XLV-5-38251 (166)

CCC No./N° CCC - FMS No./N° VME

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2016-06-23

Time Zone
Fuseau horaire
Pacific Daylight Saving Time PDT

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:
Castle, David G.

Buyer Id - Id de l'acheteur
xlv166

Telephone No. - N° de téléphone
(250) 363-0110 ( )

FAX No. - N° de FAX
( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:
Parks Canada
See herein

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Delivery Required - Livraison exigée
See Herein

Delivery Offered - Livraison proposée

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Issuing Office - Bureau de distribution
Public Works and Government Services Canada - Pacific Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Canada

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PART 1 - GENERAL INFORMATION

1.1 Security Requirements

There is no security requirement associated with this bid solicitation.

1.2 Statement of Work

The Parks Canada have a requirement for the supply and delivery of one (1), 6.5 - 7.5 Meter, Rigid hull Inflatable Boat with trailer in accordance with the Technical Statement of Requirement (TSOR) at Annex A and inspection as per Annex C - Inspection/Quality Assurance /Quality Control. All deliverables are desired to be delivered on or before August 31, 2016. Delivery is to be made to Parks Canada – Riding Mountain National Park.

There exists an option to acquire one (1) additional boat with trailer.

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.4 Trade Agreements

This requirement is subject to the provisions of the Agreement on Internal Trade (AIT).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manua l) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 *(2016-04-04)* Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 SACC Manual Clauses

B3000T, 2006-06-16, Equivalent Products
A9125T, 2007-05-25, Valid Labour Agreement

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 4 calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to

enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in British Columbia**.**

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

2.5 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least five (5) working days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:
Section I: Technical Bid – Two (2) hard copies
Section II: Financial Bid – One (1) hard copy
Section III: Certifications - One (1) hard copy

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

(a) use 8.5 x 11 inch (216mm x 279 mm) paper;
(b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement
(http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html).

To assist Canada in reaching its objectives, bidders should:

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and

2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

3.2 Section I - Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

In order to demonstrate their capabilities, the bidders must use the **ANNEX H - TECHNICAL EVALUATION PLAN, using column B ONLY** in responding to the technical requirements of the solicitation.

The technical bid must demonstrate that the proposed crafts will be mechanically sound, completely seaworthy, and operable and fit in all respects for the purposes intended.

3.2.1 Bidder's Check List and Technical Confirmation

The Bidders must submit a fully completed **Annex G - BID PACKAGE CHECKLIST** as part of their Technical Bid.

3.2.2 Inspection and Test Plan (ITP)

1. Bidders must provide with their bid the inspection plan and testing procedures that will be used to verify, test and inspect all of the components and systems on the boat from initial construction to completion. The ITP must be in accordance with **Annex C** attached to this RFP.

2. Bidders must outline the process by which they will address and solve problems or delays with the fabrication, various installations, testing and delivery of the boat.

3.2.3 Drawings and Other Documentation

Prescribed drawings format and documentation to be provided with the bid:

- A general arrangement.
- Structural Drawings showing Deck Plan, a Centerline profile.
- A detailed Lines Plan.
- A drawing of the fuel supply arrangement.
- A drawing of bilge pumping system
- Electrical one-line diagram.
- The lightship weight.
- Draft Stability Calculation of the proposed vessel
- A Project Plan (written description) of how the Bidder/Contractor will comply with the TSOR. The written description must address each main element of the TSOR and indicate how the Bidder/Contractor will comply with the intent of the TSOR and successfully deliver the vessel(s) to the performance standard(s) identified.
- A Preliminary Production Schedule which must verify the Bidder/Contractor's ability to deliver the vessel(s) in accordance with the requirements of the Solicitation.

3.2.4 Subcontractors

As part of their Technical Bid, Bidders must submit a completed **Annex E, Subcontractor List**.

3.2.5 Vessel Construction Experience

The Bidder must provide objective evidence of experience in the construction of vessels of the size, type and complexity which are the subject of this RFP. To demonstrate this experience, the Bidder must provide

(a) detailed list of such vessels built pursuant to TP 1332, Construction Standards for Small Vessels, Non-pleasure craft latest edition, within the last 5 years;
(b) photographs of vessels of listed;
(c) (for listed TP 1332, non-pleasure craft sold within the last 5 years only) purchaser's name and contact information, and the date of sale.

The Bidder must also provide details on how the materials and equipment used in the construction, manufacture of the proposed vessel is suited to the operating and environmental conditions that the vessel may encounter.

3.2.6 Naval Engineering Capability

The Bidder must provide objective evidence that it has either in-house capabilities, or has a written commitment for the duration of the Contract from a qualified sub-contractor to provide marine drafting and engineering services. Qualified sub-contractor is defined as having the provided these services on similar vessel construction projects (same size, type and complexity).

3.2.7 Contractor's Quality Management System

1. The Bidder must provide objective evidence that it has a Quality Assurance Program, which must be in place during the performance of the Work, and which addresses the quality control elements below.

2. The objective evidence may be in the form of a copy of the Bidder's Quality Assurance Manual which addresses these elements.

3. The Bidder must also provide a minimum of one (1) samples of completed quality records used on the most recent marine vessel construction at its facility.

4. The quality control elements must include, as a minimum:

   Quality Assurance Manual or Quality Assurance Program Descriptions
   Inspection and Test Plan
   Final Inspection
   Quality Records

3.2.8 Insurance Requirements

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in *Part 6 - Resulting Contract, Clause 6.19.*

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

3.3 Section II - Financial Bid

Bidders must submit their financial bid in accordance with the **Detailed Financial Bid Presentation Sheet at Annex D.**

3.3.1 Exchange Rate Fluctuation

C3011T, 2013-11-06, Exchange Rate Fluctuation

3.3.2 Financial Capability

A9033T, 2012-07-16, Financial Capability

3.3.3 Unscheduled Work

Bidders must provide the information requested in Annex D, Article D-2.The unscheduled work rates will be included in the Basis of Payment but will not form part of the bid evaluation.

3.4 Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

(a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada will evaluate the bids.

(c) The evaluation team will determine first if there are two or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and less than two responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

In order to be compliant, the Bidder's proposal must, to the satisfaction of Canada:

a) Meet all requirements of the Annex A, TSOR; and
b) Provide all information as requested in PART 3 - BID PREPARATION INSTRUCTIONS

4.1.2 Financial Evaluation

SACC Manual Clause A0222T (2013-04-25), Evaluation of Price.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive as per Annex H- Evaluation plan. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

A mandatory requirement is described using the words "shall", "must", "will" "is required" or "is mandatory."

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated information to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default in carrying out any of its obligations under the Contract, if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information verify the Bidder’s certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the Ineligibility and Suspension Policy (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the “FCP Limited Eligibility to Bid“ list at the time of contract award.

5.2.3 Canadian Content Certification

This procurement is conditionally limited to Canadian goods and Canadian services.

Subject to the evaluation procedures contained in the bid solicitation, bidders acknowledge that only bids with a certification that the goods and services offered are Canadian goods and Canadian services, as defined in clause A3050T, may be considered.

Failure to provide this certification completed with the bid will result in the goods and services offered being treated as non-Canadian goods and non-Canadian services.

The Bidder certifies that:

☐ a minimum of 80 percent of the total bid price consist of Canadian goods and Canadian services as defined in paragraph 5 of clause A3050T.

For more information on how to determine the Canadian content for a mix of goods, a mix of services or a mix of goods and services, consult Annex 3.6.(9), Example 2, of the Supply Manual.

5.2.3.1 SACC Manual clause A3050T (2014-11-27), Canadian Content Definition

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirement

There is no security requirement applicable to this Contract.

6.2 Statement of Work

The Contractor must perform the Work in accordance with the Technical Statement of Requirement (TSOR) at Annex "A".

6.2.1 Optional Goods

The Contractor grants to Canada the irrevocable option to acquire up to one (1) additional boat with trailer, as described at Annex A of the Contract under the same conditions and at the prices stated in *Annex B* of the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option within twelve (12) months after contract award by sending a written notice to the Contractor.

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manua l) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2030, (**2016-04-04)** Goods (Higher Complexity) apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

1028, 2010-08-16, Ship Construction - Firm Price, apply to and form part of the Contract.

Conduct of Work. The Supplemental General Conditions 1028, Article 02 (2010-08-16) Conduct of Work, Paragraph 1. Canadian Labour is deleted in its entirety.

Warranty. The Supplemental General Conditions 1028, Article 12 (2010-08-16) – Warranty, Paragraph 3 is deleted and replaced with the following:

The warranty periods for the vessel, from the date of its delivery to and acceptance by Canada, are:

a) Twelve (12) months for the boat propelling machinery and auxiliaries, fittings and equipment of all kinds (excluding Government Supplied Material).
b) Twenty four (24) months for the vessel hull and welding.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before August 31, 2016.

6.4.2 Delivery Location

Riding Mountain National Park
Parks Canada
PO Box 299
135 Wasagaming Drive
Onanole, MB R0J 1N0

6.4.3 Shipping Instructions - Delivered Duty Paid

Goods must be consigned and delivered to the destination specified in the contract:
Incoterms 2000 "DDP Delivered Duty Paid" to the delivery locations listed under article 6.4.2.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Dave Castle
Title: Supply Specialist, Acquisitions, Marine
Public Works and Government Services Canada
Acquisitions Branch
Address: Suite 401 - 1230 Government Street, Victoria B.C. V8W 3X4
Telephone: 250-363-0110
E-mail address: david.castle@pwgsc-tpsgc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Technical Authority

The Technical Authority for the Contract is provided upon contract award

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Inspection Authority

The Inspection Authority for the Contract is provided upon contract award

The Inspection Authority is the representative of the department or agency for whom the Work is being performed under the Contract and is responsible for inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada inspector who may from time to time be assigned in support of the designated Inspector.

6.5.4 Contractor's Representative

Name and telephone numbers of the person responsible for:
General Enquiries:

Name: _____ Telephone Number: _____

Facsimile Number: _____ E-mail address: _____

Delivery Follow-up:

Name: _____ Telephone Number: _____

Facsimile Number: _____ E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm Price of $ _____. Customs duties and Goods and Services Tax or Harmonized Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 Charge-out Labour Rate / Material Mark-up

The following rates are included in the Basis of Payment and must remain valid for the duration of the contract:

Charge-out Labour Rate: _____
Mark-up on Materials and Sub-Contracts: 10%

6.6.3 Unscheduled Work:

a) Price Breakdown:

The Contractor must, upon request, provide a price breakdown for all unscheduled work, by specific activities with trades, person-hours, material, subcontracts and services.

b) Pro-rated Prices:

Hours and prices for unscheduled work will be based on comparable historical data applicable to similar work at the same facility, or will be determined by pro-rating the quoted work costs in the Contract when in similar areas of the vessel.

c) Payment for Unscheduled Work:

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

6.6.3.1 Number of hours (to be negotiated) X $_____, being the Contractor's firm hourly charge-out labour rate which includes overhead and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, customs duties are included and applicable taxes are extra. The firm hourly charge-out labour rate and the material mark-up will remain firm for the term of the Contract and any subsequent amendments.

6.6.3.2 Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package. Elements of *Related Labour Costs* identified in 6.3.3.3, will not be negotiated, but will be compensated for in accordance with 6.3.3.3.

6.6.3.3 Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating will be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate* set out in clause 6.6.2

6.6.3.4 The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Charge-out Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

6.6.4 Payment for Fuels, Oils and Lubricants

The Contractor is responsible for the supply and cost of all fuel, lubricating oil, hydraulic oil and other lubricants sufficient for fully charging all systems as required for operating the machinery and other equipment and for performing all tests and trials.

6.6.5 Field Engineering and Supervisory Services

If Field Service Representatives (FSR) and/or Supervisory Services are required for the Work, the cost of all such services is to be included in the price for the Work.

6.6.6 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.7 Method of Payment - Multiple Payments

Canada will pay the Contractor upon completion and delivery of units in accordance with the payment provisions of the Contract if:

a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

b. all such documents have been verified by Canada;

c. the Work delivered has been accepted by Canada.

6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

2. Invoices must be distributed as follows:

   a. The original and one (1) copy must be forwarded to the following address for certification and payment.

   Riding Mountain National Park, 136 Wasagaming Drive, Onanole, Mb R0J 1N0 , PO Box 299

   b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.7.1 Warranty Holdback

A warranty holdback of 3% will be applied to the claim(s) for payment. This holdback is payable by Canada upon the expiry of the warranty holdback period of 90 days applicable to the Work. Goods and Services Tax or Harmonized sale Tax (GST/HST), as appropriate, is to be calculated and paid on the total

amount of the claim before the 3 percent holdback is applied. At the time that the holdback is released, there will be no GST/HST payable, as it was included in the previous payments.

6.7.2 Outstanding Work Holdback

In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until completion of the Work. Applicable Taxes will be calculated on this outstanding work holdback amount and paid at the time that the outstanding work holdback is released.

6.8 Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.8.1 Canadian Content Certification (if applicable)

SACC Manual clause A3060C (2008-05-12), Canadian Content Certification

6.9 Welding Certification – Contract

1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

   (a) CSA W47.2-M1987 (R2003), Certification for Companies for Fusion Welding of Aluminum division 2.1.

2. In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.

3. Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel he intends to use in the performance of the Work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding certification.

6.10 Project Schedule

1. The Contractor must provide a detailed project schedule in MS Project format or equivalent to the Contracting Authority and the Technical Authority **5 days after award of Contract**. This schedule must highlight the specific dates for the events listed below.

   (a) hull materials delivered to Contractor and sustained construction commenced;
   (b) hull and deck completed, but not closed in to allow for full inspection of the structure and welding. The Contractor must supply a hard copy of the material certificates and construction drawings to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;
   (c) outfitting/electrical 75% complete but all equipment and components delivered to the Contractor and available for full inspection. The Contractor must supply a hard copy of the list of equipment and electrical supplies to the Technical/Inspection Authority one week prior to inspection by the Technical/Inspection Authority;
   (d) technical manuals delivered to Canada for approval (no less than 14 days prior to the planned delivery date);
   (e) Contractor’s tests and trial and final sea trials required by the TSOR;
   (f) boat and trailer delivered to Canada for approval;

(g) the start and the end of the twelve (12) month warranty period.

Note: Technical Manuals will not be returned once approved.

2. The schedule is to be regularly updated and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

6.11 Progress Reports

1. The Contractor must submit monthly reports on the progress of the Work in an electronic format to the Technical Authority and to the Contracting Authority.

2. The progress report must contain two (2) Parts:
   (a) PART 1: The Contractor must answer the following three questions:
   (i) is the project on schedule?
   (ii) is the project within budget?
   (iii) is the project free of any areas of concern in which the assistance or guidance of Canada may be required?

   Each negative response must be supported with a clarification.

   (b) PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:
   (i) a description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.
   (ii) reasons for any variation from the schedule.

6.12 SACC Manual Clauses

B9035C - Progress Meetings	2008-05-12
B5007C - Procedures for Design Change or Additional Work	2010-01-11
D3015C - Dangerous Goods/Hazardous Products	2007-11-30
D0018C - Delivery and Unloading	2007-11-30
C0711C - Time Verification	2008-05-12

6.13 Trade Qualifications

The Contractor must use qualified, certified (where applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Contracting Authority may request to view and record details of the certification and/or qualifications held by the Contractor's tradespeople. This request should not be unduly exercised but only to ensure qualified tradespeople are on the job.

6.14 Quality Management Systems

1. The Contractor must have in place a Quality Assurance Program approved by the Inspection Authority during the performance of the Work which addresses the quality control elements below.

2. The quality control elements must include, as a minimum:
   Quality Assurance Manual or Quality Assurance Program Descriptions
   Inspection and Test Plan
   Final Inspection
   Quality Records

3. The Contractor's facilities may be audited by Canada, or its authorized representative, during the performance of the Work to ensure that the approved system is in place and in accordance with the foregoing requirement.

4. The Contractor will be required to submit completed quality assurance documentation with each claim for payment as applicable.

6.15 Post Contract Award/Pre-Production Meeting

Within three (3) working days of the receipt of the contract, the Contractor must contact the Contracting Authority to determine the details of a pre-production meeting. The meeting will be held at the Contractor's plant or via telephone or video conference. The Cost of holding such a pre-production meeting must be included in the price of the bid. Please note that the travel and living expenses for Government Personnel will be arranged and paid for by the Canada.

6.16 Manuals

1. The Contractor must obtain and deliver to the Technical Authority for approval, all Data Books, Operating Instruction Books, Maintenance Manuals and Spare Parts Lists (including part numbers and ordering instructions) for all machinery and equipment fitted on the Vessel as required. Once approved by the TA, the Contractor must provide two (2) complete copies in accordance with and as specified in the **TSOR, Section 15.0.**

2. Where manuals are examined by Canada, such examination does not relieve the Contractor of any responsibility under the Contract for ensuring the correctness of all details and adequacy of performance of the Vessel, nor does it obligate Canada to accept, in whole or in part, an item of Work completed in accordance with such manual, nor does it mean such an item of Work meets the requirements of the SOW.

6.17 Inspection, Test & Trials

1. During Construction of the vessel, the Contractor must arrange for regular inspections and upon completion of the construction of the vessel, the Contractor must arrange trials. All Inspections and test and trials performed must be in accordance with the TSOR Section 14.0 and the **Annex C** - Inspection/Quality Assurance/Quality Control. The Inspection Authority must approve any additional testing not specified in the TSOR.

2. The Contractor must update as required the Inspection and Test Plan (ITP) provided with its bid and submit to the Contracting Authority and the Inspection Authority seven (7) days after contract award for review and approval.

0. Once approved, any modification to the ITP must be pre-approved by the Inspection Authority. A revised ITP will be required should any modification be made.

6.18 Contractor Supplied Material (CSM)

As per the Annex A – Technical Statement of Requirement, **Article 9.0** the Contractor must install, as per the manufacturer's recommendations, the following:

(a) Two (2) 115 - 130HP, 4-Stroke or Two Stoke Direct fuel injected outboard motors as per regulations on Clear Lake, Riding Mountain National Park.

6.19 Insurance Requirements

The Contractor must comply with the insurance requirements specified in **Articles 6.19.1** and **6.19.2** below. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

6.19.1 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than $2,000,000 per accident or occurrence and in the annual aggregate.

2. The Commercial General Liability policy must include the following:

   (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.

   (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.

   (c) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.

   (d) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.

   (e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

   (f) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.

   (g) Employees and, if applicable, Volunteers must be included as Additional Insured.

   (h) Employers' Liability (or confirmation that all employees are covered by Worker'scompensation (WSIB) or similar program).

   (i) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.

   (j) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.

   (k) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

   (l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

(m) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to: Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042, Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to: Senior General Counsel,
Civil Litigation Section, Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

6.19.2 Marine Liability Insurance

1. The Contractor must obtain Protection & Indemnity (P&I) insurance that must include excess collision liability and pollution liability. The insurance must be placed with a member of the International Group of Protection and Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the Marine Liability Act, S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by Worker's Compensation as detailed in paragraph (2.) below.

2. The Contractor must obtain Worker's Compensation insurance covering all employees engaged in the Work in accordance with the statutory requirements of the Territory or Province or state of nationality, domicile, employment, having jurisdiction over such employees. If the Contractor is assessed any additional levy, extra assessment or super-assessment by a Worker's Compensation Board, as a result of an accident causing injury or death to an employee of the Contractor or subcontractor, or due to unsafe working conditions, then such levy or assessment must be paid by the Contractor at its sole cost.

3. The Protection and Indemnity insurance policy must include the following:

(a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada represented by Public Works and Government Services Canada.

(b) Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Department of Fisheries and Oceans and Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.

(c) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

(d) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

(e) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

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Senior General Counsel, Civil Litigation Section, Department of Justice
234 Wellington Street, East Tower
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6.20 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____.

6.21 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

1. The Articles of Agreement;
2. The Supplemental General Conditions **1028**, **2010-08-16**, Ship Construction - Firm Price;
3. The General Conditions **2030**, **2016-04-04**, Goods (Higher Complexity);
4. Annex A - Statement of Work;
5. Annex B – Question & Answer;
6. Annex C, Inspection/Quality Assurance/Quality Control;
7. Annex D, Basis of Payment;
8. The Contractor's bid dated _____.

6.22 Acceptance

1. The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the vessel's construction period. This list will form the annexes to the formal acceptance document for the vessel. A vessel acceptance meeting or telephone conference will be convened by the Inspection Authority on the work completion date of the vessel to review and sign off the form PWGSC-TPSGC 1105, Contractor's Certification.

2. The Inspection Authority must complete the above form and obtain the signatures of the Contractor and the Contracting Authority. The form will then be distributed by the Inspection Authority as follows:
   a. one copy to the Contracting Authority;
   b. one copy to the Technical Authority;
   c. one copy to the Contractor.

ANNEX A – TECHNICAL STATEMENT OF REQUIREMENT

A1.VESSEL: **ALUMINIUM 6.5-7.5 m Search and Rescue RIB, Motors, Console and T-Top complete with trailer.**

A2. ABBREVIATIONS

ABYC	American Boat and Yacht Council
AC	Alternating Current
ASTM	American Society for Testing and Materials full width
CFM	Contractor Furnished Material
CSA	Canadian Shipping Act
CSA	Canadian Standards Association
COLREGS	Collision Regulations
DC	Direct Current
GPS	Global Positioning System
GSM	Government Supplied material
ISO	International Organization for Standardization
PVC	Polyvinylchloride
TA	Technical Authority (As defined by the Contract)
TCMS	Transport Canada Marine Safety
UV	Ultraviolet
VHF	Very High Frequency

A3. LIST OF REFERENCE DOCUMENTS

REFERENCE	TITLE
ASTM F1166	Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities
TP 1332	Construction Standards for Small Boats
TP 13430	Standard For Tonnage Measurement of Ships
TP 14070	Small Commercial Vessel Safety Guide
ISO 12217	Small Craft – Stability and Buoyancy Assessment and Categorization
ISO 6185	Shipbuilding and Marine Structures – Inflatable Boats
Canada Shipping Act	Small Vessel Regulations
Canada Shipping Act	Collision Regulations (COLREGS)
ABYC	American Boat and Yacht Council Standards
Canadian Standards Association(CSA) W47.2-M1987	Certification of Companies for Fusion Welding of Aluminium
(CSA) C22.2 No. 183.2-M1983 (R1999)	Standards for DC Electrical Installations on Boats

A4. PWGSC SMALL CRAFT SOLICITATION INFORMATION

a.	General Information: This vessel is intended to be built based on stock small working or commercial vessel hull forms with a minimum of customization as indicated herein. Prototype hulls will not be considered for this procurement. A number of proven hulls must be shown to have been produced and be in service for the Contractor to indicate suitability of the hull for this procurement. Bidders must submit brochures, photographs, references, builder's plates, hull identification numbers confirming multiple builds, etc. as applicable.
b.	Annex A Section A5, TECHNICAL SPECIFICATION is divided into four parts: Part 1 Article 1 General Description of Vessel Role and Function Part 2 Articles 2-3 Contractor Design and Construction Practices Part 3 Articles 4-5 Vessel Particulars Part 4 Articles 6-17 Outfitting and Equipment Part 1 provides a brief description of the vessel's role and function. Part 2, Contractor Design and Construction Practices provides general information on a wide range of construction practices, standards, vessel shipping and packaging, etc. Part 3, Vessel Particulars, cover the next layer of vessel description, physical construction and arrangement. Part 4, Outfitting and Equipment, covers the vessel's fitted equipment such as electronics, propulsion, steering and trailer (if required).

A5. TECHNICAL SPECIFICATION

TABLE OF CONTENTS

1.0 OVERVIEW

Parks Canada, manages and operates small vessels in support of its programs and missions. The primary purpose of this vessel will be for inland waters in Riding Mountain National Park in connection with Search and Rescue operations, as well as, for law enforcement and scientific research projects. The vessel will be operated out of the Clear Lake Marina in Riding Mountain National Park.

1.1 REQUIREMENT

1.1.1 The Contractor must design, fabricate and supply one (1) new inflatable workboat with rigid aluminum hull in accordance with the current Transport Canada Marine Safety Branch (TCMSB) Marine Safety Publication TP 1332 “Construction Standards for Small Vessels” (hereinafter referred to as TCMSB TP 1332).

1.1.2 The vessel will be propelled by two (2) 115 - 130 HP four-stroke outboard motors, which will be provided and installed by the contractor.

1.1.3 The vessel must come complete with a trailer for transporting and launching.

2.0 DESIGN AND CONSTRUCTION REQUIREMENTS

Unless otherwise indicated, all components, equipment and materials must be supplied by the Contractor. The hull, bridge, console with T-top, and structure must be fabricated in aluminum.

2.1 ERGONOMIC DESIGN

2.1.1 Hazardous operating conditions must be avoided by arranging machinery and equipment in a safe manner; providing guards for all electrical, mechanical and thermal hazards to personnel; and providing guards or covers for any controls that might be activated by accidental contact with personnel.

2.1.2 The aluminum floor must be covered with a slip resistant finish.

2.1.3 The vessel must be designed to accommodate personnel between approximately 5 feet 2 inches and 6 feet 4 inches in height while wearing cold-weather clothing and equipment, in accordance with ASTM F1166-07 Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities.

2.1.4 Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort.

2.1.5 Equipment must be accessible for use, inspection, cleaning and maintenance as per ASTM F1166-07.

2.2 VIBRATIONS

2.2.1 The vessel and all components must be free of local vibration that could endanger the crew, damage vessel structure, machinery or systems, or interfere with the operation or maintenance of machinery or systems.

2.2.2 Moveable components, including items moved for stowage, towing or transportation must be mounted using adequate damping to prevent vibration.

2.2.3 Self-locking fasteners must be used to prevent loosening of fasteners under vibration.

2.3 MATERIALS

2.3.1 All materials must be corrosion resistant and suitable for use in a fresh water environment as detailed in the Operational Requirements. All materials normally subjected to sunlight must be UV resistant. Galvanized materials are unacceptable.

2.3.2 Dissimilar metals: Direct contact of electrolytically dissimilar metals is not permitted. Electrolytic corrosion must be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, or bushings of suitable insulating material.

2.3.3 Aluminum: Aluminum alloy 5086-H116 grade or equivalent must be used for the hull. Non-structural items serving as trim or outfitting, such as hatch frames, castings, consoles and other articles, may be made of other aluminum alloys suitable for commercial use, such as 5083/86 or 5052 or 6063-T54 alloys.

2.3.4 Stainless Steel: Stainless steel 316L or 316 grade must be used for all stainless steel applications except as noted. The 316L grade alloy must be used in any welded underwater components.

2.3.5 Fasteners and fittings must be stainless steel. Bolts used in all fittings must be 316 grade stainless steel.

2.3.6 Where flexible connections are required for steering and fuel systems, suitable hoses with permanently crimped, detachable reusable type fittings must be used.

2.3.7 All materials and equipment must be stored, installed and tested in accordance with the manufacturer's guidelines, recommendations and requirements.

2.4 FASTENERS

2.4.1 All fasteners must be of corrosion resistant materials.

2.4.2 Cadmium plated parts and fasteners, including washers, must not be used.

2.4.3 Direct attachment of alloys containing copper to aluminum is not permitted, with the exception of bonding strips.

2.4.4 Fasteners must not be screwed directly into aluminum. Where required, use aluminum or stainless steel washers or backing plates.

2.4.5 Where nuts will become inaccessible after assembly, they must be captured or anchored to allow reassembly and prevent backing off. Unless otherwise specified, self-locking nuts must be installed to prevent loosening of fasteners due to shock and vibration.

2.4.6 Fasteners in deck traffic areas must be flush mounted to eliminate tripping or snagging hazards.

2.5 STANDARDS

2.5.1 The vessel constructed under this TSOR must be fabricated in accordance with the current TCMSB TP 1332 "Construction Standards for Small Vessels" and with the requirements of the American Boat & Yacht Council (ABYC).

2.5.2 CSA C22.2 No 183.2-M1983 (R1999) – Standards for DC Electrical Installations on Boats and ABYC 'E' Electrical Standards.

2.5.3 CWB CSA\ACNOR W47.2, Sub-division 2.1 - Certification for Aluminum Welding–latest revision.

2.5.4 The Contractor must construct each vessel as per this TSOR, and where this TSOR interferes with or contravenes the above standards, the TCMSB TP 1332 standard will take precedence.

2.5.5 Site visits are required to ensure that the vessel constructed under this TSOR complies with all standards stated therein.

2.5.6 The Contractor must provide Canada or the Authorities in the contract with one electronic copy and one hard copy of all plans for the vessel under construction during the inspection.

2.5.7 Electrical systems on the vessel must be in accordance with TCMSB TP 1332 Section 8, “Electrical Systems.”

3.0 OPERATIONAL REQUIREMENTS

Unless otherwise stated, performance must be for conditions of zero sea state and no wind, in fresh water under normal load conditions. The vessel must be designed and constructed for ease of maintenance and repair, long life, and be easily supportable by local commercial facilities and suppliers.

3.1 CRUISING SPEED

3.1.1 The Contractor must indicate the proposed speed in knots under normal load conditions.

3.2 MINIMUM SPEED

3.2.1 The Contractor must indicate the proposed speed in knots under normal load conditions.

3.3 STEERING AND MANOEUVERING CONTROLS

3.3.1 Capable of steering 15° from heading in minimum Beaufort Force 5 conditions with seas in all directions (wind speeds 17 to 21 knots and wave heights 2 to 2.5 meters).

3.3.2 Steering and manoeuvring at 3 knots in Beaufort Force 5 conditions.

3.3.3 Maintain course, made good over the ground, when proceeding at a speed of 3 knots with a relative crosswind of 15 knots.

3.4 BEACHING

3.4.1 Capable of beaching on soft ground (sand, earth or clay) at a maximum speed of 5 knots without damaging the hull.

3.4.2 Capable of beaching on hard soil (rock or concrete) at a maximum speed of 3 knots without damaging the hull.

3.5 ENVIRONNEMENTAL CONDITIONS

The vessel must be Capable of operating day or night in the following conditions:

3.5.1 Average ambient air temperature range: from -5°C to +30°C.

3.5.2 Average water temperature: 0°C to +20°C.

3.5.3 Waves 2 m to 2.5 m in height.

3.5.4 Wind speeds of at least 17 to 21 knots.

3.6 LAUNCHING, RECOVERY AND TRANSPORTATION

The vessel must be readily road transportable on a boat trailer, must be able to be launched and recovered using the trailer at existing launch ramps.

3.7 MAINTENANCE

The vessel must be designed and constructed for ease of maintenance and repair, long life, and be easily supportable by local commercial facilities and suppliers.

4.0 PHYSICAL CHARACTERISTICS

4.1 VESSEL PARTICULARS

4.1.1 Overall length – Between 6.5 and 7,5 metres (excluding motors).
4.1.2 Overall breadth – Between 2.4 and 2.9 metres, maximum.
4.1.3 Depth – At least 0.76 metres.
4.1.4 Maximum draft to propellers – 1 metre (under normal load conditions).
4.1.5 Shape of hull – V-hull.
4.1.6 Vessel style – Rigid Hull Inflatable Boat with aluminum hull.
4.1.7 Propulsion – Twin four stroke or direct fuel injected two stroke outboard motors 115-130hp each.
4.1.8 Normal load conditions:
4.1.8.1 Four crew members with equipment = 440 kg.
4.1.8.2 Fuel = Minimum 135 litres in one or two of the fuel tanks.
4.1.8.3 Equipment and supplies: 200 kg.
4.1.9 Overall height when on trailer for transportation – must not exceed 3.5 metres.

5.0 VESSEL CONFIGURATION

5.1 GENERAL CONFIGURATION

Rigid Hull Inflatable Boat including console and T-top roof. With sufficient deck space to place a patient on a 6’ stretcher (ideally 7’). This can be achieved at a diagonal or partially alongside the console as long as there is room to provide first aid to the patient.

5.2 HULL

5.2.1 Single V-hulled vessel.
5.2.2 The shape of the hull must not impede the flow of water to propulsion apparatus and must protect personnel on board from spray and waves.

5.3 COLLAR

5.3.1 The collar must be orange and made of 1670 dtx Neoprene/Hypalon or better with an external protective strip measuring a minimum of 6 inches in width.
5.3.2 The collar must wrap around the port, bow and starboard and contain 5 inflatable chambers complete with pressure relief valves and interconnecting inflation/deflation valves.
5.3.3 Surfaces used for embarking must be covered with non-slip protective strips.
5.3.4 A lacing cuff and full length life lines must be installed on both the inside and outside of the collar or along the top of the collar.

5.4 DECK OUTFIT

5.4.1 The scuppers on the work deck must be sized to allow sufficient drainage of the exposed deck surfaces, in accordance with TCMSB TP-1332.

5.4.2 A deck extension (engine pod) capable of holding the contractor supplied motors must be installed at the stern.

5.5 CONSOLE AND ROOF

Aluminum central console with windshield and side windows that extend upwards from console to a T-top to provide protection from the elements for crew and equipment.

5.6 IDENTIFICATION

5.6.1 The Parks Canada logo must be affixed to a strip of Hypalon fabric, or its equivalent, and bonded to the tubes on each side. The digital logo itself will be supplied by Parks Canada whereas the fabric must be provided by the contractor.

5.6.2 The Official Number on the Transport Canada Certificate of Registry (eg. C#####MB) for the vessel must be attached to a strip of Hypalon fabric, or its equivalent, and bonded to the tubes on each side in accordance with Transport Canada's legislation. The Official Number will be obtained by Parks Canada when the technical advisor is supplied with the necessary information from the contractor to register the vessel.

6.0 <u>OUTFIT - GENERAL</u>

The pilot house must include a steering console and navigation instrument panel designed for a work area.

6.1 STEERING CONSOLE

A steering console is to be located on the starboard side of the craft with a steering system capable of withstanding the power of the vessel.

6.1.1 The steering console must be equipped with the appropriate indicators such as recommended by the manufacturer of the propulsion system. At the very minimum, the following indicators must be installed on the console:

a) Fuel gauge
b) Tachometer
c) Voltmeter for the motor
d) Temperature gauge
e) Oil pressure gauge
f) A tilt/trim indicator for each motor

6.1.2 The throttle controls must be positioned on the starboard side of the console.

6.1.3 The console must be sufficiently large to house an 800 MHz radio, a siren control unit, a plotter and a multifunction display (for indicators previously mentioned). The console must be angled at 30 to 45 degrees for the comfort of the pilot and to accommodate the steering wheel, motor controls, switchboard, lighting system and indicators.

6.1.4 The following alarms must be installed: low pressure alarm, motor overheat alarm, bilge high water alarm and bilge vapour alarm.

6.1.5 Two (2)12-V cigarette lighter type electrical plug-ins, one on the port instrument panel and the other on the starboard instrument panel.

6.2 STEERING SYSTEMS

Steering systems must be remote hydraulic with self-contained oil reservoir, and

replaceable seals on the rams, with a maximum of 4.0 turns from hard over to hard over. Specific propulsion systems may have their own requirements for steering which must be adhered to.

6.2.1 All hydraulic steering hoses must be installed to avoid any physical damage, pinching or friction wearing.

6.2.2 Hydraulic hoses must be of sufficient length and diameter to prevent pulsing. They must also be suited to installation in a marine environment and have stainless steel fittings.

6.2.3 The connection between the steering wheel and the console must be robust enough to eliminate fore and aft and lateral movement of the wheel/steering shaft mechanism.

6.2.4 The steering wheel must be stainless steel and may be rubber or plastic covered. The steering wheel must be stiff enough that during rough water operations there is no flexing of the wheel, and the wheel should be padded to provide a comfortable non-slip surface for the operator to grip.

6.3 SEATING

6.3.1 **Operators seating**

Leaning post, or jockey style seating that can comfortably accommodate pilot and navigator side by side must be provided and installed.

6.3.2 **Passenger seating**

Storable seating that can accommodate two passengers, or other form of seating that takes up minimal deck space must be provided and installed.

6.4 WINDOWS

The T-top windows must have proven aluminum frames and safety glass (e.g., polycarbonate) and be sized for maximum visibility (compliant with TCMSB TP-1332).

6.5 WINDSHEILD WIPER

A windshield wiper/washer system must be installed on the windshield. Windshield wipers must cover a minimum of 60% of the windshield surface.

6.6 HANDHOLDS

Handholds must be installed, at the very minimum, in the following locations:

6.6.1 Two (2) on the dash within reach of the operator and the navigator’s positions.

6.6.2 Two (2) behind the operator’s seating.

6.7 MOORING CLEATS

6.7.1 Two (2) mooring cleats must be installed on the transom of the vessel.

6.7.2 The cleats must be fabricated in aluminum or stainless steel and fitted with a reinforcement plate for extra sturdiness.

6.8 TOWING POSTS

Towing bollards must be affixed fore (1,500 lbs tow capacity) and aft (2,500 lbs tow capacity) on the craft.

6.8.1 A cruciform towing bollard with motor guards must be fitted aft and extend approximately 0.3 m above the motors.

6.8.2 A cruciform towing post with an anchor storage compartment must be fitted fore.

6.9 STOWAGE

6.9.1 Stowage compartments for small pieces of equipment must be installed under the seats, under the console, on the deck under the upper part of the bulwark and wherever it is possible to maximize stowage space.

6.9.2 The larger stowage compartments must be lockable.

6.9.3 Trays and clamps for stowing oars, pike poles, etc. must be fitted along the inner sides under the top of bulwarks.

6.10 CABLE CONDUITS

Cable conduits must be installed to carry electrical cables mounted internally. They must be fitted with easily removable covers and be of sufficient size to accommodate additional wiring for future installations.

6.10.1 Cables must be bundled wherever possible. All cable bundles must run through protective conduits. Where this is not possible, the cables and conductors must be attached with strain relief supports such as straps or brackets, spaced at 18-inch intervals for horizontal runs and 14-inch intervals for vertical runs.

6.10.2 Cables and conductors that pass through sealed joints, decks, bulkheads or any other exposed surface must be installed so as to maintain the watertightness of the structure. Cable entries into sealed enclosures must be fitted with appropriately sized marine-use cable glands.

6.10.3 Cables and conductors passing through structures that are not fitted with marine-use cable glands must be protected from frictional wear by abrasion resistant grommets.

6.10.4 Where possible, avoid passing cables through foam-filled spaces. If they must, pass them through PVC piping. The piping must be installed so as to prevent it from collecting water.

7.0 HULL

All components and structures (hull, deck, seats, etc.) must be strong enough to withstand the horizontal and vertical impact loading associated with the operational requirements of the craft while under normal load conditions.

7.0.1 The hull, deck and console exteriors must be welded seam construction. Sections of the structure subjected to vibrations near machinery bed plates and in the bow area exposed to impact must also be welded seam.

7.0.2 The hull must be designed to house a sufficient number of foam-filled watertight compartments to maintain adequate stability and provide good flotation when the craft is flooded and loaded. The foam must be Foamsulate TM 4255-245 or equivalent, injected in accordance with the CAN/ULC S705 standard.

7.0.3 The deck over the watertight compartments must be fitted with watertight, bolt-on plates or hatches that are easily removed to repair the tanks and flotation compartments underneath; separate covers (20.3 cm [8 in]) for inspecting fuel system components and for quick access to functional areas in accordance with TCMSB TP-1332.

7.0.4 Beaching shoe – A protective shoe of aluminum must be fitted at the full length of the keel and extend at least 100 mm on either side of the keel to prevent damage from grounding or similar hazards. This shoe must not detract from performance or seakeeping abilities, and it must be capable of withstanding the horizontal and

vertical impact loading associated with the vessel's operational requirements.

7.0.5 A bow eye must be installed on the bow of the craft for towing purposes.

7.0.6 Two (2) eyelets must be fitted to the transom for securing the craft to the trailer.

8.0 EMERGENCY AND SAFETY EQUIPMENT

The following items must be provided with appropriate stowage and securing accessories. All fittings, Contractor supplied, must be in heavy duty, corrosion resistant 316 grade stainless steel. All items must be readily accessible (the foot pump and the repair kits must be stowed in a stowage locker). All items must be readily accessible.

a) Two (2) oars with stowage brackets.
b) Two (2) fire extinguishers (Class 5BC, marine grade) with mounting brackets installed onboard.
c) One (1) man overboard rescue cradle for horizontal rescue/recovery of patients which stores attached out of the way and ready for use (eg. Ferno Sea Scoopa).
d) One (1) man overboard lifesaver buoy with mounting bracket.
e) One (1) boathook with mounting bracket.
f) Foot pump and repair kits (must be stowed in a lockable stowage locker)
g) One anchor of suitable size and material including chain and rope (stored in a compartment in the fore end of the boat)

9.0 SYSTEMS – GENERAL

9.1 PROPULSION SYSTEM

Twin outboard motors and motor controls supplied and installed by the contractor according to manufacturer's instructions. Motors must be the same make and model and have between 115 - 130hp each. The motors must be either four stroke or two stroke direct fuel injected as per boat motor regulations on Clear Lake in Riding Mountain National Park. All motor equipment and accessories installed must be approved by the motor manufacturer. Contractor must not use equipment or accessories with or perform tests on the motors that could in any way nullify the manufacturer's warranties. Contractor must select motors that have an authorized dealer capable of servicing the motors within 150km of Wasagaming, Manitoba.

9.2 PROPELLER(S)

a) Provide Two (2) sets of propellers, (one set is spare) must be supplied by the Contractor for the craft being built.
b) Propellers must be properly sized and Contractor installed.
c) The Contractor must inform the technical authority of the appropriate pitch and diameter of the propellers to meet the performance requirements as determined by the design control drawn up by the Contractor.

9.3 CONTROLS

9.3.1 The Propulsion control system installation must include a binnacle motor control located on the starboard side of the helm console. The controls must conform to the motor manufacturer's recommendations and must not interfere with any of the other controls.

9.3.1 The trim must be synced between the two motors along with controls that allow for the individual trim adjustment as well.

9.3.1 The motor package must incorporate a lanyard style automatic shutdown feature (kill switch) for the motors, to be mounted near the ignition switch.

9.4 VERIFICATION OF INSTALLATION

The installation of the motors, drive units, controls, lubrication and fuel systems, manometers and battery connections, are to be verified by an authorized technician. The engines are to be started by an authorized technician, who shall write a report and submit a copy to the technical authority.

9.5 ENGINE BREAK-IN

The Contractor must adhere to the manufacturer's break-in procedures.

9.6 PROTECTION OF CONTROLS

All control cables, electrical wiring for the engines and the steering hydraulic hoses are to be installed in UV resistant plastic pipes (looms) or equivalent. Pipes are to be installed so that no cable is immersed in water.

9.7 FUEL SYSTEM

The complete fuel system must be supplied, installed, labeled and tested in accordance with Section 7 of TCMSB TP 1332 and ABYC specifications.

a) The fuel system must include one (1) fuel filter/ water separator per motor with clear bowl, suitable for fuel supply to the gas-powered outboard motors.
b) All fuel valves must be readily accessible and labeled as per TCMSB TP 1332.
c) The locking fuel filler must be located in an accessible, watertight ventilated compartment designed to capture fuel from overfilling or blow back and prevent it from entering the vessel, as per TCMSB TP 1332.
d) The fuel tank must be equipped with an anti-siphon valve on each suction.
e) Fuel tank vent pipes are to be equipped with a non-return check valve.

9.8 FUEL TANK

a) The vessel must be equipped with one (1) or two (2) fuel tanks with baffles, if needed.
b) Total capacity must be at least two hundred and fifty (135) litres.
c) The fuel tank must undergo a hydrostatic test or air test at 3.0 lb/in^2 and be labelled in accordance with TCMSB TP-1332.
d) The fuel tank must be fitted with a fuel gauge and an indicator for the operator located on the dash of the console.
e) The fuel tanks must be fitted with anti-siphon valves installed at each suction if the flow meets the manufacturer's requirements
f) If the vessel is equipped with two (2) fuel tanks, they must be fitted with interconnect valves so that the motor can draw fuel from either tank. The valves must be clearly marked.

10.0 ELECTRICAL SYSTEM

The electrical system design, selection of components and installation must meet the CSA C22.2 N° 183.2-M1983 (R1999) standard, DC Electrical Installations on Boats, and the

TCMSB TP-1332 and/or the ABYC “E” standards to which the present document refers. All electrical equipment and materials must be installed according to the manufacturer’s specifications. The electrical equipment which must be watertight (e.g., the switchboard on the console) will be deemed acceptable if it meets IP66 standards. It must include a breaker panel with at least ten (10) circuits. The Contractor must ensure that the breaker panel can be expanded 10% or house at least two (2) spare breakers (whichever option provides more capacity).

A 12 V DC distribution system must be provided to power motor start-up and vessel service loads. The system must include the following:

a) Navigation equipment
b) Navigation lights
c) Interior lighting
d) Instruments
e) Bilge pumps
f) Electronic systems
g) Communication systems

All electrical equipment must be installed so as to function without causing interference to other equipment or the magnetic compass.

Electrical equipment must be readily accessible for maintenance.

Two (2) marine grade 12 V electrical outlets must be installed on or near the operator’s console.

10.1 BATTERIES, SWITCHES AND CHARGERS:

10.1.1 The vessel is to be equipped with a system of three (3) deep-cycle marine batteries, with a selector switch and connected in accordance with the motor manufacturer’s technical specifications.

10.1.2 Batteries must be marine grade glass mat or gel type maintenance free to eliminate leakage, and a minimum 800 deep-cycle cranking amps.

10.1.3 Battery switches must be recessed to prevent snagging or accidental switching.

10.1.4 Battery compartments must be watertight and fitted with a suitable means of gas venting.

10.2 LIGHTS

a) Backscatter of console lights must be minimized in the design. In all cases, quality marine grade dimmers must be fitted wherever practicable and be able to dim engine monitoring gauges and other indicators separately from compass illumination.
b) The boat must be equipped with a blue coloured marine strobe light (according to regulations) with 360° visibility but not obstructing the boat operator or navigation lights. To be provided by Parks Canada.
c) Navigation lights must conform to CSA Collision Regulations.
d) Navigation lights must be permanently attached and watertight.

e) The lamps in the navigation lights must be designed to resist vibration and humidity and must be protected from damage while lying alongside another vessel or a wharf.
f) Navigation lights must be mounted so as not to impede the view of the operator.
g) The all-around mast and anchor light must be located on the roof of the cabin. Two dash switches must be supplied and labelled as follows: Nav 1 (masthead and anchor) and Nav 2 (sidelights).
h) 12 V handheld water tight search light wired into the boats electrical system. Mountable in easy reach of the navigator on the port side of the console and able to be moved into lockable storage on the boat.
i) Port and starboard flood lights mounted on the t-top and controlled independently by two switches marked accordingly.

10.3 PUMP AND DRAINAGE

a) A bilge pump of a suitable size must be fitted in each watertight division as well as a manual diaphragm type bilge pump. The bilge pump must be located so that it draws from the lowest point of the hull. Piping is to direct the bilge pump discharge directly overboard. The electric bilge pump must have a control for activating it automatically when water is present in the bilge. The electric bilge pump control switch must be located on the operator's console, with settings for 'on', 'off and 'automatic' operation. An indicator light and an audible alarm must be installed at the console and must activate when the bilge pump is operating. Bilge pump(s) must be wired directly to the battery, so that it is always in readiness, as per TCMSB TP 1332 requirements.
b) Rapid drain freeing ports must be located at the stern of the vessel.
c) Hull drainage - a non-corrosive threaded plug must be provided at the lowest point to drain the hull when the vessel is out of the water.

10.4 MAGNETIC COMPASS

The Contractor is to supply and install a Ritchie-Helmsman 740 series compass or equivalent, mounted in the operator’s console. A non-white (red or green) light source must be connected to the 12 V DC electrical system and fitted with its own waterproof marine-grade dimmer switch. Compass must be adjustable for deviation.

11.0 ELECTRONIC AND NAVIGATIONAL EQUIPMENT

The Contractor must supply and install the electronic components listed below. All antennas must be mounted on the roof and fitted with detachable connections for overland transportation. All cable entries must pass through watertight cable glands. Any modifications must be approved in advance by Canada.

a) A Motorola P25 compatible fleetnet radio with antenna. To be supplied by contractor and programmed by Manitoba Telecom Services (MTS) under the authority of Riding Mountain National Park.
b) External powered speaker for Motorola radio with adjustable volume. Capable of being heard over engine noise/high winds.

c) Garmin GPSMAP 741 complete with GPS 19x NMEA 2000 position receiver/antenna and through hull mounted depth and temperature sensor. Or complete system equivalent.

d) Siren control and loudspeaker speaker will be supplied by Parks Canada and installed by the contractor.

12.0 PAINTING AND CORROSION PROTECTION

a) All aluminum components of the vessel, with the exception of the hull, must be covered using military grey powder paint.

b) Before delivery of the vessel, the Contractor must verify that all unpainted, exposed aluminum surfaces are free of imperfections, including manufacturing marks, scratches, gouges and stains.

c) The hull must be protected with sacrificial anodes bolted to the vessel as necessary for protection of the hull and motor in a freshwater environment.

d) Surface finish of the entire weather exposed decking and tops of bulwarks must be non-skid and non-slip.

13.0 TRAILER

a) The trailer is to be rated approximately 20% over the anticipated ‘wet’ weight of the vessel having the following features:
   a. welded galvanized steel construction, tandem axle;
   b. with axle bearing protection and grease nipple;
   c. brake, running, turn signal, and backing lighting with seven (7) pin RV wiring connector;
   d. hydraulic, jurisdiction compliant braking system;
   e. bow winch assembly with winch strap and bow chock;
   f. radial tires;
   g. tongue jack, with wheel;
   h. full size wheel mounted spare tire and carrier;
   i. double bunks, brake flush kit;
   j. heavy duty ‘stand-on’ fenders and;
   k. hitch to accommodate a two (2) inch min., ball.

b) The trailer shall be equipped with fenders and mudguards, which conform to Transport Canada Standards, and have adequate signal lights. The trailer shall be provided with two 2) galvanized safety chains and shackles of suitable size and rating. All electrical connections are to be sealed from the atmosphere

c) The trailer must be equipped with a two (2) speed manually operated winch of a suitable size and rating with a web strap cable with a hook rated for the trailer design load. Web strap length must be at least 914 cm. The sides of the trailer shall be fitted with two (2) eyes per side for shackles to secure the vessel to the trailer. The Contractor shall supply two (2) adequate adjustable hold down cables/straps. A galvanized safety chain and shackle must be provided on the front of the yoke assembly for securing the bow of the vessel.

d) The trailer must be adjusted for the vessel. The winch, stand and turnbuckles are to be capable of withstanding long journeys on rough terrain.

e) The trailer is to be certified so that the trailer can be used on public roadways in the Province of Manitoba.

14.0 TESTS AND TRIALS

The Contractor must inspect and test the following items, as a minimum, for adherence to the contract requirements and proper operation (proper operation means that the equipment can be started, operated, connected together and demonstrated to function in a normal fashion, as applicable). All discrepancies must be corrected prior to delivery. The required inspections and tests are minimums and are not intended to supplant any controls, examinations, inspections or tests normally employed by the
Contractor to assure the quality of the vessel. Inspections and trials target the following elements:

a) Weight
b) Construction quality
c) Propulsion motor, including starting
d) Propulsion controls
e) Steering system
f) Fuel system
g) Electrical system
h) Electronics

14.1 ON WATER TRIALS – GENERAL

On Water Trials - must be conducted by the Contractor to demonstrate the vessel and its equipment conform to the requirements as stated in the Contract. All expenses incidental to the trials, including fuel, are to be borne by the Contractor unless otherwise specified. A crew provided by the Contractor must operate the vessel during sea trials.

Speed Trials - The speed trials must be conducted over a course at least one (1) nautical mile in length. Two (2) runs must be made over the course, one (1) in each direction with the speeds for the two (2) runs averaged. GPS data (averaged) is acceptable.

Endurance Trial -The vessel must operate at maximum speed for a minimum of ten (10) minute intervals in fully loaded condition over a one (1) hour period, taking into consideration the break-in procedures for the equipment. During the endurance trials, it must be demonstrated that all parts of the propulsion system are in full operation. All systems must be operated to check for proper lubrication, control and alignment. Fuel consumption must be recorded for the one-hour trial.

Astern Propulsion - The vessel must be operated and manoeuvred using astern propulsion to establish the astern performance. During the backing performance tests the throttles must be set to provide 1/3 of the rated engine horsepower. In order to demonstrate astern performance of the motors in an emergency stop and to test the strength of the baseplates, the motors must be subjected to two (2) stops from full power ahead at maximum speed to dead in the water using reverse thrust. The time required to perform this trial must be recorded.

Steering Gear - Tests must be conducted on the steering gear to demonstrate the efficacy of the steering system under all operational conditions. Manoeuvring tests

must be performed to ensure that the vessel meets the stated requirements. Manoeuvring trials must be conducted under the normal load condition and repeated under the full load condition.

The contracting authority and the technical authority must be notified no less than two (2) weeks prior to sea trials. At a minimum, the technical authority will witness and attend the sea trials. Sea trial results must be forwarded to Canada prior to delivery of the vessel.

At the conclusion of sea trials the vessel must be thoroughly cleaned and inspected. Engine cooling systems must be flushed through with fresh water. The Contractor must repair, to the satisfaction of Parks Canada, any damage to the vessel or its equipment resulting from sea trials.

For the purpose of the trials, normal charge conditions are understood to be the base vessel, all normal equipment, a full tank of fuel, and any other item or load specified in the Vessel Particulars (see Section 4.1).

Inspection, prior to delivery must not be performed until all tests have been satisfactorily completed with data available for review by the technical authority. The vessel must be ready for delivery in all respects, except for the final preparation for shipment. The Contractor must provide personnel, as required to answer any questions and to demonstrate equipment operation, maintenance, accessibility, dismantling and installation. The Contractor must document the results of the final inspection and provide these results to the technical authority along with a hard copy of the trial results, which must be shipped with the deliverables for the vessel. Where applicable, serial numbers and other identifying information must be recorded for the vessel and motor and submitted to the technical authority.

The Contractor must record and document all stability calculations and trial results (as per TCMSB TP1332) and make them available as set out in Section 14.3, Technical Publications.

A delivery inspection will be performed by the technical authority or a representative of the technical authority at the delivery location prior to acceptance by Parks Canada. The Contractor must repair, to the satisfaction of Parks Canada, any damage to the vessel or equipment resulting from shipping. The Contractor must record the results of the acceptance inspection and submit them to the contracting authority for acceptance of the vessel.

The Contractor must maintain records of testing for the vessel for a minimum of two (2) years. The Contractor must prepare a testing check sheet that certifies that each test has been completed. The check sheet must indicate the actual weight of the vessel in light condition. The check sheet must also indicate the total loaded weight.

15.0 DOCUMENTATION

All documentation must be provided in both official languages (French and English).

15.1 IDENTIFICATION PLATE

Identification Plate(s) are to be affixed in accordance with TCMSB TP-1332

15.2 TECHNICAL PUBLICATIONS

The Contractor must provide, upon delivery of the vessel, complete sets of technical publications, including a detailed owner/operator manual that contains a physical and functional description of the vessel, its machinery and equipment, and the documents pertaining to the delivery testing and sea trial results. The manual must include but not be limited to sections such as: General Information, Technical Information, and Spare Parts List.

The Contractor must provide a number of copies of the technical publications, including the following:

a) One (1) complete hard copy and one (1) complete electronic copy on a USB key of all technical publications for the operator. The copies are to be delivered with the vessel.
b) One (1) complete hard copy and one (1) complete electronic copy on a USB key of all technical publications for the technical authority. The copies must be delivered to the address indicated in the contract.

15.3 GENERAL INFORMATION SECTION

The General Information Section must include a description of the layout and function of all structures, systems, fittings and accessories that comprise the vessel, along with related illustrations:

a) Operating procedures
b) Basic operating information (temperatures, pressures, flow rates)
c) Installation requirements and drawings, assembly and disassembly, with detailed illustrations showing each step
d) Recommended preventive maintenance
e) Complete troubleshooting procedures

15.4 TECHNICAL INFORMATION SECTION

The Technical Information Section must include a complete set of detailed owner/operator manuals, drawings, parts lists and supplemental data for all components of the vessel. These documents may be compiled by the Contractor or acquired from external sources and will cover the following elements:

a) Original spare parts list: The list must include the name, part number and serial number, if applicable, of the parts, items or components and must indicate the supplier (name, address, phone number, email address) of the part, item or component and in which part of the specifications it appears.
b) Hull: data on the hull.
c) Equipment serial numbers and warranty cards.
d) Testing Check Sheet for shop pre-trial.
e) Motor and equipment: serial numbers of motors and propulsion system.
f) Electronic components (if applicable): model and serial numbers.
g) Regulatory and stability information, as set out in TCMSB TP-1332.

15.4.1 All components fitted to the vessel must have the maintenance data sheet completed before acceptance of the vessel from the Contractor. This information will be used to populate the database for the maintenance of the vessel.

15.4.2 Acceptance certificates and compliance sheets or certificates distributed with equipment (such as life saving appliances, engine test reports, calibration certificates, Nav light certificates, fire suppression material certificates and flotation foam rating sheets).

15.4.3 Technical publications must also include a list of original spare parts that should be stocked on board. At a minimum, the list must contain the following elements (if indicated):

a) Propulsion: propellers, filters, water pump impeller, batteries, throttle and shift cables and special tools for the motor.
b) Collar: air valve, foot pump, pressure gauge, patch kit (including adhesive) and 12 V high pressure pump.
c) Electrical components: panel breakers, fuses, light bulbs
d) Vessel structure and fittings: assortment of commonly used fasteners.

15.5 ADDITIONAL DELIVERABLE DOCUMENTS

The following additional documents must be provided with each set of manuals delivered:

a) A Tonnage Registration Certificate in accordance with the TP 13430 standard (http://www.tc.gc.ca/eng/marinesafety/svcp-gt-3948.htm).
b) Registration with the Small Vessel Compliance Program, found at: http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm.
c) Two (2) sets of bills of sale for the vessel must be delivered. One copy is to be provided in the manuals delivered with the vessel, and the other will be delivered with the manuals for the technical authority.
d) Test and trial results as per Appendix A
e) Builder's tests and testing check sheets completed during construction

16.0 SHIPPING AND DELIVERY

Prior to shipping the vessel must be cleaned, preserved and covered in accordance with this section.

a) Prior to shipping, the vessel must be secured to its trailer, cleaned, fitted with appropriate protection and covered in accordance with the provisions of this section. All parts of the vessel must be cleaned before wrapping it for shipping. The bilges must be dry and free of oil and the fuel tanks must be filled, with fuel stabilizer added.
b) The propulsion system must be preserved in accordance with the manufacturer's recommendations for storage of up to one (1) year in an environment that will be subjected to freezing temperatures.
c) Batteries must be disconnected. A warning plate is to be tied to the steering wheel with a wire indicating that the vessel has been protected for shipping and storage and must not be started until the propulsion machinery has been reactivated.
d) All contact points with the vessel are to be padded. A shrink wrap cover is to be provided to protect the vessel during shipping and storage.

e) The boat must be delivered to the following address at the cost of the Contractor: Riding Mountain National Park, 135 Wasagaming Drive, Onanole, Manitoba, R0J 1N0

17.0 TRAINING

The Contractor will offer specific training for the use and operation of the constructed vessel and its components.

18.0 GOVERNEMENT SUPPLIED MATERIALS

Blue strobe light
Siren control box and loud speaker
The digital format Parks Canada logo for boat identification.

ANNEX B - QUESTION & ANSWER

Solicitation # 5P404-151022A

To be completed as required during the bid solicitation period.

Item	Spec-RFP description	Questions	Answers

ANNEX C - INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL

1. Conduct of Inspection

(a) Inspections will be conducted in accordance with the ITP provided and accepted by the Inspection Authority and as detailed in this Annex.

(b) The Contractor must provide its own staff or subcontractors to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.

(c) As applicable, the Contractor must ensure that the required conditions stated in the specification prevail at the commencement of, and for the duration of, each inspection/test/trial.

(d) The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.

(e) The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

2. Inspection Records and Reports

(a) The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records.

(b) The Contractor's Quality Control (QC) representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.

(c) Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

(d) Corrective action to remove cause of unsatisfactory inspections must be submitted to the Contracting Authority and to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Contracting Authority and to the Inspection Authority.

(e) The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.

(f) The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.

(g) Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Contracting Authority and to the Inspection Authority upon request.

3. Inspection and Trials Process

3.1 Drawings and Purchase Orders

(a) Upon receipt of two (2) copies of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of the SOW. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Government of Canada Authorities.

3.2 Inspection

(a) Upon receipt and acceptance of the Contractor's ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of the specification. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

(b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the specification and, where non-conformances are noted, will issue appropriate INSPECTION NON-CONFORMANCE REPORTS.

(c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections are required before the Work is inspected by the Inspection Authority.

(d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

(e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3.3 Inspection Non-conformance report

(a) An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.

(b) When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.

(c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance documents before the Inspection Authority's certification of such documents.

3.4 Tests, Trials, and Demonstrations

(a) To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and specifications, the Contractor must schedule, co-ordinate, perform, and record all specified tests, trials and demonstrations required by the Inspection

Authority and the Specifications and any additional tests and trials performed by the Contractor required by the Inspection Authority.

(b) Where the specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.

(c) Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.

(d) Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.

(e) The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection, Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor must provide the Inspection Authority and other Government of Canada Authorities with a minimum of ten (10) working days notice of each scheduled test, trial, or demonstration.

(f) The Contractor must keep written records of all tests, trials, and demonstrations conducted required by the QA System.

(g) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

(h) The Contracting Authority and the Inspection/Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

ANNEX D - DETAILED FINANCIAL BID PRESENTATION SHEET

D-1 Proposed Work Location:
Contractor's Facility _____

D-2 Evaluation of Price
The price of the bid will be evaluated in Canadian dollars, customs duties are included and applicable taxes are extra, Incoterms 2000 Delivered Duty Paid (DDP) to destination.

a.	**Known Work – (1 boat, 1 Trailer)** **With included delivery Incoterms 2000 DDP to:** Parks Canada – Riding Mtn National Park	$_____
b.	**Option Unit – 1 boat, 1 Trailer** **With included delivery Incoterms 2000 DDP to:** TBD	$_____
c.	**Unscheduled Work** *Labour Cost*: Estimated labour hours at a firm *Charge-out Labor Rate*, including overhead and profit: 25 person hours X $_____ per hour for a PRICE of: **See articles D-3 and D3.1 below.**	$_____
d.	**EVALUATION PRICE** [a + b +c] For an EVALUATION PRICE of: (customs duties are included and applicable taxes are excluded)	$_____

D-3 Unscheduled Work
Unscheduled work arising, as authorized by the Minister, will be calculated in the following manner:

"Number of hours (to be negotiated) X $ _____your firm hourly *Charge-out Labour Rate* which includes *Overhead* and profit, plus net laid-down cost of materials to which will be added a 10% mark-up, plus Goods and Services Tax or Harmonized Sales Tax as applicable, of the total cost of material and labour.

The firm hourly *Charge-out Labour Rate* and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

D-3.1 Notwithstanding definitions or usage elsewhere in this document, or in the Bidder's Cost Management System, when negotiating *Hours* for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of *Related Labour Costs* identified in D-3.2 will not be negotiated, but must be included within the *Charge-out Labour Rate*. It is therefore incumbent upon the Bidder to enter values in the above table which will result in fair compensation, regardless of the structure of their Cost Management System.

D-3.2 Allowance for *Related Labour Costs* such as: Management, Direct Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Inspecting and Reporting, and Estimating must be included as *Overhead* for the purposes of determining the *Charge-out Labour Rate* entered in line D-2b and Article D-3 above.

D-3.3 A 10% mark-up rate will be allowed for materials and this rate will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Charge-out Labour Rate. A separate labour component for the purchase and handling of materials or subcontract administration is not allowable.

D-4 Boat Delivery Proposal

While the delivery of the boats and all deliverable to destination required by the Contract is desired for **August 31, 2016.**

The best delivery that could be offered is _____ weeks after Receipt of Order (ARO).

ANNEX E - SUBCONTRACTOR LIST

Specification Item	Description of Goods/Services (Including Make, Model Number as	Name of Supplier	Address of Supplier

ANNEX F - INFORMATION REQUIRED FOR THE VERIFICATION OF INTEGRITY PROVISIONS

Please provide a list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors;

_____
_____
_____

2. For a Partnership, General Partnership or Limited Partnership - the names of all current partners;

_____
_____
_____

3. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual;

_____
_____
_____

4. For a Joint Venture - the names of all current members of the Joint venture;

_____
_____
_____

5. For an individual - the full name of the person

_____
_____
_____

ANNEX G – BID PACKAGE CHECKLIST

Instruction to Bidders: Table G-1 is a check list for self-verification purposes.

Table G-1 Bidder's Bid Package Check List

G1.1

Notwithstanding deliverable requirements specified anywhere else within this bid solicitation and its associated Technical Specifications, the following are the only mandatory deliverables that must be submitted with the Bid documents at the time of bid closing. The following are mandatory and the Bidder must be compliant on each item to be considered responsive.

No	Part	Article	Description	Condition	Document provided
Section I- Technical Bid					
1		Front page	Request for Proposal document part 1 page 1 completed and signed;	Mandatory with the bid	☐
2	3	3.2.1	Annex G - Bidder package Check list	Mandatory with the bid	☐
3	3	3.2.3	Drawing and other documentations	Mandatory with the bid	☐
4	3	3.2.5	Vessel construction experience	Mandatory with the bid	☐
5	Annex H	All	Technical Bid - Annex H Technical Evaluation Plan	Mandatory with the bid	☐
Section II- Financial Bid					
6	Annex D	All	Annex D- Detailed Financial Bid Presentation Sheet	Mandatory with the bid	☐

G1.2 Supporting Deliverable Requirements

If the following information which supports the bid is not submitted with the Bid; it will be requested by the Contracting Authority, and it must be provided within 48 hours (2 business days) of the written request:

No	Part	Article	Description	Condition	Document provided
Section I- Technical Bid					
1	3	3.2.2	Inspection and Test Plan	48 hrs of written request	☐
2	3	3.2.4	Subcontractor list	48 hrs of written request	☐
3	3	3.2.6	Marine Drafting and Engineering capability	48 hrs of written request	☐
4	3	3.2.7	Contractor Quality Management system	48 hrs of written request	☐
5	3	3.2.8	Insurance requirement	48 hrs of written request	☐
6	6	6.5.4	Contractor representative	48 hrs of written request	
Section III- Certification					

7	6	6.9	Welding certification	48 hrs of written request	☐
8	5	5.2.1	Annex F Information required for the Verification of Integrity Provisions	48 hrs of written request	☐
9	5	5.2.3	Canadian Content, completed	48 hrs of written request	☐
10	6	6.20	Applicable laws	48 hrs of written request	☐

G1.3 Contract Deliverable Requirements

The following information may be requested by the Contracting Authority, and it must be provided within the conditions stated in the table below of the written request:

No	Part	Article	Description	Condition	Document provided
Other documentation after contract award (Reminder)					
1	6	6.10	Project Schedule	5 days after contract award	
2	6	6.17	Inspection and Test Plan	7 days after contract award	
3	6	6.19	Insurance certificate	10 days after contract award	

ANNEX H –TECHNICAL EVALUATION PLAN

H-1.0 Technical Bid Format

The bidder is to respond to the RFP by using the **Table H-1 of this ANNEX - Column B ONLY**

This is a model for the bidder to use. Table's contents are fictional and represent a sample only.

STATEMENT OF WORK	BIDDER " NAME" RESPONSE
2.0 General	2.0 General
2.1 The seventeen foot vessel must be a cock pit design with stowage below the closed bow deck commonly referred as a "Cuddy" style	The proposed seventeen foot vessel features an open cockpit design with stowage below the closed bow deck, commonly referred in the industry as to a '"Cuddy" style vessel.
2.2 Not applicable	2.2 Not applicable
2.3 Not applicable	2.3 Not applicable
2.4 All components, equipment and material must be contractor supplied unless addressed as Government Supplied Material (GSM)	Unless stated otherwise, a;; components, equipment and material will be supplied by the **"Bidder names**"
4.0 Vessel particulars Seventeen foot	4.0 Vessel particulars Seventeen foot
4.1.1 Physical length a) Length- 6.0 to 6.2 M b) Breadth overall Min 2.4 M c) Dead rise Min 16 degrees d) Draft (Outboard down) max 0.9. M e) Draft (Outboard Up) Max 0.5 M f) Freeboard between 0.9. to 1.00 M	4.1.1 Physical length a) Length- 6.19 M b) Breadth overall Min 2.42 M c) Dead rise Min 18 degrees d) Draft (Outboard down) max 0.80. M e) Draft (Outboard Up) Max 0.42 M f) Freeboard between 0.95

H-1.1 Technical Evaluation

The bidder must use the Statement of requirement Annex "A" numbering sequence for the tables below.

The Bidder shall provide, as part of its Technical Proposal, all documents essential to demonstrate compliance with each technical mandatory requirement, including, without limitation, photographs, maps, drawings, calculations, Original Equipment Manufacturer (OEM) specifications, documents, purchase orders (less cost data), job or Quality Control or Quality Assurance record sheets, personnel resumes, current trade certificates and, other such evidence.

The Bidder itself must meet the requirements of each evaluation item listed below, except as otherwise expressly provided in the evaluation item. If an evaluation item expressly provides that it or any element of it may be met by a subcontractor to the Bidder, then the Bidder shall provide documented evidence of such compliance by its subcontractor. In that event, the Bidder shall also provide evidence that it has a binding commitment with that

subcontractor under which the subcontractor will perform services under subcontract with the Bidder under any contract issued pursuant to this RFP, and that such services are of the same type as are specified in the relevant evaluation item.

Lines annotated with the following symbol "◄ "requires drawing to demonstrate compliance with the requirement

(Table H-1- Column C- filled by the technical evaluators)

Table H-1 Mandatory Requirement

COLUMN A	COLUMN B	COLUMN C	
		Mandatory Requirement	
Description	Bidder Proposal	Bid Ref Page	Pass / Fail
CONTRACTOR DESIGN AND CONSTRUCTION PRACTICES			
1.0 General Marine Construction Practises: As applies to Vessel's Specific Construction and equipment			
2.0 Unless stated otherwise all components, equipment and material must be Contractor furnished material, (CFM).			
2.1 Ergonomic Design – General Hazardous operating conditions must be prevented by arranging machinery and equipment in a safe manner; providing guards for all electrical, mechanical and thermal hazards to personnel; and providing guards or covers for any controls that might accidentally be activated by contact of personnel. Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort for a range of physiques for individuals from approx. 5 ft. to 6' 4" in height, wearing cold weather clothing and equipment which must be accessible for use, inspection, cleaning and maintenance per ASTM F1166-07.			
2.2 Vibration 1. The boat and all components must be free of local vibration that could endanger boat personnel, damage boat structure, machinery or systems, or interfere with the operation or maintenance of boat machinery or systems. 2. Mounts for movable components, including items moved for stowage, towing or transport must be provided with resilient material as necessary to prevent rattling. 3. Loosening of fasteners under vibration must be prevented by the use of self-locking fasteners, as applicable.			

2.3 <u>Materials – General</u> 1. Environmental Exposure; All materials must be corrosion resistant and suitable for use in a fresh-water environment as detailed in the Environmental Conditions portion of the Performance Requirements. All materials normally subjected to sunlight must resist degradation caused by ultraviolet radiation. 2. Direct contact of electrolytically dissimilar metals is not allowed. Electrolytic corrosion must be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, or bushings of suitable insulating material. 3. Aluminium alloy types 5086, and dual rated 5086/5083 H116/321 must be used for plate; aluminium alloy 6061-T6 (anodized grade), suitable for type 5356 filler alloy, must be used for extruded shapes and welded tubing and pipe. Transverse bulkheads or lightened plate frames may use type 5052 to facilitate braked tabs. Specialized use of type 6061 T6 plate in fresh water for high strength delta pads is allowed. Non-hull structural items of trim and outfit such as hatch frames, castings, consoles, and hardware items may be of other aluminium alloys suitable for marine use such as type 5052 or 6063. 4. Stainless Steel: Stainless steel plate type 316 must be used for all stainless steel applications except as noted. Alloy 316L must be used in welded underwater components. Many commercial components, some fasteners and rivets, use other acceptable grades of stainless steel such as types 18-8 and 304. 5. FRP and Resins - for FRP components, if any: a. Minimum laminating material specification must include gel coats and skin-out of isopthalic resins with a barrier coat wash of the skin-out prior to main laminate and coring materials, which can be laid in GP resins. DCPD resins must not be used. b. Fibre materials to be standard mat / rovings, or “stitch” combined materials, some of which may use Carbon or Kevlar strands. NO “chopper” materials to be used. Coring materials to be vacuum bagged and to be designed for usage in these specified vessels. Suitable core materials such as ‘Termanto’, ‘Klege-cell’, and ‘Core-cell’ are acceptable and Balsa or wood, plywood, and non-structural foam materials must not be used, unless specifically required, for example, transom core.			

2.4 <u>Fasteners</u> 2.4.1 All fasteners must be of corrosion resistant materials. 2.4.2 Cadmium plated parts and fasteners, including washers, must not be used. 2.4.3 Direct attachment of alloys containing copper to aluminium is not permitted except for an electrical bonding strap, with contact bolt and separating isolation washer. 2.4.4 No fasteners must be directly threaded into aluminium alloys, except with adequate bolt or insert sizes, minimum ¼" diameter, tapped into a suitable alloy type, and thickness, such as1/4" 6061, with the use of thread adhesive type material. Aluminium or Stainless steel washers or backing plates must be used as appropriate. 2.4.5 Where nuts will become inaccessible after assembly of the vessel, nuts must be captured, or tapped inserts used, to allow reassembly and prevent backing off. Unless otherwise specified, self-locking nuts must be installed to prevent loosening of fasteners due to shock and vibration, and adequate thread showing as required. 2.4.6 Fasteners in deck traffic areas must be flush-mounted, flat head or oval head, to eliminate tripping and snagging hazards.			
2.5 <u>Standards</u> 2.5.1. The vessel constructed under this TSOR must be fabricated in accordance withTransport Canada Marine Safety Regulation **TP 1332** "Construction Standards for Small Vessels", which incorporate references to **ABYC** standards for equipment such as fuel tanks and fuel systems, as well as tank space ventilation, and **ISO** standards for stability, loading capacity, etc. as delegated to ISO 12217-1 and then to ISO 6185-3 for RIBs over 6 M. *http://www.tc.gc.ca/MarineSafety/Directorate/TP/tp1332/tp1332e.htm* 2.5.2. Canadian Standards Association C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats **and ABYC 'E' electrical standards**". Electrical systems on the vessel must be in accordance with TCMSB TP 1332 Section 8, "Electrical Systems". 2.5.3 CWB CSA\ACNOR W47.2, Sub-division 2.1 - Certification for Aluminum Welding–latest revision. 2.5.4 The Contractor must construct each vessel as per this TSOR, and where this TSOR interferes with or contravenes the above standards, the TCMSB TP 1332 standard will take precedence.			

2.5.5 Site visits are required to ensure that the vessel constructed under this TSOR complies with all standards stated therein. 2.5.6 The Contractor must provide Canada or the Authorities in the contract with one electronic copy and one hard copy of all plans for the vessel under construction during the inspection. 2.5.7 Electrical systems on the vessel must be in accordance with TCMSB TP 1332 Section 8, “Electrical Systems.”			
3.0 <u>Operational Requirements</u> Unless otherwise stated, performance must be for conditions of zero sea state and no wind, in fresh water under normal load conditions. The vessel must be designed and constructed for ease of maintenance and repair, long life, and be easily supportable by local commercial facilities and suppliers. **<u>3.1 CRUISING SPEED</u>** 3.1.1 The Contractor must indicate the proposed speed in knots under normal load conditions.			
<u>3.2 Minimum Speed</u> 3.2.1 The contractor must indicate the proposed speed in knots under normal load conditions.			
3.3 <u>STEERING AND MANOEUVERING CONTROLS</u> 3.3.1 Capable of steering 15° from heading in minimum Beaufort Force 5 conditions with seas in all directions (wind speeds 17 to 21 knots and wave heights 2 to 2.5 meters). 3.3.2 Steering and manoeuvring at 3 knots in Beaufort Force 5 conditions. 3.3.3 Maintain course, made good over the ground, when proceeding at a speed of 3 knots with a relative crosswind of 15 knots.			
3.4 <u>Beaching</u> 3.4.1 Capable of beaching on soft ground (sand, earth or clay) at a maximum speed of 5 knots without damaging the hull. 3.4.2 Capable of beaching on hard soil (rock or concrete) at a maximum speed of 3 knots without damaging the hull.			

3.5 Environmental Conditions the vessel must be capable of operating day or night in the following conditions: 3.5.1 Average ambient air temperature range: from -5°C to +30°C. 3.5.2 Average water temperature: 0°C to +20°C. 3.5.3 Waves 2 m to 2.5 m in height. 3.5.4 Wind speeds of at least 17 to 21 knots.			
3.6 Launching, Recovery and Transportation the vessel must be readily road transportable on a boat trailer, must be able to be launched and recovered using the trailer at existing boat ramps.			
3.7Maintenance The vessel must be designed and constructed for ease of maintenance and repair, long life and be easily supportable by local commercial facilities and suppliers.			
4.0 Physical Characteristics			
4.1 Vessel Particulars 4.1.1 Overall length – Between 6.5 and 7,5 metres (excluding motors). 4.1.2 Overall breadth – Between 2.4 and 2.9 metres, maximum. 4.1.3 Depth – At least 0.76 metres. 4.1.4 Maximum draft to propellers – 1 metre (under normal load conditions). 4.1.5 Shape of hull – V-hull. 4.1.6 Vessel style – Rigid Hull Inflatable Boat with aluminum hull. 4.1.7 Propulsion – Twin four stroke or direct fuel injected two stroke outboard motors 115-130hp each. 4.1.8 Normal load conditions: 4.1.8.1 Four crew members with equipment = 440 kg. 4.1.8.2 Fuel = Minimum 135 litres in one or two of the fuel tanks. 4.1.8.3 Equipment and supplies: 200 kg. 4.1.9 Overall height when on trailer for transportation – must not exceed 3.5 metres.			
5.0 Vessel Configuration **5.1 GENERAL CONFIGURATION** Rigid Hull Inflatable Boat including console and T-top roof. With sufficient deck space to place a patient on a 6' stretcher (ideally 7'). This can be achieved at a diagonal or partially alongside the console as long as there is room to provide first aid to the patient.			

5.2 HULL 5.2.1 Single V-hulled vessel. 5.2.2 The shape of the hull must not impede the flow of water to propulsion apparatus and must protect personnel on board from spray and waves.			
5.3 COLLAR 5.3.1 The collar must be orange and made of 1670 dtx Neoprene/Hypalon or better with an external protective strip measuring a minimum of 6 inches in width. 5.3.2 The collar must wrap around the port, bow and starboard and contain 5 inflatable chambers complete with pressure relief valves and interconnecting inflation/deflation valves. 5.3.3 Surfaces used for embarking must be covered with non-slip protective strips. 5.3.4 A lacing cuff and full length life lines must be installed on both the inside and outside of the collar or along the top of the collar.			
5.4 DECK OUTFIT 5.4.1 The scuppers on the work deck must be sized to allow sufficient drainage of the exposed deck surfaces, in accordance with TCMSB TP-1332. 5.4.2 A deck extension (engine pod) capable of holding the contractor supplied motors must be installed at the stern.			
5.5 CONSOLE AND ROOF Aluminum central console with windshield and side windows that extend upwards from console to a T-top to provide protection from the elements for crew and equipment.			
5.6 IDENTIFICATION **5.6.1** The Parks Canada logo must be affixed to a strip of Hypalon fabric, or its equivalent, and bonded to the tubes on each side. The digital logo itself will be supplied by Parks Canada whereas the fabric must be provided by the contractor. **5.6.2** The Official Number on the Transport Canada Certificate of Registry (eg. C#####MB) for the vessel must be attached to a strip of Hypalon fabric, or its equivalent, and bonded to the tubes on each side in accordance with Transport Canada's			

legislation. The Official Number will be obtained by Parks Canada when the technical advisor is supplied with the necessary information from the contractor to register the vessel.			
6.0 OUTFIT - GENERAL The pilot house must include a steering console and navigation instrument panel designed for a work area.			
6.1 STEERING CONSOLE A steering console is to be located on the starboard side of the craft with a steering system capable of withstanding the power of the vessel. 6.1.1 The steering console must be equipped with the appropriate indicators such as recommended by the manufacturer of the propulsion system. At the very minimum, the following indicators must be installed on the console: a)Fuel gauge b)Tachometer C)Voltmeter for the motor D)Temperature gauge E)Oil pressure gauge F)A tilt/trim indicator for each motor 6.1.2 The throttle controls must be positioned on the starboard side of the console. 6.1.3 The console must be sufficiently large to house an 800 MHz radio, a siren control unit, a plotter and a multifunction display (for indicators previously mentioned). The console must be angled at 30 to 45 degrees for the comfort of the pilot and to accommodate the steering wheel, motor controls, switchboard, lighting system and indicators. 6.1.4 The following alarms must be installed: low pressure alarm, motor overheat alarm, bilge high water alarm and bilge vapour alarm. 6.1.5 Two (2)12-V cigarette lighter type electrical plug-ins, one on the port instrument panel and the other on the starboard instrument panel.			
6.2 STEERING SYSTEMS Steering systems must be remote hydraulic with self-contained oil reservoir, and replaceable seals on the rams, with a maximum of 4.0 turns from hard over to hard over. Specific propulsion systems may have their own requirements for steering which must be adhered to. 6.2.1 All hydraulic steering hoses must be installed to avoid any physical damage, pinching or friction wearing.			

6.2.2 Hydraulic hoses must be of sufficient length and diameter to prevent pulsing. They must also be suited to installation in a marine environment and have stainless steel fittings. 6.2.3 The connection between the steering wheel and the console must be robust enough to eliminate fore and aft and lateral movement of the wheel/steering shaft mechanism. 6.2.4 The steering wheel must be stainless steel and may be rubber or plastic covered. The steering wheel must be stiff enough that during rough water operations there is no flexing of the wheel, and the wheel should be padded to provide a comfortable non-slip surface for the operator to grip.			
6.3 SEATING 6.3.1 Operators seating Leaning post, or jockey style seating that can comfortably accommodate pilot and navigator side by side must be provided and installed. 6.3.2 Passenger seating Storable seating that can accommodate two passengers, or other form of seating that takes up minimal deck space must be provided and installed.			
6.4 WINDOWS The T-top windows must have proven aluminum frames and safety glass (e.g., polycarbonate) and be sized for maximum visibility (compliant with TCMSB TP-1332).			
6.5 WINDSHIELD WIPER A windshield wiper/washer system must be installed on the windshield. Windshield wipers must cover a minimum of 60% of the windshield surface.			
6.6 HANDHOLDS Handholds must be installed, at the very minimum, in the following locations: 6.6.1 Two (2) on the dash within reach of the operator and the navigator's positions. 6.6.2 Two (2) behind the operator's seating.			
6.7 MOORING CLEATS 6.7.1 Two (2) mooring cleats must be installed on the transom of the vessel. 6.7.2 The cleats must be fabricated in aluminum or stainless steel and			

fitted with a reinforcement plate for extra sturdiness.			
6.8 <u>TOWING POSTS</u> Towing bollards must be affixed fore (1,500 lbs tow capacity) and aft (2,500 lbs tow capacity) on the craft. 6.8.1 A cruciform towing bollard with motor guards must be fitted aft and extend approximately 0.3 m above the motors. 6.8.2 A cruciform towing post with an anchor storage compartment must be fitted fore.			
6.9 <u>STOWAGE</u> 6.9.1 Stowage compartments for small pieces of equipment must be installed under the seats, under the console, on the deck under the upper part of the bulwark and wherever it is possible to maximize stowage space. 6.9.2 The larger stowage compartments must be lockable. 6.9.3 Trays and clamps for stowing oars, pike poles, etc. must be fitted along the inner sides under the top of bulwarks.			
6.10 <u>CABLE CONDUITS</u> Cable conduits must be installed to carry electrical cables mounted internally. They must be fitted with easily removable covers and be of sufficient size to accommodate additional wiring for future installations. 6.10.1 Cables must be bundled wherever possible. All cable bundles must run through protective conduits. Where this is not possible, the cables and conductors must be attached with strain relief supports such as straps or brackets, spaced at 18-inch intervals for horizontal runs and 14-inch intervals for vertical runs. 6.10.2 Cables and conductors that pass through sealed joints, decks, bulkheads or any other exposed surface must be installed so as to maintain the watertightness of the structure. Cable entries into sealed enclosures must be fitted with appropriately sized marine-use cable glands. 6.10.3 Cables and conductors passing through structures that are not fitted with marine-use cable glands must be protected from frictional wear by abrasion resistant grommets. 6.10.4 Where possible, avoid passing cables through foam-filled spaces. If they must, pass them through PVC piping. The piping			

must be installed so as to prevent it from collecting water.			
7.0 HULL All components and structures (hull, deck, seats, etc.) must be strong enough to withstand the horizontal and vertical impact loading associated with the operational requirements of the craft while under normal load conditions. 7.0.1 The hull, deck and console exteriors must be welded seam construction. Sections of the structure subjected to vibrations near machinery bed plates and in the bow area exposed to impact must also be welded seam. 7.0.2 The hull must be designed to house a sufficient number of foam-filled watertight compartments to maintain adequate stability and provide good flotation when the craft is flooded and loaded. The foam must be Foamsulate TM 4255-245 or equivalent, injected in accordance with the CAN/ULC S705 standard. 7.0.3 The deck over the watertight compartments must be fitted with watertight, bolt-on plates or hatches that are easily removed to repair the tanks and flotation compartments underneath; separate covers (20.3 cm [8 in]) for inspecting fuel system components and for quick access to functional areas in accordance with TCMSB TP-1332. 7.0.4 Beaching shoe – A protective shoe of aluminum must be fitted at the full length of the keel and extend at least 100 mm on either side of the keel to prevent damage from grounding or similar hazards. This shoe must not detract from performance or seakeeping abilities, and it must be capable of withstanding the horizontal and vertical impact loading associated with the vessel's operational requirements. 7.0.5 A bow eye must be installed on the bow of the craft for towing purposes. 7.0.6 Two (2) eyelets must be fitted to the transom for securing the craft to the trailer.			
8.0 EMERGENCY AND SAFETY EQUIPMENT The following items must be provided with appropriate stowage and securing accessories. All fittings, Contractor supplied, must be in heavy duty, corrosion resistant 316 grade stainless steel. All items must be readily accessible (the foot pump and the repair kits must be stowed in a stowage locker). All items must be readily accessible. a) Two (2) oars with stowage brackets.			

b) Two (2) fire extinguishers (Class 5BC, marine grade) with mounting brackets installed onboard. c) One (1) man overboard rescue cradle for horizontal rescue/recovery of patients which stores attached out of the way and ready for use (eg. Ferno Sea Scoopa). d) One (1) man overboard lifesaver buoy with mounting bracket. e) One (1) boathook with mounting bracket. f) Foot pump and repair kits (must be stowed in a lockable stowage locker) g) One anchor of suitable size and material including chain and rope (stored in a compartment in the fore end of the boat)			
9.0 SYSTEMS – GENERAL **9.1 PROPULSION SYSTEM** Twin outboard motors and motor controls supplied and installed by the contractor according to manufacturer's instructions. Motors must be the same make and model and have between 115 - 130hp each. The motors must be either four stroke or two stroke direct fuel injected as per boat motor regulations on Clear Lake in Riding Mountain National Park. All motor equipment and accessories installed must be approved by the motor manufacturer. Contractor must not use equipment or accessories with or perform tests on the motors that could in any way nullify the manufacturer's warranties. Contractor must select motors that have an authorized dealer capable of servicing the motors within 150km of Wasagaming, Manitoba.			
9.2 PROPELLER(S) a) Provide Two (2) sets of propellers, (one set is spare) must be supplied by the Contractor for the craft being built. b) Propellers must be properly sized and Contractor installed. c) The Contractor must inform the technical authority of the appropriate pitch and diameter of the propellers to meet the performance requirements as determined by the design control drawn up by the Contractor.			
9.3 CONTROLS 9.3.1 The Propulsion control system installation must include a binnacle motor control located on the starboard side of the helm console. The controls must conform to the motor			

manufacturer's recommendations and must not interfere with any of the other controls. 9.3.2 The trim must be synced between the two motors along with controls that allow for the individual trim adjustment as well. 9.3.3 The motor package must incorporate a lanyard style automatic shutdown feature (kill switch) for the motors, to be mounted near the ignition switch.			
9.4 VERIFICATION OF INSTALLATION The installation of the motors, drive units, controls, lubrication and fuel systems, manometers and battery connections, are to be verified by an authorized technician. The engines are to be started by an authorized technician, who shall write a report and submit a copy to the technical authority.			
9.5 ENGINE BREAK-IN The Contractor must adhere to the manufacturer's break-in procedures.			
9.6 PROTECTION OF CONTROLS All control cables, electrical wiring for the engines and the steering hydraulic hoses are to be installed in UV resistant plastic pipes (looms) or equivalent. Pipes are to be installed so that no cable is immersed in water.			
9.7 FUEL SYSTEM The complete fuel system must be supplied, installed, labeled and tested in accordance with Section 7 of TCMSB TP 1332 and ABYC specifications. a) The fuel system must include one (1) fuel filter/ water separator per motor with clear bowl, suitable for fuel supply to the gas-powered outboard motors. b) All fuel valves must be readily accessible and labeled as per TCMSB TP 1332. c) The locking fuel filler must be located in an accessible, watertight ventilated compartment designed to capture fuel from overfilling or blow back and prevent it from entering the vessel, as per TCMSB TP 1332. d) The fuel tank must be equipped with an anti-siphon valve on each suction. e) Fuel tank vent pipes are to be equipped with a non-return			

check valve.			
9.8 FUEL TANK a) The vessel must be equipped with one (1) or two (2) fuel tanks with baffles, if needed. b) Total capacity must be at least two hundred and fifty (135) litres. c) The fuel tank must undergo a hydrostatic test or air test at 3.0 lb/in^2 and be labelled in accordance with TCMSB TP-1332. d) The fuel tank must be fitted with a fuel gauge and an indicator for the operator located on the dash of the console. e) The fuel tanks must be fitted with anti-siphon valves installed at each suction if the flow meets the manufacturer's requirements f) If the vessel is equipped with two (2) fuel tanks, they must be fitted with interconnect valves so that the motor can draw fuel from either tank. The valves must be clearly marked.			
10.0 <u>ELECTRICAL SYSTEM</u> The electrical system design, selection of components and installation must meet the CSA C22.2 N° 183.2-M1983 (R1999) standard, DC Electrical Installations on Boats, and the TCMSB TP-1332 and/or the ABYC "E" standards to which the present document refers. All electrical equipment and materials must be installed according to the manufacturer's specifications. The electrical equipment which must be watertight (e.g., the switchboard on the console) will be deemed acceptable if it meets IP66 standards. It must include a breaker panel with at least ten (10) circuits. The Contractor must ensure that the breaker panel can be expanded 10% or house at least two (2) spare breakers (whichever option provides more capacity). A 12 V DC distribution system must be provided to power motor start-up and vessel service loads. The system must include the following: a)Navigation equipment b)Navigation lights c)Interior lighting d)Instruments e)Bilge pumps			

f)Electronic systems g)Communication systems All electrical equipment must be installed so as to function without causing interference to other equipment or the magnetic compass. Electrical equipment must be readily accessible for maintenance. Two (2) marine grade 12 V electrical outlets must be installed on or near the operator's console.			
10.1 BATTERIES, SWITCHES AND CHARGERS: 10.1.1 The vessel is to be equipped with a system of three (3) deep-cycle marine batteries, with a selector switch and connected in accordance with the motor manufacturer's technical specifications. 10.1.2 Batteries must be marine grade glass mat or gel type maintenance free to eliminate leakage, and a minimum 800 deep-cycle cranking amps. 10.1.3 Battery switches must be recessed to prevent snagging or accidental switching. 10.1.4 Battery compartments must be watertight and fitted with a suitable means of gas venting.			
10.2 LIGHTS a) Backscatter of console lights must be minimized in the design. In all cases, quality marine grade dimmers must be fitted wherever practicable and be able to dim engine monitoring gauges and other indicators separately from compass illumination. b) The boat must be equipped with a blue coloured marine strobe light (according to regulations) with 360° visibility but not obstructing the boat operator or navigation lights. To be provided by Parks Canada. c) Navigation lights must conform to CSA Collision Regulations. d) Navigation lights must be permanently attached and watertight.			

e) The lamps in the navigation lights must be designed to resist vibration and humidity and must be protected from damage while lying alongside another vessel or a wharf. f) Navigation lights must be mounted so as not to impede the view of the operator. g) The all-around mast and anchor light must be located on the roof of the cabin. Two dash switches must be supplied and labelled as follows: Nav 1 (masthead and anchor) and Nav 2 (sidelights). h) 12 V handheld water tight search light wired into the boats electrical system. Mountable in easy reach of the navigator on the port side of the console and able to be moved into lockable storage on the boat. i) Port and starboard flood lights mounted on the t-top and controlled independently by two switches marked accordingly.			
10.3 PUMP AND DRAINAGE a) A bilge pump of a suitable size must be fitted in each watertight division as well as a manual diaphragm type bilge pump. The bilge pump must be located so that it draws from the lowest point of the hull. Piping is to direct the bilge pump discharge directly overboard. The electric bilge pump must have a control for activating it automatically when water is present in the bilge. The electric bilge pump control switch must be located on the operator's console, with settings for 'on', 'off and 'automatic' operation. An indicator light and an audible alarm must be installed at the console and must activate when the bilge pump is operating. Bilge pump(s) must be wired directly to the battery, so that it is always in readiness, as per TCMSB TP 1332 requirements. b) Rapid drain freeing ports must be located at the stern of the vessel. c) Hull drainage - a non-corrosive threaded plug must be provided at the lowest point to drain the hull when the vessel is out of the water.			
10.4 MAGNETIC COMPASS The Contractor is to supply and install a Ritchie-Helmsman 740 series compass or equivalent, mounted in the operator’s console. A non-white			

(red or green) light source must be connected to the 12 V DC electrical system and fitted with its own waterproof marine-grade dimmer switch. Compass must be adjustable for deviation.			
11.0 ELECTRONIC AND NAVIGATIONAL EQUIPMENT The Contractor must supply and install the electronic components listed below. All antennas must be mounted on the roof and fitted with detachable connections for overland transportation. All cable entries must pass through watertight cable glands. Any modifications must be approved in advance by Canada. a) A Motorola P25 compatible fleetnet radio with antenna. To be supplied by contractor and programmed by Manitoba Telecom Services (MTS) under the authority of Riding Mountain National Park. b) External powered speaker for Motorola radio with adjustable volume. Capable of being heard over engine noise/high winds. c) Garmin GPSMAP 741 complete with GPS 19x NMEA 2000 position receiver/antenna and through hull mounted depth and temperature sensor. Or complete system equivalent. d) Siren control and loudspeaker speaker will be supplied by Parks Canada and installed by the contractor.			
12.0 PAINTING AND CORROSION PROTECTION a) All aluminum components of the vessel, with the exception of the hull, must be covered using military grey powder paint. b) Before delivery of the vessel, the Contractor must verify that all unpainted, exposed aluminum surfaces are free of imperfections, including manufacturing marks, scratches, gouges and stains. c) The hull must be protected with sacrificial anodes bolted to the vessel as necessary for protection of the hull and motor in a freshwater environment. d) Surface finish of the entire weather exposed decking and tops of bulwarks must be non-skid and non-slip.			

13.0 TRAILER a) The trailer is to be rated approximately 20% over the anticipated 'wet' weight of the vessel having the following features: a. welded galvanized steel construction, tandem axle; b. with axle bearing protection and grease nipple; c. brake, running, turn signal, and backing lighting with seven (7) pin RV wiring connector; d. hydraulic, jurisdiction compliant braking system; e. bow winch assembly with winch strap and bow chock; f. radial tires; g. tongue jack, with wheel; h. full size wheel mounted spare tire and carrier; i. double bunks, brake flush kit; j. heavy duty 'stand-on' fenders and; k. hitch to accommodate a two (2) inch min., ball. b) The trailer shall be equipped with fenders and mudguards, which conform to Transport Canada Standards, and have adequate signal lights. The trailer shall be provided with two 2) galvanized safety chains and shackles of suitable size and rating. All electrical connections are to be sealed from the atmosphere c) The trailer must be equipped with a two (2) speed manually operated winch of a suitable size and rating with a web strap cable with a hook rated for the trailer design load. Web strap length must be at least 914 cm. The sides of the trailer shall be fitted with two (2) eyes per side for shackles to secure the vessel to the trailer. The Contractor shall supply two (2) adequate adjustable hold down cables/straps. A galvanized safety chain and shackle must be provided on the front of the yoke assembly for securing the bow of the vessel. d) The trailer must be adjusted for the vessel. The winch, stand and turnbuckles are to be capable of withstanding long journeys on rough terrain. e) The trailer is to be certified so that the trailer can be used on public roadways in the Province of Manitoba.			
14.0 TESTS AND TRIALS The Contractor must inspect and test the following items, as a minimum, for adherence to the contract requirements and proper operation (proper operation			

means that the equipment can be started, operated, connected together and demonstrated to function in a normal fashion, as applicable). All discrepancies must be corrected prior to delivery. The required inspections and tests are minimums and are not intended to supplant any controls, examinations, inspections or tests normally employed by the Contractor to assure the quality of the vessel. Inspections and trials target the following elements: a) Weight b) Construction quality c) Propulsion motor, including starting d) Propulsion controls e) Steering system f) Fuel system g) Electrical system h) Electronics			
14.1 ON WATER TRIALS – GENERAL **On Water Trials -** must be conducted by the Contractor to demonstrate the vessel and its equipment conform to the requirements as stated in the Contract. All expenses incidental to the trials, including fuel, are to be borne by the Contractor unless otherwise specified. A crew provided by the Contractor must operate the vessel during sea trials. **Speed Trials -** The speed trials must be conducted over a course at least one (1) nautical mile in length. Two (2) runs must be made over the course, one (1) in each direction with the speeds for the two (2) runs averaged. GPS data (averaged) is acceptable. **Endurance Trial -**The vessel must operate at maximum speed for a minimum of ten (10) minute intervals in fully loaded condition over a one (1) hour period, taking into consideration the break-in procedures for the equipment. During the endurance trials, it must be demonstrated that all parts of the propulsion system are in full operation. All systems must be operated to check for proper lubrication, control and alignment. Fuel consumption must be recorded for the one-hour trial. **Astern Propulsion -** The vessel must be operated and manoeuvred using astern propulsion to establish the astern performance. During the backing performance tests the throttles must be set to provide 1/3 of the			

rated engine horsepower. In order to demonstrate astern performance of the motors in an emergency stop and to test the strength of the baseplates, the motors must be subjected to two (2) stops from full power ahead at maximum speed to dead in the water using reverse thrust. The time required to perform this trial must be recorded. **Steering Gear -** Tests must be conducted on the steering gear to demonstrate the efficacy of the steering system under all operational conditions. Manoeuvring tests must be performed to ensure that the vessel meets the stated requirements. Manoeuvring trials must be conducted under the normal load condition and repeated under the full load condition. The contracting authority and the technical authority must be notified no less than two (2) weeks prior to sea trials. At a minimum, the technical authority will witness and attend the sea trials. Sea trial results must be forwarded to Canada prior to delivery of the vessel. At the conclusion of sea trials the vessel must be thoroughly cleaned and inspected. Engine cooling systems must be flushed through with fresh water. The Contractor must repair, to the satisfaction of Parks Canada, any damage to the vessel or its equipment resulting from sea trials. For the purpose of the trials, normal charge conditions are understood to be the base vessel, all normal equipment, a full tank of fuel, and any other item or load specified in the Vessel Particulars (see Section 4.1). Inspection, prior to delivery must not be performed until all tests have been satisfactorily completed with data available for review by the technical authority. The vessel must be ready for delivery in all respects, except for the final preparation for shipment. The Contractor must provide personnel, as required to answer any questions and to demonstrate equipment operation, maintenance, accessibility, dismantling and installation. The Contractor must document the results of the final inspection and provide these results to the technical authority along with a hard copy of the trial results, which must be shipped with the deliverables for the vessel. Where applicable, serial numbers and other identifying information must be recorded for the vessel and motor and submitted to the technical authority. The Contractor must record and document all stability calculations and			

trial results (as per TCMSB TP1332) and make them available as set out in Section 14.3, Technical Publications. A delivery inspection will be performed by the technical authority or a representative of the technical authority at the delivery location prior to acceptance by Parks Canada. The Contractor must repair, to the satisfaction of Parks Canada, any damage to the vessel or equipment resulting from shipping. The Contractor must record the results of the acceptance inspection and submit them to the contracting authority for acceptance of the vessel. The Contractor must maintain records of testing for the vessel for a minimum of two (2) years. The Contractor must prepare a testing check sheet that certifies that each test has been completed. The check sheet must indicate the actual weight of the vessel in light condition. The check sheet must also indicate the total loaded weight.			
15.0DOCUMENTATION All documentation must be provided in both official languages (French and English). **15.1 IDENTIFICATION PLATE** Identification Plate(s) are to be affixed in accordance with TCMSB TP-1332 **15.2 TECHNICAL PUBLICATIONS** The Contractor must provide, upon delivery of the vessel, complete sets of technical publications, including a detailed owner/operator manual that contains a physical and functional description of the vessel, its machinery and equipment, and the documents pertaining to the delivery testing and sea trial results. The manual must include but not be limited to sections such as: General Information, Technical Information, and Spare Parts List. The Contractor must provide a number of copies of the technical publications, including the following: a) One (1) complete hard copy and one (1) complete electronic copy on a USB key of all technical			

publications for the operator. The copies are to be delivered with the vessel. b) One (1) complete hard copy and one (1) complete electronic copy on a USB key of all technical publications for the technical authority. The copies must be delivered to the address indicated in the contract.			
15.3 GENERAL INFORMATION SECTION The General Information Section must include a description of the layout and function of all structures, systems, fittings and accessories that comprise the vessel, along with related illustrations: a) Operating procedures b) Basic operating information (temperatures, pressures, flow rates) c) Installation requirements and drawings, assembly and disassembly, with detailed illustrations showing each step d) Recommended preventive maintenance e) Complete troubleshooting procedures			
15.4 TECHNICAL INFORMATION SECTION The Technical Information Section must include a complete set of detailed owner/operator manuals, drawings, parts lists and supplemental data for all components of the vessel. These documents may be compiled by the Contractor or acquired from external sources and will cover the following elements: a)Original spare parts list: The list must include the name, part number and serial number, if applicable, of the parts, items or components and must indicate the supplier (name, address, phone number, email address) of the part, item or component and in which part of the specifications it appears. b)Hull: data on the hull. cEquipment serial numbers and warranty cards. d)Testing Check Sheet for shop pre-trial. e)Motor and equipment: serial numbers of motors and propulsion system. f)Electronic components (if applicable): model and serial numbers. g)Regulatory and stability information, as set out in TCMSB TP-1332.			

15.4.1 All components fitted to the vessel must have the maintenance data sheet completed before acceptance of the vessel from the Contractor. This information will be used to populate the database for the maintenance of the vessel. 15.4.2 Acceptance certificates and compliance sheets or certificates distributed with equipment (such as life saving appliances, engine test reports, calibration certificates, Nav light certificates, fire suppression material certificates and flotation foam rating sheets). 15.4.3 Technical publications must also include a list of original spare parts that should be stocked on board. At a minimum, the list must contain the following elements (if indicated): a)Propulsion: propellers, filters, water pump impeller, batteries, throttle and shift cables and special tools for the motor. b)Collar: air valve, foot pump, pressure gauge, patch kit (including adhesive) and 12 V high pressure pump. c)Electrical components: panel breakers, fuses, light bulbs d)Vessel structure and fittings: assortment of commonly used fasteners.			
15.5 ADDITIONAL DELIVERABLE DOCUMENTS The following additional documents must be provided with each set of manuals delivered: a) A Tonnage Registration Certificate in accordance with the TP 13430 standard (http://www.tc.gc.ca/eng/marinesafety/svcp-gt-3948.htm). b) Registration with the Small Vessel Compliance Program, found at: http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm. c) Two (2) sets of bills of sale for the vessel must be delivered. One copy is to be provided in the manuals delivered with the vessel, and the other will be delivered with the manuals for the technical authority. d) Test and trial results as per Appendix A e) Builder's tests and testing check sheets completed during construction			

16.0 SHIPPING AND DELIVERY Prior to shipping the vessel must be cleaned, preserved and covered in accordance with this section. a) Prior to shipping, the vessel must be secured to its trailer, cleaned, fitted with appropriate protection and covered in accordance with the provisions of this section. All parts of the vessel must be cleaned before wrapping it for shipping. The bilges must be dry and free of oil and the fuel tanks must be filled, with fuel stabilizer added. b) The propulsion system must be preserved in accordance with the manufacturer's recommendations for storage of up to one (1) year in an environment that will be subjected to freezing temperatures. c) Batteries must be disconnected. A warning plate is to be tied to the steering wheel with a wire indicating that the vessel has been protected for shipping and storage and must not be started until the propulsion machinery has been reactivated. d) All contact points with the vessel are to be padded. A shrink wrap cover is to be provided to protect the vessel during shipping and storage. e) The boat must be delivered to the following address at the cost of the Contractor: Riding Mountain National Park, 135 Wasagaming Drive, Onanole, Manitoba, R0J 1N0			
17.0 TRAINING The Contractor will offer specific training for the use and operation of the constructed vessel and its components.			
18.0 GOVERNMENT SUPPLIED MATERIALS Blue strobe light Siren control box and loud speaker The digital format Parks Canada logo for boat identification.			

Evaluator's Certification		
print name	signature	date
print name	signature	date
print name	signature	date