



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**

**11 Laurier St. / 11, rue Laurier
Place du Portage , Phase III
Core 0B2 / Noyau 0B2**

**Gatineau
Québec**

K1A 0S5

Bid Fax: (819) 997-9776

**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 Rigid Hull Inflatable Boat (RHIB)	
Solicitation No. - N° de l'invitation 5P437-180055/A	Date 2017-10-26
Client Reference No. - N° de référence du client 5P437-180055	
GETS Reference No. - N° de référence de SEAG PW-\$\$MC-037-26496	
File No. - N° de dossier 037mc.5P437-180055	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-12-06	
Time Zone Fuseau horaire Eastern Standard Time EST	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Gandolfini, Gianmarco	Buyer Id - Id de l'acheteur 037mc
Telephone No. - N° de téléphone (819) 420-1547 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PARKS CANADA P.O. BOX 280 2040 PACIFIC RIM HWY UCLUELET British Columbia V0R3A0 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Ship Construction, Refit and Related Services/Construction
navale, Radoubs et services connexes

11 Laurier St. / 11, rue Laurier
6C2, Place du Portage

Gatineau

Québec

K1A 0S5

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



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037mc.5P437-180055

Buyer ID - Id de l'acheteur
037mc
CCC No./N° CCC - FMS No./N° VME

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PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides Bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications and Additional Information: includes the certifications and additional information to be provided;
- Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by Bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Requirement, the Basis of Payment, list of subcontractors and the Bidder Questions and Canada Responses.

1.2 Summary

- 1.2.1** Parks Canada has requirement for (1) 7.5m to 8.5m Rigid Hull Inflatable Boat (RHIB) with trailer that supports park operations in the waters adjacent and within Pacific Rim National Park Reserve. The boat will be delivered to Pacific Rim National Park, Ucluelet, British Columbia.
- 1.2.2** The completed Rigid Hull Inflatable Boat must be delivered on or before March 31, 2018.
- 1.2.3** Delivery location:

Pacific Rim National Park
2040 A Pacific Rim Highway
Ucluelet, British Columbia
VOR 3A0
- 1.2.4** "The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the Canadian Free Trade Agreement (CFTA)."

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 from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

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-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) 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](#) 2017-04-27 Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 90 days

2.1.1 SACC Manual Clauses

B1000T – Condition of Material, 2014-06-26

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.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than **10** 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 Ontario.

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 15 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 (3 hard copies and 1 soft copies on CD or USB)
- Section II: Management Bid (1 hard copy and 1 soft copy on CD or USB)
- Section III: Financial Bid (1 hard copy and 1 soft copy on Cd or USB)
- Section IV: Certifications (1 hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft 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 (216 mm 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) (<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.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

The technical bid must demonstrate the vessel will be fully seaworthy, operable and fit in all regards for the purposes intended.

Bidders shall demonstrate their understanding of the requirement by providing a description of how the bidder will meet each of the requirements listed in the Technical Statement of Requirement (TSOR), **Annex A**.

In addition to providing the above mentioned documentation/information, Bidders must also provide all documentation requested in articles **3.2.1** and **3.2.2**.

3.2.1 Project Schedule

1. 1. As part of its technical bid, the Bidder must propose its preliminary project schedule, in MS Project or equivalent. The Bidder must provide a preliminary project schedule, in MS Project format or equivalent, indicating the sequence and the completion dates of project milestones, deliverables, and project tasks based on a contract award as "day 0." The project schedule should include the Bidder's work breakdown structure, the scheduling of main activities and milestone events and any potential problem areas involved in completing the Work.

2. The Bidder's schedule must also provide a target date for each of the following significant events for each boat as applicable:

- (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 will be required to 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 will be required to 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; and
- (g) the start and the end of the 12 month warranty period.

3.2.2 Preliminary Drawings

The following must be included with the Bids:

- (a) draft stability calculation;
- (b) calculated lightship weight;
- (c) general arrangement;
- (d) structural drawings showing deck plan, a centerline profile and frame station construction details;
- (e) detailed lines plan;
- (f) a drawing of the fuel supply arrangement.

3.3 Section II: Management Bid

In their management bid, Bidders must describe their capability, experience, the project management team by providing all documentation as requested in the following articles **3.3.1**, **3.3.2**, **3.3.3** and **3.3.4**.

3.3.1 Subcontractors

A list, in the form of the attached **Annex C** of subcontracts for labor and/or material must be included with the Bidder's Proposal, stating the name and address of each subcontractor, and a description (Make, Model No.) of the goods or services to be supplied by each.

3.3.2 Vessel Construction Experience

The Bidder must provide objective evidence that it has a proven capability in the construction of vessels of the size, type and complexity which is the subject to this RFP, by providing a detailed list of at minimum 3 boats built within the last 7 years. The list must include the following detail for each vessel submitted as evidence of construction capability:

- (a) Delivery date;
- (b) Vessel length;
- (c) Hull material; and
- (d) Propulsion description.

3.3.3 Marine Drafting and Engineering Capability

The Bidder must provide objective evidence in the form of a statement, signed by an authorized representative that it has either: a) in-house capabilities for marine drafting and engineering or b) has a written commitment from a supplier to provide marine drafting and engineering services for the duration of the Contract. The supplier must have marine drafting and engineering experience and capabilities on vessel construction projects similar in size, type and complexity to the subject RFP.

3.3.4 Contractor Quality Management System

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. The objective evidence may be in the form of a copy of the Bidder's Quality Assurance Manual which addresses these elements. Proof of registration with a recognized quality assurance organization whose system addresses the minimum requirements below, may be submitted for consideration.

The quality control elements must include, as a minimum:

Management Representative
Quality Assurance Manual
Quality Assurance Program Descriptions
Quality Reporting Organization
Documentation
Measuring and Testing Equipment
Procurement
Inspection and Test Plan
Incoming Inspection
In-Process Inspection
Final Inspection
Special Processes
Quality Records
Non Conformance
Corrective Action

Bidder facilities may be audited by Canada, or its authorized representative, prior to award of contract to ensure that a system is in place in accordance with the foregoing requirement.

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

3.4 Section III: Financial Bid

Bidders must submit their financial bid in accordance with Part 7 – 7.6 Payment and the following articles. The total amount of Applicable Taxes must be shown separately.

3.4.1 Exchange Rate Fluctuation

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All bids including such provision will render the bid nonresponsive.

3.4.2 Firm Price

Bidders must indicate the Bid price excluding taxes for each of the following Items in **Annex B - Pricing**.

3.4.3 Optional Goods

Bidders are requested to provide pricing for the Optional Goods identified in Annex A (TSOR - Section 18). If additional funding becomes available, Parks Canada may choose to exercise the options, in whole or in part, to purchase the goods identified in Annex A (TSOR – Section 18).

Pricing for the Optional Goods identified at Annex A (TSOR - Section 18) will not form part of the Evaluation for this RFP.

3.4.4 Unscheduled Work

Bidders must provide the information requested in the Basis of Payment, *Part 7, Article 7.6.1.1 – Charge out Rate / Material Mark-up*.

The unscheduled work rates will be included in the Basis of Payment, however it will not form part of the bid evaluation.

3.5 Section IV: Certifications

Bidders must submit the certifications and additional information 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, management and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements of the TSOR and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.2 Section I - Technical Bid**.

4.1.2 Management Evaluation

4.1.2.1 Mandatory Management Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.3 Section II – Management Bid**.

4.1.3 Financial Evaluation

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

4.1.3.1 Mandatory Financial Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.4 Section III – Financial Bid**.

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical, management and financial evaluation criteria to be declared responsive. 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 AND ADDITIONAL INFORMATION

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default 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 to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will 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 Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the Integrity declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), 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 specified will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<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 available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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 Additional Certifications Precedent to Contract Award

5.2.3.1 Workers Compensation Certification- Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

The Bidder must provide, **within 5 days** following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

5.2.3.2 Welding Certification

1. Welding must be performed by a welder certified by the Canadian Welding Bureau (CWB) for the following Canadian Standards Association (CSA) standards:

(a) CSA W47.2-11, Certification of Companies for Fusion Welding of Aluminum 2.1.

2. Before contract award and **within 5 calendar days** of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its certification by CWB in accordance with the CSA welding standards.

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

There is no security requirement applicable to this contract.

6.2 Financial Capability

SACC *Manual* clause [A9033T](#) 2012-07-16 Financial Capability

6.3 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 Annex **Part 7 - Resulting Contract Clause 7.18**.

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.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Requirement

The Contractor must provide to Parks Canada (1) 7.5m to 8.5m Rigid Aluminium Hull Inflatable Boat (RHIB) with trailer built in accordance with the Technical Statement of Requirement (TSOR) at Annex A and Bidder Question and Canada Responses at Annex D.

7.1.1 Optional Goods

The Contractor grants to Canada the irrevocable option to acquire the goods described at Annex A (Section 18 - TSOR) of the Contract under the same conditions and at the prices stated in the Contract. The options 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 options within 15 days after contract award by sending a written notice to the Contractor.

7.2 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-manual) (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

7.2.1 General Conditions

[2030](#), 2016-04-04 General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

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

7.3 Security Requirements

There is no security requirement applicable to the Contract.

7.4 Term of Contract

7.4.1 Delivery Date

All the deliverables must be received on or before March 31, 2018.

7.4.2 Delivery Points

Delivery of the requirement will be made to:

Pacific Rim National Park
2040 A Pacific Rim Highway

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037mc
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Ucluelet, British Columbia
V0R 3A0

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Gianmarco Gandolfini
Title: Intern Officer
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Marine Services and Small Vessels Sector
Address: 6C2, Place du Portage, Phase III
11 Laurier Street
Gatineau, QC
K1A 0S5

Telephone: 819-420-1547
E-mail address: gianmarco.gandolfini@tpsgc-pwgsc.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.

7.5.2 Technical Authority

(Information to be provided at contract award)

The Technical Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____
Telephone: ____ - ____ - _____
Facsimile: ____ - ____ - _____
E-mail address: _____

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.

7.5.3 Contractor's Representative

(Information to be provided at contract award)

Name: _____
Title: _____

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Organization: _____
Address: _____

Telephone: ____-____-_____
Facsimile: ____-____-_____
E-mail address: _____

7.6 Payment

7.6.1 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, as specified in Annex B - Pricing for a cost of \$ _____. Customs duties are included and Goods and Services Tax or Harmonized Sales 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.

7.6.1.1 Charge-out Rate / Material Mark-up

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

1. The Charge-out Rate specified below includes all classes of labor, engineering and foreperson, and all overheads, supervision and profit. The Charge-out Rate will be used for pricing unscheduled work that results in an increase or decrease in the Work Period, except as noted in the clause entitled "Overtime."

Charge-out Rate - \$..... /person/hour

2. Overtime:

Occasionally, Canada may elect to authorize overtime, for Unscheduled Work only. If this is the case, and the rate is greater than the Charge-out Rate, cost of labor hours will be determined on the following basis;

Time and one-half rate: \$..... /person/hour

Double Time Rate: \$..... /person/hour

3. The cost of material must be the net laid-down cost of the material to which must be added a mark-up of 10% of the net laid-down cost of the material. For the purposes of pricing, Unscheduled Work and material must be deemed to include subcontracts.

7.6.1.2 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered:

Delivered Duty Paid (DDP) Pacific Rim National Park Incoterms 2010.

7.6.2 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.

7.6.3 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.

7.6.4 Limitation of Price

SACC Manual clause [C6000C](#) 2017-08-17 Limitation of Price

7.6.5 Milestone Payment

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

(a) an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

(b) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;

(c) all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.6.6 Schedule of Milestones

The schedule of milestones for the vessel for which payments will be made in accordance with the Contract is as follows:

Milestone No.	Description or deliverable(s)	%	Firm Amount
A	Hull materials delivered to Contractor and sustained construction commenced	40%	
B	Completion of Metal Work	40%	
C	Boat, trailer and technical manuals delivered and accepted by Canada	17%	
D	End of the 12 month warranty period. Final acceptance	3%	

The milestones shown above must be included and identified in all production schedules.

The payment for the delivery, **Milestone C** must be payable by Canada upon delivery and acceptance of the boat, trailer and manuals by Canada, minus the holdback for double the total estimated value of any outstanding work items.

The holdback for outstanding work must be payable by Canada upon completion of the outstanding work and when the work is accepted by Canada.

The payment for completion of the twelve month warranty period, **Milestone D** must be payable by Canada upon completion of the warranty period of the vessel, minus the total cost of any work undertaken by Canada to repair any defects subject to warranty.

7.6.7 Outstanding Work and Acceptance

The Inspection Authority, in conjunction with the Contractor, will prepare a list of outstanding work items at the end of the work period. This list will form the annexes to the formal acceptance document for the vessel. A contract completion meeting will be convened by the Inspection Authority on the work completion date to review and sign off the form PWGSC-TPSGC 1105, Acceptance. 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 that work is completed.

The Contractor must complete the above form in 3 copies, which will be distributed by the Inspection Authority as follows:

- a. original to the Contracting Authority;
- b. one copy to the Technical Authority;
- c. one copy to the Contractor.

7.7 Invoicing Instructions

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
- (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- (c) the description and value of the milestone claimed as detailed in the Contract;
- (d) Quality assurance documentation when applicable and/or as requested by the Contracting Authority.

2. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no GST/HST payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify 1 original and 1 copy of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

4. The Contracting Authority will then forward the original of the claim to the Technical Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

5. The Contractor must not submit claims until all work identified in the claim is completed.

7.8 Certifications and Additional Information

7.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

7.8.2 Welding

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 W47.2-11, Certification of Companies for Fusion Welding of Aluminum 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.

7.8.3 Workers Compensation

The Contractor must maintain its account in good standing with the applicable provincial or territorial Workers' Compensation Board for the duration of the Contract.

7.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (*insert the name of the province or territory as specified by the Bidder in its bid, if applicable*).

7.10 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.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 1028, 2010-08-16, Ship Construction Firm Price;
- (c) the general conditions 2030 (2016-04-04) Goods (Higher Complexity);
- (d) Annex A, TECHNICAL STATEMENT OF REQUIREMENT (TSOR);
- (e) Annex B, Pricing;
- (f) Annex C, Subcontractors;
- (g) Annex D, Bidder Questions and Canada Responses;
- (h) the Contractor's bid dated _____.

7.11 Post Contract Award/Pre-Production Meeting

Within **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. Cost of holding such 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 Canada.

7.12 Project Schedule

- 1. The Contractor must provide an updated detailed project schedule in MS Project format or equivalent to the Contracting Authority and the Technical Authority **5 days after award of Contract**.
- 2. 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 12 month warranty period

Note: Technical Manuals will not be returned once approved.

3. 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.

7.13 Progress Report

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 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 an explanation.

b. PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing at 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. an explanation of any variation from the schedule.

7.14 Progress Meeting

Progress meetings, chaired by the Contracting Authority, will take place at the Contractor's facility as and when required, generally once a month. Interim meetings may also be scheduled. Contractor's attendees at these meetings will, as a minimum, be its Contract (Project) Manager, Production Manager (Superintendent) and Quality Assurance Manager. Progress meetings will generally incorporate technical meetings to be chaired by the Technical Authority.

7.15 Progress Review Meetings

Progress review meeting shall encompass total project status as of the review date. The Contractor, at a minimum, must report on the following:

1. Progress to date;
2. Variation from planned progress and the corrective action to be taken during the next reporting period;
3. A general explanation of foreseeable problems and proposed solutions, including an assessment of their impact on the contract in terms of schedule, technical performance and risk. The proposed solution should include the effort involved and the consequences to the schedule (Risk Register);
4. Proposed changes to the schedule;
5. Progress on action items, problems or special issues;
6. Deliverables submitted prior to PRM;
7. Milestones (technical and financial);
8. Activities planned for the next reporting period;
9. Status of any change notifications and requests;
10. Any changes to the PMP; and
11. Other business as mutually agreed to by CANADA and the Contractor.

7.16 SACC Manual clauses

A1009C – Worksite Access, 2008-05-12
B3000T – Equivalent Products, 2006-06-16
B5001C – Procedures for Design Change/Deviations

The Contractor must complete Part 1 of form [PWGSC-TPSGC 9038 \(PDF 241 KB\)](#) - ([Help on File Formats](#)), Design Change/Deviation, and forward 2 copies to the Technical Authority and one (1) copy to the Contracting Authority.

B9028C – Access to Facilities and Equipment, 2007-05-25
D0018C – Delivery and Unloading, 2007-11-30
D2000C – Marking, 2007-11-30
D2001C – Labelling, 2007-11-30
D9002C – Incomplete Assemblies, 2007-11-30
H4500C – Lien - Section 427 of the Bank Act, 2010-01-11

7.17 Manuals

1. No later than 14 calendar days prior to delivery of each boat, the Contractor must obtain and deliver to the Technical Authority for approval all Data Books, Operating Instruction Books and Maintenance Manuals for all machinery and equipment fitted on the Vessel as required. Once approved by the TA, the Contractor will provide 2 complete copies in accordance with and as specified in the TSOR.

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 part or in whole, an item of Work completed in accordance with such manual, nor does it mean such an item of Work meets the requirements of the TSOR.

7.18 Insurance Requirements

1. The Contractor must comply with the insurance requirements specified in **Articles 7.18.1** and **7.18.2** 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.

2. 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.

3. The Contractor must forward to the Contracting Authority within 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.

7.18.1 General Commercial 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's compensation (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 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) Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.

(n), (o), (p), (q) not used.

(r) 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.

7.18.2 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:

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(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 the Department of National Defence 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 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.

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

4. 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.

7.19 Inspection and Acceptance

The *Technical* Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

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7.20 Acceptance

1. Canada's provisional acceptance for delivery of the vessel must occur with the execution of a certificate in accordance with form **PWGSC 1105** upon satisfactory completion of the vessel and all trials. The execution of the certificates must in no way relieve the Contractor of any obligations under the Contract.
2. It is understood and agreed that where the work has been substantially completed and the parties have agreed upon the terms and conditions for the Contractor to make good any deficiencies, the certificate referred to above may be executed with a statement attached concerning the rectification of the deficiencies by the Contractor.
3. Canada's final acceptance must occur upon completion of the 12 month warranty period and settlement of all accounts between the parties in relation to the Contract.

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ANNEX A

TECHNICAL STATEMENT OF REQUIREMENT

Attached as a separate document

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ANNEX B

PRICING

B1: Firm Price

B1.1: (1) 7.5m to 8.5m Rigid Hull Inflatable Boat (RHIB) built in accordance with Annex A and Annex D.

\$ _____ (CAD)

B1.2: (1) trailer built in accordance with Annex A and Annex E

\$ _____ (CAD)

B1.3: Transportation cost for delivery of 1 boat and trailer FOB to

Pacific Rim National Park
2040 A Pacific Rim Highway
Ucluelet, British Columbia
V0R 3A0

\$ _____ (CAD)

TOTAL WITHOUT GST/HST \$ _____ (CAD)

B2: Separate price, as a costed option as per Annex A (taxes excluded)

B2.1: 1 Inflatable Raft (specified in Section 18.1 of the TSOR)

\$ _____ (CAD)

B2.2: 4 Shock Mitigating Seats (specified in Section 18.2 of the TSOR)

\$ _____ (CAD)

B2.3: 1 Deck Davit (specified in Section 18.3 of the TSOR)

\$ _____ (CAD)

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ANNEX C

SUBCONTRACTORS

Specification Item	Description of Goods/Services (Incl. Make, Model Number as applicable)	Name of Supplier	Address of Supplier

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ANNEX D

BIDDER QUESTIONS AND CANADA RESPONSES

Completed and updated during the solicitation process.

Parks Canada Agency

**Technical Statement of Requirements (TSOR)
Requisition Number XXXXX-XXXXXX, Provision of One (1) 7.5
to 8.5 m Inflatable Patrol Vessel with Aluminum Hull (1/4",
5086 alloy), Motors, Console, and T-top, Complete With
Trailer**

August 2017

**CONSTRUCTION IN ACCORDANCE WITH TRANSPORT CANADA MARINE
SAFETY BRANCH (TCMSB) TP-1332 STANDARDS**

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1.0 REQUIREMENT

- 1.1.1 The Contractor must design, fabricate and supply 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” (TCMSB TP 1332).
- 1.1.2 The vessel will be propelled by 2 , 4 stroke, counter rotating outboard motors within the HP range of 200 to 250, which will be provided and installed by the contractor.
- 1.1.3 The vessel must come complete with a trailer for transporting and launching.
- 1.1.4 The vessel and trailer must be delivered to Ucluelet BC.

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 salt water environment as detailed in the 3.0 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 CSAIACNOR W47.2, Sub-division 2.1 - Certification for Aluminum Welding–latest revision.
 - 2.5.4 The Contractor must construct the 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 under the contract.
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- 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

Performance must be for conditions of variable sea state with moderate to high winds, in salt 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 they have met the cruising speed requirements of between 22 and 30 knots under normal load conditions.

3.2 MINIMUM SPEED

- 3.2.1 The Contractor must document and provide the minimum speed in knots under normal load conditions.

3.3 STEERING AND MANOEUVERING CONTROLS

- 3.3.1 Steering: The vessel must be capable of steering 15 degrees from heading, Beaufort force 7, with seas from any direction.
- 3.3.2 The vessel must steer and manoeuvre effectively at 3 knots in Beaufort force 7.
- 3.3.3 The vessel must maintain course, made good over ground, when proceeding at 3 knots with relative crosswind of 35 knots.
- 3.3.4 The vessel must be capable of turning in its own length in Beaufort force 7.

3.4 BEACHING

- 3.4.1 The vessel must be capable of beaching on soft ground (sand, clay) at a maximum speed of 5 knots without damaging the hull.
- 3.4.2 The vessel must be capable of beaching on hard (stone or concrete) surfaces at speeds of up to 3 knots without damage to 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: -10°C to $+30^{\circ}\text{C}$
- 3.5.2 Average water temperature: 0°C to $+25^{\circ}\text{C}$.
- 3.5.3 Wave heights up to 7.5 meters (Beaufort Force 8).
- 3.5.4 Wind speeds of 34-40 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 7.5 and 8.5 metres (excluding motors).
- 4.1.2 Overall breadth – Between 2.75 and 3.16 metres, maximum.
- 4.1.3 Maximum draft (outboard motors lowered) between 0.70 and 0.90 meters.
- 4.1.4 Maximum draft (outboard motors raised) between 0.50 and 0.70 meters.
- 4.1.5 Maximum freeboard (from top of collar AFT, in normal load condition) 0.70 meters.
- 4.1.6 Open Style; full beam deck between tube cradles
- 4.1.7 Maximum depth under Keel:
 - 4.1.7.1 Operate in depths of 1.0 meter with outboard motors lowered.
 - 4.1.7.2 Basic manoeuvring in depths of 0.90 meters with outboard motors in the partially raised position.
- 4.1.8 Maximum height of collar above deck 0.60 meters
- 4.1.9 Propulsion – Twin counter rotating four stroke outboard motors 200-250 hp each.
- 4.1.10 Normal load conditions:
 - 4.1.10.1 Four crew members with equipment = 440 kg.
 - 4.1.10.2 Fuel = 2 fuel tanks of 300 to 400 litres per tank
 - 4.1.10.3 Equipment and supplies: 100 kg.

5.0 VESSEL CONFIGURATION

5.1 GENERAL CONFIGURATION

Rigid Hull Inflatable Boat including console and T-top roof. Decks must be configured to attain maximum deck space.

5.2 HULL

- 5.2.1 The vessel must be 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 grey and made of 1670 dtx Neoprene/Hypalon or equivalent 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.
- 5.3.5 The vessel must have a protective cover on the bow which will extend over the outer tube and extend from the bow down each side to opposite to the aft face of

the bow. The cover must be mechanically fastened at the bottom and fastened to the grommet strip (lacing cuff) at the top. The cover must wrap the bow (collar only) from collar top centre line to collar/hull joint and extend approximately 4' (1.25M) aft down each side 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

The vessel must have an aluminum console with rear leaning watertight windshield, two watertight side windows and wiper/washer and side windows that extend upwards from console to a T-top to provide protection from the elements for crew and equipment.

- 5.5.1 The T-Top console must be constructed to low weight, high strength specifications from aluminium to withstand the accelerations of the vessel while in extreme service conditions. Successful construction methods presented include main console construction of 3/16" plate, braked at the corners, with tiered and/or sloped top surfaces for installation of controls and electronics. Alternate construction method using 2" schedule 40 pipe framing with plate panels filling the console and window faces is also commonly used. Weight and structural integrity are paramount concerns. The T-Top aft width from tube cradle to T-Top must allow sufficient space for water to rapidly drain aft from the forward cockpit.
- 5.5.2 The T-Top must be 48" to 52" wide (across beam), the height from floor to top of the roof must be at least 81" high, and the length of the roof must extend beyond the rear passenger seating.
- 5.5.3 An overhead hinged console must be fitted with space adequate for two VHF radios, which must not protrude into the headroom of operators standing ahead of seating and must not obstruct the view of the vessel operator or navigator.
- 5.5.4 There must be storage space in the console and a weather tight hatch door on the forward face of the main console. This space must be sufficient to access the space below the console for electrical equipment mounted to the in the console.
- 5.5.5 Handholds of minimum 3/4" schedule 40 pipe must be positioned on the aft, top edge of the upper console and across the forward face above the electronics access door. In addition, pipe rails must run up the outboard edges of the forward window frame, tilted away from centre so as to provide minimal visual obstruction to forward operators.
- 5.5.6 There must be a forward window and side windows on the console. Forward window must be equipped with a bottom mounted, wide sweep, pantograph wiper system. The aft corner frames must also be equipped with air dams to control air and water "wrap" of the window corners. Dams must continue aft and direct water to the aft corners of the T-top. Side and aft pipe handrails must be provided on the T-top roof frame to provide handholds when standing on tubes or aft deck. These handrails must integrate with the forward window frame corner rails.

- 5.5.7 The T-Top must be supported at forward corners of the console top, and have sufficient strength to support the T-Top without additional support posts aft of the helm, with overhang aft sufficient to extend past the aft 'jump seat' positions.
- 5.5.8 The console must be fitted with a "sunbrella" or equivalent cover, twist lock attachment to the overhead and hanging down immediately aft of the side windows and aft console corners, securing to the console. The purpose of the cover is to protect the console electronics from moisture and spray when the boat is travelling or unattended.
- 5.5.9 A seat cover must be constructed that will cover all four seats and keep them dry when the vessel is left in the elements.
- 5.5.10 Hand Holds – (to be a minimum of ¾" schedule 40 pipe)
- 5.5.11 There must be a hand hold rail extending from above the side window, around the roof edge to the other side
- 5.5.12 There must be a vertical hand hold, each side, extending aft from the roof base down to the base of the side window.
- 5.5.13 There must be a hand hold across the aft edge of the horizontal plane of the navigator position. The fastening base of this hand hold must extend from side to side under the hand hold.
- 5.5.14 There must be a hand hold on each side, below the side window, extending from front to back on side of T-top.
- 5.5.15 There is must be a vertical hand hold extending the full height of the windshield, tilted away from the center so as to provide minimal visual obstruction to forward operators.
- 5.5.16 There must be a hand hold extending across the full width of the front of the T-Top, positioned above the forward door allowing sufficient space for the door to open while a gloved hand is gripping the hand hold.
- 5.5.17 Head room for T-top style console must provide greater than 6' 8" (203 cm) headroom.
- 5.5.18 The vessel must be fitted with a canvas enclosure for the three exposed sides of the T-top and extend from the top of the T-top to deck.
- 5.5.19 The canvas enclosure must be removable and roll-able or clip- able and fully enclose around the open area of T-top and console.
- 5.5.20 The canvas enclosure must have clear see through panels for visibility while operating and a door to allow entry and exit from the enclosure
- 5.5.21 The vessel must have a shock absorbing mat on deck within the inside console area where operators stand
- 5.5.22 Continuous clear space for person to get around T-top without having to step on pontoon must be provided
- 5.5.23 A 12V plug inside the console storage space must be installed

5.6 IDENTIFICATION

- 5.6.12 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. Text size will be 6".

5.6.13 The Official Number on the Transport Canada Certificate of Registry (eg. C#####BC) 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 OUTFIT - GENERAL

The pilot house must include a steering console and navigation instrument panel designed to work for single person vessel operation.

6.1 STEERING CONSOLE

A steering console must be located on the port side of the console with a steering system capable of withstanding the power of the vessel.

6.1.1 The steering console must be equipped with the appropriate backlit with adjustable dimer indicators 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
- g) Hour meter

6.1.2 The throttle controls must be positioned on the starboard side of the helm for operation with the right hand.

6.1.3 The console must be sufficiently large to house an 800 MHz radio, 2 plotter and radar monitors (12", 30cm wide), and 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 All gauges, switches, alarms, and electronic navigational equipment must be flush mounted.

6.1.5 The following alarms must be installed: motor alarms, bilge high water alarm, and bilge vapour alarm.

6.1.6 There must be 2 marine grade 12-V cigarette lighter type electrical plug-ins, one on the port instrument panel and the other on the starboard instrument panel. One of the 2 must be USB style.

- 6.1.7 Console must be fitted with space adequate for two VHF radios, which must not protrude into the headroom of operators standing ahead of seating and must not obstruct the view of the vessel operator or navigator.
- 6.1.8 There must be pipe foot rest(s) v at the console. Foot rests and seats must be positioned in such a way as to allow clearance for legs for operators ranging from 5'8" to 6'4"
- 6.1.9 All lights switches, other switches and navigational equipment must be within easy reach of the helmsmen.
- 6.1.10 The Helm station must be on the Port side of the console, with controls on centre.

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 must be padded to provide a comfortable non-slip surface for the operator to grip.
- 6.2.5 Steering wheel to be a tilt helm and adjustable for the operator.

6.3 SEATING

6.3.1 Operators seating

The vessel must have foldable helm and navigator seats that are adjustable vertically and horizontally, and adjustable leaning bolster for stand-up operation of the vessel. Seats must be separated and be covered by energy absorbing foam.

6.3.2 Passenger seating

The vessel must have storable/foldable seating that can accommodate 2 passengers, or other form of seating that takes up minimal deck space must be provided and installed. The seating must be covered by energy absorbing foam and be positioned to the rear of the operator's seating and under the T-top roof.

6.3.3 Laz Box

Laz box must be designed to accommodate maximum seating.

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). Glass must be tempered and ½ inch minimum.

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, must be self-parking, must be heavy duty pantograph marine grade wiper, and have a washer system.

6.6 HANDHOLDS

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

- 6.6.2 Handholds around the roof of the T-top and on the sides, as well as on the front above door.
- 6.6.3 If room allows a handhold on the dash within reach of the navigator.
- 6.6.4 There must be 2 behind the operator's seating that can be used by passengers.

6.7 MOORING CLEATS

- 6.7.1 The Contractor must install 2 mooring cleats in the stern of the vessel.
- 6.7.2 The cleats must be fabricated in aluminum and fitted with a reinforcement plate for extra sturdiness.

6.8 TOWING POSTS

Removable 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 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 RECESSED CLEATS FOR CARGO TIE-DOWN

A minimum of 4 flip up cleats flush with deck, 2 on port and 2 on starboard located mid deck and forward must be installed. Spaced approximately 1 to 1.5 meters apart.

6.10 STOWAGE

- 6.10.1 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.
 - 6.10.2 The forward-deck locker must be a freeman style hatch that creates the maximum storage space possible but must be screened so that it does not allow gear or equipment to leave the compartment.
 - 6.10.3 The stern deck locker must be a freeman style hatch that creates the maximum storage space possible but must be screened so that it does not allow gear or equipment to leave the compartment and must be large enough to accommodate a stern anchor (danforth), chain, and rope.
 - 6.10.4 Trays and clamps for stowing oars, pike poles, etc. must be fitted along the inner sides under the top of bulwarks.
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- 6.10.5 Anchor storage locker at bow must include an aluminum vertical separator that must allow a lighter duty and heavier duty anchoring system. Each divided section must allow for both anchor lines to be secured to securing eye.
- 6.10.5 There must be a minimum of one storage locker in the forward portion of the T-Top.
- 6.10.6 All storage lockers must have a drain of a large enough diameter that does not easily plug built into the hatch cover. All hatch covers and doors must allow for the door to open while a gloved hand is gripping the hand hold and that the hand hold can be locked with a pad lock.
- 6.10.7 All exterior stowage compartments must be lockable with a pad lock, secured by positive means and operable by gloved or insensitive hands.

6.11 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.

- 6.11.2 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.
- 6.11.3 Cables and conductors that pass through sealed joints, decks, bulkheads or any other exposed surface must be installed so as to maintain the water tightness of the structure. Cable entries into sealed enclosures must be fitted with appropriately sized marine-use cable glands.
- 6.11.4 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.
- 6.11.5 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.

6.12 WASHDOWN SYSTEM

A washdown system must be installed and located in the stern area of the vessel with hose long enough to wash entire deck of vessel.

6.13 TRIM TABS

Stainless steel port and starboard side trim tabs must be installed at stern of vessel. Controls to be in a location within helmsman reach.

6.14 RAILING AT TRANSOM

A railing system at stern of vessel to the rear of laz box must include recoil barrier.

7 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 sea keeping 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. A system must be designed and incorporated into the construction of the stem that allow for the bowline and trailering hook to be attached to the bow and which must not protrude from the line of the stem.
- 7.0.6 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).

- a) 2 oars with stowage brackets.
 - b) 2 fire extinguishers (Class 5BC, marine grade) with mounting brackets installed onboard.
 - c) Foot pump and repair kits (must be stowed in a lockable stowage locker)
 - d) 3 anchors, 2 including chain and rope must be (stored in a compartment with divider in the fore end of the boat). Anchor 1 must be a 10kg Bruce Anchor with 50' of 1/4" chain and 150' 3/8" nylon rope. Anchor 2 must be a 5Kg Bruce Anchor with 25' of 1/4" chain and 150' of 1/2" nylon rope. Anchor 3 must be 4Kg Danforth anchor with 12' of 1/4" chain and 100' of nylon rope stored in stern anchor storage compartment.
 - e) A plastic tipped pike pole and secure stowage must be provided.
 - f) Externally mounted manual release EPIRB mounted in location that is easy to grab but will not cause an obstruction to operators working in vessel. ACR GlobalFix Pro GPS/EPIRB, Category II or similar.
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9.0 SYSTEMS – GENERAL

9.1 PROPULSION SYSTEM

Twin outboard motors and motor controls must be supplied and installed by the contractor according to manufacturer's instructions. Motors must be the same make and model and have between 200-250 hp each. The motors must be 4 stroke and have counter rotating legs. All motor equipment and accessories installed must be approved by the motor manufacturer. The Contractor must not use equipment or accessories with or perform tests on the motors that could in any way nullify the manufacturer's warranties. The Contractor must select motors that have an authorized dealer capable of servicing the motors within 150km of Ucluelet BC.

9.2 PROPELLER(S)

- a) The Contractor must provide 2 sets of stainless steel propellers for each motor.
- b) Propellers must be properly sized and installed by the Contractor.
- 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.

9.3.4 The control system must be mechanical.

9.4 VERIFICATION OF INSTALLATION

The installation of the motors, drive units, controls, lubrication and fuel systems, manometers and battery connections, must be verified by an authorized technician. The motors 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 1 fuel filter/ water separator per motor with clear bowl, suitable for fuel supply to the gas-powered outboard motors. The filter must be easily accessible.
- 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 must be equipped with a non-return check valve.
- f) Bilge Blower: The gasoline tank space must be fitted with a bilge blower controlled by a separate watertight switch on its own breaker at the control console.

9.8 FUEL TANK

- a) Fuel systems must meet all requirements of TP 1332 "Construction Standards for Small Vessels".
- b) The vessel must be equipped with 2 fuel tanks with baffles to be located under the deck.
- c) Total capacity must be at least 600 - 800 litres.
- d) The fuel tanks must undergo a hydrostatic test or air test at 3.0 lb/in² and be labelled in accordance with TCMSB TP-1332.
- e) The fuel tanks must be fitted with a fuel gauge and an indicator for the operator located on the dash of the console.
- f) The fuel tanks must be fitted with anti-siphon valves installed at each suction if the flow meets the manufacturer's requirements.
- g) The fuel tanks must be fitted with interconnect valves so that the motors can draw fuel from either tank. Tanks must be capable of individual isolation of each other. The valves must be clearly marked and easily accessible.

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 considered acceptable if it meets IP66 standards. It must include a breaker panel with at least 10 circuits. The Contractor must ensure that the breaker panel can be expanded 10% or house at least 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) Search light
- d) Interior/exterior lighting
- e) Instruments
- f) Bilge pumps
- g) Electronic systems
- h) Communication systems
- i) Wash-down pump and system

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.

4 marine grade 12 V electrical outlets must be installed. 2 must be located on or near the operator's console, and 1 at the bow near the anchor hold, and 1 in the console forward storage compartment. All electrical outlets must have waterproof fittings.

10.1 BATTERIES, SWITCHES AND CHARGERS:

10.1.1 The vessel must be equipped with a system of 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 1 or 2 blue coloured marine strobe lights (according to regulations) with 360° visibility but not obstructing the boat operator or navigation lights. Blue strobe must be marine grade LED LOPOLIGHT 200-060 or similar.

c) Navigation lights must conform to CSA Collision Regulations.

- d) Navigation lights must be permanently attached and watertight.
- e) The lamps in all 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. Navigation lights must be permanently fitted to the T-Top with protected wiring and must be waterproof. The fitting of a combined navigation sidelight lantern on the inflatable collar will not be acceptable.
- g) 2 dash switches must be supplied and labelled as follows: Anchor Light and Nav Lights.
- h) There must be 6 LED deck flood lights fitted on the T-Top of the vessel, 2 facing towards the bow on the front corners, 1 each facing to the port and starboard and 2 facing towards the rear. Rigid brand or equivalent, and controlled independently by two switches marked accordingly.
- i) There must be 1 low profile remote controlled search light mounted centered and forward of T-top roof.

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 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 must provide and install a direct read compass, with light and its own dimmer switch. The Ritchie Helmsman 70 series meets this requirement.

10.5 HORN

The Contractor must supply and install an electric horn and switch that meets the requirements of the Collision Regulations.

11.0 ELECTRONIC AND NAVIGATIONAL EQUIPMENT

The Contractor must supply and install the electronic components listed below. All radio antennas must be mounted on the roof and fitted with connections that allow lowering

for overland transportation. All cable entries must pass through watertight cable glands. Any modifications must be approved in advance by Parks Canada.

- a) A government programmed radio to be supplied by Pacific Rim National Park will be installed to manufacturer specifications. The radio will be an ICOM model IC-F121.
- b) A waterproof base marine VHF radio with DSC capability and antenna must be supplied and installed by the Contractor. ICOM IC-M324 or similar design.
- c) External powered speaker for Government radio and Marine VHF with adjustable volume must be installed inside of T-top. Capable of being heard over engine noise/high winds.
- d) Radar system will be SIMRAD Broadband 4G Radar or similar. GPS plotters and radar monitors will be SIMRAD NSS12 EVO3 multi-function display and have ability to work together (master unit, 2nd unit). Display size must be minimum 12" diagonal display. Units must have marine charts for west coast Vancouver Island installed.
- e) Communications and navigations units must be flush mounted when possible and must be within workable reach for helmsman.

12.0 PAINTING AND CORROSION PROTECTION

- a) All aluminum components of the vessel, with the exception of the hull and deck, must be covered using military grey powder paint.
- b) Deck finish must be non-skid paint system suitable for a marine environment to cover the entire deck except waterways and fittings.
- c) The hull must be painted with black anti fouling paint applied following the manufacturers guidelines for application to aluminium.
- d) 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.
- e) The hull must be protected with sacrificial anodes bolted to the vessel as necessary for protection of the hull and motor in a saltwater environment.

13.0 TRAILER

- a) The trailer must be rated approximately 20% over the anticipated 'wet' weight of the vessel having the following features:
 - 1) welded galvanized steel construction, tandem axle;
 - 2) with axle bearing protection and grease nipple;
 - 3) brake, running, turn signal, and backing lighting with 7 pin RV wiring connector;
 - 4) hydraulic, jurisdiction compliant braking system;
 - 5) bow winch assembly with winch strap and bow chock;
 - 6) radial tires;

- 7) tongue jack, with wheel;
 - 8) full size wheel mounted spare tire and carrier;
 - 9) double bunks, brake flush kit;
 - 10) heavy duty 'stand-on' fenders and;
 - 11) hitch to accommodate load.
- b) The trailer must be equipped with fenders and mudguards, which conform to Transport Canada Standards, and have adequate signal lights. The trailer must be provided with 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 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 must be fitted with 2 eyes per side for shackles to secure the vessel to the trailer. The Contractor must supply 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 must be certified so that the trailer can be used on public roadways in the Province of British Columbia.

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 before delivery of the vessel. 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 that 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 1 nautical mile in length. There must be 2 runs made over the course, 1 in each direction with the speeds for the 2 runs averaged. GPS data (averaged) is acceptable.

Endurance Trial -The vessel must operate at maximum speed for a minimum of 10 minute intervals in fully loaded condition over a 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 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 2 weeks before sea trials. At a minimum, the Technical Authority will witness and attend the sea trials. Sea trial results must be forwarded to Parks Canada before 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, before 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 before 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 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) 1 complete hard copy and 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) 1 complete hard copy and 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 lifesaving appliances, engine test reports, calibration certificates, Nav light certificates, fire suppression material certificates and flotation foam rating sheets) must be provided.

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) There must be 2 sets of bills of sale for the vessel upon delivery. 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 Section 14.1 on Water Trials.
- e) Builder's tests and testing check sheets completed during construction.

16.0 SHIPPING AND DELIVERY

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

- a) Before 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 1 year in an environment that will be subjected to freezing temperatures.
- c) Batteries must be disconnected. A warning plate must 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 must be padded. A shrink wrap cover is must provided to protect the vessel during shipping and storage.
- e) The boat and trailer must be delivered to the following address at the cost of the Contractor: Pacific Rim National Park, 2040 A Pacific Rim Highway, Ucluelet, British Columbia, V0R 3A0.

17.0 PARKS CANADA SUPPLIED MATERIALS

Park Radio.

The digital format Parks Canada logo for boat identification.

C # will be provided but not the stickers.

18.0 EXTRAS TO BE SUPPLIED AND/OR INSTALLED IF FUNDING AVAILABLE

Priority to be determined through discussions with Parks Canada.

18.1 Inflatable Raft

1 inflatable river raft tender with collapsible oars. Raft to be double-ended, river raft style, 11-12' with a self-draining floor. NRS brand, Otter E120-D model or equivalent with self-draining floor.

18.2 Shock Mitigating Seats

18.2.1 Forward seating to be 'Shockwave' G-Force type seats or equivalent with height and slider adjustment, on stands, with fold up seat edge to act as support for operators when folded up and driving in a standing position. Seats to have spring loaded footrests, folding arms, and seatbelts. The seat base must be wide enough to have the forward seats positioned in line with the foot rest in both the helm and starboard seating position inside the T-Top.

18.2.2 The seat mounting area to be suitably reinforced and framed to support the full G-load capability of the shock mitigation seating.

18.2.3 The seating bases, if any, are to be equipped with lockable stowage if adequate space is available. Seat base slider must be used to facilitate equal facility to use console equipment in seated or standing position.

18.2.4 Seats must be designed to support a person of 150 kg.

18.3 Deck Davit

Safe-T Puller Light Commercial Model (Part #STP-2100) or equivalent pot puller with 2.1 HP 12 volt electric power head, stainless steel self-grip sheave, air bellows foot switch and solenoid, 8 gauge wiring harness, 80 AMP circuit breaker, 2" schedule 80 aluminium davit, UHMW plastic sleeved side deck /cabin bulkhead bracket, and kick-plate bracket with stainless steel quick release pin. Secured to the t top when not in use and can lock in place with the pin. The davit arm and upper swivel portion must be removable and stowed in the largest below deck hold. The davit needs to be rated for a minimum of 500lbs.