



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada

Pacific Region

401 - 1230 Government Street

Victoria, B.C.

V8W 3X4

Bid Fax: (250) 363-3344

INVITATION TO TENDER

APPEL D'OFFRES

**Tender 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.

Soumission 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 et sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada -
Pacific Region

401 - 1230 Government Street

Victoria, B. C.

V8W 3X4

Title - Sujet 5.6-5.8m Aluminum Jet Boat	
Solicitation No. - N° de l'invitation F7044-180032/A	Date 2019-01-08
Client Reference No. - N° de référence du client F7044-180032	GETS Ref. No. - N° de réf. de SEAG PW-\$XLV-588-7668
File No. - N° de dossier XLV-8-41186 (588)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-02-19	
Time Zone Fuseau horaire Pacific Standard Time PST	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Wulff, Gregor F.	Buyer Id - Id de l'acheteur xl5588
Telephone No. - N° de téléphone (250) 217-7138 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Fisheries and Oceans Canada See herein	

Instructions: See Herein

Instructions: Voir aux présentes

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

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION	3
1.1 INTRODUCTION.....	3
1.2 SUMMARY.....	3
1.3 DEBRIEFINGS	3
PART 2 - BIDDER INSTRUCTIONS.....	4
2.1 STANDARD INSTRUCTIONS, CLAUSES AND CONDITIONS	4
2.2 SUBMISSION OF BIDS.....	4
2.3 ENQUIRIES - BID SOLICITATION	5
2.4 APPLICABLE LAWS	5
PART 3 - BID PREPARATION INSTRUCTIONS	6
3.1 BID PREPARATION INSTRUCTIONS.....	6
3.2 SECTION I - TECHNICAL BID	6
3.3 SECTION II: MANAGEMENT BID	7
3.4 SECTION III: FINANCIAL BID	8
3.5 SECTION IV: CERTIFICATIONS.....	9
PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION	10
4.1 EVALUATION PROCEDURES.....	10
4.2 BASIS OF SELECTION.....	10
PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION	11
5.1 CERTIFICATIONS REQUIRED WITH THE BID	11
5.2 CERTIFICATIONS PRECEDENT TO CONTRACT AWARD AND ADDITIONAL INFORMATION	11
PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS.....	13
6.1 SECURITY REQUIREMENTS.....	13
6.2 FINANCIAL CAPABILITY	13
6.3 INSURANCE - PROOF OF AVAILABILITY PRIOR TO CONTRACT AWARD.....	13
PART 7 - RESULTING CONTRACT CLAUSES	14
7.1 REQUIREMENT	14
7.2 STANDARD CLAUSES AND CONDITIONS.....	14
7.3 SECURITY REQUIREMENTS.....	14
7.4 TERM OF CONTRACT	14
7.5 AUTHORITIES	16
7.6 PAYMENT	17
7.7 INVOICING INSTRUCTIONS.....	18
7.8 WORK ACCEPTANCE.....	19
7.9 CERTIFICATIONS AND ADDITIONAL INFORMATION	19
7.10 APPLICABLE LAWS.....	20
7.11 PRIORITY OF DOCUMENTS	20
7.12 TRADE QUALIFICATIONS	20
7.13 QUALITY MANAGEMENT SYSTEMS	20
7.14 POST CONTRACT AWARD/PRE-PRODUCTION MEETING	20
7.15 PROJECT SCHEDULE	20
7.16 PROGRESS REPORT	21
7.17 PROGRESS MEETINGS.....	21
7.18 PROGRESS REVIEW MEETINGS.....	21
7.19 SACC MANUAL CLAUSES	21
7.20 MANUALS	22

7.21	INSURANCE REQUIREMENTS	22
7.22	INSPECTION AND ACCEPTANCE	24
7.23	GOVERNMENT SUPPLIED MATERIAL	25
ANNEX – A – REQUIREMENT		26
ANNEX - B – BASIS OF PAYMENT		27
ANNEX – C - BIDDER QUESTIONS AND CANADA RESPONSES.....		29
ANNEX - D - SUBCONTRACTOR LIST		30
ANNEX - E - DETAILED FINANCIAL BID PRESENTATION SHEET		31
ANNEX - F – BID PACKAGE CHECKLIST		33
ANNEX - G - ELECTRONIC PAYMENT INSTRUMENTS.....		34
ANNEX - H - FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION		35

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 Technical Statement of Requirement, the Basis of Payment, the list of Subcontractors, the Bidder Questions and Canada Responses and the Federal Contractors Program for Employment Equity - Certification, the Insurance Requirements,

1.2 Summary

Fisheries and Oceans Canada has a requirement to acquire one, 5.6 to 5.8 metre Open Aluminum Jet Boat and Trailer, built in accordance with the Requirement at Annex "A" and Bidder Questions and Canada Responses – Annex "C".

The boat is to be delivered to:

Fisheries and Oceans Canada
3-100 Annacis Parkway
Delta, British Columbia
V3M 6A2

The vessel must be received on or before 21 June, 2019.

1.2.1 Electronic Bids

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

1.2.2 Sourcing Strategy

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 (SACC) 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, (2018-05-22) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.1.1 SACC Manual Clauses

A9125T - Valid Labour Agreement

2007-05-25

B1000T - Condition of Material

2014-06-26

2.1.3 Equivalent Products

1. Products that are equivalent in form, fit, function and quality to the item(s) specified in the bid solicitation will be considered where the Bidder:
 - a. designates the brand name, model and/or part number of the substitute product;
 - b. states that the substitute product is fully interchangeable with the item specified;
 - c. provides complete specifications and descriptive literature for each substitute product;
 - d. provides compliance statements that include technical specifics showing the substitute product meets all mandatory performance criteria that are specified in the bid solicitation; and
 - e. clearly identifies those areas in the specifications and descriptive literature that support the substitute product's compliance with any mandatory performance criteria.
2. Products offered as equivalent in form, fit, function and quality will not be considered if:
 - a. the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute product; or
 - b. the substitute product fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.
3. In conducting its evaluation of the bids, Canada may, but will have no obligation to, request bidders offering a substitute product to demonstrate, at the sole cost of bidders, that the substitute product is equivalent to the item specified in the bid solicitation.

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.

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

2.2.1 Hard Copy Bid Submission

Bid Receiving Unit
Public Services and Procurement Canada
401 – 1230 Government Street
Victoria, B.C. V8W 3X4
Bid Fax: 250-363-3344

2.2.2 Electronic Bid Submission

Electronic address for epost Connect service:

TPSGC.RPRceptiondessoumissions-PRBidReceiving.PWGSC@tpsgc-pwgsc.gc.ca

Bids will not be accepted if emailed directly to this email address. This email is to initiate an ePost Connect conversation, as detailed in the Standard Instructions.

Notice to bidders: All bids to be delivered electronically to BRUs must be through the use of epost Connect service in order to meet Canada's privacy security requirements.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) business days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

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

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

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

3.1.1 OPTION 1: Electronic Delivery of Bids

If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. Bidders must provide their bid in a single transmission. The epost Connect service has the capacity to receive multiple documents, up to 1GB per individual attachment.

The bid must be gathered per section and separated as follows:

Section I:	Technical Bid
Section II:	Management Bid
Section III:	Financial Bid
Section IV:	Certifications

3.1.2 OPTION 2: Hard Copy Delivery of Bids

If the Bidder chooses to submit its bid in hard copies, Canada requests that the Bidder submits its bid in separately bound sections as follows:

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I:	Technical Bid – Two (2) hard copies
Section II:	Management Bid- Two (2) hard copies
Section III:	Financial Bid – One (1) hard copy
Section IV:	Certifications - One (1) hard copy

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

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

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

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

To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

3.2 Section I - Technical Bid

The Technical Statement of Requirements, Annex A, is entirely mandatory. In their technical bid, Bidders must 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 vessels will be fully seaworthy, operable and fit in all regards for the purposes intended.

3.2.1 Bidder's Check List and Technical Confirmation

The Bidders must review for bidding purpose the **Annex F - BID PACKAGE CHECKLIST** and provide it with the bid.

3.3 Section II: Management Bid

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

3.3.1 Vessel Construction Experience

The bid must provide objective evidence that the bidder has proven capability in the construction of vessels of the same size, type and complexity as the vessel(s) that make up the requirement of this bid solicitation, by providing detailed information of a minimum of 2 boats built within the last 8 years. Prototype hulls will not be considered as fulfilling this requirement. The bid must include the following details for each vessel submitted as evidence of construction capability:

- a) General Arrangement drawings;
- b) Photographs;
- c) References;
- d) Builder's plates (if applicable); and
- e) Hull identification numbers confirming multiple builds.

3.3.2 Marine Drafting and Engineering Capability

The bid must provide objective evidence in the form of a statement, signed by an authorized representative of the Bidder that the bidder has either:

- a) In-house capabilities for marine drafting and engineering or
- b) A written commitment from a supplier that will be providing marine drafting and engineering services to the Bidder 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 bid solicitation.

3.3.3 Contractor Quality Management System

The bid must provide objective evidence that the Bidder 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:

- a) Management Representative
- b) Quality Assurance Manual
- c) Quality Assurance Program
- d) Descriptions Quality Reporting Organization Documentation
- e) Measuring and Testing
- f) Equipment Procurement
- g) Inspection and Test Plan
- h) Incoming Inspection
- i) In-Process Inspection
- j) Final Inspection Special Processes Quality Records
- k) Non Conformance
- l) Corrective Action

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

3.3.4 Project Schedule

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 delivered to Canada for acceptance; and
 - g) the start and the end of the 12 month warranty period.

Note: Technical Manuals will not be returned once approved.

3.3.5 Preliminary Drawings

The following documents must be included with the Bid:

- 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.

3.3.6 Subcontractors

A list, in the form of the attached **Annex D** 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.

3.4 Section III: Financial Bid

Bidders must submit their financial bid in accordance with the **Annex E – DETAILED FINANCIAL PRESENTATION SHEET**. The total amount of Applicable Taxes must be shown separately.

3.4.1 Exchange Rate Fluctuation

SACC Manual Clause C3011T (2013-11-06), Exchange Rate Fluctuation

3.4.2 Firm Price

Bidders must indicate the Bid price excluding taxes for each of the following Items in **Annex E – DETAILED FINANCIAL PRESENTATION SHEET**

3.4.3 Unscheduled Work

Bidders must provide the information requested in the **Annex E – DETAILED FINANCIAL PRESENTATION SHEET**.

The unscheduled work rates will be included in and form part of the bid evaluation.

3.4.4 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex “G” Electronic Payment Instruments, to identify which ones are accepted.

If Annex “G” Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.5 Section IV: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical, 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, a Bidder's proposal must, to the satisfaction of Canada, meet all requirements of the Annex A - TSOR and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 3.1 Section I, Technical Bid.**

4.1.2 Management Evaluation

4.1.2.1 Mandatory Management Criteria

In order to be compliant, a 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

SACC Manual Clause A0222T (2014-06-26), Evaluation of Price – Canadian / Foreign Bidders

4.1.3.1 Mandatory Financial Criteria

In order to be compliant, a 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

4.2.1 Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical 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 associated information to be awarded a contract.

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, if **applicable**, the 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 provided 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 48 hours** 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 and in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

-
- (a) CSA W47.2 (current version) , Certification of Companies for Fusion Welding of Aluminum 2.1
2. Before contract award and **within 48 hours** 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

A9033T - Financial Capability 2012-07-16

6.3 Insurance - Proof of Availability Prior to Contract Award

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in **Part 7 - Resulting Contract Clause 7.21**.

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

Fisheries and Oceans Canada has a requirement to acquire one, 5.6 to 5.8 metre Open Aluminum Jet Boat and Trailer, built in accordance with the Requirement at Annex "A" and Bidder Questions and Canada Responses – Annex "C".

7.1.1 The Contractor grants to Canada the irrevocable option to acquire 1 (one) additional 5.6 to 5.8 metre Open Aluminum Jet Boat and Trailer as described at Annex A of the Contract under the same conditions and at the prices and/or rates stated in Annex B of the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option within 12 months 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, (2018-06-21), 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.

7.2.2.1 Conduct of Work.

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

7.2.2.2 Warranty.

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

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

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

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 21 June, 2019.

7.4.2 Shipping Instructions - Delivered Duty Paid

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

Incoterms 2000 "DDP Delivered Duty Paid" delivery point article 7.4.3.

7.4.3 Delivery Point

Delivery of the requirement will be made to:

The boat is to be delivered to:

N° de l'invitation - Solicitation No.

F7044-180032/A

N° de réf. du client - Client Ref. No.

F7044-180032

N° de la modif - Amd. No.

File No. - N° du dossier

XLV-8-41186

Id de l'acheteur - Buyer ID

xlv588

N° CCC / CCC No./ N° VME - FMS

Fisheries and Oceans Canada
3-100 Annacis Parkway
Delta, British Columbia
V3M 6A2

7.5 Authorities

7.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Gregor Wulff
Organization: Acquisitions Marine, Procurement Branch - Pacific Region
Public Services and Procurement Canada
Telephone: 250-217-7138
Email: gregor.wulff@pwgsc-tpsgc.gc.ca

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

7.5.2 Technical Authority

The Technical Authority for the Contract is:

The Technical authority will be provided at Contract award.

Name: TBD
Title: TBD
Organization: TBD
Address: TBD
Telephone: TBD
Facsimile: TBD
E-mail: TBD

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 Inspection Authority

The Inspection Authority for the Contract is:

The Inspection authority will be provided at Contract award.

Name: TBD
Title: TBD
Organization: TBD
Address: TBD
Telephone: TBD
Facsimile: TBD
E-mail: TBD

The Inspection 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 inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada inspector who may from time to time be assigned in support of the designated Inspector.

7.5.4 Contractor's Representative

Name and telephone numbers of the person responsible for production:

The Contractor's representatives will be determined at Contract award.

Name: TBD
 Telephone: TBD
 Facsimile: TBD
 E-mail: TBD

Name and telephone numbers of the person responsible for delivery:

Name: TBD
 Telephone: TBD
 Facsimile: TBD
 E-mail: TBD

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 of \$ _____. Customs duties are included and Applicable Taxes are extra, if applicable.

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

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.

7.6.5 Milestone Payment -Subject to Holdback

1. Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract, up to **90** percent of the amount claimed and approved by Canada if:
 - a. an accurate and complete claim for payment using form [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. the total amount for all milestone payments paid by Canada does not exceed **90** percent of the total amount to be paid under the Contract;
 - c. all the certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives;
 - d. all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of the item if the Work has been accepted by Canada and a final claim for the payment is submitted.

7.6.6 Schedule of Milestones

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

Milestone No:	Description and Deliverable (s)	Firm Amount (\$)
A	Hull materials delivered to Contractor and sustained construction commenced	32% of the Firm Unit Price (TBD at contract award

B	Boat, trailer and technical manuals delivered at destination and accepted by Canada	65% of the Firm Unit Price (TBD at contract award
C	End of the 12 month warranty period only.	3% of the Firm Unit Price (TBD at contract award

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

Milestone A: A payment no earlier than upon the material delivery being at the Contractor manufacturing facility with material price support provided to the Contracting Authority and the commencement of sustained construction.

Milestone B: A payment after the completion of delivery at destination and the acceptance of the boat, the trailer and manual by Canada.

Milestone C: A payment for completion of the twelve month warranty period only.

- a) Twelve (12) months for the boat propelling machinery and auxiliaries, fittings and equipment of all kinds (excluding Government Supplied Material).
- b) Twelve (12) months for the vessel hull and welding of the total twenty four months vessel hull and welding warranty. For the remaining (12) months of the vessel hull and welding warranty, no holdback will be retained.

7.6.7 Warranty Holdback

A warranty holdback of 3% will be applied to the claim(s) for payment. This holdback is payable by Canada upon the expiry of the warranty holdback period of twelve months applicable to the Work. Applicable Taxes will be calculated on this outstanding work holdback amount and paid at the time that the warranty holdback is released.

7.6.8 Outstanding Work Holdback

In addition to any amount held under the Warranty Holdback Clause, a holdback of twice the estimated value of outstanding work will be held until completion of the Work.

Applicable Taxes will be calculated on this outstanding work holdback amount and paid at the time that the outstanding work holdback is released.

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. Applicable taxes, 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 applicable taxes 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.

7.7.1 Electronic Payment of Invoices – Contract *(if applicable)*

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Direct Deposit (Domestic and International);
- b. Electronic Data Interchange (EDI);
- c. Wire Transfer (International Only);

7.8 Work 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 of New Vessel.

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.

7.8.1 Procedures for Design Change/Deviations

The Contractor must follow these procedures for any proposed design change/deviation to contract specifications.

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 1 copy to the Contracting Authority.

7.9 Certifications and Additional Information

7.9.1 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.

7.9.2 Welding - Contract

1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:
 - (a) CSA W47.2 (current version) , 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.

7.9.3 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.

7.10 Applicable Laws

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

7.11 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, (2018-06-21), Goods (Higher Complexity);
- (d) Annex A, Requirement;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Bidder Questions and Canada Responses;
- (g) Annex D, Subcontractors; AND
- (h) the Contractor's bid dated_____.

7.12 Trade Qualifications

The Contractor must use qualified, certified (where applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Contracting Authority may request to view and record details of the certification and/or qualifications held by the Contractor's tradespeople.

7.13 Quality Management Systems

1. The Contractor must have in place a Quality Assurance Program approved by the Inspection Authority during the performance of the Work which addresses the quality control elements below.
2. The quality control elements must include, as a minimum:
 - Quality Assurance Manual or Quality Assurance Program Descriptions
 - Inspection and Test Plan
 - Final Inspection
 - Quality Records

7.14 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 or via telephone or video conference. Travel and living expenses for Canada's representatives will be arranged and paid for by the Canada.

7.15 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 delivered to Canada for approval;

Note: Technical Manuals will not be returned once approved.

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

7.16 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.

7.17 Progress Meetings

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.

7.18 Progress Review Meetings

Progress review meetings (PRM) 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.

7.19 SACC Manual Clauses

A1009C – Worksite Access,

2008-05-12

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

7.20 Manuals

1. No later than 14 calendar days prior to delivery of the boat, the Contractor must obtain and deliver to the Technical Authority for approval all Data Books, Operating Instruction Books, Maintenance Manuals and Spare Parts Lists (including part numbers and ordering instructions) for all machinery and equipment fitted on the Vessel as required. Once approved by the TA, the Contractor 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.

7.21 Insurance Requirements

1. The Contractor must comply with the insurance requirements specified in **Articles 7.21.1** and **7.21.2** 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 working 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.

7.21.1 Commercial General Liability Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
 - (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - (b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - (c) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.
 - (d) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - (e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - (f) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the

Contract, extend to assumed liabilities with respect to contractual provisions.

- (g) Employees and, if applicable, Volunteers must be included as Additional Insured.
- (h) Employers' Liability (or confirmation that all employees are covered by Worker'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) 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.

7.21.2 Marine Liability Insurance

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

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

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

- (a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
- (b) Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Transport Canada 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

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.

7.22 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.

7.23 Government Supplied Material

The following equipment will be Government Supplied Material (GSM) and must be installed, mounted, set-up, fully functional and in accordance with the manufacturer's installation recommendations:

1. Powering will be a single Mercury 200 hp Optimax Jet, Government Supplied Material (GSM).

N° de l'invitation - Solicitation No.

F7044-180032/A

N° de réf. du client - Client Ref. No.

F7044-180032

N° de la modif - Amd. No.

File No. - N° du dossier

XLV-8-41186

Id de l'acheteur - Buyer ID

xlv588

N° CCC / CCC No./ N° VME - FMS

ANNEX – A – REQUIREMENT



Fisheries and Oceans
Canada

Pêches et Océans
Canada



FISHERIES AND OCEANS CANADA

ANNEX A

**Technical Statement of Requirement
Requisition number F7044-180032 for one (1)
5.6 to 5.8 metre Open Aluminum Jet Boat and Trailer**

29 November 2018, Revision 0

**TRANSPORT CANADA MARINE SAFETY BRANCH (TCMSB)
TP1332 APPROVED CONSTRUCTION**



Document Control

Record of Amendments

#	Date	Description	Initials
A	8 May 2018	Initial draft	GA
0	29 Nov 2018	As agreed with the end user, 2 nd loading condition added, self-draining cockpit deleted & minor wording changes. Issued for solicitation	GA

TABLE OF CONTENTS

INTERPRETATION	3
ABBREVIATIONS	3
LIST OF REFERENCE DOCUMENTS	4
1. OVERVIEW	5
1.1. REQUIREMENT	5
2. DESIGN AND CONSTRUCTION REQUIREMENTS	5
2.1. DESIGN CATAGORY	5
2.2. ERGONOMIC & OTHER DESIGN CONSIDERATIONS	5
2.3. STRUCTURAL STRENGTH & VIBRATION	5
2.4. STANDARDS	6
2.5. EQUIPMENT PROTECTION	6
2.6. SITE CLEANLINESS	6
2.7. MATERIALS, GENERAL	6
2.8. FASTENERS	7
3. OPERATIONAL REQUIREMENTS	7
3.1. PERFORMANCE	7
3.2. ENVIRONMENTAL CONDITIONS	8
3.3. LAUNCHING, RECOVERY & TRANSPORTATION	8
3.4. BEACHING	8
3.5. GROSS TONNAGE	8
4. VESSEL CONFIGURATION	8
4.1. VESSEL PARTICULARS	8
4.2. DISPLACEMENT & LOADING	9
4.3. HULL FORM	9
4.4. GENERAL ARRANGEMENT	9
5. STRUCTURE	10
5.1. STRUCTURAL MATERIALS, ALUMINUM	10
5.2. HULL STRUCTURE	10
5.3. DECKS	11
5.4. STRUCTURAL OUTFIT	12
5.5. WELDING	12
6. HULL OUTFIT	13
6.1. WINDOWS, DOORS & HATCHES	13
6.2. CONSOLE	13
6.3. INTERIOR OUTFIT	15
6.4. EXTERIOR OUTFIT	15
6.5. MOORING & DECK EQUIPMENT	15
6.6. LIFESAVING & EMERGENCY EQUIPMENT	16
6.7. FLOATATION	16
7. PROPULSION & MECHANICAL SYSTEMS	16
7.1. PROPULSION	16
7.2. PROPELLER / IMPELLER	17
7.3. CONTROLS	17
7.4. ENGINE GAUGES & ALARMS	17
7.5. VERIFICATION OF INSTALATION	17

7.6.	ENGINE BREAK-IN	17
7.7.	STEERING SYSTEM.....	18
7.8.	PROTECTION OF CONTROLS	18
7.9.	FUEL SYSTEM	18
7.10.	FUEL TANK	19
7.11.	BILGE DRAINAGE & PUMPS.....	19
7.12.	VENTILATION	20
7.13.	KICKER MOTOR	20
7.14.	NOISE MITIGATION AND FIRE SUPPRESSION MEASURES	20
8.	ELECTRICAL & ELECTRONIC SYSTEMS.....	21
8.1.	GENERAL.....	21
8.2.	BATTERIES, CABLES & CHARGING SYSTEMS	21
8.3.	LIGHTING AND POWER SYSTEMS.....	22
8.4.	NAVIGATION LIGHTING	22
8.5.	NAVIGATION EQUIPMENT & ELECTRONICS.....	23
9.	PAINTING AND CORROSION PROTECTION	23
9.1.	GENERAL.....	23
9.2.	STANDARD COLOURS AND PRODUCTS	23
9.3.	UNDERWATER HULL	24
9.4.	HULL ANODES.....	24
10.	TESTS & TRIALS.....	24
10.1.	GENERAL.....	24
10.2.	TESTS	24
10.3.	SEA TRIALS	24
11.	DOCUMENTATION	26
11.1.	NATIONAL ASSET CODE	26
11.2.	BUILDER'S PLATE	26
11.3.	PRELIMINARY DATA PACKAGE.....	26
11.4.	FINAL DELIVERABLE DATA PACKAGE	27
12.	SHIPPING AND DELIVERY	27
13.	WARRANTY AND SERVICE PROVISIONS.....	27
13.1.	COMPONENTS AND EQUIPMENT SUPPORT	27
13.2.	SPARE PARTS	27
14.	TRAILER.....	28
14.1.	REQUIREMENT	28
14.2.	DOCUMENTATION	28
APPENDIX A.....		30
SMALL CRAFT / VESSEL TESTS & TRIALS SHEET		30
APPENDIX B.....		36
FINAL DELIVERABLE DATA PACKAGE.....		36

INTERPRETATION

- 1) The words “must” or “shall” or “required” or “mandatory”, wherever they appear in this Technical Statement of Requirement (TSOR) or referenced regulations, specifications standards or codes are to be interpreted as obligations on the Contractor in the performance of the Work within the Contract Price.
- 2) In the event that there is a discrepancy in requirement between this TSOR and the TP 1332 or other referenced regulations, specifications, standards or codes, then the higher standard will apply.
- 3) References given in rectangular brackets such as [7.3.2] refer to section, subsection and paragraph numbers within this TSOR.

ABBREVIATIONS

ABYC	American Boat and Yacht Council
AC	Alternating Current
ASTM	American Society for Testing and Materials
CA	Contracting Authority (As defined by the Contract)
CFM	Contractor Furnished Material
CSA	<i>Canadian Shipping Act</i>
CSA	Canadian Standards Association
COLREGS	Collision Regulations
DC	Direct Current
GPS	Global Positioning System
GSM	Government Supplied Material
IAW	In accordance with
IWO	In way of
IA	Inspection Authority - appointed by the Technical Authority (see Contract)
ISO	International Organization for Standardization
NWT	Non water tight
PVC	Polyvinylchloride
TA	Technical Authority (As defined by the Contract)
TCMS	Transport Canada Marine Safety
TSOR	Technical Statement of Requirements
UV	Ultraviolet
VHF	Very High Frequency
WMO	World Meteorological Organization

LIST OF REFERENCE DOCUMENTS

REFERENCE	TITLE
ASTM F1166-07	Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities
TP 1332	Construction Standards for Small Vessels
TP 13430	Standard For Tonnage Measurement of Ships
TP 14070	Small Commercial Vessel Safety Guide
ISO 12217	Small Boat – Stability and Buoyancy Assessment and Categorization
Canada Shipping Act	Small Vessel Regulations
Canada Shipping Act	Collision Regulations (COLREGS)
ABYC	American Boat and Yacht Council Standards
Canadian Standards Association (CSA) CSA W47.2-M1987	Certification of Companies for Fusion Welding of Aluminum
Canadian Standards Association (CSA) C22.2 No. 183.2-M1983 (R1999)	Standards for DC Electrical Installations on Boats
CT-043-EQ-EG-001-E	Canadian Coast Guard Welding Specification

1. OVERVIEW

1.1. REQUIREMENT

- 1.1.1. The Contractor must design, fabricate and deliver to the Delta, BC, one (1) 5.6 to 5.8 metre Open Aluminum Jet Boat and Trailer. Powering will be a single Mercury 200 hp Optimax Jet, Government Supplied Material (GSM).
- 1.1.2. The primary role of this vessel will be fisheries Stock Assessment. This involves operations in various river conditions including extensive work in shallow braided channels and fast flowing rapids. The boat is required to be capable of operating in up to class III Swiftwater (International River Rating) and in shallow draft (i.e. less than 6"). The boat will be frequently beached for loading and unloading.
- 1.1.3. The vessel will generally be launched and recovered from its trailer and operated in fresh water in the lower Fraser River, BC; however, it may be deployed to other locations in the region.

2. DESIGN AND CONSTRUCTION REQUIREMENTS

2.1. DESIGN CATAGORY

- 2.1.1. The vessel will generally be operated in protected waters but must comply with ISO Design Category C.

2.2. ERGONOMIC & OTHER DESIGN CONSIDERATIONS

- 2.2.1. The vessel must be designed and constructed for durability, ease of maintenance and repair, and be easily supportable by local commercial facilities and suppliers.
- 2.2.2. Hazardous operating conditions must be prevented by arranging machinery and equipment in a safe manner; providing guards for all electrical, mechanical and thermal hazards; and providing guards or covers for any controls that might be inadvertently activated by contact with personnel. Human engineering factors considered in design must include accessibility, visibility and readability, as well as considering:
 - 2.2.2.1. Crew comfort and efficiency for a range of physiques of individuals, both male and female, from approximately 5'-4 to 6'-4" in height; and also that,
 - 2.2.2.2. Crew will at times be wearing cold weather clothing and equipment belts which they must be able to access.
- 2.2.3. Ergonomic design criteria must be in accordance with ASTM F1166-07.

2.3. STRUCTURAL STRENGTH & VIBRATION

- 2.3.1. Structural strength: All structural components (hull, deck, seatings, etc.) must be of sufficient strength and rigidity to withstand the lateral and vertical impact-loading due to the operational requirements given in section [3] and for the ISO Design Category stated at [2.1].

Section 3 of TP1332 states that “structure must satisfy the requirements of section 713(2)(a) of the *Small Vessel Regulations*”.

Supporting calculations, or other materials, must be provided if so requested by the Technical Authority.

- 2.3.2. Vibration: The vessel and all components must be free of local vibration that could endanger personnel or damage the structure, machinery or systems, or interfere with the operation of the vessel, machinery or systems.
- 2.3.3. Resilient mounts: Equipment subject to vibration and also equipment which requires to be moved or relocated for stowage or transportation must be resiliently mounted to prevent vibration or rattling.

2.4. STANDARDS

- 2.4.1. The vessel must be designed, constructed, inspected, and certified to meet the requirements of the following standards, regulations and codes:
 - 2.4.1.1. Transport Canada Marine Safety Branch TP 1332 (current edition) Construction Standards for Small Vessels. This standard references ISO, ABYC and other standards covering structure, fuel, electrical, stability and drainage requirements;
 - 2.4.1.2. CSA C22.2 No. 183.2-M1983 (R1999) Standards for DC Electrical Installations on Boats and ABYC ‘E’ Electrical Standards; and,
 - 2.4.1.3. CT-034-EQ-EG-001-E Canadian Coast Guard Welding Specification, however additional standards, regulations and codes may be applicable, as noted elsewhere within this TSOR.

2.5. EQUIPMENT PROTECTION

- 2.5.1. The Contractor is responsible for the care of all equipment in their custody. All parts, especially those having working surfaces or passages intended for lubricating oil, must be kept clean and protected during manufacture, storage and assembly, including after installation. Equipment must at all times be kept clean, protected against dust, moisture or foreign matter, and must not be subject to rapid temperature changes or extremes in temperature.

2.6. SITE CLEANLINESS

- 2.6.1. During construction, all chips, shavings, refuse, dirt and water must be removed at the completion of the work shift or sooner. The Contractor must ensure measures are taken to avoid wear and damage incident to construction, and to prevent corrosion or other deterioration. Removal and disposal of copper wire cuttings in particular must be monitored. Equipment subject to freezing must be kept drained, except during test and trials.

2.7. MATERIALS, GENERAL

- 2.7.1. Unless stated otherwise, all components, equipment and material must be contractor furnished (CFM).
- 2.7.2. All materials must be corrosion resistant and suitable for use in a salt water environment, however:

- 2.7.2.1. Galvanized materials are unacceptable, unless specified; and,
- 2.7.2.2. Cadmium plate materials are unacceptable in any case.
- 2.7.3. Stainless steel type 316 or 316L must be used for all stainless steel applications, unless otherwise specified:
 - 2.7.3.1. Alloy 316L must be used for any welded underwater components; and,
 - 2.7.3.2. Some commercially manufactured marine fittings are available only in alloys 18-8 or 304, which will be acceptable only in the event that type 316 fittings are not available and that such fittings must not be fitted under water.
- 2.7.4. Where flexible connections are required for steering and fuel systems, suitable hose with permanently crimped detachable reusable type fittings must be used.
- 2.7.5. All materials which are normally subjected to sunlight must be resistant to degradation caused by ultraviolet radiation.
- 2.7.6. All materials and equipment must be stored, installed and tested in accordance with the manufacturer's guidelines, recommendations and requirements.

2.8. FASTENERS

- 2.8.1. All fasteners, clamps and fittings, must be stainless steel, excepting:
 - 2.8.1.1. If otherwise specified within this TSOR; or,
 - 2.8.1.2. If otherwise required by the equipment manufacturer; provided that,
 - 2.8.1.3. Where stainless steel is not used; fasteners, washers, fittings and parts must be of corrosion resistant material other than cadmium plate or galvanized.
- 2.8.2. No fastener may be directly threaded into aluminum. Separate washers, nuts and/or backing plates must be used as appropriate.
- 2.8.3. Fasteners subject to loosening under vibration must be secured, as applicable, by either; self-locking nuts, lock nuts, wired nuts or lock washers. Where nuts will become inaccessible after assembly of the vessel they must be captured or anchored to prevent backing off and to facilitate maintenance and reassembly.
- 2.8.4. Direct attachment of alloys containing copper to aluminum is not permitted except for a single electrical bonding strap.
- 2.8.5. Excepting the bonding strap [2.8.4], direct contact of electrolytically dissimilar metals is not permitted and must be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, or bushings of suitable insulating material.
- 2.8.6. Fasteners in deck traffic areas must be flush or countersunk to eliminate tripping and snagging hazards.

3. OPERATIONAL REQUIREMENTS

3.1. PERFORMANCE

- 3.1.1. Unless noted otherwise, performance is stated for the Normal Loading Condition [4.2.2] operating in **fresh water**, calm sea state and no wind.

The vessel is expected to have a service life of at least 12 years, with an expected usage of between 150 to 200 hours per year, and to meet the following minimum operational requirements:

- 3.1.2. Maximum speed: not less than 35 knots;
- 3.1.3. Cruising speed: 25 knots;
- 3.1.4. Capable of steering within 15 degrees from any heading in the maximum wind force and maximum sea state given at section [3.2] below;
- 3.1.5. Steer and manoeuvre effectively on any heading at 3 knots in calm water and wind of 16 knots;
- 3.1.6. Operate in depths of 2 ft; and,
- 3.1.7. Able to transit shallows, i.e. less than 6" depth, including crossing gravel bars.

3.2. ENVIRONMENTAL CONDITIONS

- 3.2.1. The vessel must be capable of operating day or night in the following conditions:
- 3.2.2. Average ambient air temperature range: -5°C to + 30°C;
- 3.2.3. Average water temperature: 0°C to +20°C;
- 3.2.4. Significant wave heights up to 2.0 meters; and,
- 3.2.5. Wind speeds of 22 to 27 knots (Beaufort Force 6).

3.3. LAUNCHING, RECOVERY & TRANSPORTATION

- 3.3.1. The vessel must be readily road transportable on a trailer and must be able to be launched and recovered by trailer at diverse launching situations, as noted at requirement [1.1.3].
- 3.3.2. Lifting bridle: not required.

3.4. BEACHING

- 3.4.1. Capable of beaching/transiting sand or gravel bars at speeds up to 5 knots without damage to the hull.
- 3.4.2. Capable of beaching on hard (stone or concrete) surfaces at speeds of up to 3 knots without damage to the hull.

3.5. GROSS TONNAGE

- 3.5.1. Tonnage, in accordance with TP 13430 Part 3, must not exceed 5.00 GT.

4. VESSEL CONFIGURATION

4.1. VESSEL PARTICULARS

- 4.1.1. Length, not including non-essential removable components: 5.6 to 5.8 metres.
- 4.1.2. Extreme breadth over side guards must not exceed: 2.44 metres.
- 4.1.3. Breadth at upper sheer: 7'-2" to 7'-4".

- 4.1.4. Breadth at chine: 6'-4" to 6'-8" (must fit between wheel fenders of trailer).
- 4.1.5. Freeboard: Must be sufficient to comply with ISO 12217, in the Maximum Load Condition [4.2.3].
- 4.1.6. Hull depth to cockpit sole: about 1'-2" to 1'-4".
- 4.1.7. Side deck height above cockpit sole: 760 mm.
- 4.1.8. The shear line may rise forwards to present a pleasing line.

4.2. DISPLACEMENT & LOADING

- 4.2.1. Displacement approximately: 1600 to 1800 kg, in the Normal Load Condition.

4.2.2. Normal Load Condition:

- 4.2.2.1. Complement: 2 persons x (82.5 + 17.5) kg = 200 kg;
- 4.2.2.2. Fuel: 220 litres = 163 kg;
- 4.2.2.3. Equipment: 50 kg; and,
- 4.2.2.4. Cargo = 50 kg.

4.2.3. Maximum Load Condition:

- 4.2.3.1. Complement: 5 persons x (82.5 + 17.5) kg = 500 kg;
- 4.2.3.2. Fuel: 220 litres = 163 kg;
- 4.2.3.3. Equipment: 100 kg; and,
- 4.2.3.4. Cargo = 200 kg.

4.3. HULL FORM

- 4.3.1. The hull is to be "V" style monohull, having a 10 to 12 degree deadrise at the transom, constant to about ½ L and then increasing to the stem.
- 4.3.2. Hull shape must not impede water flow to the propulsion unit(s) and must direct spray and waves away from onboard personnel.
- 4.3.3. A "delta" plate must be fitted at the stern to facilitate installation of the jet drive.
- 4.3.4. The main chine must be configured with a 6 to 8 degree reverse flat between 4 and 6 inches wide, depending on experience of the Contractor and as agreed with the TA, which will fair out to the stem.
- 4.3.5. Bottom spray/lift strakes: 1 per side at about ¼ breadth P&S running from near the stem to near the transom and configured with a 2 to 4 degrees reverse flat about 3 inches wide.

4.4. GENERAL ARRANGEMENT

- The vessel must be an open cockpit, aluminum jet-boat with a step-through windshield leading to a fore-deck.
- 4.4.1. Wind screen and console [6.2] must be set well forward to provide a large open cockpit/working area aft.

- 4.4.2. A foredeck cockpit must be provided about 14" deep. A flush deck anchor locker, fitted with a hinged cover plate, must be provided forward of the cockpit. Both the cockpit and anchor locker must be self draining overboard.
- 4.4.3. Console must be provided with seating for 2 persons.
- 4.4.4. Main cockpit aft of the console must be unobstructed excepting for the engine box aft. The cockpit may be drained to the bilge.
- 4.4.5. Bulwarks [6.4.1] and guard rails [6.4.2] must be fitted around the cockpit in compliance with TP 1332 (3.5.2.5).

The aft bulwark must provide reserve buoyancy and space for mechanical & electrical components and/or stowage and must be provided with weathertight/lockable covers.
- 4.4.6. A staff-mast may be required to mount navigation lighting [6.2.3].
- 4.4.7. A radar arch or other superstructure is not required.
- 4.4.8. Stern platform must be provided to access the "stomp grid" [7.1.5] and, if the overall length would exceed 5.99 metres, must be removable (bolted).

5. **STRUCTURE**

5.1. **STRUCTURAL MATERIALS, ALUMINUM**

All structural aluminum must be marine grade, corrosion resistant and suitable for application in salt water.

- 5.1.1. Plating generally must be 5083 H116/321, 5086 H116/321 or 5456 H116/321.
- 5.1.2. Interior bulkheads and flanged plate stiffeners may be 5052 H322.
- 5.1.3. Special application of higher strength 6061 T6 plate may be approved by the Technical Authority.
- 5.1.4. Extrusions must be either 6061 T6 or 6063 T6.
- 5.1.5. Weld filler material must be compatible with the alloys to be joined, typically grade 5356, or as specified by the Contractor's Welding Engineer in accordance with their CSA W47.2 certification and approved by the TA.
- 5.1.6. Mill certificates for all structural aluminum must be provided to the satisfaction of the IA prior to commencement of fabrication.

5.2. **HULL STRUCTURE**

The Contractor must comply with the structural arrangement described below; provided however that, the Contractor may propose alternative arrangements for consideration and approval by the TA.

- 5.2.1. Minimum acceptable thickness of any hull structural component is 1/8".
- 5.2.2. Bottom Plate: Hull bottom and chine plating must be minimum 3/16". The reverse chine must be a formed part of the hull, not an external attachment.

- 5.2.3. Delta Plate: A $\frac{1}{4}$ " delta plate must be fitted at the stern, as noted at [4.3], reinforced to $\frac{3}{8}$ " or $\frac{1}{4}$ " 6061 T6 plate IWO the jet installation.
- 5.2.4. Bottom must be sheathed with UHMW $\frac{1}{2}$ " thick. Sheathing from stem to midships must be not less than 46" wide (23" P & S) and from midships to stern must be not less than 23" wide (11 $\frac{1}{2}$ " P & S). Sheathing must be thru-bolted using an approved water-proof method with $\frac{5}{16}$ " diameter SS bolts space not less than 6" around the perimeter and 12" in the interior.
- 5.2.5. Side plating $\frac{5}{32}$ ", must be suitably stiffening by any combination of:
- 5.2.5.1. Embossed "strakes"; and/or,
 - 5.2.5.2. Horizontal storage/structural shelf; and/or,
 - 5.2.5.3. Vertical framing; and,
- A stowage/structural shelf must be provided at about $\frac{1}{2}$ height from transom to about $\frac{1}{4}$ fwd of midships P&S [6.3.2].
- 5.2.6. Transom: Plating must be minimum $\frac{3}{16}$ " supported by brackets integrated with the bottom stringers and engine mounts. In way of the engine(s) & Jet:
- 5.2.6.1. Transom plating in way of jet installation must be increased to not less than $\frac{1}{4}$ " and suitably stiffened; and/or,
 - 5.2.6.2. A sandwich style construction may be proposed for consideration by the TA.
- 5.2.7. Hull bottom internal structure must provide a system of longitudinal and transverse structure sufficient for the intended service.
- 5.2.8. Longitudinal Structure:
- 5.2.8.1. A center vertical keel running from the stem/chine intersection to the delta plate, or as far as practicable: FB $1\frac{1}{4} \times 3$ ".
 - 5.2.8.2. One (1) full depth girder or trussed longitudinal or similar structure must be fitted per side to provide general strength; minimum $\frac{5}{32}$ " thick at shell.
 - 5.2.8.3. Bottom Shell Longitudinals: The bottom shell must be suitably supported with stiffeners spaced not greater than 10.5" (10" measured horizontally). The minimum web thickness must be $\frac{5}{32}$ " excepting that flat bar stiffeners must be not less than $\frac{3}{16}$ " thick.
- 5.2.9. Transverse Structure: A system of bulkheads, floors and/or web frames must be fitted to provide general strength to the vessel spaced to suit the allowable spans of the bottom shell longitudinals and/or requirement of the deck structure, but must not be spaced greater than 48" in any case.
- 5.2.10. Limber holes: Bottom internal structure must be fitted with suitable limber holes to assure free drainage to bilge pumps.
- 5.2.11. Lightening and Access Holes: NWT internal structure must be fitted with lightening and access holes to reduce weight where appropriate.

5.3. DECKS

5.3.1. Main Deck & Cockpit Sole

Deck plating must be fully welded to the sheer plate (or margin bar if so fitted) and to main below deck structure.

- 5.3.2. Cockpit sole plating must be minimum **5/32"** and supported by main structure, as described at sections **[5.2.8]** & **[5.2.9]**, and locally stiffened either longitudinally or transversely.
- 5.3.3. Removable access plates bolted in place on gaskets, or approved hatches, must be provided to facilitate inspection and repairs of below decks equipment including any tanks.
- 5.3.4. The upper edge of side plating must be fully welded to the bulwark cap or main deck or extruded gunwale cap.
 - 5.3.4.1. Bulwark cap or deck side plate must be not less than **5/32 x 6** and with an "L" formed inwale not less than **3 x 1.5 x 5/32**. Bulwark tops must be free of obstructions or snagging hazards.
 - 5.3.4.2. Fore-deck plating must be not less than **1/8"**, suitably cambered and stiffened.

5.4. STRUCTURAL OUTFIT

General: The following items must generally be welded into the structure, unless otherwise noted; however, bolted alternatives may be proposed for acceptance by the IA.

This list is not exhaustive, additional items may be detailed elsewhere in the TSOR or be logically required to complete the vessel.

- 5.4.1. Sheer Guard: Not required.
- 5.4.2. Side Guard: Not required.
- 5.4.3. Bow Eye: A non-protruding eye must be designed and incorporated into the stem about **6 inches** above the waterline. Minimum **PL ½** pierced and reinforced with two (2) stainless steel grommets suitable for both towline and trailering hook.
- 5.4.4. Stern eyes: Two (2) eyes must be mounted on the transom, minimum **PL 3/8**, each pierced and reinforced with one (1) stainless steel grommet, suitable for trailer tie-downs.
- 5.4.5. Tow Post: Not required.
- 5.4.6. Fuel Tank(s): Must be separate tank(s) not forming any boundary of the hull structure, capacity and other details stated at **[7.10]**.
- 5.4.7. Consoles: The console/control station is described at **[6.2]**.
- 5.4.8. Mast: A structural mast or radar arch is not required. See **[8.4]** for lighting staff.
- 5.4.9. An under deck conduit, or otherwise well protected routing, is required from the console to the aft bulwark to fit motor controls and cabling, as per **[7.8]**. Unless self draining, any low point must be drained to bilge.
- 5.4.10. Two (2) hull anode or transducer mounting brackets must be fitted to the transom below the waterline.

5.5. WELDING

- 5.5.1. The Contractor and any subcontractor performing welding must be certified to the Canadian Standards Association CSA W47.2-M1987, latest revision.
- 5.5.2. All welding must be in compliance with the Canadian Coast Guard Welding Specification, CT-043-EQ-EG-001-E, latest revision, excepting that the following paragraphs are revised as follows:
 - 5.5.2.1. Para 5.6.1 Monthly Facility Audit: Delete requirement of this paragraph; and,
 - 5.5.2.2. Para 5.6.10.1 Inspection Procedures: In the first sentence delete the words "by Level 3 personnel".

6. HULL OUTFIT

6.1. WINDOWS, DOORS & HATCHES

- 6.1.1. Windscreen is described at [6.2.1].
- 6.1.2. Equipment and inspection hatches/doors are described elsewhere.

6.2. CONSOLE

The Contractor must design, fabricate and install a control console, including seating, to be located at about ¼ L forward of midships.

The Contractor must consider the impact of ergonomic design factors [2.2] when preparing their design; however, the console and windscreen are to be optimized to suit a 5'-10" tall operator either standing or sitting. The structure must be sufficiently robust and vibration free for the installation of all relevant equipment.

The Contractor must provide accurate drawings of the Console, for approval of the IA, prior to commencement of fabrication.

6.2.1. Wind Screens

- 6.2.1.1. The forward windscreen must be a 3 panel type fitted with 5/16" safety glass which must either be set in neoprene/rubber "H" moulding or aluminium framed; side screen windows must be ¼" safety glass similarly mounted.
- 6.2.1.2. Central panel of windscreen must be hinged forward to port.
- 6.2.1.3. Windscreens P & S must be fitted with pantograph style variable speed wipers and variable speed defogger fans.
- 6.2.1.4. Grabs: Top edge and aft/side edges of wind screen must be provided with hand grabs.

6.2.2. Exterior Equipment

- 6.2.2.1. Navigation lighting, see [8.4].

6.2.3. Console Equipment:

The helmsman's station must be on the starboard side of the console. In this subsection "centerline" means "center-forward vision from the helmsman's

normal sitting position". The console must be fitted with equipment detailed in sections [7] & [8] as follows:

- 6.2.3.1. Steering wheel: must be mounted on centerline [7.7];
- 6.2.3.2. Magnetic compass: must be mounted as near to centerline as practicable, and with best all-around sighting [8.5.1];
- 6.2.3.3. Engine controls: must be mounted to the starboard side of the wheel [7.3];
- 6.2.3.4. Engine gauges package: generally to be mounted above and/or to each side of the wheel [7.4];
- 6.2.3.5. The following controls and lighting switches must be located conveniently for the helmsman:
 - 6.2.3.5.1. Horn;
 - 6.2.3.5.2. Compass light and dimmer;
 - 6.2.3.5.3. Gauge lighting and dimmer;
 - 6.2.3.5.4. Navigation lighting;
 - 6.2.3.5.5. Bilge pump switch and high level alarm;
 - 6.2.3.5.6. Windshield de-fogger controls (if so fitted);
 - 6.2.3.5.7. Windshield wiper and washer (if so fitted);
 - 6.2.3.5.8. Overhead red/white lighting (if so fitted);
 - 6.2.3.5.9. Spot lights (if so fitted);
 - 6.2.3.5.10. Radio (if so fitted)
 - 6.2.3.5.11. Depth finder (if so fitted); and,
 - 6.2.3.5.12. Any interior or exterior lighting affecting the helmsman's night vision.
- 6.2.3.6. Console must be fitted with the following power points:
 - 6.2.3.6.1. Two (2) USB power point; and,
 - 6.2.3.6.2. Two (2) 12v power point.
- 6.2.3.7. A storage space (glove box), about 1/2 cubic foot, must be provided on the aft face of the dash (port side) with weather tight lockable closure.
- 6.2.3.8. Hand grab to be fitted to the port side console face.

6.2.4. Console Chairs:

The console/control station must include two (2) robust, suspension mounted, seats. The control station must include two (2) robust, suspension mounted, seats. Features must include:

- 6.2.4.1. Heavy duty shock absorber suspension;
- 6.2.4.2. $\frac{3}{4}$ height back, foldable arm rests, seat slide and height adjustment; and,
- 6.2.4.3. Upholstery to be charcoal grey or black/grey matrix.

Note: Grammer MSG85/722 (Part # 28-6100HD) seat complies with the above requirements.

- 6.2.4.4. Chairs to be installed on raised stowage boxes (open faced) and provided with a foldable, adjustable foot rest.

6.2.5. Canvas Covers:

- 6.2.5.1. Foldable cover: Must be fitted with a removable 6' stand-up top with aft drop curtain (with associated frame and hull mounts) to provide cover from sun and rain during operation.
- 6.2.5.2. Cockpit cover: Must be provided with a separate cover suitable for stowage and transportation, compatible with the folding cover in its stowed position; must cover from the top of the wind screen and around the entire cockpit area..

6.3. INTERIOR OUTFIT

- 6.3.1. Fore-peak stowage: Fore-peak must be arranged for open stowage as follows:
 - 6.3.1.1. There must be either a raised floor in this area or a coaming to prevent free flooding into the fore-peak; Access opening is sufficient (no door).
 - 6.3.1.2. Stowage rack to be provided (expanded metal shelf is acceptable) mounted at half height.
- 6.3.2. Stowage shelves must be provided under the side decks [5.2.5].

6.4. EXTERIOR OUTFIT.

- 6.4.1. Bulwarks: See side plating [5.2.5] must be 760 mm above the cockpit sole.
- 6.4.2. Guard rails: Not fitted.
- 6.4.3. Grab rails: Low profile grab rails must be fitted P & S sides of the fore-deck.
- 6.4.4. Wind screen grabs [6.2.1].

6.5. MOORING & DECK EQUIPMENT

- 6.5.1. Anchor: One (1) 10 pound, pivoting fluke, galvanized steel anchor: Fortress model FX16 (or equivalent) must be supplied together with:
 - 6.5.1.1. Anchor rode comprising: suitable crown shackle; 5 metres 1/4" plain link galvanized steel chain with connecting shackle if required; 10 metres 3/8" twisted nylon rope with hard eye spliced in place and connecting shackle.
- 6.5.2. Mooring lines: four (4) - 20 feet 1/2" braided nylon line with spliced eye.
- 6.5.3. Mooring cleats: Five (5) weld on cleats are required, suitable for 5/8" fibre rope, which must be installed on the bulwark tops as follows:
 - 6.5.3.1. One (1) near the bow on centreline also provided with an anchor rode fairlead on the stem head;
 - 6.5.3.2. Two(2) mounted P&S about 5 ft aft of the bow, for example at mid length of the windshield side screens; and,
 - 6.5.3.3. Two(2) mounted P&S about 1 ft fwd of the stern.
- 6.5.4. Working Deck Tie-downs: Four (4) in total recessed eyes must be attached to the deck in the working area in such a manner that they do not pose a tripping or snagging hazard when not in use.
- 6.5.5. Lifting bridle: Not required.
- 6.5.6. Lifting Eyes: Not required.

6.6. LIFESAVING & EMERGENCY EQUIPMENT

6.6.1. The following items (see TP14070 Tables 5-1 & 5-2 for regulatory details) must be supplied and provided with stowage or securing arrangements appropriate for each item. All fittings must be heavy duty, corrosion resistant stainless steel. All items must be readily accessible:

- 6.6.1.1. One (1) Marine emergency first aid kit;
- 6.6.1.2. One (1) Reboarding device;
- 6.6.1.3. One (1) Lifebuoy attached to buoyant heaving line at least 15 metres long;
- 6.6.1.4. One (1) Watertight flashlight complete with spare batteries and bulb;
- 6.6.1.5. Three (3) Type C Red Flares;
- 6.6.1.6. Two (2) Paddles;
- 6.6.1.7. One (1) Manual bilge pump (built in to evacuate the hull below deck), Whale Gusher type;
- 6.6.1.8. One (1) Air horn;
- 6.6.1.9. One (1) Fire extinguisher (Class 1A; 5B: C), "marine listed";
- 6.6.1.10. One (1) Boat hook, 8 feet long, retractable; and,
- 6.6.1.11. One (1) Transport Canada approved radar reflector.

(Note: The final 2 items are not from TP14070)

6.6.2. See [6.5] for the anchor; [8.5] for navigation lights and the compass.

6.6.3. Lifejackets will be provided GSM by the end users.

6.7. FLOATATION

6.7.1. Sufficient floatation must be fitted into the hull to comply with TP 1332 (4.4.2).

7. PROPULSION & MECHANICAL SYSTEMS

7.1. PROPULSION

7.1.1. Powering will be a single (1) Mercury 200 hp Optimax jet, Government Supplied Material (GSM), Contractor installed with all related components for vessel final operation in accordance with the requirements of this TSOR.

7.1.2. Engine rigging: The Contractor must determine and supply all required subsystems and components, including:

- 7.1.2.1. Engine manufacturer's approved accessories and equipment;
- 7.1.2.2. Engine controls, alarm and steering systems;
- 7.1.2.3. Installation hardware; and
- 7.1.2.4. Consumables.

7.1.3. Installation: The engine and all related gear must be installed, mounted and connected by the Contractor, all in accordance with the engine manufacturer's recommendations.

7.1.4. Equipment and components must not be used, or trials performed on the engines that would, in any way, void the engine manufacturer's warranty.

7.1.5. Jet intake skid plate (QT-100) and 'EZ Clean' stomp grate to be incorporated into the hull structure.

7.1.6. Noise mitigation and fire suppression measures: See [7.14].

7.2. PROPELLER / IMPELLER

7.2.1. Contractor must supply and install a stainless steel Impellor.

7.2.1.1. Model number, including pitch etc., must be recorded in the trials record.

7.2.2. Contractor to supply and install a stainless steel wear ring.

7.3. CONTROLS

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

7.3.2. Engine package must incorporate a lanyard style automatic shutdown feature (kill switch) for the engines, to be mounted near the ignition switch.

7.4. ENGINE GAUGES & ALARMS

7.4.1. Contractor must provide the standard engine gauges package recommended by the engine manufacturer, which must include, as a minimum, the following gauges:

7.4.1.1. Tachometer;

7.4.1.2. Voltmeter;

7.4.1.3. Trim/tilt gauge; (Not applicable)

7.4.1.4. Cooling water temp. gauge;

7.4.1.5. Water pressure gauge;

7.4.1.6. Fuel gauge; and,

7.4.1.7. Hour meter.

7.4.2. Monitoring system for the engine(s) must include the following alarms:

7.4.2.1. Oil level gauge, for the remote tank;

7.4.2.2. Coolant flow alarm, if applicable;

7.4.2.3. Engine overheat/high temperature alarm; and,

7.4.2.4. Engine space high temperature alarm.

7.4.3. Console mounted gauges and displays must be fitted with dimmable lighting.

7.5. VERIFICATION OF INSTALATION

7.5.1. Installation of the motors, controls, lubrication and fuel systems, manometers and battery connections, are to be verified by an authorized technician. The motors are to be started by the authorized technician, who must provide a written report with a copy for the Technical Authority.

7.6. ENGINE BREAK-IN

- 7.6.1. The Contractor is to respect the engine manufacturer's break-in procedures and must have the appropriate authorized technician present during the break in period to resolve any issues.

7.7. STEERING SYSTEM

- 7.7.1. The steering system must be remote hydraulic with self-contained oil reservoir and have replaceable seals on the rams, unless the engine manufacturer requires some alternate steering arrangement. The system must be capable of handling the horsepower of the vessel [7.1].
- 7.7.2. Hydraulic hoses must be of sufficient size and length to prevent pulsing. Hoses must be suitable for use in an exposed marine environment complete with stainless steel fittings.
- 7.7.3. Steering systems must be power hydraulic with a maximum of 1 turn from hard over to hard over; system must be compatible with the selected motor/drive manufacturer and suitable for the horsepower.
- 7.7.4. All hydraulic steering hoses must be routed below deck and all hoses must be routed so that there are no pinch points on the hoses.
- 7.7.5. The wheel / console connection must be of robust construction, to eliminate fore and aft or lateral movement of wheel / steering shaft fixture.
- 7.7.6. The steering wheel must be robust enough that during rough water operations there is no flexing of the wheel and the wheel should be padded to provide a comfortable non-slip surface for the operator to grip. (Momo Marine steering wheels meet these requirements).

7.8. PROTECTION OF CONTROLS

- 7.8.1. All control cables, electrical wiring for the motors and the steering hydraulic hoses are to be installed in UV resistant plastic pipes (LOOM) or equal. These pipes are to be installed in such a manner as to ensure that no cable is immersed in water.

7.9. FUEL SYSTEM

- 7.9.1. The complete fuel system must be supplied, installed, labeled and tested in accordance with Section 7 of TCMSB TP 1332 and ABYC specifications.
- 7.9.2. System must comply with CEPA requirements.
- 7.9.3. The fuel system must include a separate Racor filter/separator with see-thru bowl for each engine, suitable for the volume rate of flow of the engine(s).
- 7.9.4. All fuel valves must be readily accessible and labeled as per TCMSB TP 1332.
- 7.9.5. Locking Fuel filler must be located in an accessible vented space designed to catch fuel from over filling or blow back such that fuel does not enter the vessel or spill overboard, as per TCMSB TP 1332 requirements.
- 7.9.6. Remote fuel shutoff maintenance valves are to be installed at filter/ manifold system and be easily accessible by vessel operators.

- 7.9.7. Shut-off valves must be installed in accordance with TP1332 and ABYC requirements, remote from the fuel tank(s) and engine compartments. Labeled as per TCMSB TP 1332 requirements.
- 7.9.8. The fuel tank(s) must be equipped with an anti-syphon valve installed on the suction.
- 7.9.9. Fuel tank vent pipe(s) are to be equipped with a non-return check valve(s).

7.10. FUEL TANK

- 7.10.1. The vessel must be fitted with one (1) fuel tank having a minimum total capacity of **two hundred and twenty (220)** litres, after deducting expansion allowance.
- 7.10.2. Tank(s) may be of composite semi-rigid materials, such as GRP, or aluminum. If non-metallic they must be in compliance with CEPA and approved by the TA. If aluminum, then the shell must be not less than **PL 5/32**, stiffened as necessary.
- 7.10.3. Tank(s) must be provided with vertical swash plates across any horizontal dimension greater than **30 inches**, or similar slosh dampeners must be provided.
- 7.10.4. Fuel Tank(s) and system must be hydrostatically tested to the overflow height and labelled per the requirements of TP1332 and tested to 3 psig as per requirements of CEPA.
- 7.10.5. Fuel tank(s) must be fitted with fuel level/capacity sender unit and a gauge on the dash of the console for the operator.
- 7.10.6. The fuel tank(s) is/are to be equipped with anti-siphon valve(s) installed on motor inlet provided the flow rate will meet the manufacturer's requirement.
- 7.10.7. In the event that the vessel is fitted with two (2) fuel tanks, then the system must be equipped with selection or cross-over valves to allow each engine(s) to procure fuel from any tank. These valves are to be clearly identified and easily accessible.
- 7.10.8. Fuel Tank Installation: Must be installed below decks about amidships, or to minimize changes in trim. The fuel tank(s) must not be welded into position; they must be set on resilient material and bolted onto the structure such that they can be readily removed in the event of major maintenance and must be electrically grounded.

7.11. BILGE DRAINAGE & PUMPS

- 7.11.1. GENERAL: Any forward water retaining compartment without pump must have a piped drain to the aft bilge with a stainless steel ball valve. The valve must be readily accessible for testing or draining the forward bilge to the aft pump.
- 7.11.2. An electric bilge pump with 2000 gph capacity must be fitted in the main hull or largest watertight division as well as a fixed manual operated bilge pump of the diaphragm type. The bilge pump(s) must be located so that they take suction from the lowest point of the hull. Piping must be installed which will allow the bilge pump(s) to discharge directly overboard. Any additional watertight division of the hull will be serviced by a bilge pump of 1500 GPH capacity. The wire gauge for all bilge pumps must be a minimum of 10 gauge.

- 7.11.3. An automatic level sensor control must be fitted that turns on the electric bilge pump (Non-Pedal type) when water is present in the bilge. The electric bilge pump control switch must be wired directly from the battery and provided with an individual resettable fuse (breaker) and a 2 position switch located on the operator's console, with settings for 'momentary on' and 'automatic' operation. An indicator light must be provided at the control that lights when the bilge pump is operating.
- 7.11.4. High water alarm for the engine installation space and every other space serviced by a bilge pump.
- 7.11.5. Hull drainage: A stainless steel threaded plug must be provided in the lowest point to drain the hull when out of the water.
- 7.11.6. Valves and handles must be made of non-corroding materials and must be located where they are readily accessible for operation, maintenance or removal.
- 7.11.7. A separate manual bilge pump must be installed as per [6.6.1].

7.12. VENTILATION

- 7.12.1. Powered ventilation must be provided to enclosed spaces in compliance with TP 1332 (6).

7.13. KICKER MOTOR

- 7.13.1. Not required.

7.14. NOISE MITIGATION AND FIRE SUPPRESSION MEASURES

The following noise mitigation measures must be taken with respect to the inboard engine installation:

- 7.14.1. Manufacturer approved or Custom mufflers must be installed. Back Pressure must be within 0.94-1.50 PSI measured in accordance with Exhaust System Specifications for the particular engine. The IA must witness the pressure test.
- 7.14.2. The engine box must have fire retardant sound damping sufficient to allow operators to communicate effectively while vessel underway. Technicon Acoustics VBFF-321-31-AR-00 or equivalent.
- 7.14.3. Motor mounts to address vibration isolation.
- 7.14.4. Appropriate gasket seal around the entire engine box.
- 7.14.5. The transom must be closed in with sound insulated plywood panels, the transom and hull sides within the transom must be sound insulated.
- 7.14.6. Every effort must be made to achieve sound levels of 90 db, measured at the operator's console with the boat operating at cruise 4000 rpm, in a normal load condition.
- 7.14.7. Top of the engine box must be fitted with a seat cushion (colour charcoal). Grab rails must be fitted on the engine box P & S suitable for passengers in a seated position.

- 7.14.8. Provision must be made to discharge a portable fire extinguisher directly into the engine box IAW TP1332 (10.4.1).

8. ELECTRICAL & ELECTRONIC SYSTEMS

8.1. GENERAL

- 8.1.1. The electrical system design, component selection and installation must be in accordance with Canadian Standards Association C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats", and TP1332 and/or ABYC 'E' as referenced by TP1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications
- 8.1.2. Twelve Volt (12V) DC distribution system must be provided to power the engine starting and service loads including:
- 8.1.2.1. Navigation lights;
 - 8.1.2.2. Exterior Lighting;
 - 8.1.2.3. Navigational equipment;
 - 8.1.2.4. Instrumentation;
 - 8.1.2.5. Bilge Pumps;
 - 8.1.2.6. Electronics;
 - 8.1.2.7. Communications; and,
 - 8.1.2.8. Ancillary Items
- 8.1.3. All electrical equipment must be readily accessible for performing maintenance.
- 8.1.4. All electrical equipment and switches must be labelled.
- 8.1.5. All electrical conductors and ground wires must be labelled at both ends.

8.2. BATTERIES, CABLES & CHARGING SYSTEMS

- 8.2.1. Batteries must be marine grade, 12 V, deep cycle maintenance free, glass mat or gel type (no custom batteries).
- 8.2.1.1. One (1) dedicated starting battery must be provided for each engine, sufficient to the engine manufacturer's specifications.
 - 8.2.1.2. Noe (1) house batteries must be provided sized to suit the service loads on the vessel, but sufficient to start the largest engine.
- 8.2.2. Batteries must be cross connected with selector/disconnect switches permitting any engine to be started from any combination of batteries.
- 8.2.3. Battery switches must be Certification Agency, (CE, CSA, USCG, etc.) approved and must be mounted to prevent snagging or accidental switching.
- 8.2.4. Battery compartment must be weather tight and fitted with a suitable means of gas venting including for 'sealed' batteries.
- 8.2.5. Breaker panels to be appropriately sized for the equipment detailed in this TSOR with a minimum of two (2) spares.

- 8.2.6. All fitted electrical equipment must be capable of operating simultaneously with any other fitted electronics equipment without causing interference to any electronic equipment or to the magnetic compass.
- 8.2.7. Cables for all electrical distribution must be ample in size for the particular service, of marine grade tinned boat cable.
- 8.2.8. Cables must be grouped into wiring harnesses wherever possible. All wiring harnesses must be routed through protective conduit pipe. Where practical, cables and conductors must be supported with clamps or straps at least every 18 inches on horizontal runs and every 14 inches on vertical runs.
- 8.2.9. Cabling / conductors passing through watertight boundaries, decks, bulkheads or other exposed surfaces must be installed to maintain watertight integrity of the structure. Cable entry into watertight enclosures must be through watertight marine glands of suitable size.
- 8.2.10. Cabling / conductors passing through structures without watertight glands, must be protected against chafing by the use of abrasive resistant grommets.
- 8.2.11. Routing cables through foamed spaces must be avoided wherever possible. Cables that must be routed through foamed spaces must be run in PVC conduit pipe. The pipe must be arranged in a manner that prevents water from becoming entrapped in the pipe.
- 8.2.12. PROTECTION OF CONTROLS: As per [7.8].

8.3. LIGHTING AND POWER SYSTEMS

- 8.3.1. LED lighting must be used where available.
- 8.3.2. All lights must have individual switches.
- 8.3.3. The console must be provided with the following lighting and equipment:
 - 8.3.3.1. Two (2) remote 12V marine grade accessory plugs;
 - 8.3.3.2. Two (2) USB charging ports; and,
 - 8.3.3.3. Two (2) sets overhead dimmable red/white lights.
- 8.3.4. Shore power system: Not required.

8.4. NAVIGATION LIGHTING

- 8.4.1. Vessel must be provided with permanently fitted navigation lights in compliance with the Collision Regulations, as applicable to the class and size of vessel, as follows:
 - 8.4.1.1. Masthead light;
 - 8.4.1.2. Sidelights; and,
 - 8.4.1.3. Sternlight,
- 8.4.2. Lights must be located such that they do not affect the operator's night vision and such that they are not vulnerable to damage or pose any snagging hazard.
 - 8.4.2.1. In the case of vessels less than 12m in length, the masthead light and stern light may be combined into a single all-round light. If mounted on a light staff

it must be secured with a ratchet type mounting and electrical cables must be installed with quick disconnects.

- 8.4.2.2. Side lights must be not less than 1m below the masthead light and may be mounted either on the sides of the wind screen or inset P&S at the bow.

- 8.4.3. The fixtures must be of such a design as to resist the effects of vibration and must be provided with adequate protection from damage that may occur when lying alongside a vessel or a pier. (The Hella NaviLED Series of lights, including the NaviLED 360 all-round light and NaviLED side lights meet this requirement.)

- 8.4.4. Non-white lighting must be wired together on a separate breaker of the 12 volt DC electrical system. All around Mast /Anchor light showing clear above the radar scanner as per TP 1332. One three way rocker switch, labelled "NAV" which turns on all Nav lights. When switched to the "ANC" side, only the anchor light is on.

8.5. NAVIGATION EQUIPMENT & ELECTRONICS

- 8.5.1. Compass: Ritchie Helmsman 70 series, or equal.
- 8.5.2. Horn (electric): In compliance with the Collision Regulations, Rule 32, must be audible at 0.5 NM. Must be installed on the exterior of the console facing forward and operated by a spring-loaded switch at the helm station. Either Signaltone or Ongaro or equal.
- 8.5.3. Radio: Not required.
- 8.5.4. Depth sounder: Garmin 55 dv fish finder with GPS

9. PAINTING AND CORROSION PROTECTION

9.1. GENERAL

- 9.1.1. All surfaces subject to coating must be thoroughly cleaned and degreased prior to coating. Unsightly weld scars must be carefully removed and cleaned off flush with the parent surface.
- 9.1.2. All above water aluminum components which are normally visible but are not identified for colour coating must be clear coated as follows:
- 9.1.2.1. Etch-primer plus 2 coats: CLEARCOAT.
- 9.1.3. Contractor must follow the preparation and application requirements defined by the paint supplier. Typical coating systems can be applied in the 5 to 7-mil thickness range per coating set. Typical system components would be:
- 9.1.3.1. Clean and etch-prime or profile sand;
- 9.1.3.2. Two coats of primer; and,
- 9.1.3.3. Two topcoats, minimum.

9.2. STANDARD COLOURS AND PRODUCTS

- 9.2.1. Exterior of cabin or T-Top: DFO Slate Grey (RAL7042).
- 9.2.2. Console control face: International F000, Mist Grey.

9.2.3. Exterior decks and top of bulwarks: Anti-slip, Sure-Foot grey.

9.3. UNDERWATER HULL

9.3.1. Not painted.

9.4. HULL ANODES

9.4.1. One (1) hull anode must be provided.

10. TESTS & TRIALS

10.1. GENERAL

The Contractor must conduct their own inspections, tests and trials to verify successful completion of the Work in accordance with this TSOR and the proper operation of the vessel and all associated equipment. The requirements for inspections, tests and trials and associated deliverable documentation are defined in the Contract and Annexes to the contract including any test, trials or sample reports attached thereto. All discrepancies identified through the inspection, test and trials processes must be corrected prior to delivery.

10.2. TESTS

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

- 10.2.1.1. Weight;
- 10.2.1.2. Construction Quality;
- 10.2.1.3. Lifting Gear;
- 10.2.1.4. Propulsion Engines, including starting;
- 10.2.1.5. Steering System;
- 10.2.1.6. Fuel System;
- 10.2.1.7. Electrical System; and
- 10.2.1.8. Electronics.

10.3. SEA TRIALS

Sea trials must be conducted by the Contractor to demonstrate that the vessel(s) and their equipment conform to the requirements as stated in the contract and TSOR. All expenses incident to the trials must be borne by the Contractor, including fuel unless otherwise specified. A crew provided by the Contractor must operate the vessel(s) during sea trials. The minimum acceptable sea trial is identified in Appendix A.

- 10.3.1. All Sea Trial instrumentation and equipment must be furnished and operated by the Contractor. Trial instrumentation, where applicable, must not replace the vessel's instruments.
- 10.3.2. The Contractor must submit a Test & Trials Plan, including a description of all of the acceptance trials to be performed for each vessel. The vessel(s) must operate in the Normal Loaded Condition. As a minimum, the following trials must be conducted for each vessel:
- 10.3.2.1. Speed Trials - The speed trials must be done over a course at least one (1) nautical mile in length. Two (2) runs must be made over the course, one (1) in each direction with the speeds for the two (2) runs averaged. The use of GPS data (averaged) is acceptable;
- 10.3.2.2. Endurance Trial -The vessel(s) must operate in the Normal Loaded Condition, at maximum speed for no more than the maximum time allowed if it has not operated for the minimum break-in period (typically five (5) hours);
- 10.3.2.3. Astern Propulsion - The vessels 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; and,
- 10.3.2.4. Steering Gear - Tests must be conducted on the steering gear to demonstrate the adequacy of the steering system under all operations. Manoeuvring tests must be performed to ensure that each vessel meets the stated requirements. Manoeuvring trials must be conducted in the Normal Load Condition and repeated in the Maximum Load Condition.
- 10.3.3. The Contractor must provide the completed Tests & Trials Sheets (Appendix A) for each vessel and include these sheets in the Manual (see section 9.4).
- 10.3.4. The Contractor must notify the Contracting Authority and the Technical Authority no less than two (2) weeks prior to sea trials. At a minimum, the Technical Authority will witness and attend the sea trials. Sea trial results must be forwarded to the Technical Authority prior to the delivery of the vessel(s).
- 10.3.5. At the conclusion of sea trials, each vessel must be thoroughly cleaned and inspected. Engine cooling systems must be flushed through with fresh water. The Contractor must repair any damage to the vessel(s) or ancillary equipment resulting from sea trials to the satisfaction of Canada.
- 10.3.6. For the purpose of the trials, Normal Loaded Condition must be considered to be the basic vessel, fitted with all normal equipment, full fuel, with complement and loads per Vessel Particulars, section [\[4.2\]](#).
- 10.3.7. Final Inspection must not be performed until all tests have been satisfactorily completed with data available for review. The vessel(s) must be ready for delivery in all respects, except for final preparation for shipment. The Contractor must provide personnel, as required, to resolve questions and to demonstrate equipment operation, maintenance accessibility, removal and installation.
- 10.3.8. Stability examination per TP1332, with ISO Design Category "C", will further require the Contractor to record all stability calculations and assessment utilizing ISO 12217, ISO 11812 and ISO 12216 with all detailed calculation worksheets, providing a copy for each vessel produced as per Section [\[11.4\]](#).

- 10.3.9. Final Inspection - Upon delivery, the Technical Authority, or a representative of the Technical Authority will conduct the final delivery inspection. The Contractor must document the results of the delivery and provide these results to the Technical Authority and the Contracting Authority for Acceptance as per the Contract. The Contractor must repair any damage to the vessel(s) or equipment resulting from shipping to the satisfaction of Canada.

11. DOCUMENTATION

11.1. NATIONAL ASSET CODE

The National asset code for this vessel is **VZF55**. The Contractor must include this five (5) character code to the builder's plate of the vessel with the prefix "National Asset Code".

11.2. BUILDER'S PLATE

A Builder's plate must be affixed to the vessel in a readily visible location, e.g. in way of the operator position.

- 11.2.1. The plate must be made of a weather resistant material compatible with that to which it is affixed.
- 11.2.2. The dimensions of the plate must be not less than 200mm x 125mm
- 11.2.3. The plate must contain the following information, permanently etched:
- 11.2.3.1. National Asset Code;
 - 11.2.3.2. Builder;
 - 11.2.3.3. Hull Number;
 - 11.2.3.4. Year of Construction; and,
 - 11.2.3.5. Lightship Weight in kilograms.
- 11.2.4. Builder must comply with Section 1 of TP1332 (Hull Serial Numbers).
- 11.2.5. Builder must comply with Section 2 of TP1332 (Compliance Notices).

11.3. PRELIMINARY DATA PACKAGE

The following Preliminary Documentation must be provided when requested by the Contracting Authority for verification of the design prior to commencement of fabrication:

- 11.3.1. General Arrangement (profile, plan & sections)
- 11.3.2. Lines Plan (profile, plan & sections)
- 11.3.3. Structural Arrangement (profile, plan, sections & details)
- 11.3.4. Bilge System Schematic
- 11.3.5. Fuel System Schematic
- 11.3.6. Electrical One-line Diagram(s) including AC & DC
- 11.3.7. Console arrangement

- 11.3.8. Special Systems (if any)
- 11.3.9. Weight estimate and preliminary stability calculation
- 11.3.10. Estimated range at cruising speed with 10% of fuel remaining
- 11.3.11. Tonnage calculation
- 11.3.12. Sample certificate of approval from a previous similar vessel demonstrating that the proposed vessel(s) will comply with the current TP 1332.

11.4. FINAL DELIVERABLE DATA PACKAGE

- 11.4.1. Refer to Appendix B.

12. SHIPPING AND DELIVERY

- 12.1.1. End delivery point is as stated in the contract, or at [1.1.1]; however must be confirmed with the TA prior to shipping.
- 12.1.2. Prior to shipping, the vessel is to be cleaned, appropriately protected and covered in accordance with the instructions specified in this section.
- 12.1.3. Prior to shipping, the vessel must be secured on their respective trailers, cleaned, preserved and covered in accordance with this section. All areas of the vessel are to be cleaned prior to covering for shipping. Bilges are to be dry and free of oil and debris and the fuel tanks must be full with fuel stabilizer added.
- 12.1.4. The propulsion systems must be preserved in accordance with the manufacturer's recommendations for storage of up to one year in an environment that will be subjected to freezing temperatures.
- 12.1.5. The batteries are to be disconnected. A warning plate is to be tied to the steering wheel with a wire indicating that the vessel has been protected for shipping and storage and must not be started until the propulsion machinery has been reactivated.
- 12.1.6. All contact points with the vessel are to be padded. A shrink wrap cover is to be provided to protect the vessel during shipping and storage.
- 12.1.7. Means of Delivery: The Contractor must deliver the vessel/trailer combination, the trailer supplied for the vessel must not be utilized as means of delivery.

13. WARRANTY AND SERVICE PROVISIONS

13.1. COMPONENTS AND EQUIPMENT SUPPORT

- 13.1.1. All components and all mechanical, auxiliary, electronic and electrical equipment installed on the vessel must be supportable by parts and service in Canada within 30 days.

13.2. SPARE PARTS

- 13.2.1. To facilitate replacement and inter-changeability of parts, as well as maintenance procedures and operator training wherever practicable the

Contractor must standardize on selection of equipment, fittings and fabrication methods within all vessels supplied.

14. TRAILER

14.1. REQUIREMENT

The Contractor must supply a tandem axle trailer properly equipped and adjusted to fit the boat.

- 14.1.1. Trailer must be of galvanized steel construction, either welded or bolted, rated at least 20% over the 'Normal Load Condition' weight of the boat, certified to commercial requirements in accordance with Department of Transport regulations for towing the vessel. The trailer must be equipped with:
 - 14.1.1.1. Four (4) radial tires, approved for trailers, mounted on galvanized rims, having a capacity equal or superior to the load rating of the trailer. An equivalent wheel mounted spare tire must be provided, high mounted forward;
 - 14.1.1.2. A lug wrench for the wheels;
 - 14.1.1.3. Axle bearing protection, grease nipple and flush-out kit;
 - 14.1.1.4. Heavy duty "stand on" fenders and mud flaps;
 - 14.1.1.5. Safety chains;
 - 14.1.1.6. Class III weight distributing hitch compliant; and,
 - 14.1.1.7. Hitch must be 2 inch ball.
- 14.1.2. The trailer must be fitted with a drop leg, side wind jack with caster wheel and anti-reversing mechanism, sized to meet the normal load condition of the vessel.
- 14.1.3. Braking system must be hydraulic/surge with stainless steel calipers, mounting brackets and rotors, complete with appropriate brake pads. Must be jurisdiction compliant for the point of delivery; in the event that electric boost is required to comply then the trailer must be so fitted.
- 14.1.4. Brake and turn signals must be submersible style LED lighting, with 7-prong round wiring connector.
- 14.1.5. To safely support, launch and recover the vessel the trailer must be fitted with:
 - 14.1.5.1. Side loading guides mounted aft;
 - 14.1.5.2. Bunks and bow chock, properly adjusted to fit the vessel and suitably lined;
 - 14.1.5.3. A manual two speed bow winch assembly, with winch strap and non-corroding snap hook. The winch must be of adequate size to launch and recover the vessel and fitted with anti-reverse mechanism;
 - 14.1.5.4. A strap, turnbuckle and hook(s) for securing the boat forward; and,
 - 14.1.5.5. Two (2) ratchet tie down straps with hooks for securing the boat aft.

14.2. DOCUMENTATION

- 14.2.1. The trailer must be provided with a manufacturer's plate affixed to the left hand side of the tongue.
- 14.2.2. The Contractor must include in their Manual [11.4], the technical manuals and documentation applicable to the trailer and its equipment.

- 14.2.3. The contractor must record and provide the trailer sale and registration information within the Manual for each vessel.

Appendix A

SMALL CRAFT / VESSEL TESTS & TRIALS SHEET

CONTRACT # F7044-180032

Small Craft / Vessel Builder:			
Small Craft / Vessel Description:			
Hull Identification Number:			
National Asset Code:			
Date of Trials:			
Personnel in Attendance:			
Builder			
PWGSC			
DFO			
DFO			
Time: _____ hrs Departing from _____			
Small Craft / Vessel Weights:	Dry Weight of Hull with cabin:		_____ lbs/ _____ kg
	Furnishings & Fittings:		_____ lbs/ _____ kg
	Engines & Equipment:		_____ lbs/ _____ kg
	Fuel:	Fuel:	_____ lbs/ _____ kg
	_____ Imp gal	_____ Litres	
	Total Weight of Small Craft/Vessel:		_____ lbs/ _____ kg
	Number of Crew _____ and operating equipment:		_____ lbs/ _____ kg
Test Total Laden Weight:		_____ lbs/ _____ kg	

	Trailer weight:	_____ lbs/ _____ kg
	Boat & Trailer weight:	_____ lbs/ _____ kg
Motors: Starting - Operation "IDENTIFY INBOARD/OUTBOARDS"	Port	<input type="radio"/> Immediate, Yes / No
	Starboard	<input type="radio"/> Immediate, Yes / No
Propellers/Impellers	Pitch	_____
	Diameter	_____
	No. of Blades	_____
	Stainless Steel or Aluminum	<input type="radio"/> S/S ____ AL
Static Attitude & Trim:		
Weather Conditions: Refer to attached Beaufort Wind Scale. BWS No. _____		
Speed Trials	Speed Required _____ - _____ knots	
	Cruising Speed: measured mile 1 way	_____ kts @ _____ rpm
	Cruising Speed: measured mile return	_____ kts @ _____ rpm
	Averaged Cruising Speed:	_____ kts @ _____ rpm
	Maximum Speed: measured mile 1 way	_____ kts @ _____ rpm
	Maximum Speed: measured mile return	_____ kts @ _____ rpm
	Average Maximum Speed _____ kts @ _____ rpm	
Full Throttle	From dead stop to plane	_____ seconds
	From dead stop to 30 knots	_____ seconds
Astern Propulsion:	Straight line to 2000 rpm	<input type="radio"/> Issues, Yes / No

	Hard a-port	<input type="radio"/> Issues, Yes / No
	Hard a-starboard	<input type="radio"/> Issues, Yes / No
	Emergency stop	_____ seconds
Tubes (if applicable)	No. of Chambers	_____
	Semi-auto fill system	<input type="radio"/> Yes / No
	Time to fill all chambers	_____ seconds
Endurance Trials: X = gallons or Litres	Fuel consumption	
	Port & Starboard Motor: at cruise:	_____ X/hr @ _____ rpm
	Port & Starboard Motor: at full throttle:	_____ X/hr @ _____ rpm
Steering: Acceptable Y / N	Straight line	<input type="radio"/> Yes / No
	Hard-Port radius of turn. Full Throttle	_____ feet
	Hard-Stbd radius of turn. Full Throttle	_____ feet
	Lock to lock = 35 degrees pt. & stbd	<input type="radio"/> Yes / No
	Effective steering 0-5 knots	<input type="radio"/> Yes / No
	5-10 knots	<input type="radio"/> Yes / No
	20-30 knots	<input type="radio"/> Yes / No
	Full speed	<input type="radio"/> Yes / No
Outboard/Inboard Leg Trim Control:	From fully raised to fully lowered.	<input type="radio"/> Acceptable Yes / No
Trim Tab Operation:	Fully raised, fully lowered.	<input type="radio"/> Acceptable Yes / No
Engine Controls:	Start	<input type="radio"/> Issues, Yes / No
	Shift	<input type="radio"/> Issues, Yes / No

	Throttle	<input type="radio"/> Acceptable Yes / No
Engine Gauges:	Tachometer	<input type="radio"/> Acceptable Yes / No
	Fuel gauges	<input type="radio"/> Acceptable Yes / No
	Trim gauges	<input type="radio"/> Acceptable Yes / No
	Oil pressure	<input type="radio"/> Acceptable Yes / No
Engine Gauges:	Voltmeter	_____ volts
Cabin Sound Levels:	Cruising speed- door & windows closed	_____ dbA @ _____ rpm
	Cruising speed- door & windows open	_____ dbA @ _____ rpm
	Full speed- door & windows closed	_____ dbA @ _____ rpm
	Full speed- door and windows open	_____ dbA @ _____ rpm
Outboard/Inboard engine operation:	Starting	<input type="radio"/> Acceptable Yes / No
	Shifting	<input type="radio"/> Acceptable Yes / No
	Throttle	<input type="radio"/> Acceptable Yes / No
	Raise	<input type="radio"/> Acceptable Yes / No
	Lower	<input type="radio"/> Acceptable Yes / No
Loaded Vessel Drop Test:	If applicable	<input type="radio"/> Acceptable Yes / No
Lifting Bridle Certified:	If applicable	<input type="radio"/> Acceptable Yes / No
Rollover test	If applicable	<input type="radio"/> Acceptable Yes / No

<u>NOTES</u>

Beaufort Wind Scale Identifier

Force	Wind Speed		Descriptive Term	Effects Observed at Sea	Effects Observed on Land
	Km/h	Knots			
0	Less than 1	Less than 1	Calm	Sea surface like a mirror, but not necessarily flat.	Smoke rises vertically.
1	1 - 5	1 - 3	Light air	Ripples with the appearance of scales are formed, but without foam crests.	Direction of wind shown by smoke drift, but not wind vanes.
2	6 - 11	4 - 6	Light breeze	Small wavelets, still short but more pronounced. Crests do not break. When visibility good, horizon line always very clear.	Wind felt on face. Leaves rustle. Ordinary vane moved by wind.
3	12 - 19	7 - 10	Gentle breeze	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered whitecaps.	Leaves and small twigs in constant motion. Wind extends light flag.
4	20 - 28	11 - 16	Moderate breeze	Small waves, becoming longer. Fairly frequent whitecaps.	Raises dust and loose paper. Small branches are moved.
5	29 - 38	17 - 21	Fresh breeze	Moderate waves, taking a more pronounced long form. Many whitecaps are formed. Chance of some spray.	Small trees with leaves begin to sway. Crested wavelets form on inland waters.
6	39 - 49	22 - 27	Strong breeze	Large waves begin to form. The white foam crests are more extensive everywhere. Probably some spray.	Large branches in motion. Whistling heard in telephone wires. Umbrellas used with difficulty.
7	50 - 61	28 - 33	Near gale	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Whole trees in motion. Inconvenience felt in walking against wind.
8	62 - 74	34 - 40	Gale	Moderately high waves of greater length. Edges of crests begin to break into the spindrift. The foam is blown in well-marked streaks along the direction of the wind.	Breaks twigs off trees. Generally impedes progress. Walking into wind almost impossible.
9	75 - 88	41 - 47	Strong gale	High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility.	Slight structural damage occurs, e.g. roofing shingles may become loose or blow off.
10	89 - 102	48 - 55	Storm	Very high waves with long overhanging crests. Dense white streaks of foam. Surface of the sea takes a white appearance. The tumbling of the sea becomes heavy and shock-like. Visibility affected.	Trees uprooted. Considerable structural damage occurs.
11	103 - 117	56 - 63	Violent storm	Exceptionally high waves. Sea completely covered with long white patches of foam. Visibility affected.	Widespread damage.
12	118 - 133	64 - 71	Hurricane	Air filled with foam and spray. Sea entirely white with foam. Visibility seriously impaired.	Rare. Severe widespread damage to vegetation and significant structural damage possible.



BEAUFORT FORCE 0
WIND SPEED: LESS THAN 1 KNOT
SEA: SEA LIKE A MIRROR



BEAUFORT FORCE 1
WIND SPEED: 1-3 KNOTS
SEA: WAVE HEIGHT .1M (.25FT), RIPPLES WITH THE APPEARANCE OF SCALES, BUT WITHOUT FOAM CRESTS



BEAUFORT FORCE 2
WIND SPEED: 4-6 KNOTS
SEA: WAVE HEIGHT 2-3M (.5-1FT), SMALL WAVELETS, CRESTS HAVE A GLASSY APPEARANCE AND DO NOT BREAK



BEAUFORT FORCE 4
WIND SPEED: 11-16 KNOTS
SEA: WAVE HEIGHT 1-1.5M (3.5-5FT), SMALL WAVES BECOMING LONGER, FAIRLY FREQUENT WHITE HORSES



BEAUFORT FORCE 5
WIND SPEED: 17-21 KNOTS
SEA: WAVE HEIGHT 2-2.5M (6-8FT), MODERATE WAVES TAKING MORE PRONOUNCED LONG FORM, MANY WHITE HORSES, CHANCE OF SOME SPRAY



BEAUFORT FORCE 6
WIND SPEED: 22-27 KNOTS
SEA: WAVE HEIGHT 3-4M (9.5-13 FT), LARGER WAVES BEGIN TO FORM, SPRAY IS PRESENT, WHITE FOAM CRESTS ARE EVERYWHERE



BEAUFORT FORCE 7
WIND SPEED: 28-33 KNOTS
SEA: WAVE HEIGHT 4-5.5M (13.5-19 FT), SEA HEAPS UP, WHITE FOAM FROM BREAKING WAVES BEGINS TO BE BLOWN IN STREAKS ALONG THE WIND DIRECTION



BEAUFORT FORCE 8
WIND SPEED: 34-40 KNOTS
SEA: WAVE HEIGHT 5.5-7.5M (18-25FT), MODERATELY HIGH WAVES OF GREATER LENGTH, EDGES OF CREST BEGIN TO BREAK INTO THE SPINDRIFT, FOAM BLOWN IN WELL MARKED STREAKS ALONG WIND DIRECTION.



BEAUFORT FORCE 9
WIND SPEED: 41-47 KNOTS
SEA: WAVE HEIGHT 7-10M (23-32FT), HIGH WAVES, DENSE STREAKS OF FOAM ALONG DIRECTION OF THE WIND, WAVE CRESTS BEGIN TO TOPPLE, TUMBLE, AND ROLL OVER. SPRAY MAY AFFECT VISIBILITY.



BEAUFORT FORCE 10
WIND SPEED: 48-55 KNOTS
SEA: WAVE HEIGHT 9-12.5M (29-41FT), VERY HIGH WAVES WITH LONG OVERHANGING CRESTS, THE RESULTING FOAM, IN GREAT PATCHES, IS BLOWN IN DENSE WHITE STREAKS ALONG WIND DIRECTION. ON THE WHOLE, SEA SURFACE TAKES A WHITE APPEARANCE, TUMBLING OF THE SEA IS HEAVY AND SHOCK-LIKE. VISIBILITY AFFECTED.



BEAUFORT FORCE 11
WIND SPEED: 56-63 KNOTS
SEA: WAVE HEIGHT 11.5-16M (37-52FT), EXCEPTIONALLY HIGH WAVES, SMALL-MEDIUM SIZED SHIPS MAY BE LOST TO VIEW BEHIND THE WAVES. SEA COMPLETELY COVERED WITH LONG WHITE PATCHES OF FOAM LYING ALONG WIND DIRECTION. EVERYWHERE, THE EDGES OF WAVE CRESTS ARE BLOWN INTO FROTH.



BEAUFORT FORCE 12
WIND SPEED: 64 KNOTS
SEA: SEA COMPLETELY WHITE WITH DRIVING SPRAY, VISIBILITY VERY SERIOUSLY AFFECTED. THE AIR IS FILLED WITH FOAM AND SPRAY

Appendix B

Final Deliverable Data Package

The Final Data Package which must be delivered to Canada is as defined in the Contract, but must include, as a minimum the technical publications identified in this appendix.

1.0 Comprehensive Owner/Operator Manuals

1.1 Deliverables

1.1.1 One (1) complete hard copy and one (1) complete USB stick electronic copy set of the manuals per vessel delivered for the operator of each vessel, to be delivered with the vessel.

1.1.2 One (1) complete hard copy and one (1) complete USB stick electronic copy set of the manuals per vessel delivered for the Technical Authority, to be delivered to the same address identified for invoices.

1.2 Content

The manuals must provide a physical and functional description of the craft, it's machinery and equipment, as well as delivery testing and sea trial result documentation. The manuals must include as a minimum the following three sections and as detailed below:

- General Information
- Technical Information
- Spare Parts List

1.2.1 GENERAL INFORMATION SECTION

The General Information Section must include a description of the arrangement and function of all structures, systems, fittings and accessories that comprise the boat, with illustrations as appropriate:

- 1.2.1.1 Operating procedures;
- 1.2.1.2 Basic operating characteristics (such as temperatures, pressures, flow rates)
- 1.2.1.3 Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step;
- 1.2.1.4 Recommended planned maintenance; and
- 1.2.1.5 Complete troubleshooting procedures.

1.2.2 TECHNICAL INFORMATION SECTION

The Technical Information Section a complete set of detailed owner / operator instructions, drawings (Section 15), parts lists and supplemental data for all components of the boat (whether acquired from external sources or custom-manufactured).

- 1.2.2.1 "As Fitted", dimensioned drawings must be produced for manuals to record the vessel particulars:
 - 1.2.2.1.1 Calculated lightship weight;
 - 1.2.2.1.2 General arrangement, Plan Profile section views;
 - 1.2.2.1.3 Structural drawings showing deck plan, a centerline profile and frame station construction details;
 - 1.2.2.1.4 Detailed lines plan;
 - 1.2.2.1.5 Drawing of the fuel and propulsion supply arrangement; and,

- 1.2.2.1.6 Drawing of the electrical supply and functions of the vessel.
- 1.2.2.2 Parts 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 this part, equipment or component and in which part of the specification the item appears.
- 1.2.2.3 Hull Serial Number (HIN), copy of builders plate, TEST and TRIAL results as per completed Attachment 1 of Appendix II, serial or manufacturer's numbers, and equipment warranty cards.
- 1.2.2.4 Engine(s) and equipment: including engine and propulsion serial numbers.
- 1.2.2.5 If applicable, collars; including collar material and glue materials and procedures necessary for onboard repair of the collar.
- 1.2.2.6 Acceptance Certificates, and compliance sheets or certificates distributed with equipment i.e. life-saving appliances, lifting appliances, engine test reports, calibration certificates, Nav light certificates, Fire suppression material certificates, flotation foam rating sheets
- 1.2.2.7 Pre-trial shop Testing Check Sheet.
- 1.2.2.8 Electronics, (if applicable): including model and serial numbers.
- 1.2.2.9 Regulatory and Stability documentation: as required per TP 1332, which, references ISO12217 or ISO 6185 for RIBs (if applicable).

1.2.3 SPARE PARTS LIST SECTION

The Spare Parts List section must include a list of recommended initial onboard spare parts to be stocked for the vessel. 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 this part, equipment or component and in which part of the TSOR the item appears. At a minimum this list must include the following items (as applicable):

- 1.2.3.1 Propulsion: Propellers, filters, water pump impeller, batteries, throttle and shift cables, special engine tools.
- 1.2.3.2 Electrical: panel breakers, fuses, light bulbs;
- 1.2.3.3 Boat Structures and Fittings: Miscellaneous commonly used fasteners.

2.0 ADDITIONAL DELIVERABLE DOCUMENTATION

2.1.1 The following additional documentation must be supplied in both sets of Technical publication manuals delivered (defined in 8.4.2):

- 2.1.1.1 Tonnage Registration Certificate in accordance with TP 13430 - <http://www.tc.gc.ca/eng/marinesafety/svcp-gt-3948.htm> ;
- 2.1.1.2 Registration to the Small Vessel Compliance Program (SVCP) Website: <http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm> ;
- 2.1.1.3 Two (2) Bill of Sales, one (1) for the vessel and one (1) for the trailer;
- 2.1.1.4 Test & Trial results as required by Appendix A;
- 2.1.1.5 Acceptance Certificates, i.e. life-saving appliances, lifting appliances, engine test reports, calibration certificates, extinguishers, etc;
- 2.1.1.6 A valid Motor Vehicle Registration Certificate for the relevant Province, for the trailer; and
- 2.1.1.7 All testing check sheets created and completed by the builder.

END OF DOCUMENT

ANNEX - B – BASIS OF PAYMENT**B-1 Proposed Work Location:**

Contractor's Facility: _____

B-2 Contract Price

The price is in Canadian dollars, customs duties are included and applicable taxes are extra Incoterms 2000 -DDP to destination.

Item	Description	Quantities	Firm Unit Price
a.	Known Work – (1 Aluminum Jet Boat) As per contract, article 7.2 and Annex A - Technical Statement of Requirement and Annex D - Bidders Questions and Canada's Responses	1	\$ _____
b.	Known Work – (1 trailer) As per contract, article 7.2 and Annex A - Technical Statement of Requirement and Annex D - Bidders Questions and Canada's Responses	1	\$ _____
c.	Shipping and Delivery (1 patrol vessel and 1 trailer) Incoterms 2000 DDP to destination Destination Delta, BC per Contract article 7.4.4 and 7.4.5	1	\$ _____
d.	PRICE [a + b + c] <div style="text-align: right;">For a Firm PRICE of:</div>		\$ _____

B-3 Charge-out Rate / Material Mark-up / Options

For the performance of the Work as a result of approved additional Work including Design or Engineering Change, or change in the scope of Work, the Contractor shall be paid the firm hourly charge-out rate of:

\$ _____ per hour, Applicable taxes extra,

This rate is to be a blended rate for all classes of labour, engineering and foreperson and includes all overheads, supervision and profit.

The firm hourly charge-out labour rate will remain firm for the term of the Contract and any subsequent amendments.

Overtime

Overtime shall not be paid unless authorized in writing by the Contracting Authority and for authorized additional Work only.

The Overtime Rates are as follows:

Time and One-Half Rate: \$ _____ / per person hour

Double Time Rate: \$ _____ / per person hour

Overtime shall be calculated and paid as follows:

Time and One-Half: "Time and One-Half Rate" x Charge Out Rate

Double Time: "Double Time Rate" x Charge Out Rate

B-4 Material for Additional Work including Design or Engineering Change:

For the performance of the Work to procure additional Material as a result of approved additional Work including Design Change or change in the scope of Work, the Contractor shall be paid the Direct Material Cost as defined in Contract Cost Principles 1031-2 plus a firm mark-up of 10% GST/HST extra, as applicable. Other than the 10% mark-up, no additional charges relating to material procurement, insurance, handling, store keeping and activities of this nature, or any other charge whatsoever, will be accepted as part of the additional Work prices.

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

The material mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

N° de l'invitation - Solicitation No.

F7044-180032/A

N° de réf. du client - Client Ref. No.

F7044-180032

N° de la modif - Amd. No.

File No. - N° du dossier

XLV-8-41186

Id de l'acheteur - Buyer ID

xlv588

N° CCC / CCC No./ N° VME - FMS

ANNEX – C - BIDDER QUESTIONS AND CANADA RESPONSES

Reference	Reference description	Bidder Questions	Canada's Responses

Completed and updated during the solicitation process.

N° de l'invitation - Solicitation No.

F7044-180032/A

N° de réf. du client - Client Ref. No.

F7044-180032

N° de la modif - Amd. No.

File No. - N° du dossier

XLV-8-41186

Id de l'acheteur - Buyer ID

xlv588

N° CCC / CCC No./ N° VME - FMS

ANNEX - D - SUBCONTRACTOR LIST

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

ANNEX - E - DETAILED FINANCIAL BID PRESENTATION SHEET

The price of the bid will be evaluated in Canadian dollars, customs duties are included, applicable taxes are extra, Incoterms 2000 DDP to destination.

Item	Description	Quantities	Extended Firm Price
a.	Known Work –(1 Aluminum Jet Boat) As per Part 7, article 7.2 and Annex A - Technical Statement of Requirement and Annex D - Bidders Questions and Canada's Responses	1	\$ _____
b.	Known Work –(1 trailer) As per Part 7, article 7.2 and Annex A - Technical Statement of Requirement and Annex D - Bidders Questions and Canada's Responses	1	\$ _____
c.	Shipping and Delivery (1 patrol vessel and 1 trailer) Incoterms 2000 DDP to destination Destination Delta, BC per Part 7, article 7.4.4 and 7.4.5	1	\$ _____
d.	Unscheduled Work (for evaluation) <i>Labour Cost:</i> Estimated labour hours at a firm <i>Charge-out Labor Rate</i> , including overhead and profit: 50 person hours X \$ _____ per hour for a PRICE of: See articles E-1 below.	50	\$ _____
e.	EVALUATION PRICE [a + b + c + d] For an EVALUATION PRICE of: (customs duties are included and applicable taxes are excluded)		\$ _____

E-1 Charge-out Rate / Material Mark-up / Options

For the performance of the Work as a result of approved additional Work including Design or Engineering Change, or change in the scope of Work, the Contractor shall be paid the firm hourly charge-out rate of:

\$ _____ per hour, GST/HST extra,

This rate shall be a blended rate for all classes of labor, engineering and foreperson and shall include all overheads, supervision, overhead profit.

The firm hourly charge-out labour rate will remain firm for the term of the Contract and any subsequent amendments.

E-2 Overtime

Overtime shall not be paid unless authorized in writing by the Contracting Authority and for authorized additional Work only.

The Overtime Rates are as follows:

Time and One-Half Rate: \$ _____ / per person hour

Double Time Rate: \$ _____ / per person hour

Overtime shall be calculated and paid as follows:

Time and One-Half: "Time and One-Half Rate" x Charge Out Rate

Double Time: "Double Time Rate" x Charge Out Rate

E-3 Material for Additional Work including Design or Engineering Change:

For the performance of the Work to procure additional Material as a result of approved additional Work including Design Change or change in the scope of Work, the Contractor shall be paid the Direct Material Cost as defined in Contract Cost Principles 1031-2 plus a firm mark-up of 10% GST/HST extra, as applicable. Other than the 10% mark-up, no additional charges relating to material procurement, insurance, handling, store keeping and activities of this nature, or any other charge whatsoever, will be accepted as part of the additional Work prices.

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

The material mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

ANNEX - F – BID PACKAGE CHECKLIST

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

Table F-1 Bidder's Bid Package Check List**F1.1**

Regardless of requirements specified elsewhere in this bid solicitation and its associated Technical Statement of Requirements, the following are the documents that must be submitted with the bid by the solicitation closing date and time. The bid must be compliant on each item to be considered responsive:

M: Mandatory with the bid.

48 Hrs: Must be provided within **48 hours** of the written request.

5 or 10 days: Must be provided within **5 or 10 working days** of the written request.

No.	Solicitation Reference	Solicitation Reference	Description	Period	Document provided
1	Front Page	Front Page	Request for Proposal document part 1 page 1 completed and signed;	M	<input type="checkbox"/>
2	Part 3	3.2	Section I- Technical Bid	M	<input type="checkbox"/>
3	Part 3	3.3	Section II – Management Bid	M	<input type="checkbox"/>
4	Part 3	3.4, Annex E	Section III - Financial Bid - Annex E - Detailed Financial Bid Presentation Sheet, completed	M	<input type="checkbox"/>
5	Annex H	Annex H	Federal Contractors Program for Employment Equity- Certification	M	<input type="checkbox"/>
6	Part 2	2.4	Applicable laws	48 hrs.	<input type="checkbox"/>
7	Part 7	7.5.3	Contractor's representative	48 hrs.	<input type="checkbox"/>
8	Part 6	6.3	Insurance requirement	48 hrs.	<input type="checkbox"/>
9	Part 5	5.2.3.1	Worker Compensation Certificate	48 hrs.	<input type="checkbox"/>
10	Part 5	5.2.3.2	Welding certification - Bid	48 hrs.	<input type="checkbox"/>
11	Annex F	Annex F	Bid Package Checklist	48 hrs.	<input type="checkbox"/>
12	Annex G	Annex G	Electronic Payment Instruments, completed	48 hrs.	<input type="checkbox"/>

F1.2 Contract Deliverable Requirements

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

No	Contract	Article	Description	Period after contract award	Document provided
<u>Other documentation after contract award (Reminder)</u>					
1	Part 7	7.15	Project Schedule	5 days	
2	Part 7	7.21	Insurance certificate	10 days	

N° de l'invitation - Solicitation No.

F7044-180032/A

N° de réf. du client - Client Ref. No.

F7044-180032

N° de la modif - Amd. No.

File No. - N° du dossier

XLV-8-41186

Id de l'acheteur - Buyer ID

xlv588

N° CCC / CCC No./ N° VME - FMS

ANNEX - G - ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ☐ Direct Deposit (Domestic and International);
- ☐ Electronic Data Interchange (EDI);
- ☐ Wire Transfer (International Only);

ANNEX - H - FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors

Program for Employment Equity visit [Employment and Social Development Canada \(ESDC\) – Labour's](#) website.

Date: _____ (YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

- ☐ A1. The Bidder certifies having no work force in Canada.
- ☐ A2. The Bidder certifies being a public sector employer.
- ☐ A3. The Bidder certifies being a [federally regulated employer](#) being subject to the [Employment Equity Act](#).
- ☐ A4. The Bidder certifies having a combined work force in Canada of less than 100 permanent full-time and/or permanent part-time employees.

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

- ☐ A5.1. The Bidder certifies already having a valid and current [Agreement to Implement Employment Equity](#) (AIEE) in place with ESDC-Labour.

OR

- ☐ A5.2. The Bidder certifies having submitted the [Agreement to Implement Employment Equity \(LAB1168\)](#) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

- ☐ B1. The Bidder is not a Joint Venture.

OR

- ☐ B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)