



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

Bid Receiving/Réception des soumissions

Procurement Hub | Centre  
d'approvisionnement  
Fisheries and Oceans Canada | Pêches et  
Océans Canada  
301 Bishop Drive | 301 promenade Bishop  
Fredericton, NB, E3C 2M6

**Email / Courriel :** [DFO.Tenders-  
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AND [karen.dolan@dfo-mpo.gc.ca](mailto:karen.dolan@dfo-mpo.gc.ca)

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

Proposal to: Fisheries and Oceans Canada

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

Proposition à : Pêches et Océans Canada

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

<b>Title / Titre</b> Experimental Design, Modeling and Testing of Oil Dispersion in Water: Influence of Wind and Formation of Emulsions		<b>Date</b> February 26, 2024
<b>Solicitation No. / N° de l'invitation</b> 30004990		
<b>Client Reference No. / No. de référence du client(e)</b> 30004990		
<b>Solicitation Closes / L'invitation prend fin</b> <b>At / à :</b> 2 :00 pm EST (Eastern Standard Time / HNE (Heure Normale de l'Est) <b>On / le :</b> March 15, 2024		
<b>F.O.B. / F.A.B.</b> Destination	<b>Taxes</b> See herein — Voir ci-inclus	<b>Duty / Droits</b> See herein — Voir ci-inclus
<b>Destination of Goods and Services / Destinations des biens et services</b> See herein — Voir ci-inclus		
<b>Instructions</b> See herein — Voir ci-inclus		
<b>Address Inquiries to : / Adresser toute demande de renseignements à :</b> Karen Dolan, Contracting Specialist <b>Email / Courriel:</b> <a href="mailto:DFO.tenders-soumissions.MPO@dfo-mpo.gc.ca">DFO.tenders-soumissions.MPO@dfo-mpo.gc.ca</a> AND <a href="mailto:karen.dolan@dfo-mpo.gc.ca">karen.dolan@dfo-mpo.gc.ca</a>		
<b>Delivery Required / Livraison exigée</b> See herein — Voir en ceci	<b>Delivery Offered / Livraison proposée</b>	
<b>Vendor Name, Address and Representative / Nom du vendeur, adresse et représentant du fournisseur/de l'entrepreneur</b>		
<b>Telephone No. / No. de téléphone</b>	<b>Facsimile No. / No. de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor (type or print) / Nom et titre de la personne autorisée à signer au nom du fournisseur (taper ou écrire en caractères d'imprimerie)</b>		
<b>Signature</b>	<b>Date</b>	



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## **PART 1 - GENERAL INFORMATION**

### **1.1 Security Requirements**

There is no security requirement applicable to this requirement.

### **1.2 Statement of Work**

The Work to be performed is detailed under Annex "A" of the resulting contract clauses.

### **1.3 Procurement Strategy for Indigenous Business**

#### **1.3.1 *Conditional Set-Aside under the Federal Government Procurement Strategy for Indigenous Business (PSIB)***

This is an open tender. However, it will be conditionally set-aside under the Government of Canada's Procurement Strategy for Indigenous Business (PSIB) if two or more bids have been received by Indigenous businesses who are certified under the Procurement Strategy for Indigenous Business (PSIB) criteria and who may be listed in the Government of Canada's Indigenous Business Directory (<https://www.sac-isc.gc.ca/eng/1100100033057/1610797769658>).

If your Indigenous business is not yet registered in the Indigenous Business Directory, please do so at the link provided above. If bids from two or more Indigenous businesses are compliant with the terms of the Request for Proposal, the contracting authority will limit the competition to those Indigenous businesses and will not consider bids from any non-Indigenous businesses that may have been submitted.

If the bids from the Indigenous businesses are found to be non-compliant or non-responsive or are withdrawn, such that fewer than two compliant bids from Indigenous businesses remain, bids from all of the non-Indigenous businesses that had submitted bids will then be considered by the contracting authority.

### **1.4 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 or by telephone.

### **1.5 Trade Agreements**

The requirement is subject to the Canadian Free Trade Agreement (CFTA).



## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

**As this solicitation is issued by Fisheries and Oceans Canada (DFO), any reference to Public Works and Government Services Canada or PWGSC or its Minister contained in any term, condition or clause of this solicitation, including any individual SACC clauses incorporated by reference, will be interpreted as reference to DFO or its Minister.**

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

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

The [2003](#) (2023-06-08) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

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

Delete: 60 days  
Insert: 120 days

### Technical Difficulties of Bid Transmission

Despite anything to the contrary in (05), (06) or (08) of the Standard Instructions, where a Bidder has commenced transmission of its bid through an electronic submission method (such as facsimile or Canada Post Corporation's (CPC) Connect service, or other online service) in advance of the bid solicitation closing date and time, but due to technical difficulties, Canada was unable to receive or decode the entirety of the Bid by the deadline, Canada may nonetheless accept the entirety of the Bid received after the bid solicitation closing date and time, provided that the Bidder can demonstrate the following:

- i. The bidder contacted Canada in advance of the bid solicitation closing date and time to attempt to resolve its technical difficulties; OR
- ii. The electronic properties of the Bid documentation clearly indicate that all components of the Bid were prepared in advance of the bid solicitation closing date and time.

### Completeness of the Bid

After the closing date and time of this bid solicitation, Canada will examine the Bid to determine completeness. The review for completeness will be limited to identifying whether any information submitted as part of the bid can be accessed, opened, and/or decoded. This review does not constitute an evaluation of the content, will not assess whether the Bid meets any standard or is responsive to all solicitation requirements, but will be solely limited to assessing completeness. Canada will provide the Bidder with the opportunity to submit information found to be missing or incomplete in this review within two business days of notice.

Specifically, the bid will be reviewed and deemed to be complete when the following elements have been submitted by the bidder:

1. That certifications and securities required at bid closing are included.



2. That bids are properly signed, that the bidder is properly identified.
3. Acceptance of the terms and conditions of the bid solicitation and resulting contract.
4. That all documents created prior to bid closing but due to technical difficulties Canada was unable to receive them, have been properly submitted and received by Canada.
5. All certifications, declarations and proofs created prior to bid closing but due to technical difficulties Canada was unable to receive them, have been properly submitted and received by Canada.

**Completeness of the Bid Checklist**

Bids will be reviewed and deemed to be complete when the following elements have been submitted by the bidder:

Complete (Y/N)	Action Taken
	Certifications and securities required at bid closing are included.
	Bids are properly signed, that the bidder is properly identified.
	Acceptance of the terms and conditions of the bid solicitation and resulting contract.
	All documents created prior to bid closing but due to technical difficulties Canada was unable to receive them, have been properly submitted and received by Canada.
	All certifications, declarations and proofs created prior to bid closing but due to technical difficulties Canada was unable to receive them, have been properly submitted and received by Canada.

**2.2 Submission of Bids**

Bids must be submitted by the date, time and place indicated on page 1 of the bid solicitation. Due to the nature of the bid solicitation, bids transmitted by facsimile to DFO will not be accepted.

**2.3 Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority no later than **seven (7)** calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

**2.4 Applicable Laws**

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



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

## 2.5 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:
  - Office of the Procurement Ombudsman (OPO)
  - Canadian International Trade Tribunal (CITT)

The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an impartial, independent venue for Canadian bidders to raise complaints regarding the award of certain federal contracts under \$30,300 for goods and \$121,200 for services. If you have concerns regarding the award of a federal contract below these dollar amounts, you may contact OPO by e-mail at [boa.opo@boa-opo.gc.ca](mailto:boa.opo@boa-opo.gc.ca), by telephone at 1-866-734-5169, or by web at [www.opo-boa.gc.ca](http://www.opo-boa.gc.ca).

- (c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.



## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

Canada requests that the Bidder submit **all** its **email** bid in separately saved sections as follows and **prior to the bid closing date, time and location**:

- Section I: Technical Bid** (one soft copy in PDF format)
- Section II: Financial Bid** (one soft copy in PDF format)
- Section III: Certifications** (one soft copy in PDF format)
- Section IV: Additional Information** (one soft copy in PDF format)

#### **Important Note:**

The maximum size per email (including attachments) is limited to 10MB. If the limit is exceeded, your email might not be received by DFO. It is suggested that you compress the email size to ensure delivery. Bidders are responsible to send their proposal and to allow enough time for DFO to receive the proposal by the closing period indicated in the RFP. Emails with links to bid documents will not be accepted.

For bids transmitted by email, DFO will not be responsible for any failure attributable to the transmission or receipt of the email bid. DFO will send a confirmation email to the Bidders when the submission is received.

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

#### **Section I: Technical Bid**

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

#### **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment in Annex "B"

#### **3.1.2 Exchange Rate Fluctuation**

C3011T (2013-11-06), Exchange Rate Fluctuation

#### **3.1.3 SACC Manual Clauses**

#### **Section III: Certifications**

Bidders must submit the certifications and additional information required under Part 5.



## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical 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

Refer to Annex "C"

##### 4.1.1.2 Point Rated Technical Criteria

Refer to Annex "C"

#### 4.1.3 Financial Evaluation

SACC Manual Clause [A0220T](#) (2014-06-26), Evaluation of Price-Bid.

### 4.2 Basis of Selection

#### 4.2.1 Highest Combined Rating of Technical Merit and Price - [A0027T](#) (2022-12-01)

1. To be declared responsive, a bid must:
  - a. comply with all the requirements of the bid solicitation; and
  - b. meet all mandatory criteria; and
  - c. obtain the required minimum of **55 points** overall for the technical evaluation criteria which are subject to point rating. The rating is performed on a scale of **80 points**.
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70 % for the technical merit and 30 % for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained divided by the maximum number of points available multiplied by the ratio of 70 %.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30 %.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.





The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. The total available points equal 135 and the lowest evaluated price is \$45,000 (45).

<b>Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)</b>				
		<b>Bidder 1</b>	<b>Bidder 2</b>	<b>Bidder 3</b>
<b>Overall Technical Score</b>		115/135	89/135	92/135
<b>Bid Evaluated Price</b>		\$55,000.00	\$50,000.00	\$45,000.00
<b>Calculations</b>	<b>Technical Merit Score</b>	$115/135 \times 70 = 59.63$	$89/135 \times 70 = 46.15$	$92/135 \times 70 = 47.70$
	<b>Pricing Score</b>	$45/55 \times 30 = 24.55$	$45/50 \times 30 = 27.00$	$45/45 \times 30 = 30.00$
<b>Combined Rating</b>		84.18	73.15	77.70
<b>Overall Rating</b>		<b>1st</b>	<b>3rd</b>	<b>2nd</b>



## **PART 5 - CERTIFICATIONS**

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

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

### **5.1 Certifications Required with the Bid**

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

#### **5.1.1 Integrity Provisions – Declaration of Convicted Offences**

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the 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.

#### **5.1.2 Set-aside for Indigenous Business**

Bidders must complete Attachment 2 to Part 5 if they are an Indigenous Company and wish to be considered for a Procurement Set-aside.

### **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 Additional Certifications Precedent to Contract Award**

##### **5.2.2.1 Status and Availability of Resources**

SACC Manual clause [A3005T](#) (2010-08-16) Status and Availability of Resources

##### **5.2.2.2 Education and Experience**

SACC Manual clause [A3010T](#) (2010-08-16) Education and Experience



**5.2.2.3 List of Names for Integrity Verification Form**

Bidders must complete the List of Names for Integrity Verification form found in Attachment 1 to Part 5.

**5.2.2.4 Contractor's Representative**

The Contractor's Representative for the Contract is:

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Telephone: \_\_\_\_\_  
 Facsimile: \_\_\_\_\_  
 E-mail: \_\_\_\_\_

**5.2.2.5 Supplementary Contractor Information**

Pursuant to paragraph 221 (1)(d) of the Income Tax Act, payments made by departments and agencies under applicable services contracts (including contracts involving a mix of goods and services) must be reported on a T4-A supplementary slip.

To enable the Department of Fisheries and Oceans to comply with this requirement, the Contractor hereby agrees to provide the following information which it certifies to be correct, complete, and fully discloses the identification of this Contractor:

- a) The legal name of the entity or individual, as applicable (the name associated with the Social Insurance Number (SIN) or Business Number (BN), as well as the address and the postal code:  
\_\_\_\_\_
- b) The status of the contractor (individual, unincorporated business, corporation or partnership:  
\_\_\_\_\_
- c) For individuals and unincorporated businesses, the contractor's SIN and, if applicable, the BN, or if applicable, the Goods and Services Tax (GST)/Harmonized Sales Tax (HST) number:  
\_\_\_\_\_
- d) For corporations, the BN, or if this is not available, the GST/HST number. If there is no BN or GST/HST number, the T2 Corporation Tax number must be shown:  
\_\_\_\_\_

**5.2.3 Former Public Servant**

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information.



Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

### Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c. C-17, the [Defence Services Pension Continuation Act](#), 1970, c. D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c. R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S. 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c. C-8.

### Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes ( ) No ( )**

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2019-01](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

### Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive?

**Yes ( ) No ( )**

If so, the Bidder must provide the following information:



- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

**The following certification signed by the contractor or an authorized officer:**

"I certify that I have examined the information provided above and that it is correct and complete"

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name of Signatory



## ATTACHMENT 1 TO PART 5 LIST OF NAMES FOR INTEGRITY VERIFICATION FORM

### Requirements

Section 17 of the *Ineligibility and Suspension Policy* (the Policy) requires suppliers, regardless of their status under the Policy, to submit a list of names with their bid or offer. The required list differs depending on the bidder or offeror's organizational structure:

- Suppliers including those bidding as joint ventures, whether incorporated or not, must provide a complete list of the names of all current directors.
- Privately owned corporations must provide a list of the owners' names.
- Suppliers bidding as sole proprietors, including sole proprietors bidding as joint ventures, whether incorporated or not, must provide a complete list of the names of all owners.
- Suppliers that are a partnership do not need to provide a list of names.

Suppliers may use this form to provide the required list of names with their bid or offer submission. Failure to submit this information with a bid or offer, where required, will render a bid or offer non-responsive, or the supplier otherwise disqualified for award of a contract or real property agreement. Please refer to [Information Bulletin: Required information to submit a bid or offer](#) for additional details.

List of names for [integrity verification form](#)



## ATTACHMENT 2 TO PART 5 SET-ASIDE PROGRAM FOR INDIGENOUS BUSINESS – CERTIFICATION

### 1. Set-aside for Indigenous Business

1.1 This procurement is set aside under the federal government Procurement Strategy for Indigenous Business. For more information on Indigenous business requirements of the Set aside Program for Indigenous Business, see [Annex 9.4](#), Supply Manual.

1.2 The Bidder:

- a. certifies that it meets, and will continue to meet throughout the duration of any resulting contract, the requirements described in the above-mentioned annex;
- b. agrees that any subcontractor it engages under any resulting contract must satisfy the requirements described in the above-mentioned annex; and
- c. agrees to provide to Canada, immediately upon request, evidence supporting any subcontractor's compliance with the requirements described in the above-mentioned annex.

1.3 The Bidder must check the applicable box below:

The Bidder is an Indigenous business that is a sole proprietorship, band, limited company, co-operative, partnership or not-for-profit organization.

OR

The Bidder is either a joint venture consisting of two or more Indigenous businesses or venture between an Indigenous business and a non-Indigenous business.

1.4 The Bidder must check the applicable box below:

The Indigenous business has fewer than six full-time employees.

OR

The Indigenous business has six or more full-time employees.

### 2. Owner/ Employee Certification – Set-aside for Indigenous Business

If requested by the Contracting Authority, the Contractor must provide the following certification for each owner and employee who is Indigenous:

I am \_\_\_\_\_ (insert "an owner" and/or "a full-time employee") of \_\_\_\_\_ (insert name of business), and an Indigenous person, as defined in [Annex 9.4](#) of the Supply Manual entitled "Requirements for the Set-aside Program for Indigenous Business".

I certify that the above statement is true and consent to its verification upon request by Canada.

\_\_\_\_\_  
Name of owner and/or employee

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



## PART 6 - RESULTING CONTRACT CLAUSES

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

### 6.1 Security Requirements

There is no security requirement applicable to the Contract.

### 6.2 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

### 6.3 Standard Clauses and Conditions

**As this contract is issued by Fisheries and Oceans Canada (DFO), any reference to Public Works and Government Services Canada or PWGSC or its Minister contained in any term, condition or clause of this contract, including any individual SACC clauses incorporated by reference, will be interpreted as reference to DFO or its Minister.**

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.

#### 6.3.1 General Conditions

**6.3.1.1** [2010B](#) (2022-12-01), General Conditions - Professional Services (Medium Complexity) apply to and form part of the Contract.

**6.3.2.1** Subsection 10 of [2010B](#) (2022-12-01), General Conditions - Professional Services (Medium Complexity) – Invoice submission, is amended as follows:

Delete: 2010B 10 (2022-12-01), Invoice submission

Insert: **Invoice submission**

1. Invoices must be submitted in the Contractor's name to [DFO.invoicing-facturation.MPO@DFO-MPO.gc.ca](mailto:DFO.invoicing-facturation.MPO@DFO-MPO.gc.ca) with a cc to: *(to be inserted at contract award)*. The Contractor must submit invoices for each delivery or shipment; invoices must only apply to the Contract. Each invoice must indicate whether it covers partial or final delivery.
2. Invoices must show:
  - a. Contractor's Name and remittance physical address;
  - b. Contractor's CRA Business Number or Procurement Business Number (PBN);
  - c. Invoice Date;
  - d. Invoice Number;
  - e. Invoice Amount (broken down into item and tax amounts);
  - f. Invoice Currency (if not in Canadian dollars);
  - g. DFO Reference Number (PO Number or other valid reference number);
  - h. DFO Contact Name (DFO employee who initiated the order or to whom the goods were sent. **Note:** Invoice will be return to the Contractor if that information is not provided);





- i. Description of the goods or services supplied (provide details of expenditures (such as item, quantity, unit of issue, fixed time labour rates and level of effort, subcontracts, as applicable) in accordance with the Basis of Payment, exclusive of Applicable Taxes;
  - j. Deduction for holdback, if applicable;
  - k. The extension of the totals, if applicable; and
  - l. If applicable, the method of shipment together with date, case numbers and part or reference numbers, shipment charges and any other additional charges.
3. Applicable Taxes must be specified on all invoices as a separate item along with corresponding registration numbers from the tax authorities. All items that are zero-rated, exempt or to which Applicable Taxes do not apply, must be identified as such on all invoices.
  4. By submitting an invoice, the Contractor certifies that the invoice is consistent with the Work delivered and is in accordance with the Contract.

### 6.3.2 Supplemental General Conditions

4006 (2010-08-16), Contractor to Own Intellectual Property Rights in Foreground Information, apply to and form part of the Contract.

## 6.4 Term of Contract

### 6.4.1 Period of the Contract

The period of the Contract is from date of Contract to March 12, 2027 inclusive.

## 6.5 Authorities

### 6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Karen Dolan  
 Title: Contracting Specialist  
 Department: Fisheries and Oceans Canada  
 Directorate: Materiel and Procurement Services  
 Address: 301 Bishop Drive, Fredericton, NB, E3C 2M6

Telephone: (782) 377-7245

E-mail address: [DFO.Tenders-Soumissions.MPO@dfo-mpo.gc.ca](mailto:DFO.Tenders-Soumissions.MPO@dfo-mpo.gc.ca)

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

### 6.5.2 Project Authority *(to be inserted at contract award)*

The Project Authority for the Contract is:

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Organization: \_\_\_\_\_



Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail address: \_\_\_\_\_

The Project Authority 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 Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

**6.5.3 Contractor's Representative** *(to be inserted at Contract award)*

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

E-mail address: \_\_\_\_\_

**6.6 Proactive Disclosure of Contracts with Former Public Servants**

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

**6.7 Payment**

**6.7.1 Basis of Payment**

**6.7.2 Limitation of Expenditure**

1. Canada's total liability to the Contractor under the Contract must not exceed \$ \_\_\_\_\_. *(to be inserted at contract award)* Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
  - a. when it is 75% committed, or
  - b. four months before the contract expiry date, or
  - c. as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,

whichever comes first.



3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

### **6.7.3 Methods of Payment**

#### **6.7.3.1 Multiple Payments**

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

- a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all such documents have been verified by Canada;
- c. the Work delivered has been accepted by Canada.

#### **6.7.4 Electronic Payment of Invoices – Contract**

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

- i. Acquisition Card;
- ii. Direct Deposit (Domestic and International)

### **6.8 Invoicing Instructions**

- 6.8.1 The Contractor must submit invoices in accordance with subsection 6.3.2.1 entitled "Invoice Submission" above. Invoices cannot be submitted until all work identified in the invoice is completed.
- 6.8.2 Payments will be made provided that the invoice(s) are emailed to DFO Accounts Payable at [DFO.invoicing-facturation.MPO@DFO-MPO.gc.ca](mailto:DFO.invoicing-facturation.MPO@DFO-MPO.gc.ca) with a cc to: *(to be inserted at contract award)* and provides the required information as stated in subsection 6.8.1 above.

### **6.9 Certifications and Additional Information**

#### **6.9.1 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.

#### **6.9.2 SACC Manual Clauses**

SACC Manual clause [A3015C](#) (2014-06-26), Certification - Contract

#### **6.10 Applicable Laws**

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



## 6.11 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; 4006 (2010-08-16), Contractor to Own Intellectual Property Rights in Foreground Information;
- (c) the general conditions 2010B (2022-12-01), General Conditions - Professional Services (Medium Complexity);
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) the Contractor's bid dated \_\_\_\_\_ *(to be inserted at contract award)*

## 6.13 Insurance - **G1005C** (2016-01-28)

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

## 6.14 Dispute Resolution

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".
- (e) The Parties agree to make every reasonable effort, in good faith, to settle amicably all disputes or claims relating to the Contract, through negotiations between the Parties' representatives authorized to settle. If the Parties do not reach a settlement within 25 working days after the dispute was initially raised to the other party in writing, *either Party* may contact the Office of the Procurement Ombudsman (OPO) to request dispute resolution/mediation services. OPO may be contacted by e-mail at [boa.opo@boa-opo.gc.ca](mailto:boa.opo@boa-opo.gc.ca), by telephone at 1-866-734-5169, or by web at [www.opo-boa.gc.ca](http://www.opo-boa.gc.ca).
- (f) The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an impartial, independent venue for Canadian bidders to raise complaints regarding the administration of certain federal contracts, regardless of dollar value. If you have concerns regarding the administration of a federal contract, you may contact OPO by e-mail at [boa.opo@boa-opo.gc.ca](mailto:boa.opo@boa-opo.gc.ca), by telephone at 1-866-734-5169, or by web at [www.opo-boa.gc.ca](http://www.opo-boa.gc.ca).

## 6.15 Environmental Considerations

As part of Canada's policy directing federal departments and agencies to take the necessary steps to acquire products and services that have a lower impact on the environment than those traditionally acquired, Contractors should:



a) Paper consumption:

- Provide and transmit draft reports, final reports in electronic format. Should printed material be required, double sided printing in black and white format is the default unless otherwise specified by the Project Authority.
- Printed material is requested on minimum recycled content of 30% and/or certified as originating from a sustainably managed forest.
- Recycle unneeded printed documents (in accordance with Security requirements).

b) Travel requirements:

- The Contractor is encouraged to use video and/or teleconferencing where possible to cut down unnecessary travel.
- Use of Properties with Environmental Ratings: Contractors to the Government of Canada may access the PWGSC Accommodation directory, which includes Eco-Rated properties. When searching for accommodation, Contractors can go to the following link and search for properties with Environmental Ratings, identified by Green Keys or Green Leafs that will honour the pricing for Contractors.
- Use public transportation or another method of green transportation as much as possible.



## ANNEX “A” STATEMENT OF WORK

### 1. **Scope:**

#### 1.1 Objective:

The objective is to provide services that address research needs in partial fulfilment of deliverables under the Government of Canada’s Environmental Response Science (ERS) program for conducting research and developing advice and tools to support environmental response initiatives contained in the Oceans Protection Plan (OPP 2.0) as well as informing incident responses as they occur across Canada and abroad.

#### 1.2 Background:

Fisheries and Oceans Canada’s (DFO) Centre for Offshore Oil, Gas and Energy Research (COOGER) conducts extensive scientific research on the behaviour and treatment of petroleum spills in aquatic environments. The purpose of this research is to provide science-based knowledge and advice to improve Canada’s protection of aquatic environments.

Located at the Bedford Institute of Oceanography (BIO) in Dartmouth, Nova Scotia, much of COOGER’s experimental research is conducted in its wave and flume tank facility, as well as in hydrocarbon chemistry and biology laboratories. Using salt and/or fresh water at different temperatures, tank experiments simulate conditions in the natural environment without introducing contaminants to the environment, allowing for replication, scalability and scientific rigour. COOGER’s laboratories are fully equipped to conduct comprehensive hydrocarbon chemistry and biological analyses, as well as bench-scale tests.

### 2. **Requirements:**

#### 2.1 Scope of Work:

The requirement is to conduct specialized engineering and experimental design and modeling that build on work previously conducted on behalf of DFO Science. The contract is aimed at giving COOGER scientists the ability to provide scientific information about the influence of wind on the physical and chemical dispersion of petroleum, as well as the factors affecting the formation and fate of emulsified oil. It is expected that the contracted work will be conducted over multiple years, with completion no later than March 12, 2027.

#### 2.2 Tasks:

##### 2.2.1 Incorporating wind into the simulation of sea conditions in a wave tank

The COOGER wave tank utilizes a piston and paddle wave maker to generate high energy breaking waves that simulate open ocean energy conditions and that ultimately influence the behaviour of spills in the natural environment. However, the breaking of waves and movement of water in the ocean is also due to the action of wind that chops wave crests leading to the formation of white caps, and injects turbulence causing diffusion vertically in the water column.

Currently the COOGER wave tank facility is not set up to generate wind to create the realism of cresting breaking waves. To enable this ability the Contractor shall perform the following tasks:

- Design a system capable of generating wind that interacts with breaking waves in the COOGER wave tank using physical oceanography concepts to produce stable, reproducible wave/wind configurations. Three configurations will be assessed, including one that represents an extreme sea state and two other lesser energy profiles that generate white caps (all within the limitations of the wave tank).



- Design a methodology to characterize the hydrodynamics in the tank by assessing the combined energy of wind and breaking waves using various scientific instruments, including wave gauges and ADVs (acoustic doppler velocimeters).
- Conduct initial testing and characterization of the modified wave/wind generation system in the absence of petroleum and measure the hydrodynamics in the wave tank using various instruments identified in the methodology derived from the previous task.
- Using results from the work outlined above, conduct computational fluid dynamics (CFD) to simulate the hydrodynamics in the COOGER tank. The Contractor will use the result of the CFD to determine the vertical diffusion in the tank and the energy dissipation rate for the configurations measured previously.

### 2.2.2 Testing petroleum dispersion under enhanced simulated sea conditions in a wave tank

Testing petroleum dispersion in water has been conducted in laboratory and tank systems of various sizes, however a significant challenge that persists is the scalability or transferability of the results to the field. This is especially true for the study of the interaction of wind with waves and their combined influence on dispersion. The effectiveness of oil dispersion is determined by measuring oil droplet size, and previous work in the COOGER wave tank led to the formation of a numerical model (VDROP) for predicting oil droplet size distribution (DSD) given oil properties and environmental conditions. The VDROP model is unique in that it accounts for the resistance of oil to breakup due to both the interfacial tension between oil and water and due to oil viscosity. These are the key physical parameters that determine the effectiveness of chemical dispersants. For this reason the Contractor is required to couple the VDROP model to the CFD model (from Task 2.2.1) to predict oil dispersion by wind and waves generated in the COOGER wave tank that extends from the micron scale up to the meter scale.

More specifically, this task includes:

- Develop an experimental design to test oil dispersion in the COOGER wave tank that will allow for the following:
  - model for water flow in the presence of wind in the same and opposing direction of waves
  - model for the absence and presence of chemical dispersant
  - model for different temperature and mixing regimes
  - factoring several key parameters: a representative value of the energy dissipation rate in the system, the duration over which that value is being applied on the bulk of the oil, the dilution in the system and how it affects the concentration of oil droplets at the water surface), oil properties (namely interfacial tension and viscosity), and the dispersant to oil ratio including how it impacts the oil-water interfacial tension
  - providing details on locations in the tank of instruments for conducting measurements and water sampling protocols to compute dispersant effectiveness under the three different wind/wave settings developed in Task 2.2.1
- Use results of the work described above to couple the CFD model developed from Task 2.2.1 to the VDROP model to characterize oil transport in the wave tank.

### 2.2.3 Modeling and testing the formation of emulsifications in water

When an oil slick is on a water surface that is subjected to waves, an emulsion could form whereby tiny droplets of water become entrapped in the oil. Emulsions cause challenges for spill responders, as they reduce the effectiveness of remediation methods such as dispersants and skimmers. It has been suggested that air plays an important role in the emulsification as well, however most studies have not considered the role of air in the formation and persistence of emulsions.

As there is no mechanistic model that simulates emulsion formation and stability, the Contractor will:

- Design bench-scale (flask) experiments to evaluate the influence of air on the formation and stability of oil/water emulsions. The Contractor shall consult with COOGER staff to determine techniques available at its disposal for forming emulsions and for characterizing the resulting



emulsions in terms of texture, structure, and stability. Experiments must consider various types of oil and conditions including and in the absence of photo-oxidation

- Design a series of scaled-up experiments to create emulsions in the COOGER wave tank
- Compare results obtained from bench/flask and wave tank experiments (conducted by COOGER), as well as to literature values obtained from field observations
- Develop a modeling framework to simulate emulsion formation while taking into account:
  - oil chemistry, physical properties, the presence of air, and wave mixing energy
  - variances in behaviour at the micron scale and macroscopic scale
  - the change of oil properties over time due to the release of sheen and effects of photo-oxidation

### **3. Support Provided by Canada:**

DFO will provide escorted access to the BIO wave tank facility to the Contractor for the purpose of conducting any necessary testing and data collection to undertake the required tasks. Additionally, DFO will provide the following at the request of the Contractor:

- any information regarding the COOGER wave tank facility, laboratory and measuring instruments that exist at the time of issuance of the contract that DFO has at its disposal for the purposes of completing the tasks outlined
- any data collected on its own part from lab and wave tank experiments that are specifically undertaken in association with tasks identified in this Statement of Work that will enable the efficient progress of the required tasks.

### **4. Deliverables:**

The Contractor will be required to fulfill the tasks described in each part in Section 2 (above). In doing so, the Contractor is expected to deliver the following:

#### **4.1 Incorporating wind into the simulation of sea conditions in a wave tank (Task 2.2.1)**

- a) Supply engineering drawings and technical specifications for the incorporation of a wind generation system in the COOGER wave tank facility to provide three different levels of air flow into breaking wave profiles.
- b) Develop an experimental design to measure the hydrodynamics in the wave tank using the new wind + wave profiles. The design must include details regarding what instrumentation is needed (e.g. wave gauges, ADV etc.) and where they will be placed in the tank.
- c) Using the measurements obtained from these experiments, supply CFD model results which characterize the hydrodynamics in the wave tank under all the new wave + wind profiles. Report the new energy dissipation rates ( $\epsilon$ ) of all new wave profiles.

#### **4.2 Testing petroleum dispersion under enhanced simulated sea conditions in a wave tank (Task 2.2.2)**

- a) Develop an experimental design for measuring the dispersion of different types of oil in the wave tank using the wind + wave profiles developed in Task 2.2.1. The experimental design will include details for the positioning of instrumentation for monitoring oil droplet size/concentration as well as locations and time points for water sampling. These experiments must also take into account different temperature and mixing regimes as well as the use of chemical dispersants.
- b) Supply VDROD model results which use the CFD model developed in Task 2.2.1 and the experimental results from above to characterize oil dispersion and transport in the wave tank.

#### **4.3 Modeling and testing the formation of emulsifications in water (Task 2.2.3)**

- a) Develop an experimental design that can be used to perform lab tests to evaluate the influence of air on the formation and stability of oil/water emulsions. These lab experiments should be based





on established standardized test methods published in the scientific literature (i.e. BFT test method).

- b) Take the key factors identified from the lab tests above to develop a scaled up experimental design to test the formation and stability of oil/water emulsions using the COOGER wave tank.
- c) Produce a modelling framework that uses data from the lab and wave tank experiments to simulate oil/water emulsion formation. Variables the model will take into account include oil chemistry, oil physical properties, the presence of air and mixing energy. The model should have resolution from micron to the macroscopic scale while also being capable of factoring in changes in oil properties due to the release of sheen and the effects of photo-oxidation.

**5. Project Meetings**

In addition to the Contractor attending the Bedford Institute of Oceanography as necessary to conduct tasks that require direct work at the wave tank facility, the Contractor and COOGER will have regular (approximately monthly) discussions via teleconference on progress of the work. If/when necessary there will be annual face-to-face meetings, either at the Bedford Institute of Oceanography or at a conference or other venue of mutual agreement, to discuss details and progress of the work.

**6. Project Report**

The Contractor must provide a final report providing a detailed description of the results and outputs of the contract research. Additionally, the Contractor will be encouraged to work with COOGER scientists to produce a peer-reviewed journal article arising from this project, to be submitted for publication at a date after completion of the work.

**7. Timeframe/Delivery Date:**

The contract shall commence on the date of contract award, and remain in effect until March 12, 2027. The Contractor shall follow an agreed schedule outlining the start and end dates of itemized tasks undertaken during the contract period.

Deliverables	Estimated work completed in Year 1: April 1, 2024 to March 31, 2025	Estimated work completed in Year 2: April 1, 2025 to March 31, 2026	Estimated work completed in Year 3: April 1, 2026 to March 12, 2027
4.1a	100%		
4.1b	100%		
4.1c	50%	50%	
4.2a	33.3%	33.3%	33.3%
4.2b		50%	50%
4.3a	50%	50%	
4.3b		100%	
4.3c		33.3%	66.7%

**8. Security Requirement:**

The Contractor will not have access to Protected or Classified material or information. During occasional visits to the Bedford Institute of Oceanography, the Contractor will at all times be escorted by Fisheries and Oceans Canada personnel.



**ANNEX “B”  
BASIS of PAYMENT**

The Contractor will be paid all-inclusive firm rates as follows for work performed in accordance with the Contract. Customs duties are included and Applicable Taxes are extra.

**The bidder should refer to part 7 of Annex “A” Statement of Work to complete the following pricing table while understanding that each deliverable may not be completed in one fiscal year.**

Description	Firm price per deliverable
Deliverable 4.1a: Supply engineering drawings and technical specifications	\$ _____
Deliverable 4.1b: Develop an experimental design to measure the hydrodynamics in the wave tank using the new wind + wave profiles	\$ _____
Deliverable 4.1c: Supply CFD model results	\$ _____
Deliverable 4.2a: Develop an experimental design for measuring the dispersion of different types of oil in the wave tank using the wind + wave profiles	\$ _____
Deliverable 4.2b: Supply VDROF model results	\$ _____
Deliverable 4.3a: Develop an experimental design that can be used to perform lab tests to evaluate the influence of air on the formation and stability of oil/water emulsions	\$ _____
Deliverable 4.3b: develop a scaled up experimental design to test the formation and stability of oil/water emulsions using the COOGER wave tank	\$ _____
Deliverable 4.3c: Produce a modelling framework that uses data from the lab and wave tank experiments to simulate oil/water emulsion formation	\$ _____
<b>Subtotal</b>	\$ _____ CAD



**Payment schedule:**

Task	Estimated work completed in Year 1: April 1, 2024 to March 31, 2025	Payment Amount	Estimated work completed in Year 2: April 1, 2025 to March 31, 2026	Payment Amount	Estimated work completed in Year 3: April 1, 2026 to March 12, 2027	Payment Amount
4.1a	100%:	\$ _____				
4.1b	100%	\$ _____				
4.1c	50%	\$ _____	50%	\$ _____		
4.2a	33.3%	\$ _____	33.3%	\$ _____	33.3%	\$ _____
4.2b			50%	\$ _____	50%	\$ _____
4.3a	50%	\$ _____	50%	\$ _____		
4.3b			100%	\$ _____		
4.3c			33.3%	\$ _____	66.7%	\$ _____



**ANNEX "C"  
EVALUATION CRITERIA**

**MANDATORY TECHNICAL CRITERIA**

Proposals submitted for this requirement **must clearly demonstrate** that the Bidder meets all of the Mandatory Criteria. Failure to demonstrate this will result in the Proposal being deemed NON-COMPLIANT and given no further consideration.

The experience of the Bidder must be clearly identified by providing a summary/description of the previous projects/work experience and indicating when the work was carried out.

**For the Bidder's examples and for each of the proposed resources**, experience is to be used to demonstrate compliancy and should include the following information:

- The client organization;
- The dates/duration of the project;
- A description of the project, including the scope and elements of the framework, and the results/outcomes of the work undertaken by the proposed resources;
- A description of the activities performed by the proposed resources; and
- The name and contact information of the client Project Authority.

Tiebreaker Determination:

In the event, following a successful technical and financial evaluation, one or more (1) responsive bids have an equal total amount of points, the contract will be recommended for award to the bidder with the lowest all-inclusive price.

The Bidder should include the following table in their proposal and provide the proposal page number that contains the information to verify that the criteria have been met.

#	Description of Mandatory Criteria (MT)	Proposal Page number
<b>M1</b>	<p>The Bidder's proposed Project Lead must undertake and/or supervise the work of other project team members required to fulfill the services described in Annex A – Statement of Work.</p> <p>As a minimum, the Project Lead:</p> <ul style="list-style-type: none"> <li>- Must possess a recognized designation as a Professional Engineer</li> <li>- Must have a minimum of ten years of experience in the field of oil spill science.</li> </ul> <p>A copy of the Professional Engineer's valid proof of registration, license or license number from a recognized institution must be submitted.</p> <p>A copy of Project Lead's resume/CV with dates must be provided as proof.</p>	
<b>M2</b>	<p>The Bidder must provide a minimum of <b>three separate</b> examples of previous projects demonstrating the bidder's capacity, expertise and resources to undertake the subject work listed below. The examples must include <b>one or more</b> of each subject listed:</p> <ul style="list-style-type: none"> <li>• Hydrodynamic modeling of a wave tank system</li> <li>• Designing and conducting bench and wave tank experiments to study the behaviour of oil spills in water, including oil droplet</li> </ul>	



	<p>formation, dispersion and transport</p> <ul style="list-style-type: none"> <li>• Conducting numerical modeling of oil droplet formation and dispersion in water</li> </ul> <p>For <b>each</b> project example, the Bidder must provide: Option 1:</p> <ul style="list-style-type: none"> <li>- Identification of which subject(s) listed above the project has relevance to</li> <li>- Brief (maximum of 500 words) abstract describing the project, including: purpose, methodology, results</li> <li>- Brief description (maximum of 200 words) of the Project Lead's role as it applied specifically to the project</li> </ul> <p>AND/OR</p> <p>Option 2:</p> <ul style="list-style-type: none"> <li>- Identification of which subject(s) listed above the project has relevance to</li> <li>- A peer-reviewed publication authored or co-authored by the Project Lead that resulted from the identified project</li> <li>- Brief description (maximum of 200 words) of the Project Lead's role as it applied specifically to the project</li> </ul>	
<b>M3</b>	<p>The Bidder must have experience using flap-type wave makers to generate waves using the dispersive focusing technique in a tank facility.</p> <p>The Bidder must provide a minimum of one example of a project it has conducted to demonstrates this experience.</p>	

**POINT RATED TECHNICAL CRITERIA**

Proposals submitted for this requirement should clearly demonstrate that the Bidder meets all of the Point Rated Criteria.

The experience of the Bidder must be clearly identified by providing a summary/description of the previous projects/work experience and indicating when the work was carried out.

**For the Bidder's examples and for each of the proposed resources**, experience is to be used to demonstrate compliancy and should include the following information:

- The client organization;
- The dates/duration of the project;
- A description of the project, including the scope and elements of the framework, and the results/outcomes of the work undertaken by the proposed resources;
- A description of the activities performed by the proposed resources; and
- The name and contact information of the client Project Authority.

**Please note bidders must complete the following chart and include with their bid submission.**

<p><b>Point-Rated Criteria</b> In their response, the Bidder is asked to provide information (peer-reviewed publications are acceptable) that demonstrates that within the past fifteen years they have led and/or participated in projects requiring a scope of knowledge and expertise in undertaking work directly relevant to requirements outlined in Annex A – Statement of Work</p>			
<b>#</b>	<b>Description of Point-Rated Technical Criteria</b>	<b>Point Score</b>	<b>Proposal page number</b>



<b>R1</b>	<p>The Bidder has experience designing and actively participating in wave tank experiments with a volume capacity of:</p> <ul style="list-style-type: none"> <li>- &lt;5,000 liters: 0 points</li> <li>- 5,000 – 25,000 liters: 5 points</li> <li>- 25,000+ liters: 10 points</li> </ul>	____/10	
<b>R2</b>	<p>The Bidder has experience working on projects using a wave tank(s) to study oil spills in water, specifically in regard to the formation and dispersion of oil droplets in various simulated environmental conditions:</p> <ul style="list-style-type: none"> <li>- &lt;3 projects: 0 points</li> <li>- 3-5 projects: 10 points</li> <li>- 6+ projects: 15 points</li> </ul>	____/15	
<b>R3</b>	<p>The Bidder has experience working on projects involving numerical modeling of oil droplet formation and dispersion in water using of spill treating agents:</p> <ul style="list-style-type: none"> <li>- &lt;3 projects: 0 points</li> <li>- 3-4 projects: 10 points</li> <li>- 5+ projects: 15 points</li> </ul>	____/15	
<b>R4</b>	<p>The Bidder has experience working on projects involving the determination of energy dissipation of various wave profiles using a wave tank(s):</p> <ul style="list-style-type: none"> <li>- &lt; 1 project: 0 points</li> <li>- 1 project: 5 points</li> <li>- 2 projects: 10 points</li> <li>- 3 projects: 15 points</li> <li>- 4+ projects: 20 points</li> </ul>	____/20	
<b>R5</b>	<p>The Bidder has experience working on projects involving the development of numerical models to predict oil droplet size distribution incorporating fluid viscosity and interfacial tension:</p> <ul style="list-style-type: none"> <li>- &lt;1 project: 0 points</li> <li>- 1 project: 5 points</li> <li>- 2-3 projects: 10 points</li> <li>- 4-5 projects: 15 points</li> <li>- 6+ projects: 20 points</li> </ul>	____/20	
<b>TOTAL SCORE</b> <b>(required minimum of 55 points overall)</b>		____/80	