



**Return Bids to:**

Natural Resources Canada  
Bid Receiving  
See herein for bid submission instructions

**Request for Proposal (RFP)**

**Proposal To: Natural Resources 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, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Comments**

**Issuing Office**

Natural Resources Canada  
Finance and Procurement Management Branch  
580 Booth Street  
Ottawa, ON  
K1A 0E4

<b>Title – Sujet</b>	
National feasibility study for flood hazard modeling and mapping at a regional scale	
<b>Solicitation No.</b>	<b>Date</b>
<b>NRCan-5000075340</b>	August 31, 2023
<b>Requisition Reference No.</b>	
178930	
<b>Solicitation Closes</b>	
at 2 p.m. (Eastern Daylight Savings Time (EDT)) on September 30, 2023	
<b>Address Enquiries to:</b>	
Steve Verner; <a href="mailto:steve.verner@nrcan-rncan.gc.ca">steve.verner@nrcan-rncan.gc.ca</a>	
<b>Telephone No.</b>	
343-543-6090	
<b>Destination – of Goods and Services:</b>	
Natural Resources Canada 580 Booth Street Ottawa, ON K1A 0E4	
<b>Security</b>	
THERE ARE NO SECURITY REQUIREMENTS ASSOCIATED WITH THIS REQUIREMENT.	
<b>Vendor/Firm Name and Address</b>	
<b>Telephone No.:</b>	
<b>Email:</b>	
<b>Name and Title of person authorized to sign on behalf of Vendor/Firm (type or print)</b>	
<b>Signature</b>	<b>Date</b>



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The Articles contained in this document are mandatory in their entirety, unless otherwise indicated. Acceptance of these Articles, in their entirety, as they appear in this document, is a Mandatory requirement of this RFP.

**Suppliers submitting a proposal containing statements implying that their proposal is conditional on modification of these clauses or containing terms and conditions that purport to supersede these clauses or derogate from them will be considered non-responsive.**

Bidders with concerns regarding the provisions of the Bid Solicitation document (including the Resulting Contract Clauses) should raise such concerns in accordance with the Enquiries provision of this RFP.

By signing its bid, the bidder confirms that they have read the entire bid solicitation including the documents incorporated by reference into the bid solicitation and certifies that:

1. The Bidder considers itself and its proposed resources able to meet all the mandatory requirements described in the bid solicitation;
2. This bid is valid for the period requested in the bid solicitation;
3. All the information provided in the bid is complete, true and accurate; and
4. If the Bidder is awarded a contract, it will accept all the terms and conditions set out in the resulting contract clauses included in the bid solicitation.



## **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 Statement of Work, the Basis of Payment, and any other annexes.

The Appendixes include the Evaluation Criteria, the Financial Proposal Form and the Criteria Description Form.

### **1.2 Summary**

By means of the RFP, Natural Resources Canada (NRCan) is seeking proposals from bidders for:

1. Review regional flood hazard modelling examples relevant to the FHIMP in Canada and internationally, identify good practices, challenges and limitations.
2. Develop technical recommendations and guidance for regional flood hazard modelling in Canada.
3. Develop a research and action plan for NRCan to support Federal, Provincial and Territorial levels of governments in the implementation of regional flood hazard modelling through FHIMP.
4. Prepare case studies to evaluate and document the applicability of the proposed technical recommendations and guidance for regional flood hazard modelling.

- 1.2.1 This bid solicitation allows bidders to use the CPC 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.

### **1.3 Debriefings**

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within fifteen (15) working days from receipt of the results of the bid solicitation process. The debriefing will be done in writing, by email.



## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

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

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

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

- **In the complete text content (except Section 1 and 3)**  
**Delete:** Public Works and Government Services Canada” and “PWGSC”  
**Insert:** “Natural Resources Canada.” and “NRCan”
- **At 02 Procurement Business Number:**  
**Delete:** “Suppliers are required to”  
**Insert:** “It is suggested that suppliers”
- **At 08 Transmission by facsimile or by Canada Post Corporation's (CPC) Connect service, article 1:**  
**Delete:** in its entirety
- **At 08 Transmission by facsimile or by Canada Post Corporation's (CPC) Connect service, article 2a:**  
**Delete:** The only acceptable email address to use with CPC Connect for responses to bid solicitations issued by PWGSC headquarters is: [tpsgc.pareceptiondessomissions-apbidReceiving.pwgsc@tpsgc-pwgsc.gc.ca](mailto:tpsgc.pareceptiondessomissions-apbidReceiving.pwgsc@tpsgc-pwgsc.gc.ca). or, if applicable, the email address identified in the bid solicitation.  
**Insert:** The only acceptable email address to use with CPC Connect for responses to bid solicitation issued by NRCan is: [procurement-appvisionnement@NRCan-RNCan.gc.ca](mailto:procurement-appvisionnement@NRCan-RNCan.gc.ca)
- **At 08, Transmission by facsimile or by Canada Post Corporation's (CPC) Connect service, article 2b:**  
**Delete:** “six business days”  
**Insert:** “five business days”
- **At 20, Further information, article 2b:**  
**Delete:** in its entirety

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

Delete: 60 days  
Insert: 120 days

### 2.2 Submission of Bids

Bidders must submit all proposals using the Canada Post Canada (CPC) Connect service. Given the current constraints on NRCan’s networks, the electronic mail system has a limit of 1GB per single message received and a limit of 20GB per conversation.

Bids must be submitted no later than the date and time indicated on page 1 of the bid solicitation.



**Only bids submitted using CPC Connect service will be accepted.**

At least five (5) business days before the bid solicitation closing date, it is necessary for the Bidder to send an email requesting to open CPC Connect conversation to the following address:

[procurement-provisionnement@NRCan-RNCan.gc.ca](mailto:procurement-provisionnement@NRCan-RNCan.gc.ca)

**Note 1:** Bids will not be accepted if e-mailed directly to this address. This e-mail address is to be used to open CPC Connect conversation, as detailed in the Standard Instructions [2003 \(article 08, paragraph 2\)](#), or to send bids through CPC Connect message if the bidder is using its own licensing agreement for CPC Connect.

**Note 2:** Send as early as possible in order to ensure a response, Requests to open a CPC Connect conversation received after that time may not be answered.

**IMPORTANT:** It is requested that you write the bid solicitation number in "Subject" of the email:

[NRCan-5000075340-National feasibility study-178930](#)

NRCan will not assume responsibility for proposals directed to any other location.

The onus is on the Bidder to ensure that the bid is submitted correctly using CPC Connect service. Not complying with the instructions may result in NRCan's inability to ascertain reception date and/or to consider the bid prior to contract award. Therefore, NRCan reserves the right to reject any proposal not complying with these instructions.

Due to the nature of the bid solicitation, bids transmitted by email, mail or facsimile to NRCan will not be accepted.

### 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.

## 2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) 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.

## 2.5 Applicable Laws

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



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

## 2.6 Improvement of Requirement During Solicitation Period

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

## 2.7 Basis for Canada's Ownership of Intellectual Property

Natural Resources Canada has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, on the following reasons: as set out in the [\*Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts\*](#)

1. Where the main purpose of the Crown Procurement Contract, or the deliverables contracted for, is:
  - 4.1 To generate knowledge and information for public dissemination.

## 2.8 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)
- (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

- The Bidder must submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. The CPC Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

Canada requests that the Bidder submits its bid in separately saved documents as follows:

- Section I: Technical Bid
- Section II: Financial Bid
- Section III: Certifications
- Section IV: Additional Information

If the Bidder is simultaneously providing copies of its bid using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through CPC Connect service, the wording of the electronic copy provided through CPC Connect service will have priority over the wording of the other copies.

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

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](https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573) (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, bidders should:

- 1) Include all environmental certification(s) relevant to your organization (e.g., ISO 14001, Leadership in Energy and Environmental Design (LEED), Carbon Disclosure Project, etc.)
- 2) Include all environmental certification(s) or Environmental Product Declaration(s) (EPD) specific to your product/service (e.g., Forest Stewardship Council (FSC), ENERGYSTAR, etc.)

#### Section I: Technical Bid

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

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

#### Section II: Financial Bid

- 3.1.1 Bidders must submit their financial bid in accordance with the Appendix 2 - Financial Bid Presentation Sheet.

- 3.1.2 **Exchange Rate Fluctuation**

[C3011T](#) (2013-11-06), Exchange Rate Fluctuation



**Section III: Certifications**

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

**Section IV: Additional Information**

**In section IV of their bid, the Bidders should include:**

- a) 1<sup>st</sup> page of the RFP signed, with their legal name;
- b) The name of the contact person (provide also this person's mailing address, phone numbers and email address) authorized by the Bidder to enter into communications with Canada with regards to their bid, and any contract that may result from their bid.



## **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 evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### **4.1.1 Technical Evaluation**

Mandatory and point rated technical evaluation criteria are included in Appendix 1 – Evaluation Criteria.

### **4.2 Basis of Selection**

#### **4.2.1 Highest Combined Rating of Technical Merit and Price**

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 105 points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of 150 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 / 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>	$45/55 \times 30 = 24.55$	$45/50 \times 30 = 27$	$45/45 \times 30 = 30$
<b>Combined Rating</b>		84.18	73.15	77.70
<b>Overall Rating</b>		1st	3rd	2nd



## PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

### 5.1 Certifications Required with the Bid

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

#### 5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the Integrity declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

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

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property 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.

- Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder or, in the case of a private company, the owners of the company.
- Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).
- Bidders bidding as partnerships do not need to provide lists of names.

Name of Bidder: \_\_\_\_\_

OR

Name of each member of the joint venture:

Member 1: \_\_\_\_\_

Member 2: \_\_\_\_\_



Member 3: \_\_\_\_\_

Member 4: \_\_\_\_\_

**Organizational Structure:**

- corporate entity - provide the names of the current Board of directors
- privately owned corporation - provide a list of the owner's names
- sole proprietor - provide a list of the owner's names

**LIST OF NAMES:**

SURNAME	NAME	TITLE

**5.2.2 Aboriginal Designation**

Who is eligible?

- a. An Aboriginal business, which can be:
  - i. a band as defined by the Indian Act
  - ii. a sole proprietorship
  - iii. a limited company
  - iv. a co-operative
  - v. a partnership
  - vi. a not-for-profit organization
 in which Aboriginal persons have at least 51 percent ownership and control,

OR

- b. A joint venture consisting of two or more Aboriginal businesses or an Aboriginal business and a non-Aboriginal business(es), provided that the Aboriginal business(es) has at least 51 percent ownership and control of the joint venture.

When an Aboriginal business has six or more full-time employees at the date of submitting the bid, at least thirty-three percent of them must be Aboriginal persons, and this ratio must be maintained throughout the duration of the contract.

The supplier must certify in its submitted bid that it is an Aboriginal business or a joint venture constituted as described above.

- Our Company is NOT an Aboriginal Firm
- Our Company is an Aboriginal Firm, as identified above.



**5.2.3 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](#) website.

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

**5.2.4 Additional Certifications Precedent to Contract Award**

**5.2.4.1 Status and Availability of Resources**

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

**5.2.4.2 Education and Experience**

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

**5.2.4.3 Former Public servant**

<p><b>Former Public Servants</b></p> <p>See the Article in Part 2 of the bid solicitation entitled Former Public Servant for a definition of "Former Public Servant".</p>	<p>Is the Bidder a FPS in receipt of a pension as defined in the bid solicitation?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, provide the information required by the Article in Part 2 entitled "Former Public Servant"</p>
	<p>Is the Bidder a FPS who received a lump sum payment under the terms of the Work Force Adjustment Directive?</p> <p>Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, provide the information required by the Article in Part 2 entitled "Former Public Servant"</p>

**SIGNATURE for CERTIFICATION**

The Contractor certifies having read and understood the information included in the present document and acknowledges receipt.

\_\_\_\_\_  
Name

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Authorized Representative



## **PART 6 – SECURITY, FINANCIAL AND OTHER REQUIREMENTS**

### **6.1 Security Requirements**

There are no security requirements associated with this procurement.





## 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 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's technical bid entitled \_\_\_\_\_, dated \_\_\_\_\_. (*to be completed at contract award*)

### 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

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

- If applicable, replace references to Public Works and Government Services Canada (PWGSC) with Natural Resources Canada (NRCan).

#### 7.2.2 Supplemental General Conditions

The following clauses apply to and form part of this contract:

[4007](#) (2022-12-01), Canada to Own Intellectual Property Rights in Foreground Information apply to and form part of the Contract.

### 7.3 Security Requirements

There is no security requirement applicable to the Contract.

### 7.4 Term of Contract

#### 7.4.1 Period of the Contract

The period of the Contract is from date of Contract to March 31, 2025 inclusive.

### 7.5 Authorities

#### 7.5.1 Contracting Authority

Name: Steve Verner  
Title: Senior Procurement Officer  
Organization: Natural Resources Canada  
Address: 580 Booth Street, Ottawa, ON K1A 0E4  
Telephone: 343-543-6090  
E-mail address: [steve.verner@nrcan-rncan.gc.ca](mailto:steve.verner@nrcan-rncan.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 Project or Technical Authority**

Name: \_\_\_\_\_ (to be filled out at contract award)  
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.

**7.5.3 Contractor's Representative**

Name: \_\_\_\_\_ (to be filled out at contract award)  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
Telephone: \_\_\_\_-\_\_\_\_-\_\_\_\_\_  
E-mail address: \_\_\_\_\_

**7.6 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: 2019-01](#) of the Treasury Board Secretariat of Canada.

**7.7 Payment**

**7.7.1 Basis of Payment - Firm Price, Firm Unit Price(S) or Firm Lot Price(s)**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in Annex B for a cost of \$ \_\_\_\_\_ (*insert the amount at contract award*). Customs duties are included, and Applicable Taxes are extra.

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.

**7.7.2 Method of Payment**

**Milestone Payments**

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

- a. an accurate and complete claim for payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.



## 7.8 Invoicing Instructions

Invoices shall be submitted using **the following method**:

E-mail:

[Invoicing-Facturation@nrcan-rncan.gc.ca](mailto:Invoicing-Facturation@nrcan-rncan.gc.ca)

**Note:** Attach "PDF" file. No other formats will be accepted

Invoices and all documents relating to a contract must be submitted on the Contractor's own form and shall bear the Contract number: \_\_\_\_\_ *(to be filled out at contract award)*

**Invoicing Instructions to suppliers:** <http://www.nrcan.gc.ca/procurement/3485>

## 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.

### 7.10 Applicable Laws

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

### 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 [4007](#) (2022-12-01), Canada to Own Intellectual Property Rights in Foreground Information;
- c) the general conditions [2010B](#) (2022-12-01), Medium Complexity – Professional Services;
- d) Annex A, Statement of Work;
- e) Annex B, Basis of Payment;
- f) the Contractor's bid dated \_\_\_\_\_ *(to be filled out at contract award)*

### 7.12 Foreign Nationals (Canadian Contractor **OR** Foreign Contractor)

SACC Manual clause [A2000C](#) (2006-06-16) Foreign Nationals (Canadian Contractor)

**OR**

SACC Manual clause [A2001C](#) (2006-06-16) Foreign Nationals (Foreign Contractor)



### 7.13 Insurance - No Specific Requirement

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.

### 7.14 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](#)".



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## ANNEX A - STATEMENT OF WORK

### SW.1.0 TITLE

#### National feasibility study for flood hazard modeling and mapping at a regional scale

### SW.2.0 BACKGROUND

Natural Resources Canada (NRCan) is currently preparing the second phase of implementation of the Flood Hazard Identification and Mapping Program (FHIMP). This program seeks to help Canadians better plan and prepare for future floods. In partnership with provincial and territorial governments, the FHIMP aims to complete flood hazard maps of higher risk areas in Canada and make this flood hazard information accessible to all Canadians.

To advance flood mapping across Canada, NRCan will support activities to develop flood hazard models & maps for areas where the risk level is lower, and where it might not be financially and technically feasible to implement detailed engineering flood hazard maps. This approach, currently referred to as “regional modelling”, aims to provide hazard information at a medium level of detail that can fill data gaps between local, detailed engineering flood hazard maps. Regional flood models would typically be implemented at the scale of one or multiple watersheds for use in hazard screening and prioritization, public awareness, emergency response planning, preliminary land-use planning, and high-level risk assessment.

Significant scientific developments in numerical modeling, computing performance, remote sensing and artificial intelligence can allow regional-scale modelling at a speed and efficiency that was previously not possible to achieve. As an example, the Federal Emergency Management Agency (FEMA) in the United States has been implementing regional flood modelling for a number of years as a cost-effective solution to provide communities with a baseline understanding of their flood hazards (referred to as base-level engineering). Many flood mapping stakeholders at the local, provincial and territorial levels are already implementing or plan to implement regional modelling in Canada, including a number of initiatives supported by NRCan through the first phase of the FHIMP.

NRCan aims to support the implementation of regional flood hazard modelling projects with provincial and territorial partners through FHIMP, as well as support research and development activities to better support this novel approach. Having a comprehensive understanding of the current possibilities and experiences in regional flood modelling, as well as the recommended best practices, would directly inform the efforts required to implement regional modelling at scale in Canada.

For the purposes of this assignment, the following concepts are initially defined<sup>1</sup> as:

- **Detailed engineering flood hazard modelling:** Engineering-level hydrological and hydraulic modeling using high-resolution data inputs, detailed information on bathymetry and structures, and extensive validation and calibration. Implemented at a small geographic scale for a local area for detailed regulatory land use planning, infrastructure and site-level assessments and detailed hazard assessments. The detailed engineering flood hazard modelling corresponds to the highest technical standard for currently producing flood hazard maps in Canada.
- **Regional flood hazard modelling:** Regional-level hydrological and hydraulic modelling with limited data on bathymetry and structures, hydrological approximation methods, automated GIS-based methods and medium-resolution data inputs. Implemented at a regional geographic scale (one or multiple watersheds) for hazard screening and prioritization, public awareness, emergency response planning, preliminary land-use planning, and high-level hazard assessment. The regional flood hazard

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<sup>1</sup> The definitions for “detailed engineering flood hazard modelling”, “regional flood hazard modelling” and “tiers of modelling” are preliminary and subject to review depending on outcomes from various assignments/projects such as this current study. They do not constitute official endorsements or recommendations from NRCan or the Government of Canada.



modelling aims to produce approximate flood hazard maps to fill in gaps between detailed engineering flood hazard maps.

- **Tiers of modelling:** Tiers are defined as the application of either detailed engineering or regional modelling methods. The use of different tiers of modelling within a study area implies that both methods are used in the study and that flood hazard areas are delineated for flood hazard maps with varying levels of detail, according to the intended use cases.

### SW.3.0 OBJECTIVES

The following are the objectives for the current mandate:

5. Review regional flood hazard modelling examples relevant to the FHIMP in Canada and internationally, identify good practices, challenges and limitations.
6. Develop technical recommendations and guidance for regional flood hazard modelling in Canada.
7. Develop a research and action plan for NRCan to support Federal, Provincial and Territorial levels of governments in the implementation of regional flood hazard modelling through FHIMP.
8. Prepare case studies to evaluate and document the applicability of the proposed technical recommendations and guidance for regional flood hazard modelling.

### SW.4.0 PROJECT REQUIREMENTS

#### SW.4.1 Tasks, Deliverables, Milestones and Schedule

##### Tasks

This work includes the following tasks:

1. Organize kickoff meeting with NRCan to discuss the objectives and requirements of the study and the Contractor's provisional approach and methodology. The meeting will take place within one (1) week of the contract award by videoconference. The Contractor will prepare kickoff meeting minutes.
2. Collect and review key internal and external documents to obtain contextual information about regional flood hazard modelling.
3. Conduct research on existing regional flood hazard models and methodologies used in Canada, the United States and in other countries that may be relevant to meet the objectives of this study. Findings of this research will be summarized in an Environmental Scan report, highlighting good practices, challenges and limitations identified with these approaches. As part of this research, the Contractor should consult and interview relevant stakeholders to gain insights into existing projects, methods and approaches. He should also identify recent trends and developments in the fields of remote sensing and AI that could be leveraged to support or enhance regional flood hazard modelling in Canada, including the use of data from the new SWOT satellite mission.
4. Develop technical recommendations and good practices for the implementation of regional flood hazard modelling in Canada. These recommendations will be summarized in a public-facing guidance document which will be considered for inclusion in the Federal Flood Mapping Guideline Series.

The guidance document will cover at a minimum (approx. 30 pages in length):

- a. Background information;
- b. Considerations for standard of care;
- c. Data requirements;
- d. Modeling methods and recommended level of detail for hydrologic, hydraulic and coastal analyses;
- e. Uncertainty;
- f. Recommended applicability and use cases;



- g. Limitations; and
- h. Additional resources.

The guidance should be tailored to regional considerations that affect fluvial, pluvial and coastal flood mechanisms in different parts of Canada, as well relevant recommendations for potential consideration of compound flooding and tsunamis flooding.

It should also include relevant entry points for considering the impacts of climate change in the production of flood inundation and flood depth maps at regional scale.

- 5. Develop an action plan for NRCan to support program stakeholders in the implementation of regional flood hazard modelling through FHIMP.

This action plan, approx. 30 pages in length, will be informed by findings from the previous deliverables, as well as two half-day technical workshops held virtually with federal and provincial/territorial flood mapping stakeholders.

The Contractor will be responsible for facilitating the discussion, preparing relevant materials for these technical workshops as well as meeting minutes. NRCan will organize the sessions, manage the logistics and invite the participants.

The action plan will identify key short, medium, and long-term priorities to ensure that regional flood hazard modelling can be successfully implemented in Canada. These will be centered around the following pillars:

- a. Foundational data requirements;
- b. Implementation framework with Federal, Provincial and Territorial partners; and
- c. Research and development activities;

- 6. Prepare three (3) case studies for regional flood hazard modelling in Canada.

The Contractor will use the technical framework presented in the previously prepared guidance document to implement regional flood hazard modelling for three (3) test watersheds. Case study sites will be selected with NRCan to showcase a diversity of flood mechanisms, data availability, watershed conditions and other regional considerations. Sites may include areas that already have existing flood hazard models or flood hazard maps to facilitate access to existing data, inputs and model evaluation with existing detailed engineering models within the study area. Priority should be given to areas where validation and calibration data is available for the case studies.

The Contractor will be responsible for:

- a. Conducting an initial screening of potential case study sites and documenting the final selection in a selection memo (approx. 5 pages in length);
- b. Inventorying and collating all existing data required; no surveys or field data collection will be conducted as part of this assignment;
- c. Preparing a methodology memo for the production of flood inundation and depth maps as part of the case study activity. The methodology memo will have an approximate length of 10 pages and should include:
  - a. Description of software and models to be used;
  - b. Technical specifications for the upcoming modeling work (required analysis scenarios – minimum 5 scenarios to be considered; flood mechanisms considered; hydrological and hydraulic modelling approaches; assumptions and requirements related to topographic and bathymetric data; hydrometric data; climate and meteorological data; climate change; boundary conditions, etc.);
  - c. Description of model validation and calibration requirements;



- d. Expected limitations;
  - d. Developing regional flood hazard models for each case study site;
  - e. Performing validation, calibration and sensitivity analysis of the models where possible and appropriate;
  - f. Preparing flood inundation maps and flood depth maps for each case study site. Detailed map coverage will be provided in PDF format only for specific areas of interest, while digital geospatial files will be provided for the complete study areas.
  - g. Preparing a simplified technical report for each case study site (approx. 20 pages in length per case study). The final delivery of the technical reports will be accompanied by processed datasets for model data inputs and outputs, as well as model files.
- The Contractor may make suggestions with regards to the sequential or concurrent preparation of the three case studies reports. All three draft reports should be delivered by the final timeline specified in the schedule table.
7. Review the initial versions of the Technical Recommendations and Guidelines Report as well as the Research and Action Plan Report; taking into account key takeaways from the case study activity and providing practical examples where appropriate. A summary of the highlights and changes made to the two documents will also be summarized in a presentation.
  8. Develop presentation materials for each deliverable:
    - a. Environmental Scan Report;
    - b. Technical Recommendations and Guidelines Report;
    - c. Research and Action Plan Report;
    - d. Case Study Methodology Memo;
    - e. Case Study Technical Reports;
    - f. Highlights of updates to Technical Recommendations and Guidelines Report; Research and Action Plan Report.
  9. Lead or assist in the delivery of up to six (6) webinar-style presentations related to the current study. These presentations will have the objective of presenting study deliverables, obtaining feedback, and may have varied audiences including counterparts and representatives from NRCan / other federal departments, provincial and territorial partners or the wider public. A presentation should be tentatively planned for each of the presentation materials listed in task 8.
  10. Participate in monthly progress meetings with the NRCan Project Authority by videoconference, and prepare meeting minutes.

Deliverables, Milestones and Schedule

The Contractor must produce the following deliverables:

Milestone #	Deliverable	Time Schedule (for draft versions)
1	Kickoff Meeting Minutes	Meeting to be held within 1 week of contract award  Kickoff meeting minutes to be submitted within 2 weeks of contract award
2	Environmental Scan Report	Within 8 weeks of contract award
3	Technical Recommendations and Guidelines Report	Within 16 weeks of contract award
4	Research and Action Plan Report	Within 22 weeks of contract award
5	Case Study Selection Memo	Within 28 weeks of contract award





Milestone #	Deliverable	Time Schedule (for draft versions)
6	Case Study Methodology Memo	Within 32 weeks of contract award
7	Case Study Technical Reports (3)	Within 52 weeks of contract award
8	Technical Recommendations and Guidelines Report (Revised)	Within 60 weeks of contract award
9	Research and Action Plan Report (Revised)	Within 60 weeks of contract award
10	Presentation materials and lead/assist in the delivery of webinars for: <ul style="list-style-type: none"> <li>- Environmental Scan Report;</li> <li>- Technical Recommendations and Guidelines Report;</li> <li>- Research and Action Plan Report;</li> <li>- Case Study Methodology Memo;</li> <li>- Case Study Technical Reports;</li> <li>- Highlights of updates to Technical Recommendations and Guidelines Report;</li> <li>- Research and Action Plan Report.</li> </ul>	As required

**SW.4.2 Reporting Requirements**

- All deliverables will be in the Official Language of the Contractor’s choosing.
- Memos and reports will be provided in both Word and PDF formats, while presentation materials will be provided in both Powerpoint and PDF format.
- Digital files will be provided with the Case Study Technical Reports, these will include geospatial files for model data inputs and outputs (vectors in Shapefile, Geopackage or Geodatabase format; rasters in Geotiff format) as well as model files. All geospatial vectors must be geometrically valid according to Open Geospatial Consortium (OGC) standards as defined in OpenGIS Implementation Specification for Geographic information (#06-103r4).
- The target audience for the deliverables includes provincial, territorial, and indigenous governments, private engineering firms, civil society and non-governmental organizations (NGOs), and academia.

**SW.4.3 Method and Source of Acceptance**

- Each deliverable will be delivered in draft and final versions. Deliverables will only be considered final upon written confirmation by the NRCan Project Authority.
- The NRCan Project Authority will provide comments on deliverables within 2 weeks of receipt, and the Contractor will have up to 2 weeks for revision.

**SW.4.4 Technical, Operational and Organizational Environment**

- The Contractor will be expected to conduct the work at their own facilities.
- The Government of Canada will not accept any travel and/or living expenses incurred by the Contractor as a consequence of any relocation required to satisfy the terms of the Contract.
- No travel outside of the National Capital Region (NCR) is anticipated in the performance of the activities described in this Statement of Work.

**SW.5.0 OTHER TERMS AND CONDITIONS OF THE SOW**

**SW.5.1 Contractor’s Obligations**

In addition to the obligations outlined in Section 4 of this Statement of Work, the Contractor shall:



- In satisfying the requirements of this agreement, the Recipient is encouraged to comply with the provisions and intent of the NRCan Scientific Integrity Policy (SIP) and to discharge its contractual obligations in support of research, science, or related activities in a manner consistent with all relevant NRCan SIP provisions. For more information on the Scientific Integrity Policy, please visit the NRCan website at: <https://www.nrcan.gc.ca/scientific-integrity/21665#a20>
- Anything that is created or developed by the Contractor as part of the Work under the Contract in which copyright subsists belongs to Canada. The Contractor must incorporate the copyright symbol and either of the following notices, as appropriate: © His Majesty the King in right of Canada (year) or © Sa Majesté le Roi du chef du Canada (année).

### **SW.5.2 NRCan's Obligations**

As required to perform the contract work and at the discretion of the NRCan Project Authority, NRCan will endeavour to provide Contractor personnel with:

- relevant internal documentation, some of which may be subject to non-disclosure agreements to support confidentiality of internal information;
- scheduled access to departmental stakeholders; and
- provision of timely review, feedback on and approval of deliverables (approximately 10 business days unless otherwise specified)

### **SW.5.3 Diversity and inclusion in the public service**

Natural Resources Canada is committed to making our Department more inclusive for everyone and fostering an equitable workplace culture that values diversity and creates an environment that is welcoming and rewarding for all. We encourage the businesses that work with us to reflect these values. More information can be found at: <https://www.canada.ca/en/government/publicservice/wellness-inclusion-diversity-public-service/diversity-inclusion-public-service2.html>



**ANNEX B - BASIS OF PAYMENT**

**1. Firm Price - Milestone Payments**

The all-inclusive firm price to perform the work is in Canadian funds, applicable taxes excluded. Any Travel and Living Expenses and other miscellaneous expenses must be included in the firm price.

<b>Milestone #</b>	<b>Description of Milestone</b>	<b>Firm Price (Applicable Taxes Excluded)</b>
1	Kickoff Meeting Minutes	5%
2	Environmental Scan Report	15%
3	Technical Recommendations and Guidelines Report	20%
4	Research and Action Plan Report	15%
5	Case Study Selection Memo	5%
6	Case Study Methodology Memo	5%
7	Case Study Technical Reports (3)	25%
8	Technical Recommendations and Guidelines Report (Revised)	5%
9	Research and Action Plan Report (Revised)	5%
10	Presentation materials and lead/assist in the delivery of webinars for: <ul style="list-style-type: none"> <li>- Environmental Scan Report;</li> <li>- Technical Recommendations and Guidelines Report;</li> <li>- Research and Action Plan Report;</li> <li>- Case Study Methodology Memo;</li> <li>- Case Study Technical Reports;</li> <li>- Highlights of updates to Technical Recommendations and Guidelines Report; Research and Action Plan Report.</li> </ul>	-



**APPENDIX 1 - EVALUATION CRITERIA**

Bidders are advised to address these criteria in the following order and in sufficient depth in their proposals to enable a thorough assessment. NRCan’s assessment will be based solely on the information contained within the proposal. NRCan may confirm information or seek clarification from bidders.

Bidders are advised that only listing experience without providing any supporting data to describe responsibilities, duties and relevance to the criteria will not be considered demonstrated for the purpose of this evaluation.

The Bidder should provide complete details as to where, when (month and year) and how (through which activities/ responsibilities) the stated qualifications/experience were obtained. Experience gained during formal education shall not be considered work experience. All criteria for work experience shall be obtained in a legitimate work environment as opposed to an educational setting. Co-op terms are considered as work experience provided they are related to the required services.

Bidders are also advised that the months of experience listed for a project whose time frame overlaps that of another referenced project will only be counted once. For example: project one time frame is July 2001 to December 2001; project two time frame is October 2001 to January 2002; the total months of experience for these two project references is seven (7) months.

**1. TECHNICAL CRITERIA**

**1.1 MANDATORY EVALUATION CRITERIA**

The Mandatory Criteria listed below will be evaluated on a simple pass/fail basis. Proposals which fail to meet the mandatory criteria will be deemed non-responsive.

Criterion ID	Mandatory Criteria	Proposal Page #	Pass/Fail
M1	<p>The Bidder <b>MUST</b> propose a lead resource with at least 10 years experience <b>managing engineering projects related to flood hazard modelling and mapping in Canada</b> between January 1, 2008 and the bid solicitation closing date.</p> <p>The bidder <b>MUST</b> provide the résumé, which demonstrates the required experience of the resource proposed, including relevant project descriptions and their role &amp; responsibilities in these projects. The bidder should <b>clearly indicate</b> the relevant areas in the resource’s CV which correspond to the criteria described.</p>		
M2	<p>The proposed lead resource <b>MUST</b> have a valid professional engineering license in Canada. <b>A proof to this effect MUST be provided as an appendix to the proposal.</b></p>		



Criterion ID	Mandatory Criteria	Proposal Page #	Pass/Fail
M3	<p>The Bidder <b>MUST</b> propose up to five (5) additional resources, and demonstrate they have each a minimum of 5 years of continuous experience within the previous 10 years of the bid solicitation closing date, in the following areas of expertise:</p> <ul style="list-style-type: none"> <li>- Hydrological and hydraulic modelling for fluvial/riverine flooding in Canada</li> <li>- Hydrological and hydraulic modelling for pluvial flooding in Canada</li> <li>- Coastal flood modelling in Canada</li> <li>- Climate modeling in a flood hazard mapping context</li> <li>- Geospatial data analysis in a flood hazard mapping context</li> </ul> <p>All areas of expertise <b>MUST</b> be covered by the team of additional resources. Different resources can be used for each of the five areas of expertise. One resource can combine multiple areas of expertise if it can be demonstrated that the resource meets the minimum experience requirement in each area.</p> <p>The bidder <b>MUST</b> provide the résumé, which demonstrates the required experience of the resources proposed, including relevant project descriptions and their role &amp; responsibilities in these projects. The bidder should <b>clearly indicate</b> the relevant areas in the resource’s CV which correspond to the criteria described. The bidder should clearly identify which area of expertise is covered by which resource.</p>		



Criterion ID	Mandatory Criteria	Proposal Page #	Pass/Fail
<b>M4</b>	<p>The Bidder <b>MUST</b> demonstrate experience within 5 projects for which they have developed <b>flood hazard models and maps</b> between January 1, 2013 and the bid solicitation closing date.</p> <p>The projects must have a minimum contract value of \$100,000. For a project to be considered, at least one of the proposed resources listed in the bid <b>MUST</b> have participated in the project.</p> <p>In order to demonstrate that their company possesses the required experience, the bidder should provide the following information:</p> <ol style="list-style-type: none"><li>1. Project name</li><li>2. Project summary</li><li>3. Project start and completion Dates</li><li>4. Client contact name and contact information (references*)</li><li>5. Contract value</li><li>6. Description of the services, including: location, client, data sources, geographic scale of the project, methodology, software programs used, main assumptions and level of detail, outcomes and climate change considerations</li><li>7. Proposed resources' participation in the project</li></ol> <p>* References may be contacted to confirm the information provided.</p>		



## 1.2 EVALUATION OF RATED CRITERIA

The criteria contained herein will be used by NRCan to evaluate each proposal that has met all of the mandatory criteria.

Proposals must achieve the stated minimum points required overall for the rated criteria to be assessed as responsive under the point rated technical criteria section; proposals not meeting the minimum required points will be deemed non-responsive.

**\* Certain criteria will be evaluated according to the evaluation grid below**

EVALUATION GRID	
<b>100%</b>	The rated criteria are addressed in full detail and the information provided shows that the bidder fully and thoroughly understands all elements of the rated criteria.
<b>80%</b>	The information provided clearly shows the bidder fully understands all elements of the rated criteria, but there are some minor gaps.
<b>60%</b>	The information provided clearly shows the bidder understands certain but not all elements of the rated criteria.
<b>40%</b>	The information provided shows a basic understanding of the specified criteria, without showing that the bidder fully understands all elements of the rated criteria. The bidder shows basic communication skills. The project results presented are poor and non-significant.
<b>20%</b>	The information provided shows that the bidder has a limited understanding of the specified criteria.
<b>0%</b>	The information provided does not meet the criteria.



Proposals will be evaluated based on the following criteria:

Criterion ID	Point Rated Technical Criteria	Maximum Points	Proposal Page #
R1	<p><b>Project Team Experience:</b> Points will be awarded for experience demonstrating that the proposed resources meet the following requirements for a maximum of 30 possible points:</p> <ol style="list-style-type: none"> <li>1. Completion of flood hazard modelling studies and mapping to both a detailed engineering level and a regional modelling level of detail (can be as separate projects or combined) (10 points)</li> <li>2. Demonstrated experience in the development of technical guidance, guidelines or specifications in the context of flood hazard modelling and mapping (10 points)</li> <li>3. Demonstrated experience in research &amp; innovation activities related to flood hazard modelling and mapping (10 points)</li> </ol> <p>Only resources proposed in the mandatory criteria (M1 and M3) will be evaluated as part of this criterion.</p> <p>The bidder should <b>clearly indicate</b> the relevant areas in the resource's CV which correspond to the criteria described, using the form provided in Appendix 3.</p> <p>* These items will be evaluated individually according to the evaluation grid presented above.</p>	Up to 30 points	
R2	<p>Points will be awarded for corporate experience demonstrating 5 projects achievements that meet the following requirements for a maximum of 6 possible points per project.</p> <ol style="list-style-type: none"> <li>1. Project utilizing hydrological and hydraulic modeling software to produce fluvial flood hazard mapping at a large modeling scale (study watershed area larger than 5,000 km<sup>2</sup>) (2 points)</li> <li>2. Project utilizing innovative modeling methods such as rain-on-grid hydrology, automated model development techniques, AI &amp; remote sensing, large-scale approximations for hydrological and hydraulic parameters or innovative ways of approximating coastal flood hazard (2 points)</li> <li>3. Project utilizing different tiers of hydrological, hydraulic or hydrodynamic modeling approaches to achieve a full coverage in flood hazard mapping over a study area (1 point)</li> <li>4. Project completed after January 1, 2018 (1 point)</li> </ol> <p>The bidder should <b>clearly indicate</b> the relevant areas in the project descriptions which correspond to the criteria described, using the form provided in Appendix 3. Projects can be repeated between criteria M4 and R2.</p>	Up to 30 points	





<p><b>R3</b></p>	<p><b>Technical Approach:</b> A technical approach should be provided with details on the understanding of the assignment, methodology, work plan, project schedule and team structure to implement the proposal (max. 20 pages in length).</p> <p>Points will be awarded for the following for a maximum of 80 points*:</p> <ul style="list-style-type: none"> <li>- The bidder provides a description of its understanding of the assignment. The section addresses challenges in flood modelling and mapping, current industry context and developments (10 points)</li> <li>- The bidder provides a methodology that will meet the project objectives (20 points)</li> <li>- The bidder describes in its methodology best practices, standards, guidelines or procedures to be employed (10 points)</li> <li>- The bidder provides a work plan with task descriptions detailing how the work will be implemented (10 points)</li> <li>- The bidder identifies potential risks and problem areas for completing the assignment, and provides realistic solutions for mitigating these risks (15 points)</li> <li>- The bidder provides a realistic detailed schedule and deliverable framework for the assignment (5 points)</li> <li>- The bidder provides a team structure with an organizational chart, work breakdown/hours per proposed resource, and clearly identified main point of contact (5 points)</li> <li>- The bidder demonstrates how their proposal is flexible and provides potential areas where additional value-added activities could be considered (5 points)</li> </ul> <p>* These items will be evaluated individually according to the evaluation grid presented above.</p>	<p><b>Up to 80 points</b></p>	
<p><b>R4</b></p>	<p><b>Quality of the Proposal:</b> Points will be awarded for the overall quality and clarity of the bidder's proposal will be assessed according to the following criteria:</p> <ul style="list-style-type: none"> <li>- Compatibility between the structure of the document and that outlined in the assessment criteria.</li> <li>- Ease with which relevant information can be obtained.</li> <li>- Quality of visual presentation.</li> <li>- Quality of language.</li> </ul> <p>* These items will be evaluated according to the evaluation grid presented above.</p>	<p><b>Up to 10 points</b></p>	
<p><b>[Minimum] Total Number of Points Needed to be Considered Compliant:</b></p>		<p><b>105 / 150</b></p>	



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## APPENDIX 2 - FINANCIAL BID PRESENTATION SHEET

### 1. Firm Price

The all-inclusive firm price to perform the work is Canadian funds, applicable taxes excluded. Any Travel and Living Expenses and other miscellaneous expenses must be included in the firm price.

DESCRIPTION	FIRM PRICE (Applicable Taxes Excluded)
For all deliverables and work listed at the section SW4 (Annex A – Statement of Work)	\$ _____

NOTE: It is suggested to present a cost breakdown to support the Financial Proposal, into the format you want, which may be discussed at the kickoff meeting.



**APPENDIX 3 – CRITERIA DESCRIPTION FORM**

**Template forms for rated criteria R1 and R2**

Note: These forms are requested, should be filled out by bidders and included in their proposals.

**Criterion R1**

Resource	Name	Requirement 1: Completion of flood hazard modelling studies and mapping to both a detailed engineering level and a regional modelling level of detail (can be as separate projects or combined)	Requirement 2: Demonstrated experience in the development of technical guidance, guidelines or specifications in the context of flood hazard modelling and mapping	Requirement 3: Demonstrated experience in research & innovation activities related to flood hazard modelling and mapping
		Provide a brief description in the rows below to explain how the proposed resource meets a requirement		
Lead resource				
Additional resource 1				
Additional resource 2				
Additional resource 3				
Additional resource 4				
Additional resource 5				



**Criterion R2**

Project reference name	Client	Requirement 1: Project utilizing hydrological and hydraulic modeling software to produce fluvial flood hazard mapping at a regional modeling scale (study watershed area larger than 5,000 km2)	Requirement 2: Project utilizing innovative modeling methods such as rain-on-grid hydrology, automated model development techniques, AI or large-scale approximations for hydrological and hydraulic parameter	Requirement 3: Project utilizing different tiers of hydrological, hydraulic or hydrodynamic modeling approaches to achieve a full coverage in flood hazard mapping over a study area	Requirement 4: Project completed after January 1, 2018
		Provide a brief description in the rows below to explain how the project reference a requirement			