



**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

Proposal To: Transport Canada

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

Proposition à : Transports Canada

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

Comments - Commentaires

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

By e-mail to: - Par courriel au :

trevor.hardman@tc.gc.ca

Solicitation Closes - L'invitation prend fin

At - à :
2:00 PM - 14:00

On - le :
August 22, 2023 - 22 août 2023

Time Zone - Fuseau Horaire :
Central Time - Heure centrale

Title - Sujet

Pediatric Vehicular Heatstroke (PVH) – An Assessment of Risks, Countermeasures, and Requirements - Coup de chaleur pédiatrique dans un véhicule – évaluation des risques, des contremesures et des besoins

**Solicitation No.
N° de l'invitation**

T8080-230074

**Date of Solicitation
Date de l'invitation**

July 5, 2023 - 5 juillet 2023

Address enquiries to: - Adresser toute demande de renseignements à :

Trevor Hardman

Telephone No. - N° de telephone

431 335-3874

E-Mail Address - Courriel

trevor.hardman@tc.gc.ca

Instructions: Municipal taxes are not applicable. Unless otherwise specified herein all prices quoted must include all applicable Canadian customs duties, GST/HST, excise taxes and are to be delivered Delivery Duty Paid including all delivery charges to destination(s) as indicated. The amount of the Goods and Services Tax/Harmonized Sales Tax is to be shown as a separate item.

Instructions : Les taxes municipales ne s'appliquent pas. Sauf indication contraire, les prix indiqués doivent comprendre les droits de douane canadiens, la TPS/TVH et la taxe d'accise. Les biens doivent être livrés « rendu droits acquittés », tous frais de livraison compris, à la ou aux destinations indiquées. Le montant de la taxe sur les produits et services/taxe de vente harmonisée doit être indiqué séparément.

Vendor/Firm Name and Address

Raison sociale et adresse du fournisseur/de l'entrepreneur

Person authorized to sign on behalf of Vendor/Firm (type or print):

La personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie) :

Name - Nom

Title - Titre

Signature

Date

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PART 1 - GENERAL INFORMATION

1.1 Introduction

- A. 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.

1.2 Summary

1.2.1 Description

- A. The scope of this project focuses on vehicular heatstroke deaths and injury cases involving children aged 8 and under. Technical countermeasures to be considered include both original equipment and aftermarket systems for passenger road vehicles. The development of new detection technology is out of scope.

1.3 Debriefings

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses, and Conditions

- A. 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.
- B. 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.
- C. The [2003](#) (2023-06-08), Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation, with the following modification(s):
- (i) Section 05, Submission of bids, subsection 2, paragraph d., is deleted in its entirety and replaced with the following:
 - d. send its bid only to the Transport Canada location specified on page 1 of the bid solicitation;
 - (ii) Section 05, Submission of bids, subsection 4, is amended as follows:
 - Delete: 60 days
 - Insert: 90 days
 - (iii) Section 06, Late bids, is deleted in its entirety and replaced with the following:

Transport Canada will not return any bids delivered after the stipulated solicitation closing date and time, unless they qualify as a delayed bid as described in section 07.

For bids submitted electronically, the late bids will be deleted. Late paper bids will be disposed of in accordance with Transport Canada document management policies.

2.2 Submission of Bids

- A. Bids must be submitted only Transport Canada by the date, time, and place indicated on page 1 of the bid solicitation.

2.2.1 Transmission by E-mail

- A. Individual e-mails that may include certain scripts, formats, embedded macros, and/or links, or those that exceed 10 megabytes may be rejected by Canada's e-mail system and/or firewall(s) without notice to the Bidder or Contracting Authority. Larger bids may be submitted through more than one e-mail. Canada will confirm receipt of documents. It is the Bidder's responsibility to ensure that their entire submission has been received. Bidders should not assume that all documents have been received unless Canada confirms receipt of each document. In order to minimize the potential for technical issues, bidders are requested to allow sufficient time before the closing date and time to confirm receipt. Bid documents submitted after the closing time and date will not be accepted.

2.3 Former Public Servant

- A. 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.

2.3.1 Definitions

A. For the purposes of this clause:

- (i) "Former public servant" is any former member of a department as defined in the *Financial Administration Act* (<http://laws-lois.justice.gc.ca/eng/acts/f-11/>), 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;
- (ii) "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; and
- (iii) "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.

2.3.2 Former Public Servant in Receipt of a Pension

A. As per the above definitions, is the Bidder a FPS in receipt of a pension?

() Yes

() No

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

(i) Name of former public servant; and

(ii) Date of termination of employment or retirement from the Public Service.

C. 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](https://www.canada.ca/en/treasury-board-secretariat/services/policy-notice/changes-contracting-limits-approval-new-requirements.html) (<https://www.canada.ca/en/treasury-board-secretariat/services/policy-notice/changes-contracting-limits-approval-new-requirements.html>) and the [Guidelines on the Proactive Disclosure of Contracts](http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14676§ion=text) (<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14676§ion=text>).

2.3.3 Work Force Adjustment Directive

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

() Yes

() No

B. If so, the Bidder must provide the following information:

- (i) Name of former public servant;
- (ii) Conditions of the lump sum payment incentive;
- (iii) Date of termination of employment;
- (iv) Amount of lump sum payment;
- (v) Rate of pay on which lump sum payment is based;
- (vi) Period of lump sum payment including start date, end date and number of weeks; and
- (vii) Number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

2.4 Enquiries - Bid Solicitation

- A. All enquiries must be submitted in writing to the Contracting Authority no later than 15 calendar days before the bid closing date. Enquiries received after that time may not be answered.
- B. 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

- A. Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.
- B. 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 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](https://buyandsell.gc.ca/) (<https://buyandsell.gc.ca/>) website, under the heading "[Bid Challenge and Recourse Mechanisms](https://buyandsell.gc.ca/for-businesses/selling-to-the-government-of-canada/bid-follow-up/bid-challenge-and-recourse-mechanisms)" (<https://buyandsell.gc.ca/for-businesses/selling-to-the-government-of-canada/bid-follow-up/bid-challenge-and-recourse-mechanisms>) contains information on potential complaint bodies such as:
 - (i) 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 \$26,400 for goods and \$105,700 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, by telephone at 1-866-734-5169, or by web at www.opo-boa.gc.ca. For more information on OPO's services or to determine if your concerns are within the Ombudsman's mandate, please see the [Procurement Ombudsman Regulations \(https://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-143/page-1.html\)](https://laws-lois.justice.gc.ca/eng/regulations/SOR-2008-143/page-1.html) or visit the [OPO website](#); and

(ii) 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

- A. The bid must be gathered per section and separated as follows:
- Section I: Technical Bid;
- Section II: Financial Bid;
- Section III: Certifications.
- B. Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.
- C. It is recommended that all electronic documents be submitted using PDF file format.

3.2 Submission of Only One Bid

- A. A Bidder, including related entities, will be permitted to submit only one bid in response to this bid solicitation. If a Bidder or any related entities participate in more than one bid (participating means being part of the Bidder, not being a subcontractor), Canada will provide those Bidders with 2 working days to identify the single bid to be considered by Canada. Failure to meet this deadline will result in all the affected bids being disqualified.
- B. For the purposes of this Article, regardless of the jurisdiction where any of the entities concerned is incorporated or otherwise formed as a matter of law (whether that entity is a natural person, corporation, partnership, etc.), an entity will be considered to be "related" to a Bidder if:
- (i) They are the same legal entity (i.e., the same natural person, corporation, partnership, limited liability partnership, etc.);
 - (ii) They are "related persons" or "affiliated persons" according to the Canada Income Tax Act;
 - (iii) The entities have now or in the two years before bid closing had a fiduciary relationship with one another (either as a result of an agency arrangement or any other form of fiduciary relationship); or
 - (iv) The entities otherwise do not deal with one another at arm's length, or each of them does not deal at arm's length with the same third party.
- C. Individual members of a joint venture cannot participate in another bid, either by submitting a bid alone or by participating in another joint venture.

3.3 Section I: Technical Bid

- A. 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.
- B. 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.

3.4 Section II: Financial Bid

- A. Bidders must submit their financial bid in accordance with the Annex titled "Basis of Payment".

3.4.1 Exchange Rate Fluctuation

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

3.5 Section III: Certifications

- A. 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

- A. Mandatory and point rated technical evaluation criteria are included in the Attachment to Part 4 titled "Evaluation Criteria".

4.1.2 Financial Evaluation

- A. The price of the bid will be evaluated as follows:
 - (i) Canadian-based bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded; and
 - (ii) Foreign-based bidders must submit firm prices, Canadian customs duties, excise taxes and Applicable Taxes excluded. Canadian customs duties and excise taxes payable by Canada will be added, for evaluation purposes only, to the prices submitted by foreign-based bidders.
- B. Unless the bid solicitation specifically requires bids to be submitted in Canadian currency, bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.
- C. For the purpose of the bid solicitation, bidders with an address in Canada are considered Canadian-based bidders and bidders with an address outside of Canada are considered foreign-based bidders.

4.2 Basis of Selection - Highest Combined Rating of Technical Merit and Price

- A. To be declared responsive, a bid must:
 - (i) Comply with all the requirements of the bid solicitation; and
 - (ii) Meet all mandatory criteria; and
 - (iii) Obtain the required minimum of points overall for the technical evaluation criteria which are subject to point rating.
- B. Bids not meeting (i) or (ii) or (iii) will be declared non-responsive.
- C. 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.
- D. 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%.
- E. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30%.
- F. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.

- G. 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 3 bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%).

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$115/135 \times 60 = 51.11$	$89/135 \times 60 = 39.56$	$92/135 \times 60 = 40.89$
	Pricing Score	$45/55 \times 40 = 32.73$	$45/50 \times 40 = 36.00$	$45/45 \times 40 = 40.00$
Combined Rating		83.84	78.56	80.89
Overall Rating		1st	3rd	2nd

- H. Should two or more responsive bids achieve an identical highest combined rating of technical merit and price, the bid with the lowest overall price will be recommended for award of a contract.

ATTACHMENT 1 TO PART 4 - EVALUATION CRITERIA

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

Except where expressly provided otherwise, the experience described in the bid must be the experience of the Bidder itself (which includes the experience of any companies that formed the Bidder by way of a merger but does not include any experience acquired through a purchase of assets or an assignment of contract). The experience of the Bidder's affiliates (i.e. parent, subsidiary or sister corporations), will not be considered.

4.1.1.1 Mandatory Technical Criteria

At time of bid closing, the Bidder must comply with the following mandatory requirements and provide the necessary documentation to support compliance. Any bid which fails to meet the following mandatory criteria will be declared non-responsive and will not be given further consideration. Each criterion should be addressed separately

Proposals that fail to meet the following mandatory requirements will be discarded at this stage without further consideration and the bidder's proposal will be considered to be non-responsive.

No.	Mandatory Requirements	Bid Preparation Instructions	Pass/Fail	Cross reference to Proposal
M1	<p>Research Experience The Bidder must demonstrate a minimum of five (5) years' relevant research experience, within the last ten (10) years, for each of the resources:</p> <ol style="list-style-type: none"> 1. Principle Investigator 2. Epidemiologist/ Data Analyst 3. Human Factors Specialist/ Biomedical Engineer 4. Research Psychologist/ Public Health & Safety Researcher 5. Project Manager 	<p>The Bidder must submit details of project experience, relevant to their resource title, to demonstrate compliance. Each project must include the following information:</p> <ol style="list-style-type: none"> a. Project title; b. Description of the project and their roles; c. Client organization name; d. Contact name and email address; e. Start and end date of the project(s) (month and year). <p>The five (5) years' relevant research experience can be accumulated over a multi-year project or several shorter projects.</p>	<p>Pass – Yes for each resource</p> <p>Fail – No for one or more resource</p>	
M2	<p>Qualifications The Bidder must demonstrate a minimum of an MA/ MSc degree (related to their role) or equivalent, for each of the following project resources:</p> <ol style="list-style-type: none"> 1. Principal Investigator 2. Epidemiologist/ Data Analyst 	<p>The Bidder must include the following degree information in the submitted resumes for each resource:</p> <ol style="list-style-type: none"> a. Degree title(s) and area(s) of expertise; b. Institution(s); c. Date(s) received. 	<p>Pass – Yes for each resource</p> <p>Fail – No for one or more resource</p>	

	<p>3. Human Factors Specialist/ Biomedical Engineer</p> <p>4. Research Psychologist/ Public Health & Safety Researcher</p> <p>5. Project Manager</p>			
M3	<p>Research Publications and Project Reports</p> <p>The Bidder's proposal must include research references and abstracts for three (3) peer-review published research papers and/or final project deliverables in the last ten (10) years), for each of the following resources:</p> <ol style="list-style-type: none"> 1. Principal Investigator 2. Epidemiologist/ Data Analyst 3. Human Factors Specialist/ Biomedical Engineer 4. Research Psychologist/ Public Health & Safety Researcher 	<p>The Bidder must submit evidence of research publications and project reports for each resource. The three (3) research references must include:</p> <ol style="list-style-type: none"> a. Author surnames and initials; b. Date of publication, c. Title of paper; d. Type of publication (e.g., conference, journal, deliverable etc.); e. Publisher; f. Abstract and/or Executive Summary. <p>A given publication can be listed by multiple resources.</p>	<p>Pass – Yes for each resources</p> <p>Fail – No for one or more resource</p>	

4.1.1.2 Point Rated Technical Criteria

Proposals meeting all Mandatory Criteria will be evaluated and rated against the Point-Rated Criteria (R1-R9) in the table below. For the technical proposal the total score will be established as follows:

Proposal compliance will be evaluated based on the following mandatory and rated requirements. Bidders must provide necessary documentation to support compliance.

Table 1: REQUIRED FORMAT FOR DEMONSTRATING EXPERIENCE

<p>When requested in a technical evaluation criterion to demonstrate either work experience or project deliverables, the bidder must provide (at a minimum) the following information to demonstrate compliance (in addition to any other required information identified in the criterion).</p> <ol style="list-style-type: none"> a. A description of the project, including the scope and elements of the framework, and the results/outcomes of the work undertaken by the bidder (Executive Summary if available, links to online report(s), publications (identify these on CV)). b. Description of the roles, responsibilities, and activities performed by the proposed team member(s) relevant to the criteria. c. The name of the client organization and the name, title, email address of a contact person that may be used as a reference to validate project(s) and/or experiences. d. The dates/-duration of the work/project indicating year/months of engagement by the bidder/resource and the project budget.
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No.	Requirement	Substantiating Detail	Point Distribution	Cross reference to Proposal	Score
R1	<p>Demonstrated Research Experience The Bidder must include a summary, for a minimum of three (3) to maximum of five (5), relevant research projects in the last ten (10 years) for each resource.</p> <ol style="list-style-type: none"> 1. Principal Investigator 2. Epidemiologist/ Data Analyst 3. Human Factors Specialist/ Biomedical Engineer 4. Research Psychologist/ Public Health & Safety Researcher 5. Project Manager 	<p>Submit summaries of 3 to 5 relevant research projects carried out by members of the proposed team.</p> <p>A given project can be listed for points by multiple resources.</p> <p>Refer to Table 1 for reporting format.</p>	<p><i>Maximum 25 points</i></p> <p>One (1) point per project for each resource listed (max 25 points)</p>		/ 25
R2	<p>The Bidder must demonstrate that the proposed Principal Investigator has experience performing that role.</p>	<p>Provide examples of the Principal Investigator's experience in:</p> <ol style="list-style-type: none"> a. Planning and execution of relevant research projects; b. Leading a multidisciplinary research team; c. Obtaining ethics approval for research involving human participants; d. Managing and maintaining the integrity of team members, collaborators, and project stakeholders; e. Managing and monitoring the integrity of the design, conduct, and reporting of research projects; f. Overseeing the preparation and review of research reports. <p>Refer to Table 1 for reporting format.</p>	<p><i>Maximum 60 points</i></p> <p>Rate experience out of 10 points for each activity a) to f).</p> <p>0 – proposed Principal Investigator does not have experience for the type of activity.</p> <p>5 – proposed Principal Investigator has minimum experience for the type of activity.</p> <p>10 – proposed Principal Investigator exceeds the minimum experience for the type of activity.</p>		/ 60

R3	<p>The Bidder must demonstrate that the proposed Epidemiologist/ Data Analyst has experience performing that role.</p>	<p>Provide examples of the Epidemiologist/ Data Analyst's experience in:</p> <ul style="list-style-type: none"> a. Possessing knowledge and training of ethics principles related to research involving sensitive and private data; b. Accessing, collecting and analysing data on human health injuries and/or fatalities, behaviours, and performance; c. Collaborating with other team experts to analyze trends and interpret results; d. Communicating complex medical information in clear terms to non-medical personnel. <p>Refer to Table 1 for reporting format.</p>	<p><i>Maximum 40 points</i></p> <p>Rate experience out of 10 points for each activity a) to d).</p> <p>0 – proposed Epidemiologist/ Data Analyst does not have experience for the type of activity.</p> <p>5 – proposed Epidemiologist/ Data Analyst has minimum experience for the type of activity.</p> <p>10 – proposed Epidemiologist/ Data Analyst exceeds the minimum experience for the type of activity.</p>		/ 40
R4	<p>The Bidder must demonstrate that the proposed Human Factors Specialist/ Biomedical Engineer has experience performing that role.</p>	<p>Provide examples of the Human Factors Specialist/ Biomedical Engineer experience in:</p> <ul style="list-style-type: none"> a. Researching factors in the human health and consumer products, medical devices and/or automotive applications; b. Possessing knowledge in the domain of human factors in HMI, warning systems design and performance and human-centred design; c. Evaluating and testing the performance of technical devices and/or consumer products; d. Demonstrating knowledge in the 	<p><i>Maximum 40 points</i></p> <p>Rate experience out of 10 points for each activity a) to e).</p> <p>0 – proposed Human Factors Specialist/ Biomedical Engineer does not have experience for the type of activity.</p> <p>5 – proposed Human Factors Specialist/ Biomedical Engineer has minimum experience for the type of activity.</p> <p>10 – proposed Human Factors Specialist/ Biomedical Engineer exceeds the minimum</p>		/ 40

		domain of design guidelines, standards, and their development.	experience for the type of activity.		
		Refer to Table 1 for reporting format.			

R5	The Bidder must demonstrate that the proposed Research Psychologist/ Public Health & Safety Researcher has experience performing that role.	Provide examples of the Research Psychologist/ Public Health & Safety Researcher experience in: <ul style="list-style-type: none"> a. Research experience conducting literature reviews and identifying underlying key factors that affect public health awareness, perception, and prevention; b. Proposing best practices and intervention strategies on public health policies based on scientific knowledge and evidence; c. Developing and supporting evidence-based strategies for health promotion outreach, awareness, and education. <p>Refer to Table 1 for reporting format.</p>	<p><i>Maximum 30 points</i></p> <p>Rate experience out of 10 points for each activity a) to c).</p> <p>0 – proposed Research Psychologist/ Public Health & Safety Researcher does not have experience for the type of activity.</p> <p>5 – proposed Research Psychologist/ Public Health & Safety Researcher has minimum experience for the type of activity.</p> <p>10 – proposed Research Psychologist/ Public Health & Safety Researcher exceeds the minimum experience for the type of activity.</p>		/ 30
R6	The Bidder should demonstrate that the proposed Project Manager has experience performing that role.	Provide example projects (5-10) of the Project Manager demonstrating their successful delivery on time and within budget. <p>Refer to Table 1 for reporting format.</p>	<p><i>Maximum 20 points</i></p> <p>2 point per project.</p>		/ 20

R7	<p>The Bidder's Organization(s)</p> <p>Relevant experience and competence in human factors, public health, epidemiology, behavioural research, and human performance domains. Experience should be proven by similar or related work.</p>	<p>Provide examples of relevant projects demonstrating experience in the following domains:</p> <ul style="list-style-type: none"> a. HMI warnings and performance b. Vehicle safety performance c. Public health awareness and safety campaigns d. Injury and/or fatalities data <p>Refer to Table 1 for reporting format.</p>	<p><i>Maximum 20 points</i></p> <p>5 point per research project to a maximum of 20.</p>		/ 20
R8	<p>Bidder's Demonstration of their understanding of Project Requirements</p> <p>The Bidder is to demonstrate in their proposal their understanding of the project's objectives, scope, tasks, and deliverables as stated in the Statement of Work (SOW): Annex A.</p>	<p>The following definitions will be used to evaluate R8</p> <ul style="list-style-type: none"> • Incomplete or incorrect means the proposal does not address, satisfy, or include most elements of the objectives, scope, tasks, and deliverable (0 points). • General means the proposal satisfies most but not all elements of the objectives, scope, tasks, and deliverables (10 points). • Thorough means the proposal satisfies all elements of the objectives, scope, tasks, and deliverable (15 points). • Complete and thorough means the proposal satisfies all elements of the objectives, scope, tasks, and deliverables and includes significant added insights that demonstrate the completeness of understanding of the objectives (20 points). 	<p><i>Maximum 20 points</i></p>		/ 20

R9	<p>Proposed Work Plan and Schedule</p> <p>The Bidder will provide a well-developed work plan that will ensure tasks and allocations of resources will meet the delivery dates. To include:</p> <ul style="list-style-type: none"> i. Allocation of proposed resources by role, task, and the associated level of effort, availability of team members, backup capability, reporting structure etc. (30 points); ii. Project management tools or methodology. Adequacy of management support systems, tools or methodology and project management process demonstrating how the project will be kept on time and on budget (30 points); iii. Demonstrate an understanding of risks and 	<p>Points Distribution for item i) and ii)</p> <ul style="list-style-type: none"> • Not evident: poor and incorrect understanding of considerations and knowledge (0 points). • Inadequate: poor understanding of considerations and knowledge. Incomplete or lacking any evidence of understanding (10 points). • Good: complete and correct understanding of knowledge and considerations with possible additions to scope proposed or a more complete understanding of the industry (20 points). • Excellent: complete and correct understanding of knowledge and considerations combined with significant added insights that demonstrate the completeness of understanding (30 points). 	<p>Items i) and ii) <i>Maximum 30 points</i></p> <p>Items iii) and iv) <i>Maximum 20 points</i></p>	<p>Item i) / 30 Item ii) / 30 Item iii) / 20 Item iv) / 20</p> <p>TOTAL: / 100</p>
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	<p>challenges including those not provided in the SOW and strategies to overcome them (20 points); iv. Demonstrating strategies and schedule for completion of tasks, deliverables, and milestones (20 points).</p>	<p>Points Distribution for item iii) and iv)</p> <ul style="list-style-type: none"> • Not evident: poor and incorrect understanding of considerations and knowledge (0 points). • Good: complete and correct understanding of knowledge and considerations with possible additions to scope proposed or a more complete understanding of the industry (10 points). • Excellent: complete and correct understanding of knowledge and considerations combined with significant added insights that demonstrate the completeness of understanding (20 points). 			

The Bidder must have 60% of total points needed to pass (TOTAL POINTS: 355).

Solicitation No. - N° de l'invitation
T8080-230074

Amd. No. - N° de la modif.
Original

Buyer ID - Id de l'acheteur
Trevor Hardman

PART 5 - CERTIFICATIONS AND ADDITIONAL INFORMATION

5.1 General

- A. Bidders must provide the required certifications and additional information to be awarded a contract.
- B. 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.
- C. 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.

5.2 Certifications Required with the Bid

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

5.2.1 Integrity Provisions - Declaration of Convicted Offences

- A. 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.

5.3 Certifications Precedent to Contract Award and Additional Information

- A. 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.

5.3.1 Integrity Provisions - Required Documentation

- A. 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.

5.3.2 Federal Contractors Program for Employment Equity - Bid Certification

- A. By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/corporate/portfolio/labour/programs/employment-equity/federal-contractors/compliance-assessment.html) website (<https://www.canada.ca/en/employment-social-development/corporate/portfolio/labour/programs/employment-equity/federal-contractors/compliance-assessment.html>).
- B. 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.

5.3.3 Status and Availability of Resources

- A. The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may

propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications, and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

- B. If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

5.3.4 Education and Experience

- A. The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

5.3.5 Price Support

- A. The Bidder must provide, on Canada's request, one or more of the following price support, if applicable:
- (i) A current published price list indicating the percentage discount available to Canada; or
 - (ii) Copies of paid invoices for the like quality and quantity of the goods, services or both sold to other customers; or
 - (iii) A price breakdown showing the cost of direct labour, direct materials, purchased items, engineering and plant overheads, general and administrative overhead, transportation, etc., and profit; or
 - (iv) Price or rate certifications; or
 - (v) Any other supporting documentation as requested by Canada.

PART 6 - SECURITY, FINANCIAL, AND OTHER REQUIREMENTS

6.1 Security Requirements

- A. There is no security requirement associated with this bid solicitation.

PART 7 - RESULTING CONTRACT CLAUSES

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

ARTICLES OF AGREEMENT

7.1 Statement of Work

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

7.2 Standard Clauses and Conditions

- A. 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

- A. [2035](#) (2022-12-01), General Conditions - Higher Complexity - Services, apply to and form part of the Contract.

7.3 Security Requirements

- A. There is no security requirement applicable to the Contract.

7.4 Term of Contract

7.4.1 Period of the Contract

- A. The Work is to be performed from contract award to March 31, 2025.

7.5 Authorities

7.5.1 Contracting Authority

- A. The Contracting Authority for the Contract is:

Name: Trevor Hardman
Telephone: 431 335-3874
E-mail: trevor.hardman@tc.gc.ca

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

7.5.2 Technical Authority

- A. The Technical Authority for the Contract is:

[Coordonnées à indiquer dans le contrat subséquent]

Name:
Title:
Telephone:
E-mail:

- B. The Technical 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 Technical Authority; however, the

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

7.5.3 Contractor's Representative

[Contact information to be detailed in the resulting contract]

Name: _____
Title: _____
Address: _____

Telephone: _____
E-mail: _____

7.6 Proactive Disclosure of Contracts with Former Public Servants

- A. By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](http://laws-lois.justice.gc.ca/eng/acts/P-36/FullText.html) (<http://laws-lois.justice.gc.ca/eng/acts/P-36/FullText.html>) (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](https://www.canada.ca/en/treasury-board-secretariat/services/policy-notice/changes-contracting-limits-approval-new-requirements.html) (<https://www.canada.ca/en/treasury-board-secretariat/services/policy-notice/changes-contracting-limits-approval-new-requirements.html>) of the Treasury Board Secretariat of Canada.

7.7 Basis of Payment

7.7.1 Firm Unit Price(s)

- A. In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit price(s), as specified in the Annex titled "Basis of Payment" for a cost of \$[amount to be detailed in the resulting contract]. Customs duties are included and Applicable Taxes are extra.

7.7.2 Limitation of Expenditure

- A. Canada's total liability to the Contractor under the Contract must not exceed \$[amount to be detailed in the resulting contract]. Customs duties are included and Applicable Taxes are extra.
- B. 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 as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work.
- C. 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.

7.7.3 Method of Payment

7.7.3.1 Multiple Payments

- A. Canada will pay the Contractor upon completion and delivery of units in accordance with the payment provisions of the Contract if:
- (i) 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;

- (ii) all such documents have been verified by Canada; and
- (iii) the Work delivered has been accepted by Canada.

7.7.4 Electronic Payment of Invoices - Contract

- A. The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):
 - (i) Direct Deposit (Domestic and International);

7.8 Invoicing Instructions

- A. The Contractor must submit invoices in accordance with the section titled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
- C. Invoices must be distributed as follows:
 - (i) The original and 1 copy must be forwarded to the address shown on page 1 of the Contract for certification and payment;

7.9 Certifications and Additional Information

7.9.1 Compliance

- A. 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

- A. 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

- A. If there is a discrepancy between the wordings of any of the documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.
 1. The Articles of Agreement;
 2. The General Conditions 2035 (2022-12-01), General Conditions - Higher Complexity - Services;
 3. Annex A, Statement of Work; and
 4. Annex B, Basis of Payment; and
 5. the Contractor's bid dated [date to be specified in the resulting contract], as clarified on [date to be specified in the resulting contract, if required], and as amended on [date to be specified in the resulting contract, if required], excluding the Contractors Terms and Conditions; the Contract contains the Terms and Conditions between the parties.

One of the following options will be inserted in the resulting contract, as applicable:

Option 1: When the contract is to be with a Canadian-based supplier; or

7.12 Foreign Nationals (Canadian Contractor)

- A. The Contractor must comply with Canadian immigration requirements applicable to foreign nationals entering Canada to work temporarily in fulfillment of the Contract. If the Contractor wishes to hire a foreign national to work in Canada to fulfill the Contract, the Contractor should immediately contact the nearest Service Canada regional office to enquire about Citizenship and Immigration Canada's requirements to issue a temporary work permit to a foreign national. The Contractor is responsible for all costs incurred as a result of non-compliance with immigration requirements.

Option 2: When the contract is to be with a foreign-based supplier.

7.12 Foreign Nationals (Foreign Contractor)

- A. The Contractor must comply with Canadian immigration legislation applicable to foreign nationals entering Canada to work temporarily in fulfillment of the Contract. If the Contractor wishes to hire a foreign national to work in Canada to fulfill the Contract, the Contractor should immediately contact the nearest Canadian Embassy, Consulate or High Commission in the Contractor's country to obtain instructions, information on Citizenship and Immigration Canada's requirements and any required documents. The Contractor is responsible to ensure that foreign nationals have the required information, documents and authorizations before performing any work under the Contract in Canada. The Contractor is responsible for all costs incurred as a result of non-compliance with immigration requirements.

7.13 Insurance - No Specific Requirement

- A. 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" (<https://buyandsell.gc.ca/for-businesses/selling-to-the-government-of-canada/contract-management/dispute-resolution>).

ANNEX A - STATEMENT OF WORK

Pediatric Vehicular Heatstroke (PVH) – An Assessment of Risks, Countermeasures, and Requirements

Background

Leaving children unattended in a hot car, even for a few minutes, can be fatal. A car's interior can quickly rise to unsafe temperatures even when the outside temperature is comfortable. Children's thermoregulatory systems are less efficient, causing their body temperatures to rise at a faster rate than adults (Smith, 2019). Evidence from the United States indicates an increase in PVH deaths in recent years and this situation may worsen as temperatures rise with climate change. From 1998 to 2019 there were 858 deaths due to PVH in the United States. On average, 37 children under the age of 15 have died in a hot car per year in the USA (National Safety Council, 2023). Data for PVH-related deaths are limited in Canada. This information is not captured in national road safety databases such as Transport Canada's National Collision Database (NCDB). Hot cars may also be a risk to others such as older people and persons with disabilities.

PVH cases are primarily attributed to caregivers forgetting about a child and leaving them unattended in the vehicle. These attention or memory lapses can result from distraction, stress, or fatigue and may also occur when there are changes in daily driving routines to daycare, school, or work (Ho, Minhas, Young, Sgro, & Huber, 2020). A breakdown of the US data indicated that 56 percent (29 deaths) of the PVH fatalities occurred because children were "forgotten" and left in vehicles (Wiacek, Firey, & Herrera, 2022). In 21 percent (11 deaths), children were "knowingly left" in the vehicles, while in 15 percent of fatalities (8 deaths), the children "gained access" to the vehicles on their own. The circumstances could not be confirmed for the remaining 8 percent of the fatalities (4 deaths) and were categorized "Unknown".

Awareness and safety campaigns have been launched to address the dangers of leaving a child alone in a hot car (National Highway Traffic Safety Administration (NHTSA), 2023; National Safety Council, 2023; KidsandCars.org., 2023, Null, 2022; Transport Canada, 2022; Canada Safety Council, 2021). As an example, the NHTSA Heatstroke Prevention Campaign reminds the public of the fatal risk of leaving children alone in hot cars and encourages drivers to always check the back seat when walking away from their vehicle. These campaigns strive to prevent PVH by raising public awareness about this issue and providing mitigation strategies to prevent those risks.

Occupant Monitoring Systems (OMS) are a promising in-vehicle technology to eliminate fatalities from Pediatric Vehicular Heatstroke (PVH). These systems use cameras and other sensors to detect the presence and condition of occupants. Upon detecting a child left in a car, systems can notify the driver and potentially activate other countermeasures to reduce heat in the vehicle such as controlling the climate system.

There has been some activity in the US to require child safety alert systems in vehicles (e.g., Hot Cars Act of 2021) and many manufacturers have already committed to equipping their vehicles with this technology. While this commitment is encouraging, there is a need to assess the effectiveness of these technologies in preventing PVH injuries and deaths. The detection of children left behind is only part of the challenge. This information must then be quickly and reliably communicated to caregivers through an effective warning interface that enables them to make a fast and appropriate response.

The work in this RFP addresses the need to investigate the risks of PVH in Canada and to identify and evaluate potential countermeasures to reduce fatalities. Design guidance is needed for both the detection and warning components of occupant detection systems. Test methods and safety performance criteria are also required to evaluate their effectiveness.

Objectives

The primary objectives of the project are to:

1. Compile and analyze fatality and injury data attributed to PVH across Canada.
2. Provide an understanding of the risks of PVH and contributing factors to inform testing requirements and help optimize intervention strategies.
3. Develop preliminary test methods to evaluate the performance of child presence detection and intervention systems, including the evaluation of Human Machine Interface (HMI) and user interactions.
4. Develop recommendations for the prevention of PVH for use by key stakeholders.

Scope of Work

The scope of this project focuses on vehicular heatstroke deaths and injury cases involving children aged 8 and under. Technical countermeasures to be considered include both original equipment and aftermarket systems for passenger road vehicles. The development of new detection technology is out of scope.

Acronyms

DMS – Driver Monitoring System

CHIRPP - Canadian Hospitals Injury Reporting and Prevention Program
EMS – Emergency Management Service
HMI – Human Machine Interface
NCDB – National Collision Data Base
OEM – Original Equipment Manufacturer
OMS – Occupant Monitoring System
PVH – Pediatric Vehicular Heatstroke

Requirements

Tasks & Deliverables

The Contractor will be available for bi-weekly online meetings to discuss: 1) the work accomplished, 2) any support requirements from the Project Authority, 3) project schedule status, and 4) financial status.

Task 1 – Literature Reviews: Risks, Available Data, Legislation, & Public Awareness Initiatives

Review Canadian and international literature on the risks of PVH, relevant policy, legislation, and public awareness initiatives worldwide to identify best practices in PVH prevention.

Identify sources of relevant data such as incidents of children left alone in vehicles and other measures of precursors to PVH as well as PVH injury and death data.

Identifying key contributing factors to PVH will help us understand the underlying causes and how to better mitigate them. There are several policies, legislation, and public awareness campaigns currently being implemented in Canada and other countries to address PVH. A summary and evaluation of these strategies to determine best practices will be beneficial to advance Canada's approach.

Deliverable for Task 1:

The findings will be summarized in a report. The report shall include, at a minimum:

- overview of Canadian and international research literature, and media on the risks of PVH.
- identify and review current policy, legislation and penalties, and public awareness initiatives in Canada and internationally relevant to the prevention of PVH.
- descriptions of datasets available in Canada that may capture incidents relevant to PVH.
- examples of best practices in tracking and documenting PVH-relevant injuries and deaths in other countries.
- provide an annotated bibliography with a description of search criteria and the literature databases and resources consulted.

Task 2 – Technology Scan.

Review OMS technology to identify the costs, capabilities, and limitations of the technologies with respect to child presence detection and complementary safety features.

There is OMS technology for child presence detection on the market today. A comprehensive review of this technology is needed to help us better understand its potential to prevent PVH. The report should include technologies and approaches that are available or new (e.g. described by a supplier but not yet in production). It should also document available evidence of their effectiveness, key limitations, HMI, and the methods used to evaluate performance.

Deliverable for Task 2:

The findings will be summarized in a report. The report shall include, at a minimum:

- a review of the existing and new automotive OEM and aftermarket OMS and DMS technologies.
- general system specifications and information including sensor type, coverage, applications (e.g., child presence detection, child seat detection, occupant position, driver distraction), and sensor placement.
- description of how the technology functions, including but not limited to what it detects, sensor types (e.g., radar, camera, door logic), system limitations (e.g., misses and false positives), data logging (e.g., event data collection), and intervention design (e.g., warning mechanism, types of warning, escalation).
- identify a sample of representative systems for potential testing in Task 5
- images of the device, HMI, operating instructions, and system costs.

Task 3 – Ethics Approval, Data Collection Plan and Activities.

Develop a data collection plan to identify sources and approaches to access and compile fatality and injury data on PVH-related incidents across Canada. Incidents of PVH are not captured in TC's NCDB, so other sources of data

must be examined to better understand and quantify the risks in Canada. Collect data from available databases (e.g. police and emergency medical services (EMS) data, hospital records and coroner's reports, Canadian Hospitals Injury Reporting and Prevention Program (CHIRPP)) and identify potential gaps. The primary focus will be on pediatric cases (aged 0-8), but the report can include data on other victims of vehicular heatstroke including older children (9-12), elderly persons (aged 70+), and persons with disabilities.

Deliverable for Task 3:

The data collection plan and related activities will be summarized in a report. The report shall include, at a minimum:

- a clear and feasible plan to access and collect Canada-wide injury and fatality data on vehicular heatstroke as well as data on the number of rescues.
- a description of the methodology, key variables, and available data sources.
- a plan for adherence to Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2 or equivalent) including data access, use and secure storage.
- a compilation of data on PVH-related injury and fatality cases across Canada going back at least 10 years from 2023, with case narratives (detailed description of the circumstances that resulted in the PVH cases), where available.

Task 4. - Data Analyses and Interpretation

Examine PVH incidents in Canada to identify and classify the contributing factors to better understand the risks, inform potential test requirements, and optimize intervention strategies. A safe systems approach should be taken that accounts for human factors, vehicle/ equipment, and road-traffic environment.

Deliverable for Task 4:

The findings will be summarized in a report. The report shall include, at a minimum:

- descriptive statistical analyses of Canadian PVH incidents and inferential analyses of contributing factors using appropriate methods as well as data visualization methods to present the data.
- examine data for regional differences across Canada and compare with other jurisdictions internationally.
- adopt a behavioural framework to identify and explain key failure mechanisms and contributing factors in consideration of current theories (e.g., human error).
- develop an effective strategy or strategies to optimize PVH interventions.

Task 5 - Test Method Review and Development.

Develop preliminary test methods to evaluate the performance of child presence detection and intervention systems.

There is a need for practical, accurate and reliable test methods and safety performance criteria to evaluate the effectiveness of occupant monitoring systems for child presence detection and intervention. Based on the information gathered in the preceding tasks, identify critical test cases, conditions, participants (if user-in-the-loop testing is necessary), equipment and performance criteria (e.g., hits, misses, false positives, timing, reliability). The findings will then be used to draft test methods to verify detection performance and the warnings and intervention strategy human factors. The preliminary test methods will be applied by the Project Authority to a sample of OMS systems to support the further refinement of the test methods in an iterative fashion in collaboration with the contractor.

Deliverable for Task 5:

The findings will be summarized in a report. The report shall include, at a minimum:

- summary and review of the latest available assessment procedures used to evaluate child detection technologies with use-cases/scenarios, and performance metrics and criteria (e.g, EuroNCAP 2023).
- identify critical test cases/ scenarios, performance metrics and criteria.
- draft test methods for evaluation of:
 - the performance of child presence detection systems.
- the human factors of systems' warnings and interventions.
- identify a list of key performance indicators.
- draft a preliminary test method for evaluating the performance of PVH detection and intervention systems.

Task 6 – Best Practices and Guidelines for Preventing PVH

Based on the review and evaluation of information from the preceding tasks, the Contractor shall provide recommendations for preventing PVH including but not limited to best practices for effective public awareness campaigns, specific engineering approaches for child presence detection and intervention, reviewing and comparing current and proposed legislation, policies, and guidelines for use by key stakeholders (e.g., policy makers, industry, healthcare).

Deliverable for Task 6:

The findings will be summarized in a report. The report shall include, at a minimum recommendations for:

- messaging and strategies for PVH public awareness campaigns based on theory and evidence.
- PVH prevention policies.
- the design of child presence detection system HMI and interventions.

Acceptance Criteria

All the material resulting from this project must be prepared in English and provided electronically to Transport Canada. The reports shall be in a format consistent with high-quality technical reports and must be provided in Microsoft Word format.

The Project Authority will review the accuracy and completeness of the material submitted as deliverables and determine the quality of the submission and if the collection, analysis, and interpretation of data/information has been done in such a way to deem the work as acceptable. The Project Authority will have two weeks to review the deliverables and either accept or request changes to any material submitted.

Once a change is requested, the Contractor will have two weeks to make appropriate changes and submit the final deliverables for acceptance.

Responsibility of the Contractor

The Contractor is responsible for carrying out all aspects of the project work as indicated herein including having access to necessary literature database and injury data to complete the work. The Contractor will perform the work using the Contractor's own information, research, facilities, equipment, and access to data. The Contractor must comply with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2022.html) or equivalent. It is the responsibility of the Contractor to facilitate and maintain regular communication with the Project Authority. Communication is defined as all reasonable efforts to inform the Project Authority of plans, decisions, proposed approaches, implementation, and results of work, to ensure that the project is progressing well and in accordance with expectations. Communication may include: phone calls, email, and meetings (virtual or in-person). In addition, the Contractor is to immediately notify the Project Authority of significant issues, problems, or areas of concern in relation to any work completed under the contract, as they arise.

Language

English will be the language of communication for both oral and written communication for this work.

Travel and Living

The Contractor is not required to travel.

Replacement of Resources

The Contractor must provide the services of the personnel named in the contract to perform the work unless the Contractor is unable to do so for reasons beyond their control. Should the Contractor at any time be unable to provide the services of the resource(s) named in the contract, the Contractor shall be responsible for providing replacement personnel, at the same cost, who shall be of similar or greater ability and attainment and whom shall be acceptable to the Transport Canada Project Authority.

In advance of the date upon which replacement resources are to commence work, the Contractor shall notify, in writing, to the Transport Canada Project Authority the reason for the unavailability of the resource(s) named in the contract. The Contractor shall then provide to the Transport Canada Project Authority the name(s) of the personnel and an outline of the qualifications and experiences of the proposed replacement(s). Any replacement personnel will be evaluated at the same time. Under no circumstances shall the Contractor allow performance of the services by the replacement resources that have not been authorized by the Transport Canada Project Authority.

Support provided by Transport Canada

The Transport Canada Project Authority will be responsible for providing, as required, direction and guidance to the Contractor, and accepting and approving Contractor deliverables on behalf of the department. Additionally, as required for the completion of the work, the Project Authority will:

- a. Ensure that appropriate subject matter experts and stakeholders from within the department are available to the Contractor, as required, to provide input, answer questions, evaluate deliverables and participate in meetings.
- b. Provide available references and supporting documentation to the Contractor.
- c. Review and provide comments on draft reports and all submitted deliverables. The Project Authority will provide a written response addressing any issues promptly.

Location of Work

All work will be conducted at the contractor's site except for attendance at any in-person meetings at the Transport Canada Multi-Modal and Road Safety Programs offices.

Timeframe of delivery dates

The completion date for the project and submission of all deliverables must be no later than March 30, 2025. Required dates for each task deliverable are provided in Table 1 and these deliverables will be project milestones.

Table 1. Schedule of Deliverables and Milestones

Task	Deliverables/ Milestones	Delivery Date
0	Project management plan	Month 1
1	Literature reviews	Month 3
2	Technology scan	Month 6
3	Ethics plan, data access and collection	Month 10
4	Data analysis and interpretation	Month 12
5	Draft test methods to evaluate the performance of PVH detection and intervention systems	Month 14
6	Recommendations	Month 18

Optional Period for Future Work

An optional period of work may be necessary to collect further data and support the evaluations of occupant monitoring technology.

Contractor Qualifications

The Contractor will provide a project team that will be led by a Principal Investigator and have, at a minimum, the following areas of expertise:

- 1. Principle Investigator
- 2. Epidemiologist/ Data Analyst
- 3. Human Factors Specialist/ Biomedical Engineer/
- 4. Research Psychologist/ Public Health & Safety Researcher
- 5. Project Manager

Note: One team member may fulfill more than one role and additional team members may be included.

References

The following references provided are helpful but not required to complete the proposal:

Canada Safety Council. (2021, February 11). *Hot car warning*. Vehicle & Road Safety, Youth Safety. [https://canadasafetycouncil.org/hot-car-warning/#:~:text=Extreme%20heat%20affects%20infants%20and,%C2%BAC%20\(105%C2%BA%20F\)](https://canadasafetycouncil.org/hot-car-warning/#:~:text=Extreme%20heat%20affects%20infants%20and,%C2%BAC%20(105%C2%BA%20F))

Ho, K., Minhas, R., Young, E., Sgro, M., & Huber, J. F. (2019). Paediatric hyperthermia-related deaths while entrapped and unattended inside vehicles: The Canadian experience and anticipatory guidance for prevention. *Paediatrics & Child Health*, 25(3), 143–148. <https://doi.org/10.1093/pch/pxz087>

House Energy and Commerce. (2021, December 5). *Hot Cars Act of 2021*. H.R.3164 - Hot Cars Act of 2021 . <https://www.congress.gov/bill/117th-congress/house-bill/3164>

KidsandCars.org. (2023). *Kids and Car Safety - HEATSTROKE*. KidsandCars.org.
<https://www.kidsandcars.org/>

National Highway Traffic Safety Administration. (2023, May 1). *Child Safety Heatstroke Prevention*. Traffic Safety Marketing. <https://www.trafficsafetymarketing.gov/get-materials/child-safety/heatstroke-prevention>

National Safety Council. (2023, May 4). *Hot car deaths - data details*. Injury Facts.
<https://injuryfacts.nsc.org/motor-vehicle/motor-vehicle-safety-issues/hotcars/data-details/>

Niar, A. (2022, December). *Child Presence Detection*. (Australia) Child Presence Detection.
<https://unece.org/transport/documents/2022/12/informal-documents/australia-child-presence-detection>

Null, J. (2022). *Heatstroke deaths of children in vehicles*. No Heat Stroke. <https://www.noheatstroke.org/>

Smith, C. J. (2019). Pediatric thermoregulation: Considerations in the face of global climate change. *Nutrients*, 11(9), 2010. <https://doi.org/10.3390/nu11092010>

Transport Canada. (2022, September 1). *Dangers of hot vehicles and children*. Road Transportation.
<https://tc.canada.ca/en/road-transportation/dangers-hot-vehicles-children>

Wiacek, C. J., Firey, L. M. L., & Herrera, H. (2022, August 31). *NHTSA Special Crash Investigations: Comprehensive Study of 2019 U.S. Pediatric Vehicular Hyperthermia Fatalities*. TRID.
<https://trid.trb.org/view/2026136>

ANNEX B - BASIS OF PAYMENT

1. General

- A. All prices are in Canadian Dollars, Canadian customs duties and excise taxes included, Delivered Duty Paid (DDP), Applicable Taxes excluded.
- B. Travel and living expenses will not be reimbursed and are included in the costs below.

Resource	Firm All-Inclusive Daily Rate	Estimated level of Effort (DAYS)	Total
Principal Investigator	\$		\$
Epidemiologist/ Data Analyst	\$		\$
Human Factors Specialist/ Biomedical Engineer	\$		\$
Research Psychologist/ Public Health & Safety Researcher	\$		\$
Project Manager	\$		
Total Evaluated Price:			\$
Applicable Taxes			\$
Total Estimated Cost of Professional Fees:			\$

Additional Resources (as-and-when).

The following firm all-inclusive daily rates are requested to be submitted by the Bidder. The pricing table below will not be evaluated and does not form part of the financial evaluation. The table shall be used as firm rates within the resulting contract. Additional resources can be added (with the corresponding Firm All-Inclusive Daily Rate) if the Bidder planned to use them to complete the work.

Resource	Firm All-Inclusive Daily Rate	Estimated level of Effort (DAYS)	Total
	\$		\$