



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

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

**11 Laurier St. / 11, rue Laurier
Place du Portage , Phase III
Core 0A1 / Noyau 0A1
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776**

**Request for Proposal
Demande de Proposition**

**Proposal to: Public Works and Government
Services Canada**

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

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

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

Comments - Commentaires

**Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Science Procurement Directorate/
Direction de l'acquisition de travaux
scientifiques
11C1, Phase III
Place du Portage
11 Laurier St. / 11, rue Laurier
Gatineau, Québec K1A 0S5

Title-Sujet Hybrid Safety Warning Systems for Railway-Roadway Grade Crossings	
Solicitation No. - N° de l'invitation T8156-140053/A	Date 2015-07-09
Client Reference No. - N° de référence du client T8156-140053	
GETS Reference No. - N° de référence de SEAG	
File No. - N° de dossier 052ss.T8156-140053	CCC No./N° CC - FMS NO. / N° VME
Solicitation Closes - L'invitation prend fin at - à 2:00 PM on - le 2015-08-07	Time Zone Fuseau horaire Eastern Daylight Time (EDT)
Delivery Required - Livraison exigée See Herein	
Address Enquiries to: - Adresser toutes questions à: Brooke Taylor	Buyer Id - Id de l'acheteur 052ss
Telephone No. - N° de téléphone 819-956-1674	Email Address: Brooke.Taylor@tpsgc-pwgsc.gc.ca
Destination of Goods, Services and Construction: Destinations des biens, services et construction : Specified Herein Précisé dans les présentes	
Security - Sécurité This Request for Proposal does not include provisions for security. Cette Demande de proposition ne comprend pas des dispositions en matière de sécurité.	

Instructions : See Herein

Instructions : voir aux présentes

Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de telephone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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PART 1 - GENERAL INFORMATION

1. Introduction

The bid solicitation document is divided into six 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: includes the certifications to be provided;
- Part 6 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work and the Basis of Payment.

The Attachments include the Financial Bid Presentation Sheet and the Project Description Forms.

2. Summary

Transport Canada has a requirement for Research and Development services to develop comprehensive criteria and guidelines to identify the most appropriate hybrid safety warning systems for Canadian rail-highway grade crossings. The results of this project will provide a tool to regulators, railways and road authorities to determine hybrid safety warning systems that could be deployed at specific rail-highway grade crossings.

The Contract will be from contract award date to **October 31, 2016** inclusive.

For services requirements, Bidders in receipt of a pension or a lump sum payment must provide the required information as detailed in Part 5 of the bid solicitation.

The requirement is subject to the provisions of the Agreement on Internal Trade (AIT) and is limited to Canadian goods and/or services.

The requirement is for Transportation Research & Development which is excluded from the application of the North American Free Trade Agreement (NAFTA) as per Annex 1001.1b-2, Class A (Research and Development). The requirement is also excluded from the application of the World Trade Organization - Agreement on Government Procurement (WTO-AGP), under Appendix I, Annex 4.

Bidders must submit a list of names, or other related information as needed, pursuant to section 01 of 2003 (2014-09-25) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements.

3. Debriefings

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

4. Communications

As a courtesy and in order to coordinate any public announcements pertaining to this contract, the Government of Canada requests that successful Bidders notify the Contracting Authority 5 days in advance of their intention to make public an announcement related to the recommendation of a contract award, or any information related to the contract. The Government of Canada retains the right to make primary contract announcements.

5. Conflict of Interest

The Work described herein and the deliverable items under any resulting Contract specifically exclude the development of any statement of work, evaluation criteria or any document related to a bid solicitation. The Contractor, its subcontractor(s) or any of their agent(s) directly or indirectly involved in the performance of the Work and/or in the production of the deliverables under any resulting Contract will not be precluded from bidding on any potential future bid solicitation related to the production or exploitation of any concept or prototype developed or delivered under any resulting Contract.

PART 2 - BIDDER INSTRUCTIONS

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>) 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 (2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: one hundred twenty (120) days

2. Submission of Bids

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

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

3. Enquires - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no **later than ten (10) calendar days** before the bid closing date. Enquiries received after that time may not be answered.

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

The Contracting Authority for the requirement is:

Brooke Taylor
Supply Team Leader
Public Works and Government Services Canada
Acquisitions Branch
Science Procurement Directorate
Place du Portage, Phase III, 11C1
11 Laurier Street
Gatineau, Quebec
K1A 0S5
Telephone: (819) 956-1674
Facsimile: (819) 997-2229
E-mail address: brooke.taylor@pwgsc.gc.ca

4. Applicable Laws

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

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

5. Improvement of Requirement during Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least 10 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

6. Maximum Funding

The maximum funding available excluding Travel and Living expenses for the contract resulting from the bid solicitation is **\$169,000.00** (Applicable Taxes extra, as appropriate). A budget of **\$6,000.00** (Applicable Taxes extra, as appropriate) will be provided for Travel and Living Expenses, if required – for a total maximum funding of **\$175,000.00** (Applicable Taxes extra, as appropriate). Bids valued in excess of this amount will be considered non-responsive. This disclosure does not commit Canada to pay the maximum funding available.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

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

Section I: Technical Bid (5 hard copies and 1 soft copy on CD or USB)

Section II: Financial Bid (1 hard copy and 1 soft copy on CD or USB)

Section III: Certifications (1 hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

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

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

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

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

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

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 and describe their approach in a thorough, concise and clear manner for carrying out the work.

The technical bid should clearly address 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

Bidders must submit their financial bid in accordance with the following:

- (a) For the Work described in Annex A “Statement of Work”, excluding Travel and Living costs, a firm, all inclusive lot price for the Work; the costs must not exceed the maximum funding specified in Part 2;
- (b) The total amount of Applicable Taxes are to be shown separately, if applicable; and
- (c) The information should be provided in accordance with the Financial Bid Presentation Sheet at Attachment 1 to Part 3.

For Canadian-based bidders, prices must be in Canadian funds, Canadian customs duties and excise taxes included, and Applicable Taxes are extra, if applicable.

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.

Price Breakdown

Bidders are requested to detail the following elements for each task, milestone or phase of the Work, as applicable:

- (a) Labour: For each individual and (or) labour category to be assigned to the Work, indicate: i) the hourly rate, inclusive of overhead and profit; and ii) the estimated number of hours.
- (b) Equipment: Specify each item required to complete the Work and provide the pricing basis of each one, Canadian customs duty and excise taxes included, as applicable. These items will be deliverable to Canada upon completion of the contract.
- (c) Materials and Supplies: Identify each category of materials and supplies required to complete the Work and provide the pricing basis.
- (d) Travel and Living Expenses: Indicate the number of trips and the number of days for each trip, the cost, destination and purpose of each journey, together with the basis of these costs.
- (e) Subcontracts: Identify any proposed subcontractor and provide for each one the same price breakdown information as contained in this article.
- (f) Other Direct Charges: Identify any other direct charges anticipated, such as long distance communications and rentals, and provide the pricing basis.
- (g) Applicable Taxes: Identify any Applicable Taxes separately.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

**ATTACHMENT 1 to Part 3
FINANCIAL BID PRESENTATION SHEET**

1. For the Work described in the "Statement of Work", Annex A, excluding Travel and Living Expenses:

Milestone Schedule

Milestone No.	Description	Due Date	Firm Amount (Applicable Taxes extra)
1	Phase I: Work Plan, Kick-off meeting and Literature Review as described in article 6.1 and 6.2 of the Statement of Work.	No later than 11 weeks after contract award	\$ _____ No more the than 10% of the total Contract value
2	Phase II: Risk Assessment and Warning System Selection Criteria as described in article 6.3 of the Statement of Work.	No later than 23 weeks after contract award	\$ _____
3	Phase III: Milestone report as described in article 6.4 of the Statement of Work.	No later than 31 weeks after contract award	\$ _____
4	Phase IV: Evaluation as described in article 6.5 of the Statement of Work.	No later than 43 weeks after contract award	\$ _____
5	Phase V: Technical Reports and Guidelines as described in article 6.6 of the Statement of Work.	No later than 57 weeks after contract award	\$ _____ No less the than 10% of the total Contract value
Total Firm All-inclusive Lot Price, excluding Travel and Living: (Applicable taxes extra)			\$ _____

2. Travel and Living Expenses:

A budget of \$6,000.00 will be provided for Travel and Living Expenses, if required.

CEILING PRICE FOR TRAVEL AND LIVING: \$ 6000.00 (if required)

TOTAL FINANCIAL BID: \$ _____

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

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.

1.1 Technical Evaluation

1.1.1 Bidder Experience

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), subcontractors, or suppliers will not be considered.

1.1.2 Supporting Documentation

In the event that the Bidder fails to submit any supporting information pursuant to the evaluation criteria listed below, the Contracting Authority may request it thereafter in writing, including after the closing date of the bid solicitation. It is mandatory that the Bidder provide the supporting information within three (3) business days of the written request or within such period as specified or agreed to by the Contracting Authority in the written notice to the Bidder.

1.1.3 Mandatory Technical Criteria

At bid closing time, the Bidder must comply with the following mandatory technical criteria and provide the necessary documentation to support compliance. Any bid which fails to meet the following mandatory technical criteria will be declared non-responsive. Each criterion should be addressed separately.

Bidders are advised to carefully read the mandatory requirements below and address each area of the criteria in sufficient detail using a table or matrix format, which will help evaluators refer to the specific requirements they are searching for, to clearly and effectively demonstrate compliance and show how the work will be accomplished.

- M1.** The Principal Researcher must have a minimum of sixty (60) months experience completed within ten (10) years from the date of bid closing in conducting research related to transportation and traffic engineering and railway safety. To demonstrate compliance, the Bidder should utilize the Project Description Form Provided in Attachment 1 to Part 4 and/or provide a curriculum vitae for the proposed Principal Researcher that clearly demonstrates; where, the month and year commenced and completed, and how (through what activities and responsibilities) the stated experience was acquired.
- M2.** The Project Director must have a minimum of thirty-six (36) months experience completed within ten (10) years from the date of bid closing in conducting road transportation or railway projects. To demonstrate compliance, the Bidder should utilize the Project Description Form Provided in Attachment 1 to Part 4 and/or provide a curriculum vitae for the proposed Project Director that clearly demonstrates; where, the month and year commenced and completed, and how (through what activities and responsibilities) the stated experience was acquired.

1.1.4 Point Rated Technical Criteria

The Technical Bid will be evaluated and scored in accordance with the following evaluation criteria and point rating scale.

Maximum Points Available: 75
Minimum Points Required to Pass: 53 points

PR 1: QUALITY AND RESPONSIVENESS OF PROPOSAL

Maximum Points Available: 30; Minimum Points Required: 18

PR1.1 Demonstrated project and task planning. (15 points)

The Bidder should submit a proposal demonstrating its project and task planning. The project and task planning should address the following elements:

- (i) Work breakdown structure;
- (ii) Personnel allocation (including subcontractor management, if applicable);
- (iii) Level of effort;
- (iv) Risk and mitigation strategies;
- (v) Financial management, including cash flow projections;
- (vi) Project management plan; and
- (vii) Documentation procedures.

0 points	5 points	10 points	15 points
The proposal does <u>not</u> address at least 5 of the project and task planning elements listed above.	The proposal addresses at least 5 or more project and task planning elements listed above, however there are a number of details missing.	The proposal addresses at least 5 or more project and task planning elements listed above, however there are a few details missing.	The proposal addresses all project and task planning listed above and is comprehensive, no details missing.

PR1.2 Proposed work Technical Approach and Research Strategy. (15 points)

The Bidder should submit a proposal clearly outlining its proposed Technical Approach and Research Strategy as it relates to the requirements of the Statement of Work. Sufficient detail should be provided to demonstrate the Bidder's grasp of the requirement and the Bidder's ability to meet it. The Technical Approach and Research Strategy should include, but not be limited to the following:

- i) Methodology used to collect information and data;
- ii) Methodology used to conduct spatial analysis and typology; and
- iii) Methodology used to evaluate and validate results and prescribe appropriate hybrid safety warning systems.

0 points	5 points	10 points	15 points
The proposal does not outline the proposed technical approach and research strategy.	The proposal outlines the proposed technical approach and research strategy but there are major deficiencies in the methodologies proposed.	The proposal clearly outlines the proposed technical approach and research strategy and demonstrates the Bidder's grasp of the requirement and the Bidder's ability to meet it. There are methodologies proposed for each of the three elements listed above, however, there are minor deficiencies.	The proposal clearly outlines its proposed technical approach and research strategy and demonstrates the Bidder's grasp of the requirement and Bidder's ability to meet it. Comprehensive and effective methodologies are proposed.

PR2. PROJECT TEAM QUALIFICATIONS Maximum Points Available: 45; Minimum Points Required: 27

PR 2.1 Principal Researcher Education and Qualification (10 points)

The Bidder should demonstrate the Qualifications and Education of the Principal Researcher, including Professional Qualifications (such as a member in a professional engineering or urban planning association), Diplomas, Certifications, or Degrees. To demonstrate this, the Bidder should clearly state where, when, and how the stated education and qualifications were acquired. Evidentiary documents demonstrating the education and/or qualifications should be provided. Only documents from a recognized Canadian university or college, or the equivalent as established by a recognized Canadian academic credentials assessment service*, if obtained outside Canada, will be considered.

*The list of recognized organizations can be found under the Canadian Information Centre for International Credentials website, at the following internet link: <http://www.cicic.ca/indexe.stm>

0 points	5 points	6 points	8 points	10 points
Principal Researcher has a High school Diploma, or Post-Secondary Certification or College Diploma.	Principal Researcher has a University Undergraduate Degree.	Principal Researcher has a University Graduate Degree.	Principal Researcher has a University Undergraduate Degree and a Professional Qualification (such as a member in a professional engineering or urban planning association).	Principal Researcher has a University Graduate Degree and Professional Qualifications (such as a member in a professional engineering or urban planning association).

PR2.2 Principal Researcher Experience (10 points)

The Bidder should demonstrate the previous experience of the Principal Researcher by completing Project Description Form 1.1, "Principal Researcher Experience" provided in Attachment 1 to Part 4 of the Request for Proposal, for up to four relevant research projects completed by the proposed Principal Researcher within the past (10) years. Relevant research projects consist of the conduct of research related to transportation and traffic engineering and railway safety.

0 points	3 points	7 points	10 points
No relevant research projects	Less than three relevant research projects	Three relevant research projects	Four or more relevant research projects

PR2.3 Project Director Education and Qualification (10 points)

The Bidder should demonstrate the Qualifications and Education of the Project Director, including Professional Qualifications (such as a member in a professional engineering or urban planning association), Diplomas, Certifications, or Degrees. To demonstrate this, the Bidder should clearly state: where, when, and how the stated education and qualifications were acquired. Evidentiary documents demonstrating the education and/or qualifications should be provided. Only documents from a recognized Canadian university or college, or the equivalent as established by a recognized Canadian academic credentials assessment service*, if obtained outside Canada, will be considered.

*The list of recognized organizations can be found under the Canadian Information Centre for International Credentials website, at the following internet link: <http://www.cicic.ca/indexe.stm>

0 points	5 points	6 points	8 points	10 points
Project Director has a High school Diploma, or Post-Secondary Certification or College Diploma.	Project Director has a University Undergraduate Degree.	Project Director has a University Graduate Degree.	Project Director has a University Undergraduate Degree and a Professional Qualification (such as a member in a professional engineering or urban planning association).	Project Director has a University Graduate Degree and Professional Qualifications (such as a member in a professional engineering or urban planning association).

PR2.4 Project Director Experience (5 points)

The Bidder should demonstrate the previous experience of the Project Director by completing Project Description Form 1.2, "Project Director Experience" provided in Attachment 1 to Part 4, for up to four projects completed by

the proposed Project Director within the past ten (10) years. Relevant projects consist of projects conducting road transportation or railway projects.

0 points	1 points	3 points	5 points
No relevant projects	Less than three relevant projects	Three relevant projects	Four or more relevant projects

PR2.5 Other Key Team Member’s experience in conducting research related to transportation and traffic engineering and railway safety. (10 points)

The Bidder should demonstrate its Other Key Team Member’s previous experience by completing Project Description Form 2.3, “Other Key Team Members Experience” provided in Attachment 1 to Part 4, for up to four relevant projects completed by the Other Key Team Members. Relevant projects consist of conducting research related to transportation and traffic engineering and railway safety.

0 points	3 points	7 points	10 points
No relevant projects	Less than three relevant projects	Three relevant projects	Four or more relevant projects

1.2 Financial Evaluation

1.2.1 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, Delivery Duty Paid (DDP), Canadian customs duties and excise taxes included.

For evaluation purposes only, the price of the bid will be determined as detailed in Attachment 1 to Part 3, Financial Bid Presentation Sheet.

2. Basis of Selection

2.1 Basis of Selection - Lowest Evaluated Price Per Point

To be declared responsive, a bid must:

- (a) comply with all the requirements of the bid solicitation;
- (b) meet all mandatory evaluation criteria;
- (c) obtain the required minimum points specified for each group of criteria with a pass mark; and
- (d) obtain the required minimum points overall for the technical evaluation criteria which are subject to a point rating.

Bids not meeting (a) or (b) or (c) or (d) will be declared non-responsive. Neither the responsive bid that receives the highest number of points nor the one that proposed the lowest price will necessarily be accepted. The responsive bid with the lowest evaluated price per point will be recommended for award of a contract. The evaluated price per point will be determined by dividing the evaluated price of the bid by the number of points obtained for the point rated technical evaluation criteria.

In the event that two or more responsive bids have the same lowest evaluated price per point, the responsive bid with the lowest evaluated price will be recommended for award of a contract.

ATTACHMENT 1 to Part 4

PROJECT DESCRIPTION FORMS

1. Project Description Forms

1.1 Principal Researcher Experience

In the format outlined below, the Bidder should provide a description of relevant projects identified in response to Mandatory and/or Point Rated Technical Criteria. The Bidder should submit one form per project and add space as necessary to fully describe the required information.

Bidder's Name:			
Project Title:			
Project Duration (Date: yyyy/mm/dd)		Commencement Date:	Completion Date:
Client:		Project Total Dollar Value:	\$
Location of the Project:			
Description of the Project:			
Objectives:			
Scope and Tasks:			
Outcome or Result:			

PROJECT DESCRIPTION FORMS

1.2 Project Director Experience

In the format outlined below, the Bidder should provide a description of relevant projects identified in response to Mandatory and/or Point Rated Technical Criteria. The Bidder should submit one form per project and add space as necessary to fully describe the required information.

Bidder's Name:			
Project Title:			
Project Duration (Date: yyyy/mm/dd)	Commencement Date:	Completion Date:	
Client:		Project Total Dollar Value:	\$
Location of the Project:			
Description of the Project:			
Objectives:			
Scope and Tasks:			
Outcome or Result:			

PROJECT DESCRIPTION FORMS

1.3 Other Key Team Member's Experience

In the format outlined below, the Bidder should provide a description of relevant projects identified in response to Point Rated Technical Criteria. The Bidder should submit one form per project and add space as necessary to fully describe the required information.

Bidder's Name:			
Project Title:			
Project Duration (Date: yyyy/mm/dd)	Commencement Date:	Completion Date:	
Client:		Project Total Dollar Value:	\$
Location of the Project:			
Description of the Project:			
Objectives:			
Scope and Tasks:			
Outcome or Result:			

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and related documentation to be awarded a contract. Canada will declare a bid non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications to provide the related documentation or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

1. Mandatory Certifications Required Precedent to Contract Award

1.1 Integrity Provisions – Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions [2003](#). The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Human Resources and Skills Development Canada (HRSDC) - 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.

2. Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

2.1 Former Public Servant - Competitive Requirements

Contracts with 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 with FPS, bidders must provide the information required below.

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:

- i. an individual;
- ii. an individual who has incorporated;
- iii. a partnership made of former public servants; or
- iv. 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 FPS in receipt of a pension, as applicable:

- i. name of former public servant;
- ii. 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: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? **Yes (___) No (___)**

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;
- vii. number and amount (professional fees) of other contracts subject to the restrictions of a work force reduction program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including applicable Taxes.

2.2 Canadian Content Certification

This procurement is limited to Canadian services.

The Bidder certifies that:

() the service(s) offered is(are) a Canadian service as defined in paragraph 2 of clause A3050T.

2.2.1 Canadian Content Definition

SACC Manual clause A3050T (2014-11-27)

2.3 Status and Availability of Resources

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.

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.

2.4 Education and Experience

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.

2.5 Language Capability

The Bidder certifies that it has the language capability required to perform the Work, as stipulated in the Statement of Work.

PART 6 - RESULTING CONTRACT CLAUSES

1. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's proposal entitled _____, dated _____.

1.1 Work Authorization

Despite any other condition of the Contract, the Contractor is only authorized to perform the Work required to complete Phase I of the Contract. Upon completion of each Phase, the Work will be reviewed before the Contractor is authorized to commence Work for any additional Phases. Depending on the results of the review and evaluation of the Work, Canada will decide at its discretion whether to continue with the Work.

If Canada decides to continue with the next Phase, the Contracting Authority will advise the Contractor in writing to commence work on the next Phase. The Contractor must immediately comply with the notice.

If Canada decides not to proceed with the next phase, the Contracting Authority will advise the Contractor in writing of the decision and the Contract will be considered completed at no further costs to Canada. In no event will the Contractor be paid for any cost incurred for unauthorized work.

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>) issued by Public Works and Government Services Canada.

2.1 General Conditions

2040 (2015-07-03), General Conditions - Research & Development, apply to and form part of the Contract.

3. Security Requirement

3.1 There is no security requirement applicable to this Contract.

4. Term of Contract

4.1 Period of Contract

The period of the Contract is from date of Contract to **October 31, 2016** inclusive.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Brooke Taylor
Supply Team Leader
Public Works and Government Services Canada
Acquisitions Branch
Science Procurement Directorate
Place du Portage, Phase III, 11C1

11 Laurier Street
Gatineau, Quebec
K1A 0S5
Telephone: (819) 956-1674
Facsimile: (819) 997-2229
E-mail address: brooke.taylor@pwgsc.gc.ca

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

5.2 Technical Authority

The Technical Authority for the Contract is (to be inserted at contract award):

Name : _____
Title : _____
Organization : _____
Address : _____

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

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.

5.3 Contractor's Representative

The Contractor's Representative for the Contract is:

_____ (Name)
_____ (Title)
_____ (Address)

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

6. Proactive Disclosure of Contracts with Former Public Servants

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

7. Payment

7.1 Basis of Payment

7.1.1 For the Work described in Annex A "Statement of Work", excluding Travel and Living costs:

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

For the firm price portion of the Work only, 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.

7.1.2 For Travel and Living Expenses:

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work, as determined in accordance with the Basis of Payment in Annex B, to a ceiling price of \$_____ (**insert the amount at contract award**). Customs duties are included and Applicable Taxes are extra.

The ceiling price is subject to downward adjustment so as not to exceed the actual costs reasonably incurred in the performance of the Work and computed in accordance with the Basis of Payment.

7.1.3 Total Estimated Contract Price: \$ _____

7.2 Method of Payment

7.2.1 Milestone Payments

For the work described in Annex A "Statement of Work", excluding Travel and Living Expenses, Canada will make milestone payments in accordance with the Schedule of Milestones detailed Annex B and the payment provisions of the Contract if:

- (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111 (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf>), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
- (c) all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.2.2 Monthly Payment

For Travel and Living Expenses:

Canada will pay the Contractor on a monthly basis for work performed during the month covered by the invoice in accordance with the payment provisions of the Contract if:

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

7.3 SACC Manual Clauses

A9117C (2007-11-30), T1204 - Direct Request by Customer Department

7.4 Discretionary Audit

SACC Manual Clause C0705C (2010-01-11), Discretionary Audit

8. Invoicing Instructions

1. The Contractor must submit a claim for progress payment using form PWGSC-TPSGC 1111 (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf>), Claim for Progress Payment.

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
 - (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - (c) the description and value of the milestone claimed as detailed in the Contract; and
 - (d) a copy of the invoices, receipts, vouchers for all travel and living expenses.
2. The Contractor must prepare and certify an original claim on Form PWGSC-TPSGC 1111, and forward it to the Contracting Authority for certification in an electronic format to the electronic mail address identified under section entitled "Authorities" of the Contract. Portable Document Format (.pdf) format is acceptable. The Contracting Authority will then forward the certified claim, in an electronic format, to the Technical Authority for appropriate certification after inspection and acceptance of the Work takes place, and onward submission to the Payment Office for the remaining certification and payment.
 3. The Contractor must not submit claims until all work identified in the claim is completed.

9. Certifications

9.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9.2 SACC Manual Clauses

A3060C (2008-05-12), Canadian Content Certification

10. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (to be inserted at contract award).

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 general conditions 2040 (2015-07-03), General Conditions - Research & Development;
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated _____ (to be inserted at contract award).

12. Foreign Nationals (Canadian Contractor)

SACC Manual clause A2000C (2006-06-16), Foreign Nationals (Canadian Contractor)

13. Insurance

SACC Manual clause G1005C (2008-05-12), Insurance

ANNEX A
STATEMENT OF WORK
TRANSPORT CANADA

1.0 TITLE

Hybrid Safety Warning Systems for Railway-Roadway Grade Crossings

2.0 BACKGROUND

The Grade Crossing Standards is a reference document prepared and maintained by the Transport Canada-Railway Safety Directorate. It provides minimum safety standards for the construction, alteration and maintenance of grade crossings, including the inspection and testing of grade crossing warning systems. This includes road approaches and other land adjoining the railway right-of-way to the extent that the safety of grade crossings may be affected. The document can be found at the following link: <http://www.tc.gc.ca/eng/railsafety/grade-crossings-standards.htm>

Risk-mitigating countermeasures are recommended primarily on the basis of criteria and conditions stipulated in sections 11 and 12 of the Grade Crossing Standards document. Risk assessment criteria and recommended risk-mitigating countermeasures are designed to maintain safety for all crossing users, including pedestrians, cyclists, motorists and train passengers.

While the Grade Crossing Standards include many conditions and criteria, recommended safety countermeasures generally fall into two categories:

- Passive Warning Systems (e.g., crossbucks), which are relatively inexpensive, and
- Active Warning Systems (e.g., flashing lights, bells and gates or grade separations), which are relatively costly.

There are four main benefits of using hybrid or intermediate warning systems, rather costly full-scale active warning systems, to mitigate identified risks at grade crossings:

- Mitigate risk for grade crossing users by treating the identified hazard with specific hybrid systems, rather than going directly to costly full-scale active warning systems. Therefore, hybrid systems would be safer and more cost-effective.
- Hybrid systems take less time to deploy, so grade crossing hazards can be addressed more quickly and risk-exposure reduced.
- Mitigating risk with hybrid warning systems provides a more gradual conversion of grade crossing from passive to costly active warning systems or grade-separation. This approach acknowledges continuing budget constraints, the high and rising costs of full-scale active warning systems, and the large number of grade crossings in Canada.
- A selection of hybrid solutions will allow grade crossing safety inspectors, railway companies, road authorities and other stakeholders to manage the performance gap between passive and active warning systems or grade separation.

3.0 OBJECTIVES

The objective of this project is to develop comprehensive criteria and guidelines to identify the most appropriate hybrid safety warning systems for Canadian rail-highway grade crossings. The results of this project will provide a tool to regulators, railways and road authorities to determine hybrid safety warning systems that could be deployed at specific rail-highway grade crossings.

4.0 SCOPE OF WORK

The work to be carried out will include:

- conducting a detailed literature search in Canadian and various international jurisdictions to identify grade crossing warning systems that can be deployed as intermediate or hybrid countermeasures, between conventional passive and full-scale active warning systems;
- reviewing all pertinent standards, guidelines, laws and regulations (Federal and Provincial levels) related to the performance, design and application of grade crossing warning/alerting safety systems in Canada;
- developing risk assessment criteria and guidelines to warrant and select hybrid warning systems for rail-highway grade crossings; and
- producing milestone and final reports describing the work carried out: the findings, the conclusions and the recommendations.

5.0 IMPLEMENTATION APPROACH

The project will be implemented in five phases, with a go/no-go decision at the end of each phase. The Technical Authority will convene a Project Steering Committee to review and comment on the progress of the work; provide advice; make decisions concerning scientific, technical, and managerial aspects of the work and its results; and serve as a forum for information exchange. Members will include project stakeholders and scientific or technical experts.

At a minimum, the Contractor must participate with the Technical Authority in the Project Steering Committee meeting during the planning stages of the work, principal milestones and the completion of each phase, and after submission of draft technical reports and/or plans. Meetings may be face-to-face, electronically-mediated or on-site, as appropriate and at the discretion of the Technical Authority.

6.0 DETAILED WORK DESCRIPTION

The following are the principal elements of the work that the Contractor must perform:

6.1 Phase I: Work Plan and Kick-off Meeting

The Contractor must attend a kick-off meeting to discuss the proposed Work Plan, including activities, cash flow projections, project management, and documentation within three (3) weeks of the contract award date. The dates for submission and review of milestone and final reports, as well as dates of Project Steering Committee meetings will be discussed. The Contractor must submit an updated Work Plan for each phase of the project within two weeks of the kick-off meeting.

6.2 Literature Review

- 6.2.1 The Contractor must arrange approval from government, rail and road officials for each jurisdiction identified in 6.2.3, as well as authorities, associations and institutions identified by local governments, to obtain literature, information and data required for this phase of the study.
- 6.2.2 The Contractor must conduct literature review in, but not be limited to, Australia, U.S., Great Britain, and mainland Europe as well as local (Canadian) jurisdictions deploying or planning to deploy hybrid warning systems at grade crossings. The literature review must include a detailed description of the selection processes, key assessment criteria and guidelines used in evaluating grade crossing risk used for selecting candidate hybrid warning systems.
- 6.2.3 The Contractor must identify, analyze and describe hybrid warning systems currently deployed or being considered for deployment including detailed technical and operational descriptions as well as their benefits and costs.

- 6.2.4 The Contractor must conduct a detailed search and identify hybrid warning/alerting systems being deployed at road intersections that could also be deployed at grade crossings in the countries and local jurisdictions identified for this project.
- 6.2.5 The Contractor must identify, analyze and document the key findings of research, tests and studies that validate the safety merits of road intersection warning/alerting systems and their applicability to grade crossings.
- 6.2.6 The Contractor must review risk-assessment criteria (Federal and Provincial levels) currently used to monitor safety at all grade crossings and relevant laws and regulations (e.g. Railway Safety Act and Transport Canada's Safety Management System).
- 6.2.7 The Contractor must prepare and submit a draft report of all of the findings of Phase I to the Technical Authority for review, comments and approval. The draft report must include results, conclusions and recommendations.
- 6.2.8 The Contractor must prepare and submit to the Technical Authority for approval an updated detailed work plan and activity schedule for Phase II.
- 6.2.9 The Contractor must participate with the Technical Authority in the Project Steering Committee meeting as described in Section 14.0, "Meetings".

Go/no-go decision required to proceed to Phase II.

6.3 Phase II: Risk Assessment and Warning System Selection Criteria

- 6.3.1 For the selected countries and local jurisdictions, the Contractor must identify, analyze and document the evaluation and selection criteria used to compare the safety, technical, and lifecycle benefit-cost merits of candidate hybrid warning systems, and selecting those deemed acceptable countermeasures at grade crossings.
- 6.3.2 In the countries and local jurisdictions identified for this project, the Contractor must identify, analyze and document risk-assessment criteria and other relevant models and tools used to identify immediate and potential hazards at grade crossings.
- 6.3.3 In the countries and local jurisdictions identified for this project, the Contractor must identify, analyze and document relevant processes and assessment criteria, studies and analysis used in selecting the appropriate countermeasures. These include adopted and acceptable hybrid warning systems, to eliminate the specific hazards and risks to safety identified at grade crossings. This includes, but is not limited to lifecycle benefit-cost and cost-effectiveness criteria and models.
- 6.3.4 The Contractor must prepare and submit to the Technical Authority for approval a draft report containing all of the findings of Phase II, including analysis, results and conclusions.
- 6.3.5 The Contractor must prepare and submit to the Technical Authority for approval an updated detailed work plan and activity schedule for Phase III.
- 6.3.6 The Contractor must participate with the Technical Authority in the Project Steering Committee meeting as described in Section 14.0, "Meetings".

Go/no-go decision required to proceed to Phase III.

6.4 Phase III: Milestone Report

- 6.4.1 Based on the findings of the previous phases, the Contractor must rank hybrid warning systems from most to least commonly used in the countries studied. The ranking will include,

but not be limited to, the specific hazard(s) for which the hybrid warning system is intended, its purchase and installation cost, and detailed design/installation specifications.

- 6.4.2 The Contractor must summarize key results from studies, tests and related research with emphasis on the benefit and disadvantages of each hybrid warning system, justifying the rankings outlined in 6.4.1.
- 6.4.3 The Contractor must prepare and submit the Milestone Technical Report of phases I, II and III, incorporating modifications requested by the Technical Authority in accordance with Section 11.3, "Technical Report and Delivery".
- 6.4.4 The Contractor must participate with the Technical Authority in the Project Steering Committee meeting as described in Section 14.0, "Meetings".

Go/no-go decision required to proceed to Phase IV.

6.5 Phase IV: Evaluation

- 6.5.1 The Contractor must investigate, analyze and evaluate acts, laws, regulations, design standards and guidelines related to warning/alerting systems used in Canada to mitigate risk at grade crossings.
- 6.5.2 The Contractor must investigate, analyze and evaluate all current risk-assessment criteria or models used to identify safety hazards at Canadian grade crossings. This includes but is not limited to management systems and processes used by federal and provincial jurisdictions.
- 6.5.3 The Contractor must investigate, analyze and evaluate current criteria and models used to select the appropriate warning/alerting system(s) as countermeasures to mitigate risk at Canadian grade crossings. This includes, but is not limited to, benefit-cost and/or cost/safety effectiveness criteria and models.
- 6.5.4 The Contractor must investigate, analyze, evaluate and document issues related to passive and active warning/alerting systems used to mitigate risk at Canadian public and private grade crossings. This includes, but is not limited to road approaches, at grade crossings and along the tracks.
- 6.5.5 Based on findings of phases I, II and III and sections 6.5.1 through to 6.5.4, the Contractor must develop a methodology to evaluate, assess and measure the effectiveness (safety and cost) and feasibility of deploying identified hybrid warning systems, as intermediate and alternative risk-mitigating countermeasures (between full passive and full-scale active warning systems) for grade crossings in Canada.
- 6.5.6 The Contractor must prepare and submit for Technical Authority approval a draft report presenting all of the findings of Phase IV, including results, conclusions and recommendations.
- 6.5.7 The Contractor must prepare and submit to the Technical Authority for approval an updated detailed work plan and activity schedule for Phase V.
- 6.5.8 The Contractor must participate with the Technical Authority in the Project Steering Committee meeting as described in Section 14.0, "Meetings".

Go/no-go decision required to proceed to Phase V.

6.6 Phase V: Technical Reports and Guidelines

- 6.6.1 The Contractor must recommend hybrid warning systems for Canadian grade crossings that are less costly than full-scale active warning systems, with no negative impact on safety. These are some key benefits of recommended hybrid warning systems:
- They are considered intermediate systems, between standard passive and full-scale active warning systems. The use of hybrid warning systems can defer the deployment of costly full-scale active warning systems and grade separation, reducing costs considerably.
 - Hybrid warning systems can be deployed more quickly than conventional full-scale active warning systems and grade separation, significantly improving grade crossing safety.
- 6.6.2 The Contractor must recommend effective and comprehensive risk-assessment criteria to select the most safety and cost effective hybrid treatment to mitigate identified hazards at Canadian grade crossings. Selection criteria will take into consideration, but not be limited to:
- technical and design standards,
 - the Railway Safety Act, including Canadian guidelines and safety management systems, and
 - the life-cycle benefits-costs of candidate hybrid warning systems.
- 6.6.3 The Contractor must provide a detailed description of each hybrid warning system recommended. This will include but not be limited to technical, design and installation specifications, and current costs (including purchase, installation and maintenance).
- 6.6.4 The Contractor must provide a detailed description of selection assessment criteria and its operation instructions. This will include, but not limited to, algorithms, formulas, assumptions, and other constraints that form the base of recommended selection criteria.
- 6.6.5 The Contractor must analyze and evaluate the changes to current selection criteria and guidelines such as Grade Crossing Standards required to select the most appropriate hybrid warning system(s) for Canada.
- 6.6.6 The Contractor must prepare and submit final reports and guidelines presenting all of the findings of all phases of this project, including results, conclusions and recommendations, and incorporating modifications requested by the Technical Authority in accordance with Section 11.3, "Technical Report and Delivery".
- 6.6.7 The Contractor must participate with the Technical Authority in the Project Steering Committee meeting as described in Section 14.0, "Meetings".

7.0 SPECIAL INSTRUCTIONS

7.1 Credit for TC/TDC Support

Contractors are encouraged to publicize their research. Authorization to submit a paper or presentation on the research performed under this contract for an event such as a conference or for publication in a journal or periodical must be obtained in writing from the Technical Authority. The paper or presentation must include acknowledgement of Transport Canada's involvement as well as a copyright notice. Copyright ownership is to be attributed to the Government of Canada; i.e., © Her Majesty the Queen in right of Canada (year) or © Sa Majesté la Reine du chef du Canada (année). An electronic copy in Microsoft Word of any material proposed to be published or distributed must be provided to the Technical Authority at least four (4) weeks in advance of publication to permit full review of the material.

7.2 Illustrative Deliverables

Suitable applications for visual materials will be identified. This would include high-resolution electronic images (minimum 300 dpi), slides, photographs, videos or drawings to illustrate the concepts and technical equipment being developed or tested.

At the conclusion of the work, and no later than submission of the Final Report, an electronic presentation (in PowerPoint format) on the project must be delivered to the Technical Authority. It must describe the entire project including objectives, methodology, analysis and results, conclusions, and recommendations.

7.3 Limitation of Views and Opinions

In addition to credits for TC/TDC support, the Contractor will ensure that any presented and published work; including public conferences and workshops linked to the work carried out under this contract contain a TC/TDC statement of limited views and expressions, as approved by the Technical Authority.

8.0 COORDINATION OF PROJECT ACTIVITIES

Coordination of activities between the Contractor and participating organizations, including at the field level, will be the responsibility of the Contractor. The Technical Authority will, however, be kept informed of developments and activities and will be advised of any action it may take in order to expedite the work or to achieve the project objectives.

9.0 TECHNICAL AUTHORITY SUPPORT

The Technical Authority will be responsible for the following during the course of the work:

- Provision of electronic templates for reporting.
- Creation of a Project Steering Committee (“Committee”) that will include, among others, project sponsors and principal stakeholders. Other organizations, including those providing specialized expertise, may be invited to join the Committee or attend specific project meetings and site visits should project requirements warrant.
- Convening Committee meetings for each phase as outlined in Section 6.0, “Description of Work”, and 14.0, “Meetings”.
- Distribution to Committee members of necessary reports or other materials delivered by the Contractor.
- Providing feedback, as required, to the Contractor.

10.0 CONSTRAINTS

10.1 Confidentiality

The Contractor must not release, publish, permit to be published, or distribute for public consumption any confidential information to which it may gain access during the course of the contract, both for the duration of the contract and thereafter.

11.0 DELIVERABLES

The Contractor must submit the deliverables described in Section 6.0, “Description of Work”, and section 7.2, “Illustrative Deliverables”, to the Technical Authority:

Deliverables
<p>Phase I: Work Plan, Kick-off Meeting and Literature Review</p> <ul style="list-style-type: none"> • Kick-off Meeting for Phase 1 • Updated Work Plan and Activity Schedule • Provide list of documents to include in the literature review • Draft report • Minutes of the meeting
<p>Phase II: Risk Assessment and Warning System Selection Criteria</p> <ul style="list-style-type: none"> • Updated Work Plan and Activity Schedule • Draft report • Minutes of the meeting
<p>Phase III: Milestone Report</p> <ul style="list-style-type: none"> • Milestone Technical Report for phases I to III • Updated Work Plan and Activity Schedule • Minutes of the meeting
<p>Phase IV: Evaluation</p> <ul style="list-style-type: none"> • Updated Work Plan and Activity Schedule • Draft report • Minutes of the meeting
<p>Phase V: Technical Reports and Guidelines</p> <ul style="list-style-type: none"> • Final reports and guidelines • Minutes of the meeting • Electronic Presentation (see section 7.2)

11.1 Reports

The reports must be submitted in electronic Microsoft Word format to the Technical Authority for review and acceptance.

The reports must include methodology, data, results, conclusions, recommendations, and proposed work plan for the subsequent phase.

The Milestone Technical Report of Phase III must provide sufficient detail to permit stakeholder assessment of the work already performed and any decisions on proposed future work. The Milestone Technical Report must be prepared in accordance with TDC's Publication *Standards and Guidelines for Contractors (TP 929)* referred to in Section 11.3, "Technical Report and Delivery".

11.2 Technical Reports and Guidelines Document

11.2.1 General Report Requirements

Technical Reports and Guidelines must meet these general requirements:

- (i) The Technical Report must be prepared in accordance with the "TDC Publication Standards and Guidelines for Contractors (TP 929)", available on TDC's website: <https://www.tc.gc.ca/media/documents/innovation-eng/tp929e.pdf> Contractors shall be thoroughly familiar with TP 929. Reports are subject to review by the Technical Authority for quality control and adherence to TP 929.
- (ii) The Technical Report and Guidelines must include an identification number (TP number), which will be assigned by the Technical Authority.

- (iii) The Technical Report and Guidelines must include a summary in both official languages. Translation will be provided by the Technical Authority during the draft stage. The summary may be either an executive summary section in the report or a separate document. (The decision to proceed with the latter must be made in consultation with the Technical Authority.)
- (iv) The Technical Report and Guidelines must include a Publication Data Form (PDF) (form TDC/CDT 79-005 Rev. 96, refer to link in section 11.2.1 sub section (i) in both official languages. Translation will be provided by the Technical Authority during the draft stage (see Section 9.0, "Technical Authority Support"). (v) SI (metric) units must be used, unless the Technical Authority agrees otherwise in writing.
- (vi) The Contractor must provide 10 printed copies of the Final Technical Report after review and approval by the Technical Authority.
- (vii) Two electronic versions of the report are required on a CD-R or flash drive. The first must be produced as or converted to a Microsoft Word (version 2000 or 2007) document. The second must be an Adobe portable document format (pdf) file. The disk should contain the entire text of the report in one *.doc or *.doc file as well as one *.pdf file, and carry a label specifying the software version used, the title of the report, and the TP number.

11.2.2 Delivery Schedule

The Contractor must submit the Draft Report to the Technical Authority, who will submit it to the Project Steering Committee for review. Feedback and comments will be provided to the Contractor by the Technical Authority. The Technical Report submission and review schedule will be as follows:

- (i) The Contractor must provide one printed copy and one copy in Microsoft Word of the Draft Report, including the summary, PDF abstract and key words.
- (ii) Comments on the Draft Report will be provided electronically to the Contractor within three (3) weeks of receipt for approval or discussion.
- (iii) The Contractor must provide a revised version of the Draft Report within three (3) weeks of receipt of the editorial comments.
- (iv) The Contractor must provide the required number of copies of the Final Technical Report, as specified in Section 11.3.1, "General Report Requirements", within two (2) weeks of receipt of the Technical Authority written authorization to proceed with printing of the Final Technical Report and confirmation of the number of copies required.

12.0 LANGUAGE OF WORK

The Contractor must provide all deliverables and reports to the Technical Authority in English.

12.1 Place of work

All work is to be undertaken at the Contractor's premises.

12.2 Schedule

The duration and schedule for each phase of the project, including startup and contracting requirements, are estimated to be as follows (subject to revision according to the date of the Contract Award):

Phase I: Work Plan, Kick-off Meeting and Literature Review <ul style="list-style-type: none"> • Work Plan and Kick-off Meeting for Phase 1 • Literature Review and Draft report 	<ul style="list-style-type: none"> • 3 weeks • 8 weeks 	ESTIMATED PERIOD Sept. 2015 – Nov. 2015
<ul style="list-style-type: none"> • Go/no-go decision 	<ul style="list-style-type: none"> • 2 weeks 	
Phase II: Risk Assessment and Warning System Selection Criteria <ul style="list-style-type: none"> • Draft Report 	<ul style="list-style-type: none"> • 10 weeks 	ESTIMATED PERIOD Dec. 2015 – Feb. 2016
<ul style="list-style-type: none"> • Go/no-go decision 	<ul style="list-style-type: none"> • 2 weeks 	
Phase III: Milestone report <ul style="list-style-type: none"> • Milestone Technical Report of Phase I to III 	<ul style="list-style-type: none"> • 6 weeks 	ESTIMATED PERIOD Mar. 2016 – Apr. 2016
<ul style="list-style-type: none"> • Go/no-go decision 	<ul style="list-style-type: none"> • 2 weeks 	
Phase IV: Evaluation <ul style="list-style-type: none"> • Draft report 	<ul style="list-style-type: none"> • 10 weeks 	ESTIMATED PERIOD May 2016 – July 2016
<ul style="list-style-type: none"> • Go/no-go decision 	<ul style="list-style-type: none"> • 2 weeks 	
Phase V: Technical Reports and Guidelines <ul style="list-style-type: none"> • Final reports and guidelines • Electronic Presentation (see section 7.2) 	<ul style="list-style-type: none"> • 3 months 	ESTIMATED PERIOD Aug. 2016 – Oct. 2016

13.0 TRAVEL AND LIVING

Travel will be required to Ottawa, Ontario during the Kick off Meeting and each of the five (5) Phases of the Contract as detailed in Annex A “Statement of Work”. One addition travel may be required to a location within the Quebec City – Windsor corridor. All travel must have prior approval of the Technical Authority. The meetings may be held on-site at the location of the work, or by electronic means, as appropriate and at the discretion of the Technical Authority.

14.0 MEETINGS

The Contractor will be required to participate in kickoff and subsequent meetings convened by the Technical Authority as indicated in, but not limited to, Section 6.0, “Detailed Work Discription”. The meetings may be held on-site at the location of the Work, or by electronic means, as appropriate and at the discretion of the Technical Authority.

Prior to each meeting, the Contractor must submit an agenda of items it wishes to discuss during the meeting, along with the Draft Report, Milestone Report or Technical Report, as applicable, to the Technical Authority for distribution to Steering Committee members. During each meeting, the Contractor will clearly present the status of the project and results achieved. The Committee will review and comment on the progress of the Work, provide advice and make necessary decisions concerning scientific, technical and managerial aspects of the Work and its results, and serve as a forum for information exchange.

The Contractor must prepare and submit to the Technical Authority the official records (minutes) of discussion of these meetings. The records (minutes) will include decisions, action items and other information flowing from the meetings.

ANNEX B

BASIS OF PAYMENT

1. SCHEDULE OF MILESTONES:

The Schedule of Milestones for which payments will be made in accordance with the contract is as follows:

Milestone No.	Description	Due Date	Firm Amount (Applicable Taxes extra)
1	Phase I: Work Plan, Kick-off meeting and Literature Review as described in article 6.1 and 6.2 of the Statement of Work.	No later than 11 weeks after contract award	\$ _____
2	Phase II: Risk Assessment and Warning System Selection Criteria as described in article 6.3 of the Statement of Work.	No later than 23 weeks after contract award	\$ _____
3	Phase III: Milestone report as described in article 6.4 of the Statement of Work.	No later than 31 weeks after contract award	\$ _____
4	Phase IV: Evaluation as described in article 6.5 of the Statement of Work.	No later than 43 weeks after contract award	\$ _____
5	Phase V: Technical Reports and Guidelines as described in article 6.6 of the Statement of Work.	No later than 57 weeks after contract award	\$ _____
Total Firm All-inclusive Lot Price (Applicable taxes extra)			\$ _____

2. TRAVEL AND LIVING EXPENSES:

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the [National Joint Council Travel Directive](#) and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

All travel must have prior authorization of the Technical Authority. All payments are subject to government audit.

Estimated Travel and Living Expenses to a Ceiling Price: \$6000.00

3. Total Estimated Contract Price: \$ _____