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**REQUEST FOR PROPOSAL (RFP)**

**Reference Number: 1000173235**

**CLOSING DATE: July 10, 2015**

**CLOSING TIME: 2:00 PM EDT**

**PROJECT TITLE:** Investigation of National and Regional Mortality and Morbidity Risks for the Air Health Indicator (AHI).

**Branch/ Directorate:** Healthy Environments and Consumer Safety Branch  
Environmental and Radiation Health Sciences Directorate  
Environmental Health Science and Research Bureau  
Health Canada

**FOR ADDITIONAL INFORMATION PLEASE CONTACT:**

**Robert Merrick  
(Departmental Representative)**

robert.merrick@hc-sc.gc.ca  
**(E-mail address)**

**RFP Issue Date:** June 25, 2015

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## 1. Scope

### 1.1. Title

#### **Investigation of National and Regional Mortality and Morbidity Risks for the Air Health Indicator**

### 1.2. Introduction

Health Canada has recently developed a new methodology, the Air Health Indicator (AHI), for assessing the effects on daily mortality of short-term exposure air pollution for warm season from April to September, as they may vary dynamically over space and time in response to changes in air quality, and has been assessing its performance in simulation studies and applying it to 26 years (1984-2009) of data from 24 major Canadian Census Divisions (CDs). Hundreds of time-series studies of daily mortality have now been published worldwide, and are critical components of the scientific evidence supporting a causal relationship between air pollution and public health. The AHI provides time trends in annual risks at city-specific, regional and national levels such as an increasing, decreasing or constant trend over a time period of interest. The AHI can be used in policy analysis, with potentially important applications to the assessment of the public health impacts of air quality regulation.

For the AHI, health outcome (daily mortality) data from 24 Canadian cities was used and estimation of between city heterogeneity has been problematic due to the small number of cities involved. Applying least squares estimation (LSE), negative estimates that are meaningless have sometimes been obtained. To improve the estimation, a Bayesian MCMC approach has been employed to estimate the heterogeneity as well as national risks. In previous contracts we investigated the effects of prior distributions on parameters on the risk estimation and have found the use of non-informative prior distributions to be desirable. We have investigated region specific risk and variability for several different region definitions, which needs further exploration.

Estimation of short-term (or acute) risk due to air pollution is the main topic of the AHI and has been subject to much scrutiny in the recent contract. We have demonstrated a source of bias in current estimates of population health risk due to air pollution based on natural spline smoother of time and proposed a new smoother (Slepian smooth functions ) to reduce the compensates of this bias, resulting in estimates with more accurate interpretation.

In previous contracts we have developed a model for aggregating multiple lags of a pollutant together so as to provide a single estimate of risk. This estimate can be thought of philosophically as similar to a distributed lag effect, representing the acute risk due to the air pollutant across a number of lags. This approach called synthetic lag model offers a satisfactory and stable way of synthetically lagging pollutants to give estimates of risk which encapsulate multiple lags in one series.

So far the AHI has developed for mortality only on a single pollutant. It is desirable to consider multiple pollutants at a time as the population are always exposed to multiple pollutants. The main pollutants for the AHI are ozone and fine particulate matters  $<2.5 \mu\text{g}/\text{m}^3$  (PM<sub>2.5</sub>) but their availability is quite different. Ozone is available for 1980-2009, whereas PM<sub>2.5</sub> for 2000-2009. For trend detection purpose, investigation over a long time period is more benefit to model development, and thus a 2-pollutant model for ozone and nitrogen dioxide (NO<sub>2</sub>) seems a good start. The next model would be for another 2-pollutant model for ozone and PM<sub>2.5</sub> and possibly for 3-pollutant model for ozone, NO<sub>2</sub> and PM<sub>2.5</sub>.

In addition to expanding from single to multiple pollutants, another expansion on response variable is desirable to include morbidity. Air pollution could make people sick, which leads to hospitalization, and

thus mortality and morbidity attributable to air pollutants can be investigated together as bivariate responses.

Further work needs to be done to incorporate a new smoother (Slepian smooth functions), synthetic lags and multiple pollutants into a bivariate response model.

### 1.3. Objectives of the Requirement

This work is supposed to provide information on the following questions:

- (1) How to best model single, synthetically lagged pollutant risk estimates at regional and national levels?
- (2) How to best model warm season model minimizing bias in risk estimates from (1)?
- (3) How to best model two pollutant risk estimates based on (1) and (2) above? In particular, for two-pollutant models for ozone & NO<sub>2</sub>.
  - a. What is the 1<sup>st</sup> pollutant specific risk?
  - b. What is the 2<sup>nd</sup> pollutant specific risk?
  - c. What is the risk in common between the two pollutants, which cannot separate one pollutant from the other?
- (4) How to best model multiple pollutant models and short temporal (single- or several-year) blocks for bivariate responses?
- (5) Can the method of (3) be extended to include PM data?
- (6) How best to deal with pre-2000 PM data
- (7) How best to model the interaction between temperature and pollutants?

### 1.4. Estimated Contract Value

The total amount of funds available for this contract is \$25,000, plus applicable taxes. A one-year contract will be awarded for \$25,000, plus applicable taxes, with two option years, each worth \$25,000 plus applicable taxes, for a total potential contract value of \$75,000, plus applicable taxes.

The option years will only be picked up if funding becomes available and the contractor's work is deemed satisfactory. The winning bidder will be selected based on highest technical score within this budget.

### 1.5. Background and Specific Scope of the Requirement

The previous contractor applied spectral methods to filter the pollution series and introduced a new smoother (Slepian smooth functions), based on spectral ideas, into the generalized additive models (GAMs) used to estimate city-specific risks. The new smoother acts to isolate only the higher frequency variations in these data, so as to more faithfully estimate the short-term effects of pollution on mortality. We feel we have the methodology to cleanly isolate the shorter-term effects from longer-term effects, which has not been possible before. A paper on this topic has been published: "*Bias Correction in Estimation of Public Health Risk Attributable to Short-term Air Pollution Exposure*", *Environmetrics*, 2015. Software packages to implement the gap-filling, spectral estimation and filtering, and the new smoother, have been written as R packages (AHItools and spsmooth) through the recent contract. This software packages are to be essential tools to achieve the goals of the AHI development.

It is required to incorporate multiple pollutants in the generalized additive model (GAM) risk estimation procedure, specifically Ozone and NO<sub>2</sub> together. Through a spectrally motivated appeal to line components, a technique which can take multiple input series and remove periodic common structural components from them has been developed. It is also required to take two pollutants and produce three series: two residual pollutant series, and a series common to both. The result gives two pollutant-specific risk estimates and another risk estimate in common between the two pollutants.

The above technique can be applied to a single pollutant series, and this led to the development of a *synthetic lag* technique. In typical risk models, a single lag of the primary pollutant is chosen as the predictor of interest (e.g., Ozone lag-1, meaning lagged one calendar day). A more sophisticated technique involves the use of so-called distributed lag models. It is required a technique which combines all temporally local lags, not daily but finer time resolution, together into a single series, with the risk from that single series being interpretable as the aggregate risk from exposure to the pollutant of the series over a temporally local time period.

It is required to improve the initial work on bivariate response models (mortality and morbidity response series) using the new Slepian smoother and synthetic lag models mentioned above.

## 2. Requirements

### 2.1. Tasks, Activities, Deliverables and Milestones

Health Canada will be providing the data and reports on contracted outcomes that the contractor will use to perform the activities described in Section 2.1. It is expected items (a) and (b) below to be completed in the first year, items (c), (d) and (e) to be done in future years if we choose to pick up the options.

In order to develop an improved AHI, the following investigations are necessary.

- (a) Multiple pollutant models and short temporal blocks for single response: A 2-pollutant model for ozone and NO<sub>2</sub>, or ozone and PM<sub>2.5</sub> should be developed for regional and national risks. It is required to use the new Slepian smoother and synthetic lag models in addition to single day lag models.
- (b) Single pollutant models and short temporal blocks for bivariate responses: To account for the correlation between mortality and morbidity, single pollutant models will be first explored for annual regional and national risks.
- (c) Multiple pollutant models and short temporal blocks for bivariate responses: Work on (a) and (b) should be extended to bivariate responses with multiple pollutants.
- (d) PM data and gap filling: There is reasonably complete data available from 2000-2009 for daily PM<sub>2.5</sub>. However, PM<sub>2.5</sub> data before 2000 is much less frequent (readings every six days) and result in considerable gaps between available days. Advanced statistical methods for these gap filling should be developed to provide a longer term time trend in risk due to PM<sub>2.5</sub>.
- (e) Interaction between temperature and pollutants: In 2013 a previous contract on “*Investigation of Temperature Influences on Mortality for the Air Health Indicator (AHI)*”, Health Canada has investigated the relationships between daily mortality and temperature at multiple lags for Toronto and Vancouver and found that lag-0 temperature is much more strongly related to mortality than lag-1 temperature. It is required to extend this preliminary study results to investigate possible correlation/coherence between lag-0 temperature and multi pollutants as an extension of Work on (c).

The following sequence of work products will be prepared during this period:

1st report on September 28, 2015: Progress report #1 prepared by the contractor.

2nd report on November 30, 2015: Progress report #2 prepared by the contractor.

Final report on February 29, 2016: A final report for FY2015 prepared by the contractor.

The Contractor must submit one (1) electronic copy of reports to the Project Authority outlining the accomplishments for the given period, open issues and upcoming milestones on a biweekly basis.

## **2.2. Specifications and Standards**

All analyses conducted under this contact, along with any recommendations for further research, will be summarized in a written report of 50-60 pages for progress reports and extended up to 100 pages for the final report. The report will describe the sources of all data used in these analyses, the statistical methods applied, and the results obtained. The report will conclude with a proposal for an improved AHI and an explanation of the underlying statistical methods. The final report will include an executive summary of 2-3 pages, and all data developed will be delivered on an encrypted USB.

## **2.3. Technical, Operational and Organizational Environment**

This work is part of the CESI initiative headed by Environment Canada and is being done in collaboration with Environment Canada and Statistics Canada. The current AHI work extends some of the technical aspects of the methodology and will involve the expertise of the contractor. This will be facilitated by regular teleconferences and in-person meetings.

## **2.4. Method and Source of Acceptance**

All analyses will be summarized in a written report which will describe the sources of all data used in these analyses, the statistical methods applied, and the results obtained. The Departmental Representative will assess the work in terms of quality, provide feedback to the Contractor, request any necessary modifications, and be responsible for determining final acceptance of the report.

Health Canada needs to provide comments/suggestions on progress reports and final report submitted by the contractor within 10 working days.

## **2.5. Reporting Requirements**

Refer to Section 2.1.

The Departmental Representative will arrange meetings with the contractor on a regular basis (biweekly, via email, phone, video conference, or in person) to discuss current progress and updates.

## **2.6. Project Management Control Procedures**

Refer to Section 2.5, "Reporting Requirements"

# **3. Additional Information**

## **3.1. Authorities**

Authorities will be identified in the contract

## **3.2. Canada's Obligations**

Access to facilities and loan or use of Government Furnished Equipment is not required. Data pertaining to the project will be provided by Health Canada.

## **3.3. Contractor's Obligations**

Unless otherwise specified, the Contractor must use its own equipment and software for the performance of this Statement of Work.



The Contractor has no other obligations outside of those described elsewhere in this Statement of Work.

### **3.4. Location of Work, Work site and Delivery Point**

The majority of the work is expected to be completed at the contractor's workplace. All personnel assigned to this contract are ready to work in close and frequent contact with the Departmental Representative.

### **3.5. Language of Work**

The work will be conducted in English.

### **3.6. Security Requirements**

There are no security requirements.

Information which is to be used in the development of the contracted product, as reference material or otherwise made available to the contractor, must be unclassified material and considered to be releasable to the public by Health Canada and/or The Government of Canada.

No Protected or Classified information is to be made available to the contractor, used in the production of the contracted product, or produced as a result of this contract.

### **3.7 Insurance Requirements**

It is the sole responsibility of the contractor to decide whether or not any insurance coverage is necessary for its own protection or to fulfil its obligations under the contract and to ensure compliance with required federal, provincial or municipal law. Any such insurance shall be provided and maintained by the contractor at its own expense.

### **3.8 Travel and Living**

Not applicable.

## **4. Project Schedule**

### **4.1. Expected Start and Completion Dates**

The services of the Contractor will be required for a period of approximately one year commencing on or about the 20<sup>th</sup> of July, 2015. The expected completion date of this project is the 29<sup>th</sup> of February, 2016.

### **4.2. Schedule and Estimated Level of Effort (Work Breakdown Structure)**

1st report on September 28, 2015: Progress report #1 prepared by the contractor.

2nd report on November 30, 2015: Progress report #2 prepared by the contractor.

Final report on February 29 2016: A final report for FY2015 prepared by the contractor.

### **Budget**

The total funds available for this work is \$25,000 plus applicable tax per fiscal year. There will be a contract for one year, plus two option years that can only be picked up through a contract amendment if funding is available and the contractor's work is satisfactory.

<u>Payment</u>	<u>Deliverables</u>	<u>Amount</u>	<u>Due Date</u>
#1	A progress report #1	\$8,000	September 28, 2015
#2	A progress report #2	\$8,000	November 30, 2015
#3	A final report	\$9,000	February 29 2016

## 5. Required Resources or Types of Roles to be Performed

The contractor(s) should have experience working with various types of data, including time series data, health data and climate data, and expertise with many different statistical methodologies and models, including the generalized additive model, spectral analysis, smoother functions, and Bayesian hierarchical models.

### Applicable Documents and Glossary

5.1. Applicable Documents  
Not applicable.

5.2. Relevant Terms, Acronyms and Glossaries  
Not applicable.

## PART II PROPOSAL REQUIREMENTS

### 7.0 Administrative Instructions for Completion of the RFP

#### 7.0 Administrative Information

#### 7.1 General Information

##### 7.1.1 Components, Language and Number of Copies

You are invited to submit via e-mail electronic copies in either official language (English or French) of both the Technical and Cost Proposals to:

[Robert.Merrick@hc-sc.gc.ca](mailto:Robert.Merrick@hc-sc.gc.ca)

The RFP Reference Number and the name of the Requirement must be in the subject line of your e-mail and your proposal must be structured in the following manner:

- \$ one covering letter, signed by an authorized representative of your firm;
- \$ *one (1) electronic* copy of the Technical Proposal;
- \$ one (1) copy of Certifications ( Appendix "A") and;
- \$ *one (1) copy of the Cost/Price Proposal (Appendix "B") ) saved as a separate document.*

If the proposal is **greater than 20mb**, the firewall protecting Health Canada's network system will not permit the e-mail to be received. In which case, the bid will have to be physically delivered to the address cited below and an email sent to the Departmental Representative (found on page 1) stating that the bid has been delivered by hand / courier. You **must** send an email to the Departmental Representative to ensure your bid is included in this solicitation. The RFP Reference Number and the name of the Departmental Representative must be marked on all documents, binders and respective envelopes delivered by hand. If you are delivering hard copies, your proposal must be structured in the following manner:

- one covering letter, signed by an authorized representative of your firm;
- four (4) copies of the Technical Proposal;
- one (1) copy of Certifications ( Appendix "A") and;
- *one (1) copy of the Cost/Price Proposal (Appendix "B"), contained in a **separate sealed envelope.***

#### **Deliveries by hand / courier are to be sent to the following address:**

Health Canada Bid Receiving Unit  
Federal Records Centre Building,  
161 Goldenrod Driveway (Loading Dock),  
Ottawa, Ontario K1A 0K9  
**Attention:** Robert Merrick  
**RFP Reference Number:** 1000173235

**Hours of Operation:** 07h30 to 16h30 (EST) Monday to Friday

**7.1.3 No Payment for Pre-Contract Costs**

No payment will be made for costs incurred in the preparation and submission of a proposal in response to this RFP. No costs incurred before receipt of a signed contract or specified written authorization from the Departmental Representative can be charged to the proposed contract.

**7.2 Delivery Instructions for Bid / Proposal**

As per section 7.1.1

The onus for submitting bids on time at the specified location rests with the bidder. It is the responsibility of the bidder to ensure correct and timely delivery of the entire bid to the Crown, including all required information and proposal pages.

**7.3 Non-Acceptance of Proposal by Facsimile**

Proposals sent by fax, telex and telegraphic means will **not** be accepted.

**7.4 Closing Date and Time**

All proposals must be received at the specified on the front page of this Request for Proposal. Proposals received after this time will be returned unopened. The onus for submitting bids on time at the specified location rests with the bidder. It is the bidder's responsibility to ensure correct delivery of its bid to the Crown.

**7.5 Time Extension to Closing Date**

A request for a time extension to the closing date will be considered only in exceptional circumstances. Any requests for extension must be received in writing by the identified Departmental Representative.

**7.6 Non-Compliance / Unacceptable Proposals**

Failure to meet the mandatory requirements of this RFP will result in your proposal being declared non-responsive.

Proposals received after the proposal closing time will not be considered and will be returned unopened to the bidder. Further, for any proposals which are found to be non-compliant, the financial part of the bid or proposal will be returned unopened with a letter from Health Canada indicating that the bid/proposal was non-compliant.

**7.7 Bidders Conference / Site Visits**

There is no site visit with this requirement. However, resource(s) proposed by the Contractor will be interviewed in order to confirm their level of knowledge and experience.

**7.8 Announcement of Successful Contractor**

Health Canada will communicate to all bidders the name and address of the successful candidate as well as the total dollar value and award date for the contract only after contract sign-off.

**7.9 Rights of the Crown**

The Crown reserves the right to:

- reject any or all proposals received in response to this RFP;
- accept any proposal in whole or in part; and
- cancel and/or re-issue this requirement at any time.

#### **7.10 Sample Long Form Contract**

The successful bidder for this requirement will be expected to enter into agreement with Health Canada as per departmental contract terms and conditions.

#### **7.11 Employment Equity**

Not applicable.

#### **7.12 Procurement Business Number (PBN)**

Public Works and Government Services Canada (PWGSC) has adopted the Procurement Business Number (PBN) for all its purchasing databases, and now requires that its suppliers have one for each of their offices that may be awarded contracts. Go to **Buyandsell.gc.ca** to register in the Supplier Registration Information (SRI) service and to obtain your PBN. As an existing or potential supplier to the Department, you must obtain a PBN to avoid possible delays of any contract award. It is Health Canada's intention to use this sourcing system for all its procurements of goods and services to which the trade agreements do not apply.

SRI is a database of suppliers who have registered to do business with the Government of Canada. The PBN is created using your Canada Revenue Agency Business Number to uniquely identify a branch, division or office of your company. Unlike many existing departmental vendor databases, your information in SRI is accessible to all federal government buyers. SRI can help to open up new opportunities with the federal government for requirements not posted on the electronic tendering service, [www.buyandsell.gc.ca](http://www.buyandsell.gc.ca).

Visit the **Buyandsell.gc.ca** Internet site at

<https://srisupplier.contractsCanada.gc.ca/index-eng.cfm?af=ZnVzZWJdGlVbj1yZWdpc3Rlci5pbnRybyZpZD00&lang=eng> for information and registration procedures.

#### **7.13 Order of Precedence**

In the case of any dispute which may arise during the period which may be covered by any ensuing contract, the following documents will be considered in order of precedence in terms of importance in resolving any disputes between the parties:

- The Health Canada Contract;
- Any changes to the terms and conditions contained herein which have been approved by General Counsel for Health Canada;
- The Statement of Work in this RFP; and
- The terms identified in this RFP.

## 8.0 Technical Proposal

### 8.1 General Information

Your technical proposal must address all the requirements of the SOW and demonstrate that you are capable of meeting all obligations of the contractor specified in the same.

Your technical proposal must meet **all of the Mandatory Requirements** listed in Section 12.0, as well as the **minimum score identified for the Point Rated Requirements** in Section 13.0.

Furthermore, your technical proposal should include the following:

### 8.2 Understanding of the Requirements

A brief statement that demonstrates that the contractor understands the requirements of the SOW, including the objectives, scope of work and deliverables.

### 8.3 Approach and Methodology:

#### 8.3.1 General Approach

A description of the overall approach and strategy to this project.

#### 8.3.2 Methodology

Identify methodologies and techniques to be used, including identifying any proprietary information which is proposed to be used in the program.

#### 8.3.3 Work Plan / Project Schedule

Break down the work by task - show phases, planned start, completion dates and the estimated level of effort (i.e. person days) needed to complete the task. The work plan may include a matrix and/or time line charts. A project schedule structured in weeks, reflecting milestones and deliverables, should be included.

#### 8.3.4 Performance and Quality Control

Specify how you propose to deal with the performance and quality assurance of the work provided by your organization to the Crown. Include information about quality control methods and reporting mechanisms.

### 8.4 Proposed Team

#### 8.4.1 Personnel

Identify the proposed personnel, including **Project Manager**, who will be assigned to this contract, describe the role they will be performing, including the amount of direct time dedicated to the project by principals and/or senior personnel, and explain why they are well suited for the work, referring to their qualifications, certifications, education and experience.

If applicable, include a list of proposed sub-contractors, with reference to their capabilities, experience and degree of involvement in the work.

The bidder must certify in the technical proposal that the information provided in all the personnel résumés has been verified to be true and accurate. In addition, for every

resource proposed by the bidder who is not an employee of the firm, the actual resource must certify that they are aware that they are being bid as part of the bid/ proposal and state their relationship with the firm.

#### **8.4.2 Contingency Plan**

If the contract cannot be completed by the assigned personnel, the following individual(s) will complete the work. *Attach résumés.*

### **8.5 Contractor Profile**

#### **8.5.1 Organization**

Provide background information about your company, including its legal name and the province in which the company is incorporated.

#### **8.5.2 Relevant Work Experience**

Describe your company's capacity and experience in this field.

#### **8.5.3 References**

If references for a firm or proposed resource are requested, identify the number of referenced; the criteria against which they will be applied; and the specific details which the reference will have to address. Caution should be taken when using references: they are not criteria in themselves but are instead ways of verifying compliance with a specific criteria. Further care should be taken to ensure that the person providing the reference is able to provide objective, useful and valid information.

### **8.6 Résumés of Personnel**

Attach résumés of proposed personnel.

## **9.0 Cost / Price Proposal Please see Appendix B**

### **9.1 General Information**

The Price Proposal must contain a detailed breakdown of the **total quoted price**, by phase, or by major tasks, or both. The Price Proposal should address each of the following, if applicable:

#### **9.1.1 Per Diem**

For each individual and/or labour category to be employed on the project, including subcontractors, indicate the proposed time rate and the estimated time requirement. Although detailed support for the rates is not requested at this time, you should be prepared to substantiate the proposed rates.

#### **9.1.2 Travel**

Estimate the cost of travel using the current Treasury Board Travel Directive. **9.1.3**

#### **9.1.3 Other Expenses**

List any other expenses which may be applicable, giving an estimated cost for each (e.g. long distance communications, reproduction, shipping, equipment, rentals, materials, etc.).

#### **9.1.4 Goods and Services Tax / Harmonized Sales Tax**

Various items in your cost proposal may be subject to GST / HST or custom duties, and this charge must be included in the cost estimates where applicable.

## 10.0 Enquiries

All enquiries or issues concerning this procurement must be submitted **in writing only** to the Departmental Representative named on the front cover page of this RFP document **not later than seven (7) working days prior to the bid closing date.**

To ensure consistency and quality of information to Bidders, the Departmental Representative will provide, simultaneously to all bidders to which this solicitation has been sent,

- any information with respect to significant enquiries received, and
- the replies to such enquiries without revealing their sources,

**provided that such enquiries are received no less than seven (7) working days prior to the bid closing date.**

All enquiries and other communications with government officials throughout the solicitation and evaluation period are to be directed **only** to the Departmental Representative named on the front cover page of this RFP document. **Non-compliance with this condition during the bid solicitation and evaluation period may be sufficient reason for bid disqualification.**



**PART III BID SELECTION PROCESS**

**11.0 Introduction**

Below are separate mandatory and point-rated criteria to be used to evaluate the bids.

**12.0 Mandatory Requirements**

**12.1 Method of Evaluation**

Mandatory requirements are evaluated on a simple pass or fail basis. Failure by bidders to meet any of the mandatory requirements will render the bidder’s proposal **non-responsive**. The treatment of mandatory requirements in any procurement process is absolute.

Proposers must meet **all** the mandatory requirements described below. This will be evaluated as either “**Yes**” or “**No**”. Proposals not receiving “**Yes**” for any mandatory requirement will **not** be considered further.

**12.2 Mandatory Requirements**

<b>Attention Bidders: Write beside each of the criteria the relevant page number(s) from your proposal that addresses the requirement identified in the criteria.</b>			
<b>Mandatory Criteria</b>	<b>Page #</b>	<b>Yes</b>	<b>No</b>
<b>M1.</b> The bidder’s project leader must have a PhD from a recognized university with specialization in Statistics with experiences in Bayesian hierarchical models, Spectral analysis, and smoother functions. Provide a description in 250 words or less.			
<b>M2.</b> The bidder’s project leader must demonstrate that within the last 5 years, they have undertaken at least one project on Canadian population health for environmental issues. Provide a one-page summary for the most recent project.			
<b>M3.</b> The bidder’s project leader must have at least one peer-reviewed publication on Canadian population health in a scientific journal listed in the Science Citation Index Expanded (within the last 5 years). Provide titles, journals and years.			
<b>M4.</b> The bidder’s project leader must show that they have experience working with Canadian environmental databases on air pollution and climate. Provide a description in 250 words or less.			
<b>M5.</b> The bidder’s project leader must have experience working with generalized additive model and/or generalized Poisson model. Provide a description in 250 words or less.			

<b>M6.</b> The bidder's project leader must show that they have experience working with statistical software such as R. Provide a description of experience in 250 words or less.			
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### 13.0 Point Rated Requirements

#### 13.1 Method of Evaluation

A proposal with a score less than the specified minimum for technical compliance for any one criteria will be considered non responsive, and eliminated from the competition. To be considered responsive, a bid must obtain the required minimum of **42 points** for the criteria which are subject to point rating. The rating is performed on a **scale of 100 points**.

#### 13.2 Point Rated Requirements

<b>Attention Bidders: Write beside each of the criteria the relevant page number(s) from your proposal which addresses the requirement identified in the criteria.</b>				
Point-Rated Criteria	Page Number	Points Allocated for the Criteria	Minimum Points Required	Score
<b>R1.</b> Indicate the number of peer-reviewed publications for which the bidder's project leader was listed as an author and which dealt with the adverse health effects of air pollution on Canadian population. Provide the name and date of the publication and the title of article. Two points for each, up to a maximum of 10 points.		10	4	
<b>R2.</b> Indicate the number of formal reports (including book chapters but excluding publications) for which the bidder's project leader was listed as an author and which dealt with the adverse health effects of air pollution on Canadian population. Provide the title and date of the report. Two points for each, up to a maximum of 10 points.		10	4	
<b>R3.</b> Indicate the number of years of experience the bidder's project leader has in estimating impact of air pollution on Canadian population. One point for each half year, up to a maximum of 10 points.		10	5	

<b>R4.</b> Indicate the number of years of experience the bidder's project leader has in temporal and spatial changes in public health risks. One point for each half year, up to a maximum of 10 points.		10	5	
<b>R5.</b> Indicate the number of projects the bidder's project leader has conducted involving Bayesian hierarchical model. Two points for each, up to a maximum of 10 points.		10	4	
<b>R6.</b> Indicate the number of projects the bidder's project leader has conducted involving air pollution and/or temperature. Two points for each, up to a maximum of 10 points.		10	4	
<b>R7.</b> Indicate the number of projects the bidder's project leader has conducted involving generalized additive model. Two points for each, up to a maximum of 10 points.		10	4	
<b>R8.</b> Indicate the number of projects the bidder's project leader has conducted involving time series model. Two points for each, up to a maximum of 10 points.		10	4	
<b>R9.</b> Indicate the number of projects the bidders project leader has conducted involving smoothers such as natural splines and/or Slepian basis matrix. Two points for each, up to a maximum of 10 points.		10	4	
<b>R10.</b> Indicate the number of years the bidder's project leader has conducted involving short-term adverse health risks attributable to air pollution. Two points for each, up to a maximum of 10 points.		10	4	
<b>Total Points</b>		100	42	

#### 14.0 BASIS OF AWARDING CONTRACT

##### Highest Technical Score within Budget:

It is understood by the parties submitting proposals that, to qualify, bidders **must** meet all mandatory requirements as well as the minimum score identified for the point-rated criteria. The contract will be awarded to the bidder with the highest technical score within the budget of \$25,000 for each fiscal year (one year contract with two option years).

**CERTIFICATIONS**

**15.0** In order to confirm the authority of the person or persons signing the certifications or to establish the legal capacity under which the Bidder proposes to enter into Contract, any Bidder who carries on business in other than its own personal name shall, if requested by Canada, provide satisfactory proof of:

- (a) such signing authority; and
- (b) the legal capacity under which it carries on business;

prior to contract award. Proof of signing authority may be in the form of a certified copy of a resolution naming the signatory(ies) that is (are) authorized to sign this tender on behalf of the corporation or partnership. Proof of legal capacity may be in the form of a copy of the articles of incorporation or the registration of the business name of a sole proprietor or partnership.

**Note to Bidders: The following certification requirements apply to this RFP. Bidders complete these certifications by filling in the appropriate spaces below and include them with their proposal.**

**Legal name and bidder's information (print clearly)**

Bidder's Legal Name \_\_\_\_\_

Bidder's Complete Address \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Bidder's Phone number (\_\_\_\_\_) \_\_\_\_\_

Bidder's Authorized Representative \_\_\_\_\_

Bidder's Authorized Representative Phone number (\_\_\_\_\_) \_\_\_\_\_

Bidder's Authorized Representative e-mail \_\_\_\_\_

Bidder's GST/HST Number \_\_\_\_\_

Bidder's province in which he is incorporated. \_\_\_\_\_

**15.1. Bidder Certification**

We hereby offer to sell to Her Majesty, in accordance with the Health Canada terms and conditions referred to herein or attached hereto, the goods and/or services listed herein and on any attached sheets at the prices set out therein.

We certify that all information provided herein is accurate. Furthermore we have satisfied ourselves that the personnel proposed by us for this requirement are capable of satisfactorily performing the requirements described herein. In addition, we certify that individuals proposed will be available until completion of the

project. Also, that the work specified herein can be met in a timely manner, and will be achieved with the time frame allocated.

\_\_\_\_\_  
Signature of the Authorized Representative of the Bidder      Date

**15.2. Bid Validity Certification**

We certify that all pricing identified in the bid/ proposal will be valid for a period of one hundred twenty (120) days from the closing date of the RFP.

\_\_\_\_\_  
Signature of Authorized Representative of the bidder      Date

**15.3      Employment Equity**

Not applicable.

**15.4. Status of Resources**

If we have proposed any person in fulfillment of this requirement who is not an employee (of the Bidder), we hereby certify that we have the written permission from the person to propose his/her services in relation to the Work to be performed in fulfillment of this requirement.

\_\_\_\_\_  
Signature of the Authorized Representative of the Bidder      Date

**15.5. Price Certification**

We certify that the price quoted in this Proposal is not in excess of the lowest price charged anyone else, including its most favoured customer, for like quality and quantity of the products/services, does not include an element of profit on the sale in excess of that normally obtained on the sale of products/services of like quality and quantity, and does not include any provision for discounts to selling agents. **Furthermore, we certify that our total bid price is not in excess of any funding limitations set out herein.**

\_\_\_\_\_  
Signature of the Authorized Representative of the Bidder      Date

## 15.6. Joint Venture Information (if applicable)

A joint venture is an association of two or more parties who temporarily combine their money, property, knowledge, or other resources in a joint business enterprise. There are two primary types of joint ventures, the incorporated joint venture and the contractual joint venture, i.e. formed through a contractual agreement between the parties.

If a contract is awarded to a contractual joint venture, all members of the joint venture shall be jointly and severally or solitarily liable for the performance of the Contract.

If the Bidder is submitting a type of joint venture, the Bidder must provide the following information in the proposal:

(a) indicate the type of joint venture:

- incorporated joint venture
- limited partnership joint venture
- partnership joint venture
- contractual joint venture
- other (explain)

(b) provide the legal names and addresses of all of the members of the joint venture (i.e. the legal name of the firm associated with the Business Number (BN) or Social Insurance Number (SIN) for sole proprietorships), as well as the legal name and address of the joint venture business entity.

**Appendix “B”**

Tableau “A1” – From Contract award to March 31, 2016

A	B	C	D (BxC)
Category of Personnel Insert rows as required	Per Diem Rate(s)	Level of Effort/Number of Days Required	Total Costs for Professional Fees TAXES NOT INCLUDED
1.	\$		\$
2.	\$		\$
Sub-Total 1:			\$