

Peace Airshed Zone Association  
Technical Working Committee  
PO Box 21135  
Grande Prairie, Alberta, Canada T8V 6W7

## REQUEST FOR PROPOSALS (“RFP”) NUMBER 01-2013

### *Evaluation of Peace Airshed Zone Association*

### *Ambient Air Quality Monitoring Network*

**RFP Issue Date:** March 1, 2013  
**RFP Closing Date and Time:** March 29, 2013, no later than 16:30:00 Alberta Time  
**Project Manager:** Shelly Pruden, Executive Director  
**Telephone:** (780) 833-4343  
**Email:** [shelly@paza.ca](mailto:shelly@paza.ca)

# Request for Proposals: Evaluation of Peace Airshed Zone Association Ambient Air Quality Monitoring Network

## 1 Project Overview

The Peace Airshed Zone Association (PAZA) seeks proposals from qualified professional individuals, teams, or consultant groups to evaluate the PAZA ambient air quality monitoring network in accordance with the requirements set out in this Request for Proposal (RFP). This competitive procurement is being commissioned with the underlying purpose to clearly understand an appropriate monitoring program to meet each stated monitoring objective, and to provide credible justification for making modifications to the current monitoring program.

## 2 Introduction to Peace Airshed Zone Association

The Peace Airshed Zone Association (PAZA) is a multi-stakeholder, not for profit society established to maintain an ambient air quality monitoring network to collect and preserve relevant, credible, transparent and accessible data to allow stakeholders to make informed decisions regarding air quality in our region.

Our place based regional design enables our stakeholders to work within their designated areas to monitor, analyze, report on, and make recommendations to improve air quality and/or design local solutions to address local air quality issues.

PAZA first formed in March of 1999 in response to concerns about air quality in the Grande Prairie Region. The desire of industry, government, community groups and the public to work together to better understand air quality drives our organization.

PAZA is governed by a multi-stakeholder Board of Directors with members from industry, government, non government organizations and the public. Board appointed committees assist PAZA staff with the day to day operations of the organization. The Technical Committee is primarily responsible for oversight of the monitoring network and provides technical guidance to PAZA and is responsible for the development of this network evaluation.

### PAZA VISION

All people living, working and playing in the PAZA region will have the best possible air quality data.

### PAZA MISSION

The Peace Airshed Zone Association operates an ambient air quality monitoring network to collect and preserve relevant, credible, transparent and accessible data to allow our stakeholders to make informed decisions regarding air quality in our region.

PAZA covers a 38,500 square kilometer area of northwest Alberta. The PAZA region is of mixed use and contains a mixture of agricultural lands, forested lands, the City of Grande Prairie and several smaller communities, First nations and Métis lands, natural area, upstream oil and gas activities and servicing sectors, forestry activities and is a major transportation corridor to the north. The Airshed stretches from the Peace River south to the top of Township 64 and is adjacent to a Provincial border.

## 3 Historical Monitoring Objectives

PAZA formed an ambient air quality monitoring network in 2002, primarily by establishing a grid of 49 passive monitoring stations. The continuous network commenced operation in collaboration with Alberta Environment and Sustainable Resource Development establishing a station in the city of Grande Prairie. Later, assuming Alberta Environment and Sustainable Resource Development's monitoring program at Beaverlodge, incorporating a collection of industrial compliance monitoring stations, and establishing a portable (roving) monitoring station, to compliment the network. Station location selection was determined primarily on the basis of the prior two years compilation of passive monitoring data.

The network development was based upon a shift from industry fence-line compliance monitoring to a regional air quality monitoring approach with a desire to measure parameters which may adversely affect ecosystem and human health. The network objectives were initially developed for the passive monitoring network and were designed primarily to assess trends, spatial variation of parameters and to determine suitable continuous monitoring location selection and to meet the regulatory monitoring requirements of Alberta's Environmental Protection and Enhancement Act (EPEA) Approval holders and to measure compliance with Alberta's Ambient Air Quality Objectives (AAAQO) and Canada-wide Standards (CWS).

In the future, ambient air quality monitoring will have an important role in triggering and assessing the effectiveness of potential air quality management activities. At the same time, stakeholders are interested in local emerging issues.

## 4 Desired Monitoring Objectives

In addition to continuing to monitor as required for compliance to EPEA Approvals, AAAQOs and CWS, PAZA wishes to maximize the informational value of the

monitoring network in a cost effective and sustainable way, with the following monitoring objectives:

- 4.1 Monitor to ensure compliance to EPEA Approvals
- 4.2 Measure and assess air quality relevant to AAAQOs and CWS
- 4.3 Understand the spatial distribution of monitored pollutants in the region.
- 4.4 Identify regional air quality trends and emerging issues.
- 4.5 Characterize specific geographic locations or sources.
- 4.6 Provide information required to understand potential population impacts to ambient air quality.
- 4.7 Provide information required to understand potential air quality impacts on the environment and population.
- 4.8 Improve the ability to identify and apportion pollutant sources for purposes of air quality management.
- 4.9 Provide adequate input and validation information for dispersion modeling.
- 4.10 Monitoring will be conducted using best available technology economically achievable.

## 5 Emerging Issues

In addition to consideration of the monitoring objectives listed above, new issues are developing in the region. PAZA has specifically chosen not to rank the relative importance of each of the objectives or issues against each other at this time, as each objective is important to different stakeholders. PAZA is currently exploring how to most effectively address each of the following emerging issues:

- 5.1 Local emissions will likely increase within the next 5 years due to the addition of industrial facilities to the region (Examples: Increasing industrial development in the County of Grande Prairie No.1 along highway no.2 in Clairmont and Sexsmith and, increasing heavy oil activities in the Peace River Oil Sands located near the northeast boundary of the PAZA region.).
- 5.2 The recent addition of an industry continuous monitoring station in the Falher, Alberta area. The procurement of this station in two years time will bring additional monitoring resources.
- 5.3 There is increasing scrutiny of PM<sub>2.5</sub> monitoring data because PM<sub>2.5</sub> concentrations may trigger management plans actions under CWS. PAZA

currently operates a variety of continuous PM<sub>2.5</sub> monitoring technologies and needs to understand quantitative measurement differences between the various newer technologies and the historical ones.

- 5.4 Emissions from local heavy oil and gas production processes are not well characterized and drilling activity is rapidly increasing. Residents have expressed concern about the potential effects of this activity on air quality.
- 5.5 There is an increased frequency of resident concerns about air quality impacts. (Some examples include but are not limited to increased industrial activities, trans-boundary sources, increase transportation, wood burning stoves and wildfires).
- 5.6 There is a need to consider diffuse, unregulated sources and population growth in the region and their impacts on air quality.
- 5.7 The implementation of the new National Air Quality Management System including the components of place-based air quality management through 'air zones' within provincial and territory boundaries and larger trans-boundary 'regional airsheds' and Alberta's enhanced Air Quality Management System.

## 6 Additional Resources and Information

A resource package containing the following materials is available online (send request for link to [shelly@paza.ca](mailto:shelly@paza.ca)) and will be helpful in developing the Proposal.

Begin with:

- PAZA 2012 Annual Technical Report: Network and Data Summary
- PAZA maps of the PAZA region: monitoring sites, names and locations and names of existing regulated sources, oil and gas sites, municipalities.

Other relevant materials and information:

- PAZA Air Quality Monitoring Program (Amarok Consulting June 2004)
- Boundary Expansion Feasibility Assessment, includes emissions summary and dispersion modeling (Amarok Consulting and Focus Corporation (December 2006)
- Girouxville Area Ambient Air Quality Monitoring Summary Report (PAZA March 2011)
- Hamlet of Bonanza Air Quality Summary Report June 2010 to June 2011 (Sirius Consulting March 2013)

- Town of Falher Air Quality Monitoring Summary Report September 2006 to August 2007 (Sirius Consulting March 2013)
- Village of Kinuso Air Quality Monitoring Summary Report April 2009 to June 2010 (Sirius Consulting March 2013)
- Town of Spirit River Air Quality Monitoring Summary Report September 2007 to March 2009 (Sirius Consulting March 2013)
- 2009 Ambient Air Monitoring Strategy for Alberta, (CASA Board Team, Sept 2009)
- Clearing the Air Alberta's Renewed Clean Air Strategy 2012 (Alberta Government, October 2012)
- Clearing the Air Alberta's Renewed Clean Air Strategy 2012 Action Plan (Alberta Government, October 2012)
- Air Quality Monitoring in the County of Grande Prairie December 1998 to August 2000 (Alberta Environment July 19, 2001)
- Validated one-hour data for PAZA continuous monitoring stations is available at [www.casadata.org](http://www.casadata.org) (February 2004 – present).
- Alberta Environment and Sustainable Resource Development Ambient Air Quality Objectives.
- Passive monitoring data is available in .xls spreadsheet format upon request.
- Emissions data for industry sources in the region: via NPRI, Alberta Environment and Sustainable Resource Development, Energy Resources Conservation Board or other source.

## 7 The Charge: Evaluation of PAZA AQM Network

Through considerate and rigorous scientific analysis of the existing PAZA air quality monitoring network, its data, knowledge of regional emissions, knowledge of best practices in other jurisdictions, materials provided, and by addressing the following listed tasks, make and justify a series of recommendations to enable PAZA to achieve its monitoring objectives, consistent with its Vision and Mission.

### 7.1 Identify redundant and/or irrelevant monitoring activities.

Using quantitative analysis of historical monitoring data, assess the relative value of each parameter currently measured in the monitoring program. For each stated monitoring objective outlined in Section 4, rank the most important measurement (for informational value) to the least important measurement. Explicitly state and provide reasoning for those monitoring data of little or no value toward meeting an objective. If there

is value in measuring a parameter that stated objectives don't recognize (for quality assurance/quality control purposes, for example), state the informational value of the measured parameter.

7.2 Identify monitoring gaps.

Review the network and available data set with each of the monitoring objectives in mind. Comment on the adequacy of the network to meet individual monitoring objectives. For each monitoring objective, rank the identified monitoring gaps by importance.

7.3 Recommend changes to the monitoring network to more effectively meet the monitoring objectives outlined in Section 4 and to address the emerging issues in Section 5.

7.3.1 Recommend an appropriate monitoring program to most effectively understand the spatial distribution of monitored pollutants in the region.

7.3.2 Recommend appropriate analytical tools so as to statistically analyze trends, including the ability to define uncertainty in air quality measurements.

7.3.3 Comment on how PAZA can appropriately address emerging issues described in Section 5.

7.3.4 Make recommendations to appropriately provide data to stakeholders to evaluate potential population exposure to air pollutants.

7.3.4.1 Make recommendations to provide representative Air Quality Health Index (AQHI) reporting for population centers within the Airshed.

7.3.5 Make recommendations about what information is useful to understand air quality impacts on the environment and population.

7.3.6 Make recommendations to improve the ability to identify and apportion pollutant sources for purposes of air quality management.

7.3.7 Comment on the suitability and completeness for the data set to provide adequate input (background, meteorological information) and validation information for dispersion modeling.

7.3.8 Highlight the recommendations that serve multiple monitoring purposes.

7.3.9 Evaluate the benefits, if any, of monitoring outside of current boundaries.

- 7.3.10 Provide comments about other aspects and observations of the PAZA network based on your previous monitoring network experience.
- 7.4 Present the key findings and recommendations to stakeholders in Grande Prairie.
  - 7.4.1 Prepare and present a summary of the findings and recommendations of this network evaluation to a PAZA multi-stakeholder audience.
  - 7.4.2 Recommend a process for prioritizing the implementation of the recommendations in this network evaluation, given a multi-stakeholder makeup of the Peace Airshed Zone Association.
  - 7.4.3 Present key findings and recommendations to a technical working group audience, fielding technical questions regarding monitoring program recommendations.

## 8 The Proposal

Provide a Network Evaluation Proposal that addresses each of the elements described in Section 7.

- 8.1 The proposal must include responses to the following mandatory requirements:
  - 8.1.1 A description of the Proponent's demonstrated knowledge/experience related to network assessment and statistical analysis;
  - 8.1.2 A description of the Proponent's demonstrated knowledge/experience related to analysis and evaluation of ambient air monitoring data;
    - 8.1.2.1 A list of references
    - 8.1.2.2 A list and description of past network assessment projects or similar work.
  - 8.1.3 A description of the proposed approach, reflecting the Proponent's understanding of the scope, objectives, priorities and requirements presented in this RFP;
  - 8.1.4 A narrative of the rationale behind the Proponent's proposed methodology to providing the analysis; describe whether qualitative or quantitative analysis will be undertaken, and the level of quantitative analysis that will be applied. Where a choice



of analytic methods may depend upon available budget, describe the types of analyses, the comparative informational value and costs.

- 8.1.5 Any assumptions as to the scope or nature of the work, which the Proponent has made in completing the Proposal.
- 8.2 The proposal should also include the following provisions:
  - 8.2.1 A work plan including major tasks, resource allocations, milestones, deliverables, dependencies, timelines and budget breakdown;
  - 8.2.2 The rationale behind the Proponent's proposed team, structure, and composition including team member CV;
  - 8.2.3 A resource work effort matrix; including the total number of hours per resource on the Project, and a detailed description of which resource will work on the development of each deliverable and work product;
  - 8.2.4 An identification of risks applicable to the Project, and proposed strategies to mitigate such risks;
  - 8.2.5 An indication why the Proponent considers itself, its Proposal and its resources to be the "right" ones and what key strengths it will bring to the Project;
  - 8.2.6 What the Proponent sees as the critical success factors for the Project.
- 8.3 Questions regarding this RFP
  - 8.3.1 Questions for clarification may be directed in writing to [shelly@paza.ca](mailto:shelly@paza.ca). Any questions and responses that clarify the content or expectations of this RFP will be shared with other interested bidders.
  - 8.3.2 After March 25, 2013 a reply in time to meet RFP deadline cannot be guaranteed.
- 8.4 The proposal shall be submitted electronically by email to [shelly@paza.ca](mailto:shelly@paza.ca) on or before March 29, 2013 at 16:30:00 Alberta time.
- 8.5 Evaluation of the RFP
  - 8.5.1 Proposals will be reviewed by the Technical Committee and selections will be made from materials provided by the Proponent. Requests for further clarification may occur before a final selection is made.

- 8.5.2 Proposals will be evaluated based upon:
  - 8.5.2.1 Technical: understanding of requirements, scope of proposed project, level of detail in proposal, degree of appropriate quantitative analysis, proposed methodology.
  - 8.5.2.2 Qualifications: quantity and relevance of experience/knowledge related to mandatory criteria
  - 8.5.2.3 Organizational/resources: allocation and ability of personnel, overall organization of time including work schedule
  - 8.5.2.4 Balance of cost and informational value
  - 8.5.2.5 Value-added: unique or exceptional methodological proposal, exceptional personnel, exceptional experience, other.
- 8.5.3 PAZA does not guarantee that a contract will be awarded.
- 8.6 Budget and Administration:
  - 8.6.1 Projects proposals are expected in the range of \$70,000 to \$110,000.
  - 8.6.2 Project must be completed on or before October 31, 2013.
  - 8.6.3 Communications regarding all aspects of project implementation and execution will be with the Project Manager.
  - 8.6.4 Written progress reports will be required every two weeks for project duration.
  - 8.6.5 Draft and final detailed reports will be delivered to the Project Manager.
    - 8.6.5.1 To include three printed copies of the draft and final reports, three electronic copies of all maps, data files, and the final report on compact disc or external hard drive, report text products to be submitted in MS Word, or compatible format.
  - 8.6.6 Project Proposals will not be returned and PAZA reserves the right to dismiss any Proposal, for any reason.
- 8.7 Intellectual Property. All materials, publications, objects and all documents and information, and all displays, reports and other property made, and all products and deliverables created, for or pursuant to the provision of the services are the property solely of the Peace Airshed Zone Association, and upon completions of the services, the termination of

work agreement or such other time as PAZA may request, shall be delivered to PAZA or its designate.

## 9 Anticipated key deliverables and timeline

The contractor will provide the deliverables to the satisfaction of PAZA no later than October 31, 2013.