



ANNUAL REPORT 2011

The sky's the limit!

We believe people in the Peace region deserve the best air quality possible, and we bring diverse stakeholders together to make sure they get it.

Of course we're talking about air, which is something we do a lot of at PAZA, but we're also talking about community, public policy, and protecting something that affects all of us.

The sky is the limit. It's also our goal.

The Peace Airshed Zone Association

PAZA is a not for profit, multi-stakeholder organization that conducts ambient air quality monitoring in northwestern Alberta. PAZA is an unbiased, open and transparent organization, and our members collaborate to provide local solutions to local air quality concerns. As an independent third-party, PAZA has invested over a decade in building trust among members of the public, industry, government and non-governmental organizations.

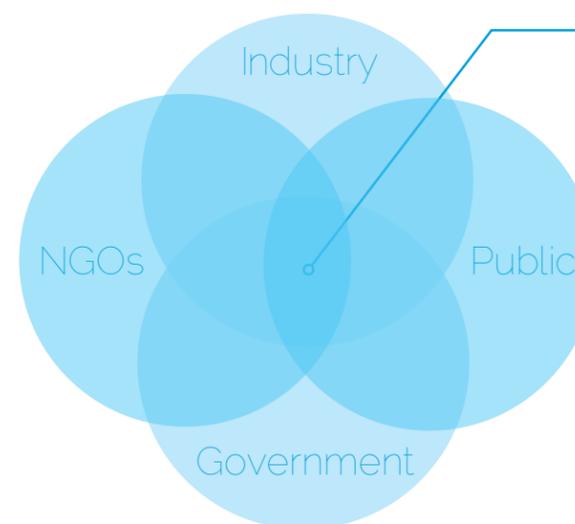
The air quality monitoring program developed by PAZA is a resource for the public to learn about local air quality, but also promotes continuous improvement of regional air quality, protection of environmental health, and influence on public policy.

PAZA follows the guiding principle of consensus decision making. Consensus is widely defined as a general agreement, ensuring everyone involved can live with the outcome of the decision. Stakeholders may not achieve all their goals, but the objective is to find the optimal solution that meets the best interests of everyone. Decisions made through consensus processes are likely to be more innovative and longer lasting than those reached through traditional negotiation or top-down hierarchy.

PAZA has been a recognized airshed by the Clean Air Strategic Alliance (CASA) since 2003.

OUR 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.



OUR VISION

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

A Message from the Board

As a long time resident of Grande Prairie and a Board member since the inception of PAZA, I can say that 2011 was a very full and exciting year for us.

This year marked PAZA's first ever Board of Directors strategic planning retreat, a great chance for our multidisciplinary stakeholders to develop a clear direction going forward. This process included modernizing the vision and mission of the organization. Shortly after, we carried out a meaningful review of PAZA's funding model to maximize organizational sustainability. This review concluded with sustainable funding improvements that will be implemented in 2012 to ensure the continued operation of the regional air quality monitoring program. For a full list of our activities this year, please have a look at the Year in Review starting on pg. 6 of this report.

Meanwhile, the Government of Alberta has committed to develop a new provincial monitoring system, with a strong focus on the need for a central independent agency led by good science. This is good news for Albertans, and there is huge potential for airsheds like ours to aid and integrate with this system. With our shared commitment to scientific and transparent air monitoring data collection, and our experience in data evaluation and reporting, we are confident that PAZA and our sister airsheds will have an important role to play in the new provincial system.

I want to thank our member organizations, supporters, as well as our staff for their contributions this past year, and for their continued dedication to excellence in the work PAZA does. Your efforts are providing everyone in this corner of Alberta with the best air quality monitoring data possible. I encourage members of the public interested in learning more about PAZA and air quality to visit our new website, where you can find detailed air quality data for the region.

Sincerely,



Bob Savage

Public Member, 2011 PAZA Board Chair

Did you know?

You're in PAZA airspace.

PAZA operates a network of six continuous monitoring stations and 46 passive monitoring stations that collectively monitor air quality across the Peace region.

The PAZA boundary encompasses approximately 38,000 square kilometres, with a population of approximately 100,000 people living and working in the region.



Another Year of Growth for PAZA

PAZA recognizes the air quality monitoring needs of our region are continually changing and we must grow and adapt to remain effective. Working closely with our stakeholders we completed an extensive review of our region's air quality monitoring needs and our program objectives. We completed this work in 2011, and it strongly positions PAZA to move into the future, including a full network assessment project planned for 2012.

PAZA continues to focus on the priority of producing credible air quality monitoring data and ensuring our monitoring is meeting our stakeholders' air quality monitoring needs.

January

Network and station objective review: Review of the network and station monitoring objectives was undertaken to reassess the air quality monitoring needs of the region and modernize our objectives according to regional changes.

New data loggers for the network: To improve the network data collection system and minimize operational downtime, we began replacement of the network data loggers at the stations.

March

1 Grande Prairie and Falher Community Agri-Shows: PAZA attended these local tradeshows engaging various members of the community to share information about air quality across our region. The children were engaged in activities to raise awareness about air quality.

Quality Assurance Plan Audit: PAZA contracted an independent third party audit of our Quality Assurance Plan. This document outlines the policies (quality assurance) and procedures (quality control) to ensure accurate and integral data is being collected and reported through the network to meet or exceed the performance requirements of the Alberta Air Monitoring Directive. The audit confirmed that PAZA's existing QA/QC program is effective in ensuring high quality air monitoring data, and provided PAZA with suggestions to further enhance our program.

Girouxville Area Ambient Air Monitoring Summary Report Released: There is an ongoing history of odour and air quality complaints regarding confined feeding operations (CFOs) south of Girouxville, Alberta. In 2007 PAZA responded to landowner concerns by implementing a sub-regional monitoring network consisting of six strategically distributed hydrogen sulphide passive monitors and one continuous monitoring station equipped to monitor hydrogen sulphide, total reduced sulphur compounds, sulphur dioxide, ammonia, and meteorology. This report—available on our website—summarized this project.

Value of Airsheds Report: Alberta Environment and Water released a report that outlines the success and value Airsheds provide to the Province and to our regional communities through monitoring activities and community engagement.

2 Grande Prairie Regional College Student Tour: PAZA partnered with science students at the Grande Prairie Regional College to discuss air quality in our region. This annual outreach program includes a station tour.

April

PAZA rebranding: PAZA unveiled a new logo and visual brand identity. We undertook these changes to ensure the outward appearance of our organization accurately reflects the professional value and integrity of our work. Our new look is meant to better emphasize the human side of PAZA's contribution to the region.

Photo Contest: PAZA's annual photo contest brought in over 75 entries this year. The calibre of entries was astounding (you are looking at the results in the pages of this report). A special thanks to all the participating artists.

May

Provincial Air Quality Advisories: Alberta Health issued air quality advisories for the northern part of the province due to high levels of fine particulate matter as a result of wildfires burning in northern Alberta. PAZA monitored air quality very closely, providing news releases and exposure reduction strategies during these events.

June

Bonanza Air Monitoring Concluded: The portable station complements PAZA's monitoring network and allows us to collect air quality data in areas of the network where data gaps exist or where there are local air quality concerns. This station collected data in the Bonanza community until June, concluding one year of monitoring. Air quality monitoring summary reports for Bonanza and other communities where portable monitoring has been conducted are available online.

3 PAZA Board of Directors Strategic Planning Workshop: PAZA Directors attended a full day retreat to revisit our vision and mission and set our priorities for the next three years. This workshop solidified our focus on producing credible air quality monitoring data and recognized the need to modernize our vision and mission and to work to secure equitable and sustainable funding for PAZA.



PAZA BOARD MEMBERS

From left to right: Bob Savage, Leanne Chartrand, Greg Smith, Ed Lamy, Andy Trudeau, Sharon Nelson, Dan Crowley, and Bill Nalder.

Not pictured: Brian Lieveise, Bob Cameron, Denis Sauvageau, Jamie Hallett, and Drennen Hallett.



July

Air Quality Health Index Roll Out in Alberta: The Government of Alberta announced the adoption of a modified federal Air Quality Health Index (AQHI) to give Albertans the most timely and relevant information to plan their outdoor activities. The AQHI includes a forecasting tool to anticipate air quality for the current day, night and the following day. PAZA has two stations in our region that report the hourly AQHI: Grande Prairie and Beaverlodge.

Beaverlodge Station Tour: PAZA invited local government, industry and public to tour the Beaverlodge station and to learn more about air quality monitoring in the region.

August

Commenced Review of PAZA Funding Model: PAZA is working to enhance our network funding model to ensure equitable, fair and sustainable funding necessary to continue the operation of the ambient air monitoring network. This project concluded in December with a revised funding model presented to the Board of Directors for approval early in 2012.

Three Creeks Area Working Group: PAZA members continued to provide educational support on airshed development and processes to stakeholders outside our boundaries where currently no airshed exists.

September

Passive Monitoring Expanded to East Prairie: The passive monitoring network was expanded with the addition of a passive station in East Prairie measuring sulphur dioxide, nitrogen dioxide and ozone.

PHOTO CONTEST

Our annual photo contest generates dozens of local entries per year.

The talent on this spread is thanks to (clockwise from top right) Corry Heinrichs, Janice Kretzer-Prysunka, Nicole Emmett, Lloyd Dykstra, Lloyd Dykstra, and Jessica Cook.

Thank you to all who entered!

October

New Website: The new site provides easy access to regional air quality information and updates. The use of Twitter allows PAZA to provide timely news updates and advisories to those on the go.

2011 Alberta Environment and Water Annual Audit: PAZA passed with flying colours! Alberta Environment and Water conducted an audit of our continuous monitoring stations from October 17 to 19. During the audit all of the continuous gas analyzers are challenged with audit quality gases to measure their accuracy. The auditor also identifies needs for improvement. The audit was very successful. All parameters measured in the audit passed and no items were identified for improvement following the audit.

November

Girouxville Area Sub-regional Ambient Air Monitoring Program: PAZA has concluded the operation of a sub-regional ambient air monitoring program, installed in 2007. There remains an ongoing history of odour and air quality complaints regarding confined feeding operations (CFOs) south of Girouxville, Alberta. PAZA will continue to operate two hydrogen sulphide passive monitors strategically placed in this area as part of the regional monitoring network.

December

Air Quality Monitoring Installed in Sunset House: The portable air monitoring station complements PAZA's monitoring network and allows us to collect air quality data in areas of the network where data gaps exist or where there are local air quality concerns. This station was relocated to the community of Sunset House and will commence operation early in 2012 for a period of one year with new measurements for fine particulate matter and total hydrocarbons. This station will also commence hourly reporting of the AQHI. Up to the minute data is available on our website.

Provincial Grant Awarded: PAZA was awarded a \$10,000 grant from Alberta Environment and Water for public education and outreach. On June 5 and 6, 2012 in partnership with the City of Grande Prairie and Canfor, PAZA will host the first ever vehicle emissions clinic in Grande Prairie.



Fact.

Running your gas powered lawnmower for one hour is equal to driving a new car between 320 and 480 km.

Fiction.

Air pollution is only an issue for cities. People who live in rural areas are not affected.

Fact or fiction?

Learn the difference at www.paza.ca

PAZA Ambient Air Quality Monitoring Network

The regional ambient air quality monitoring program commenced operation in 2002, developed in accordance with Alberta's Clean Air Strategy.

PAZA's ambient air monitoring program was implemented to provide scientifically credible air quality data to assess short and long term air quality on a regional scale. It is designed to respond to local and regional air quality issues and concerns in relation to human and ecosystem health.

The goal of the monitoring program is to collect reliable, representative, scientifically credible data in an efficient and economically sustainable manner and to ensure the data is available and easily accessible to all stakeholders.

What happens to the data?

The monitoring stations are operated in accordance with Alberta's Air Monitoring Directive. All data is verified through a rigorous quality assurance program, including daily equipment checks, monthly multipoint calibrations, and annual third party audits. PAZA also conducts frequent data review for variances and trends.

As an air monitoring organization, PAZA does not set the standards for air quality. The data we collect is compared against Alberta Ambient Air Quality Objectives (AAAQO) set by Alberta Environment and Water. The AAAQO are intended to provide protection of the environment and human health. This data is used by the health authorities to issue air quality health advisories during poor air quality episodes, and to make informed air quality and management decisions. PAZA reports any exceedances of AAAQO and submits monthly and annual air quality monitoring reports to Alberta Environment and Water.

PAZA also provides near instantaneous air quality data for public viewing online. For the calculation of the Air Quality Health Index (AQHI) measurements, PAZA submits up to the hour data to Alberta Environment and Water. The AQHI is updated hourly, 24-hours-a-day, and can be viewed on our website and the Alberta Environment and Water website.

In addition, the Grande Prairie Henry Pirker and Beaverlodge stations are part of the National Air Pollution Surveillance Program, which monitors and assesses the quality of outdoor air in populated regions of Canada.



WE DEAL IN DATA

Data from all PAZA stations is compared against Alberta Ambient Air Quality Objectives (AAAQO) as defined in the Alberta Environment Protection and Enhancement Act, and any exceedances of AAAQO are reported.

PAZA also submits monthly and annual air quality monitoring reports to Alberta Environment and Water.



PAZA Boundary and Monitoring Stations

PAZA operates a network of six continuous monitoring stations and 46 passive monitoring stations that collectively monitor the air quality across the region. The PAZA boundary encompasses approximately 38,000 square kilometres, with a population of approximately 100,000 people living and working in the region.

The rover station was operational until the end of June. This station remained out of operation while station upgrades were carried out and a future monitoring location was determined. This station will return to operation in 2012 in Sunset House with the additional capability to measure fine particulate matter and total hydrocarbons. This station will also commence hourly reporting of the AQHI.

The six continuous monitoring stations measure parameters continuously and provide near instantaneous readings at selected areas in the zone, while passive monitoring stations measure monthly average concentrations. In the PAZA network passive stations are intended to gather information over a broad spatial area and to measure trends over time. They are set up on a grid system to provide comparative air quality throughout the zone.

NEVER STOP LEARNING

Our new Making It Clear fact sheet series available online can provide you with detailed information on how air quality is monitored and regulated in Alberta, how air quality pollutants can impact your health and other related topics.

Visit paza.ca for more information.

How is the data reported?

If an exceedance is measured, Alberta Environment and Water is notified. Up to the hour data is also submitted to Alberta Environment and Water for hourly calculations of the Air Quality Health Index (AQHI). If the index indicates higher levels of risk to public health, Alberta Health Services may issue a public health advisory.

Validated data, suitable for use in scientific data analysis, is submitted to Alberta Environment and Water monthly and annually and is archived at the Clean Air Strategic Alliance Data Warehouse (www.casadata.org).

Monthly data summaries are compiled for technical reports to Alberta Environment and Water. Annual data summaries are compiled for reports to the community and technical reports for Alberta Environment and Water.

All data reports are available for viewing on our website.



PASSIVE vs. CONTINUOUS

There are six continuous (left) and 46 passive monitoring stations (above) dotted throughout the Peace region.

What affects air quality?

Air quality can be impacted by many sources both through human activity and natural phenomenon.

- **Point Sources:** factories, industry, power plants, home and business heating and cooling
- **Mobile Sources:** transportation, vehicles, aircraft
- **Natural Sources:** trees, vegetation, wetlands, gas seeps, forest fires
- **Area Sources:** small sources, BBQs, firepits, drycleaners, pesticide use

In addition to wind speed and direction and important meteorological parameters that affect the transport and dispersion of air, monitoring at the stations is based on what is expected to be present in an area and available technology. For example, monitoring stations in urban centres typically measure for nitrogen oxides, carbon monoxide, particulate matter, and ozone, the parameters commonly associated with vehicle emissions and home heating and cooling. In an industrial area we may monitor for sulphur dioxide, total reduced sulphurs, hydrogen sulphides, total hydrocarbons or fine particulate matter, depending on the industry. In rural areas we may monitor for particulate matter, ozone, or nitrogen oxides.

What does PAZA monitor?

Passively monitored parameters:

- Sulphur dioxide
- Nitrogen dioxide
- Ozone
- Hydrogen sulphide

Meteorological parameters (that affect the transportation and dispersion of compounds):

- Wind speed and direction
- Solar Radiation
- Outdoor Temperature
- Relative Humidity

Continuously monitored parameters:

- Sulphur dioxide (SO₂)
- Total reduced sulphur (TRS)
- Hydrogen sulphide (H₂S)
- Oxides of nitrogen (NO₂, NO and NO_x),
- Carbon monoxide (CO)
- Total hydrocarbons (THC)
- Ozone (O₃)
- Fine particulate matter (PM_{2.5})

Where the land meets the sky.

Air is always in motion. It moves dynamically across the face of the earth, interacting with the landscape.

In other words, emissions within the region disperse via the topography of the area. Air flows like a liquid through the many hills, valleys, forests, and cities we inhabit. When the land provides a barrier to the flow, it gets redirected. This can impact the air quality of the area by increasing chemical concentrations trapped by topography.

Understanding these dynamics is crucial in predicting dispersion patterns and siting emission sources.



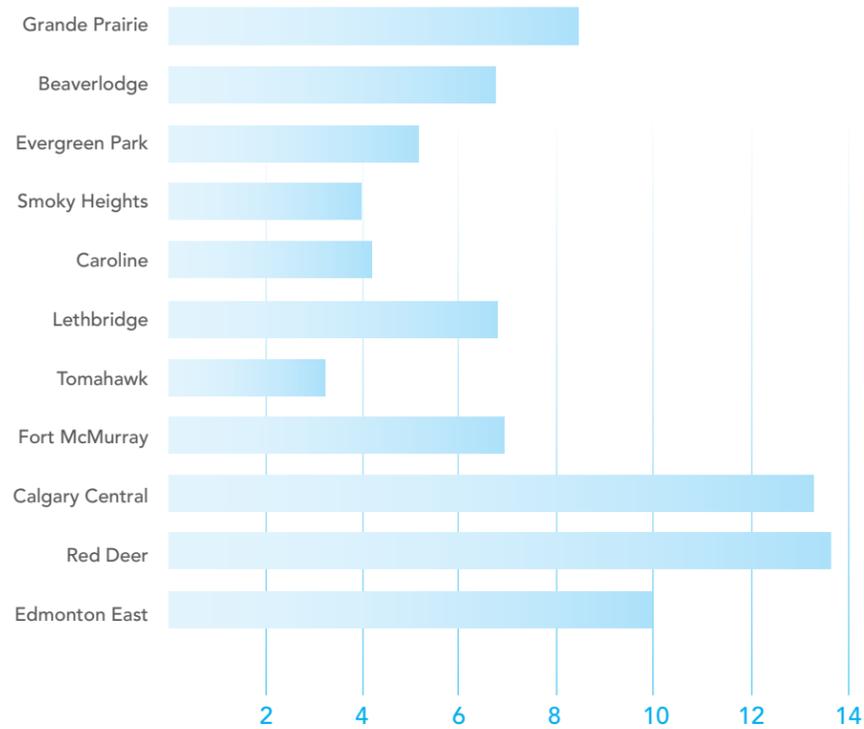
24/7 MONITORING

PAZA technicians like Grover Christiansen perform regular calibration and maintenance to ensure PAZA's six continuous monitoring stations operate day in and day out, year-round.

Our network's average instrument uptime was 99% during 2011.



Fine Particulate Matter in ug/m³ (2011 Average by Community)



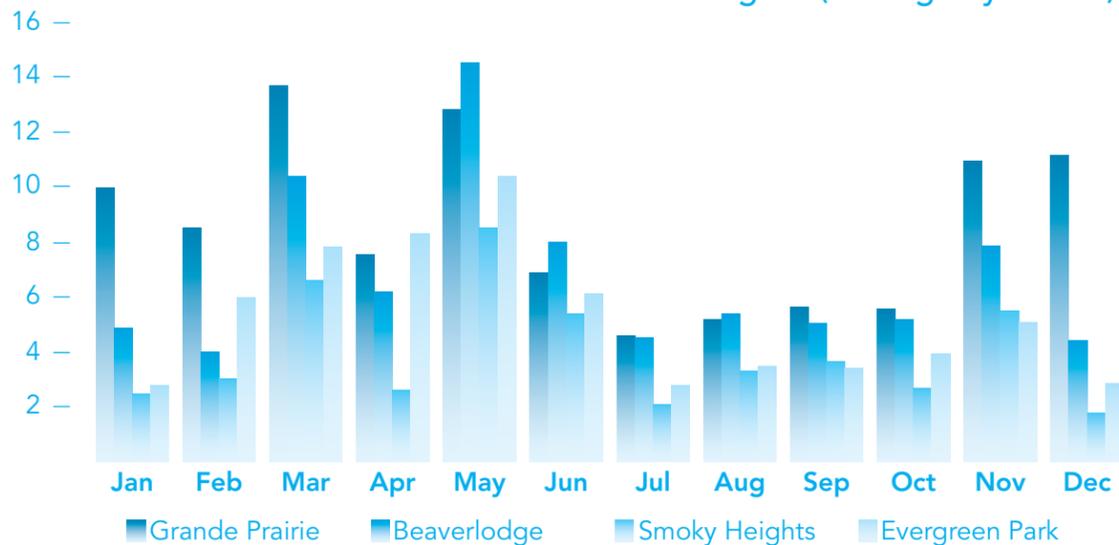
Fine Particulate Matter (PM_{2.5})

This year increased levels of PM_{2.5} were observed in the northern part of the province, mainly due to wildfires burning. Concentrations were lower than those observed from wildfires in 2010, as evidenced in the graph below. Particulate matter can also be a significant problem in rural areas due to controlled wood burning.

PAZA measured only eight Alberta Ambient Air Quality 24-hour Objective exceedances for PM_{2.5} in 2011, compared to 29 exceedances in 2010.

The highest maximum hourly average concentration in our network was approximately 337 µg/m³ at Evergreen Park. Despite the fact that northern Alberta communities experienced increase PM readings from wildfires in the spring, overall annual average concentrations were less than those measured in large urban centres across the province—as evidenced in the graph at left.

Fine Particulate Matter in ug/m³ (Average by Month)



So what did the data tell us in 2011?

The data PAZA collects is compared to the Alberta Ambient Air Quality Objectives set by Alberta Environment and Water.

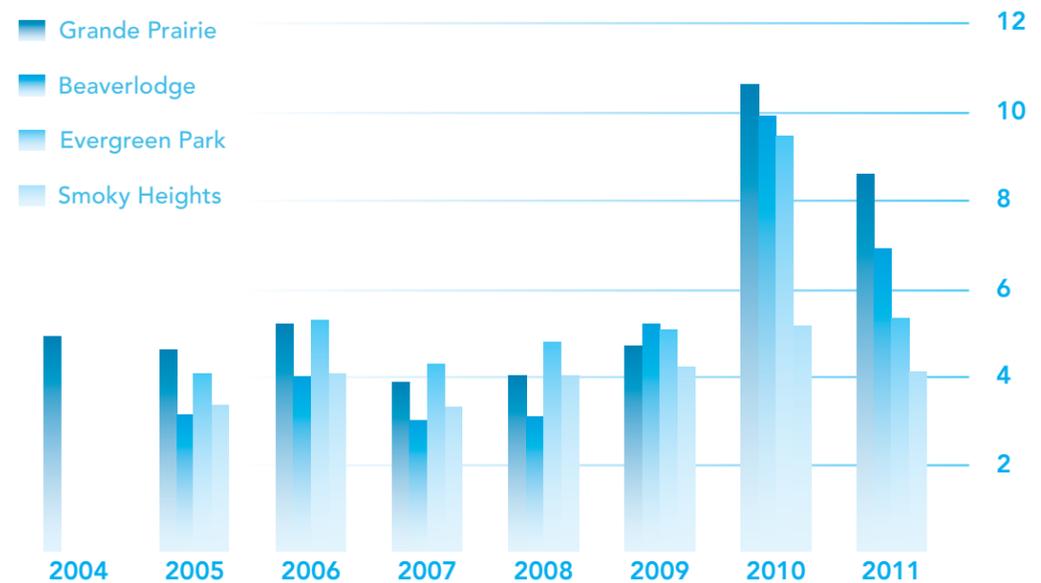
In 2011, there were eight exceedances of the 24-hour AAAQO for fine particulate matter (> 30 ug/m³). In the month of May, wildfires burning in northern Alberta contributed to six of the eight exceedances. These exceedances ranged between 37.7 and 90.6 ug/m³ and were measured at all stations measuring fine particulate matter in the network. Regional air quality advisories were issued by Alberta Health Services during this period.

The two remaining fine particulate matter exceedances were observed at the Evergreen Park station in April and may be attributed to industrial operations occurring upwind of the station.

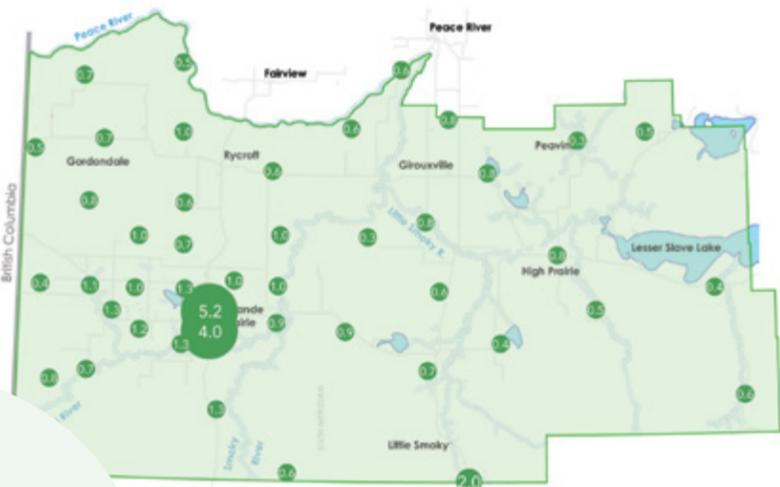
The technical data included provides a brief summary of the air quality results for 2011. If you would like to review more extensive air quality summaries across our zone please visit our website. Data in the report is reported in parts per billion (ppb). One part per billion is roughly equivalent to one second of time in 32 years. All Provincial data comparisons outside of PAZA's zone are based on validated continuous data archived in the Clean Air Strategic Alliance Warehouse.

LONG ACRONYM, SIMPLE CONCEPT
 Alberta Ambient Air Quality Objectives (AAAQOs) are established by Alberta Environment and Water to define the maximum acceptable concentration. These objectives are based on evaluation of scientific, social, technical and economic factors and developed in consultation with government departments, the scientific community, environmental organizations, industry and the general public.

Fine Particulate Matter in ug/m³ (Average by Year)



NOTE: Graphs and other graphic representations of data in this report were created for illustration only, based on official 2011 data. Values represented are approximate. For official audited data, including full reports, please visit our website.



Nitrogen Dioxide Concentrations in ppb (Annual Average by Passive Station)

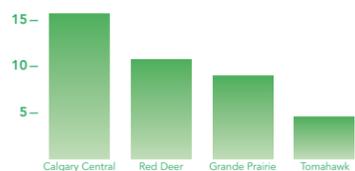
Nitrogen Dioxide (NO₂)

Nitrogen dioxide emissions across the zone are highest along major transportation routes and urban centres. This is visible in the passive annual average bubble map at left, and explains why major cities such as Edmonton and Calgary experience much higher overall emissions (as indicated in the graph below).

Increases in NO₂ emissions are observed during colder ambient temperatures when there is increased vehicle idling and residential/commercial heating. At the same time, weather conditions inhibit mixing and dispersion of air and air pollutants and temperature inversions trap stagnant air close to ground level. Overall nitrogen dioxide concentrations are down across the zone from last year, and are the lowest measured at the continuous stations since the inception of monitoring in 2004.



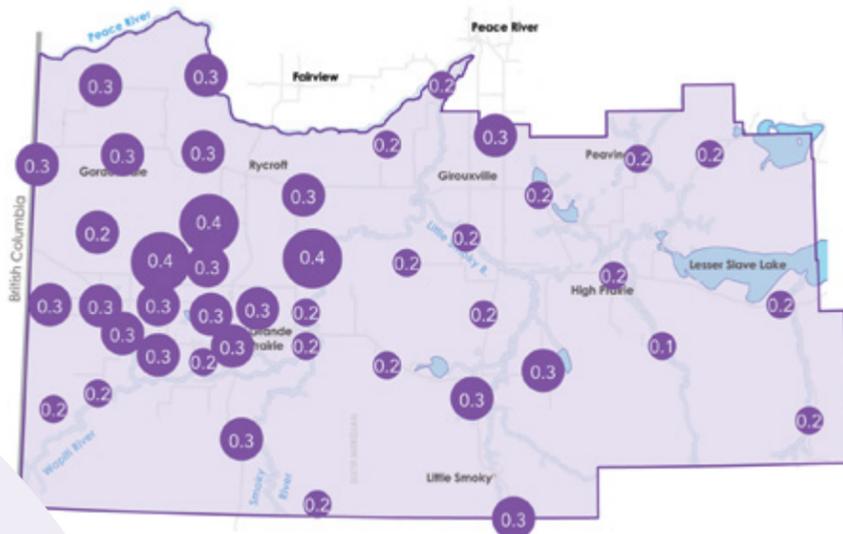
Sulphur Dioxide Concentrations in ppb (Annual Average)



Annual Nitrogen Dioxide Emissions by Region (in ppb)

Sulphur Dioxide (SO₂)

Sulphur dioxide concentrations tend to increase during colder ambient temperatures when weather conditions inhibit mixing and dispersion of air and air pollutants. Sulphur dioxide concentrations tend to be higher at the stations located in areas where industrial facilities involve the burning of fossil fuels, as indicated on the map at right.



Sulphur Dioxide Concentrations in ppb (Annual Average by Passive Station)

This circle represents the approximate diameter of the Annual Alberta Air Quality Objective (8 ppb) relative to the bubbles on the map. As you can see, annual averages are well within AAAAQO parameters.

Ozone (O₃)

Ozone and particulate matter play a role in the production of smog. These pollutants may cause human health problems and can pose a threat to environmental systems. They mainly affect the lowest part of the atmosphere, which holds the air we breathe.

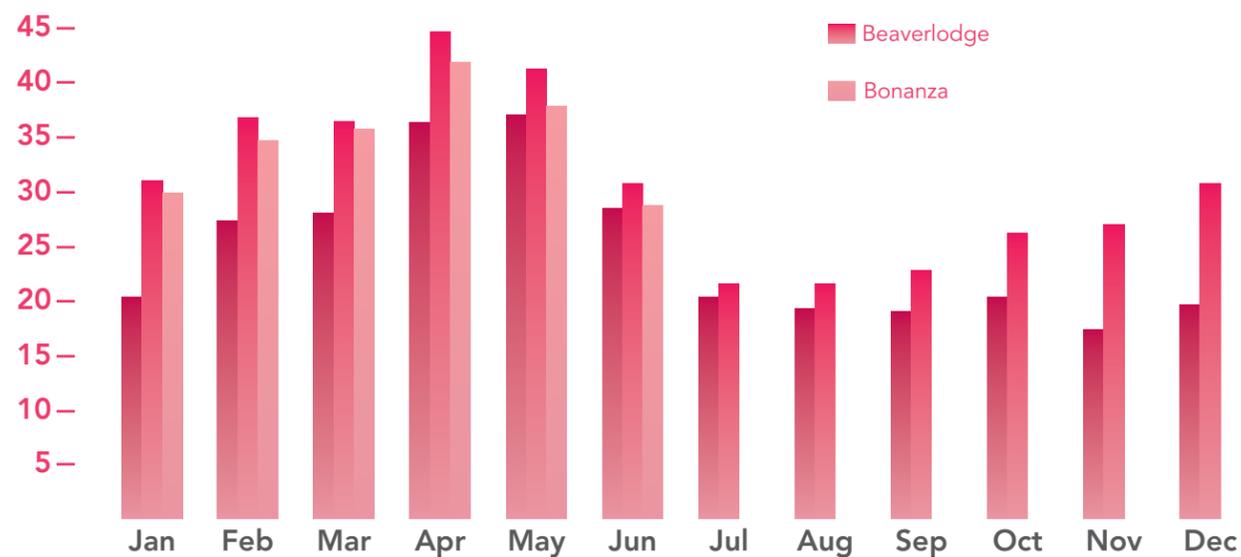
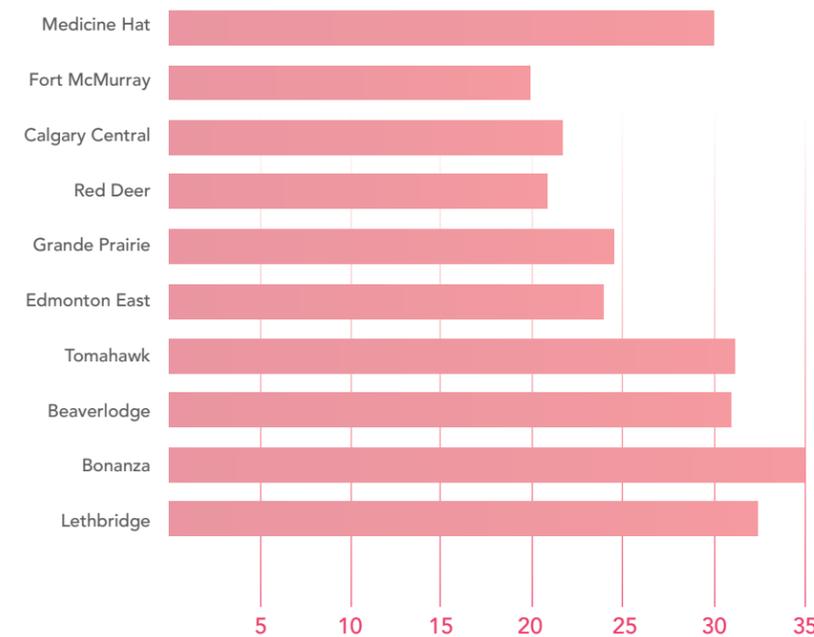
Ozone is not emitted directly, but is formed from the reaction of nitrogen oxides, emitted from fossil fuel combustion, and volatile organic compounds (VOCs) in the presence of sunlight and/or heat. When sunlight is not present, nitrogen oxides consume ozone to form nitrogen dioxide. This is why ozone levels are lower in urban areas or transportation corridors—where we expect to see more nitrogen oxides from vehicles—than in rural areas.

As evidenced in the graph at right, some of the highest urban and rural concentrations measured in 2011 were measured in the PAZA zone.

The O₃ concentrations are highest in the spring and early summer when O₃ production at ground level is at a maximum due to higher levels of sunlight. Increased O₃ values during the winter months may be caused by weather conditions such as temperature inversions that trap stagnant air close to ground level.

Annual average ozone concentrations measured in 2011 were the highest PAZA has measured since the inception of monitoring in 2004.

Ozone Concentrations in ppb (2011 Average by Community)



Ozone Concentrations by Month in ppb

Air Quality Health Index

An advantage of continuous monitoring is the ability to calculate an Air Quality Health Index. On July 13, 2011 Alberta adopted a modified federal AQHI to indicate the level of health risk associated with local air quality. This replaces the former Air Quality Index (AQI).

AN HOURLY MEASURE OF OUTDOOR AIR QUALITY

The AQHI allows you to plan your outdoor activities with health risk messaging.

In 2011, the PAZA region enjoyed AQHI risk ratings of "low" or "moderate" over 99% of the time.

The Peace region experienced limited "High" and "Very High" risk rating due to wildfires burning in northern Alberta.

Communities compared in the graph experienced low or moderate risk ratings over 98% of the time.

The AQHI is a scale designed to help Albertans better understand what the air quality around us means to our health. Everyone is affected by air pollution differently. Some are at a higher risk than others.

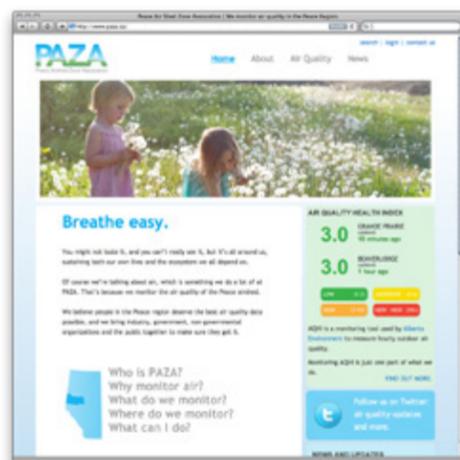
AQHI uses a scale of 1 to 10+ to indicate the level of risk associated with the local air quality. The lower the number, the lower the health risk. The AQHI value for the hour is calculated by a formula using the concentrations of the following three parameters, measured continuously:

- **Fine Particulate Matter**
- **Nitrogen dioxide**
- **Ozone**

Because of our energy based economy, Alberta has enhanced the AQHI to also consider concentrations of the following pollutants:

- **Sulphur dioxide**
- **Hydrogen sulphide**
- **Total reduced sulphur**
- **Carbon monoxide**

Additionally, special community-based messaging for odour or visibility is an added feature to the AQHI reported in Alberta. The index does not measure the effects of pollen, heat or humidity on health.



REAL-TIME AQHI FOR THE PEACE AIRSHED

As part of our new website design, we have added real-time AQHI data provided by Alberta Environment and Water. The system provides up to the hour indices for Grande Prairie and Beaverlodge.

What does it mean for me?

The AQHI allows you to look ahead at anticipated air quality conditions for 48 hours and provides associated health advice. You can refer to the AQHI to check the quality of outdoor air in your community before heading off to work or play, and you can use the forecasts to plan your activities, whether over the next hour or the next day.

	At Risk Populations	General Population
Low Risk 1-3	Enjoy your usual outdoor activities.	Ideal air quality for outdoor activities.
Moderate Risk 4-6	Consider reducing or rescheduling strenuous activities outdoors if you are experiencing symptoms.	No need to modify your usual outdoor activities unless you experience symptoms such as coughing and throat irritation.
High Risk 7-10	Reduce or reschedule strenuous activities outdoors. Children and the elderly should take it easy.	Consider reducing or rescheduling strenuous activities outdoors if you experience symptoms such as coughing and throat irritation.
Very High Risk 10+	Avoid strenuous activities outdoors. Children and the elderly should also avoid outdoor physical exertion.	Reduce or reschedule strenuous activities outdoors, especially if you experience symptoms such as coughing and throat irritation.

What affects AQHI?

High risk and very high risk air quality episodes can occur when particulate matter is carried into urban areas from forest fires, or during wintertime smog events. Ground-level ozone is a component of photochemical smog that can be harmful to human health and vegetation; it also has the ability to degrade synthetic materials. High and very high episodes can occur when ozone forms during periods of summertime smog. Ground level ozone can form in hot, sunny weather, through complex chemical reactions involving pollutants emitted by automobiles and industry. Winter-time smog often forms during a temperature inversion (warm air trapped under heavier colder air) and sunny weather.

In 2011, all of the high and very high risk ratings occurred in May when wildfires burning in northern Alberta had an impact on air quality in the region.

	Grande Prairie	Beaverlodge	Edmonton	Fort McMurray
Low Risk	91%	97%	78%	95%
Moderate Risk	8.8%	2.6%	21%	3.3%
High Risk	0.1%	0.2%	0.6%	1.7%
Very High Risk	0.1%	0.1%	0.0%	0.5%

2011 AQHI Average Ratings from Sample Communities

What can I do?

Learn

Think for yourself! Learn about air quality. Visit paza.ca for info.

Get Involved

PAZA welcomes anyone with an interest in air quality to our regular meetings. Meeting dates are posted online. Join us!

Find up-to-the-minute air quality data, including AQHI, online.

Request a presentation to be made to your organization or group.

Attend our AGM in April to learn more about air quality monitoring and PAZA's activities.

Get Active

Small changes can have the biggest cumulative impact:

- Walk, bike, car pool, or use public transportation
- Reduce vehicle idle time
- Keep your vehicle tuned up and ensure proper tire pressure for better fuel efficiency and reduced emissions
- Install a programmable thermostat
- Turn down your hot water tank
- Turn off lights and electronics when not in use
- Reduce, reuse, then recycle
- Use energy-efficient appliances
- Buy local and reduce your carbon footprint
- Start a compost and garden organically

Contact us for more information:
780.833.4343 or 1.866.764.2681

www.paza.ca

2011 Membership

The Peace Airshed Zone Association (PAZA) thanks our members for their previous support and look forward to their continued support in 2012. Our regional ambient air quality monitoring network has an annual budget of over \$750,000 funded largely by voluntary contributions. Without the valuable support of our members, PAZA would be unable to operate the air quality monitoring network with such a high level of scientific credibility.

Individual members representing various stakeholder groups regularly attended meetings, participated on committees and provided their time and resources. Sincere thanks to all our members for over 750 hours of volunteer time and resources, totalling over \$70,000 worth of in-kind support.

1471002 Alberta Ltd.
Advantage Oil & Gas Ltd.
Ainsworth Engineering Canada LP.
Alberta Environment and Water
Alberta Health Services
Altagas Ltd.
ARC Resources Ltd.
ATCO Power Canada
AvenEx Energy Corp.
Barb Ringle
Barrick Energy Partnership
Bellamont Exploration Ltd.
Birchcliff Energy Ltd.
Bob Cameron
Bonavista Energy Corporation
Canadian Natural Resources Limited
Cequence Energy Ltd.
ConocoPhillips Canada Resources Corp.
County of Grande Prairie
Crescent Point Resources Limited Partnership
Dark Energy Ltd.
Delphi Energy Corp.
Devon Canada
Encana
Energy Resources Conservation Board
Enerplus Resources Corporation
Friends of an Unpolluted Lifestyle
Galleon Energy
Glenogle Energy Inc.
Grande Prairie Generation Inc.
Hanna Oil & Gas Company

Insignia Energy Ltd.
KinMerc Oil & Gas Inc.
Longview Oil Corp.
Maxim Power Corp.
MD of Greenview
MD of Smoky River
MD of Spirit River No 133
Municipal District of Big Lakes
NAL Resources Ltd.
Pengrowth
Penn West Petroleum Ltd.
Polar Star Canadian Oil & Gas Inc.
Response Energy
Saddle Hills County MD 20
Seaview Energy Inc.
Shell Canada Energy
Shoreline Acquisition Corp.
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