

Annual Report 2006





## About CASA

The Clean Air Strategic Alliance (CASA) is a multi-stakeholder partnership, composed of representatives selected by industry, government and non-government organizations. Stakeholders are committed to developing and applying a comprehensive air quality management system for all Albertans.

All CASA groups and teams, including the board of directors, make decisions and recommendations by consensus. Recommendations are likely to be more innovative and long lasting than those reached through traditional negotiation processes.

## Vision

The air will be odourless, tasteless, look clear and have no measurable short or long-term adverse effects on people, animals or the environment.

## Mission

To recommend strategies to assess and improve air quality in Alberta, using a consensus process.

## Mandate

CASA was established by Ministerial Order as an advisory committee under the Environmental Protection and Enhancement Act and the Department of Energy Act to undertake and report on:

1. The operation of the Comprehensive Air Quality Management System (CAMS).
2. The conduct of strategic air quality planning for Alberta through shared responsibility and the utilization of a consensus building collaborative approach. Planning shall include:
  - i. clear identification of issues;
  - ii. prioritization of specific problems;
  - iii. allocation and coordination of resources;
  - iv. development of action plans; and
  - v. evaluation of results.
3. The prioritization of problems with respect to air quality in Alberta and specific actions or action plans and activities to resolve such problems. The action plans will prescribe guidelines for the initiatives to be undertaken, the economic and environmental consequences, and what outcomes are expected from each initiative.

Decisions on matters of policy and action of CASA will be based on consensus. Where consensus policy and action matters are not achieved, yet some action is deemed necessary, specific alternatives will be provided to the Ministers for decision. The alternatives will reflect the extent of consensus and areas of agreement, the specific issues about which there is no consensus, and the reasoning behind the differing views.

Progress reports will measure and compare the actual benefits and results to projected outcomes, responsibility, accountability and performance of the initiatives; and any reports submitted will be jointly presented to the Ministers of Environment and Energy.

## CASA supports the following air quality management goals

1. Protect the environment by preventing short and long-term adverse effects on people, animals and the ecosystem.
2. Optimize economic efficiency.
3. Promote pollution prevention and continuous improvement.

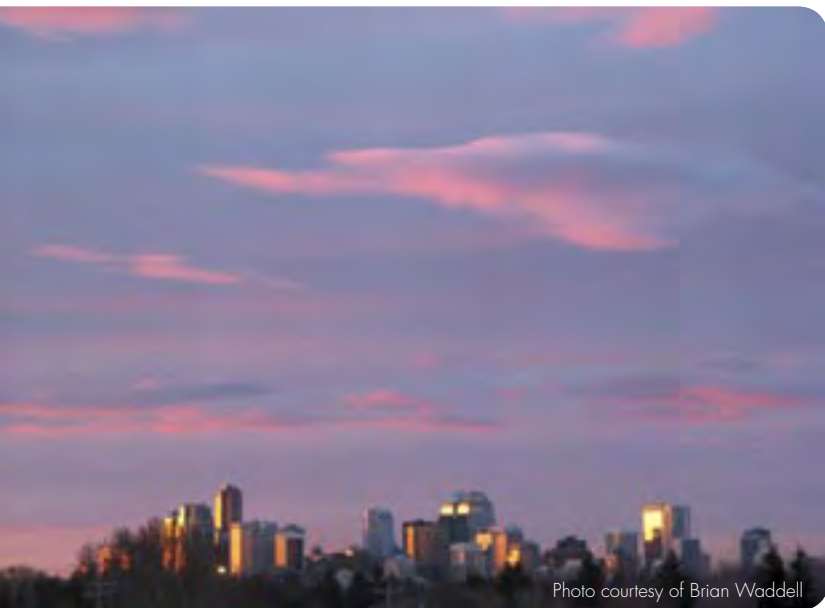
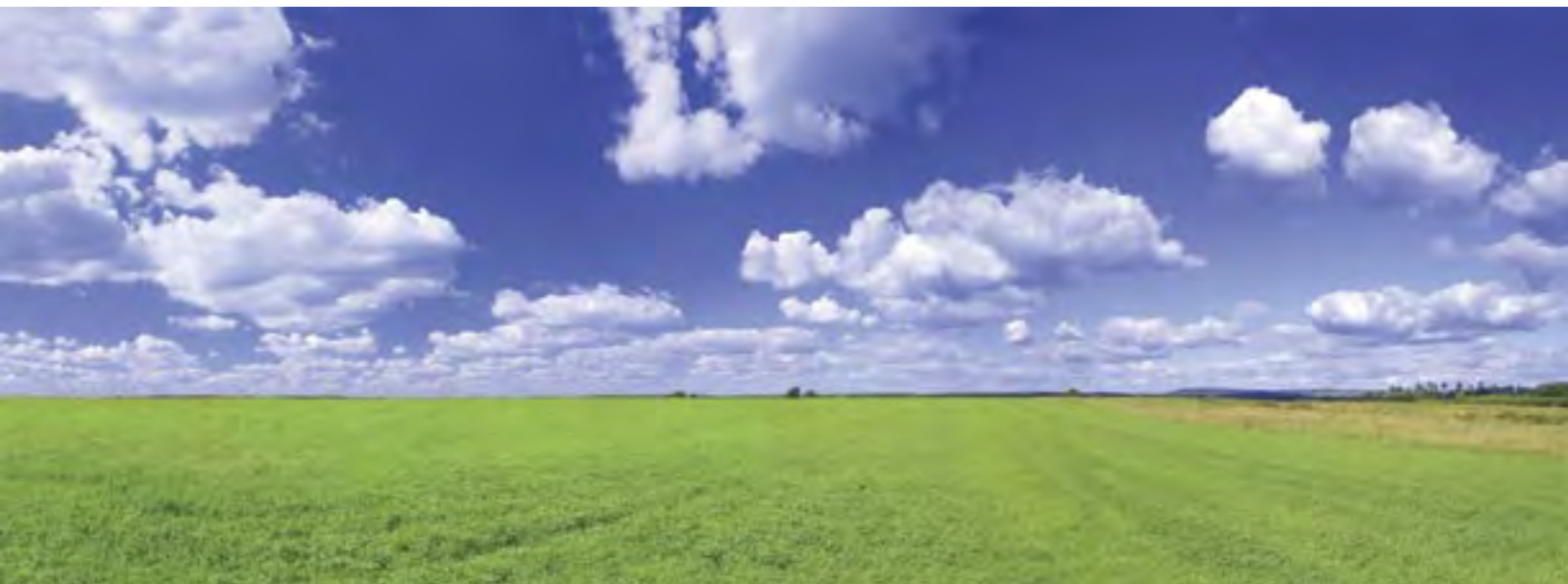


Photo courtesy of Brian Waddell

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## Highlights

### CASA board adopts a Code of Ethics

CASA aspires to achieve the highest standards of public participation, consensus-based decision-making and ethical behavior in carrying out its mandate. In 2006, the board approved a Code of Ethics. It will provide new and existing members of the CASA board of directors with the principles and objectives adopted by the board and set out the expectations and ethical standards applicable to each CASA board member.

### Electrical Efficiency & Conservation Project Team report

The CASA board approved the final report and five recommendations of the Electrical Efficiency and Conservation Project Team. The report focused on the need for an overarching energy efficiency and conservation framework in Alberta. The proposed framework would provide guidance in addressing the barriers to energy conservation and efficiency in a coordinated and effective manner.

### Science Symposium on Nitrogen

On September 27 – 29, over 200 attendees gathered in idyllic Lake Louise to learn about the fate and effects of nitrogen. Nitrogen emissions are increasing in Alberta and the symposium was hosted by CASA to inform stakeholders and others of the current science and management of nitrogen. Speakers ranged from local to global on diverse topics, including deposition, acidification, eutrophication, monitoring and management.

### Ambient Monitoring Strategic Plan Workshop

On June 6, the Ambient Monitoring Strategic Planning Team held a successful workshop for 40 CASA stakeholders to discuss and provide input into the draft Ambient Monitoring Strategic Plan for Alberta.

### Particulate Matter and Ozone Management Framework implementation

Rising ozone levels in three urban areas in Alberta triggered the management planning level of the Management Framework. Ozone levels did not exceed Canada Wide Standards – the management plan level is intended to keep clean areas clean and prevent exceedances. Stakeholders in the Census Metropolitan Areas around Edmonton, Calgary and Red Deer received notification and have two years to develop management plans to reduce ozone levels. The PM and Ozone Implementation Team is monitoring implementation of the Framework.

### Alberta Airsheds Council formed

The inaugural meeting of the Alberta Airsheds Council was convened at CASA following CASA board approval of the Airsheds Zones Conference Organizing Committee's final report, including a recommendation that CASA convene an Airsheds Council meeting in 2006.



Photo courtesy of Brian Waddell

## Message from the President



Peter Watson, President

The Clean Air Strategic Alliance continues to lead the way with innovative solutions to complex air quality issues in Alberta. CASA's sphere of influence is not confined to Alberta, as many others again looked to CASA to impart the success of its multi-stakeholder, consensus-based process.

Pivotal to CASA's success is the trust that has evolved between stakeholders at the CASA table over the past twelve years. CASA embodies a nucleus of stakeholder relationships which have withstood the test of time, changing issues and new challenges. This core facilitates continuity and supports the process with a wealth of experience and expertise. CASA stakeholders and their commitment to air quality in Alberta lend vigour and sustainability to CASA.

The CASA board of directors affirmed their commitment to credibility and accountability by enacting a Code of Ethics in 2006. The board also increased their efforts in the monitoring of board approved

recommendations to ensure that CASA recommendations are implemented in a timely and meaningful manner. A review of performance measures and indicators was also completed. New and/or improved performance measures are anticipated in 2007.

CASA continues to make a positive difference for air quality in Alberta. Proof positive is the pending development of proactive management plans to reduce ground-level ozone in Alberta's urban areas, a direct result of the implementation of the Particulate Matter and Ozone Management Framework. On the cutting edge of innovation, the board approved recommendations on energy efficiency and conservation as well as renewable and alternative energy this year.

It is truly an honour and a privilege to be at the helm of CASA. With several air quality issues looming on the horizon, the future promises to be challenging but CASA is poised and ready to meet these challenges.

## Board of Directors as of December 31, 2006 unless otherwise noted

### Sector: Industry

Member category	Association/affiliation	Representative
Agriculture	Alberta Beef Producers	Len Vogelaar
Alternate energy	Alternate energy producers	Theresa Howland
Chemical manufacturers	Canadian Chemical Producers Association	Wendy Lyka (to February) Réjeanne Cool (from May)
Forestry	Alberta Forest Products Association	Brian Gilliland
Mining	Mining industry	Wayne Kenefick (to January) Peter Darbyshire (from January)
Oil and gas (large producers)	Canadian Association of Petroleum Producers	Dave Byler, <b>CASA vice-president</b>
Oil and gas (small producers)	Vacant	
Petroleum products	Canadian Petroleum Products Institute	Dave Barrett (to February) Cindy Christopher (from February)
Utilities	Utilities	Bob Page

### Sector: Government

Federal	Environment Canada	Jim Vollmershausen
Provincial	Alberta Environment	Peter Watson, <b>CASA president</b>
Provincial	Alberta Energy	Sandra Locke
Provincial	Alberta Health and Wellness	Wayne McKendrick
Local (urban)	Alberta Urban Municipalities Association	Darren Aldous (to November) Len Bracko (from November)
Local (rural)	Alberta Association of Municipal Districts and Counties	Carolyn Kolebaba
First Nations	Vacant	
Métis	Métis Settlements General Council	Gerald Cunningham

### Sector: Non-Government Organization

Consumers/transportation issues	Vacant	
Health issues	The Lung Association, Alberta & NWT	Tony Hudson
Pollution issues	Pembina Institute	Tom Marr-Laing (to March) Chris Severson-Baker (from May)
Pollution issues	Toxics Watch Society of Alberta	Myles Kitagawa
Wilderness issues	Prairie Acid Rain Coalition and Bert Riggall Environmental Foundation	Martha Kostuch <b>CASA vice-president</b>



## Alternates as of December 31, 2006 unless otherwise noted

### Sector: Industry

Member category	Association/affiliation	Representative
Agriculture	Wild Rose Agricultural Producers	Terry Murray (to June) Humphrey Banack (from June)
Alternate energy	Alternate energy producers	David Baker
Chemical manufacturers	Canadian Chemical Producers Association	Barbra Korol (to April) Al Schulz (from May)
Forestry	Alberta Forest Products Association	Keith Murray
Mining	Mining industry	Ron Laing
Oil and gas (large producers)	Canadian Association of Petroleum Producers	Bill Clapperton
Oil and gas (small producers)	Vacant	
Petroleum products	Canadian Petroleum Products Institute	Ted Stoner
Utilities	Utilities	Mike Kelly

### Sector: Government

Federal	Environment Canada	Tim Goos
Provincial	Alberta Environment	John Knapp
Provincial	Alberta Energy	Jerry MacPherson
Provincial	Alberta Health and Wellness	Alex Mackenzie
Local (urban)	Vacant	
Local (rural)	Alberta Association of Municipal Districts and Counties	Eugene Wauters (from June)
First Nations	Vacant	
Métis	Métis Nation of Alberta	Rick Boucher

### Sector: Non-Government Organization

Consumers/transportation issues	Vacant	
Health issues	Canadian Public Health Association	Timothy Lambert (from November)
Pollution issues	Lake Wabamun Enhancement and Protection Association	Linda Duncan
Pollution issues	Residents for Accountability in Power Industry Development	Ian Peace
Wilderness issues	South Peace Environmental Association	Bob Cameron

### Thank you to past board members

CASA gratefully acknowledges the contribution of board members, indicated below, who stepped down in 2006.

<b>Darren Aldous</b>	Alberta Urban Municipalities Association	<b>Tom Marr-Laing</b>	Pembina Institute
<b>Dave Barrett</b>	Canadian Petroleum Products Institute	<b>Terry Murray</b>	Wild Rose Agricultural Producers
<b>Wayne Kenefick</b>	Graymont Limited	<b>Bob Page</b>	Transalta Corporation
<b>Barbra Korol</b>	Canadian Chemical Producers Association	<b>Mitch Shier</b>	Small Explorers and Producers Association of Canada
<b>Wendy Lyka</b>	Canadian Chemical Producers Association		

## Message from the Executive Director



**Jillian Flett**, Executive Director

2006 was an extremely busy year for CASA. In March, the CASA Board of Directors developed a list of priority issues as part of their strategic planning process. In June, the Ambient Monitoring Strategic Planning Team held a workshop to gather stakeholder input on the draft strategic plan for ambient monitoring in Alberta. In September, CASA hosted a world-class Science Symposium on Nitrogen with over 200 participants and commenced the ROVER vehicle emissions study in Edmonton, Calgary, Red Deer and Canmore. During 2006, the CASA board approved the reports and recommendations of the following teams: Renewable and Alternative Energy, Electrical Efficiency and Conservation and the Airsheds Zones Conference. And throughout 2006, three board committees, seven project teams and five implementation teams toiled on under their respective mandates.

CASA also saw the departure of Donna Tingley as CASA Executive Director. Under her capable leadership, CASA saw many successes. She certainly will be missed.

It is with great pleasure that I join the CASA partnership of dedicated people.

A multitude, 276 to be exact, of stakeholders from 121 government, industry and non-government organizations worked together this year to attain excellence for air quality in Alberta. Achieving consensus on complex air quality issues in the multi-stakeholder arena is hard work. The commitment and contributions of all CASA stakeholders is truly remarkable and is sincerely appreciated by the Board and Secretariat. I invite you to peruse the list of stakeholders and organizations involved in CASA later in this report to ponder the diversity of interests represented.

Air quality issues are gaining in recognition and priority on a local to global scale. Each small step takes us forward to achieving our vision for air quality in Alberta. CASA is ready, able and willing to do its part to take on the challenges. I look forward to working with you to achieve ongoing successes in 2007.

Thank you all...

## Secretariat

### Executive Director

Donna Tingley (to December 31)

### Science Advisor

Marianne English

### Office Manager

Lori Melanson (from June 19)

Bernice Lloyd (to July 31)

### Communications Advisor

Sharon Hawrelak

### Senior Project Manager

Kerra Chomlak

### Project Managers

Matthew Dance

Bettina Mueller (to November 15)

Kevin McLeod (from August 1)

### Finance Officer

Joanne Dixon (to May 31)

### Administrative Assistants

Kathy Semchuk (from October 10)

Alison Jenness (from November 7)

Kendra Mackenzie (to June 23)

Wilma Raman-Nair (to August 30)

Thank you to **Kim Sanderson** and **Christa Cruthers** for applying their skills as consultants to various CASA teams this year.

## Evaluating and Measuring CASA Performance

### Performance evaluation

In the belief that "what gets measured gets done," CASA has a strong system for measuring and evaluating its performance. When CASA was established in 1994, an article was included in the bylaws to ensure that overall organizational performance is evaluated on a regular basis. Article 16 of the CASA bylaws requires that, "The performance of the Society will be evaluated upon the expiration of three years from the date of its incorporation, or the date of its last performance evaluation, by the Members of the Society."

The most recent performance evaluation was completed in 2004 and the five areas for improvement identified in that evaluation were satisfactorily addressed in 2005. The next performance evaluation is due in 2007.

In keeping with the practice that every three years a priority setting process on the importance of existing and emerging air quality issues is commenced by the board, this process was commenced in 2005 and continued in 2006. Five prospective issues of concern were presented to the board.

### 2006 performance measures results

CASA has five performance measures, established by the board of directors, to reflect the organizational performance of CASA.

These are:

1. Improved air quality indicators in areas of CASA action.
2. Capability to measure air quality effects on humans and the ecosystem.
3. Number of recommendations through the Comprehensive Air Quality Management System process implemented.
4. Degree of CASA members, partners and clients' satisfaction with the CASA approach.
5. Degree of recognition by emitters and the general public of CASA as a major vehicle for delivering improved air quality management for Alberta.

Photo courtesy of Brian Waddell

## 2006 performance measures results (continued)

### 1. Improved air quality

CASA's mandate includes the evaluation of air quality in Alberta through a collaborative process.

To assess progress, two sets of indicators were defined; one set is based on concentrations of selected substances in the air and the other set is based on exceedances of the Alberta ambient air quality one-hour guideline of three substances. Analysis began with data from 1994 because that was the year CASA was formed. Please note that this performance measure is calculated every three years, with the next calculation due in 2007.

#### Concentrations of selected substances

Annual average ambient concentrations and the annual peak concentrations across Alberta are the two indicators chosen for this set. The specific substances, as shown in Figures 1 and 2, were selected because:

- They are substances of concern in Alberta.
- They affect air quality in Alberta.
- They are associated with issues addressed by one or more CASA project teams.
- Data on each substance is readily available in electronic form.

The annual average concentration of wet deposition of acidifying emissions is also analyzed as part of this indicator set. Benzo(a)pyrene was included in previous reports, but its monitoring was discontinued in 2001 so it has been dropped as an indicator.

Figures 1 and 2 reflect differing levels of progress for the selected substances. Only benzene and sulphur dioxide showed overall reductions in both ambient and peak concentrations between 1994 and 2003. Ambient levels for fine particulates and hydrogen sulphide dropped, but the peak concentrations for both substances rose. For nitrogen dioxide, a small downward trend is indicated for peak concentrations, but a slight upward trend in ambient levels. There were small upward trends in both indicators for ozone. No trend was apparent in the average annual wet deposition.



Photo courtesy of Brian Waddell

Figure 1: Change in average concentration of selected substances (1994 to 2003)

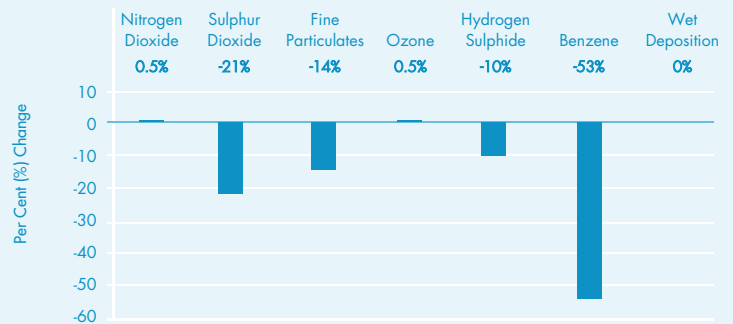
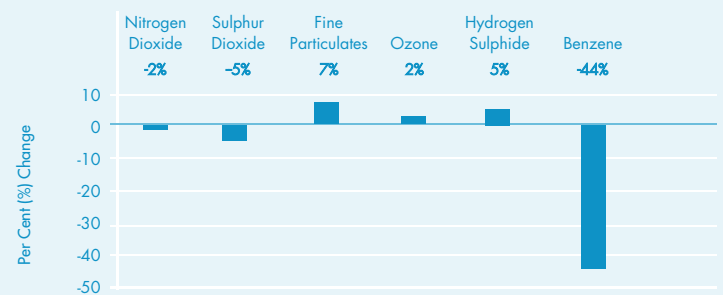


Figure 2: Change in annual peak concentration of selected substances (1994 to 2003)



## Exceedances of the Alberta ambient guidelines

Exceedances of the Alberta ambient one-hour guideline across Alberta for three substances (sulphur dioxide, hydrogen sulphide and nitrogen dioxide) provides the second set of indicators. The data was obtained from industrial compliance, airshed and Alberta Environment monitoring stations between 1994 and 2003.

The overall downward trend for sulphur dioxide exceedances continues, and a new significant downward trend was found for hydrogen sulphide exceedances (see Figures 3 and 4). There have been so few exceedances of the guideline for nitrogen dioxide that a chart is not provided.

Figure 3: Sulphur Dioxide - Per cent exceedances from industry, airshed and provincial data (1994 to 2003)

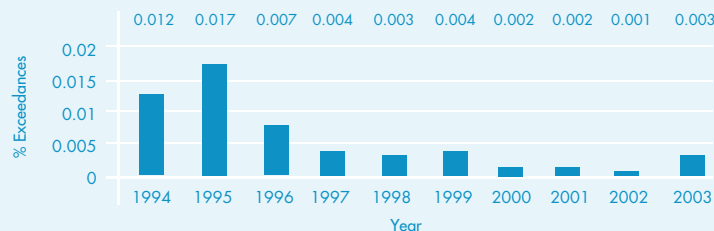
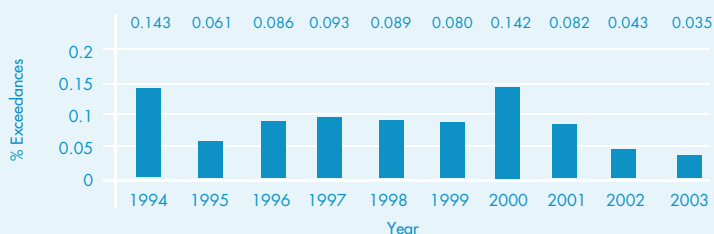


Figure 4: Hydrogen Sulphide - Per cent exceedances from industry, airshed and provincial data (1994 to 2003)



## 2. Capability to measure air quality effects

Four indicators were developed to represent capability to measure air quality effects and are calculated every three years, with the next calculation due in 2007. To keep the indicators simple, efforts focused on monitoring, which is an important part of measuring effects. In order to define air quality effects, a measure of air quality and a measure of the effects are needed, thus resulting in three types of monitoring indicators:

- Ambient air quality.
- Ecological effects.
- Human health effects.

The ambient air quality indicator is based on the number of air quality monitoring sites and instruments in use as a percentage of the number of sites and instruments expected to be in operation in Alberta, as described in the Ambient Air Quality Strategic Plan. In 1994, the value of this ambient indicator was 31 per cent; and in 2003 it was 48 per cent, up one percent from 2002. This does indicate that progress has been made over the last ten years in our capability to measure concentrations of substances of concern.

Two ecological effects monitoring indicators have been defined. One is based on the number of ecological monitoring sites that have been put in place as a percentage of the number of expected sites, as described in the Ambient Air Quality Strategic Plan. The second ecological effects monitoring indicator is simply the total number of ecological monitoring sites that have been implemented. The results for these two indicators are unchanged from 2002, at 33 per cent and 10 sites respectively. In comparison, there were no ecological effects monitoring sites in Alberta in 1994.

A preliminary human health monitoring indicator was developed in 2004 to indicate the extent to which data of the type required by the CASA Human Health Monitoring Framework (approved by the CASA board in 1999) is being collected in Alberta. The extent to which this monitoring is being done was assessed on a scale of one to five, and compared against the ideal (a score of "5"). For 2004, the rating was 2/5, or 40 per cent, which compares favourably against a value of zero in 1994. This indicator will be used in the short term only.

### 3. Recommendations implemented

CASA teams make recommendations for consideration by the CASA board of directors. The intent of this indicator is to measure the degree to which recommendations that can lead directly to improved air quality (that is, substantive recommendations) have been implemented within three years of their approval by the CASA board. This indicator is a snapshot taken three years after the recommendations were approved, and complex actions may take more than three years to be fully implemented. Recommendations accepted by the board that are administrative or operational are not included in this indicator.

There were 53 substantive recommendations approved by the CASA board in 2002. The percentage of substantive recommendations from 2002 implemented by 2006 is 74 per cent.

\*Please note that no substantive recommendations were made in 2000.

### 4. Stakeholder satisfaction

The indicator for this performance measure was derived from surveys of CASA stakeholders conducted in 1995, 2001 and 2004. These surveys asked CASA members, partners and clients about various things, but the performance indicator for this measure is based on answers to one question on stakeholder satisfaction with the CASA way of addressing air quality issues. As shown in Figure 5, there has been a steady improvement. The next stakeholder satisfaction survey is due in 2007.

### 5. Degree of recognition

To measure how well Albertans recognize the CASA organization and its accomplishments, one indicator based on CASA website usage and three indicators based on media coverage are calculated each year.

#### Website indicator

In 2006, there was a substantial increase in the number of repeat visitors to the CASA website over previous years, as apparent in Figure 7. The CASA website was redesigned and several new features were added in 2006.

Figure 5: Recommendations Implemented

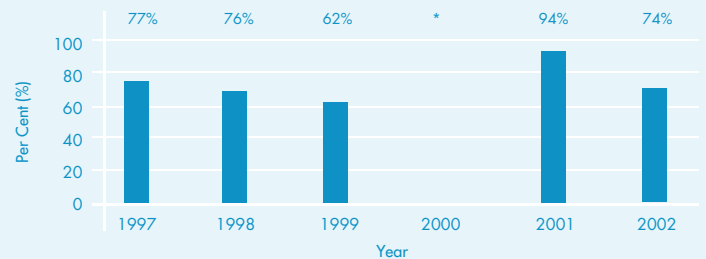


Figure 6: Degree of satisfaction with the CASA approach

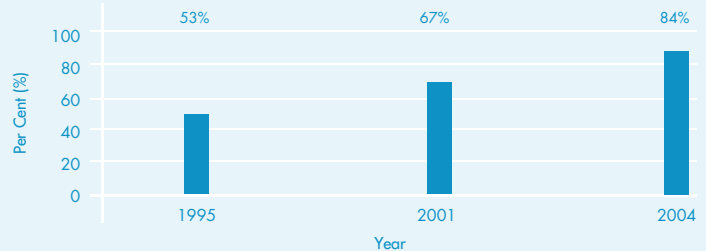
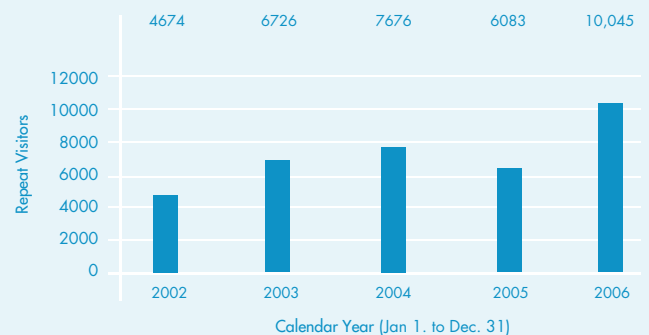


Figure 7: Number of repeat visitors to the CASA website



## News stories indicators

There are three news stories indicators in the degree of recognition performance measure. News stories in 2006 show a substantial increase over all previous years in the news stories that mention CASA.

Figure 8: CASA news stories count

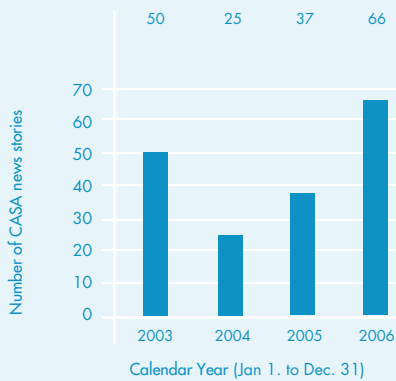


Figure 9: CASA news stories as a percentage of air quality news stories

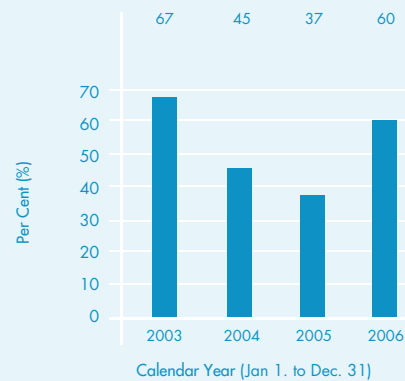


Figure 10: CASA-air quality stories as a percentage of air quality stories

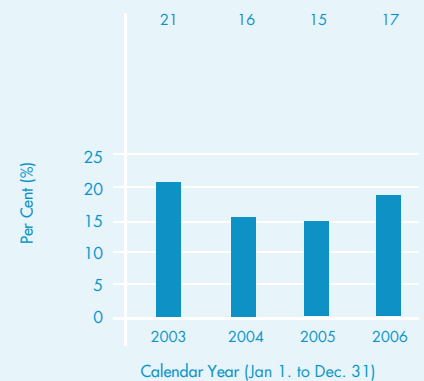


Photo courtesy of Brian Waddell

## CASA Teams

The work of CASA is achieved largely through the participation of teams of individuals representing stakeholders who share an interest in a specific issue. Most issues are brought to the CASA board in the form of a statement of opportunity. When the board of directors agrees that CASA should take on an issue, a working group is formed to draft terms of reference for a project team. Once the board approves those terms of reference, a project team is formed. The project team is accountable to the board while individual participants are accountable to their stakeholder organizations. As appropriate, recommendations from a project team lead to the formation of another team to oversee implementation.

The CASA board also forms committees to achieve specific organizational goals not directly associated with project teams.

## Board Committees

### Executive

The executive committee of the board is composed of four positions: the president, two vice-presidents and the secretary-treasurer. Members from each sector (government, industry and non-government organizations) are represented on the executive committee.

The executive committee oversees CASA finances and the operation of the secretariat. It also sets the agenda and presides at board meetings, monitors board effectiveness and adherence to policies and procedures. The committee provides impartial leadership, liaises with government ministers, advocates on behalf of CASA and represents CASA.

The members of the executive committee are:

**Peter Watson**, president  
Representing the government sector

**Martha Kostuch**, vice-president  
Representing the non-government organization sector

**Dave Byler**, vice-president  
Representing the industry sector

**Donna Tingley**, secretary-treasurer  
Executive director of CASA





## Communications

The goal of the CASA communications committee is to provide direction and advice to strategic internal and external communications initiatives, plans and priorities in support of the CASA mission and vision.

### Report for 2006

The committee revised its terms of reference in 2006 and tracked implementation of the strategic communications plan. The Air Quality Education and Outreach Clearinghouse pilot was extended for another year to December 2007. The Clearinghouse is an online resource of contacts for air quality education and outreach programs and resources in Alberta.

The Communications Committee volunteered to organize a Coordination Workshop to be held on June 20, 2007 in Red Deer. This workshop will provide valuable information to board and project team members on where their team fits into CASA. It promotes communication and integration between the board, project teams and committees.

The redesign of the CASA website was completed in November 2006 and visits to the website increased dramatically.

## Performance measures

The committee reports to the CASA board on performance and manages the stewardship processes for the five performance measures (please see the *performance measures results* section earlier in this report).

### Report for 2006

The committee completed a review of existing performance measures and indicators for relevance to the CASA vision, mandate and goals and consistency with CASA's principles and criteria for performance indicators. Although all performance measures were found to be relevant, a few of the indicators did not satisfy all of the principles and criteria. The committee drafted additional performance measures and indicators as well as refinements to some of the current indicators and will seek board approval of the additions and changes in 2007.

The results for all of the performance indicators are available in the *Evaluating and Measuring CASA performance* section of this annual report.



Photo courtesy of Matthew Dance

## Project Teams

### Airshed zones conference

On October 23 - 25, 2005, CASA hosted 205 delegates at the first *In the Zone: Alberta Airsheds Zones Conference* in Edmonton.

#### Report for 2006

The committee's report and recommendations were approved by the CASA board in March 2006. Key recommendations included the formation of an Alberta Airsheds Council and that CASA convene an Airshed Council meeting in 2006. The recommended goals of the Airshed Council were to facilitate communication between airshed zones and between airshed zones and Albertans, to provide a venue to discuss issues and concerns common to Alberta airshed zones, and provide advice to forming airshed zones.

### Ambient monitoring strategic planning

The Ambient Monitoring Strategic Planning Project Team (AMSP) is reviewing and updating the *Strategic Plan for Air Quality Monitoring in Alberta*. The team's goal is that Alberta will possess a dynamic, effective and efficient framework that provides the foundation for the development of a world-class ambient air quality monitoring system.

#### Report for 2006

The AMSP has been meeting since June 2004. The CASA board approved revised terms of reference to reflect the progress of this team in March 2006. Highlights of the work accomplished are:

- Reviewed the *1995 Strategic Plan for Air Quality Monitoring in Alberta* and the *1997 Alberta Ambient Monitoring Implementation Design Team Report to the CASA board*.
- Conducted a jurisdictional review of ambient air quality monitoring networks from around the world.
- Created an ambient air quality monitoring best practices document for Alberta.
- Drafted a new strategic plan for the monitoring of Alberta's ambient air.
- Held a successful workshop for 40 stakeholders on June 6, 2006 to present the draft plan and seek input from stakeholders.

### Confined feeding operations

The CASA Confined Feeding Operations (CFO) Project Team will work within the CASA consensus process to develop a strategic plan to improve the management of air emissions from existing and future confined feeding operations in Alberta and to improve relationships between stakeholders.

#### Report for 2006

In 2006, the team accomplished considerable progress towards their goals by forming four sub-groups to inform the team: Effects, Emissions Inventory, Jurisdictional Review and Management Mechanisms. The team developed a list of priority substances which included: ammonia (NH<sub>3</sub>), hydrogen sulphide (H<sub>2</sub>S), volatile organic compounds (VOCs), particulate matter (PM) and pathogens/bioaerosols. The team also agreed by consensus to the following:

1. Odour is a natural result of livestock production.
2. Odour from livestock production constitutes a nuisance.
3. Odour is a priority issue recognizing that there are fundamental differences between odour and the priority substances.

### Electrical efficiency and conservation

This team was created to implement the energy efficiency and conservation recommendations (65-68) found in the 2003 report of the Electricity Project Team, with the aim of increasing electricity efficiency and expanding conservation efforts within the province. This work includes identifying the resources required to implement the various programs recommended.

#### Report for 2006

The Electrical Efficiency and Conservation (EEC) Project Team presented its final report and five recommendations, which were accepted by the board on November 30. The report focused on the need for an overarching energy efficiency and conservation framework in Alberta. The proposed framework would provide guidance in addressing the barriers to energy conservation and efficiency in a coordinated and effective manner. The team recognized the need to explore and propose concrete measures and recommended that the proposed framework include a diversity of implementation approaches. Another of the team's recommendations

was that this issue transcends electrical efficiency and conservation and should be expanded to include other types of energy. A report on energy efficiency and conservation in the residential sector is pending.

## Indoor air quality

The project team will develop indoor air quality targets for Alberta and define a plan for the development and implementation of the strategies, tools and resources to achieve the Alberta targets.

### Report for 2006

The team met late in 2006 to revise the team's terms of reference. After completing a broad literature review of regulatory and best practices in Alberta and other jurisdictions in early 2006, the team commenced a more focussed review of Alberta-specific materials.

## Renewable and alternative energy

The goal of the CASA Renewable and Alternative Energy Project Team is to work within the CASA process to increase the supply and demand of renewable and alternative electrical energy in Alberta.

### Report for 2006

The CASA board approved 17 recommendations developed by the Renewable and Alternative Energy Team with the aim of increasing the supply of renewable and alternative electrical energy in Alberta in late 2005. A key recommendation was that the CASA Renewable and Alternative Energy Project Team work with the Government of Alberta to develop a policy framework to encourage the development of renewable and alternative electrical energy in Alberta. The team developed "fresh start" terms of reference and made considerable progress towards the development of the policy framework in 2006. The team is expected to present their final report to the board in early 2007.

## Science symposium on nitrogen

The Science Symposium on Nitrogen Organizing Committee's goal was to organize a symposium to address issues related to the science of nitrogen emissions and their environmental effects, and to examine risks and management approaches for these issues in Alberta.

### Report for 2006

On September 27 - 29, the CASA Science Symposium on Nitrogen drew over 200 participants to the Chateau Lake Louise to hear about the science and management of nitrogen emissions. The topic was timely due to rapid growth in population, industrial activity and agriculture. Urban sprawl and increases in distance driven are also leading to rising nitrogen emissions and potential impacts on air, land and water. Experts from Canada, Europe and the United States shared their knowledge and expertise on the science and management of nitrogen emissions. The symposium was well-received and the organizing committee is expected to present their final report and recommendations to the CASA board in 2007.



# Implementation Teams

## Ambient monitoring operations

The Ambient Monitoring Operations Steering Committee (OSC) provides overall direction, tracks progress and makes budgetary decisions regarding the implementation of the provincial ambient air quality monitoring network. In Alberta, air quality is monitored by a comprehensive network of stations operated by Alberta Environment, air quality management zones, Environment Canada and industry stations. The committee has membership representing government, industry, non-governmental organizations and airsheds.

### Report for 2006

The team meets a minimum of twice a year to review progress in implementing the *1995 Strategic Plan for Ambient Air Monitoring* and the 1997 implementation plan and to provide a forum to share information between the team members on new initiatives with regards to air monitoring and associated programs.

The team reviews the operation of the CASA Data Warehouse and budgets for enhancements. In 2006, the CASA Data Warehouse generated over 14,000 air quality reports, an increase of two per cent over 2005. The most popular reports requested were for selected parameters at one station and monthly reports.

## Flaring and venting

The Flaring and Venting Implementation Team's purpose is to assess the performance of the Alberta solution gas flaring and venting management framework and address a broad range of flaring and gas venting issues in Alberta.

### Report for 2006

The team met in 2006 to discuss progress on implementation of the framework and subsequently updated the CASA board. The Alberta Energy and Utilities Board addressed the 44 recommendations from all three CASA Flaring and Venting team reports at the same time via Directive 60, which was issued November 16, 2006, is effective January 31, 2007 and will be enforced starting April 30, 2007.

Decisions are pending from Alberta Energy on the two recommendations regarding royalties. The Canadian Association of Petroleum Producers updated the board on expected completion dates of five best practices management guides:

- Fugitive emissions and facility flaring - December 31, 2006.
- Well test flaring - March 31, 2007.
- Flare maintenance and venting close to residences - December 31, 2007.



Photo courtesy of Brian Waddell

## Human and animal health

This team reviews and develops implementation plans for the recommendations from the Human Health Project Team and Animal Health Project Team. It also identifies emerging issues in the area of air emissions and their effects on human and animal health.

### Report for 2006

The Human Health Team worked on two outstanding items in the implementation of the Comprehensive Human Health Monitoring System (CHHMS): the range of positions and rationale for the 1-800 number and the multi-stakeholder committee. The team plans to report back to the CASA board in 2007.

With respect to animal health, a contractor presented a series of workshops on the Herd and Environmental Record System (HERS) in four rural communities in Alberta in the fall of 2006. While attendance was low, those who did make it to the workshops saw a great value and need for the HERS. The HERS provides the foundation for a producer to monitor the variables that might affect the health of the herds.

## Particulate matter and ozone implementation

The Particulate Matter (PM) and Ozone Management Framework was approved by the CASA board in 2003. Implementation of the framework was undertaken by various parties and The PM and Ozone Implementation Team monitors implementation of the Framework.

### Report for 2006

Rising ozone levels in three urban areas in Alberta triggered the management plan level of the Framework. Ozone levels did not exceed Canada Wide Standards – the management plan level is intended to keep clean areas clean and prevent exceedances. Stakeholders in the Census Metropolitan Areas around Edmonton, Calgary and Red Deer received notification and have two years to develop management plans to reduce ozone levels.

## Vehicle emissions

The Vehicle Emissions Team recommends initiatives to reduce vehicle emissions and support the CASA vision of clean air.

### Report for 2006

The Vehicle Emissions team replicated and expanded the 1998 ROVER vehicle emissions study as remote sensing equipment collected tailpipe emissions data (CO, CO<sub>2</sub>, NO, hydrocarbons and particulate matter) from over 70,000 vehicles in Edmonton, Calgary, Red Deer and Canmore between September 21 and October 18, 2006. The study will establish a current inventory of vehicles, their emissions and how things have changed since the original study in 1998. The report and recommendations are expected in 2007.

Another objective of the study was to raise awareness of Albertans' options in reducing vehicle emissions. Media events were held in the four communities and news stories on TV, radio and in newspapers helped inform Albertans of ways to reduce vehicle emissions. Choices include driving less, using alternatives to driving like biking and using transit, regular vehicle maintenance, reducing idling and driving to produce fewer emissions.

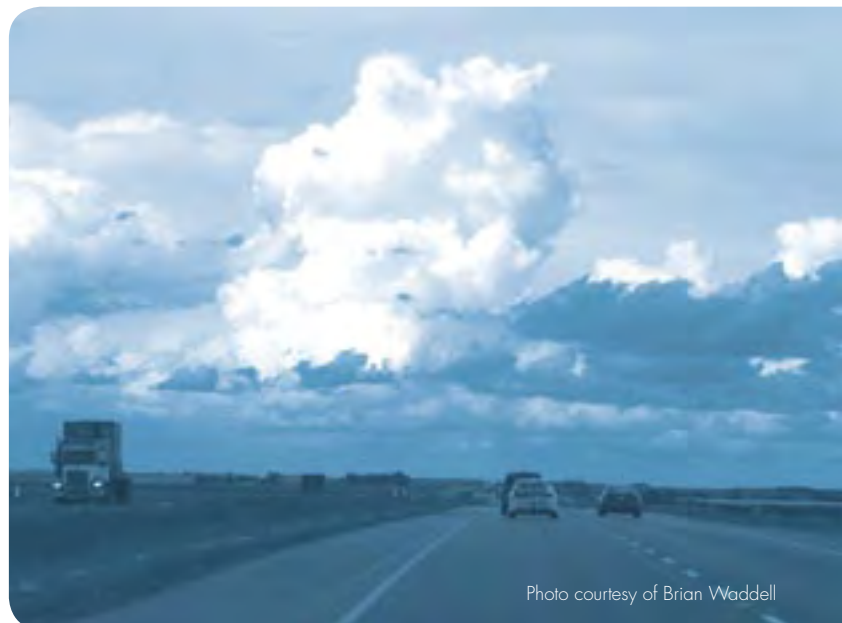


Photo courtesy of Brian Waddell

## Implementation

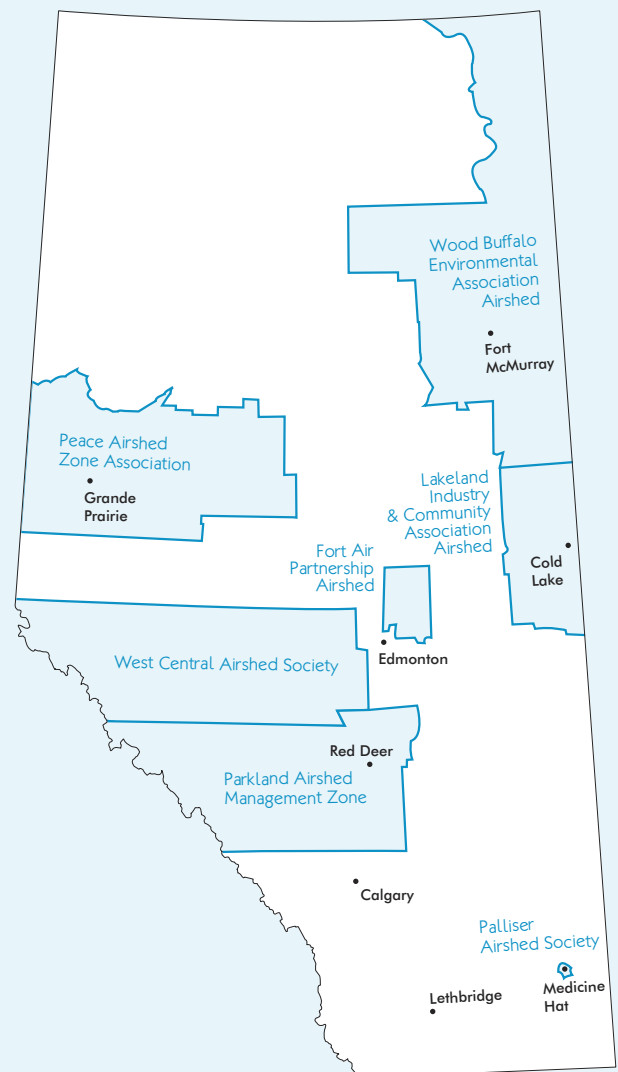
CASA made significant progress in 2006 towards monitoring implementation of CASA recommendations. The degree to which recommendations are implemented has been tracked via the CASA performance measures, specifically performance measure 3 - recommendations implemented, for the past six years. Both CASA and external implementation teams report progress on implementation at CASA board meetings on a rotation schedule. In 2006, the board received progress reports on implementation of the recommendations from the following teams: Particulate Matter and Ozone Management, Flaring and Venting, Pollution Prevention and Continuous Improvement, Electricity, Electricity – Greenhouse Gases and Ecological Effects Monitoring.

An implementation matrix which tracks recommendations previously approved by the board is updated quarterly at each board meeting and posted to the CASA website. Project teams also integrate implementation and monitoring into their terms of reference, work plan and recommendations.

## Airshed Zones

Airshed zones are established by local stakeholders to deal with air quality issues in a specific region. CASA provides the framework within which an airshed zone functions but each operates independently from CASA as a non-profit society. Airshed zones are consensus-based and support the CASA vision. Passive and/or continuous ambient air quality monitoring is conducted in each airshed zone and is funded by the partners in the airshed zone.

Most notable this year was the formation of the Alberta Airsheds Council, comprised of the seven existing and two forming airshed zones. Details are contained in the report below. The two new airshed zones in the early stages of formation are the Alberta Central Airshed (Edmonton and area) and the Calgary Region Airshed Zone (Calgary and area).



# Reports from CASA airshed zones

## Alberta Airsheds Council

Since CASA began in 1994, seven airshed zones have been endorsed by CASA, with work ongoing in the development of at least two others. Despite their differences in mandates, location and structures, all of these zones share many common issues and concerns. The need to establish clear lines of communications between airshed zones, between airshed zones and the public and to create a forum where common challenges to airshed development, growth and operation can be discussed, has long been recognized by all the airshed zones.

Following a recommendation that arose from the *In the Zone: Alberta Airshed Zones Conference* held in the fall of 2005, a meeting was held in May 2006 to discuss the formation of an airshed zones council. The meeting was hosted and facilitated by CASA. Representatives from the seven CASA endorsed airshed zones and two forming airshed zones attended. There was agreement from all to proceed with investigating the formation of an airsheds council. Representatives reconvened at a meeting held in Lake Louise in September 2006, and the group decided by consensus to form the Alberta Airsheds Council. It was agreed that the council would exist as an unincorporated association that will operate using the CASA consensus decision-making model.

Goals and objectives for the airshed council are currently under development. They include the following key areas:

- Communicate on a broad scale between airsheds in Alberta and with Albertans.
- Facilitate information sharing between airsheds.
- Act as a resource for forming airsheds.
- Provide a forum for discussing issues and processes to address those issues.
- Delegate airshed representation for various CASA working groups and project teams.
- Host an airshed workshop every two years on topics of mutual interest to airsheds.
- Strengthen the relationships between airsheds and regulatory agencies.
- Seek council representation on the CASA board.

The council is co-chaired by the executive director of the Parkland Airshed Management Zone and a representative from the newly forming Calgary Region Airshed Zone. The other members include representatives from the other six CASA endorsed airshed zones and the Alberta Central Airshed Society. The council plans to meet regularly with its main objectives for 2007 being to finalize its terms of reference including vision and mission statements, and the organization and hosting of the second airshed zone workshop in October 2007.

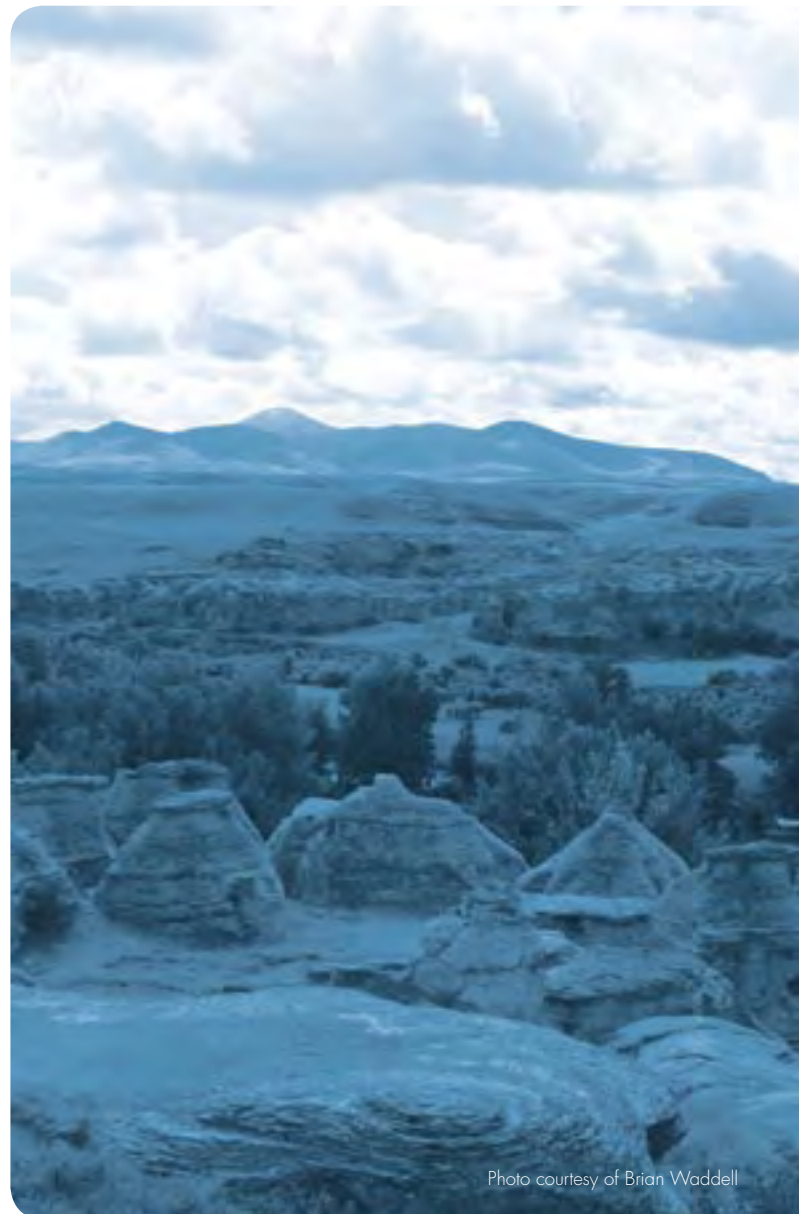


Photo courtesy of Brian Waddell

## Fort Air Partnership

During 2006, the Fort Air Partnership (FAP) has carried on with its mission, "To generate and provide comprehensive and credible air quality information to the public, industries and government."

With goals of *providing credible air quality data and providing comprehensive and timely air quality information*, FAP made progress on expanding the monitoring network. The passive monitoring network grew from 10 sites to 40 sites this year. FAP continues to report air quality data from eight continuous monitoring stations. At the Scofford Station, newly available instrumentation continuously measures levels of benzene, toluene, ethyl benzene, o-xylene and styrene (BTEX/S).

The quality of the data is important. FAP performed well in station audits performed by Alberta Environment, and began the process of documenting the internal QA/QC policies and procedures.

FAP continued to report monitoring data to the CASA Data Warehouse, provided weekly Air Quality Index reports to local newspapers, and produced an annual report as well as semi-annual community reports. Furthermore, the FAP, together with Environment Canada, completed an 18-month long, comprehensive volatile organic compound (VOC) study, measuring 150 VOCs at six sites.

In the area of air quality modeling and management, FAP is managing the development of a Regional Air Dispersion Model, to provide a more consistent basis for modelling environmental impact assessments. This regional model is particularly important as we try to understand the cumulative effects of industrial growth in the area. The airshed zone has also been asked by Alberta Environment to create particulate matter (PM<sub>2.5</sub>) monitoring and ozone management plans.

In an effort to increase the quality of communications, numerous improvements to the FAP website were made, including improved links to continuous data, passive monitor results, VOC study results, educational materials and improved graphical presentation of the data. In addition FAP released a comprehensive package of educational materials for Junior High students, reflecting the Alberta curriculum, entitled "Air, Our Invisible Connection."

Following the goal of *providing an open forum for discussion of air quality information and issues*, FAP replied to information requests from residents, appeared at trade shows, industry open houses, municipal councils, and presented at the Young Scientists Conference. In addition, FAP launched the 2005 annual report with public "Question and Answer" open house events in Lamont and in Redwater. The FAP board is currently framing responses to public input received at the open houses and other venues.

The Fort Air Partnership continues to operate with a goal to *expand our resources for operations and initiatives*. The annual budget continues to increase. FAP is becoming well recognized by the public and by industrial partners who are ready to participate with FAP's monitoring program.

In the coming year, the FAP monitoring network will be required to grow with increasing industrial activity and increasing public expectations. New resources and expertise will be identified and utilized to help FAP improve understanding of air quality in the region.

## Lakeland Industry and Community Association

The Lakeland Industry and Community Association (LICA) Airshed Zone's work in 2006 has been focused on expanding the regional monitoring network and working to improve understanding of air quality in the region.

### Network Expansion

In September, LICA added three passive monitoring stations to the regional network, bringing the total number of stations to 24. Two stations were added in the area near thermal-recovery heavy oil operations northwest of Cold Lake and one station was added in the Town of Bonnyville.

The LICA Airshed Zone *Implementation Plan* provides for three continuous monitoring trailers in the network. Two trailers have not yet been added to the network as they are currently used for compliance monitoring by one of the member companies. In 2007, LICA hopes to fully implement the continuous monitoring program by commissioning the remaining two trailers. A set of requests to amend operating approvals under the *Alberta Environmental Protection and Enhancement Act* will have to be processed before the trailers can be made available to the LICA network.



## Understanding Air Quality

In mid-2006, the LICA Airshed Zone commissioned an exploratory study to review existing information collected by Alberta Environment, industry and other organizations which have studied acidification impacts. It is expected that the consultant will use this information to develop specific recommendations about acid deposition monitoring and the development of management frameworks for acid deposition in the area.

In late 2005, Alberta Environment approached the LICA Airshed Zone to provide input for a monitoring project near La Corey. The objective of the project was to characterize vapour released by heated heavy oil storage tanks at primary production operations (sometimes called "cold-flow heavy oil production"). Although the project was not initiated by the LICA Airshed Zone, Alberta Environment requested the Airshed Zone's input into project design and communication of results. Results of the study were presented at the June 2006 Airshed Zone meeting, and there is continuing discussion of results with local industry and stakeholders. The LICA Airshed Zone will ensure that understanding gained from this work is incorporated in future projects and our ongoing monitoring programs.

## Organizational Change

In 2006, LICA made changes to its bylaws and committee structure to support the work of the airshed zone. The whole LICA organization adopted consensus decision making to be aligned with the process suggested by CASA.

## 2007 Plans

In 2007, LICA will continue to focus on communicating and promoting awareness of data available from the regional monitoring programs. Other plans for 2007 include commissioning a third-party review of our air quality monitoring program design and results, and developing a comprehensive regional emissions inventory. These two projects will help in understanding regional air quality and determine whether any adjustments should be made to the parameters measured or the locations of monitoring stations.

## Palliser Airshed Society Palliser Airshed Society Zone Expansion

In 2006, the Palliser Airshed Society (PAS) zone expanded; its borders were finally determined by the Palliser Health Authority boundaries. A monitoring plan was developed based on the new borders. Included in the monitoring plan is one stationary station (Crescent Heights) in Medicine Hat, one portable monitoring station that would relocate every six months and a 20 station passive network.

The PAS had excellent network performance for 2006 with average uptime for all instruments greater than 99 per cent. Average concentrations of the parameters recorded in 2006 were well below Alberta Environment objectives. In addition, Air Quality Index (AQI) readings for 2006 indicated the "Good" level 94 per cent of the time.

## Initiatives in 2006

- PAS provided public access to hourly air quality updates from the Crescent Heights air monitoring station through the web site at [www.palliserairshed.ca](http://www.palliserairshed.ca).
- The average uptime for all instruments in 2006 was 99.4 per cent.
- Representatives from PAS worked with Praxis in the region to conduct presentations to local schools on air quality and provided information on how we can work to reduce harmful effects on the environment.
- PAS participated as the Airshed Representative on the Provincial Science Symposium Committee (for the CASA Science Symposium on Nitrogen).
- PAS participated in the first annual Environment Week Trade Fair in the City of Medicine Hat.
- PAS participated in the City of Medicine Hat's Community Environmental Priorities Workshop.
- PAS presented and participated in the Forth Southern Alberta Environmental Summit.

## Plans for 2007

- Install 20 passive sites in accordance with the PAS monitoring plan.
- Commission the portable Rover station in late spring.
- Continue to work with stakeholders in the region to address air quality issues.
- Develop comprehensive communication strategies.
- Continue presenting and participating in annual environmental events such as Environment Week and the Southern Alberta Environmental Summit.

## Parkland Airshed Management Zone

In 2006, the Parkland Airshed Management Zone (PAMZ) Regional Air Quality Monitoring Program continued to address issues of concern to zone residents and fill gaps in its geographic air quality database. Monitoring was conducted continuously at nine temporary and two permanent locations and also through PAMZ's 33 station passive monitoring network.

In March 2006, PAMZ began operating a special air quality monitoring network for the Tay River Advisory Committee. The network is operated separate from the PAMZ Regional Program and consists of ten passive stations and one continuous monitoring station. The purpose of the network is to understand changes in local air quality resulting from the processing of sour gas from the Tay River Area at two local sour gas processing plants. The passive network is indicating a definite increase in ambient SO<sub>2</sub> levels around one of the plants resulting from its increased throughput.

In 2006, PAMZ began monitoring air quality outside of its boundaries for the first time. From April through September, the Raven Monitoring Station was located near the hamlet of Fenn approximately 70 km. east south east of Red Deer. The purpose of the monitoring was to better understand levels of anthropogenic ozone build-up downwind of sources in and around Red Deer. Analysis of the data indicates ozone levels were lower than expected while ambient sulphur dioxide levels were higher and this has led to additional follow-up work.

In July, in anticipation of Alberta Environment's determination that PAMZ had exceeded the CASA Particulate Matter and Ozone Management Framework's Ozone Management Trigger, based on an assessment of 2001-2003 provincial data, an Ozone Management Plan Committee was established. The group's purpose is to develop an ozone management plan for the zone and coordinate management activities with those of other airsheds. At year's end, the committee and a data needs sub-group were busy recruiting members and soliciting resources for the work that lies ahead.

PAMZ has partnered with the Canadian Geological Survey in establishing a Mercury Deposition Monitoring Station at PAMZ's Crossfield-Carstairs site that began operation in June. The project's

primary objective is to determine the atmospheric flux of mercury and other selected trace elements leading to a better understanding of these compounds' atmospheric deposition and geochemical cycle in the environment.

In the spring, PAMZ upgraded the data acquisition system at the Red Deer Station. In the fall, PAMZ began monitoring fine particulate matter continuously at its Caroline, Peregrine & Raven Stations. In September, the Raven Monitoring Station was upgraded into a new monitoring trailer making it nearly identical to its sister unit, Peregrine.

PAMZ is providing funding, communications, ambient monitoring and further in-kind support for the Community Health Assessment & Monitoring Program (CHAMP), a partnership with Alberta Health & Wellness & the David Thompson Health Region. The initial phase of the program is scheduled to commence operations in February 2007 in the Rocky Mountain House-Caroline-Sundre area. At year's end, a program coordinator had been recruited and over half of the 100 volunteers needed had joined.

PAMZ believes that in many cases the most effective approach to address issues is to provide input into processes that help determine provincial management strategies and policies. For this reason PAMZ is an active participant on a number of CASA project teams and committees. In 2006 PAMZ was represented directly on four teams and committees and PAMZ members served on a number of others.

Good two-way communication and both public and member education remain priorities for PAMZ. The annual public issues identification meeting was held in May in Rimbey. The PAMZ information booth was displayed at several community events during the year and three issues of the Zone newsletter were published. PAMZ members attended several conferences on behalf of the organization including Environment Canada's Air Quality 2006 Banff Workshop in February, the Alberta Government's Environment 2006 Conference in June and the CASA Nitrogen Symposium in September.

## Peace Airshed Zone Association

In 2006, the Peace Airshed Zone Association (PASZA) continued its focus on building a solid foundation for its Regional Air Quality Monitoring Program.

## Operations

As planned, the new Rover Continuous Station went into service in September 2006 near Falher. This location was chosen because of local air quality concerns regarding confined feeding operations as well as higher SO<sub>2</sub> levels measured with PASZA's passive monitoring stations in this area of the Airshed Zone. In September, PASZA also took over operations of the Valleyview Continuous Station. These two additions brought the total number of stations in the continuous monitoring program to six.

## Airshed Expansion Project

In 2005, Alberta Environment approached PASZA's Board of Directors with a request that PASZA consider expanding the zone's boundaries. With a grant from Alberta Environment, work on the Boundary Expansion Feasibility Project began. Recommendations on expansion were presented at the September 2006 Board of Directors meeting. In November, the Board decided to extend regional passive monitoring into the proposed expansion areas. Official expansion of the boundaries will be revisited in late 2007 after data from the new stations are analyzed.

Extending the passive program into the proposed expansion areas entails adding 15 new stations; 12 will be added in the areas north of Peace River and Fairview, and three will be added in the area north of Grand Cache between PASZA and the West Central Airshed Society. These 15 additions will bring the total number of stations in the passive monitoring program to 58.

## 2007 Plans

In 2007, additional consultation is planned for industry located in the proposed expansion areas. This initiative will be carried out in unison with the "PASZA Stakeholder Presentation Series" which will include a series of presentations to stakeholders (community groups, industry, government and non-government organizations). The objective of these presentations is to enhance local understanding of PASZA's monitoring network, air quality and air monitoring data.

## West Central Airshed Society

The West Central Airshed Society (WCAS) continues to operate and maintain a state of the art air monitoring network which includes twelve continuous air monitoring stations located in the west central region of Alberta. WCAS has 90 members in good standing and enjoys a strong financial position.

The West Central board is currently exploring another boundary expansion. This expansion would push the northern boundary up to the southern boundary of the Peace Airshed southern boundary. This would dramatically increase the size of the airshed and would add significantly to the amount of air quality data WCAS collects. Ultimately, this would give us a better understanding of our air quality. WCAS has solicited input from the environmental non-government organization sector, Alberta Environment and industry at this point. Seeing no roadblocks, WCAS intends to seek municipal and public support for this expansion.

A review of emission sources for the area reveals a possible need for five more continuous air monitoring stations and a number of passive monitoring sites. WCAS expects to have enough information to make a decision by the fall of 2007.

Another project WCAS is considering is an air monitoring program called the Sentinel Monitoring Program. This is a program under development in the Pembina Oilfield. A number of oil and gas companies have discovered a very prolific gas field that is extremely sour (up to 30 per cent sour). The field stretches from Lodgepole to Tomahawk. The farming community is concerned about the possibility of H<sub>2</sub>S contamination. Both the industry and agriculture sectors are developing a monitoring plan that would enhance the WCAS monitoring program and industry's ERP program. There is a strong desire from both sectors to have WCAS operate, maintain and manage the program. WCAS expects to have a proposal for this project in the near future. This could add an additional eight to ten continuous monitoring stations that would monitor H<sub>2</sub>S, SO<sub>2</sub> and meteorological parameters.

WCAS is developing an alternate power source for the Hightower background air-monitoring station. This need came about in 2004 when the cost of continuing the local power source was going to increase in cost from \$1,400 to \$35,000 annually. With the help of a generous grant provided by Alberta Environment Climate Change, WCAS designed and constructed a new super insulated building that has considerably lower power requirements.

The lower power requirement has made it possible to generate most of the power from wind turbines and solar panels. A back up propane powered generator has been provided as well. The station has been equipped with equipment provided from the National Air Pollution Surveillance or NAPS program. The station is currently going through a series of tests and is expected to be on line shortly.

WCAS has in the past considered its mandate to collect credible data on regional air quality and to openly communicate the data to the stakeholders and the public. Late in 2006, Alberta Environment asked the board to consider expanding the mandate to include air quality management and to take a leadership role in regional air quality management. WCAS is willing to consider this as an opportunity, however, at this time it is unclear what this new role might look like and what resources might be needed to take this on. WCAS looks forward to more information and discussion on this matter before any final decisions could be made.

## Wood Buffalo Environmental Association Facilities

The Wood Buffalo Environmental Association (WBEA) moved to the Morrison Centre in June and has set up the office space in partnership with the Cumulative Environmental Management Association (CEMA). The move has allowed for the sharing of not only space but office personnel.

## Air Monitoring Station Audits

WBEA had 4 air monitoring station audits last year, 3 were performed by Alberta Environment and the other was an independent audit of the network. These audits consist of station inspections as well as performance audits of all continuous parameters. The equipment is audited according to the Alberta Environment Air Monitoring Directive which specifies and standardizes acceptable ambient monitoring methods and reporting formats. This also enforces quality assurance by performing calibration audits on all stations in the network.

All items identified in the Alberta Environment audits for improvement to the WBEA network have been addressed and completed.

An independent audit was conducted in June to identify network issues and improve the reliability of the ambient air monitoring network. Recommendations have since been addressed with longer term issues becoming part of the improvement plan for 2007.

## Data Audit

An independent audit of WBEA continuous data was conducted last spring; one month of data (August 2005) was analyzed and validated. This is an additional quality assurance measure that is implemented by WBEA in their efforts to provide scientifically credible data.

## Database Design

WBEA is designing a new database and the goal of this database system design is to provide a centralized location for the storage of the data that is produced by the air monitoring stations in addition to the passive and discrete data that is collected.

In 2006, WBEA undertook a full review of its data network including the following:

- Stakeholder interviews to ascertain the specific requirements for this new system.
- Evaluation of different database options with a specific recommendation being put forward.

In 2007, WBEA will have the final phase of the project completed with the implementation of the data management system.

## Operation and Maintenance

The operations and maintenance, data management and reporting, and the intermittent/passive data collection segments of the WBEA network were put out to a request for proposal in September of 2006. Considerable effort was applied by WBEA members, in particular members of the Ambient Air Technical Committee to ensure a smooth transition of this contract.

## Human Exposure Monitoring Program

This is an ongoing long term program that monitors, records and examines personal exposure to air contaminants in the Wood Buffalo region. Monitoring was conducted in the communities of Fort McKay and Fort McMurray First Nations Anzac this year.

## Funding

The core operations of CASA are supported by financial contributions from Alberta Environment and Alberta Energy. Industry, government and non-government organizations provide additional funding and in-kind support for CASA teams.

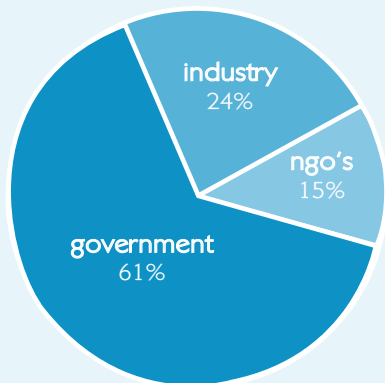
CASA has tried to put an actual dollar figure on the support and assistance provided by each sector. The figures are compiled by examining time and travel costs, as well as cash and in-kind contributions and almost certainly under-record and underestimate the actual value of stakeholder contributions. These figures are offered in the spirit of acknowledging and recognizing participant involvement.

### Cash and in-kind contributions to CASA teams

#### CASA teams

Industry	\$ 269,228
Government	\$ 676,529
Non-government organizations	\$ 156,500

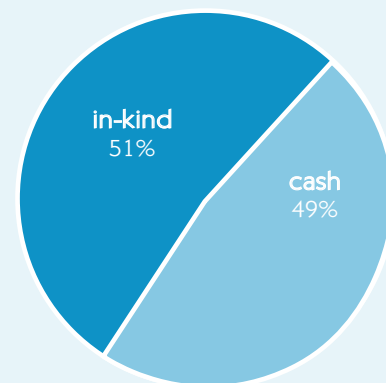
Combined \$ 1,102,257



#### Total cash and in-kind contributions

In-Kind	\$ 559,355
Cash	\$ 542,902

Combined \$ 1,102,257



# The People

The following 276 people have given their time, effort, goodwill and expertise in the pursuit of the CASA vision. A profound thank you goes out to all our stakeholders and the organizations with which they are affiliated.

Grant Ainsley	Michael Edge	Simon Knight	Terry Murray	Ron Schafer	Len Vogelaar
Darren Aldous	Mike Ekelund	Wayne Koberstein	Bob Myrick	Lawrence Schmidt	Jim Vollmershausen
Atta Atia	Maureen Elko	Don Kochan	Chelsea Nickles	Al Schulz	Brian Waddell
Diane Atkins	Gerry Ertel	Carolyn Kolebaba	Jeff Nish	David Scott	Darcy Walberg
Ron Axelson	Rob Falconer	Barbra Korol	Stan Nowakowski	Bob Scotten	Ross Warner
David Axford	Shannon Flint	Martha Kostuch	Steve O'Gorman	Thom Sedun	Kevin Warren
David Baker	Jason Foster	Len Kryzanowski	Courtney Oishi	Carrie Selin	Peter Watson
Humphrey Banack	Dave Fox	Robin Kuhn	Ken Omotani	Chris Severson-Baker	Eugene Wauters
Ann Baran	Dennis French	Bevan Laing	Jolene Ondrik	Barbara Shackel-Hardman	Leslie Welsh
David Baker	Kristina Friesen	Ron Laing	Bob Page	Nashina Shariff	Shannon Wever
David Bartesko	Alexandra Frison	Tim Lambert	Rients Palsma	Mitch Shier	Brian Wiens
Chris Best	Long Fu	Shane Lamden	Allen Pankratz	Sherry Sian	Geoff Williams
Rob Bioletti	Stephan Gabos	Mike Langfeldt	John Parr	Sonja Simard	Kimberley Williams
Michael Bisaga	Darcy Garchinski	Monique Lapalme	Sian Pascoe	Kristofer Siriunas	Scott Wilson
Laura Blair	Brian Gilliland	Frank Letchford	Bill Patterson	Larry Sirman	Raymond Wong
Karina Bodo	Tim Goos	Tim Leung	Ron Pauls	Richard Slocomb	Brenda Woo
Rick Boucher	David Graham	Sandra Locke	Mike Pawlicki	Dave Slubik	Ruth Yanor
Matthew Bower	Geoff Granville	Satwanti Lota	Ian Peace	Bryan Smith	
Len Bracko	Mary Griffiths	Doris Ludlage	Roxanne Pettipas	Karen Smith	
Cheryl Bradley	Pat Guidera	Findlay MacDermid	Denise Poirier	Ralph Smith	
Shawn Brockhoff	Brian Haggerty	Carna MacEachern	Bernie Poirtas	Rich Smith	
Michael Brown	Shannon Hall	Grace MacGregor	Gord Potter	Jim Spangelo	
Carol-Ann Brown	Les Hagen	Alexander MacKenzie	Albert Poulette	David Spink	
Alan Brownlee	Lloyd Harman	Matthew Machielse	Kelsey Prenevost	John Squarek	
Dave Byler	Lenore Harris	Doug MacLeod	Steven Probert	Roger Steele	
Bob Cameron	Ray Harrison	Jerry MacPherson	Jason Proche	Ken Sterling	
Glynis Carling	Linda Harvey	Josee Maillette	Mike Queenan	Claire Stock	
Sally Caudill	Howaida Hassan	Tom Marr-Laing	Barry Ranger	Ted Stoner	
Claude Chamberland	Karen Haugen-Kozyra	Paul Martin	Drew Rau	Lisa Stroscher	
Casey Chan	Barb Hazelton	Jean-Luc Matteau	Gina Rau	Kent Stuehmer	
Denise Chang-Yen	Stewart Henderson	David McCoy	Doreen Rempel	Gene Sywenky	
Raynald Charest	Jodi Hesse	Kevin McCullum	Andy Ridge	John Taggart	
Chris Chawla	Wayne Hillier	Dan McFadyen	John Rilett	Glenda Taylor	
Lawrence Cheng	Nolan Hindmarsh	Paula McGarrigle	Greg Ritz	Stuart Thiesson	
Cindy Christopher	Paul Hodgman	John McGowan	Jonathan Robb	Jack Thompson	
Julia Ciccaglione	Parker Hogan	Wayne McKendrick	Rob Robinson	Andre Tremblay	
Bill Clapperton	Ken Hogg	David McKenna	Mark Roedel	Gloria Trimble	
Andrew Clayton	Gordon Howell	Jim McKinley	Mayne Root	Jim Turner	
Roy Clough	Theresa Howland	Kevin McLeod	Janine Ross	Reed Turner	
Simon Cobban	Tony Hudson	Kim McLeod	Jesse Row	Merry Turtiak	
Réjeanne Cool	Judy Huntley	Laura McLeod	Jimmy Sadden	Harry Tyrell	
Jeff Cormier	Rick Hyndman	Lynn McNeil	Kim Sanderson	Kelly Vail	
Marilyn Craig	Ahmed Idriss	Bruce Milne	Scott Sangster	Josepha Vaderstoop	
Steve Cressy	Bruce Inch	Rachel Mintz	Gary Sargent	Susan Valentine	
Gerald Cunningham	Ila Johnston	Anand Mishra	Denis Sauvageau	Kerry Van Camp	
Peter Darbyshire	Les Johnston	Brian Mitchell	Bob Savage	James Vaughan	
Keith Denman	Alex Joseph	Russell Miyagawa	Carleen Schaefer	B.J. (Brendan) Vickery	
Gur Dhaliwal	Damian Kajnc	Asish Mohapatra			
Tom Dickson	Mike Kelly	Debra Mooney			
Frans M.J.A. Diepstraten	Anouk Kendall	Myra Moore			
Randy Dobko	Joe Kendall	Al Morin			
John Donner	Wayne Kenefick	Bettina Mueller			
Linda Duncan	Jim Kiss	Usha Mulukutla			
Peter Dzikowski	Myles Kitagawa	George Murphy			
Kim Eastlick	John Knapp	Keith Murray			

## Volunteers at CASA

A lot of effort is applied from those behind the scenes who support those who sit at the board or project team table. CASA is very grateful for the substantial and valuable contributions of time and expertise from those individuals who support their stakeholder representatives.

# The Organizations

The following 121 organizations have offered financial and in-kind support to CASA. This support ensures the continuing success of CASA.

Action on Smoking and Health	City of Edmonton	Natural Resources Conservation Board
Agriculture and Agri-Foods Canada	City of Red Deer	NewERA (New Energy Resources Alliance)
Agrium	Chinook Health Region	Nexen
Alberta Agriculture, Food and Rural Development	Climate Change Central	Northern Lights Health Region
Alberta Association of Municipal Districts & Counties	ConocoPhillips Canada	NOVA Chemicals Corporation
Alberta Beef Producers	Cumulative Environmental Management Association	Palliser Airshed Society
Alberta Cattle Feeders' Association	David Thompson Health Region	Parkland Airshed Management Zone
Alberta Energy	Direct Energy Marketing Limited	Peace AirShed Zone Association
Alberta Energy and Utilities Board	DF Technical Services	Pembina Institute
Alberta Environment	Dow Chemical Canada Inc	Phoenix Engineering Inc.
Alberta Electric System Operator	EnerVision	Prairie Acid Rain Coalition
Alberta Federation of Labour	ENMAX Energy Corporation	Pristine Power Inc.
Alberta Forest Products Association	Environment Canada	Red Deer River Naturalists
Alberta Health and Wellness	Environmental Law Centre	Renewable Energy Solutions
Alberta Home Builders Association	Environmental Systems Products	Residents for Accountability in Power Industry Development
Alberta Infrastructure and Transportation	EPCOR	Rocky Mountain House Community Health Centre
Alberta Milk	Focus	RWDI Consulting Engineers & Scientists
Alberta Motor Association	Fort Air Partnership	Seacor Environmental Ltd.
Alberta Municipal Services Corporation	Friends of an Unpolluted Lifestyle	Shell Canada Limited
Alberta Pork	Golder Associates	Small Explorers & Producers Association of Canada
Alberta Poultry Producers	Government of BC, Oil & Gas Commission	Society for Environmentally Responsible Livestock Operations
Alberta Sheep & Wool Commission	Graymont Limited	Southern Alberta Environmental Group South Peace Environmental Association
Alberta Sustainable Resource Development	Health Canada	Stantec
Alberta Urban Municipalities Association	Heenan Blaikie LLP Lawyers	Suncor Energy Inc.
AltaLink	Howell Mayhew Engineering Inc.	Syncrude Canada Ltd.
AMAROK Consulting	Husky Oil Limited	The Alberta Roadbuilders & Heavy Construction Association
ATCO	Imperial Oil Resources	The Farmers Advocate
Bert Riggall Environmental Foundation	Inland Cement Limited	The Lung Association – Alberta and NWT
Building Owner & Managers Association of Edmonton	Intensive Livestock Working Group	Toxics Watch Society of Alberta
Calgary Health Region	Lafarge Canada Inc.	Town of Canmore
Calgary Motor Dealers Association	Lake Wabamun Enhancement & Protection Association	TransAlta Corporation
Canada Mortgage and Housing Corporation	Lehigh Inland Cement Limited	TransCanada
Canadian Association of Petroleum Producers	Lakeland Industry & Community Association	UTS Energy Corporation
Canadian Chemical Producer's Association	Mewassin Community Action Council	Vision Quest Windelectric Inc.
Canadian Hydro Developers Inc.	Meteorological Service of Canada	West Central Airshed Society
Canadian Natural Resources Limited	MEGlobal	Weyerhaeuser Company Ltd.
Canadian Petroleum Products Institute	Métis Nation of Alberta	Wild Rose Agricultural Producers
Canadian Public Health Association	Métis Settlements General Council	Wood Buffalo Environmental Association
Capital Health	MGV Energy Inc.	
Carpool.ca	MKL Professional Services Inc.	
City of Calgary	Natural Resources Canada	

# Financial Statements

of The Clean Air Strategic Alliance Association, December 31, 2006



Deloitte & Touche LLP

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Edmonton AB T5J 4E4  
Canada

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## Auditors' Report

To the Members of The Clean Air Strategic Alliance Association

We have audited the balance sheet of The Clean Air Strategic Alliance Association (the "Association") as at December 31, 2006 and the statements of revenue, expenditures and fund balances and cash flow for the year then ended. These financial statements are the responsibility of the Association's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Association as at December 31, 2006 and the results of its operations and its cash flow for the year then ended in accordance with Canadian generally accepted accounting principles.

A handwritten signature in blue ink that reads "Deloitte &amp; Touche LLP".

Chartered Accountants  
February 1, 2007



# Balance Sheet

Year ended December 31, 2006

	2006			2005
	Core	External Projects	Total	Total
<b>Assets</b>				
<b>Current</b>				
Cash	\$ 78,493	\$ 238,978	\$ 317,471	\$ 181,552
Short-term investments	597,500	115,000	712,500	810,000
Accrued interest	1,268	–	1,268	1,080
Accounts receivable	20,564	1,000	21,564	64,669
Interfund receivable (payable)	63,913	(63,913)	–	–
Prepaid expenses	5,015	–	5,015	3,212
	\$ 766,753	\$ 291,065	\$ 1,057,818	\$ 1,060,513
<b>Capital Assets</b> (Note 3)	\$ 2,464	–	\$ 2,464	\$ 3,520
	<b>\$ 769,217</b>	<b>\$ 291,065</b>	<b>\$ 1,060,282</b>	<b>\$ 1,064,033</b>
<b>Liabilities</b>				
<b>Current</b>				
Accounts payable & accrued liabilities	\$ 96,456	\$ –	\$ 96,456	\$ 71,309
Deferred contributions (Note 4)	355,883	291,065	646,948	698,516
	452,339	291,065	743,404	769,825
<b>Fund Balances</b>				
Board restricted	240,000	–	240,000	240,000
Unrestricted				
Invested in capital assets	2,464	–	2,464	3,520
Available for operations	74,414	–	74,414	50,688
	<b>316,878</b>	<b>–</b>	<b>316,878</b>	<b>294,208</b>
	<b>\$ 769,217</b>	<b>\$ 291,065</b>	<b>\$ 1,060,282</b>	<b>\$ 1,064,033</b>

Approved by the board



Peter Watson, Director



Dave Byler, Director

# Statement of Revenue, Expenditures and Fund Balances

Year ended December 31, 2006

	2006			2005
	Core	External Projects	Total	Total
<b>Revenue</b>				
Grants	\$ 747,271	\$ 349,012	\$ 1,096,283	\$ 893,266
Interest	22,670	9,943	32,613	21,634
	<b>769,941</b>	<b>358,955</b>	<b>1,128,896</b>	914,900
<b>Expenses</b>				
External projects	–	358,955	358,955	171,280
Projects	286,402	–	286,402	269,765
General and administrative	231,770	–	231,770	246,259
Communications	131,778	–	131,778	123,923
Board support	96,394	–	96,394	84,899
Statement of concern	927	–	927	1,652
	<b>747,271</b>	<b>358,955</b>	<b>1,106,226</b>	897,778
<b>Net Revenue Over Expenses</b>	<b>22,670</b>	<b>–</b>	<b>22,670</b>	17,122
<b>Fund Balance, Beginning of Year</b>	<b>294,208</b>	<b>–</b>	<b>294,208</b>	277,086
<b>Fund Balance, End of Year</b>	<b>\$ 316,878</b>	<b>\$ –</b>	<b>\$ 316,878</b>	\$ 294,208

# Statement of Cash Flow

Year ended December 31, 2006

	2006	2005
<b>Net Inflow (Outflow) of Cash Related to the Following Activities</b>		
<b>Operating Activities</b>		
Net revenue	\$ 22,670	\$ 17,122
Add item not requiring an outlay of cash		
Depreciation	1,056	1,508
	23,726	18,630
Changes in non-cash working capital items		
Increase in accrued interest	(188)	(370)
Decrease in accounts receivable	43,105	20,050
Increase in prepaid expenses	(1,803)	-
Increase (decrease) in accounts payable	25,147	(8,723)
(Decrease) increase in deferred contributions	(51,568)	56,714
<b>Increase in Cash and Short-Term Investments</b>	<b>38,419</b>	86,301
<b>Cash and Short-Term Investments, Beginning of Year</b>	<b>991,552</b>	905,251
<b>Cash and Short-Term Investments, End of Year</b>	<b>\$ 1,029,971</b>	\$ 991,552
<b>Represented By:</b>		
Cash	\$ 317,471	\$ 181,552
Term deposits with maturities under 90 days	712,500	810,000
	<b>\$ 1,029,971</b>	\$ 991,552

# Notes to the financial statements

Year ended December 31, 2006

## 1. Description of Operations

The Clean Air Strategic Alliance Association ("CASA" or the "Association") is a non-profit organization incorporated March 14, 1994 under the Societies Act of Alberta and is not taxable under the Canadian Income Tax Act. The Association is comprised of members from three distinct stakeholder categories; industry, government and non-government organizations. The Association has been given shared responsibility by its members for strategic air quality planning, organizing and coordination of resources and evaluation of results in Alberta. In support of these objectives, the Association receives cash funding from the Province of Alberta as well as cash and in-kind support from other members.

## 2. Accounting Policies

These financial statements have been prepared on a fund accounting basis using the deferral method of accounting in accordance with Canadian generally accepted accounting principles ("GAAP") and include the following significant accounting policies:

### Funds maintained

#### Core Project Fund

Funds provided by governments together with interest earned are used to support general operations. The fund balance is an accumulation of interest earned. In 2000, the Board of Directors internally restricted accumulation of this fund to \$240,000 to pay necessary expenses in the event of the wind down of the Association.

The unrestricted portion of this fund consists of:

- The undepreciated balance of capital assets entitled investment in capital assets; and
- The remainder of the fund entitled available for operations.

The change in the investment in capital assets represents the amount of depreciation recorded during the year.

#### External Projects Fund

Funds provided by CASA stakeholders together with interest earned are raised and expended by project teams for specific purposes.

### Cash and short-term investments

Cash and short-term investments consist of cash in bank and term deposits with original maturity dates not exceeding 90 days.

### Capital assets

Capital assets are recorded at cost. Depreciation, which is based on the cost less the residual value over the useful life of the asset, is computed using the declining-balance method at the rates disclosed in Note 3.

Long-lived assets are tested for recoverability whenever events or changes in circumstances indicate their carrying amount may not be recoverable. An impairment loss is recognized when its carrying value exceeds the total undiscounted cash flows expected from their use and eventual disposition. The amount of the impairment loss is determined as the excess of the carrying value of the asset over its fair value.

### Non-monetary support

Association members contribute non-monetary support including staff resources, meeting space and publication support. The value of this non-monetary support is not reflected in these financial statements.

### Revenue recognition

Grants are recognized as income at an amount equal to expenses incurred for core projects. Interest is earned from short-term investments computed on the accrual basis.

### Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the recorded amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the reporting period. Actual results could differ from these estimates. Significant areas requiring the use of management's estimates include the collectible amounts of accounts receivable, the useful lives of capital assets and the corresponding rates of amortization and the amount of accrued liabilities.

### Interest rate and credit risk

The Association is exposed to interest rate risk on interest earned from short-term investments because the interest rate fluctuates with the prime rate. The Association is exposed to credit risk through accounts receivable. This risk is minimized as the core funding is received from governments and project funding is received prior to expenditures being incurred.

### Fair value of financial instruments

The Association's financial instruments consist of cash, short-term investments, accounts receivable and accounts payable and accrued liabilities. It is management's opinion that the Association is not exposed to significant currency or credit risks arising from these financial instruments. Unless otherwise noted, the fair values of these financial instruments approximate their carrying values.

## 3. Capital Assets

	Depreciation Rates	2006			2005
		Cost	Accumulated Depreciation	Net Book Value	Net Book Value
Computer equipment	30%	\$ 32,659	\$ 30,323	\$ 2,336	\$ 3,337
Furniture and equipment	30%	4,419	4,291	128	183
		<b>\$ 37,078</b>	<b>\$ 34,614</b>	<b>\$ 2,464</b>	<b>\$ 3,520</b>

## 4. Deferred Contributions

### Core Fund

During the period, the Association received grants totaling \$717,500 (2005 - \$759,500) from the Province of Alberta. The purpose of the grants is to provide core funding in support of the Association's objectives as described in Note 1. The regulations to the Department of the Environment Act, the Department of Energy Act and the Department of Health Act, under which the grants have been provided, specify that grants must either be used for the purposes specified in the grant, be used for different purposes if such different purposes are agreed to by the applicant and the respective Minister, or be returned to the Province. Accordingly, in the event the Association does not utilize the funds in pursuit of its objectives, any unexpended grant monies remaining may have to be repaid to the Province of Alberta.

	2006	2005
Deferred core fund contributions, beginning of year	\$ 385,654	\$ 349,752
Grant monies received	717,500	759,500
Other funds received	-	2,900
Revenue recorded based on allowable expenditures	(747,271)	(726,498)
<b>Deferred core fund contributions, end of year</b>	<b>\$ 355,883</b>	<b>\$ 385,654</b>

### External Projects Fund

Deferred external project contributions are comprised of monies received for specific external projects, which have not been expended for the purposes specified in the mandates of the projects.

	2006	2005
Deferred external project contributions, beginning of year	\$ 312,862	\$ 292,050
Grant monies received and interest earned	339,258	193,218
Revenue recorded based on allowable expenditures	(358,955)	(171,280)
Refund to grantor	(2,100)	(1,126)
<b>Deferred external project contributions, end of year</b>	<b>\$ 291,065</b>	<b>\$ 312,862</b>



## Clean Air Strategic Alliance

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