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CASA acronyms

AAC Alberta Airsheds Council

AAQO Ambient Air Quality Objectives

AQHI Air Quality Health Index

AEP Alberta Environment and Parks

AWC Alberta Water Council

CAAQS Canadian Ambient Air Quality Standard

EFR Electricity Framework Review

ROVER Roadside Optical Vehicle Emissions Recorder

Note: The only chemical symbol used in this report is NO_x (nitrogen oxides). The names of all other substances are written out to ensure clarity for readers.

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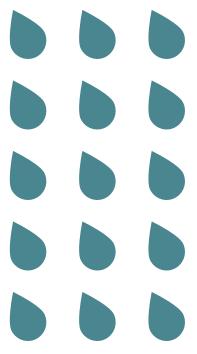
About CASA

Vision

The air will have no adverse odour, taste or visual impact and have no measurable short- or long-term adverse effects on people, animals or the environment.

Mission

The Clean Air Strategic Alliance (CASA) is a multistakeholder alliance composed of representatives selected by industry, government, and nongovernment organizations to provide strategies to assess and improve air quality for Albertans, using a collaborative consensus process.



Mandate

- 1. Implement the Comprehensive Air Quality Management System for Alberta,
- 2. Conduct strategic air quality planning for Alberta through shared responsibility and use of a consensus-building, collaborative approach, and
- 3. Prioritize concerns with respect to air quality in Alberta and develop specific actions or action plans and activities to resolve those concerns.

CASA was established in March 1994 as a new way to manage air quality in Alberta.

CASA supports three 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

Responsibility for specific air quality planning is shared among stakeholders. Regulatory implementation, licensing, compliance, control, and enforcement remain with existing government agencies.

The Government of Alberta provides core funding to CASA. Financial information for fiscal year 2018 is available on the CASA website.

2018 CASA Highlights

Strategic Planning

Given recent challenges and changes and the fact that CASA will be celebrating its 25th anniversary in 2019, it was very timely for the board to lay the foundation for a new strategic plan this year. Working with an experienced consultant and facilitator, the board spent two full days in collaborative and constructive discussions. A key outcome was the identification of four strategic priorities. To address one of the priorities, an ad hoc board committee will review organizational governance and recommend any changes. One priority will be continued excellence in air quality management advice and tools; one will aim to strengthen stakeholder reach, involvement and relationships; and another will focus on a sustainable business and economic model for the organization.

Electricity Framework Review

The third five-year review of the Emissions Management Framework for Alberta's Electricity Sector began this year. Despite informed and intensely focused discussions, consensus could not be reached on a proposed NOx emission standard for new gas-fired electricity generation units. An interim report with stakeholder perspectives on this matter was transmitted to the Government of Alberta in December, and work will continue in 2019.

Ambient Air Quality Objectives

Drawing on its in-depth research and the experience and knowledge of its stakeholders, requested advice was provided to the Government of Alberta to inform its decisions on potential new Ambient Air Quality Objectives for four substances: fine particulate matter, ozone, hydrogen sulphide, and total reduced sulphur. To complete this task, advice on the two remaining substances—nitrogen dioxide and sulphur dioxide—will be submitted in 2019.

ROVER III

The ROVER III (Roadside Optical Vehicle Emissions Reporter) project began in the spring of 2018 and is the third on-road emissions testing study undertaken since 1998. It is being done in response to recommendations from CASA's Non-Point Source project and will involve data collection in the municipalities of Calgary, Edmonton, Red Deer, Grande Prairie, and Fort McMurray, starting in spring 2019.

Indigenous Engagement

Following amalgamation of support services with the Alberta Water Council (AWC), staff reached out to Indigenous communities, to share information about the two organizations and to learn more about the communities' concerns. In May, staff attended a ceremony that saw the signing of a historic education agreement between the Maskwacis Education Schools Commission and the Government of Canada; a sacred and traditional Water Ceremony was held with elders of the Samson Cree Nation in September. In December, staff met with the South Saskatchewan Regional Plan First Nations table to discuss AWC and CASA.

Executive Director's Message

Strategic planning is a critical component of any organization's success, and this was a key focus for CASA in 2018. A workshop in the fall followed by more indepth discussion at the December board meeting resulted in four strategic areas of focus in the coming years. These include the development of a sustainable business

and economic model for the organization; continued excellence in air quality management advice and tools; a strengthening of stakeholder reach, involvement and relationships; and a review of organizational governance to be undertaken by an ad hoc board committee with staff support. We look forward to seeing new ideas and creative approaches emerge as the strategic plan is prepared in 2019.

Project teams continue to be the engine of our organization—the place where so much of the hard work and innovative thinking gets done. Three teams were very active in 2018, and their work is described in more detail elsewhere in this annual report. The Ambient Air Quality Objectives (AAQO) team developed advice for the Government of Alberta on AAQOs for

fine particulate matter, ozone, hydrogen sulphide, and total reduced sulphur.

The team will prepare advice on nitrogen dioxide and sulphur dioxide in 2019.

A team was struck in July 2018 to launch the third five-year review of the Emissions Management Framework for Alberta's Electricity Sector.
A key short-term task was to recommend an air emission standard for nitrogen oxides for new gas-fired electricity generation units. The team produced an interim

report with stakeholder perspectives, which was transmitted to the Government of Alberta in December. This work will continue in 2019.

The ROVER III project team was launched in the spring. This on-road emissions testing is the third such study undertaken by CASA and supports the work done by the Non-Point Source project. Data collection will begin in five Alberta communities in spring 2019, and a successful fundraising effort will enable the team to gather more data than initially expected.

2018 was the first full year of amalgamation of support services for CASA and the Alberta Water Council. With staff support and enthusiasm, we made considerable progress in streamlining, updating, and harmonizing administrative and financial processes to increase efficiencies. We also did some preliminary Indigenous engagement to build and strengthen relationships.

The dedication and enthusiasm of our volunteers remained unwavering this year. I continue to value the input and support from our board and team members, the executive committee, and staff as we celebrate a quarter century of CASA activity and innovation in 2019.

Andre Asselin Executive Director

Secretariat (as of December 31, 2018)

Andre Asselin – Executive Director

Anuja Ramgoolam – Operations Manager (Acting)

Cara McInnis – Communications Advisor

Christa Edwards – Board and Office Administrator

Katie Duffett – Project Manager

Kim Sanderson – Writing and Editing Support

Marie-Claire St-Jacques – Project Manager

Matt Dance – Project Manager (Contractor)

Sunny Yeung – Accountant



Board of Directors

The following were members of the CASA Board of Directors as of December 31, 2018. CASA is very grateful for the ongoing commitment and support of these individuals and the organizations they represent. In 2018, long-serving members Alberta Health and Alberta Energy withdrew their membership from the Board, but continue to participate at the project team level. CASA acknowledges their contributions and looks forward to their continued involvement.

Stakeholder Group	Sector	Director	Alternate Director
Non- Government Organizations	Consumer Transportation	Scott Wilson	Vacant
(NGOs)	NGO Health	Leigh Allard	Vacant
	NGO Industrial	Ruth Yanor	Benjamin Israel
	NGO Rural	Ann Baran	Wayne Ungstad
	NGO Urban	Bill Calder	David Spink
Industry	Agriculture	Rich Smith	Humphrey Banack
	Alternate Energy	David Lawlor	Vacant
	Chemical Manufacturers	James Baldwin	Greg Moffatt
	Forestry	Keith Murray	Dan Moore
	Mining	Rob Beleutz	Dan Thillman
	Oil & Gas – Large Producers	Claude Chamberland	Vacant
	Oil & Gas – Small Producers	Vacant	Vacant
	Petroleum Products	Alison Miller	Brian Ahearn
	Utilities	Jim Hackett	Ahmed Idriss
Government	Federal Government	Vacant	Martin Van Olst
	Local Government - Rural	Kathy Rooyakkers	Vacant
	Local Government – Urban	Vacant	Vacant
	Provincial Government – Environment	Vacant	Rick Blackwood
Indigenous	Métis	Mary Onukem	Vacant
	Samson Cree Nation	Holly Johnson Rattlesnake	Vacant

CASA thanks the following directors and alternates, who stepped down in 2018, for their contributions:

- Andrew Read NGO Industrial
- Chris Shandro Provincial Government, Health
- Peter Noble Petroleum Products
- Stacey Schorr Provincial Government, Energy
- Terry Rowat Chemical Manufacturers
- Wade Clark Provincial Government, Energy



Ambient Air Quality Objectives Project Team

At its December 2016 meeting, the board approved a statement of opportunity from Alberta Environment and Parks for the formation of an Ambient Air Quality Objectives (AAQO) Project Team. The priorities are in response to the development of Canadian Ambient Air Quality Standards (CAAQS) for fine particulate matter, ozone, nitrogen dioxide, sulphur dioxide, total reduced sulphur, and hydrogen sulphide.

AAQOs are used in a number of ways, including assessing compliance near major industrial air emission sources and to report on the state of Alberta's atmospheric environment. These values are also applied in various assessments used to model and predict the impact on air quality and human and environmental health (e.g., Environmental Impact Assessments, Human Health Risk Assessments).

In 2018 the project team recommended revised AAQOs for fine particulate matter and ozone. The team was not able to reach consensus on a total reduced sulphur guideline; however, advice was provided to AEP on a TRS guideline in the form of perspectives documents from the stakeholder groups.

In 2019 the team will provide recommendations for the nitrogen dioxide and sulphur dioxide AAQOs, and the project is expected to be complete by December 2019.

Electricity Framework Review Project Team

The board approved the Electricity Framework Review project charter in June 2018 and the project team was initiated in July 2018.

Through this third Five-Year Review, the project team's goal is to ensure the *Emissions Management Framework for Alberta's Electricity Sector* reflects current circumstances. The project is being undertaken in two phases, with the initial phase completed in December 2018.

The team's initial task was to recommend a NOx emission standard for natural gas-fired turbines. The team was not able to reach consensus on this task, but provided an interim report that summarized the work it had completed and the perspectives of the stakeholders involved. The board approved the interim report and it was transmitted to Alberta Environment and Parks as advice to use in their decision making.

The project team is now working on the second phase of the project and hopes to complete it by December 2019.

ROVER III Project Team

In 2017, CASA launched its third ROVER (Roadside Optical Vehicle Emissions Reporter) project to assess in-use vehicle emissions using remote sensing technology. Based on the 2014 Air Pollutant Emissions Inventory, the on-road transportation sector is a large emission source of NOx as well as being a source of volatile organic compounds and primary fine particulate matter. Diesel engine exhaust, in particular, has been shown to have negative effects on human respiratory health.

In 2018 the project team identified study sites in Edmonton, Calgary, Red Deer, Grande Prairie, and Fort McMurray where it expects to see a high proportion of diesel vehicles. They are working to begin data collection in summer 2019 and will then use the data to recommend management actions and/or next steps for the Government of Alberta to reduce emissions from the transportation sector.

This project is expected to be complete by December 2020.

Strategic Planning Committee

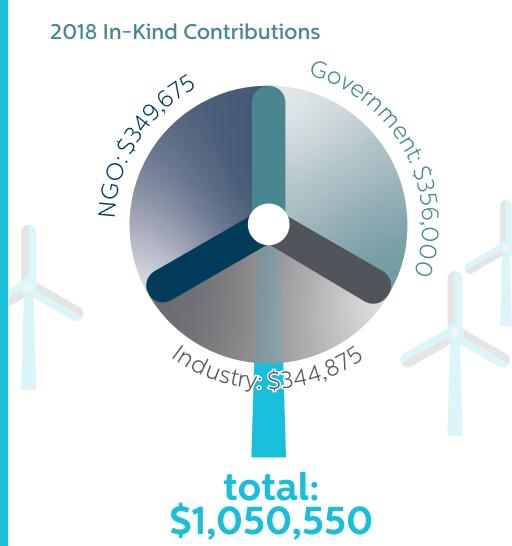
In 2017 the board established a strategic planning committee to review relevant information and recommend an approach to CASA's next multi-year strategic planning process, planned for 2018. The committee met several times to discuss CASA's past strategic planning approaches, current elements to consider, and the best path forward. In April 2018 the proposed approach was approved by the board. The process was overseen by the Strategic Planning Steering Committee with support from the Secretariat. The board strategic planning session occurred over two days on October 31st and November 1st of 2018. The board plans to finalize a new CASA threeyear Strategic Plan in 2019.



Cash and In-Kind **Contributions**

Cash and in-kind support are crucial factors in CASA's effectiveness and ability to undertake its work. Core funding is provided by the Government of Alberta and is not included in the contributions shown below. No additional cash contributions were made to CASA in 2018. Government, industry, and non-government organizations all provided in-kind support. CASA has tried to assign a dollar value to this support by examining time and travel costs and other contributions but is confident that the true value of these contributions is both under-recorded and underestimated. The Government of Alberta also generously provided office space as an in-kind contribution in 2018.

2018 In-Kind Contributions



We would like to thank ATCO for generously sponsoring CASA's 2018 Board Recognition Evening Event.

Evaluating and Measuring CASA's Performance

Every year CASA ensures that performance is measured to reflect the work completed; this enables the organization to make adjustments for improvement. CASA's Performance Measures Strategy defines performance measures (areas where CASA has a higher degree of control over results) and performance indicators (areas where CASA has a lower degree of control over results). CASA developed the foundation for a new strategic plan this year, and it will

be completed in 2019, along with a review of performance measures. For ease of year-to-year comparison, the measures and indicators shown in the tables below are the same as those presented in the 2017 CASA annual report. This combination of performance measures and performance indicators provides a well-rounded description of CASA as an organization and, by providing timelines and meaningful information, supports continuous improvement of CASA.

CASA Performance Measures

(Areas where CASA has a higher degree of control over the results)

Objective	#	Performance Measure	Target	Actual	Notes
Ensure that CASA is financially efficient and accountable	1	Sufficient operating funds are available to bridge CASA's and GoA's fiscal years	Three months of operating funds	Four months as of December 31, 2017	CASA has more than three months of operating funds.
Encourage board member participation in CASA	5a	Percentage of board member attendance at board meetings by sector group	75%	Government: 75% ¹ Industry: 75% ² NGO: 73% ³	Government and Industry targets were met. Sectors without current representation are not included in the calculations. 2017 results: Government: 46% Industry: 72% NGO: 70%
Develop reports and recom- mendations adhering to CASA's Manag- ing Collabora- tive Processes Guide	6	Degree of satisfaction with project team work by team: The Project Charter was completed The process was collaborative The team developed recommendations using the SMART (Specific, Measurable, Actionable, Realistic, Timebound) model	N/AN/A	N/AN/A	No project teams were scheduled to complete their work in 2018, as such, the results of this measure are not applicable (N/A).

CASA Performance Measures (continued)

(Areas where CASA has a higher degree of control over the results)

Objective	#	Performance Measure	Target	Actual	Notes
Improve project team knowledge of the Managing Collaborative Processes Guide	7	Project teams' degree of satisfaction with ability to participate in collaborative processes	Maintain or increase	85%	2018 results indicate a increase based on data taken from the work on the Electricity Framework Review (EFR). 2017 results: 70%
Increase awareness of CASA, CASA projects, and the Managing Collaborative Processes Guide	8	Speaking engagements and meetings undertaken by CASA's Executive Director	Maintain or increase	28	Target met. The number of speaking engagements increased from the previous year. 2017 results: 17 engagements

¹Government attendance:

indigenous (Samson Cree Nation):	6/%
Indigenous (Metis): Inactive, not included	
Federal:	67%
Local (Rural):	67%
Local (Urban): Vacant, not included in totals	
Provincial (Environment):	100%

²Industry attendance: Agriculture:

Agriculture:	100%
Alternate Energy:	33%
Chemical Manufacturers:	33%
Forestry:	67%
Mining:	67%
Oil & Gas – Large:	100%
Oil & Gas – Small: Vacant, not included in totals	
Petroleum Products:	100%
Utilities:	100%

³ NGO attendance:

NGO Health:	67%
NGO Rural:	100%
NGO Industrial:	100%
NGO Urban:	100%
Consumer Transportation:	0%



CASA Performance Indicators

(Areas where CASA has a lower degree of control over results)

Objective	#	Performance Indicator	Actual		Notes	
Implement CASA recom- mendations	1	Percentage of substantive recommendations from the previous four years that have been implemented	0%	from the 2015 EF discussion will be the 2018 EFR Pro recommendation	three substantive re R report. Each of the included in the fin oject Team, and two ns from the 2017 No commendations ha	nese topics of ial report of substantive n-point Source
Improve capacity to monitor air quality in Alberta	4.a	The percentage of monitoring stations and/or parameters implemented from the 2009 Ambient Monitoring Strategic Plan	58%, this is 1% higher than the number calculated for December 31, 2016. Detailed information is available in the 2018 Performance Measures Report.			
	4.b	Geographic percentage of	Airshed		Size	Population Estimate
		province covered	Alberta Capital Airshed		9,867 km ²	1,300,000
		by airshed zones	Calgary Region Airshed Zone		32,000 km ²	1,555,434
			Fort Air Partnership		4,500 km ²	60,000
			Lakeland Industry and Community Association		18,000 km ²	48,000
			Palliser Airshed Society		44,500 km ²	129,500
			Parkland Airshed Management Zone		42,000 km ²	283,785
			Peace A	irshed Zone ion	38,000 km ²	100,000
				iver Area ing Program tee	3,000 km ²	
			West Ce Society	ntral Airshed	61,834 km ²	
			Wood Buffalo Environmental Association		68,454 km²	111,687
			TOTAL		322,155 km ²	



Alberta Airshed Zones and the Alberta Airsheds Council

The Alberta Airsheds Council (AAC) is a partnership of Alberta's Airsheds to support healthy air quality in the province. Collaboration within and among Airsheds has resulted in increased program alignment, cost efficiencies, and improved air quality monitoring and reporting. Despite the challenging economic environment, community, industry, and government members in each Airshed continue to champion a model that delivers science-based air quality monitoring, contributes to provincial policy development, and promotes education and engagement on air quality issues that affect Albertans.

In 2018, Airsheds were active in three main areas:

- Air quality monitoring and reporting. Airsheds are the backbone
 of Alberta's ambient air monitoring network, operating more than
 70 air monitoring stations and providing data to report the Air
 Quality Health Index (AQHI) in over 30 communities.
- Provincial policy development and regional planning. Airshed representatives actively contribute to CASA-led initiatives. In collaboration with Alberta Environment and Parks (AEP) and other stakeholders, Airsheds remain focused on understanding and addressing fine particulate matter and ozone exceedances. Airsheds provided feedback to AEP throughout the development of a provincial five-year monitoring plan.
- Education and outreach. Airsheds continue to use AAC-developed educational videos and print materials in their outreach programs. Several Airsheds participated in school programs in 2018 to enhance understanding of air quality and encourage students to take on projects to further their learning and raise awareness of air quality issues in their communities. Airsheds engage with stakeholders through open houses, trade shows, service club meetings, municipal Council meetings, and social media.

Airshed highlights from 2018:

- Alberta Capital Airshed (ACA) expanded its passive monitoring program to include additional smaller communities and neighbourhoods, and hosted the Clean Air Forum, focusing on the connection between air quality and human health, current air quality management practices, and innovative approaches to monitoring.
- Calgary Region Airshed Zone (CRAZ) conducted a short-term air quality assessment downwind of a bio compost facility on behalf of Wheatland County, and also began a four-year portable air monitoring laboratory project in regional communities. CRAZ continued an ongoing workshop series on "Transportation and Air Quality."
- Fort Air Partnership (FAP) concluded a volatile organic compound speciation study and launched a similar study on fine particulate matter. FAP began a portable monitoring program that will be implemented across the Airshed to address monitoring gaps and

- emerging issues, and gathered public and stakeholder input into a long-term vision for the Airshed.
- Lakeland Industry and Community
 Association (LICA) deployed a meteorology
 monitoring array in the Beaver River Valley to
 quantify anecdotal evidence that air quality
 in the Valley differs from areas adjacent to it,
 and used its portable air monitoring station
 to help quantify hydrogen sulphide odours
 from Jessie Lake. As well as local air quality
 presentations, LICA hosted a "Gauge and
 Save" event, promoting effective vehicle
 maintenance practices to reduce emissions.
- Palliser Airshed Society (PAS) relocated its portable station to a site north-northeast of Medicine Hat to monitor potential influences of industrial and urban activity.
- Parkland Airshed Management Zone (PAMZ) conducted community health-based air quality investigations in several locations in the Airshed to monitor emissions from various sources. PAMZ held its second Blue Skies Awards event to recognize businesses and organizations taking exemplary steps to improve air quality in the region.
- Peace Airshed Zone Association (PAZA)
 expanded its boundaries to encompass the
 MD of Greenview, including Fox Creek and
 Grande Cache. PAZA continues to connect
 with local stakeholders and respond to their

- concerns, and the Airshed met with over 1,500 students to talk about air quality and individual action.
- Peace River Air Monitoring Program
 Committee (PRAMP) purchased a new
 monitoring station that will be the first to
 provide the AQHI in the Peace River area.
 PRAMP boundaries are under review with
 stakeholders and new communities, including
 Indigenous communities, are likely to be part
 of the expanded PRAMP area.
- West Central Airshed Society (WCAS)
 wrapped up an 18-month supplementary
 mobile monitoring program in Hinton,
 supported a fine particulate matter
 speciation study, and expanded its
 boundaries to include the Whitecourt area.
 WCAS initiated outreach activities in several
 communities and hosted a large public event
 in Drayton Valley.
- Wood Buffalo Environmental Association (WBEA) added three new continuous ambient air monitoring stations, increasing its network to 28 stations. WBEA is undertaking semi-continuous measurement of sulphur species to better understand odour-causing sulphur compounds in the region. The Community Odour Monitoring Program app collected information on odours that residents experienced and is comparing this information to ambient data.

AAC Members

Alberta Capital Airshed (ACA): www.capitalairshed.ca

Calgary Region Airshed Zone (CRAZ): www.craz.ca

Fort Air Partnership (FAP): www.fortair.org

Lakeland Industry and Community Association (LICA): www.lica.ca

Parkland Airshed Management Zone (PAMZ): www.pamz.org

Palliser Airshed Society (PAS): www.palliserairshed.com

Peace Airshed Zone Association (PAZA): www.paza.ca

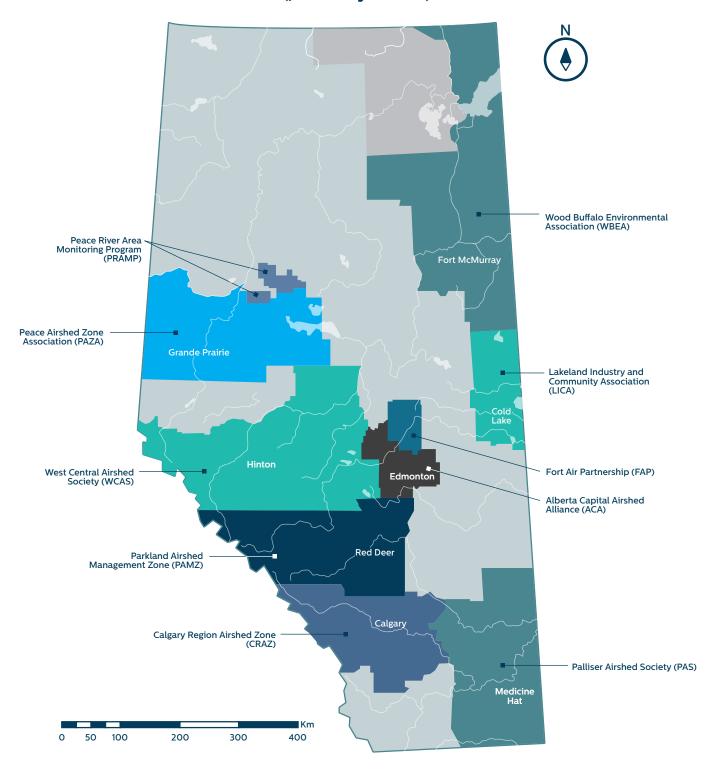
Peace River Area Monitoring Program (PRAMP): www.prampairshed.ca

West Central Airshed Society (WCAS): www.wcas.ca

Wood Buffalo Environmental Association (WBEA): www.wbea.org

For more information, visit: www.albertaairshedscouncil.ca

Alberta Airsheds (January 2018)



Note: Some Airsheds adjusted their boundaries slightly in 2018, and those changes are not reflected in this map.

CASA Participating Organizations

CASA could not operate without the help of the many organizations that support participants on the board and project teams. CASA is very grateful to these organizations for providing financial and in-kind contributions of time and expertise.

Alberta Agriculture and Forestry	Chemistry Industry Association of Canada
Alberta Airsheds Council	City of Calgary
Alberta Beef Producers	City of Edmonton
Alberta Canola Producers	City of Grande Prairie
Alberta Capital Airshed	City of Red Deer
Alberta Energy Regulator	ENMAX
Alberta Environment and Parks	Environment and Climate Change Canada
Alberta Environmental Network	Fort Air Partnership
Alberta Federation of Agriculture	Government of Alberta
Alberta Forest Products Association	Graymont Western Canada Inc.
Alberta Health	Health Canada
Alberta Health Services	Imperial Oil Ltd.
Alberta Motor Association	Innstor
Alberta Motor Transport Association	Inter Pipeline
Alberta Newsprint Company	Maxim Power Corp.
ATCO Power Canada Ltd.	MEG Energy
Calgary Region Airshed Zone	Methanex Corporation
Canadian Association of Petroleum Producers	Mewassin Community Council
Canadian Fuels Association	NextEra Energy Canada
Capital Power Corporation	North West Refinery
Chamberland Consulting Ltd.	North West Redwater Partnership



CASA Participating Organizations continued

Notinto Sipiy Conservation Authority
NOVA Chemicals Corporation
Palliser Airshed Zone
Parkland Fuel Corporation
Pembina Institute
Prairie Acid Rain Coalition
R. Angle Consulting
Repsol
Rural Municipalities of Alberta
Samson Cree Nation
Southern Alberta Group for the Environment
Suncor Energy
Syncrude
The Lung Association Alberta and NWT
TransCanada
TransAlta
West Central Airshed Society
Weyerhaeuser Company Ltd.





Clean Air Strategic Alliance

#1400, 9915 – 108 Street NW Edmonton, AB T5K 2G8

780-427-9793 info@awc-casa.ca www.casahome.org @CleanAirSA

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