

*June 8 & 9, 2011*

*Board Strategic Planning Retreat  
Discussion Document*

# **ABOUT CASA**

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## ***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:***

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

## ***Identity:***

***The Clean Air Strategic Alliance is a multi-stakeholder partnership composed of representatives from industry, government, and non-government organizations.***

## ***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.***

## Strategic Planning Retreat

**June 8 & 9, 2011**

**Grand Rockies Resort, Canmore**

**Tuesday, June 7, 2011**

*Habitat Lounge (Grand Rockies Resort)*

**7:00 pm** Cocktail Reception

**Wednesday, June 8, 2011**

*Banff Room (Grand Rockies Resort)*

- 8:30 – 9:00 am** Continental Breakfast  
*(pastries & fruit)*
- 9:00 am** *Opening Remarks*
- Part 1: Affirming strategic planning building blocks.
- Part 2: Clarifying and prioritizing goals and objectives.
- 12:00 to 1:00 pm** Deli Lunch  
*(soup, salad, sandwiches)*
- 1:00 pm** Part 2: Clarifying and prioritizing goals and objectives (continued).
- Part 3: Review of CASA's mission statement.
- 4:00 pm** CASA Annual General Meeting
- 4:15 pm** Workshop Adjourns for the Day

**Thursday, June 9, 2011**

*Banff Room (Grand Rockies Resort)*

- 8:15 – 9:00 am** Alpine Breakfast  
*(selection of hot items)*
- 9:00 am** Part 3: Review of CASA's mission statement (continued).
- Part 4: Implications for CASA's function and structure.
- 12:30 – 1:30 pm** Luncheon Buffet  
*(soup, salad, hot entrées)*
- 1:30 pm** Part 4: Implications for CASA's function and structure (continued).
- 3:00 pm** Workshop Adjourns

## Board Dinner

*Sage Bistro (1712 Bow Valley Trail, Canmore)*

**6:00 pm** Cocktails & Dinner



<b>1.</b>	<b><i>Mission Review</i></b>  <b><i>Transmittal Letter &amp; Discussion Document</i></b>
<b>2.</b>	<b><i>Supporting Documents</i></b>  <b><i>2.1 2010 Performance Evaluation Report</i></b>  <b><i>2.2 Strategic Foresight Report</i></b>  <b><i>2.3 Preparing for Change: Exploring the Full Range of Possible Futures</i></b>  <b><i>2.4 CASA Environmental Scan Report</i></b>  <b><i>2.5 Social, Technology, Environment, Economy, and Political (STEEP) Analysis</i></b>  <b><i>2.6 2010 Business Plan – Monitoring &amp; Evaluation Report</i></b>

May 3, 2011

Dear Board Members and Alternates,

**Re: Discussion Document for the June strategic planning retreat**

Further to our discussions at the Board meeting on March 10, 2011, please find attached your copy of a discussion document that has been prepared under the direction of the CASA Secretariat as a primer for the June strategic planning retreat.

It would have been difficult to prepare this discussion document without the significant contributions of Board members and stakeholders. Most notably the work of the Strategic Foresight Committee and Foresight Canada provided unique insights with respect to the changing environment in which CASA will operate. The Board caucuses provided clear, concise summaries of their experiences with CASA over the past several years and they identified some new approaches that CASA could use to address emerging air quality issues. Individual Board members and stakeholders reinforced these messages, providing their own assessments of the challenges CASA will face and they offered suggestions about the ways in which we might “do business” differently to solve increasingly complex problems. The discussion document is a synthesis of all these contributions.

As these more visible discussions continued, Secretariat staff worked behind the scenes, facilitating group discussions, retrieving and preparing materials, adding their own ideas and managing the strategic planning process to ensure that products were completed on time and to the required standard.

Finally, the considerable work of Randy Angle and Gordon Erlandson has resulted in a document that will allow the Board to have an informed discussion about CASA’s future. Over the course of several months they researched materials from the past 15 years, they reviewed the recommendations of countless committees and project teams and they looked for common themes in more recent Board discussions. The resulting document weaves all of these materials together in a manner that should provide for focused and truly strategic discussions at the June retreat.

All of this work will provide for a far better strategic planning forum than might otherwise have been possible. You have set the table to do the work that remains.

Enjoy the read. We are looking forward to Canmore!

Sincerely,

A handwritten signature in black ink, appearing to read "Norman MacLeod". The signature is fluid and cursive, with a large initial "N" and "M".

Norman MacLeod  
Executive Director  
The Secretariat, Clean Air Strategic Alliance

# **Mission Review**

## **The Clean Air Strategic Alliance**

**A Discussion Document for the  
Board of Directors**

**May 2, 2011**



**Prepared for the Clean Air Strategic Alliance by:**

**R. Angle Consulting and  
Erlandson Consulting Inc.**

## MESSAGE FROM THE EXECUTIVE ...

The operating environment for Alberta's Clean Air Strategic Alliance is changing. Alberta's policy and regulatory regime is evolving in response to escalating concerns about air quality, complexity of air quality issues is increasing, and the array of stakeholder interests is expanding. At the same time, the work of the Alliance is in transition and there is demand for greater efficiency in operating practices. The challenge for Alliance members is to determine how to adjust to these pressures, and set a course for how the organization can best contribute to the management of air quality in Alberta in the future.

In response to issues and trends, the Board of Directors has embarked on a comprehensive review of Alliance corporate direction. At its planned workshop in June 2011, the Board has set for itself the task of developing renewed strategic direction by building the key components of a strategic plan that guides work of the Alliance over the next five to ten years.

This discussion document is the primer for the Board's deliberations at its June workshop, and familiarity with its content will allow Board members to make the best use of available time. The nature of the Board's strategic planning discussions will differ from the project focus of previous years – the objective will be to set strategic direction by selecting a package of goals and objectives that shape the future of the Alliance.

The document draws on a wide range of inputs, particularly from Board members through the Strategic Foresight Committee, Caucus Performance Evaluations and individual communications. Information was also drawn from an extensive set of background materials, listed in Section 3.4, firmly anchoring the planning work in the Alliance's history, accomplishments and practices. Part 1 of the document provides an analysis of planning inputs.

At its March 2011 meeting, the Board acknowledged the 'roadmap' that the Alliance Secretariat has used to guide strategic planning, a process which culminates in discussions at the June workshop, providing the necessary direction for the Secretariat to produce a draft strategic plan. Part 2 of the document contains strategic plan components to inform the workshop discussion and help Board members:

- ◆ Agree on a strategic planning framework;
- ◆ Clarify assumptions about the issues and opportunities the Alliance faces;
- ◆ Make decisions about the goals and objectives that need to be pursued;
- ◆ Understand where business improvements are possible; and
- ◆ Determine the implications of future direction on structure, functions and resources.

Lastly, and on behalf of the Board, we must acknowledge the great work of the Secretariat staff in developing CASA's strategic planning initiative, and for preparing this comprehensive background material.

**Executive Committee of the Board  
Clean Air Strategic Alliance**





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## INTRODUCTION

The *Clean Air Strategic Alliance* (CASA or the Alliance) is a multi-stakeholder partnership composed of representatives selected by industry, government and non-government stakeholders. All members have a vested interest in air quality. CASA's main task is to conduct strategic air quality planning for Alberta by identifying priority issues and developing action plans that include economic and environmental consequences and expected outcomes. CASA was established in 1994 by Ministerial Order as an advisory committee under Alberta's *Environmental Protection and Enhancement Act* and the *Department of Energy Act*.

The Board of Directors of CASA (the Board or members<sup>1</sup>) has embarked on a strategic review of its future roles and responsibilities with respect to air quality management and monitoring. This *Mission Review* is a component of the Board's strategic planning mandate as laid out in the Alliance bylaws which calls for "*periodic assessment of fundamental principles, including the vision, mission and goals*".

*CASA's 2010-11 strategic planning initiative is the most comprehensive review of corporate direction that the Alliance has ever undertaken, and comes at a time when substantive adjustments to Alberta's policy and regulatory regime is responding to escalating concerns about environmental integrity, including air quality management.*

### Purpose of this Document

This discussion document presents the results of strategic planning work undertaken by the Board in 2010-11. Its sole purpose is to provide background analyses and strategic content that supports Board deliberations towards renewed strategic direction for CASA.

The Board is convening a strategic planning workshop in June 2011. Board members and the CASA Secretariat have prepared the necessary background materials for the Board, and this document is a key outcome of that work. It summarizes strategic considerations for the Board, and presents a range of alternatives for CASA's future. Results from the Board's deliberations will be used to prepare a new *CASA Strategic Plan*.

This document also serves as a record of the work done, listing sources of information used, documenting analysis results, and describing the steps and outcomes of the process. This and other source materials provide a reference point for subsequent strategic planning cycles.

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<sup>1</sup> CASA's Board of Directors is inclusive of all twenty-two CASA member organizations. An Executive Committee of the Board provides strategic oversight of Board activities and a Secretariat function.

## Structure and Content

The document is organized in **PARTS**.

### **PART 1      Background and Analysis of Planning Inputs**

- ♦ Describes the strategic planning process and activities;
- ♦ Discusses the history and role that CASA has played in Alberta's Air Quality Management System (AAQMS);
- ♦ Draws issues and themes concerning CASA's future role from a wide range of relevant materials and sources;
- ♦ Presents strategic challenges that CASA faces in relation to its operating environment and an evolving AAQMS; and
- ♦ Identifies alternative business streams where CASA's experience and knowledge might make future contributions.

### **PART 2      Setting Strategic Direction**

- ♦ Presents options for amending CASA's strategic direction that result from the planning work; and
- ♦ Provides a starting point for Board member deliberations at its June 2011 workshop by summarizing results and posing questions.

### **PART 3      Preliminary Workshop Outline**

- ♦ Links the strategic planning results to the anticipated topics for discussion at the June Workshop.

## **PART 1: BACKGROUND INFORMATION AND ANALYSIS**

### **1. Overview of the Strategic Planning Process**

*Strategic planning* is the means by which the members of CASA envision the future of the organization, and develop the procedures and operations necessary to achieve that future. It provides the strategic direction that is the foundation for managing all aspects of the organization, and is both a management process and the generator of a product in the form of a strategic plan.

The *process* of strategic planning is the interaction between the people who are central to the plan's delivery. Board members and Secretariat staff participate, bringing their unique understandings to the process, and recognizing that all parts of the organization need to be committed to a course of action. The process sets organizational aims, analyzes options, identifies objectives and defines actions. It is a systematic and iterative approach to determining what to do, when to do it, how it will be done, and by whom. This process is built into CASA's bylaws, wherein the Board is required to conduct a periodic "assessment of fundamental principles, including vision, mission and goals."

The *product* is renewed strategic direction laid out in a strategic plan – a document that describes the purpose the organization will fulfill within its operating environment, and provides a blueprint for getting there. The plan provides a structure that the Board can use to amend operating policy and make day-to-day decisions, consistent with CASA's purpose and culture. The strategic plan also provides a means of tracking consequences of decisions over time and, as experience or circumstances change, the foundation for changing course.

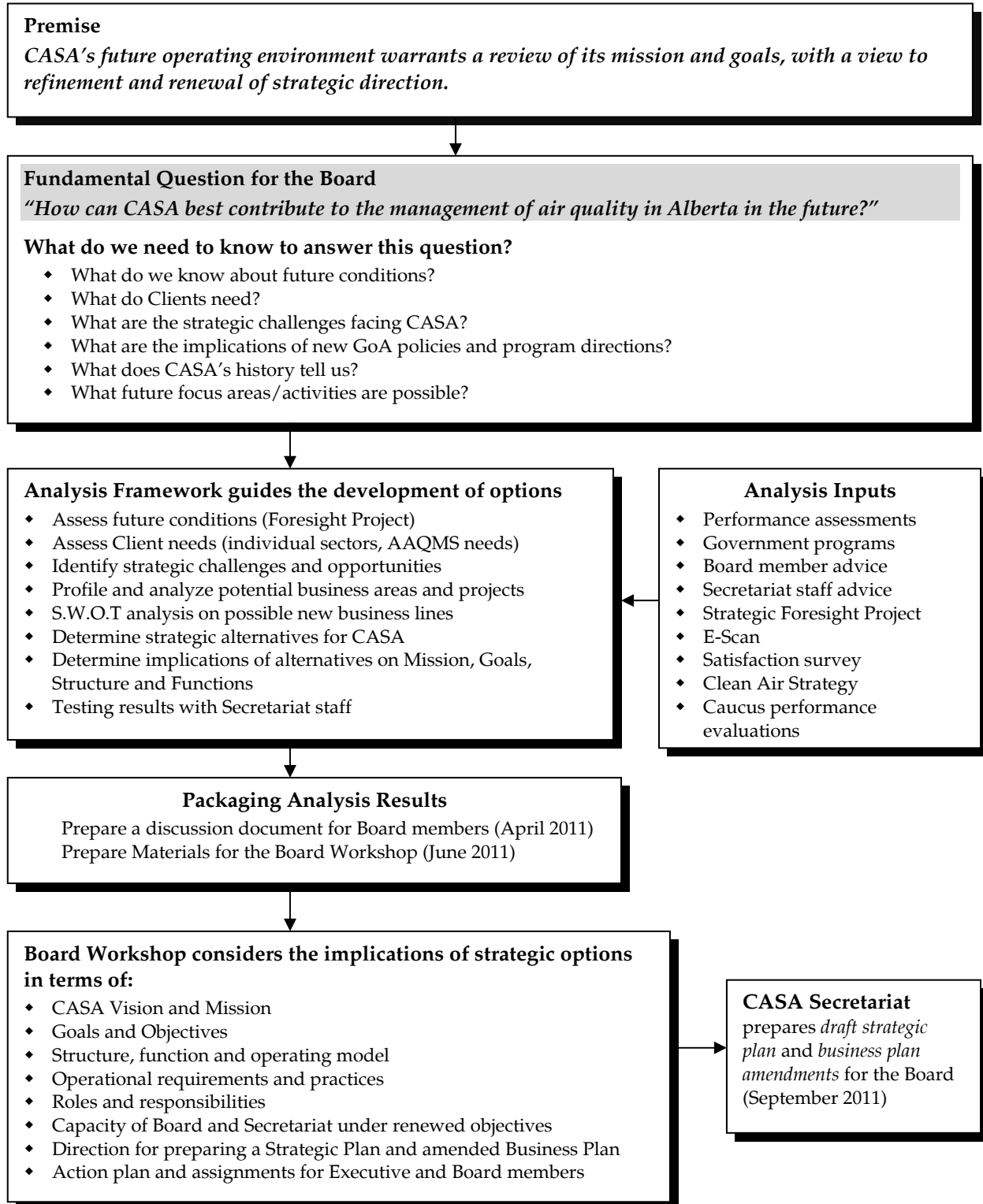
#### **1.1 CASA's Planning Approach**

The approach to strategic planning taken by the Secretariat in 2010 has been a comprehensive one that allowed for:

- ◆ Scanning CASA's operating environment and the wide array of processes and factors affecting CASA;
- ◆ Assessing potential future trends and conditions;
- ◆ Canvassing observations and ideas from stakeholders and staff;
- ◆ Collating and evaluating issues and opportunities; and
- ◆ Developing a package of strategic alternatives for consideration by the Board.

Figure 1 provides a summary of the planning work undertaken by the Secretariat, and the sequence of the steps involved.

**Figure 1: Description of CASA's 2010-2011 Strategic Planning Approach**



## 1.2 Assumptions for Strategic Planning

A set of *assumptions* provided both scope and direction for the strategic planning initiative. Assumptions were tested with the Board at its March 10, 2011 meeting to ensure that members were generally comfortable with the underlying premise with which strategic planning has proceeded.

*The following assumptions should be confirmed by the Board to ensure a common starting point for deliberations about CASA's future.*

1. CASA Board members agree with CASA's Vision for clean air.
2. CASA provides a forum for development of air quality outcomes that reflect the environmental, social, and economic interests of Albertans.
3. CASA's policies and procedures for consensus-based collaboration among client groups have made a unique contribution to consultation and engagement practices in Alberta.
4. CASA has a role to play in air quality management as part of the realignment of Alberta's land-air-water management frameworks, and in facilitating dialogue about air quality more broadly.
5. CASA's three main client groups (government agencies, non-government organizations, industries) wish to maintain their CASA-based engagements.
6. CASA's changing operating environment dictates the need for a comprehensive review of its mission and goals, aimed at refinement and renewal of the organization's future direction.



**Figure 2: Terms in this Document**

**Consensus-Based Outcomes:** General agreement on a package of provisions to the extent that, although parties to the agreement may not agree to every aspect of the package, they do not disagree enough to warrant their opposition to the overall package. Consensus-based outcomes reflect agreements that each participant in the negotiations can support, without sacrificing their underlying interests.

**Facilitation:** A process wherein an individual who, as a neutral third party, oversees, coordinates and expedites discussions and meetings, ensuring fair, orderly and principled opportunities for dialogue and recording of results.

**Goal:** A generally worded statement that indicates a direction that an organization plans to take.

**Indicator:** A measure or observed property which provides useful information about patterns or trends or about variables that affect or are affected by air quality. Indicators are well-defined criteria developed to measure the extent to which goals, objectives or interests are satisfied. Indicators may express an expected measurable, absolute outcome, or a more subjective and relative description of an expected outcome.

**Interest:** The underlying and motivating needs, desires, fears, hopes and concerns that are the basis for the positions taken by participants in a negotiation. Interests may be substantive, procedural or psychological. (The objective of interest-based negotiation is to develop an outcome that best satisfies the collected interests of the parties to the extent possible.)

**Mediation:** Intervention by a neutral third party in a negotiation that has normally reached an impasse or deadlock, with the aim of assisting the parties to reach an agreement.

**Mission:** The mission is a brief statement identifying the basic business the Alliance is in, and the distinctive products or services that differentiate the organization from others. A mission statement addresses *what function CASA performs, for whom and how.*

**Objectives:** Statements of desired or intermediate targets consistent with overarching goals. Objectives are measurable, either directly or indirectly, as a basis for evaluating whether or not a plan or program is achieving its intended outcomes. Objectives usually specify values and what is to be accomplished in a time frame.

**Operating Principle:** A high-level, generally worded statement of philosophy to guide how the Board, Secretariat and participants will conduct the work of administration, projects, programs and activities of the Alliance.

**Interest-Based Negotiation:** An approach to negotiation that assumes a mutual intention of 'win-win' and an appreciation of interdependence among the participants. Principled or interest-based negotiations are characterized by face-to-face dialogue, a focus on problems not people, dealing with interests not positions, inventing solutions for mutual gain, and the use objective evaluation criteria.

**Shared Decision-Making or Consensus-Based Decision-Making:** An approach to participation in decision-making in which, on a certain set of issues for a defined period of time, those with authority to make a decision and those affected by that decision are empowered jointly to seek an outcome that accommodates, rather than compromises, the interests of all concerned. Stakeholder representatives come together with a shared goal to collaboratively develop outcomes using principled negotiation, which reflect agreement among the parties. Final decisions remain with statutory decision-makers.

**Strategy:** A course of action selected from among alternatives as a means of achieving a goal or objective (or interest). The definition of a strategy is broad. A strategy may be general or specific in nature, and may describe a pattern, management standard, guideline, action, procedure or policy. Strategies express how, where and when to commit resources to achieve objectives.

**Vision:** A broad philosophical description of the desired long-term state or condition of air quality in Alberta, as developed by CASA members to help forge a unifying direction and context for the work of the Alliance. A vision statement reflects the organization's philosophy and core values.

## 2. Historical Context

This section provides a retrospective on CASA's work and accomplishments. Its purpose is to refresh the memory of CASA's origins and its evolution as an organization, and to help establish a common understanding of progress to date, as a starting point for making judgments about the future role for the Alliance.

### 2.1 Origins of CASA

In the late 1970s and throughout the 1980s, global concerns about acid deposition, climate change, smog and toxic air pollutants led to various international commitments to stabilize or reduce emissions. These same concerns were voiced by various Alberta stakeholders at public hearings of the Alberta Energy Resources Conservation Board on the development of energy resources. Because Alberta's economy is driven in large measure by energy production, these concerns had special significance. When government management systems at the time seemed unable to respond to these new environmental challenges, it became clear that changes were needed.

Recognizing this situation, the Government of Alberta (GoA) on March 15, 1990 announced a broadly based public consultation process on energy and air quality, called the Clean Air Strategy for Alberta. The outcome of this four-phase, eighteen-month consultation was the recommendation that, to address emerging challenges, there was a need for a more comprehensive system for managing air quality. A Transitional Steering Committee with representatives from government, industry and non-government organizations worked for the next two years to determine how this could be done and what criteria would be used to make decisions along the way. With the details fleshed out, the GoA formally accepted the Committee's recommendations, endorsing the formation of a non-profit organization with three categories of membership: governments, industrial associations, and public interest groups from environment and health sectors.

In a 1994 Ministerial Order, the Minister of Environment under the *Environmental Protection and Enhancement Act* together with the Minister of Energy under the *Department of Energy Act* named the 'Clean Air Strategic Alliance Association' as an advisory committee to undertake and report to them on:

1. *The operation of the Comprehensive Air Quality Management System as described in the Clean Air Strategy for Alberta Report dated November 1991.*
2. *The conduct of strategic air quality planning for Alberta through the utilization of a consensus building collaborative approach. Planning shall include, but is not limited to:*
  - i. *Clear identification of issues,*
  - ii. *Prioritization of current and emerging issues, and*
  - iii. *Allocation and coordination of resources.*
3. *Recommendations as to the priority of problems with respect to strategic air quality in Alberta and to specify action plans and activities to resolve such problems. The action plans will prescribe guidelines for the initiatives to be undertaken and what outcomes are expected from each initiative.*

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*In all reports submitted, there shall be a recommendation as to which organization or agency should take the lead for action. The recommendation shall include the economic, and air quality implications of the proposed courses of action. Reports shall include the progress and compare the actual benefits and results to projected outcomes, responsibility, accountability and performance of the initiatives. Reports will be submitted jointly to the Ministers of Environment and Energy.*

The Alliance represented a move away from the confrontational and adversarial positioning that characterized the 1980s, to a collaborative, consensus-building and problem-solving approach. It was intended to achieve a more efficient and effective allocation of government and stakeholder resources. It was also intended as a mechanism for coordinating and preparing Alberta responses to national and international air quality issues such as greenhouse gas emissions and climate change.

The role of the government was transformed from that of arbitrator between competing lobbies, to that of a facilitator and partner. The Alliance was not a government agency or commission – it was then and remains a non-profit association under the *Alberta Societies Act*. The Ministry of Health later joined the Alliance.

### 2.2 Structure and Operations

Under the terms of the *Alberta Societies Act*, CASA operates in accordance with its own set of bylaws. CASA's operating policies and guidelines are described in a variety of publications which have been developed over its 16-year history.

Membership in CASA is a balance of three broad-based stakeholder groups – industry, government, and non-government organizations (NGOs) – which are further divided into major sectors. Currently, Alliance seats are fully subscribed with 22 member organizations, up from the original 18 in 1994. Each member organization names a representative to the Board of Directors, and may also name an alternate director who can be from a different organization within the stakeholder group and sector.

Support for the work of the Alliance is provided by a small, full-time Secretariat under the direction of an Executive Director. The Executive Director is an *ex officio* member of the Board of Directors.

The Board of Directors chooses a President and two Vice-Presidents, one from each stakeholder group who, together with the Executive Director, form the Executive Committee. The Executive Director has traditionally served as the Secretary-Treasurer.

Board Committees are formed to further the work of the Alliance, with 'Communications' and 'Performance Measures' being long-term standing committees. Recently a joint standing committee has been formed with the Alberta Airsheds Council.

The Board of Directors usually meets four times per year to make decisions on administrative matters and projects, hear implementation progress reports, and plan for the future. Once per year, in conjunction with a regular Board meeting, the Directors meet as members of the association for the Annual General Meeting, at which the annual report and audited financial statements are approved, membership is reaffirmed, and the auditor for the next year is appointed.

The work of the Alliance has been largely directed at the operation of its Comprehensive Air Management System (CAMS) which has three stages; (1) screen and scope proposed work, (2) develop and approve plans for managing projects, and (3) coordinate implementation and evaluate progress. Three different teams of stakeholders (roughly balanced from the three member groups) do the work at each stage. Thus an issue or opportunity brought to the Board in the form of a 'Statement of Opportunity' passes from a working group (stage 1) to a project team (stage 2) to an implementation team (stage 3) in an orderly and disciplined fashion.

The CASA Board and all CASA teams, committees and working groups operate by consensus. Typically, working groups take six months to screen and scope, while project teams take up to two years to develop management plans. Following from a strategic plan for Air Quality Monitoring in Alberta, an Operations Steering Committee provides overall direction for the cooperative air monitoring system.

### 2.3 CASA as Project Manager

Project team operations between 1994 and 2010 have been reviewed. In the first few years after CASA's formation, the big issues of acid deposition, climate change, and air toxics were addressed by project teams. In subsequent years, a greater percentage of teams were formed with a focus on implementation, to coordinate follow-up work on the frameworks and plans that had been delivered by earlier project teams. Some implementation teams operated for many years.

Frameworks created by CASA include reviews at specified intervals. In the last few years, these reviews (Electricity, Flaring and Venting, Particulate Matter and Ozone, Acid Deposition, Ambient Air Monitoring Strategy, Clean Air Strategy) have become the main area of project team activity. In the past five years, only two new issues have come to the table – indoor air quality and confined feeding operations.

The effectiveness of teams operating between 1997 and 2005 was recently assessed.<sup>2</sup> The projects that rated highest for effectiveness, Electricity and Flaring and Venting, addressed point-source emissions rather than area sources. Projects rated in the mid-range of effectiveness were those associated with area sources or specific air pollutants. The lowest-rated projects were not associated with a type of source or a pollutant, but rather addressed broad issues, such as human health or animal health.

Interviews with staff and stakeholders involved in the two most effective projects (many of whom were involved in other projects) revealed three main factors contributing to success:

- ◆ Clear scope;
- ◆ Strong political will; and
- ◆ Commitment to consensus process.

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<sup>2</sup> *Applying Consensus Decision Making to Air Quality Issues: the Case of the Clean Air Strategic Alliance*; presented at the International Union of Air Pollution Prevention and Environmental Protection Association's (IUAPPA) World Clean Air Congress; Jennifer Allen; Vancouver, September 2010.

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For each of the two most successful projects, the scope of the problem and the tools available were clear – government had signalled that the issue would likely be addressed through regulation, and individuals working on the teams understood the consensus process and adhered to its principles. The more successful projects were also characterized by an intensive burst of activity to complete the work, whereas the least successful projects tended to take longer and be drawn out.

The ‘CASA Data Warehouse’, approved prior to 1997, was also judged to be a highly successful project. At the time, there was significant pressure on the GoA to develop an accessible ambient air monitoring database, but internal procedures were cumbersome and resources were limited. By having CASA develop the database, resources were leveraged, the interests of stakeholders were incorporated, and the work was completed quickly.

### 2.4 CASA as Facilitator and Convenor

In support of the Alberta air quality management system, CASA has occasionally undertaken some types of work not strictly aimed at producing consensus outcomes, such as facilitating collaborative discussions on a topic or managing special events, for example:

- ◆ Holding three science symposiums – 1996 on Acidifying Emissions, 2002 on Alberta Air Quality, Human and Animal Health, Exposure, Effects, and 2006 on Nitrogen;
- ◆ Striking a multi-Stakeholder Group for Particulate Matter and Ozone to provide Alberta Environment with stakeholder input during the establishment of federal-provincial Canada-wide standards;
- ◆ Convening three Priority Substances Workshops in 2000, 2004, and 2009, to allow Alberta Environment to obtain input from stakeholders on the substances needing to have ambient air quality objectives be created or updated;
- ◆ Convening discussions about value-added tools and determining the need for a network of practitioners in consensus decision-making;
- ◆ Convening discussions to generate lessons-learned about the Particulate Matter and Ozone Management Framework, in response to a request from the Air Management Committee of the Canadian Council of Ministers of the Environment; and
- ◆ Assisting Alberta Environment to convene meetings with air quality data providers to address both data quality and the procedures for submitting data to the CASA Data Warehouse, that will be incorporated into a revised Air Monitoring Directive.

### 2.5 Recognition for CASA

The success of the CASA model for consensus-building, both in terms of Alberta products and as a model for best practices, is reflected in the accolades and formal recognition that CASA has received for its work, including:

- ◆ Carleton University Arthur Kroeger College Award for Policy Leadership 2005 for the *CASA Consensus Decision-Making Model*;
- ◆ Alberta Emerald Award 2004 in recognition of the *Emissions Management Framework for the Alberta Electricity Sector (2003)*;

- ◆ Premier's Award 2000 for the *Acid Deposition Management Framework (1999)*;
- ◆ Premier's Award 2001 to the *Multi-Stakeholder Group for Particulate Matter and Ozone (1999)*; and
- ◆ Alberta Emerald Award 2001, Pollution Prevention Award 2005 from the Canadian Council of Ministers of the Environment for the *Management of Routine Solution Gas Flaring in Alberta (1998)*, and mention as a World Bank Best Practice in 2003.

**Figure 3: Major CASA Products**

To March 2011, 51 final reports of project teams have been published, including the following examples.

- ◆ Zone Air Quality Management Guidelines (1995) / Airshed Zones Guidelines (2004)
- ◆ Strategic Plan for Air Quality Monitoring in Alberta (1995) / Ambient Air Monitoring Strategy for Alberta (2009)
- ◆ Proceedings of Three Science Symposia, described above
- ◆ Sulphur Dioxide Management in Alberta (1997)
- ◆ CASA Data Warehouse (1998)
- ◆ Management of Routine Solution Gas Flaring in Alberta (1998)
- ◆ Acid Deposition Management Framework (1999)
- ◆ Multi-Stakeholder Group for Particulate Matter and Ozone (1999) – advice to AENV
- ◆ ROVER Vehicle Emissions Surveys (1998, 2006)
- ◆ Priority Substances Workshop (2000, 2004, 2009)
- ◆ Pollution Prevention/Continuous Improvement Framework (2002)
- ◆ Particulate Matter and Ozone Management Framework (2003)
- ◆ Emissions Management Framework for the Alberta Electricity Sector (2003)
- ◆ Herd Environmental Record System (2003)
- ◆ 'Breathe Easy' Vehicle Retirement (2003)
- ◆ Diesel Particulate Filter Demonstration (2003)
- ◆ Managing Air Emissions from Confined Feeding Operations in Alberta (2008)
- ◆ Recommendations for a Clean Air Strategy (2009)
- ◆ Consensus Decision-Making Toolkit (2010)

### 3. Commentary on CASA's Operating Environment

This section provides an overview of CASA's current operating environment and possible future conditions, as well as a listing of the source materials that have been reviewed during the development of this discussion document.

#### 3.1 Direction from the Strategic Foresight Committee

The Strategic Foresight Committee examined the range of potential changes that would most significantly affect a CASA-like organization in the decades through to 2040. While no foresight exercise can predict the future, an exploration of the range of possible futures can help position an organization to more confidently and effectively adapt to changing conditions as the future unfolds.

The Strategic Foresight Committee identified nine *trends and drivers* with a spectrum of conditions that would define the future world in which CASA operates.<sup>3</sup>

1. Nature of air quality data for decision-making: comprehensive, robust, shared, transparent, and accessible versus inconsistent, uncertain, sporadic, and restricted.
2. Willingness to exercise leadership on air quality issues: timely versus reactive measures, certainty in air quality standards versus changeability, and beyond-compliance behaviour versus compliance as the industry goal.
3. Scope/size of carbon pricing and impacts: higher prices motivate aggressive action versus low prices with little action.
4. Nature of impacts of climate change on Alberta: obvious and extreme (water shortages, disease, loss of biodiversity, and extreme weather events) versus gradual and benign (longer growing season with new agricultural opportunities, and nicer weather).
5. Prominence of natural capital in human ecological decision-making: acceptance of trade-offs between the environment and the economy versus broad recognition of externalities and the value of natural capital.
6. Role and relationship of non-government players in environmental decision-making: centralization of power within the government of Alberta versus reliance on multi-stakeholder groups to develop solutions that governments can implement.
7. Ability of the Government of Alberta to influence/shape Alberta's future: globalized markets dictate the future versus local autonomy to make decisions.
8. Impact of air quality on well-being of individual Albertans: no perceived effects versus air quality as a significant driver of behaviour change.

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<sup>3</sup> From: *Preparing for Change: Exploring the Full Range of Possible Futures; A Report on the Strategic Foresight Project Undertaken with the Clean Air Strategic Alliance; September 2010 to March 2011; March 7, 2011; and Strategic Foresight Report, Prepared by the Strategic Foresight Committee for the CASA Board of Directors; Strategic Foresight Project Committee; March 10, 2010.*

9. Degree of innovation in production and use of Alberta's hydrocarbon resources: innovative technology to avoid the generation of emissions versus continued use of traditional methods.

The Strategic Foresight Committee also developed four major *insights* about CASA's future:

1. **Building upon Success:** Air quality management in Alberta has advanced over the past 15 years, in large part attributable to the ongoing dialogue and collaboration through CASA. The high level of engagement and synergy has led to sound and durable solutions to air quality issues.
2. **Defining the 'S' in CASA:** CASA has focused primarily on generating solutions to air quality challenges, but the opportunity exists for CASA to demonstrate strategic leadership and to play a more proactive role in addressing emerging issues and shaping our collective path forward.
3. **Expanding CASA's Reach and Broadening its Focus:** Opportunity exists to think more holistically about air quality management, to consider integrated approaches across environmental media, to consider tackling issues beyond its current scope, to expand to national, inter-provincial, regional and sub-regional scales, and to engage a broader range of stakeholders.
4. **Building Capacity:** Broadening CASA's focus and engaging a wider range of stakeholders will require enhanced capacity to facilitate 'interest-based' discussions and to contemplate air quality management issues beyond those associated with regulated emissions.

### 3.2 Environmental Scan Findings

An environmental scan is commonly defined as 'an analysis and evaluation of internal conditions and external data and factors that affect the goals and direction of an organization.' Many factors can be considered, including socio-cultural, technological, environmental, economic, and political/regulatory trends (often called a STEEP analysis). CASA's environmental scan was to identify emerging issues, trends, patterns and structures which are of particular importance to Alberta air quality.

The E-Scan<sup>4</sup> examined social, technological, environmental, economic and political developments in the world today. Some of the significant findings were that:

1. Air quality is one of the top three environmental issues related to health;
2. Although new technology may mitigate emissions, this can also lead to unintended consequences and new air quality issues;
3. There is continued concern about the health effects and long-term impacts of oil and gas activities, particularly tailings ponds and sulphur-based pollutants;

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<sup>4</sup> From: *CASA Environmental Scan Report 2011*; Center for Applied Business Research in Energy and Environment (CABREE), Alberta School of Business; February 28, 2011.



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4. Fossil fuel demand is up, and increased growth in oil and gas activities will increase air quality concerns and emissions;
5. International pressures feed a growing public interest in credible and accessible environmental monitoring and air quality information; and
6. Odour remains an important issue to the general public.

### 3.3 Government of Alberta Initiatives

The Government of Alberta has two major initiatives that relate to CASA's future – the Land Use Framework for Alberta (LUF) and the Cumulative Effects Management System (CEMS).

The Land Use Framework provides a blueprint for land use management and resource decision-making aimed at achieving Alberta's long term environmental, social and economic goals. A Land Use Secretariat is responsible for preparing or directing the preparation of regional plans and amendments, identifying the need for policies and the integration or coordination of policies, coordinating or supporting the coordination of integrated information systems, periodically monitoring progress, investigating complaints, and other duties described under the *Alberta Land Stewardship Act* (2009).

Regional Plans are developed through Regional Advisory Councils consisting of individuals representing the range of interests within each region, and who are able to appreciate the broad interests of the region. Regional plans are approved by Cabinet and implemented through line departments and the Land Use Secretariat.

Dovetailed with the LUF is Alberta Environment's new Cumulative Effects Management System. This system is intended to be outcome and risk-based, and consider health, economic and social values. It is to be implemented using a place-based approach, a broad set of tools and collaboration with many parties. It is to be adaptive and flexible in assuring the achievement of outcomes. The CEMS represents a shift in scale from managing air quality on a provincial basis to managing air quality on a regional basis, and a change in focus from managing air quality on its own to managing air, land, water, and biodiversity together.

A review of government business plans for the ministries of Environment, Energy, Health & Wellness, Transportation and Municipal Affairs reveals that all five make some mention of the environment; four make reference to the Land Use Framework; only one refers directly to air quality. While four departments list actions that relate to determinants of air quality, it is clear that the Ministry of Environment has the lead role and is the primary authority for matters related to air quality. However, Alberta Energy currently provides all of the core funding for CASA.

Future roles for CASA or for Alberta Airsheds have not been defined within either the Land Use Framework or the Cumulative Effects Management System.

### 3.4 Listing of Source Materials for Planning

Tables 1 through 5 which follow, describe the various sources of input to this discussion document and the types of information that each provides, organized according to the general content of the inputs. Each source is referenced and a short description of its contribution provided. This information was supplemented by perspectives and ideas provided by opinion leaders through personal communications.

**Table 1: Inputs Pertaining to CASA Operations**

Source	Content
1. Business Plans <ul style="list-style-type: none"> <li>▪ 2010 CASA Three-year Business Plan</li> <li>▪ Business Plan 2003-2005</li> <li>▪ Business Plan 1999-2002</li> <li>▪ Business Plan 1996</li> <li>▪ Stakeholder Prospectus and Business Plan 1993</li> </ul>	<ul style="list-style-type: none"> <li>▪ strategic thinking of the past in terms of Vision, Mission, Principles and core business areas.</li> </ul>
2. 2010 Business Plan Monitoring and Evaluation Report	<ul style="list-style-type: none"> <li>▪ progress on the goals and strategies in the current business plan</li> </ul>
3. CASA Performance Evaluation 2007	<ul style="list-style-type: none"> <li>▪ based on a set of interviews, the Performance Evaluation Committee provided recommendations to address the effectiveness of CASA in supporting the GoA in strategic air quality planning</li> </ul>
4. 2010 Performance Evaluation Report	<ul style="list-style-type: none"> <li>▪ stakeholder group answers to five questions:               <ol style="list-style-type: none"> <li>a. Which elements of CASA's processes are most valuable?</li> <li>b. Where is there room for improvement?</li> <li>c. How has CASA changed to stay relevant?</li> <li>d. Where has CASA shown the greatest success?</li> <li>e. What else should CASA be doing?</li> </ol> </li> </ul>
5. Annual Reports, 1994-2010	<ul style="list-style-type: none"> <li>▪ highlights of organizational activities in each year with lists of active committees and teams</li> </ul>
6. Performance Measures Review, September 2007	<ul style="list-style-type: none"> <li>▪ confirmation of the five performance measures, proposed additional indicators for PM1 and PM4 and modifications to the indicators under PM2 and PM5.</li> </ul>
7. 2010 Performance Measures Report, March 2011	<ul style="list-style-type: none"> <li>▪ current status on the five CASA performance measures</li> </ul>

**Table 2: Information from the CASA Strategic Foresight Project**

Source	Content
1. Strategic Foresight Report, March 10, 2010	<ul style="list-style-type: none"> <li>▪ identification and description of the major drivers of strategic change, a range of possible futures, and the strategic issues that CASA may face</li> </ul>
2. Preparing for Change Report March 7, 2011	<ul style="list-style-type: none"> <li>▪ reflections about the design, operation and success of the project, including an appendix with a list of concerns and ideas about the future, derived from participant interviews</li> </ul>

**Table 3: Inputs Pertaining to the Plans of the Government of Alberta**

Source	Content
1. Government of Alberta Business Plans for 2010-2013: energy, environment, health and wellness, transportation, municipal affairs	<ul style="list-style-type: none"> <li>▪ mention of air, environment, land use framework, or action related to air</li> </ul>
2. Land Use Framework, presentation at Coordination Workshop, September 2010	<ul style="list-style-type: none"> <li>▪ update on Lower Athabasca Regional Plan, Phase 2 Consultations</li> </ul>
3. Cumulative Effects Management and Proposed Amendments to the <i>Environmental Protection and Enhancement Act</i> , presentation at CASA Board Meeting, September 2010	<ul style="list-style-type: none"> <li>▪ Alberta Environment's plans for a cumulative effects management system and possible amendments to the legislation required for implementation</li> </ul>
4. Integrated Monitoring, Evaluation and Reporting Framework, presentation at Coordination Workshop, September 2010	<ul style="list-style-type: none"> <li>▪ Alberta Environment's plans around governance, assurance and outcomes for an integrated monitoring system in support of cumulative effects management</li> </ul>
5. Federal Action on Air Pollution and the Proposed Tripartite Comprehensive Air Management System, presentation at Coordination Workshop, September 2010	<ul style="list-style-type: none"> <li>▪ Federal government's plan for an air management system comprising Canadian Ambient Air Quality Standards (CAAQS), Air Zone Management/Regional Airsheds, and Base-level Industrial Emissions Requirements (BLIERs)</li> </ul>
6. Air Quality Issues and the ERCB, presentation at Coordination Workshop, September 2010	<ul style="list-style-type: none"> <li>▪ summary of ERCB involvement in air quality since four of 48 common objections to energy developments relate to dust, emissions, flaring and odour</li> </ul>
7. Regulatory Enhancement Project, Technical Report, December 2010	<ul style="list-style-type: none"> <li>▪ overview of the project and recommendations for an enhanced policy development and policy assurance system for the oil and gas industry in Alberta by consolidating activities</li> </ul>
8. Alberta's Draft Clean Air Strategy, presentation to the CASA Board, March 10, 2011	<ul style="list-style-type: none"> <li>▪ status of GoA's development of a new Clean Air Strategy under four general categories: (1) planning and management of non-point sources, (2) shared responsibility and partnerships, (3) integrated monitoring, evaluation, and reporting, and (4) knowledge enhancement</li> </ul>
9. Summary of AENV project: Review of value and funding options for Airshed Zones and Watershed Planning and Advisory Councils	<ul style="list-style-type: none"> <li>▪ description of a project to capture the value from WPACs and AZs, clarify potential future management roles with the cumulative effects management system, and develop sustainable funding options to support work</li> </ul>
10. Terms of Reference, Provincial Environmental Monitoring Panel for Monitoring, Evaluation and Reporting for the Lower Athabasca River	<ul style="list-style-type: none"> <li>▪ purpose and scope of a panel to provide recommendations on the development of a provincial scale world class environmental monitoring evaluation and reporting system focused on the Athabasca River but with secondary attention to air, land, biodiversity and the province as a whole</li> </ul>

**Table 4: Information Pertaining to the CASA Board and Secretariat**

Source	Content
1. The Comprehensive Air Quality Management System: CASA's Decision Making Process 2007	<ul style="list-style-type: none"> <li>description of the stages and steps in the overall CASA system for managing air issues through strategic air quality planning</li> </ul>
2. CASA Procedural Guidelines, June 2009	<ul style="list-style-type: none"> <li>description of the roles and responsibilities of different entities and the organization's operating practices</li> </ul>
3. Secretariat Vision and Mission	<ul style="list-style-type: none"> <li>internal vision, mission and values of the staff in the secretariat</li> </ul>
4. 2011 Operational Plan	<ul style="list-style-type: none"> <li>details of tasks, milestones and staff responsibilities</li> </ul>
5. Staff Brainstorming	<ul style="list-style-type: none"> <li>Secretariat staff ideas about what CASA could be doing in the future</li> </ul>
6. Applying Consensus Decision Making to Air Quality Issues: the Case of the Clean Air Strategic Alliance, presented at the International Union of Air Pollution Prevention and Environmental Protection Association's (IUAPPA) World Clean Air Congress, Vancouver, September 2010	<ul style="list-style-type: none"> <li>analysis of the relative success of projects from 1997 to 2005 and discussion of the factors contributing to the various levels of success</li> </ul>
7. Enhancing Collaboration Between CASA and the Alberta Water Council, November 6, 2009	<ul style="list-style-type: none"> <li>identification of the commonalities and ways in which the two similar organizations can work together</li> </ul>
8. Operations Steering Committee Interviews	<ul style="list-style-type: none"> <li>underscoring of the importance of CASA involvement in data management</li> </ul>

**Table 5: Other Information Pertaining to CASA**

Source	Content
1. The Clean Air Strategy for Alberta Report to Ministers, 1991	<ul style="list-style-type: none"> <li>foundations of CASA and the Comprehensive Air Management System</li> </ul>
2. CASA Environmental Scan Report, February 2011	<ul style="list-style-type: none"> <li>trends in social, technological, economic, environmental and political factors with potential relevance to CASA</li> </ul>
3. Recommendations for a Clean Air Strategy, June 2009	<ul style="list-style-type: none"> <li>ideas for a new clean air strategy with four major themes: governance, regional planning, pollution prevention and control, knowledge and information</li> </ul>
4. 2009 Ambient Air Monitoring Strategy for Alberta	<ul style="list-style-type: none"> <li>framework for a complete ambient air monitoring system including management, design, funding, data and information management, and an implementation plan</li> </ul>
5. Report of the Data Issues Group, March 2003	<ul style="list-style-type: none"> <li>actions required to ensure adequate data for decision-making; data requirements included source emissions, ambient concentrations, ecosystem and human health effects</li> </ul>
6. Stakeholder Satisfaction Survey, 2010 Comments	<ul style="list-style-type: none"> <li>issues and concerns with CASA operations and suggestions as to possible future activities</li> </ul>
7. Alberta Airsheds Council and CASA: Roles and Responsibilities, March 24, 2010	<ul style="list-style-type: none"> <li>opportunities to strengthen the relationship between CASA and airsheds</li> </ul>

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Source	Content
8. Enhancing Consensus Decision Making: A Report to the CASA Board from the Martha Kostuch Legacy Workshop; March 2010	▪ recommendations for continuous improvement in consensus decision making
9. Particulate Matter and Ozone Management Framework: Lessons Learned; February 28, 2011	▪ captures the experience of a multi-stakeholder team on the implementation of the Particulate Matter and Ozone Management Framework

## 4. Assessment of Current Business Areas

Strategic direction for CASA has been reflected in the business plans that have guided CASA activities in the past. This section provides (a) commentary on how CASA's operational objectives and activities, as defined in business plans, have contributed to Alberta's air quality management system, and (b) general observations on performance in relation to CASA business areas.

### 4.1 Contributions to the Alberta Air Quality Management System

Air quality management systems around the world, irrespective of detail, contain the same five functional elements, shown below.



CASA has contributed in varying degrees to each of these elements.

**Policies & Programs:** CASA's main business has been the development of strategies (e.g., Ambient Air Monitoring Strategy, Zone Air Quality Management Guidelines, Recommendations for a Clean Air Strategy), management frameworks (e.g., Flaring and Venting, Acid Deposition, PM and Ozone, Electricity, Pollution Prevention and Continuous Improvement), and the piloting of various programs (e.g., Herd Environmental Record System, Vehicle Retirement, ROVER Vehicle emissions survey, diesel particulate filters).

**Regulations and Controls:** CASA has assisted the GoA by convening stakeholders to recommend source standards (e.g., Electricity Framework), set priorities for the establishment of ambient air quality objectives, and develop data handling procedures.

**Assessment and Evaluation:** For many years CASA has reported on a set of performance measures that relate to Board expectations:

1. Measures of air quality:
  - a. improved air quality indicators in areas of CASA action,
  - b. change in emissions of substances of concern in areas of CASA action, and
  - c. energy use as an indirect measure of air quality in areas of CASA action;
2. Capability to measure air quality effects on humans and the ecosystem;
3. Number of recommendations implemented through Comprehensive Air Quality Management System;

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4. CASA member, partner and client satisfaction with the CASA approach; and
5. Degree of recognition by emitters and general public of CASA as a major vehicle for delivering improved air quality management in Alberta.

**Communication and Education:** CASA maintains a website about its activities, publishes booklets on subjects of interest, circulates a regular newsletter (the Clean Air Bulletin), issues media releases and holds regular coordination workshops.

**Information and Research:** Each CASA project team has commissioned studies to collect the information needed to inform its deliberations. CASA has also managed a Data Warehouse where ambient monitoring data is stored and made available to the public in an accessible and transparent manner. Periodically CASA has hosted a science symposium to address specific topics of interest to stakeholders (e.g., acidifying emissions, air quality, human and animal health and exposure effects).

### 4.2 Observations on Structure and Content of Business Plans

Table 8 in Appendix A, 'Comparison of CASA Business Plans', provides a tabular summary of key aspects of business plans between 1993 and 2010. With reference to Table 8, the following general observations can be made.

1. Business plans have not been consistent in structure or in terminology. This makes it somewhat difficult to track the changes in the business of the Alliance and suggests a need to standardize on a business plan model.
2. CASA's Vision and Mission have changed slightly between 1993 and the present. In 2007, the Vision statement was adjusted from "*The air will be odourless, tasteless and look clear,*" to "*The air will have no adverse odour, taste or visual impact.*"  
  
In 2005, the Mission was simplified: *To recommend strategies to assess and improve air quality in Alberta using a consensus process,* and the first part of the original mission statement became the 'CASA Identity': *The Clean Air Strategic Alliance is a multi-stakeholder partnership, composed of representatives selected by industry, government and non-government organizations.* Some additional changes may be required to align with future business.
3. Business plans have contained recurring themes about core business areas that have been framed in different ways – generally referring to planning, coordinating, evaluating results, and building public awareness and stakeholder understanding.
4. Four expectations continue to be reflected in the performance measures: *improved air quality, trust and credibility, effective organizational operations, recognized and influential organization.* These may need to be revisited if there is a change to organizational direction.
5. CASA operated on the basis of a three-year business plan from 2003 to 2010.

### 4.3 Commentary on Existing Core Business Areas

The current 2010 Business Plan identifies four ‘strategic focus areas’ that form the core business of CASA – also reflected as the four ‘goals’ in the business plan.

<b>Goal 1.</b> Strategic Development	<b>Goal 3.</b> Pollution Prevention and Continuous Improvement
<b>Goal 2.</b> Air Quality Management	<b>Goal 4.</b> Knowledge and Information

An elaboration and commentary on these goals follows.

**Goal 1 - Strategic Development:** To provide strategic advice on emerging air quality issues and the impacts of major policy initiatives on air quality.

In the current business plan, CASA intends to:

1. Conduct a strategic environmental scan to determine and prioritize emerging air quality issues and identify sectors and stakeholders associated with these issues; and
2. Establish a process to evaluate and prioritize the impacts of major policy initiatives on air quality and the determinants of air quality, and identify potential inconsistencies among various policies and frameworks.

**Observations:**

Both the E-Scan and Strategic Foresight Project have been completed. Updates on GoA initiatives have been received but no project has been started to review policy initiatives. In the past, project teams did such evaluations in the context of an issue under discussion.

CASA has a well-established project team process with credibility in the eyes of policy makers and stakeholders. It has a track record of ground-breaking, award -winning projects, and has produced significant outcomes with durable products that have about an 80% implementation rate. However, the sophisticated issue management process has been criticized for being slow and lacking ‘nimbleness’.

Some air quality issues that could be addressed in the future include: ultrafine particulate, oil sands, link between air quality and human health, VOC, odour, urban air quality, vehicle idling, wood stoves, heavy metals, PAH, housing, asbestos, mercury, toxics, visibility, energy efficiency, renewable energy, and transportation demand management.

Objectives have not been identified under this goal, but can be inferred as:

- ◆ Emerging air issues - To determine and prioritize emerging air quality issues on a minimum three year cycle;
- ◆ Policy analysis - To establish a process to evaluate impacts of major policy initiatives on air quality and the determinants of air quality; and



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- ♦ Consistency analysis - To identify potential inconsistencies among various policies and frameworks (national, provincial and regional) as these relate to air quality management in Alberta.

**Goal 2 - Air Quality Management:** To provide for the continued development and implementation of effective and efficient air quality management in Alberta.

In the current business plan, CASA intends to:

1. Explore its role in supporting airsheds;
2. Explore its role in regional planning, e.g., under the Alberta Land Use Framework;
3. Develop a framework to guide air quality management planning; and
4. Review and assess components of the air quality management system and the resources required to support the system.

**Observations:** The Joint Standing Committee is exploring CASA's role in supporting airsheds. The Executive Director is also in the process of meeting with representatives of each airshed. GoA has provided information to CASA about regional planning under the Land Use Framework, but has not suggested any role for CASA or for airsheds. CASA has not yet taken action on developing an air planning framework, although this might have been helpful to the Regional Advisory Councils developing regional plans under the Land Use Planning Framework.

The GoA's new Clean Air Strategy is still under development, so potential roles for CASA are unknown at this time. No action has yet been initiated on reviewing the components of the air quality management system (assumed to be the CASA Comprehensive Air Management System rather than the GoA air management system).

Objectives have not been identified under this goal, but can be inferred as:

- ♦ Airshed Support - To work with the Alberta Airsheds Council and Airshed Zones to clarify boundaries, deliverables, people, systems, and planning;
- ♦ Place-Based Planning - To support place-based planning and cumulative effects management (if GoA is prepared to grant a role);
- ♦ Air Management Planning Framework - To develop a framework to guide air quality management planning, including where appropriate; (a) a description of how to determine 'green', 'yellow', and 'red' trigger levels similar to the PM and Ozone Management Framework, (b) which air pollutants require trigger levels, and (c) ensuring that needed and timely actions are identified; and
- ♦ CAMS - To operate and efficient an effective Comprehensive Air Management System, assessing the components to identify potential refinements and the resources required for support, and revising previously developed sector-specific or emission-specific air management frameworks on the prescribed schedule (e.g., acid deposition, electricity, and particulate matter and ozone).

**Goal 3 - Pollution Prevention and Continuous Improvement:** To promote pollution prevention and continuous improvement principles in all air quality management decision-making at CASA.

In the current business plan, CASA intends to:

1. Encourage project teams to consider pollution prevention as the strategy of choice; and
2. Review issues requiring pollution prevention measures and identify the most beneficial opportunities for reducing emissions from point and non-point sources.

**Observations:** The main action aimed at the first task is to include pollution prevention and continuous improvement in a CASA project management guide. Specific work has not yet been undertaken for the second task, however these concepts have been embedded at the project level. Because pollution prevention and continuous improvement seem to be an approach that underlies everything that CASA does, it seems more appropriate to include them as a component of Operating Principles, rather than as a stand-alone business area.

**Goal 4 - Knowledge and Information:** To contribute to the development of a reliable, comprehensive, objective base of knowledge and information on emissions, ambient air quality, health and environmental impacts, and potential management and mitigation mechanisms.

In the current business plan, CASA intends to:

1. Increase awareness of CASA's mandate and activities through targeted outreach to all sectors;
2. Assemble and share cross-jurisdiction information on air monitoring, mitigation measures and best management practices; and
3. Facilitate economic and other analysis on policy measures and the associated costs of action and inaction.

**Observations:** The CASA Executive Committee has made presentations to GoA ministries and agencies. CASA hosted a Coordination Workshop in September 2010, developed several new publications, continued to distribute the Clean Air Bulletin, and participated in an information fair on Clean Air Day. There has been internal discussion about creating an information repository, and information sharing occurred at the Coordination Workshop in September 2010. Although the CASA Data Warehouse (in place since 1997) is not explicitly mentioned in the business plan, it continues to operate and was recently expanded to be able to accept industry compliance monitoring data. Economic analysis is generally done by project teams, so the only action has been to identify appropriate research groups.

This goal combines two very different types of activities – compiling technical information for problem solving, and communicating about CASA. Two very different skill sets and actions are needed. A much clearer representation of business functions would be achieved by separating the two as was done in previous business plans, making communications and outreach as a core business on its own.

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Objectives have not been identified under this goal, but can be inferred as:

- ♦ Air Management Information - To provide knowledge and information required for air management, including work on the CASA Data Warehouse and on archiving the information gathered by project teams, neither of which is mentioned in the business plan;
- ♦ Jurisdictional Information - To assemble and share cross-jurisdictional information on air monitoring, mitigation measures and best management practices;
- ♦ Accountability - To promote accountability within the air quality management system, achieved primarily through performance measures; and
- ♦ Awareness - To increase awareness of CASA's mandate and activities through targeted outreach to all sectors.

### 4.4 Current Capacity of CASA Secretariat

A critical factor in the achievement of the objectives laid out in business plans, but not addressed in relation to performance assessments, is the capacity of the Secretariat to perform its functions and assignments. An overview of current capacity is included here as a point of reference should CASA's strategic direction or workload vary from current conditions. The current CASA Secretariat staff complement consists of nine positions:

- ♦ One Executive Director;
- ♦ One Administrative Coordinator;
- ♦ One Administrative Assistant;
- ♦ One Financial Administrator;
- ♦ One Communications Advisor; and
- ♦ Four Project Managers.

Contractors are hired to take minutes at Board meetings, and for IT services, webhosting, design, printing and other as-needed services. A part-time science advisor was part of the Secretariat for a number of years in the past, but this position does not currently exist.

An estimate of the general distribution of work in the Secretariat, based on a three-year average (2008-2010), is shown below. There is some overlap between categories and in particular between administrative functions and Board support.

Secretariat Activity Area	Time Spent
Project management and team support	41 %
Communications and outreach	12 %
Preparation for Board meetings and support for Board members	14 %
Finance and administration	33 %

*Any changes to strategic direction from the current workload may require a rationalization of the operating model and resources within the Secretariat.*

## 5. Summary of Key Challenges

An evolving set of challenges, unique to the times, points to the need for review and renewal of the roles that CASA can play in such areas as:

- ◆ Air quality policy development;
- ◆ Initiation and management of a variety of air quality or other projects;
- ◆ Management of consultative processes and collaborative problem-solving for client groups;
- ◆ Design and management of engagement requirements for public sector projects; and
- ◆ Implementation and monitoring of air quality initiatives.

Identifying and clarifying these challenges has been a focal point for strategic planning, drawing on:

- ◆ Experience of the Secretariat staff;
- ◆ Insights from the Strategic Foresight Committee and E-Scan (externalities are captured here);
- ◆ Reflections by CASA members about CASA's functioning and future role;
- ◆ Comments and ideas from an array of sources, filtered for applicability to CASA; and
- ◆ Context given evolving policies and programs of the GoA and growing public interest in clean air.

*The challenges described below are a roll-up of issues and concerns, intended as a catalyst for Board discussions, and are not mutually exclusive (refer also to Section 6.4).*

### 5.1 Mature Organization

CASA has matured into an organization with well-developed operating policies and procedures, and a proven track record of successes in delivering projects identified for action by the Board. This body of substantive project results has grown along with the organization. As projects have been completed, there has been comparatively less time spent on new projects, and more time spent on maintenance work for completed projects (i.e., recurring tasks, project implementation tasks).

This transition to work associated with implementation, maintenance and review, coupled with increasingly complex issues, presents challenges in relation to the applicability of CAMS procedures. The CAMS is oriented to scoping and managing new projects, and was not specifically designed to accommodate the type of work that CASA is now encountering.

### 5.2 Complexity of Air Quality Related Issues

Projects to date have tended to address issues that were relatively well-defined, where affected interests were willing to engage or where options for resolution were readily apparent (sometimes referred to as 'low hanging fruit'). The issues of air quality now facing Albertans,

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and within CASA's purview, are generally more complex and therefore more difficult to resolve, often with implications across jurisdictions.

This is not to suggest that past air quality issues have not been complex, they have, both from a technical perspective and in terms of the need for collaborative processes to resolve them. Today's challenge with complexity, however, extends beyond the inherent difficulty of unresolved air quality issues to externalities that impact the 'fit' of the CASA model with current planning and decision-making, including:

- ◆ A greater number of government agencies involved in a new suite of projects encompassing federal, provincial and municipal levels;
- ◆ Lack of clear divisions of responsibilities for issues and responses among air-related organizations;
- ◆ New non-government players, some with national and international reach;
- ◆ Evolving government policy and programming for land and resource use decision-making; and
- ◆ Increasing public pressures for protection of the environment generally, and air quality specifically.

### 5.3 Commitment to the CASA Model

The GoA is a key player in the projects and processes undertaken by CASA. It is the GoA that sets provincial policy and regulation for air quality, establishes the tests for authorization of projects with air quality impacts, and is largely responsible for implementing the results of CASA-led projects. Notwithstanding the importance of the Alliance, its effectiveness is linked directly to its ability to contribute to the GoA's air quality management responsibilities.

Fundamental changes to GoA processes for land and resource decision-making have dominated agency workloads in recent months, particularly with the development of Alberta's Land Use Framework (LUF) and its Cumulative Effects Management System (CEMS). The introduction of these new policies and programs has raised questions about how CASA can best make contributions in the future.

The observation has been made by a number of CASA stakeholders that the commitment of the GoA to CASA seems to be waning, measured in relation to:

- ◆ An apparent preoccupation with new program requirements;
- ◆ A perception of less focus on requirements for engagement in decision-making generally; and
- ◆ Pace and nature of implementation of project results.

Loss of government focus on CASA (either real or perceived) is felt by other stakeholders, and raises questions about government commitment to CASA in the future. If government commitment wanes, this will translate into less interest on the part of stakeholders to continue participating. Non-government participants want to know on what basis they are being asked to engage with government, so as to best judge where their limited resources should be targeted.

#### 5.4 Clarity for CASA's Future Role

The convergence of several factors has had an impact on how well the role of CASA is understood with respect to future processes for engagement, constructive dialogue and collaborative decision-making.

- ◆ It is not yet clear how CASA fits into the GoA's recent policy and organizational changes for management of land, resources and environment. New public policy initiatives will continue to require public involvement and/or collaborative effort among agencies, public interest groups, industries, aboriginal organizations, communities and citizens. To make progress on priority files, government and stakeholders will have a continued need to manage engagement requirements. This means investment in some form, either through CASA or in some like mechanism, yet to be identified.
- ◆ There are new players with an interest in air quality policy and projects who are not connected with CASA, or not aware of CASA's role and its consensus-based approach. This includes those who represent new entrants to Alberta's air quality discussions from outside the province or Canada, both government and non-government.
- ◆ There is a certain degree of loss of memory in the system about CASA's role, and about past successes that CASA has enjoyed in addressing air quality issues. A contributing factor is the introduction of new people to CASA.

Lack of understanding about the service CASA provides, fuels questions about its future relevance.

#### 5.5 Responsiveness of Operating Procedures

CASA's management system adheres to tested principles for successful consensus-based process. Over a matter of years, administrative procedures have been developed to support the ability of the Board and project teams to deliver using the consensus model. While the administrative procedures work for the purposes for which they were originally designed, they have taken on a certain structured approach that may not be an easy fit with some of today's administrative requirements of government agencies.

For government, many projects need to be started and often completed within a fiscal year, and while there is momentum (or priority) around a topic. The structured process to start an initiative through CASA is long and resource intensive, and may as a result be considered ineffective in terms of an agency's operational constraints. The statement of opportunity, terms of reference development and set procedures for reaching consensus are often too lengthy and cumbersome to be responsive to priority pressures and budgetary timeframes. This has led to suggestions for administrative procedures to be streamlined or redefined to accommodate a more pressing set of circumstances.

Some reluctance to engage CASA is also emerging because of the perception of limitations of the CASA model in circumstances where accountability for the decisions taken weigh heavily on decision-makers. An example might be where a regulator needs to respond to an issue by making an independent statutory decision to create a standard by regulation. Experience with the mechanics of the CASA consensus process, however successful over the longer term, has

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had an unintended outcome of creating the perception that CASA-managed projects may not be practical for certain types of work.

This suggests a need for review of the application of interest-based negotiations for reaching agreements, and a better understanding of the utility of the CASA toolkit for use beyond previous applications. Opportunities lie in tailoring the application of the toolkit to better respond to a wider spectrum of circumstances, with varying requirements for levels of engagement, resources and timing.

A related set of factors are concerned with Secretariat roles and responsibilities, including: available skill sets, technical capacity, use of secondments, opportunities for staff growth and development, in-house contributions to projects, staff projects and sustainable office practices. These factors get addressed later in development of a strategic plan, in response to amendments to CASA's strategic direction.

## 6. Emerging Themes for CASA Renewal

This section presents an array of air-related themes and opportunities for advancement or improvement in relation to a future role for CASA.

### 6.1 Future Contributions to the Alberta AQMS

While the GoA is shifting to a place-based, integrated air-land-water-biodiversity approach, it still sees a need for a provincial clean air strategy, similar to other provincial strategies that provide context for the development of regional plans (such as, Water for Life, Biodiversity, Climate Change, Energy, Oil Sands). In 2009, CASA provided recommendations for such a strategy.<sup>5</sup> Alberta Environment has signalled that the GoA's new Clean Air Strategy will likely contain four general directions:

1. Management of Non-Point Sources and Airshed Planning;
2. Shared Responsibility and Partnerships;
3. Integrated Monitoring, Evaluation and Reporting; and
4. Knowledge Enhancement.

To deliver in these four areas, the AAQMS of the future will need to enhance existing activities and undertake some new ones. CASA could make a contribution to many of these, especially in relation to:

- ◆ Building capacity for engagement of stakeholders;
- ◆ Applying an expanded toolkit for different types of consultation and engagement;
- ◆ Establishing a way of getting air quality objectives into land use plans;
- ◆ Developing a method for determining the achievement of air quality objectives;
- ◆ Implementing various air quality projects;
- ◆ Coordinating and networking among air quality organizations and agencies;
- ◆ Maintaining a workable repository for air quality information;
- ◆ Providing public air quality information;
- ◆ Raising awareness and educating the general public;
- ◆ Conducting targeted pieces of air quality research; and
- ◆ Supporting airsheds and other related groups sanctioned by government.

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<sup>5</sup> *Recommendations for a Clean Air Strategy - A report to the CASA Board from the Clean Air Strategy Project Team*; Clean Air Strategic Alliance; June 2009; ISBN 978-1-896250-62-5.



## 6.2 Scanning for Themes and Opportunities

An initial scan of available advice and brainstorming work by the Secretariat generated a first set of ideas about the nature and scope of potential future opportunities that might be available to CASA. These ideas were collated and grouped, and a number of themes identified.

- A. Creating Partnerships
  - ◆ A body of CASA associates
  - ◆ Networks with other organizations
- B. Building Consensus Practitioners
  - ◆ Regular orientation and training for stakeholder participants
  - ◆ CASA as a 'hub' for consensus practitioners
- C. Broad Policy Advice
  - ◆ Involvement in all air policy discussions
  - ◆ Address air issues still of concern (e.g., ultrafine particulate, VOC, odour)
- D. Information and Knowledge Management
  - ◆ Coordinate monitoring data collection and storage
  - ◆ Interpret and report air quality data
  - ◆ Manage air quality knowledge
- E. Communications and Outreach
  - ◆ Hold regular air quality conferences
  - ◆ Maintain a first class website
  - ◆ Develop education programs for members and communities
- F. Regional Planning
  - ◆ Support place-based planning and cumulative effects management
  - ◆ Support and oversee airsheds
- G. Facilitating Dialogue
  - ◆ Adopt and apply a broader range of collaborative tools
  - ◆ Assist GoA and others with various types of public engagement processes
- H. Delivering Selected Programs
  - ◆ Facilitate the development of ambient objectives and source emission standards
  - ◆ Cooperate in the production and maintenance of emission inventories
  - ◆ Identify research needs and establish research priorities
- I. Secretariat Operations
  - ◆ Additional skill sets
  - ◆ Growth and challenge for project managers

These ideas were then combined with those provided by the Caucus Performance Evaluations, GoA program plans, Foresight interviews, E-scan work, individual communications, and comments on the stakeholder satisfaction survey, to produce a set of 'other possible business areas' (Section 6.3) and a set of 'business improvements' (Section 6.4).

### 6.3 Other Possible Business Areas

Analysis of inputs suggests six types of ‘other possible business areas’ that CASA could consider, all of which coincidentally may be said to be extensions of CASA’s existing business areas, as defined in the 2010 Business Plan.

1. **Policy Research and Analysis.** CASA could establish some means of multidisciplinary inquiry to create, critically assess, and communicate information that is useful in understanding and improving public policy relevant to air quality. Groups of stakeholders working with Secretariat staff would propose and evaluate various alternative public policies directed at the determinants of air quality. CASA would become proactive and put policy choices on the table. Staff would conduct and commission various types of analysis, research reports, white papers and discussion documents under the guidance of stakeholder steering groups.
2. **Facilitating Dialogue.** CASA could provide a forum for the discussion of a wide range of air quality related topics (both policy and operational) across an array of stakeholder groups. All methods of stakeholder collaboration (not only consensus outcomes as per CAMS) would be applied as part of CASA’s toolkit. For example, Alberta Environment has found CASA’s support valuable in addressing data handling procedures and in setting priorities for ambient air quality objectives.

There is a need for efficient and effective public dialogue around a variety of matters related to air quality and there is currently no standing mechanism for doing so. For example, the new GoA CEMS envisions broad collaborations with many parties. To support these types of client requirements, CASA would need to streamline its internal processes so that action could be initiated and completed quickly.

3. **Regional Planning.** CASA could provide support for place-based planning and cumulative effects management. CASA processes would be applied to components of Regional Land Use Plans under the Land Use Framework. Experience gained in one region would be made available to other regions. Greater consistency could be achieved and adverse consequences for neighbouring regions minimized. CASA and stakeholders would need to interact strongly with the GoA to define an appropriate role.
4. **Program Delivery.** CASA could assist the GoA by assuming responsibility for some specific components of the AAQMS. CASA could have either a statutory role (e.g., as a Delegated Administrative Organization), or a standing agreement to perform functions such as: managing the process for the development of ambient objectives and source emission standards; managing the funds for the Alberta Ambient Air Monitoring System; or coordinating a public education program. CASA’s extensive network of contacts in the air quality world would make for an easy transition to operational responsibilities. CASA is currently not responsible for any aspect of implementation other than coordination, because its role has been strategic rather than tactical.
5. **Knowledge Management.** CASA could embark on a systematic process for creating, capturing, sharing and leveraging the knowledge needed for successful air quality management, using the tools and techniques of the ‘knowledge management’ field. As a centre for air quality knowledge management, CASA could undertake activities such as:

organizing air quality training; operating a library or clearinghouse for air quality information; maintaining access to expertise; or preserving the air quality history of Alberta.

The CASA Data Warehouse has been very successful and is the envy of many other jurisdictions. Cumulative environmental effects management will also require a comprehensive database, pointing to the opportunity for CASA to undertake a knowledge management role with respect to Alberta Environment's new Integrated Monitoring, Evaluation and Reporting Framework (IMERF) initiative.

6. **Communications and Outreach.** CASA could make a major effort to provide information to the public, air quality practitioners, and decision-makers about air quality and collaborative processes. CASA has always undertaken a variety of communications activities, but could do more to facilitate the exchange of air quality information among practitioners and decision-makers, and to educate the public. A better-informed populace will make better decisions both individually and collectively. CASA has considerable experience in media relations, public communications, organizing conferences and maintaining contacts, but additional expertise would be needed for science-based products, adult education and training, and the development of new products and delivery mechanisms.
7. **Networking.** CASA could establish partnerships and working relationships in two areas: (1) with air quality specialists in Alberta, across Canada, and around the world, and (2) with consensus practitioners globally. Such technical content and engagement process networks would extend CASA's reach to many other organizations, academia and jurisdictions. CASA could also establish itself as a collaboration centre of excellence, a 'hub' that would work to develop consensus skills and facilitate issue resolution in other environmental areas, and potentially other jurisdictions. CASA would gain broader recognition for the good work being done and could harvest the best ideas from elsewhere.

### 6.4 Improvements to 'How Business is Done'

Analysis of inputs also points to a number of concerns about the future applicability of CASA business practices to its changing operating environment – that is, 'how business is done', rather than a focus on 'what business'. The inputs suggest nine areas where there is potential for improvements in the way CASA conducts its current business. These areas are not mutually exclusive.

1. **Slowness of Process.** There are at least three causes of slowness: (1) the inherent complexity of an issue, in which case faster is likely not possible, (2) lack of skill and experience of the participants, for which training may provide a solution, and (3) the relatively cumbersome process required to initiate a project. This process element requires: (a) statement of opportunity approved by Board, (b) working group for terms of reference approved by the Board, (c) project team formation to begin work, (d) interim progress reports to the Board, and (e) final project team report approved by the Board. These many steps requiring several check-ins with the Board (which meets quarterly) takes way too long for many GoA projects that might otherwise come to CASA. A more streamlined administrative process might allow for a project to be completed within a single GoA fiscal year.

2. **Weak Commitment to Deliver.** Some recommendations are not being implemented as expected by CASA participants. This may be due to a lack of clarity, misinterpretation, change in staff, or loss of interest by implementers. A better means of ensuring implementation is needed, including long-term monitoring of past frameworks for purposes of updating where necessary to ensure they remain relevant.
3. **Representation.** A number of interests have been identified as being underrepresented in CASA activities: academics, youth, First Nations, health, local governments, and economics. The extent and availability of CASA support for some of these stakeholders may be a factor that is limiting participation.
4. **Broader Suite of Tools.** There are alternatives to consensus-based processes that require unanimous agreement, and CASA may be missing many opportunities to make a contribution to air quality management by adhering to a single mode of collaboration. CASA's consensus model may also lead to weak results where timeframes are protracted or issues unresolved. CASA could be more effective as an organization by bringing stakeholders together for GoA or Alberta Environment consultation, as has been done on the development of data handling procedures for ambient air quality data.
5. **Awareness.** Alberta Government departments are generally not aware of the CASA consensus model and process. The original importance and significance of CASA consensus recommendations is not well understood – considered not as decisions, but rather as points for consideration. Although CASA's performance has had an accrued benefit to Alberta, those outside the province and in the international community are generally not aware of the existence, operation or successes of CASA.
6. **Attendance.** There are three aspects related to attendance: (1) the rank and appropriateness of participants who must be empowered to conclude agreements, or have effective access to decision-makers in their sector; (2) consistency and stability of participation – last-minute, surprise changes in representatives slow the process because there is no carry-over of experience from meeting to meeting; and (3) intra-sector communication – others in the sector must be kept in the loop on what is transpiring in project teams.
7. **Training of Participants.** New stakeholder representatives are often not familiar with the consensus approach. They need to be oriented to their role and the expectations of project team members. Basic training for participants interest-based negotiations should be made available to improve both the effectiveness of the process and the quality of the end-result. A mentorship program for new/novice members in CASA could also expedite cultural understanding and promote essential behaviours.
8. **Board/Project Relationship.** There needs to be a strong connection between the project team member, the sector, the caucus and the counterpart on the Board. Outcomes should not be dependent on individual project team members. The Board needs to be engaged earlier when breakdowns are anticipated.
9. **Project Management.** The role as relationship/information broker seems to have disappeared from CASA's project managers. This role needs to be re-introduced. CASA is also hampered somewhat by the lack of scientific expertise and credibility. The Secretariat

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could do more on the screen and scope of issues to determine whether an issue is best handled by a project team, the Board, or in some other manner, and could provide recommendations on process. CASA should be cautious about attempting to address an issue where the need for change from the status quo is not clear.

## PART 2: SETTING STRATEGIC DIRECTION

PART 2 presents the key determinants from which the Board can fashion a *renewed strategic direction* for CASA.

PART 2 applies the Background Information from Part 1, and invites the Board to consider:

- Section 7.0 Adopting a standard strategic planning framework for CASA;
- Section 8.0 Selecting Goals and Objectives with a five to ten year horizon in mind; and
- Section 9.0 Determining implications of new goals and objectives to CASA's mission, and to how the Board and Secretariat function.

### 7. A Strategic Planning Framework

Analysis of CASA's business plans for preceding years reveals a range of labels that have been used to describe strategic direction, including goals, objectives, core business functions, key focus areas, strategies, principles, and values. This inconsistency in the definition and use of terms is at best confusing, making it difficult to follow the evolution of organizational response to changing conditions, or to track the consequences of decisions over time.

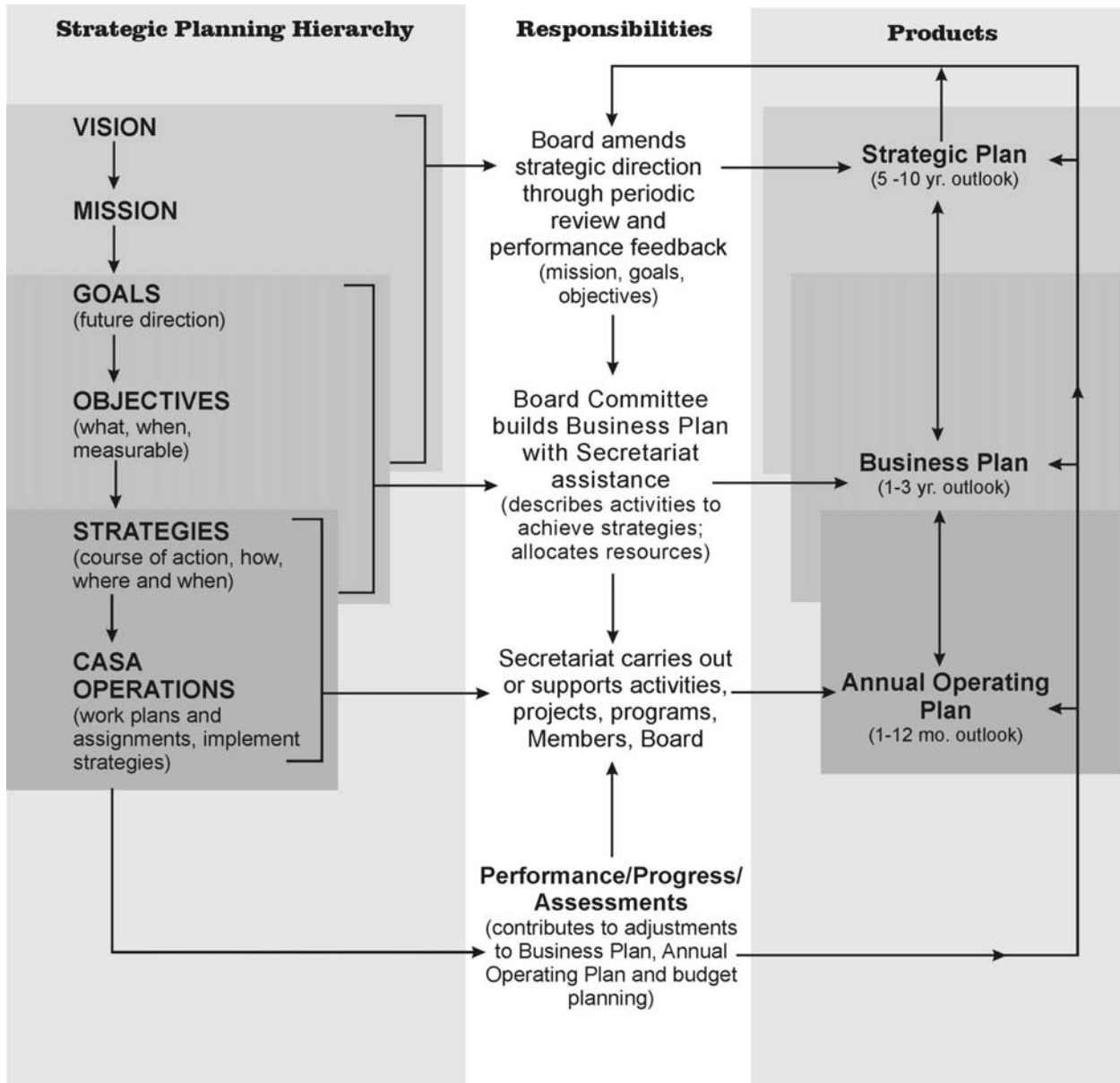
To address this problem and to simplify the strategic planning task, the Board should adopt a strategic planning framework that can be carried forward from one planning cycle to the next, and that better reflects standard planning practice. The following approach is proposed.

**Table 6: Proposed Strategic Planning Hierarchy**

<b>Vision</b> (as written or adjusted)	A broad philosophical description of the desired long-term state or condition of air quality in Alberta, developed by CASA members to help forge a unifying direction and context for the work of the Alliance. A vision statement reflects the organization's philosophy and core values.
<b>Mission</b> (as written or adjusted)	A brief statement identifying the basic business of the Alliance, and the distinctive products or services that differentiate the organization from others. A mission statement addresses <i>what function</i> CASA performs, <i>for whom</i> and <i>how</i> .
<b>Goals</b> (as in 2010 Business Plan)	Generally worded statements that indicate a direction that an organization plans to take.
<b>Objectives</b> (under each Goal, called 'strategies' in the 2010 business plan)	Statements of desired or intermediate targets which are consistent with overarching goals. Objectives are measurable, either directly or indirectly, as a basis for evaluating whether or not a plan or program is achieving its intended outcomes. Objectives usually specify values and what is to be accomplished in a time frame.
<b>Strategies</b> (for each Objective, called 'actions' in the 2010 business plan)	A course of action selected from among alternatives as a means of achieving a goal or objective (or interest). The definition of a strategy is broad. Strategies may be general or specific in nature, and may describe a pattern, management standard, guideline, action, procedure or policy. Strategies express how, where and when to commit resources to achieve objectives.

Figure 4 shows the strategic planning hierarchy in relation to CASA's overall planning and performance management framework.

**Figure 4: Strategic Planning and Performance Management for CASA**



## 8. Setting Goals and Objectives

This section proposes that the Board make determinations about key components of a new strategic plan that include:

- ♦ A renewed set of Operating Principles;
- ♦ Strategic Goals for CASA, fashioned after those in the 2010 Business Plan; and
- ♦ One or more Objectives for each of the Goals, selected from the existing business plan objectives and from an array of other possible business areas.

*The fundamental question in consideration of Goals and Objectives is to ask, “How can CASA best contribute to the management of air quality in Alberta in the future?”*

### 8.1 Confirming Operating Principles

**Operating Principle:** *A high-level, generally worded statement of philosophy to guide how the Board, Secretariat and participants will conduct the work of administration, projects, programs and activities of the Alliance.*

CASA has previously developed statements of principle, referring to them most recently in the 2010 Business Plan as ‘cultural priorities that guide activities’. From a strategic planning perspective, these priorities seem better characterized as *operating principles*. Figure 5 recommends a set of Operating Principles, reflecting CASA’s current principles, with minor amendments. None of the current statements of principle have been lost.

In the 2010 Business Plan, Goal 3 “Pollution Prevention and Continuous Improvement,” is aimed at ensuring that “pollution prevention and continuous improvement principles are promoted in all air quality management decision-making at CASA.” While labeled as a goal, this statement seems more consistent with the definition of an Operating Principle.

In addition, the 2003 Business Plan, the 2010 Business Plan and the published booklet about CAMS, refer to three high-level air quality management goals that were adopted by the Board from the 1997 Sulphur Dioxide Management project team. These broad philosophical statements, which again refer to ‘continuous improvement’, are also more consistent with the definition of an operating principle. The original intent that “these goals are not to be taken as individual and discrete components but rather are to be considered collectively with balance between elements” seems more consistent with an operating principle than a goal. Based on this assessment, a new proposed principle related to ‘integration’ has been written into the list in Figure 5:

**Integration:** *CASA supports integrated air quality decision-making that will: (a) protect the environment, (b) optimize economic performance and efficiency, and (c) seek continuous improvement and pollution prevention.*



**Figure 5: Recommended Operating Principles**

**Collaboration:** CASA works with individuals, organizations, businesses, and government in a comprehensive and integrated manner to build consensus and encourage shared responsibility.

**Integrity:** CASA is recognized as an independent and influential advisory body to government, stakeholders, and the public, supported by sound scientific and economic knowledge.

**Transparency:** CASA is an open and accessible organization, with established processes to bring issues forward and communicate activities.

**Fairness:** CASA treats all stakeholders equally, without bias toward any individual, organization, business, or government.

**Innovation:** CASA brings together diverse and unique stakeholders and seeks to develop the best recommendations for improving air quality in Alberta.

**Timeliness:** CASA's projects are prioritized and coordinated to enable effective and efficient responses to air quality management issues.

**Integration:** CASA supports integrated air quality decision-making that will: (a) protect the environment, (b) optimize economic performance and efficiency, and (c) seek continuous improvement and pollution prevention.

*The Board should endorse a set of Operating Principles.*

## 8.2 Confirming Strategic Plan Goals

**Goals:** Generally worded statements that indicate a direction that an organization plans to take.

Other minor modifications to the current set of goals in the 2010 Business Plan yield the four adjusted goals, listed in Figure 6. These goals are written to capture all of the current business areas, the fundamental difference being to differentiate between 'information and knowledge' (in a new Goal 3) and 'communication and outreach' (in a new Goal 4). These elements were previously grouped together in the business plan, but warrant separate treatment given their very different operational requirements. Goals 1 and 2 are unchanged from the 2010 Business Plan.

Also noteworthy is that planning work has not identified alternative business areas that fall outside the scope of these four adjusted Goals.

Figure 6 recommends a set of Strategic Plan Goals for CASA.

**Figure 6: Recommended Goals**

*Goal: A generally worded statement that indicates a direction that an organization plans to take.*

**GOAL 1 - STRATEGIC ADVICE**

To provide strategic advice on emerging air quality issues and the impacts of major policy initiatives on air quality.

**GOAL 2 - SUPPORTING AIR QUALITY MANAGEMENT**

To support the continued development and implementation of effective and efficient air quality management in Alberta.

**GOAL 3 - INFORMATION AND KNOWLEDGE**

To contribute to the development of a reliable, comprehensive, objective base of knowledge and information on emissions, ambient air quality, health and environmental impacts, and potential management and mitigation mechanisms.

**GOAL 4 - COMMUNICATION AND OUTREACH**

To communicate information that builds awareness, understanding and commitment to air quality management in Alberta.

*The Board should endorse a set of Strategic Plan Goals.*

### 8.3 Objectives for Each Goal

*Objectives: Statements of desired or intermediate targets which are consistent with overarching goals. Objectives are measurable, either directly or indirectly, as a basis for evaluating whether or not a plan or program is achieving its intended outcomes.*

Each of the Goals in Figure 6 is accompanied by a set of Objectives that are intended to produce tangible results towards the achievement of that goal. These Objectives are derived from the current business plan and other business areas suggested in planning inputs..

The current business plan does not identify 'objectives' as such, but does present 'strategies and actions'. For consistency with the strategic plan model (Table 6 and Figure 4 above), these statements have been expressed either as an objective, or as a specific strategy for achieving an objective, whichever is most appropriate.

None of the current statements of direction provided by the 2010 Business Plan have been lost, just reframed where appropriate, to more accurately reflect their nature.

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A description follows of the Goals and Objectives that CASA could choose to pursue. For added clarity 'Current Objectives' from the 2010 Business Plan are listed separately from 'Other Possible Objectives'.

'Strategies' are provided to illustrate the types of activities that might occur for each Objective. Strategies may contribute to achieving more than one goal.

A summary table, Table 7: Summary of Goals and Objectives, provides a spreadsheet of the goals and their respective objectives.

A more detailed description of goals and objectives appears in the text following the summary table. The format for the textual description is:

- ◆ Each Goal is stated (from Figure 6 above);
- ◆ The Current Objectives and current Strategies for each Goal, extracted directly from the 2010 Business Plan; and
- ◆ Other Possible Objectives (or alternative business areas) for each Goal, with Example Strategies that illustrate the nature of that objective.

*The substantive task for the Board will be to develop a perspective on what mix of Objectives, drawn from the pool of 'current objectives' and 'other possible objectives', will constitute a renewed strategic direction for CASA. The Board is faced with selecting the objectives that it believes CASA should pursue over a plan horizon of five to ten years. There may also be certain objectives that fall out as priorities for the Board, or for which some timeframe should be attached, and the Board may identify additional alternatives.*

**Table 7: Summary of Goals and Objectives**

GOAL	CURRENT OBJECTIVES	OTHER POSSIBLE OBJECTIVES
<p><b>1. Strategic Advice:</b> To provide strategic advice on emerging air quality issues and the impacts of major policy initiatives on air quality.</p>	<p><b>1a. Emerging Air Issues:</b> To determine and prioritize emerging air quality issues on a minimum three-year cycle.</p> <p><b>1b. Policy Analysis:</b> To establish a process to evaluate impacts of major policy initiatives on air quality and the determinants of air quality.</p> <p><b>1c. Consistency Analysis:</b> To identify potential inconsistencies among various policies and frameworks (national, provincial and regional) as these relate to air quality management in Alberta.</p>	<p><b>1d. Problem Analysis:</b> To conduct comprehensive problem analysis that informs Board decision-making with respect to the nature and extent of identified issues, and provides advice with respect to appropriate actions by CASA or other organizations.</p> <p><b>1e. Proactive Assessment:</b> To provide multidisciplinary assessments of broad air-related issues needing greater understanding for the improvement of public policy.</p>
<p><b>2. Supporting Air Quality Management:</b> To support the continued development and implementation of effective and efficient air quality management in Alberta.</p>	<p><b>2a. Airshed Support:</b> To work with the Alberta Airsheds Council and Airshed Zones to determine the best form of support that CASA can provide.</p> <p><b>2b. Place-based Planning:</b> To support place-based planning and cumulative effects management (if GoA is prepared to grant a role).</p> <p><b>2c. Air Management Planning Framework:</b> To develop a framework to guide air quality management planning, including where appropriate; (a) a description of how to determine 'green', 'yellow', and 'red' trigger levels similar to the PM and Ozone Management Framework, (b) which air pollutants require trigger levels, and (c) that needed and timely actions are identified.</p> <p><b>2d. CAMS:</b> To operate an efficient and effective Comprehensive Air Management System.</p>	<p><b>2e. Facilitating Dialogue:</b> To provide a forum for the discussion of air quality issues among various stakeholder groups.</p> <p><b>2f. Municipal Support:</b> To assist municipalities in air quality planning.</p> <p><b>2g. Program Delivery:</b> To assist the GoA by assuming responsibility for assigned components of the air quality management system.</p> <p><b>2h. Clean Air Strategy:</b> To assist the GoA in delivering aspects of the new Clean Air Strategy.</p>

GOAL	CURRENT OBJECTIVES	OTHER POSSIBLE OBJECTIVES
<p><b>3. Information and Knowledge:</b></p> <p>To contribute to the development of a reliable, comprehensive, objective base of knowledge and information on emissions, ambient air quality, health and environmental impacts, and management and mitigation mechanisms.</p>	<p><b>3a. Air Management Information:</b> To provide knowledge and information required for air management.</p> <p><b>3b. Jurisdictional Information:</b> To assemble and share cross-jurisdictional information on air monitoring, mitigation measures and best management practices that could be effective in Alberta.</p> <p><b>3c. Accountability:</b> To promote accountability within the air quality management system.</p>	<p><b>3d. Monitoring Coordination:</b> To coordinate monitoring data collection and storage.</p> <p><b>3e. Air Data Interpretation:</b> To interpret air quality data through comparison to other areas and relative risks to people, animals and the environment.</p> <p><b>3f. Knowledge System:</b> To operate a systematic process by which knowledge needed for successful air quality management is created, captured, shared and leveraged.</p>
<p><b>4. Communication and Outreach:</b></p> <p>To communicate information that builds awareness, understanding, and commitment to air quality management in Alberta.</p>	<p><b>4a. Awareness:</b> To increase awareness of CASA’s mandate and activities through targeted outreach to all sectors.</p>	<p><b>4b. Air Networking:</b> To facilitate the exchange of air quality information among practitioners and decision-makers.</p> <p><b>4c. Public Education:</b> To facilitate the transmission of air quality information to the general public.</p> <p><b>4d. Air Partnerships:</b> To build air quality partnerships and working relationships with other air quality practitioners.</p> <p><b>4e. Collaboration Hub:</b> To establish CASA as a centre of knowledge for the application of collaborative processes in multi-party situations.</p> <p><b>4f. Extension of CASA Model:</b> To make the CASA problem solving model available to non-air situations.</p>

**GOAL 1. STRATEGIC ADVICE: TO PROVIDE STRATEGIC ADVICE ON EMERGING AIR QUALITY ISSUES AND THE IMPACTS OF MAJOR POLICY INITIATIVES ON AIR QUALITY.**

***Current Objectives:***

**1a. Emerging Air Issues:** To determine and prioritize emerging air quality issues on a minimum three-year cycle.

**Strategies:**

- ◆ Conduct a strategic environmental scan to determine and prioritize emerging air quality issues and stakeholders who are associated with these issues.

**1b. Policy Analysis:** To establish a process to evaluate impacts of major policy initiatives on air quality and the determinants of air quality.

**Strategies:**

- ◆ Establish an ongoing board committee/project team that will engage with the GoA to proactively discuss/vet all GoA policy initiatives for their air-related impacts.
- ◆ Establish a screen and scope process by the Secretariat to identify policy initiatives with air-related impacts and public consultation processes that CASA could provide input.
- ◆ Assign government Board representatives an ongoing, routine agenda item to update the Board on upcoming policy initiatives.
- ◆ Facilitate economic and other analysis on policy measures and the associated costs of action and inaction to reduce air emissions.

**1c. Consistency Analysis:** To identify potential inconsistencies among various policies and frameworks (national, provincial and regional) as these relate to air quality management in Alberta.

***Other Possible Objectives:***

**1d. Problem Analysis:** To conduct comprehensive problem analysis that informs Board decision-making with respect to the nature and extent of identified issues, and provides advice with respect to appropriate actions by CASA or other organizations.

**Example Strategies:**

- ◆ Expand the screen and scope activity associated with a Statement of Opportunity to include explicit identification and exploration of alternative ways of responding to the issue.
- ◆ Commission reviews by outside experts.

**1e. Proactive Assessment:** To provide multidisciplinary assessments of broad air-related issues needing greater understanding for the improvement of public policy.

**Example Strategies:**

- ◆ Produce independent research reports and develop white papers for use by others.
- ◆ Facilitate interaction among scientists and other experts to create background information and viable broad policy alternatives.

**GOAL 2. SUPPORTING AIR QUALITY MANAGEMENT:** To support the continued development and implementation of effective and efficient air quality management in Alberta.

*Current Objectives:*

**2a. Airshed Support:** To work with the Alberta Airsheds Council and Airshed Zones to determine the best form of support that CASA can provide.

**2b. Place-based Planning:** To support place-based planning and cumulative effects management (if GoA is prepared to grant a role).

**2c. Air Management Planning Framework:** To develop a framework to guide air quality management planning, including, where appropriate; (a) a description of how to determine 'green', 'yellow', and 'red' trigger levels similar to the PM and Ozone Management Framework, (b) which air pollutants require trigger levels, and (c) ensuring that needed and timely actions are identified.

**2d. CAMS:** To operate an efficient and effective Comprehensive Air Management System.

**Strategies:**

- Assess the components of CASA's Comprehensive Air Management System to identify potential refinements and the resources required to support the system.
- Review and update previously developed air management frameworks on the prescribed schedule.

*Other Possible Objectives:*

**2e. Facilitating Dialogue:** To provide a forum for the discussion of air quality issues among various stakeholder groups.

**Example Strategies:**

- ♦ Coordinate the input to government from stakeholders on any matter related to air quality, bringing stakeholders together to obtain the range of views.
- ♦ Provide advice and referrals to a network of practitioners.
- ♦ At stakeholder request, facilitate public engagement around air related issues.

**2f. Municipal Support:** To assist municipalities in air quality planning.

**Example Strategies:**

- ♦ Provide provincial and national context for local air quality planning.
- ♦ Connect municipal staff with appropriate expertise in the various components of air quality planning.
- ♦ Assist in establishing municipal air quality outcomes, and in reporting progress toward their achievement.

**2g. Program Delivery:** To assist the GoA by assuming responsibility for assigned components of the air quality management system.

**Example Strategies:**

- ◆ Manage the process for the development of ambient objectives and source emission standards.
- ◆ Assist in the production and maintenance of emission inventories.
- ◆ Manage the funds for the Alberta Ambient Air Monitoring System.
- ◆ Identify research needs and establish research priorities.
- ◆ Administer grants for research, development and implementation.

**2h. Clean Air Strategy:** To assist the GoA in delivering aspects of the new Clean Air Strategy.

**Example Strategies:**

- ◆ Provide expertise for regional air planning.
- ◆ Maintain a clearinghouse of air quality information.
- ◆ Expand the CASA Data Warehouse.
- ◆ Partner for air quality communications.



**GOAL 3. INFORMATION AND KNOWLEDGE:** To contribute to the development of a reliable, comprehensive, objective base of knowledge and information on emissions, ambient air quality, health and environmental impacts, and management and mitigation mechanisms.

*Current Objectives:*

**3a. Air Management Information:** To provide knowledge and information required for air management.

**Strategies:**

- ♦ Oversee the CASA Data Warehouse.
- ♦ Store and make accessible technical information gathered by project teams.

**3b. Jurisdictional Information:** To assemble and share cross-jurisdictional information on air monitoring, mitigation measures and best management practices that could be effective in Alberta.

**Strategies:**

- ♦ Create a repository for information on best management practices in other jurisdictions, as compiled by the project teams.

**3c. Accountability:** To promote accountability within the air quality management system.

**Strategies:**

- ♦ Report on air quality in the province.

*Other Possible Objectives:*

**3d. Monitoring Coordination:** To coordinate monitoring data collection and storage.

**Example Strategies:**

- ♦ Coordinate air-related ecological monitoring.
- ♦ Expand the CASA Data Warehouse to accommodate new data requirements.
- ♦ Act as banker for collecting and disbursing air monitoring funds for implementation of new Air Monitoring Strategy.
- ♦ Operate or oversee a Centre of Excellence for monitoring technology.

**3e. Air Data Interpretation:** To interpret air quality data through comparison to other areas and relative risks to people, animals and the environment.

**Example Strategies:**

- ♦ Create an air footprint and/or emissions footprint.
- ♦ Engage experts to analyze the potential effects of air quality levels in Alberta.

**3f. Knowledge System:** To operate a systematic process by which knowledge needed for successful air quality management is created, captured, shared and leveraged.

**Example Strategies:**

- ♦ Identify research needs.
- ♦ Organize air quality training.
- ♦ Operate a clearinghouse for air information and air quality history.

**GOAL 4. COMMUNICATION AND OUTREACH:** To communicate information that builds awareness, understanding, and commitment to air quality management in Alberta.

*Current Objectives:*

**4a. Awareness:** To increase awareness of CASA's mandate and activities through targeted outreach to all sectors.

**Strategies:**

- ♦ Maintain a website.
- ♦ Publish a newsletter, brochures and reports.
- ♦ Hold coordination workshops.

*Other Possible Objectives:*

**4b. Air Networking:** To facilitate the exchange of air quality information among practitioners and decision-makers.

**Example Strategies:**

- ♦ Continue to hold periodic science symposia.
- ♦ Convene an annual air forum for exchanging technical and other information on air research and management practices.
- ♦ Maintain a list of air quality experts.
- ♦ Develop communities of practice.

**4c. Public Education:** To facilitate the transmission of air quality information to the general public.

**Example Strategies:**

- ♦ Provide fact sheets.
- ♦ Develop informational programs for members and communities.
- ♦ Partner with others on communications about air quality (e.g., Air Quality Health Index).
- ♦ Develop a 'speaker's bureau'.

**4d. Air Partnerships:** To build air quality partnerships and working relationships with other air quality practitioners.

**Example Strategies:**

- ♦ Develop linkages with other air quality organizations and sectors/groups that are not directly affiliated with CASA right now.
- ♦ Establish contact with other jurisdictions on air related initiatives, policies and research projects.
- ♦ Engage academia for scientific/technical knowledge and input into policy development.

**4e. Collaboration Hub:** To establish CASA as a centre of knowledge for the application of collaborative processes in multi-party situations.

**Example Strategies**

- ◆ Mentor other consensus practitioners or groups.
- ◆ Provide training in consensus decision-making and other collaborative tools.
- ◆ Develop support groups.

**4f. Extension of CASA Model:** To make the CASA problem solving model available to non-air situations.

**Example Strategies:**

- ◆ Make targeted orientation and training available to others.
- ◆ Provide issue resolution services for other environmental areas.

## 9. Implications of Strategic Direction

Sections 7 and 8 above provide a basis for discussion by the Board about the Goals and Objectives that CASA could pursue in future years. These are drawn directly from Board and stakeholder inputs to the strategic planning initiative. Consequently, there is every indication that there will be changes to CASA's strategic direction.

With potential changes to the organization's objectives, timing of activities and workloads, there may be implications for the structures and functions within CASA, how business is done, and how roles and responsibilities of members and staff are defined. Potential changes in workload may also have implications for resourcing the Secretariat's capacity (staffing levels, expertise, and budgets).

For reference, Appendix B provides an overview of CASA's current structures and functions, including roles and responsibilities of Board members and the Executive Director. Section 6.4 provides discussion of a number of areas where there is the potential for improvements in the way CASA conducts its business.

### 9.1 Implications of Strategic Direction to Organization

This section poses questions about how a renewed strategic direction, as determined by the Board, might impact CASA's mission, functions, and structure, as well as how the Board and Secretariat will conduct business. In other words, there must be consideration for both 'what business' is undertaken and 'how business is done'.

#### 9.1.1 Implications for Mission

The first questions stem from renewal of CASA's Goals and Objectives, and require reflection on the extent to which a new array of business areas points to changes in CASA's vision and mission.

- ◆ To what extent do proposed Goals and Objectives depart from CASA's traditional role?
- ◆ Is the current CASA *Mission* consistent with any newly proposed strategic direction? Are amendments warranted to the *Mission*?

#### 9.1.2 Implications for Function and Structure

The following is concerned with how CASA is structured, and what functions CASA will be asked to perform as a result of a renewed strategic direction.

- ◆ Do proposed business areas suggest a change in function, or a change in emphasis of work undertaken by CASA, and how can such changes best be described?
- ◆ Do proposed business areas impact the current roles and responsibilities of members and staff?
- ◆ Do proposed business areas have implications for the current structure of CASA?

### 9.1.3 Implications for Roles and Responsibilities

The following questions may help to prompt discussions about roles and responsibilities.

#### Role of Members and the CASA Board of Directors

- ◆ CASA bylaws limit membership to 22. Is the Board large enough to be representative of anticipated new players? Is the Board too large to function efficiently? How can participation pressures and implications be managed?
- ◆ The Board currently meets four times per year. Agendas are detailed and project-specific. Secretariat efforts to support these meetings are substantial. If workloads increase, can the Board expect to continue to manage oversight in this fashion?
- ◆ Should the way that the Board operates be shifted more toward a corporate model? Should the role of the Board be that of a reviewer and direction setter, and leave management of CASA affairs to the Executive Committee and/or the Executive Director?
- ◆ What can be done to ensure that participation at the Board and in projects is stable and consistent, and that representatives are empowered by their constituency to make the expected commitments and decisions?

#### Role of the Executive Committee

- ◆ The bylaws charge the Executive Committee with oversight responsibilities. If workloads increase, can the Executive Committee take on more of an oversight role, assuming responsibility for representing the Board on some or many decision-making matters?
- ◆ Currently, there are four positions on the Executive Committee, all of which must be filled by Directors of CASA. Should the membership of the Executive Committee be expanded?

#### Role of the Secretariat

- ◆ Lack of nimbleness is a growing concern. The rigorous nature of the CAMS process and the detailed oversight required of the Board are cited as sources of extended timeframes and slow responses. How could concerns about responsiveness of process and more timely results be addressed?
- ◆ Much of CASA's progress at the committee and team levels is attributable to the availability of the participating Board members or their assigns. Could the Secretariat be given greater responsibility and accountability in a way that moves projects forward more efficiently?
- ◆ Although the Secretariat has a toolkit that could be tailored for use in a number of consultative or collaborative situations, work has been largely confined to the rigorous consensus procedure laid out in the CAMS. Should the Secretariat be encouraged to make more effective use of its toolkit in situations requiring constructive dialogue where unanimous agreement is not a pre-requisite?

#### Implications for Resources

- ◆ Where do CASA's resources need to be improved?
- ◆ Given the discussion on strategic direction, where might the skill set of the Secretariat staff be developed (e.g., project managers, convenors, facilitators, problem-solvers, mediators)?
- ◆ What flexibility, or what alternatives, exist for managing future funding requirements?

## **PART 3: PRELIMINARY WORKSHOP OUTLINE**

PART 3 makes a link between the content of this discussion paper (particularly that of PART 2), the Board's deliberations at its June 2011 Workshop, and the content of a new CASA strategic plan.

### **10. Preliminary Outline for the June 2011 Workshop**

The purpose of the Board's June 2011 Workshop is to work with the issues and opportunities presented in this document to renew strategic direction for the Alliance.

#### **10.1 Workshop Objectives**

1. To confirm a Strategic Planning Framework for CASA.
2. To understand the possible future roles and contributions that CASA could make to air quality management in Alberta.
3. To generate building blocks for a new strategic plan by renewing CASA's vision, goals and objectives.
4. To determine improvements to efficiency and effectiveness of business practices.
5. To provide insights into the implications of CASA's future role to its structure, functions and resourcing requirements.
6. To provide guidance to the Executive Committee for the development of a strategic plan and business plan amendments.

#### **10.2 Expectations for Workshop Outcomes**

- ◆ Operating Principles verified.
- ◆ Planning assumptions confirmed.
- ◆ Strategic issues clarified.
- ◆ Strategic planning hierarchy adopted.
- ◆ Future business areas identified and priorities set in the form of goals and objectives;
- ◆ Implications of renewed strategic direction determined in relation to structure, functions, roles and responsibilities and capacity to conduct CASA business.

Achieving these expectations leads to:

- ◆ Executive Committee using the results to prepare a draft strategic plan and any required amendments to the business plan;
- ◆ Assignments for Board members and Committees; and
- ◆ Expectations for a September Board meeting.

### 10.3 Workshop Discussion Topics

With the exception of an AGM session, the June Workshop is dedicated to the discussion of renewal of CASA's strategic direction. Four discussion sessions will be of particular importance, around which the workshop should be designed:

1. Confirming a *strategic planning framework* for CASA (Assumptions, Principles, Mission-Goals-Objectives-Strategies), (PART 2, Sec 7 and 8.1);
2. Discussing concerns raised by members and stakeholders with respect to *business improvements*, or 'how CASA does business', with reference to policies and procedures, timeliness of activities and results, product implementation, and use of the CASA toolkit in situations requiring constructive dialogue where unanimous agreement is not a pre-requisite, (PART 1, Sec 6.4);
3. Assessing in some detail the proposals for a suite of *Goals and Objectives* that define areas of work that the Board considers viable for CASA's future role, (PART 2, Sec 8.2 and 8.3); and
4. Based on detailed discussions of potential future contributions (3. above), *assessing the implications associated with a renewed strategic direction*, including changes to CASA's Mission, or to functions, structures, roles, responsibilities, operating procedures or resourcing, (PART 2, Sec 9).

### 10.4 An Example of Strategic Plan Content

Other than the general direction provided by its Vision and Mission, CASA has not had a strategic plan that looks beyond the three-year timeframe provided by business plans. The purpose of the 2011 Mission Review is to confirm strategic direction for a five to ten year horizon. The intended result is a new *Strategic Plan* with a long-term outlook, and subject to regular review. Refer to Section 7, Figure 4 for the strategic planning hierarchy.

Direction from the Board will facilitate the preparation of a draft strategic plan. The Board will need to account for the implications of renewed strategic direction as part of review and approval of that plan.

A word of context is helpful. Review of readily available references about strategic plans shows that, while there are common elements to plans, there is significant variability in the nature of the content and how the parts of strategic plans are organized. Strategic plans are tailored to the needs and circumstances of an organization. Such is the case with CASA, wherein the strategic planning process has responded to: (a) pressures and circumstances shaping CASA's future role in air quality management in Alberta, and (b) the perspectives brought to the process by participants. By extension, the strategic plan will contain those elements of importance to the Board and Secretariat, framed in a manner and format that meets expectations.

Following is a preliminary outline for a strategic plan, provided as a reference for what CASA's strategic plan might contain. Elements of this outline indicate where outcomes of the June Workshop fit into a plan format.

### **1. Executive Summary**

An executive level presentation about how the plan supports CASA's Mission.

- ◆ What is the fundamental problem(s) that this plan addresses?
- ◆ What are the primary benefits in terms of support for the bigger picture?
- ◆ What are the key elements of the plan in summary form?
- ◆ What actions are needed to implement?
- ◆ What are the anticipated milestone achievements during the life of the plan?
- ◆ What are the costs and benefits of implementing the plan?

### **2. Strategic Planning Methodology**

- ◆ How was this plan developed and who participated?
- ◆ Unique aspect of CASA's planning process.
- ◆ Target audience.
- ◆ Constraints or limitations that impacted the process or the results.
- ◆ Approval provisions.

### **3. Organization History and Profile**

- ◆ What is CASA and what does it do now?
- ◆ Relevant historical context.
- ◆ Operating Principles or Values.

### **4. CASA's Vision and Mission**

- ◆ Reaffirmation of the vision and mission statements.
- ◆ Narrative definition of the mission; Board and staff responsibility to the mission.
- ◆ Explanation of any adjustments.

### **5. CASA's Operating Environment**

- ◆ Key findings of the Strategic Foresight Committee and Environmental Scan (lessons learned, trends, forces, scenarios that shaped plan content and results).
- ◆ Who are the major players, and what are their mandates?
- ◆ What are the major initiatives in play (e.g., LUF, CEMS, National AQMS)? What are initiatives directed at achieving? How do they relate to one another?
- ◆ What is CASA's appropriate positioning and role?
- ◆ Strategic challenges and assessment of risk.
- ◆ Board's perspective on future issues and challenges to be monitored.



**6. Goals and Objectives**

- ◆ Translating the above context into goals and objectives.
- ◆ Strategies the Secretariat will pursue to achieve objectives.
- ◆ Board approach to methods of service delivery, partnering, communicating.
- ◆ Indicators of success.

**7. Administration and Resources**

- ◆ Structures and functions.
- ◆ Roles and responsibilities.
- ◆ Organizational issues and adjustment.
- ◆ Staffing and funding.
- ◆ Future projections (financing and budget planning implications).

**8. Implementation Program**

- ◆ Implementation plan, priorities, phasing and milestones.
- ◆ Performance indicators and implementation monitoring.
- ◆ Process for strategic plan recalibration and formal review.

**9. Appendices**

- ◆ Board members and profiles of who they represent.
- ◆ Current business plan; current and previous budget.

## Appendix A: Comparison of Business Plan Elements

Table 8: Comparison of CASA Business Plans 1993-2010

Element	1993 Prospectus	1996 Business Plan	1999 Business Plan	2003 Business Plan	2010 Business Plan
<b>Vision</b>	The air will be odourless, tasteless, look clear and have no measurable short or long-term adverse effects on people, animals, or the environment.	The air will be odourless, tasteless, look clear and have no measurable short or long-term adverse effects on people, animals, or the environment.	The air will be odourless, tasteless, look clear and have no measurable short or long-term adverse effects on people, animals, or the environment.	The air will be odourless, tasteless, look clear and have no measurable short or long-term adverse effects on people, animals, or the environment.	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.
<b>Mission</b>	The Clean Air Strategic Alliance (CASA) is a stakeholder partnership that has been given shared responsibility by its members, including the Government of Alberta, for strategic planning, organizing and coordinating resources, and evaluation of air quality in Alberta through a collaborative process.	The Clean Air Strategic Alliance (CASA) is a stakeholder partnership that has been given shared responsibility by its members, including the Government of Alberta, for strategic planning, organizing and coordinating resources, and evaluation of air quality in Alberta through a collaborative process.	The Clean Air Strategic Alliance (CASA) is a stakeholder partnership that has been given shared responsibility by its members, including the Government of Alberta, for strategic planning, organizing and coordinating resources, and evaluation of air quality in Alberta through a collaborative process	The Clean Air Strategic Alliance (CASA) is a stakeholder partnership that has been given shared responsibility by its members, including the Government of Alberta, for strategic planning, organizing and coordinating resources, and evaluation of air quality in Alberta through a collaborative process	To recommend strategies to assess and improve air quality in Alberta using a consensus process  Identity: The Clean Air Strategic Alliance is a multi-stakeholder partnership, composed of representatives selected by industry, government and non-government organizations.
<b>Values</b>	<ul style="list-style-type: none"> <li>▪ develop trust &amp; respect among stakeholders through an open, consensus building, decision-making process</li> <li>▪ continuously seek alternative, innovative, and cost effective ways to achieve clean air</li> <li>▪ remove barriers to marketing Alberta air quality technology and services internationally</li> <li>▪ achieve sustainable development</li> </ul>	<ol style="list-style-type: none"> <li>1. Consensus decision-making</li> <li>2. Focused on solutions</li> <li>3. Respect for different perspectives</li> <li>4. Efficient and effective use of resources</li> <li>5. Sustainable development</li> <li>6. Accountability for decisions</li> <li>7. Win/win decisions</li> <li>8. Human health &amp; ecological integrity</li> <li>9. Sound scientific information &amp; appropriate risk management</li> <li>10. Obligations to future generations</li> </ol>	<ol style="list-style-type: none"> <li>1. human health and ecological integrity</li> <li>2. comprehensive and integrated approach</li> <li>3. consensus decision-making</li> <li>4. sound science and economics</li> <li>5. contribution to national strategies</li> <li>6. prudent action in face of uncertainty</li> <li>7. open and transparent communication</li> </ol>	Not included	<ol style="list-style-type: none"> <li>1. Collaborative</li> <li>2. Trustworthy</li> <li>3. Transparent</li> <li>4. Fair</li> <li>5. Innovative</li> <li>6. Timely</li> <li>7. Human Health and Ecological Integrity</li> </ol>

Clean Air Strategic Alliance

Element	1993 Prospectus	1996 Business Plan	1999 Business Plan	2003 Business Plan	2010 Business Plan
<b>Expectations &amp; Performance Measures</b>	<p>Performance criteria:</p> <ol style="list-style-type: none"> <li>The environment and economic consequences of the Alliance initiatives</li> <li>The efficiency and effectiveness of the organization</li> </ol>	<ul style="list-style-type: none"> <li>Baseline data</li> <li>Improved air quality</li> <li>Capability to measure effects</li> <li>Information available to assess air quality &amp; evaluate strategies</li> <li>Capability for cross-regional data transfer &amp; analysis</li> <li>Capability to measure air quality effects</li> <li>Reduction in per capita energy use</li> <li>Number of participating organizations</li> <li>Recommendations implemented</li> <li>Stakeholder satisfaction</li> <li>Degree of recognition</li> <li>Percent of project funding raised</li> </ul>	<ul style="list-style-type: none"> <li>improved air quality</li> <li>capability to measure effects</li> <li>Recommendations implemented</li> <li>Stakeholder satisfaction</li> <li>Degree of recognition</li> </ul>	<ul style="list-style-type: none"> <li>Enabling Planning: number of recommendations through the CAMS process implemented</li> <li>Organizing &amp; coordinating resources: degree of CASA members, partners and client's satisfaction with the CASA approach</li> <li>Evaluating Results: capability to measure air quality effects on humans &amp; the ecosystem; and improved air quality indicators in areas of CASA action</li> <li>Building public awareness and stakeholder understanding: degree of recognition by emitters and the general public of CASA as a major vehicle for delivering improved air quality management for Alberta</li> </ul>	<p><b>Goal 1 Indicator:</b> Survey of CASA stakeholders during the stakeholder satisfaction survey (2 added questions)</p> <p><b>Goal 2 Indicator:</b> Survey of CASA stakeholders during the stakeholder satisfaction survey (3 existing questions).</p> <p><b>Goal 3 Indicator:</b> A review of major air policies of the Government of Alberta for pollution prevention and control measures.</p> <p><b>Goal 4 Indicator:</b> Knowledge of CASA and initiatives in other jurisdictions among target outreach audiences.</p>
<b>Core Business Functions</b>	<ul style="list-style-type: none"> <li>apply the strategic planning framework of the Clean Air Strategy</li> </ul>	<ul style="list-style-type: none"> <li>clarify issues</li> <li>set priorities</li> <li>delegate design of action plan</li> <li>review plan</li> <li>approve implementation</li> <li>secure resources &amp; implement</li> <li>evaluate &amp; review</li> </ul>	<ol style="list-style-type: none"> <li>Data assessment</li> <li>Strategic planning</li> <li>Comprehensive Air Quality Management System</li> <li>Communication</li> </ol>	<ul style="list-style-type: none"> <li>Enabling strategic air quality planning</li> <li>Organizing &amp; coordinating resources</li> <li>Evaluating results</li> <li>Building public awareness &amp; stakeholder understanding</li> </ul>	<ul style="list-style-type: none"> <li>Conduct strategic air quality planning for Alberta by identifying priority issues and developing action plans that include economic and environmental consequences and expected outcomes.</li> </ul>

Element	1993 Prospectus	1996 Business Plan	1999 Business Plan	2003 Business Plan	2010 Business Plan
<p><b>Goals (also called key focus areas, strategic focus areas)</b></p>	<p><b>Services</b></p> <ul style="list-style-type: none"> <li>▪ identify, assess &amp; prioritize air quality issues and the resources required to address them</li> <li>▪ identify the need and cost of gather information on emissions, ambient air quality , ecosystems, public health and epidemiology data</li> <li>▪ identify and where needed, ensure the collection of new data through well defined applied research and targeted analysis</li> <li>▪ specify the resource responsibilities of its stakeholders for this work</li> <li>▪ recommend a course of action for each priority problem</li> <li>▪ specify which organizations should take the lead for each action</li> <li>▪ report on progress, comparing actual benefits and results to projected outcomes</li> <li>▪ evaluate and report on CASA projects and actions, applying the information to management decisions.</li> </ul>	<ul style="list-style-type: none"> <li>▪ To achieve measurable improvement in air quality management in response to identified problem areas in Alberta</li> <li>▪ To develop broad consensus on air quality objectives and management strategies</li> </ul>	<p>Pollution prevention &amp; continuous improvement</p> <ul style="list-style-type: none"> <li>▪ A working environment in which P2/CI is used to protect air quality</li> <li>▪ Public contributes to P2 by making clean air friendly choices</li> </ul> <p>Human &amp; animal health</p> <ul style="list-style-type: none"> <li>▪ Prevention of adverse short and long term effects due to outdoor and indoor contaminants</li> </ul> <p>Ecological health</p> <ul style="list-style-type: none"> <li>▪ Prevention of adverse short and long term effects of air emissions on ecosystem health</li> </ul> <p>Socio-economic integration</p> <ul style="list-style-type: none"> <li>▪ Recommendations optimize social, economic &amp; environmental benefits &amp; minimize costs to Albertans</li> <li>▪ Limited resources are used effectively</li> <li>▪ CASA decision-making is sensitive to public opinion about air quality.</li> </ul>	<p>Pollution prevention &amp; continuous improvement</p> <ul style="list-style-type: none"> <li>▪ A working environment in which P2/CI is used to protect air quality</li> <li>▪ Public contributes to P2 by making clean air friendly choices</li> </ul> <p>Human &amp; animal health</p> <ul style="list-style-type: none"> <li>▪ Prevention of adverse short and long term effects due to outdoor and indoor contaminants</li> </ul> <p>Ecological health</p> <ul style="list-style-type: none"> <li>▪ Prevention of adverse short and long term effects of air emissions on ecosystem health</li> </ul> <p>Socio-economic integration</p> <ul style="list-style-type: none"> <li>▪ Recommendations optimize social, economic &amp; environmental benefits &amp; minimize costs to Albertans</li> <li>▪ Limited resources are used effectively</li> <li>▪ CASA decision-making is sensitive to public opinion about air quality.</li> </ul>	<ol style="list-style-type: none"> <li>1. Strategic Advice</li> <li>2. Air Quality Management System Support</li> <li>3. Pollution Prevention and continuous Improvement</li> <li>4. Knowledge and Information</li> </ol>

Element	1993 Prospectus	1996 Business Plan	1999 Business Plan	2003 Business Plan	2010 Business Plan
<p><b>Objectives (also called strategic objectives and strategies)</b></p>		<ul style="list-style-type: none"> <li>▪ To develop credible air quality information</li> <li>▪ To develop mechanisms to relate air quality to human and ecosystem health</li> <li>▪ To catalyze effective action on priority air quality issues</li> <li>▪ To employ the CAMS to address air quality concerns</li> <li>▪ To be an effective, credible, trusted, and influential organization</li> <li>▪ To communicate and build partnerships to implement CASA recommendations</li> </ul>	<p>Pollution Prevention &amp; Continuous Improvement</p> <ul style="list-style-type: none"> <li>▪ Identify &amp; recommend cost effective reduction strategies</li> <li>▪ Encourage innovative reduction strategies</li> <li>▪ Establish system of incentives for P2/CI</li> </ul> <p>Human &amp; Animal Health</p> <ul style="list-style-type: none"> <li>▪ Detect health effects attributable to air contaminants</li> <li>▪ Develop management response system for identified risks</li> <li>▪ Assess air quality guidelines &amp; objectives</li> </ul> <p>Ecological Health</p> <ul style="list-style-type: none"> <li>▪ Increase knowledge of ecological effects</li> <li>▪ Develop management response system for identified risks</li> <li>▪ Assess air quality guidelines &amp; objectives</li> </ul> <p>Socio Economic Integration</p> <ul style="list-style-type: none"> <li>▪ Assess costs &amp; benefits</li> <li>▪ Pursue multiple benefits</li> <li>▪ Balance social, environmental &amp; economic considerations</li> <li>▪ Integrate air quality into planning processes</li> <li>▪ Develop effective public engagement programs</li> <li>▪ Monitor public opinion</li> </ul>	<p>Pollution Prevention &amp; Continuous Improvement</p> <ul style="list-style-type: none"> <li>▪ Identify &amp; recommend cost effective reduction strategies</li> <li>▪ Encourage innovative reduction strategies</li> <li>▪ Establish system of incentives for P2/CI</li> </ul> <p>Human &amp; Animal Health</p> <ul style="list-style-type: none"> <li>▪ Detect health effects attributable to air contaminants</li> <li>▪ Develop management response system for identified risks</li> <li>▪ Assess air quality guidelines &amp; objectives</li> </ul> <p>Ecological Health</p> <ul style="list-style-type: none"> <li>▪ Increase knowledge of ecological effects</li> <li>▪ Develop management response system for identified risks</li> <li>▪ Assess air quality guidelines &amp; objectives</li> </ul> <p>Socio Economic Integration</p> <ul style="list-style-type: none"> <li>▪ Assess costs &amp; benefits</li> <li>▪ Pursue multiple benefits</li> <li>▪ Balance social, environmental &amp; economic considerations</li> <li>▪ Integrate air quality into planning processes</li> <li>▪ Develop effective public engagement programs</li> <li>▪ Monitor public opinion</li> </ul>	<p>1.1. Conduct strategic environmental scan</p> <p>1.2. Establish a process to evaluate and prioritize the impacts of major policy initiatives on air quality and the determinants of air quality</p> <p>2.1 Explore the role of CASA in supporting airsheds</p> <p>2.2 Explore the role of CASA in regional planning</p> <p>2.3 Develop a framework to guide air quality management planning</p> <p>2.4 Review and assess the components of the Air Quality Management System and the resources required</p> <p>3.1 Encourage project teams to consider pollution prevention.</p> <p>3.2 identify the most beneficial opportunities for pollution prevention</p> <p>4.1 Increase awareness of CASA</p> <p>4.2 Assemble and share cross-jurisdictional information</p> <p>4.3 Facilitate economic and other analysis on policy measures</p>

Element	1993 Prospectus	1996 Business Plan	1999 Business Plan	2003 Business Plan	2010 Business Plan
<b>Other</b>	<p><b>Customers/clients:</b></p> <ul style="list-style-type: none"> <li>▪ Regulatory agencies</li> <li>▪ Regulated community</li> <li>▪ Public interest groups</li> <li>▪ General public</li> </ul>	<p><b>Role Choices:</b></p> <ul style="list-style-type: none"> <li>▪ fully accountable</li> <li>▪ facilitate</li> <li>▪ involved customer</li> <li>▪ refer</li> </ul>		<p><b>Air quality management goals:</b></p> <ul style="list-style-type: none"> <li>▪ Protect the environment</li> <li>▪ Optimize economic performance &amp; efficiency</li> <li>▪ Seek continuous improvement</li> </ul> <p><b>Accountability Statement:</b> The CASA board of directors is comprised of senior representatives from non-government organizations, government, and industry, and is accountable for air quality planning responsibilities that are shared among stakeholders. Regulatory implementation, licensing, compliance, control and enforcement remain with existing government agencies.</p>	<p><b>Air quality management objectives:</b></p> <ol style="list-style-type: none"> <li>1. Protect the environment by preventing short and long-term adverse effects on people, animals and the ecosystem</li> <li>2. Optimize economic efficiency</li> <li>3. Promote pollution prevention and continuous improvement.</li> </ol>

## Appendix B: CASA's Current Structures and Functions

Figure 7: Current CASA Structure

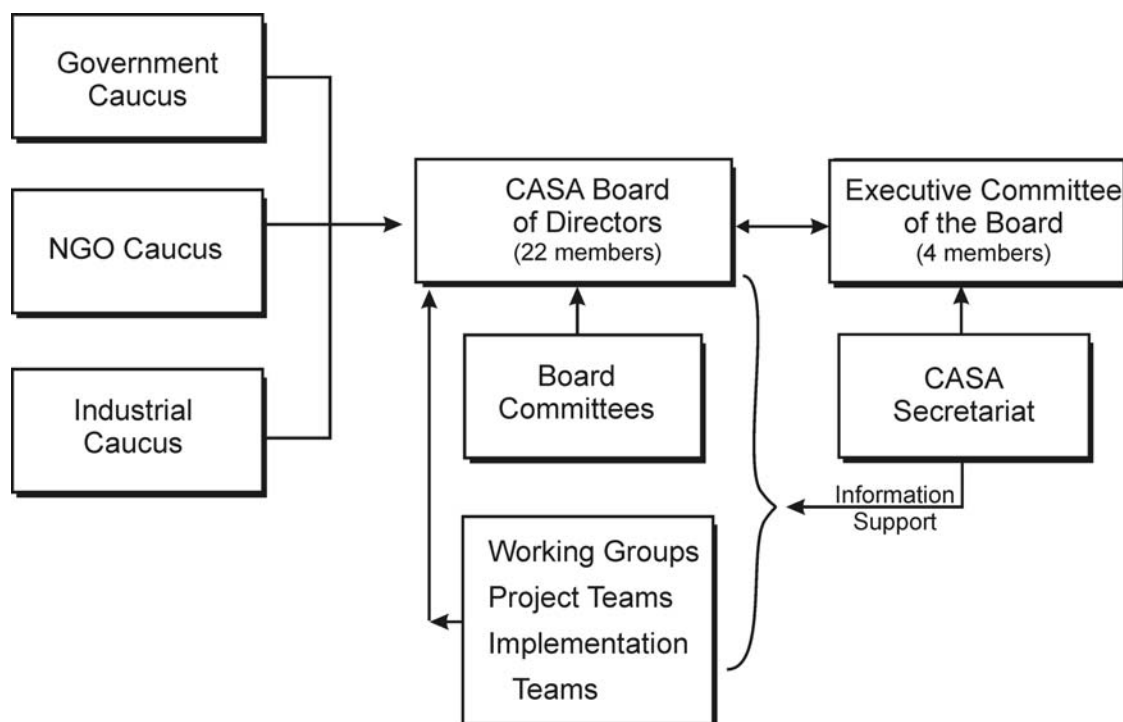


Table 9: Structures and Functions

Structure	Function
Board of Directors	<ul style="list-style-type: none"> <li>◆ Advises the Alberta Government, stakeholders and the public on effective strategies for managing air quality</li> <li>◆ Sets policies on CASA direction and priorities, with a focus on long-term direction</li> <li>◆ Creates and disbands Board committees, other than the Executive Committee</li> <li>◆ Coordinates and commits resources</li> <li>◆ Evaluates results of CASA projects</li> <li>◆ Assesses Board progress and functions</li> <li>◆ Establishes and oversees work of Board, committees and project teams</li> <li>◆ Engages in strategic planning exercises and provides overall direction to the organization</li> <li>◆ Oversees and engages in CASA communications</li> <li>◆ Promotes CASA, its process, priorities and its outcomes</li> </ul>

Structure	Function
<b>Executive Committee of the Board</b>	<ul style="list-style-type: none"> <li>◆ Provides leadership in support of strategic direction</li> <li>◆ Provides guidance to and takes direction from the Board</li> <li>◆ Brings membership issues to the Board</li> <li>◆ Provides stewardship for CASA operations through ongoing advice to the Secretariat</li> <li>◆ Sets Board agendas and chairs Board meetings</li> <li>◆ Liaises with Ministers</li> <li>◆ Monitors Board effectiveness</li> <li>◆ Advocates and markets CASA and the CASA process</li> <li>◆ Communicates with the media</li> </ul>
<b>CASA Secretariat</b>	<ul style="list-style-type: none"> <li>◆ Supports and facilitates processes and projects</li> <li>◆ Arranges logistics and manages resources</li> <li>◆ Facilitates external communications</li> <li>◆ Coaches individual participants on tools for effective participation</li> <li>◆ Screens statements of opportunity</li> </ul>

**Table 10: Current Roles and Responsibilities**

<b>Roles and Responsibilities</b>	
<b>Board Members</b>	<ul style="list-style-type: none"> <li>◆ Represents views of stakeholder sector</li> <li>◆ Communicates between meetings</li> <li>◆ Participates in committees, teams, &amp; tasks</li> <li>◆ Coordinates with Alternate and others in stakeholder group</li> <li>◆ Promotes CASA and its activities</li> <li>◆ Assists in implementation</li> </ul>
<b>Executive Director of CASA Secretariat</b>	<ul style="list-style-type: none"> <li>◆ Manages all aspects of the CASA Secretariat</li> <li>◆ Ex-officio member of the CASA Board</li> <li>◆ Works collaboratively as a member of the Executive Committee</li> <li>◆ Ensures the agreed-upon decision-making process is followed</li> <li>◆ Brings important issues to the attention of the Board</li> <li>◆ Assists in maintaining and improving the smooth functioning and group dynamics of the Board</li> <li>◆ Prepares draft documents for review by the Board</li> <li>◆ Implements communication and consultation activities</li> <li>◆ Hires and assigns staff as required to meet the needs of the Board and its project teams</li> <li>◆ Coordinates and integrates resources across various project teams</li> <li>◆ Advises the Board on its responsibilities and liabilities</li> </ul>





*Item 2.1*

*2010 Performance Evaluation  
Report*



# 2010 Performance Evaluation Report



Prepared by the  
CASA Secretariat  
for the  
Clean Air Strategic Alliance  
Board of Directors

March 2011



## **Introduction:**

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The CASA renewal process is a by-law requirement whereby every 3 years the members must evaluate the performance of the society. At the September 30, 2010 Board meeting, members agreed to a two-step caucus-based activity as follows:

1. Each stakeholder caucus – government, industry and NGO's will meet independently to discuss questions such as:
  - a. Which elements of CASA's processes are most valuable?
  - b. Where is there room for improvement?
  - c. How has CASA changed to stay relevant?
  - d. Where has CASA shown the greatest success?
  - e. What else should CASA be doing?

The results of the 3 caucus sessions, together with the Strategic Planning session slated for June 8 and 9, 2011, will be used to answer the question: Is there still value in CASA and its approach?

For the purposes of this report, the CASA Secretariat has deliberately captured the results as they were provided so as not to lend any bias to or categorization of responses.

## **Industry Caucus:**

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Industry is very interested in seeing CASA thrive:

- the process can be painful, but at least the output of recommendations is understood
- CASA's work is very relevant, and key issue topics need to be kept that way
- Industry can get involved at the front end
- Important opportunity to ensure industry sectors beyond oil and gas have a seat at the table
- In the absence of CASA, the dialogue is none-existent or happens in the media

Key areas to work:

- helping Alberta Environment in development and implementation of CAMS
- development of regional/air shed plans
- ongoing implementation of Land Use Framework
- implementing Alberta's new Clean Air Strategy
- cumulative effects – implementing CEMS
- air standards within multiple jurisdictions and regions
- development of provincial standards and policies

Key opportunities for improvement:

- strengthen all participants' consensus making skills
- more proactive, strategic thinking versus tactical, technical debates
- engaging the board earlier when breakdowns are coming
- stronger caucus alignment and empowerment between project team members and board members (outcomes should not be so dependent on the individual project team members)
- more senior level commitment and participation at the Board and in Project Teams by all stakeholders

## NGO Caucus:

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### Introduction

As part of the CASA 2011 Performance Evaluation, the Clean Air Energy Caucus (CAE) of the Alberta Environmental Network (AEN) solicited the participation of any and all caucus members that are serving, or have served on the board and/or project teams of the Clean Air Strategic Alliance. Two notices were dispatched over the AEN's CAE Caucus list serve announcing a February 7, 2011 workshop to discuss and compile responses to the 6 performance evaluation questions identified by the CASA board at its September 20, 2010 board meeting.

This report also provides additional advice from the ENGO Caucus which arose at their evaluation workshop. **Priority messages are in bolded text.**

#### 1. *Which elements of CASA processes are most valuable?*

There are several elements of CASA's consensus process that are valued by the ENGOs:

**- Dialogue and communication: Having decision makers represented in the room is more direct and efficient than lobbying ministers or working bi-laterally with the government; and,**

**- Opportunity to dialogue with all of the key players that are involved in or are impacting air quality management issues; ability to understand their perspective and develop relationships to further initiatives.**

**- ENGOs have an equal voice and opportunity to participate in the decision making process.**

**- Follow-up: efforts to ensure decisions are implemented as they were originally agreed upon, and to ensure long-term management and viability.**

**- Joint information gathering where stakeholders agree on the information to be acquired and who is trusted to gather it. This is in contrast to "battling expert consultants".**

**- CASA strives towards a culture of fairness that tries to level the playing field of participation. Policies of balance and stakeholder support help ensure that CASA is inclusive and supportive, and tries to ensure that finances are not a barrier to participation.**

**- The recommendations themselves: CASA recommendations are products that stand the test of time; more influential, carries more weight.**

**- The promise that CASA consensus recommendations will be implemented as policy.**

- CASA's internal communications with stakeholders process is effective.

- CASA's resource library which is open to stakeholders is valued.

- Project teams, science symposium, workshops - helps all to enhance knowledge and get information.

- CASA's respect for sectoral self-selection for delegates.

*2. Where is there room for improvement?*

**CASA needs a new set of challenges** - a new suite of projects that are both contentious and fit government's priorities so CASA can continue to demonstrate value. The need for stakeholder involvement should be apparent.

**Update stakeholder support policy - availability is appreciated, but current level causes many groups to limit their involvement or not participate at all.** This undermines effective long-term participation by members of the sector which creates a comparative disadvantage.

CASA should reach out to local governments. CASA is virtually unknown in the towns and cities.

CASA should be in the education system as part of curriculum.

**The importance and significance of CASA Consensus Recommendations needs to be re-established. CASA Consensus Recommendations are "decisions", not merely "recommendations for consideration".**

Improvements in implementation monitoring is needed. Some recommendations are not being implemented as expected by CASA participants due to a lack of clarity or misinterpretation by implementers.

Preliminary training for participants in consensus-based decision making basics should be made available. Consensus-based decision making processes can be a challenging. Basic training for stakeholders would improve both the effectiveness of the process and the quality of the end-result.

**A stronger mentorship program for new/novice members in CASA norms to expedite cultural understanding, promote essential behaviours, and appreciate the significance of the organization.**



**Improve the rank of participation - participants have to be empowered to make deals, or have effective access to decision-makers.**

**CASA must be more product-output based vs. process-base**

Need more government leadership and direction.

First Nations participation - while there is some participation at the board level, it is low/non-existent in project teams

**There needs to be better intra-sector communication, stability, and consistency of participation. Last-minute, surprise participants must be avoided.**

**Overall attendance needs to have consistent carry-over of experience from meeting to meeting.**

Long-term monitoring of past frameworks for updating where necessary to ensure they remain relevant.

Project Management - the role as relationship/information broker seems to have disappeared from CASA's project managers. This role needs to be re-introduced.

The perception of the CASA process as too slow should be addressed. CASA needs to be fairly compared to other processes. Where CASA is slow due to training issues, this should be addressed. Where CASA is "slow" due to the complexity of an issue, this should be accommodated.

*3. How has CASA changed to stay relevant?*

There have been no apparent significant changes.

**Creation of the Strategic Foresight Committee.**

Vision statement was updated.

Executive Committee has started meeting with other Government of Alberta Departmental Committees.

Promoting the CASA approach to different audiences and jurisdictions (eg. CAMS to CCME).

*4. Where has CASA shown the greatest success?*

**A demonstrated model of a working, functional, multi-stakeholder consensus-building process.**

The Martha Kostuch course.

Flaring and Venting (1996 - 2006), Particulate Matter and Ozone Framework, Acid Deposition Management Framework, Electricity Management Framework.

**Creating a long-term forum for constructive dialogue; reducing confrontation / acrimony between stakeholder groups, and facilitating understanding of different positions and interests**

Science Symposiums (Nitrogen)

**Exporting CASA onto the National stage with CAMS.**

*5. What else should CASA be doing?*

CASA should have some role in all aspects and activities that impact air quality in the province. The role could be information-based, ensuring that CASA and its stakeholders are aware of activities related to air quality; or the more active role of providing policy advice through project teams and other initiatives. Currently, CASA is too limited by relying solely on the statement of opportunity process.

CASA needs to examine its role relative to overall air quality management, where its niche is, and have all stakeholders agree on its appropriate role.

CASA should seek opportunities to be more involved in the delivery of certain air quality management system components similar to its role with the CASA data warehouse.

CASA is not generally involved in the actual process of implementation. This can be a weakness as CASA may not be aware that its consensus recommendations are being misinterpreted or not implemented at all. CASA should consider whether a different approach to its role in implementation is needed.

*6. Is there still value in CASA and its approach?*

**CASA is better than any other process that the Provincial government uses.**

Recent experiences with regional plans seem to focus more on gathering industry input and draw attention away from participating in the CASA process.

**CASA has inherent values and qualities that are hard to replicate such as its history of success, its organizational culture, and the relationships it has fostered among the many of the stakeholders across the sectors. A new mandate is preferred to closing up shop.**

**There is value in CASA, but a more deliberate approach is recommended.** The organization's momentum has decreased in the last couple of years. To revitalize itself, CASA needs to seek important, challenging issues to act on.

*Other Advice of the ENGO Caucus*

CASA should be cautious about attempting to address an issue where the need for change from the status quo is not clear. CASA should address issues where the status quo is not acceptable. There should be a willingness on the part of government to act on the issue in order to create leverage for stakeholders to work through the CASA process.

There is a need to reconfirm some of CASA's guiding principles (ie., precautionary principle), and that CASA's vision includes protecting the health of all people, and not only the health of the population in aggregate.

## Government Caucus:

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Consensus model may not be perfect, but you can live with it.

Revisit what consensus is and how best to support it. Have to define whether it is the GoA/ministerial consensus or CASA

Be clear on GoA consensus vs. authority to make a decision. There is a distinction to be made between best efforts or commitment.

Government is in a unique position as many recommendations are either given to or for government.

Government is also unique in that it has all 3 orders of government represented – municipal, provincial and federal. Municipal elected officials bring their council mandate to the table.

Understand what consensus means

Does consensus work for the control entity i.e. whoever holds the authority to complete the action?

Appropriateness for CASA approach and the ability to assess issues. Does consensus as an approach fit the issue?

1. Understand consensus
2. More thoughtful and deliberate selection of issues for the consensus process.

The structure is also important as there are 3 sectors represented; ensure that those who need to be there are there.

Valuable to have 3 sectors that are integrated.

If an issue is cross-cutting how do you set reasonable expectations – is this the next bar that CASA sets for itself?

Past success is based on regulatory solutions

What is the “fit” of CASA’s role in the emerging reality of integration?

Should CASA alter its clear “line of sight” role?

The issues have been at the CASA table but there has been no clear approach

Change thinking around non-consensus being a failure

Don’t want to lose the value that the CASA process has built.

Emerging issues – robust thinking to address an issue.

The “product” is enhanced knowledge about an emerging issue

Probing for understanding the interests around an issue

Could be pre-work for a Statement of Opportunity.

Extension of the CASA CAMS process

Do a test issue and learn from it...i.e. unregulated point sources (dog food around Morinville)

Issues around odour problems that don't seem to fit in any one department or jurisdiction

Changes the level of thinking around an issue.

Test issues with respect to "built" environments as it could integrate more than air

Where to have the discussions about odours.

What is a path forward?

Do you necessarily need to regulate, or is there another avenue to address the issue?

No technical way to quantify odours

How do you deal with odours in general?

Odours around Ft. McKay

Vehicle Emissions

Indoor Air Quality

**Improvements:**

Re-communicate CASA across government; CASA needs to be described in the changing context.

Correctly frame the challenge and position oneself accordingly

A peace-making/peace-keeping or custodial function with respect to the nature and kinds of recommendations that are made

CASA is effective at engaging stakeholders who should be responsible for engaging the public

Determine if the answer is at the appropriate level; is the nature of the issue best handled by a project team or at the Board

Ensure a strong connection between; the sector on the project team and their counterpart on the Board

The process behind the project team member to foster efficient participation

Project team expectations are clearly outlined and understood

Orienting team members to role

Check back with constituency at milestones – clear messages

Do more of an analysis of the process throughout the life of the project as well as at the end

Check back for a common understanding and do the implications lend themselves to moving forward

Create a culture where stakeholders feel comfortable clarifying interests

**Success:**

Outreach to stakeholders and fostering engagement

Should/does CASA speak for the air i.e. “air keeper”.

Bringing interests together to: a) understand the problem

b) understand the interests

c) understand the path forward

Odour issues do involve the public.

*Item 2.2*

*Strategic Foresight Report*



# **Strategic Foresight Report**

Prepared by the CASA  
Strategic Foresight Committee

For the CASA Board of Directors

**March 10, 2010**





## **Background**

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In March 2010, the Board of Directors of the Clean Air Strategic Alliance (CASA) created the Strategic Foresight Committee (SFC) to prepare one of several inputs into its 2011 comprehensive strategic planning session. The Strategic Foresight Committee has taken an outward and forward look at the range of potential changes that would most significantly affect a CASA-like organization in the decades through to 2040.

While no foresight exercise can predict the future, an exploration of the range of possible futures can help position an organization to more confidently and effectively adapt to changing conditions as the future unfolds.

## **Introduction**

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The SFC is CASA's first effort in “futures work”, and is a unique project in the organization's history to date, in large part due to a dual purpose design. In addition to producing information for the board's planning consideration, the committee was also deliberately designed to be a learning journey to build capacity for practising foresight, both within CASA and in participating stakeholder organizations. As such, it called for something different from the participating team members.

The work drew on the participants' knowledge about CASA's historical and current role in air quality management, and their perceptions about the dynamics of CASA's current operating environment. Team members were also challenged to draw inferences about what these current dynamics might mean for the future. Most significantly, they were required to share these inferences with each other – to test them, to defend them, and to develop insights about how CASA may likely be challenged in the future.

Lastly, the SFC took the additional step of assembling a partnership – the Joint Foresight Project Team, consisting of CASA stakeholders and Foresight Canada personnel – that was, in composition, also unique.

## Methodology

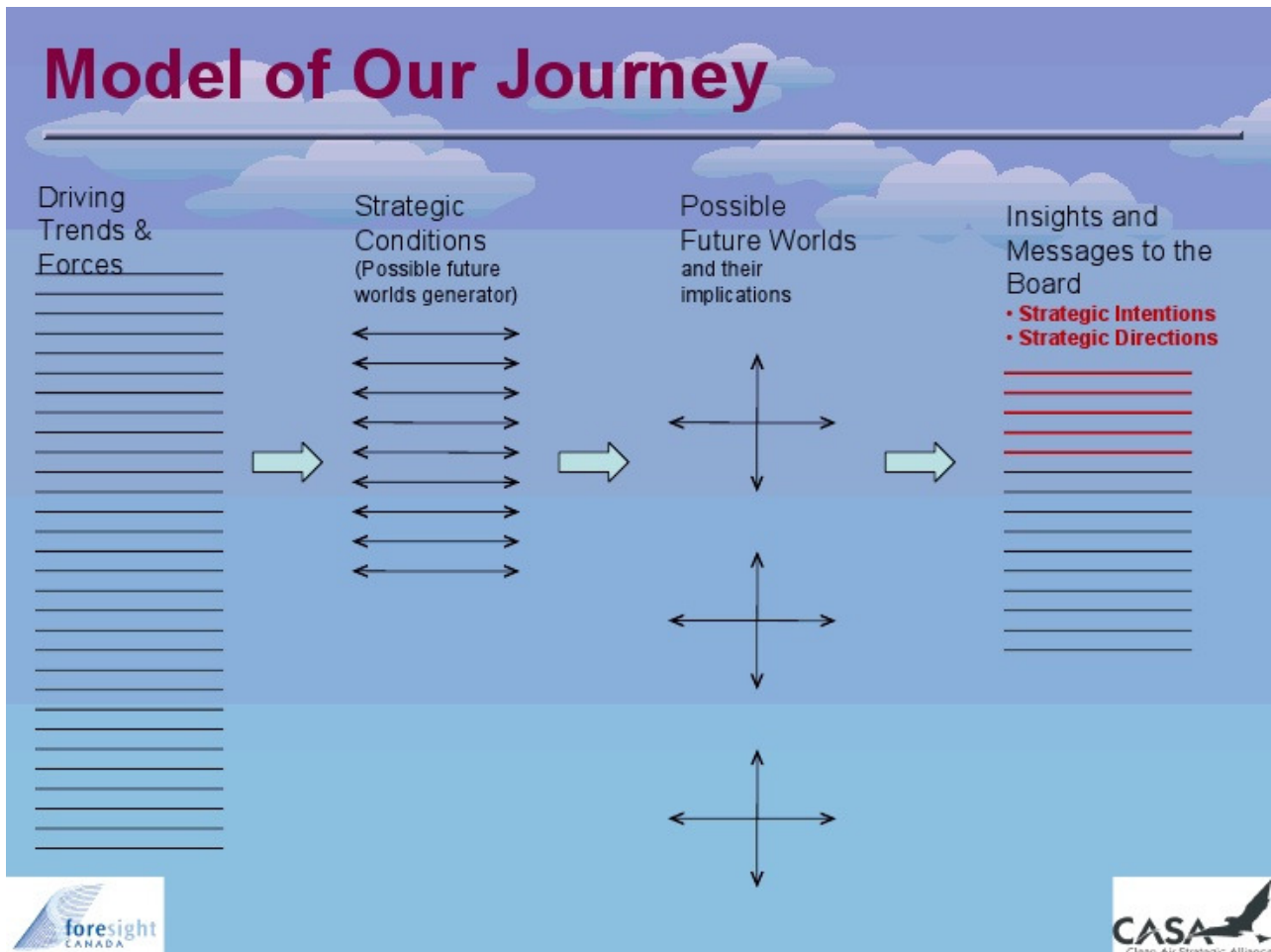
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The SFC's work was guided by a focal question, specifically:

*How might the reality of and concern for air quality in Alberta evolve to 2040, and what implications might this have for a CASA-like body in Alberta during the next 5 to 10 years?*

The committee worked through a series of workshops, which included exercises, individual reflection, and small group work, and covered five distinct phases:

- Current Observations
- Drivers and Trends
- Significant Strategic Conditions
- Possible Future Worlds (and their implications)
- Strategic Insights, Intentions, and Directions



## **Current Observations – The Current Consciousness of CASA**

Foresight Canada personnel conducted 30 minute telephone interviews with members of the Strategic Foresight Committee. The interview questions were designed to evoke observations about CASA's past and current performance, the contextual conditions contributing to this performance, and initial thoughts about the future.

## **Drivers and Trends**

Responses to air quality in Alberta are shaped by trends (aspects of physical or social reality that change over time), and the underlying causes of these trends, referred to as drivers. In a workshop, which included full-group and individual work, the team generated a comprehensive<sup>1</sup> list of trends and drivers that had the potential to shape the future of air quality to 2040. This list served as the foundation for full-group discussion to develop a short-list of the most important forces potentially shaping CASA's future. Although perspectives from a diverse range of stakeholder groups were represented at the table, there was significant overlap and agreement on the priority of the trends and drivers.

## **Significant Strategic Conditions**

The implications and effects of drivers and trends shape the future conditions that CASA may have to operate in. In other words, as a trend progresses through time, foreseeable consequences will arise. Additionally, these consequences may in turn become trends and drivers for a second order of consequences. Through full-group and small-group work, the SFC identified 9 significant drivers that were explored for their causal consequences. This enabled the team to develop its own impressions of the significance of each trend or driver and start to see a full range of future possibilities.

## **Possible Future Worlds**

While the team could come to consensus about the existence of certain trends and drivers, and even agree to their potential significance, it is axiomatic that no one can predict the future. Based on the prioritization of the trends and drivers, the team identified and explored the range of significant impacts and future conditions. The team explored the full *spectra of change* in order

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<sup>1</sup> 'comprehensive' – to the full limits of the participant's conception.

to understand how trend-change, in one direction or another, would shape the different future contexts that CASA would have to operate in. These contexts provide the basis of plausible narratives to describe possible futures.

### **Strategic Insights, Intentions, and Directions**

Plausible narratives of possible futures are valuable to current decision-making by provoking thoughtful attention to whether there is an organizational need for new capabilities or other changes to remain resilient and relevant in the future. The results of this thoughtful attention are captured as strategic insights, intentions and/or directions for the board to consider.

### **Range of Possible Future Worlds**

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It is important to anticipate the range of possible future conditions that could influence air quality management in Alberta and understand how CASA could and should respond to these conditions, so that it can continue to play an important and valued role in the future Alberta.

Do future drivers and trends continue to take us down the same path, or are there other drivers and trends that will make the challenges faced by Albertans different and may also make the way CASA needs to respond to those challenges different? The challenges of air quality in the face of escalating growth are likely to remain, but there are also drivers of change that focus on climate change and greenhouse gas emissions, water use and quality, and a shift to more unconventional energy sources. The spectrum of conditions for these drivers can be quite broad and the impact on Albertans could range from minor to major.

Using the list of priority trends and drivers, the team began to infer spectra of possible conditions that might impact air quality management in Alberta to 2040. Each spectrum needed to have a wide range of significant impacts and be related back to the trends and drivers. Through this process, the team developed nine spectra of possible future worlds.

### **Air Quality Data for Decision-Making**

Will there be a trend towards the gathering of comprehensive and robust data for air quality, climate change and energy development and will that data be shared widely? Will it be transparent and accessible and will there be quality interpretation of the data and communication of the findings? The future would be different if inconsistent, uncertain and sporadic data was the norm with restricted access and mediocre standards.

### **Willingness to Exercise Leadership on Air Quality Issues**

Will there be more aggressive and proactive effort – characterized by proactive industry action, certainty in the direction of air quality standards, and the perception of compliance as a minimum standard of performance – to enhance air quality management and ensure that all air quality issues are addressed? Will we experience little demand, or need, to change from the way air quality is managed today?

### **Scope/Size of Carbon Pricing and Impacts**

Will environmental conditions lead to higher prices on carbon to motivate more aggressive action on climate change, with concurrent effects on air quality? Will carbon pricing have little or no effect on the behaviour of industry and individuals?

### **Nature of Impacts of Climate Change on Alberta**

Will Alberta experience an obvious and extreme impact from climate change characterized by water shortages, disease, loss of biodiversity, and extreme weather events? Will Alberta experience local effects from climate change, such as a longer growing season with new agricultural opportunities, and nicer weather which shield us from effects elsewhere?

### **Holistic Economy: Prominence of Natural Capital in Human Ecological Decision-Making**

How will drivers and trends change the way Albertans value their health, the environment and the ecosystem? Will there continue to be an acceptance of trade-offs between the environment and the economy? Will there be a broad recognition of externalities and the value of natural

capital? Or will the GDP based economy, jobs and the fear of recession continue to dominate the minds of Albertans? Will the balance shift?

### **Seat of Power: Role and Relationship of Non-Government Players in Environmental Decision-Making**

Will the Government of Alberta increasingly rely on stakeholders as advisors on the range of policy perspectives on air quality? Will stakeholders increasingly be asked to develop solutions for implementation by government?

### **Ability of the Government of Alberta to Influence/Shape Alberta's Future**

What will be the response of the Alberta Government? Will future drivers and trends take us to the point where globalization means that the decisions impacting Alberta's future will be largely dictated by global governments and markets? Will the seat of power rest with a Government that serves as a unilateral decision maker? Or will existing multi-stakeholders collaborative efforts continue and be enhanced so that mutually developed policy making becomes more of the norm rather than the exception?

### **Impact of Air Quality on Individual Albertans' Well-Being**

Will lack of data, or confusion about the effects of air quality on Albertan's well-being prevent more aggressive action? Will air quality become a significant driver of behaviour change among consumers, commuters, investors, and designers?

### **Degree of Innovation in Production and Use of Alberta's Hydrocarbon Resource**

Will the future drivers and trends lead us to an innovative and rich technological future where breakthroughs not only advance how emissions can be controlled but also help avoid the generation of emissions by new processes for energy development? Technology has had a major influence on how Alberta has changed in the last 30 years. What will the next 30 years look like?

There are many possible futures for Alberta and the combinations and permutations of the different issues we face, the tools we have at our disposal to deal with the issues, and the values and governance of the province present a wide range of options. CASA needs to carefully

consider the range of possible future conditions, track the trends, and determine how CASA can be best positioned to succeed, no matter what the future may be.

Of over 75 trends and drivers identified in the project team's work, there was consensus amongst the different stakeholders that dramatic change in the above nine trends and drivers would likely have a significant effect on CASA's future. Developing a means to track these trends – a kind of strategic foresight 'dashboard' for CASA – should be considered.

## **Key Insights**

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Today's operating context differs considerably from that which existed when CASA was established. Air quality challenges still exist, however their nature has become increasingly complex. In response, our management needs have evolved to require consideration of cumulative impacts across environmental media; heightened integration amongst social, economic and environmental arenas; and increased collaboration amongst a wider range of stakeholders at multiple geographic levels.

The strategic foresight project enabled participants to acknowledge the evolution of this context and to consider a range of possible futures. It forced team members to divorce themselves of the belief that the future is predictable and predetermined and to contemplate the risks associated with a 'business as usual' approach to tomorrow's challenges. As such, the SFC concluded the following:

- CASA *can be* relevant and responsive today and into the future, *but...*
- This relevancy and responsiveness is dependent upon CASA's ability to adapt to today's realities and to mature in parallel with our evolving context.

Meeting this challenge will require, amongst other things, building upon CASA's success, defining its character, expanding its reach and focus, and building capacity.

### **Building upon Success**

- Air quality management in Alberta has advanced over the past fifteen years, much of which may be attributed to the results of the multi-stakeholder process enabled by CASA.



- Through ongoing dialogue and collaboration, CASA members have achieved a level of engagement and synergy that has led to sound and durable solutions to air quality issues.
- As the future unfolds, it will be important to capitalize on and heighten this multi-stakeholder approach and to continue to serve as a forum for relationship building.
- Building upon such past successes will help ensure organizational responsiveness to priority matters, foster innovation and optimize air quality expertise.

### **Defining the ‘S’ in CASA**

- To date, CASA has focused primarily on generating solutions to air quality challenges in the province. In doing so, the organization has assumed an operational character, providing sound technical advice on policy and regulatory elements of the air quality management system.
- While this role has been of value, it has raised the question of whether CASA is a ‘Clean Air Solutions Alliance’ or a ‘Clean Air *Strategic* Alliance’, or possibly both. Finding clarity on this matter is fundamental to moving forward.
- Opportunity exists for CASA to demonstrate strategic leadership and to play a more proactive role in addressing emerging issues and shaping our collective path forward.

### **Expanding CASA’s Reach and Broadening its Focus**

- Regardless of whether CASA is a multi-stakeholder alliance for solutions or strategy, the reach of the organization can be expanded.
- Opportunity exists to think more holistically about air quality management and to consider integrated approaches across environmental media.
- CASA may consider tackling issues beyond its current scope, particularly issues associated with climate change.
- In addition, CASA’s influence need not be restricted to provincial level policy and approaches, but instead be expanded to inform air quality management at a national, inter-provincial, regional and sub-regional scale.
- Such extension may require the engagement of a broader range of stakeholders and increased focus on education and outreach.

## **Building Capacity**

- As CASA's operating context evolves, so too must its capacity to interact with and optimize this context.
- It will be important for CASA to evaluate its role and approaches on an ongoing basis. This may include an assessment of its vision, mission, structure and consideration of options for decision-making processes beyond CASA's traditional consensus-based approach.
- Broadening CASA's focus and engaging a wider range of stakeholders will also require enhanced capacity to facilitate 'interest-based' discussions and to contemplate air quality management issues beyond those associated with regulated emissions.
- If CASA intends to become a *strategic* alliance, capacity will be needed to understand the operating context and its implications to the organization, to anticipate and adapt to change, and to consider future possibilities so as to pursue proactive efforts.
- This may involve the routine inclusion of environmental scanning and foresight exercises and the creation of reflection time to ensure appreciation of past circumstances and performance.

## *Item 2.3*

# *Preparing for Change: Exploring the Full Range of Possible Futures*





Courageous, Loving and Strategic Leadership



# Preparing for Change: Exploring the Full Range of Possible Futures

A Report on the Strategic Foresight Project  
Undertaken with the Clean Air Strategic Alliance  
September 2010 to March 2011

Prepared By  
Ruben Nelson  
Executive Director

March 28, 2011

29 Des Arcs Road, Lac Des Arcs, AB, Canada, T1W 2W3  
T 403-673-3537, F 403-673-2114  
[foresightcanada@shaw.ca](mailto:foresightcanada@shaw.ca)

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# Preparing for Change:

## Exploring the Full Range of Possible Futures

### 1. Background and Purpose of the Strategic Foresight Project

This document sets out the essential elements of the 2010 – 2011 strategic foresight project undertaken by Alberta’s Clean Air Strategic Alliance (CASA). The major documents to which reference is made are found in the appendices. All of the Working Documents of the project, including PowerPoint slides, are on file in the CASA office.<sup>1</sup>

#### 1.1 Background

The Clean Air Strategic Alliance (CASA) is an Alberta-based not-for-profit organization that was formed in 1994 with a Mission “to recommend strategies to assess and improve air quality in Alberta, using a consensus process.” CASA’s Vision is of a world in which there are no adverse impacts, short or long-term, from the air in Alberta on people, animals or the environment.

CASA’s Board of Directors is a representative body made up of 20+ persons from all levels of government, including First Nations and Metis people, several industries and concerned NGOs. The CASA Board and its committees make decisions by consensus.

In the spring of 2010, the CASA Board wished to provide a solid foundation for its upcoming strategic conversations and inform its 2011 strategic planning. It chose to do so by utilizing the insights that emerged from its first strategic foresight project.

Accordingly, on July 23, 2010, CASA issued an RFP to solicit proposals for the strategic foresight project. (See Appendix A for the full RFP.) The RFP positioned the foresight project in this way:

The CASA Board of Directors meets four times per year. Every three years, CASA holds a two-day board meeting to facilitate strategic planning. The Board would like to initiate a strategic foresight process to inform the upcoming strategic planning session, to be held in June 2011. Strategic foresight is the process of creating and maintaining a forward view and using the insights arising in strategic and organizational ways. This foresight process will ensure the CASA Board has a solid foundation for strategic conversations and planning. It should prepare the Board to explore, make sense of and respond to the full range of anticipated changes in the next 20 to 30 years.

On August 19, 2010, Foresight Canada (FC) was awarded the contract to design, facilitate and participate in the strategic foresight project.

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<sup>1</sup> Clean Air Strategic Alliance, 10<sup>th</sup> floor, 10035 – 108 Street, Edmonton, AB, Canada, T5J 3E1, Ph. 780-427-9793

In early fall 2010, a Joint Foresight Project Team (JFPT) was created. It was made up of twenty persons drawn from the private, public and voluntary sectors and from CASA and Foresight Canada. (See point 4 on page 4 below for a description of the JFPT and Appendix B for the names of its members.)

### 1.2 Long-Term Purpose to be Served

The contract with Foresight Canada included these words:

The continuing intention that underlies the strategic foresight project is to better prepare the Board to explore, make sense of and respond to the full range of anticipated changes in the next 20-30 years as the Board seeks to realize its vision for air quality in Alberta.

## 2. Objectives and Design Considerations

### 2.1 Outputs (Hard Results/Objectives)

1. A written Report prepared by Foresight Canada (FC) and agreed to by the Joint Foresight Project Team (the JFPT is described below) – one that captures the essential logic, processes and content of the project and includes appropriate appendices. The critical strategic insights for CASA will be highlighted.
2. A PowerPoint presentation of the results of the project that can be made to the Board of Directors and, if desired, other interested stakeholders.
3. A variety of internal working documents and systems maps that have future utility for CASA.

### 2.2 Outcomes (Soft Results/Objectives)

1. The major drivers of strategic change in the next 20 to 30 years are identified and adequately described. (Note 'adequately' is understood as "for the purposes of CASA's first foresight project.")
2. The full range of possible futures for Alberta that will impact CASA in the next 20 to 30 years are identified and adequately described.
3. The strategic issues that CASA may face in the next 20 to 30 years are identified and adequately described.
4. Strategic insights/advice to which CASA should pay particular attention are identified and clearly set out.
5. Participants in the foresight project, both internal and external stakeholders, have a deepened understanding of strategic foresight and its relationship to strategic planning.
6. Participants in the foresight project have an increased capacity to work with and understand high-quality information regarding present trends, future events and possibilities.

7. The CASA Board of Directors is better able to explore, make sense of and respond to the full range of anticipated changes in the next 20-30 years as they seek to realize CASA's vision for air quality in Alberta.

### 2.3 Project Design Considerations

To increase transparency and allow readers of this report to check their assumptions against those made by FC, the major considerations that influenced Foresight Canada's design of the CASA strategic foresight project are set out here.

1. This project was CASA's first foray into strategic foresight. This fact and the small budget suggested that a clear and simple design was in order. The intention was to meet the immediate needs of CASA's Board and set it up for more sophisticated work in the future. In this light, the scale of the project was seen to be appropriate.
2. The project was designed and undertaken primarily as a learning, training and capacity development experience for CASA's Board, staff and stakeholders. Everything in the project was done with a view to enhancing the capacity of those who participated to better see, think through and shape the future. This is not to say that the cognitive content was given short shrift; it was not.
3. The fact that foresight work necessarily entails surfacing and challenging deeply-held assumptions and commitments was openly acknowledged and stated.
4. A Joint Foresight Project Team (JFPT) was created to undertake the foresight project. It was made up of all persons – those named by both CASA and FC – who participated regularly in the foresight project. The intention of the JFPT was to increase the ownership of the process and its outcomes by all participants; increase learning; and reduce client/vendor conflicts.
5. A seven person JFPT Steering Group guided the design and work of the JFPT, and carried the responsibility for the overall management of the project. It was made up of two Co-Chairs from JFPT, two CASA Staff and three FC staff.
6. As not all members of the CASA Board of Directors were involved in the JFPT ways were sought to engage the whole Board of Directors in the work and thinking of the JFPT before its work was formally presented to the Board in March 2011.
7. It was openly acknowledged that the CASA foresight project would require rather more time and work than a project with a small budget would normally allow. To begin with, the project needed to be of a high enough quality to ensure that its recommendations were reliable. Scattered insights do not provide a secure base for a new push to shape the future. Second, insight generation is somewhat capricious. Insights cannot be called up "on time and on schedule." Enough time must elapse between work sessions for ideas to emerge, germinate and take hold.
8. The logic of the outcomes set out in CASA's RFP was used as the logic of the foresight project – moving from the forces of change (trends and drivers), to the range of possible future states within which CASA may find itself, to the strategic



issues and insights (both positive and negative). A preliminary phone conversation with most members of the JFPT was undertaken at the front end. This process allowed a focal question to emerge.

9. Much of the creative work was undertaken in a series of six day-long workshops with members of the JFPT. They were spaced at three to four week intervals between October 18, 2010 and February 22, 2011. They were held alternatively in Edmonton and Calgary, in keeping with CASA's normal practice.
10. The identification of the full range of possible conditions within which CASA may find itself was deemed to be more important than the elaboration of detailed scenarios about how each of the possible conditions may actually develop.

### 2.4 The Rhythms of Each Workshop

The skeletal structure of each workshop was as follows:

- Welcome by one of the two Co-Chairs of the JFPT.
- Introductions and a Check In.
- Review of the overall logic of the project and identification of the stage we were at and the work to be done.
- Undertake the work of the day.
  - A bit of foresight theory.
  - Review and consolidate previous work.
  - Undertake new work.
- Reflect on the day and a Check Out.
- Anticipate the next workshop and assign homework.
- Adjourn.

### 2.5 The Objectives of Each Workshop

The objectives of each workshop were as follows: (See Appendix C for the full Agendas.)

1. JFP Team members understand and are committed to the project.  
JFP Team members have a preliminary feel for the 2<sup>nd</sup> generation of foresight. Trends and Driving forces of change affecting CASA and air quality have been identified.
2. JFP Team members have identified, explored, weighed and come to understand the most significant trends and driving forces of change that may well affect air quality in Alberta and CASA to 2040.
3. JFP Team members understand and begun to use the three levels of generality in Foresight Canada's Whole Systems Governance Onion.  
JFP Team members understand how a range (a spectrum) of possible future conditions can be derived and fleshed out using a list of trends and drivers. An initial set of spectrums of possible future conditions have been derived from the trends and driving forces of change.

4. JFP Team members understand the set of spectra of possible future conditions that have been derived from the trends and driving forces of change.  
JFP Team explore a variety of ways of working with and understanding the implications of the spectra of possible future conditions.  
JFP Team members understand what is meant by an “insight” for the Board.  
Open a dialogue about how we will engage the Board with the insights we generate.
5. JFP Team members explore the implications of the spectra of possible future conditions for air quality and CASA by working with the ends in two ways.  
JFP Team members review, add to and begin to order their insights and messages for the Board.  
JFP Team members think further about what is involved in engaging the Board with the insights and messages generated for the Board.  
JFP Team members are clear about how a draft report to the Board will be created and reviewed by them at meeting #6.
6. JFP Team members have reviewed and critiqued the draft materials for the March 10 Board meeting.  
JFP Team members have agreed on ways to engage the Board.  
JFP Team members have completed a self-assessment and agreed on recommendations for the Board.

### 3. Key Themes of the Work

#### 3.1 Getting on Board the Strategic Foresight Project

Foresight Canada undertook one-on-one phone conversations with most members of the JFPT prior to the first workshop. The intention was twofold: (1) to assist JFPT members to develop clear and grounded expectations of what the upcoming foresight project would, and would not, entail; and (2) to allow FC to develop a grounded sense of the members’ views of CASA’s (a) current condition, (b) future issues, and (c) available strategies for dealing with the emerging issues. A summary report of these conversations was discussed at the first workshop. (See Appendix D for a summary.)

In addition, time was invested during the first workshop in digesting the Board’s rationale for the project, its logic, structure, design, outputs and outcomes. These items were reviewed at each subsequent workshop with a view to identifying the particular contribution of the work of each workshop. (See Appendix E for an overview of the logic and structure of the project.)

#### 3.2 Getting on Board Strategic Foresight 2.0

These were the key points made during the introduction to strategic foresight 2.0<sup>2</sup>:

- Foresight is the capacity to make reliable decisions in the present in light of an imaginative exploration of the possible conditions of the future. As such it is about

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<sup>2</sup> See especially the PowerPoint slides for workshops #1 and #4.

making more reliable decisions in the light of uncertainty about future conditions. Thus defined, foresight is commonly used daily in every human culture.

- ‘Strategic’ as used by Foresight Canada has to do with setting and altering one’s trajectory through time across emerging and uncertain conditions.
- ‘Strategic foresight’, therefore, limits its focus to those few matters, internal and external, which set or alter one’s trajectory into a dynamic and uncertain future. Therefore, strategic foresight is not a form of planning. Rather, it is an exploration of one’s changing context as a basis for the conscious determination of one’s trajectory in history.
- Strategic foresight assumes that all persons, groups, cultures and forms of civilization develop a dominant set of unconsciously-held perceptions and understandings that shape their default views of and responses to the world. It assumes, further, that in a world as dynamic as ours many of our inherited default views no longer map the current world, much less the range of possible future worlds. The result is that we systematically make inappropriate decisions because the world in our heads no longer maps on to the world as it is emerging.
- In these terms, the major function of strategic foresight is to stretch our minds, hearts and imaginations enough that they can notice, see, explore, understand and respond to the full range of possible futures that actually face us.
- The next generation of strategic foresight (foresight 2.0) differs from the usual practice because it rests on a post-critical ontology and epistemology, rather than the earlier realist foundations. As such the social construction of societal realities is taken for granted.<sup>3</sup>
- One way to locate strategic foresight is to distinguish it from both administration and management.
  - Administration: Looks inward with the eyes & mind of an operator.
  - Management: Looks inward/outward with the eyes and mind of a manager.
  - Foresight 1.0: Looks outward with the eyes & mind of a manager.
  - Foresight 2.0: Looks outward with the eyes & mind of a whole systems governor.
- The CASA strategic foresight project was designed on the basis of this understanding and with the objective of stretching our imaginations into new shapes.

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<sup>3</sup> For those who are interested in a longer exploration of the case for and nature of foresight 2.0, a copy of “Extending Foresight” by Ruben Nelson may be obtained from the CASA office or Foresight Canada.

### 3.3 The Focal Question

The focal question for the foresight project emerged out of discussion of the preliminary phone conversations, the nature of strategic foresight and the Board's need for an futures-informed strategic planning session in June 2011. It was:

- How might the reality of and concern for air quality in Alberta evolve to 2040, and what implications might this have for a CASA-like body in Alberta during the next 5-10 years?

Note that the question has both an expansive (to 2040) and more immediate (next 5-10 years) focus. The phrase "CASA-like body" allowed participants to think beyond CASA as it is and has been, and also value highly what it is and has been.

### 3.4 Trends and Driving forces of change

Given the time pressures of each workshop, FC decided to seed the trends and driving forces of change discussion with a preliminary list of both trends and drivers. JFP Team members were invited to add to the list and refine it. Then participants were asked to identify the most significant trends and driving forces of change. (See Appendix G for the complete list of trends and drivers and the list of those judged to be most significant.)

### 3.5 Possible Future Conditions

Given the near impossibility of working with hundreds of trends and driving forces of change, it is necessary to combine them into a manageable set of possible future conditions. Foresight Canada does this by the creation of a *spectrum of possible future conditions*. A well-formed spectrum will measure a major and significant societal feature about which there is deep uncertainty as to how it may turn out to be in the future, i.e. it will have ends that are dramatically and substantially different. The uncertainty results from the fact that there are trends and drivers pushing towards each end. The point is that, as of today, we do not know where we will be on the spectrum in 30-50 years, although we do know we will likely be somewhere on it. This means that today we are uncertain about the actual conditions we will face in the future regarding the societal feature in question.

For example, a spectrum may measure where Albertans will predominantly live in the future. One end would be "in the Calgary/Edmonton corridor." The other end would be "scattered over the whole landscape." If the time frame is to 2040, then even a cursory knowledge of Alberta reveals more uncertainty about this spectrum than is normally assumed. It is the case today that the trends that are now allowed to shape Alberta's future are largely those of the marketplace, and that the market seems to be trying to get as many people into the Calgary/Edmonton corridor as soon as possible. Behind this overall trend lies such trends as the desire for an easier life (typically rural life is harder); the desire for the kind of services that larger towns and cities have; the education of women and their participation in the economy as employed persons; the preferences of the development industry; the centralizing nature of our highway infrastructure. The list goes on. However, counter trends also exist and may well strengthen. The desire to live in smaller place with a real sense of community; the need for Alberta to respond to the looming global food crisis by focusing again on agriculture, especially on foods that now

come from thousands of miles away; the disenchantment with industrial agriculture (will it grow?); the emergence of information, communication and manufacturing technologies that enable re-settlement of distant-from-major-cities-landscapes. Again, this list is not exhaustive.

The JFPT identified nine such spectra of possible future conditions. (See Appendix H for the list of the nine spectra of possible future conditions that will shape CASA and air quality.)

### 3.6 Possible, Probable and Preferred Futures

Each JFP Team member was asked to identify where in each spectrum he/she thought (a) Alberta was now, (b) Alberta would likely be in 2040, and (c) he/she would like to see Alberta in 2040. Thus we surfaced the group's judgment about the present and futures possible, probable and preferable. Further, JFP Team members were asked to think through how today's CASA would do if the future turned out to be at one of the ends of each spectrum. This is a form of wind-tunneling. Finally, JFP Team members were asked to imagine and think through what it would like for Alberta and for CASA to (a) make the journey from the present to their probable future and (b) influence Alberta to arrive at their preferred future. (See Appendix H for the worksheets used to work with the uncertain conditions that will shape CASA and air quality.)

### 3.7 Insights for the CASA Board

From the beginning of the foresight project it was clear that at the highest level of description the objective of the project was to:

Inform the Board's Strategic Planning in June, by (a) exploring the full range of anticipated conditions to 2030 – 2040, (b) providing foundation for insightful strategic conversations about positioning CASA for future success, and (c) increasing CASA's capacity for dialogue based on strategic foresight.

Beginning with workshop #4, we invited JFP Team members to note, capture and share any insights that emerged for them from the work of the JFPT. By "any insight" we meant a perception that dug beneath the surface and revealed something worth noting that bore directly on CASA strategic dialogue and planning for its future. These were reviewed and refined at workshop #5 and again by the JFP Steering Group. (See Appendix I for the insights developed by the JFPT.) These insights were further refined by those making part of JFPT presentation to the Board.<sup>4</sup>

### 3.8 Engaging the CASA Board

As noted above in Section 2.3, it was always seen to be part of the JFPT's responsibilities not only to learn on behalf of CASA, but to engage the members of the Board who were not part of the JFPT<sup>5</sup> regarding what was being learned and its apparent importance to CASA's future. Therefore, this item was discussed at workshops #5 and #6. It was decided that all members of the CASA Board who were not members of the JFPT would

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<sup>4</sup> Available from the CASA office.

<sup>5</sup> Seven members of the JFPT were members of CASA's twenty-four member Board of Directors.

be given an opportunity to talk with a member of the JFPT prior to the March 2011 and June 2011 Board meetings.

### 4. Reflections on the CASA Strategic Foresight Project<sup>6</sup>

- Basically, the project did what it was intended and designed to do: (1) develop future-oriented insights that will inform the strategic conversations and strategic planning of CASA's Board of Directors, and (2) increase the capacity of the project participants to understand, utilize and undertake strategic foresight work.
- The reasons the project succeeded include:
  - CASA's RFP was exceptionally well-written. Specifically, it clearly stated the desired outputs and outcomes and challenged responders to devise ways to achieve them. Sadly, such clarity is all too rare in futures-oriented RFPs.
  - The basic design of the project was sound and appropriate. Specifically, the creation of the JFPT and its Steering Group, logic and structure of the project, and the timing of the workshops.
  - CASA had allowed enough time in the overall schedule to cope with unforeseen delays, such as we had at the beginning. It took longer than anticipated to put the JFPT together.
  - JFP Team members showed up at each workshop willing to work, and they did so. This is in contrast to many projects which are basically carried by the consultants.
  - The time for each person to check-in and check-out at each session allowed for the project to develop with a sense that it was a learning journey with its own unique rhythms. The check-in and check-out also allowed participants to raise questions and express doubts about the way the journey was unfolding. This was particularly acute during workshop #3.
  - The memo to participants from the Steering Group after workshop #3, entitled "Reflections on the Foresight Project" was particularly appreciated. It pointed out that with human processes one is often halfway through the time without being halfway through the work; that this was alright as the work would come together more rapidly during the second half of the time. This perspective enabled participants to adjust their expectations regarding the rhythms of the work.
  - The fact that the JFPT's responsibility was only "to inform" the Board's strategic conversations and planning; that it did not have to choose a particular future for CASA. This, of course, is consistent with the good use of foresight. The credit is wholly due to the overall design developed by CASA to enable the Board to engage in a strategic conversation about its future.

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<sup>6</sup> The reflections captured here do not claim to be exhaustive. However, an attempt has been made to record the most fundamental observations made by members of the JFPT.

- The foresight project was experienced by many participants as an effective team building process. This is in keeping with foresight as a human journey that increases the inclusiveness of one's perceptions, the reliability of one's knowing and the depth of one's judgment.
- Because the strategic foresight project was the first exercise of CASA's Strategic Foresight Committee (SFC), the actual report to the Board regarding the work and results of the project will be made by members of the JFP Team wearing their hats as members of the Board's SFC. (For copies of these reports, see the CASA office.)
- Overall the foresight project was personally satisfying to the participants as a foray into the world of strategic foresight. As a participant in this process, Foresight Canada also found this to be true.

### 5. Appendices

The following appendices contain the critical documents developed before or during the CASA strategic foresight project.

A.	CASA's Request for Proposals .....	- 13 -
B.	Members of the Joint Foresight Project Team .....	- 18 -
C.	Agendas of the Six Workshops .....	- 21 -
D.	Summary of the One-on-One Conversations .....	- 28 -
E.	Structure and Logic of the Foresight Project .....	- 37 -
F.	Foresight Canada Whole Systems Governance Onion .....	- 39 -
G.	Trends and Driving Forces of Change .....	- 41 -
H.	Spectra of Possible Future Conditions .....	- 50 -
I.	Insights that Illuminate the Focal Question .....	- 61 -

Appendix A  
CASA's Request for Proposals



## Preparing for Change

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*Clean Air Strategic Alliance*

*Request for Proposal - No 02-10*

Clean Air Strategic Alliance  
10<sup>th</sup> Floor, 10035-108 Street  
Edmonton, Alberta

**T5J 3E1**

Telephone: 780-427-9793

Fax: 780-422-3127

Internet: [www.casahome.org](http://www.casahome.org)

**RFP Number: CASA-02-10**

**RFP Issue Date:** July 23, 2010

**RFP Close Date:** August 6, 2010

**RFP Close Time:** 4:30 p.m.

**Contracting Manager:**  
Robyn-Leigh Jacobsen  
Project Manager  
Clean Air Strategic Alliance

**Clean Air Strategic Alliance  
~ Strategic Foresight Project ~**

**Vendors must sign and return this form with their proposal**

Enclosed is our proposal submitted in response to the above noted Request for Proposal

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Telephone/Fax

\_\_\_\_\_  
E-Mail

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Title

The Sections of this RFP include:

- 1.0 Organizational Overview
- 2.0 Background
- 3.0 Scope of Work Required
- 4.0 Request for Proposal
- 5.0 Disclaimer

### **1. Organizational Overview**

The Clean Air Strategic Alliance (CASA) was established in March 1994 as a forum to manage air quality issues in Alberta. CASA is a non-profit association composed of diverse stakeholders from government, industry, and non-government organizations. Representatives from each of these sectors are committed to developing and applying a comprehensive air quality management system for the people of Alberta. More information on CASA may be found at [www.casahome.org](http://www.casahome.org).

### **2. Background**

The CASA Board of Directors meets four times per year. Every three years, CASA holds a two-day board meeting to facilitate strategic planning. The Board would like to initiate a strategic foresight process to inform the upcoming strategic planning session, to be held in June 2011. Strategic foresight is the process of creating and maintaining a forward view and using the insights arising in strategic and organizational ways. This foresight process will ensure the CASA Board has a solid foundation for strategic conversations and planning. It should prepare the Board to explore, make sense of and respond to the full range of anticipated changes in the next 20 to 30 years.

### **3. Scope of Work Required**

The key tasks and outcomes CASA requires from the strategic foresight process are discussed below. Interested consultants should determine the most suitable ways to achieve the stated outcomes and the supporting work.

#### *Key Tasks*

1. The consultant shall design and facilitate an appropriate process to achieve the outcomes set out below.
2. The consultant shall undertake any background work required by their process.
3. The consultant shall make “best efforts” to ensure that CASA Board members, staff and stakeholders are appropriately involved. The consultant may seek assistance from the committee to engage the appropriate parties.
4. The consultant shall prepare a report that details the essential logic and content of the process and includes appropriate appendices.
5. The consultant shall assist CASA’s staff to determine and design appropriate ways to engage the CASA Board with the results of this project.

#### *Outcomes*

7. The major drivers of strategic change in the next 20 to 30 years have been identified and adequately described.

### 8. *Clean Air Strategic Alliance*

### *Request for Proposal - No 02-10*

9. The full range of possible futures for Alberta that will impact CASA in the next 20 to 30 years has been identified and adequately described.
10. The strategic issues that CASA may face in the next 20 to 30 years have been identified and adequately described.
11. Strategic insights/advice to which CASA should pay particular attention have been identified.
12. Participants in the foresight process (internal and external stakeholders) have deepened their understanding of foresight and its relationship to strategic planning.
13. Participants in the foresight process have increased their capacity to work with and understand high-quality information regarding present trends and future events and possibilities.

#### **4. Request for Proposal**

There are several ways to achieve the work described above and the CASA working group invites you to submit an original proposal for undertaking this work. Proposals must consider how to complete this project within the budget of \$10,000, including any out-of-pocket expenses. In your proposal, please provide the following:

- A brief overview of the consultant's experience with this type of evaluation.
- A budgetary estimate, including a breakdown of the costs.
- A project rationale, design, and work plan.
- A time schedule and major milestones, including regular meetings/conference calls to discuss progress, results, and key issues.
- A declaration of capacity to deliver the key tasks and outcomes within the budget of \$10,000.

If the work cannot be completed within the required timeframe (final report by January 2011) please propose an alternate completion date.

We are currently working to select a consultant and have a contract in place by August 13, 2010. We expect the work to be completed as soon as is feasible, but with a final report due no later than January 31, 2011.

The working group will discuss the scope of the proposal with interested consultants by phone and respond to any questions before proceeding with its selection process.

#### **5. Disclaimer**

This RFP is not a contract, or an offer to enter into a contract, but is a RFP for the supply of service to the Clean Air Strategic Alliance. The Clean Air Strategic Alliance reserves the right to reject any or all proposals, whether or not completed properly and whether or not a proposal contains all the required information. The Clean Air Strategic Alliance may reject any and all proposals without further questions or redress from respondents. The Clean Air Strategic Alliance reserves the right to accept or reject proposals in whole or in part, to discuss different or additional terms to those currently included in the RFP or in any proposal, and to amend or modify any term in this RFP. The Clean Air Strategic Alliance

## Preparing for Change

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*Clean Air Strategic Alliance*

*Request for Proposal - No 02-10*

shall not be responsible for any cost incurred by the proponent in preparing a proposal or in completing other work prior to the signing of a contract with the Clean Air Strategic Alliance.

Following the evaluation of submissions by the Clean Air Strategic Alliance, the successful contractor will be invited to enter into an agreement with the Clean Air Strategic Alliance to provide the required products and/or services detailed in this RFP.

This RFP is a private and copyrighted document that may not be copied or distributed without permission.

All proposals must be received by 4:30 p.m. MST on August 6, 2010, to be eligible for consideration. Late proposals will not be accepted.

Please submit the proposal in one (1) electronic copy in either Microsoft Office Word (.doc) or Adobe Acrobat (.pdf) format. Please forward all proposals to Robyn-Leigh Jacobsen.

*Robyn-Leigh Jacobsen*  
*Project Manager*  
*Clean Air Strategic Alliance*  
*10<sup>th</sup> Floor, 10035 – 108 Street NW*  
*Edmonton, Alberta T5J 3E1*  
*Telephone: (780) 644-5180,*  
*Fax: (780) 422-3127*  
*Email: [rjacobsen@casahome.org](mailto:rjacobsen@casahome.org)*

CASA will review all proposals and make a final selection of the successful vendor.

**Appendix B**  
**Members of the Joint Foresight Project Team**

David Chaplin  
Foresight Canada

Stephanie Clarke  
Branch Head  
Strategy Development and Foresight  
Alberta Environment

Gerry Ertel  
Manager, Regulatory Affairs  
Oil Sands  
Shell Canada Limited

Jillian Flett  
Section head  
Strategic Planning and Development  
Alberta Environment

Kristina Friesen  
Executive Director  
Alberta Capital Airshed Alliance

Eileen Gresl-Young  
Manager  
COPD & Asthma Network of Alberta

Robyn-Leigh Jacobsen  
Project Manager  
Clean Air Strategic Alliance

Myles Kitagawa\*\*  
Associate Director  
Toxics Watch Society of Alberta

Norman McLeod  
Executive Director  
Clean Air Strategic Alliance

Ruben Nelson  
Executive Director  
Foresight Canada

Al Schulz  
Alberta Regional Director  
Chemistry Industry Association of Canada

Chris Severson-Baker  
Managing Director  
Pembina Institute for Appropriate Development

Rich Smith  
Executive Director  
Alberta Beef Producers  
[richs@albertabeef.org](mailto:richs@albertabeef.org)

## Preparing for Change

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Jennifer Steber  
Assistant Deputy Minister  
Resource Development Policy Division  
Alberta Energy

Brian Wiens  
Head, Air Quality Science Unit  
Meteorological Service of Canada  
Prairie and Northern  
Environment Canada

Brian Woodward  
Associate Executive Director  
Foresight Canada

Beverly Yee\*\*  
Assistant Deputy Minister  
Strategy Division  
Alberta Environment

\*\* indicates JFPT Co-Chair

Appendix C  
Agendas of the Six Workshops



### **CASA Strategic Foresight Project**

Meeting #1, Joint Foresight Project Team

10:00 AM to 3:30 PM, Monday, October 18, 2010

CASA Board Room

Edmonton

V 4.0

#### **Objectives of the Workshop**

- All JFP Team (JFPT) members understand and are committed to the project
- All JFP Team members have a preliminary feel for the 2<sup>nd</sup> generation of foresight
- Trends and Driving forces of change affecting CASA and air quality have been identified

#### **Agenda**

1. Welcome Myles Kitagawa and Bev Yee, Co-Chairs, JFP Steering Group (15 min)\*
    - Background and purpose of the foresight project
    - Role and expectations of the Joint Foresight Project Team
    - Role of the JFP Steering Group
  2. The CASA Foresight Project (30 min)
    - Introductions
    - Hopes, Fears, Expectations
    - Results – hard and soft
    - Logic of the work of the JFP Team
    - Work pattern of the Meetings of the JFPT
    - Times/Dates for Future Meetings of the JFP Team
    - Working agreements
  3. An Introduction to Strategic Foresight: (60 min)
    - What it is and what it isn't
    - The 2<sup>nd</sup> generation of foresight
  4. Report/Discussion – the Pre-Meeting Phone Conversations (30 min)
- Lunch (30)
5. Trends Affecting the Future of Air Quality and CASA (60)
  6. Driving forces of change (60)
  7. Looking Back Over the Day and Forward to the Next Meeting (20)
  8. Adjourn

\* times are approximate

### **CASA Strategic Foresight Project**

Meeting #2, Joint Foresight Project Team

9:30 AM to 4:00 PM, Monday, November 8, 2010

33<sup>rd</sup> floor, President & Country Chairs Boardroom

Shell Centre, 4<sup>th</sup> Ave. & 3<sup>rd</sup> Street SW, Calgary

V 2.0

#### **Objectives of the Workshop**

- JFP Team members have identified, explored and come to understand the most significant trends and driving forces of change that may well affect air quality in Alberta and CASA to 2040.

#### **Agenda**

1. Welcome: Myles Kitagawa and Bev Yee, Co-Chairs, JFP Steering Group (20 min)\*
  - Introduction of new members
  - Overview of the CASA Foresight Project
  - Reflections and questions regarding the CASA Foresight Project
2. Overview of the Day (10 min)
  - Work of the Day
  - Objectives of the Day
  - Working Agreements
3. Task 1: Significant Trends/Driving forces of change Affecting Air Quality & CASA (45 min)
4. **Break** (15 min)
5. Group Reports and Plenary Discussion (45 min)
6. Task 2: Implications of the most Significant Trends/Drivers (45 min)
7. **Lunch** (30 min)
8. Group Reports and Plenary Discussion (45 min)
9. Task 3: Implications of the Most Significant Trends/Drivers II (45 min)
10. **Break** (15 min)
11. Groups Reports and Plenary Discussion (45 min)
12. Looking Back Over the Day and Forward to the next Meeting (30 min)
13. **Adjourn**

\* times are approximate

### **CASA Strategic Foresight Project**

#### **Meeting #3, Joint Foresight Project Team**

**9:45 AM to 4:00 PM, Thursday, December 9, 2010**

**CASA Board Room**

**Edmonton**

**V 2.0**

#### **Objectives of the Workshop**

- JFP Team members understand and begun to use the three levels of generality in Foresight Canada's Whole Systems Governance Onion.
- JFP Team members understand how a range (a spectrum) of possible future conditions can be derived and fleshed out using a list of trends and drivers.
- A set of spectrums of possible future conditions have been derived from the trends and drivers.

#### **Agenda**

1. **Welcome & check In:** Myles Kitagawa/Bev Yee, Co-Chairs, CASA JFP (20 min)\*
2. Review: The main steps of the CASA Foresight Project and the core question for meeting #3. (10 min.)
3. A bit of theory: Whole Systems Governance. (30 min.)  
**Break** (15 min.)
3. Exercise 1: Deriving and naming a set of spectrums of possible future conditions that are relevant to CASA. (50 min.)  
**Lunch** (30 min.)
4. Exercise 2: Group reports and plenary discussion to clarify the spectrums of possible future conditions. (50 min.)  
**Break** (10 min.)
6. Exercise 3: Fleshing out the ends of a spectrum of possible future conditions. (45 min.)
7. Exercise 4: Group Reports and Plenary Discussion (60 min)
7. Anticipating the Next Meeting and Check Out: Reflect on the Day. (15 min.)
8. **Adjourn**

\* times are approximate

### **CASA Strategic Foresight Project**

#### **Meeting #4, Joint Foresight Project Team**

**9:45 AM to 4:00 PM, Tuesday, January 11, 2011**  
**33<sup>rd</sup> floor, President & Country Chairs Boardroom**  
**Shell Centre, 4<sup>th</sup> Ave. & 3<sup>rd</sup> Street SW**  
**Calgary**

#### **Objectives of the Workshop**

- JFP Team members understand the set of spectra of possible future conditions that have been derived from the trends and drivers.
- JFP Team explore a variety of ways of working with and understanding the implications of the spectra of possible future conditions.
- JFP Team members understand what is meant by an “insight” for the Board.
- Open a dialogue about how we will engage the Board with the insights we generate.

#### **Agenda**

1. **Welcome & check In:** Myles Kitagawa/Bev Yee, Co-Chairs, CASA JFP (30 min)\*
2. **Measuring Our Progress:** The main steps of the CASA Foresight Project, the core questions for meeting #4 and a word about “Insights.” (30 min.)  
**Break** (15 min.)
3. **Clarifying and naming the Spectra and the Ends we have identified.** (50 min.)  
**Lunch** (30 min.)
4. **Exercise 1: Spectral Analysis I: Working with spectra of possible future conditions.** (55 min.)  
**Break** (5 min.)
5. **Exercise 2: Spectral Analysis II: End Point combinations.** (75 min.)  
**Break** (10 min.)
6. **Dialogue: Insights for the Board.** (20 min.)
7. **Dialogue: Engaging the Board** (30 min)
7. **Anticipating the Next Meeting and Check Out: Reflect on the Day.** (15 min.)
8. **Adjourn**

\* times are approximate

**CASA Strategic Foresight Project**  
**Meeting #5, Joint Foresight Project Team**  
**9:45 AM to 4:00 PM, Thursday, February 3, 2011**  
**CASA Boardroom**  
**Edmonton**  
**V 3.0**

### **Objectives of the Workshop**

- JFP Team members explore the implications of the spectra of possible future conditions for air quality and CASA by working with the ends in two ways.
- JFP Team members review, add to and begin to order their insights and messages for the Board.
- JFP Team members think further about what is involved in engaging the Board with the insights and messages generated for the Board.
- JFP Team members are clear about how a draft report to the Board will be created and reviewed by them at meeting #6.

### **Agenda**

1. **Welcome & check In:** Myles Kitagawa/Bev Yee, Co-Chairs, CASA JFP (20 min)\*
2. Review Edited Spectra and Choice of Spectra for insight Generation (30 min.)  
**Break** (10 min.)
3. Exercise 1: Spectral Analysis I: in Plenary (60 min.)  
**Lunch** (30 min.)
3. Exercise 1: Spectral Analysis II: in Groups (70 min.)  
**Break** (10 min.)
4. Groups Report and Plenary Discussion (60 min)  
**Break** (10 min.)
5. Dialogue: Insights for the Board. (20 min.)
6. Dialogue: Engaging the Board and the process for developing a draft report to the Board. (30 min)
7. Anticipating the Next Meeting and Check Out: Reflect on the Day. (10 min.)
8. **Adjourn**

\* times are approximate

### Strategic Foresight Committee – Meeting #6

**Date:** Tuesday, February 22, 2011

**Time:** 9:30 am – 4:00 pm

**Place:** Alberta Beef Producers, 320 – 6715 8 Street NE, Calgary

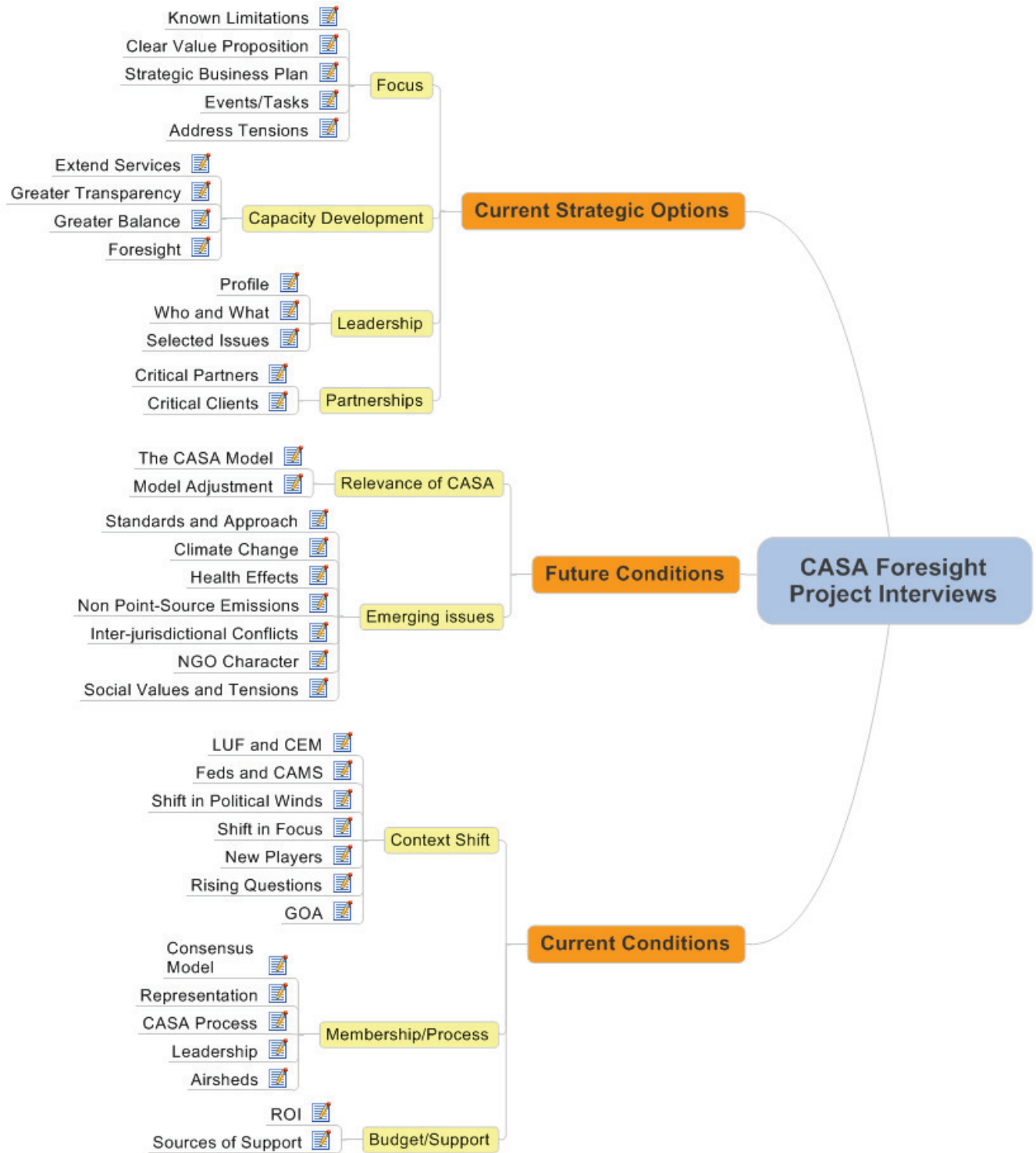
**Meeting objectives:**

- Review and provide feedback on the materials for the March 10 Board meeting.
- Discuss the plan for engaging the Board.
- Complete a self-assessment and discuss any recommendations for the Board.

<b>Time</b>	<b>Agenda item</b>
9:30	<b>1. Welcome and check in</b> <ul style="list-style-type: none"><li>▪ What are you thinking/feeling about the CASA foresight project?</li></ul>
10:00	<b>2. Remarks from Foresight Canada</b> <ul style="list-style-type: none"><li>▪ Review materials from workshop 5 – opportunity to discuss questions and comments.</li><li>▪ Brief overview of outline and timelines for Foresight Canada's report on the logic of the process.</li><li>▪ Closing remarks from Foresight Canada.</li></ul>
10:30	<b>3. Presentation for the CASA Board (March 10)</b> <ul style="list-style-type: none"><li>▪ Myles, Gerry, and Stephanie will run through their draft material and PowerPoint slides.</li><li>▪ Roundtable: feedback on material for Board meeting.</li></ul>
	<b>BREAK</b>
11:30	<b>4. Engaging the Board</b> <ul style="list-style-type: none"><li>▪ Discuss how the Board should be engaged after they receive the Board materials.</li><li>▪ Assign committee members to “buddy up” with Board members before the March 10 meeting.</li></ul>
12:00	<b>LUNCH</b>
1:15	<b>5. SFC Self-Assessment</b> <ul style="list-style-type: none"><li>▪ Have we satisfactorily completed our Terms of Reference?</li><li>▪ Are there any gaps?</li><li>▪ If so, how will these gaps be addressed?</li></ul>
1:45	<b>6. Recommendations for the CASA Board</b> <ul style="list-style-type: none"><li>▪ Are there any recommendations we would like to make to the CASA Board?</li><li>▪ Is there a role for the committee after March 10?</li><li>▪ Should there be a Board standing committee to oversee strategic planning?</li></ul>
	<b>BREAK</b>
3:00	<b>7. Reflections for the day</b> <ul style="list-style-type: none"><li>▪ Anticipating the Board meeting.</li><li>▪ Roundtable: check out.</li></ul>
3:30	<b>8. Adjourn</b>

Appendix D  
Summary of the One-on-One conversations

# Preparing for Change





# CASA Foresight Project Interviews Summary

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## 1 Current Conditions

### 1.1 Context Shift

#### 1.1.1 LUF and CEM

GOA moving to address its problems and issues from a regional perspective (not a sectoral one e.g. air) now more CE-based. therefore different people need to be involved and maybe different decision-making processes.

Clean Air Strategy creating a vacuum because in the last half of an election cycle. So 'What job should CASA be doing?'

These conditions create questions: is the make-up of CASA correct, what job is it to do? Does the secretariat have the right skills? Is the board working in the way it needs to? What is the relationship between the board and the secretariat?

LUF- could provide a framework for managing cumulative impacts (but is unpredictable) - Athabasca is the test case - the AQ part covers only NOCS and SO<sub>2</sub> (not other gases) - in the loose draft stage

GOA tending more towards CASA advice of lower value, now CEM, LUF dominate and drive

Shift in GOA in environmental mmt - was AENV lead now LUF and through CEM milieu more integrated but emergence of SRD that has an entirely different way of partnering

LUF requires more integrated Air/Water/Land planning

#### 1.1.2 Feds and CAMS

Feds thinking prairie wide airshed for CAMS

Feds getting into the Air Quality regulation business

#### 1.1.3 Shift in Political Winds

GOA trend to re-centralize (last decade decentralized)

Political winds suggest all levels of consultation have been reduced since current premier took over)

Alberta political upheaval - CASA best with a stable political environment - best hope of for CASA's effectiveness is through GOA admin (e.g. AENV) but the legislative branch is becoming the place for change - a populist- based party shifting everything right CASA will lose influence

Clean Air Strategy creating a vacuum because in the last half of an election cycle.

#### 1.1.4 Shift in Focus

In a time of transition for CASA but a transition to what?

Scope - GOA thinking more regionally (LUF) and point-focused (CE),

Point-source (all electrical) to non-point source (e.g. transportation)

Feds designing a CAMS - prairie focus

Sustainability-based initiatives and project focus vs environmental protection and principles focus

Shifting Role with GOA

Clean-Air Strategy (done by CASA in early 90's) now only advise on - has taken 2 years GOA still has not produced it

CASA used less (e.g. Ind heartland emission caps)

CASA is more advisory than developing (Clean Air Strategy)- getting fewer requests

- Oil Sands used at last minute, data- gathering only

### 1.1.5 New Players

Agriculture coming into picture - represents more the intersection between industry and where people live

Actors of big USA campaigns indirectly affect political relevance of local environmental groups - Washington, Oregon - of what service is CASA on that front?

Transportation big new issue, greening public attitude shift, longer-term - urban design

### 1.1.6 Rising Questions

Is the make-up of CASA correct, what job is it to do? Does the secretariat have the right skills? Is the board working in the way it needs to? What is the relationship between the board and the secretariat?

In a time of transition for CASA but a transition to what?

The population is becoming more educated on environmental exposures and demanding more answers to very complex questions

More and more, we are noticing the emergence of a zero risk agenda influencing the issues in a rather negative or counterproductive way. For example, it is not possible to have air quality that is free from odours; it is not possible to have emissions not affect anyone; not every chemical exposure is man-made (e.g. mercury in fish). Yet, we spend a lot of time debating and discussing these kinds of issues/concerns.

How does CASA work to support LUF and CEM and regulation and planning exercises?

### 1.1.7 GOA

CASA losing alignment with GOA

GOA seems comatose to implementation - seems not committed

## 1.2 Membership/Process

### 1.2.1 Consensus Model

Consensus model beginning to result in weak results - due to more complex issues, tendency of members and shifting leadership

Experiencing a shift from multi-stakeholder consensus approach - familiarity and commitment - new members unfamiliar with process, less commitment to it

Consensus very detailed, near-focus, very slow

Members currently see CASA as a buffer between GOA and industry

### 1.2.2 Representation

Very little health talk in CASA.

Younger ones coming in are more project and locally focused (have more a sustainability agenda rather than an environmental protection one) - thinning the ranks so lower representation on CASA

Aboriginals not present but very influential

## 1.2.3 CASA Process

The 'Consensus model and process' is not well known or appreciated in Alberta. Energy and Environment know it but not others (Health, SRD)

Currently CASA spread very thin so concerns about depth of work or ability to maintain focus in work

Little systemic thinking - usually who speaks the loudest and longest and who has most to gain or lose..wonder about the credibility and effectiveness

Governance Issue: Increasing 'testiness' of CASA members so more difficult to reach consensus and a slipping back into lobbying

Economic factor seldom integrated into decisions especially ignored in non- consensus reports

## 1.2.4 Leadership

Traditional leadership role of GOA in CASA is waning, therefore CASA not performing and losing relevance

People in CASA committed to dealing with hard issues but sponsorship and leadership wavering

## 1.2.5 Airsheds

Airsheds now monitor and measure but no one collects for all Alberta and reports it - this a necessary future thing

Airsheds - some are members of CASA, some not

## 1.3 Budget/Support

### 1.3.1 ROI

Due to economics, face budget cuts or worse

Have difficulty demonstrating ROI when are being used much less.

### 1.3.2 Sources of Support

Few, traditional sources - health has withdrawn funding

Difficulty getting funding today

## 2 Future Conditions

### 2.1 Relevance of CASA

#### 2.1.1 The CASA Model

Where is Air Quality headed? How measured (intensity vs overall)?

CEMA board moving more to majority-based decision-making vs consensus -based. This may affect CASA

Policy and regs imposed without adequate understanding of effects of policy (why CASA set up in first place)

#### 2.1.2 Model Adjustment

GOA: is it pulling back?, abandoning shared consensus?

Model provides a place for constructive confrontation--a common space

Need to test alternatives to the consensus DM model - need a project to test the new process(es)

### 2.2 Emerging issues

#### 2.2.1 Standards and Approach

Alberta emissions are rising - and are bucking the continental trend

Alberta is doing little to lower air pollution in cities (urban planning, etc.)

Current Alberta health index (AQ) is not compatible with Feds - Alberta's standards for AQ are out of date - used to lead in AQ standards

How will people view air in the future e.g. CO<sub>2</sub>, GHGs, methane and NO

Continue incremental increases in policy development but may be missing opportunities to control emissions economically

#### 2.2.2 Climate Change

Pollution reduction shifting to CC prevention

The great unspoken trend/issue

#### 2.2.3 Health Effects

Health - now in an age of info sharing- new health revelations affect public opinion - new threats, perceived or real, will be acted upon quickly for good or ill- issues can become overblown

Indoor Air Quality

Substantial link between air quality and human health

#### 2.2.4 Non Point-Source Emissions

Non point-source emissions - transportation

Big issue is addressing consumption (rather than supply) but very political

#### 2.2.5 Inter-jurisdictional Conflicts

Inter-jurisdictional issues are looming. Fed desire to regulate air, transboundary air quality

#### 2.2.6 NGO Character

Changing landscape of NGOs in Alberta- GOA has good relations with homegrown NGOs but not with new International ones who are more advocates than partners - CASA does not have high profile NGOs as members

#### 2.2.7 Social Values and Tensions

Global urbanization and results on social values towards the environment (dissociation from). less first hand contact with Environment How will the environment matter to next generation?

Tension (therefore balance needed) between quality of life and economic growth; tension between improved air quality and economic sustainability; tension between the needs of the one or the few and the needs of the many; tension between regulation and the need for creativity; tension between population wants and population needs.

The balance of socio-economics, environment, and the economy. We need serious discussion on this matter by representatives that are serious about trying to find supportable solutions.

### 3 Current Strategic Options

#### 3.1 Focus

##### 3.1.1 Known Limitations

CASA needs to see limitations of what it can do, be realistic and have an understanding of its own reach

Now have a single scale (provincial) in a new emerging context (regional, national)

CE-Based management - this is a point-source not an eco-system-based approach - CASA has been provincial but now more regional or sector based work at AENV

CASA - be pragmatic about issues it takes on (what it can lead on) - may not be the most important issues but can still make a difference

##### 3.1.2 Clear Value Proposition

Casa needs daily to ask itself: in what way are we relevant? What processes and documents do we need to eliminate? Who are our client groups? Who need to be the new players? Where and what are the windows of opportunity for CASA

How should CASA be structured to do the new job, how does the board need to change?

Make value proposition obvious

- logistically flawless
- psychologically safe
- strategic information

Carve out a clear role for CASA- (SRD does not know CASA exists)

Could do more - ambient objectives, monitoring, help GOA do its business - deal with the public

Remind GOA of value of CASA and get message out on how CASA can add value

Perhaps a change in consensus process, offer a generic service,

Must demonstrate value for money ROI

CASA's flagship value - stakeholder trust

##### 3.1.3 Strategic Business Plan

Need a well developed, sound Strategic Business Plan - larger perspective, what is coming at us, what is the focus, what need to tackle and what changes to process needed in the new context

Strategic issues list - analyze the issues and commit (policy recommendations)

Determine where GOA is going on LUF and prepare a role for CASA

Assist GOA with its intention for Regulatory Enhancement

##### 3.1.4 Events/Tasks

Need to do a couple of big things with new people (events/tasks):

- international conference on air quality consensus decision-making groups around the world
- address outreach and visibility
- seek the intersection points among sectors to find what is needed to bring them together
- become a significant clearing house for talent for consensus decision-making - future associates

### 3.1.5 Address Tensions

CASA is best positioned to address the "Tension-Balance" issues. We believe that it is this arena in which CASA will secure its future and endure. We already have multiple levels of policy makers, scientists, and many others addressing the issues of science. We have very little in the way of a "think tank" like organization that could debate the issues of balance in a multi- sectoral forum where most of the major players in the ultimate debate are represented, including First Nations.

## 3.2 Capacity Development

### 3.2.1 Extend Services

Develop beyond the consensus model, take on tasks that require a different decision- making process

Need to look at CASA process weaknesses - bring more people in to educate the board

May change business as a service to get new future funding (monitoring through airsheds

May offer a broader suite of tools - examine how CASA offers an 'outcome and results' not just the process (more real Knowledge in the results that comes from CASA)

Need to bolster science credibility - have a science advisor (GOA contracts out its science) speaks to credibility and relevance

Flag issues on a more timely basis and get to recommendations quicker

### 3.2.2 Greater Transparency

Need a higher degree of transparency - performance management system - issues are tougher and tougher so need more of this - the greater complexity requires sharing - e.g. transportation - new players are not used to working in the consensus manner

### 3.2.3 Greater Balance

More balance between science, social and economic perspectives in the role of developing policy options

Also become much more conversant in broader environmental issues

### 3.2.4 Foresight

Foresight to ultimately determine where resources should go

## 3.3 Leadership

### 3.3.1 Profile

CASA started and needs to continue greater public profile emphasizing competency to do this work

### 3.3.2 Who and What

How should leadership be done now that GOA leadership is shifting? Who will take it on. Can it be shared. Do we need a new model?

### 3.3.3 Selected Issues

Need to take on specific issues and lead on them. e.g. Oil Sands venting and flaring

## 3.4 Partnerships

### 3.4.1 Critical Partners

Energy and Environment become an integral part of CASA work

## Preparing for Change

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CASA needs to spread wings outside itself - more engagement with those outside CASA

More outreach and education

Don't get too far ahead but integrate with GOA in small steps, be quicker on our feet

### **3.4.2 Critical Clients**

Who are CASA's critical clients? need to build and nurture relationships - OUTREACH (e.g. health)

**Appendix E**  
**Structure and Logic of the Foresight Project**

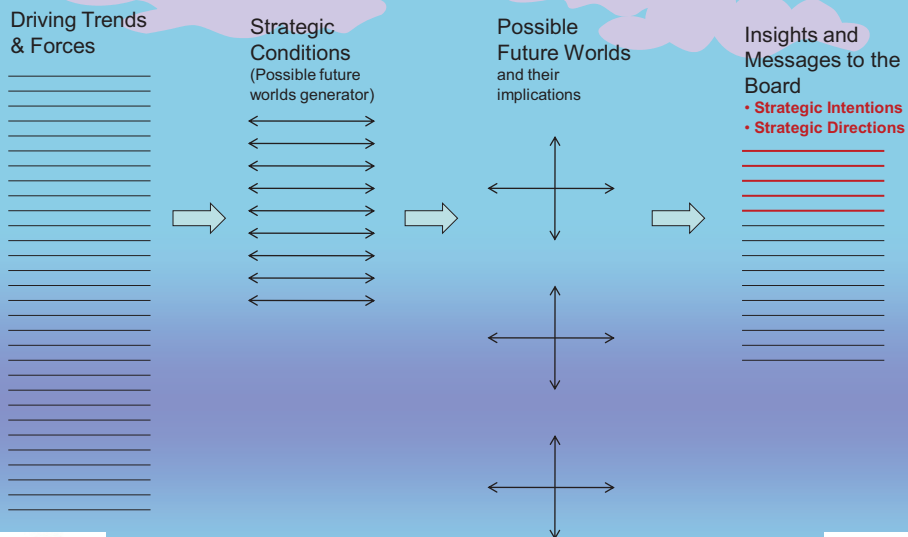


## Each JFP Workshop

1. Review Foresight Project; Identify trends/drivers to 2040.
2. Explore and prioritize trends/drivers.
3. Identify and explore the range of possible future conditions Alberta may face to 2040.
4. Explore the range of possible future conditions and their implications for CASA; Wind-tunnel CASA in selected conditions.
5. Identify (draft) narrative and key messages to the Board.
6. Write final reports to the Board and develop presentations.
7. Report to the Board – March 10, 2011.

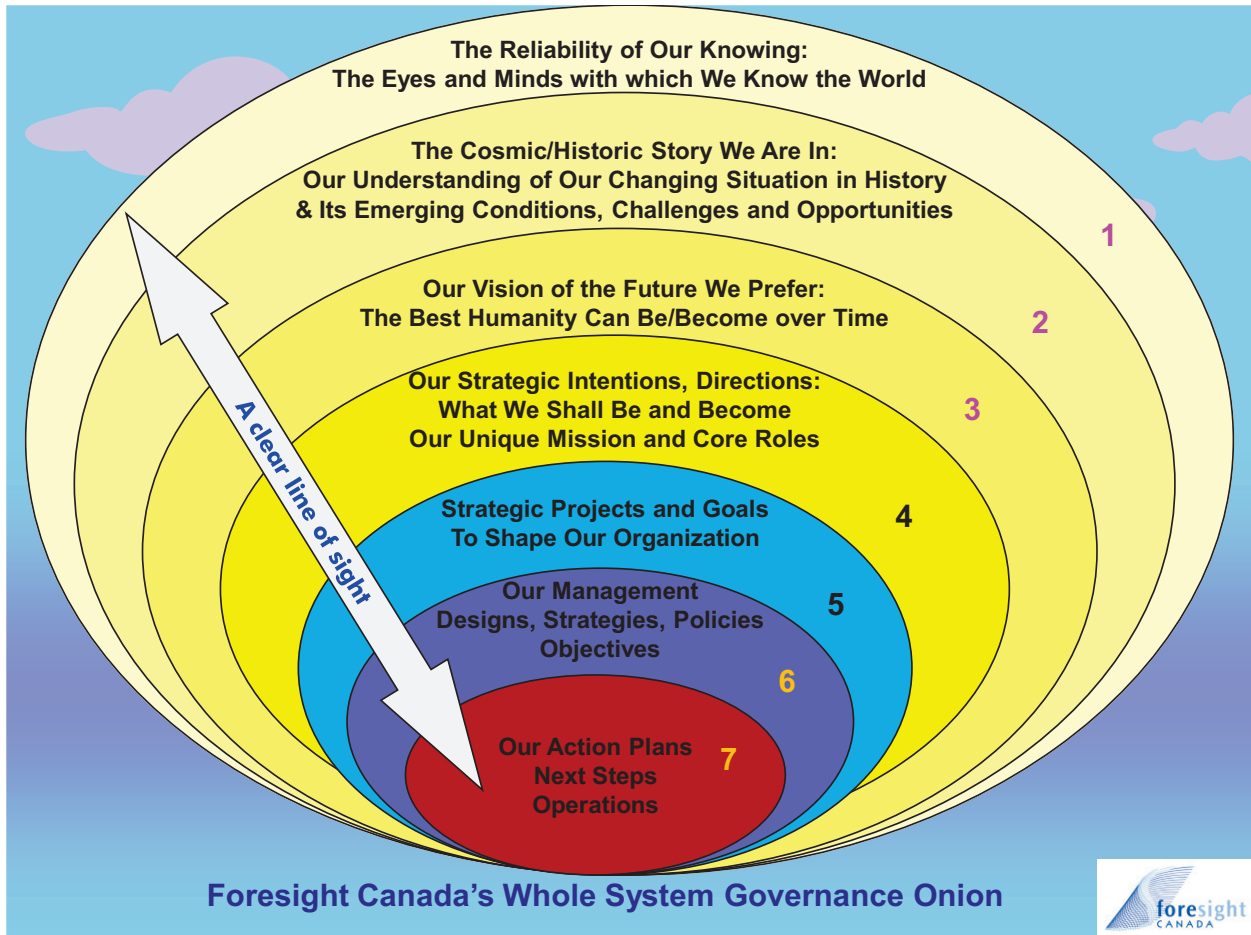


## Model of Our Journey



Appendix F  
Foresight Canada Whole System Governance Onion

# Preparing for Change



Appendix G  
Trends and Driving Forces of Change

### **CASA Trends**

*Greater complexity, stress, and uncertainty leads to lower adaptability and impetus*

*Water shortages and water wars – diminished focus especially in AB where Air quality is relatively good of other environmental issues –other things more important*

*Urban sprawl continues even after it becomes highly undesirable and pollution in cities rise*

*Resource depletion and economic downturns*

*Deep reduction in GHGs becomes a requirement – province and municipalities look much harder for ways to reduce GHG – air pollution reduction is side benefit.*

*Population shift – growing urbanization – or growing communities that are smaller for protection and health*

*Increasing inability for government to take action – coalition government, Narrative wars lead to no effective way to integrate points of view and take collective action.*

*Climate change will increasingly impact air quality leading to changes in weather patterns, increasing forest fires, hotter temperatures, increased smog in cities*

*Growing population and increasing prosperity in developing world will place greater pressure on global air quality through increased emissions.*

*Energy economics – energy will become more costly, likely leading to higher efficiencies.*

*Economics – decrease in well being of an increasingly larger middle class. – government will consider economic development at any cost , environment comes last in decision making – increasing international ownership in AB businesses and resources – increased globalization may shift return to nationalist/protectionist policies.*

*Increased demands to abandon economic growth as the engine of progress (true sustainability)*

*Increased regulation of consumer products*

*Increased education and advocacy by government and industry on large point source emission standards*

*Increasing/decreasing awareness of the individual's impact on global air quality – the tragedy of the commons*

*Growing relevancy of place based and environmentally focussed (i.e. X-media) organization/stakeholder groups*

## Preparing for Change

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*Increasing public knowledge and concern about all environmental impacts, including air quality, among people not currently engaged in environmental discussions*

*Greater difficulty in balancing social, economic, and environmental objectives*

*Increased necessity to harness collective intellectual capital – includes information and knowledge mgmt/generation and research and development.*

*Balancing self responsibility with community/policy makers' responsibilities – still swinging from one extreme to the other. Effective change/lasting results demands balance that we haven't consistently maintained.*

*A growing appreciation for the shared responsibility to lessen air quality impacts*

*Increased demands efficiency/effectiveness/relevance of decision makers and process – people want results to be immediate.*

*Increased international focus on Canadian resource development issues*

*Populist movement – culture wars, distrust of educated, concession towards the uneducated, decreases confidence in established institutions.*

*Global/international s scale of issues – dust storms, BC forest fires, global increase in pollution levels – more difficult to deal with problems when you are not the source – difficulty to get buy-in for solutions that address part of the problem and not the whole problem*

*Alberta no longer dictates to Ottawa how it would respond to climate change*

*Heighten integration across environment media: regulated and non regulated parties – challenges and opportunities of tomorrow will be identified and translated in environmental terms and as social issues not through media specific silos – solutions to these challenges will be born through integration*

*Political relevance of air quality issues declining. As human activity becomes limited by water and land use governance and conflicts, political attention will go there instead of towards air quality.*

*Heightened expectations from informed public – emphasis on social license in Alberta – social license for all contributing parties, including governments*

*Lack of clarity as to who is responsible for managing air quality and hw, increasing division of responsibilities – government is more a broker of policy not of generator of it so will require more integration, government requires implementation from those generating it*

*Increase in use of multi-stakeholder process outside of AB and outside CASA – process used in AB now being employed outside Alberta. Now those other implementations of multi-stakeholder processes than what we have here. Result = expectations of how multi-stakeholder works and what the results are. Pressure now where before we had none may influence the future.*

*Political instability in AB*

*Conversion from environmental to sustainability groups*

*Addressing air quality and all environmental issues increasingly vulnerable to political and social (military) influence*

*Increased or decreased ? reliance on complex models and science to make decision – reduced expectation for leaders to make ethical or judgment based decision- abdication of decision making responsibilities to economists or system modelers OR increased judgment based decision making without any regard for current evidence.*

*Distractions or confusion about what is credible and a useful consumer of our time and dollars. Significant resources may be spent in err while waiting for better evidence and better sharing of responsibility.*

*Increasing multiple interacting environmental factors with increasing rates of change therefore harder to understand or study accurately*

*Decreasing communications effectiveness in part due to increasing modalities*

*Dependence on technology – faith that technology will solve our current problems despite historical evidence that most solutions create new problems*

*GHG trend decreases through technology – CCS, Natural gas power generation*

*Increased technology investment by government and industry*

*Better measurement – improved sampling technologies, cheaper equipment, broader range of specialization, lower detection limits.*

*Communications technology transforms democracy- increases multi participator involvement easily*

*Monitoring technology advances deployment- technology advancement, outside control of GOA for individual to capture and transmit AQ data based on own interests*

*Increased need for integrated , partnership approaches to monitoring and reporting*

*Increased standardization of air monitoring and measurement in regions*

*Ability to measure and identify air quality parameters will increase knowledge and the intensity of the debate.*

*Public will become more aware and concerned with air quality and its impact on health and wellness*

*Health effects of air quality will become more recognized and accepted – will become more important to government*

*Health links to AQ become better understood – better understanding of chronic exposure – acute exposure*

*Shifting air quality focus – with directed policy and technology improvements, there will be a shift in focus from large, visible point source emission to non-point source emissions.*

*Increasing urban air quality issues*

*Increasing urban air quality health issues*

*Health and air quality – air quality monitoring will become more and more important – an expansion of what is monitored and where may be supported \*resistance to acknowledge air quality and health link.*

*Climate change - change in environmental conditions = change in environmental problems – current AQ problems are result of our current environmental conditions – not clear what new unanticipated problems may arise – new problems might not be possible to address using current tools*

*Changing climate – more photo chemistry likely – shifts in transport and dispersion – changes in emissions cause, less heating more air conditioning*

*Climate change – shift in biogenic emission – change in flora – direct and indirect emissions, change in wildfire, change in decomposition*

*Changes in emissions - species shift, impressed emissions controls both tech and cost – improved combustion/energy use efficiency – overall emissions growth due to growing population of affluence – get new/different toxins/waste*

*Indoor air quality will be increasingly recognized as an influence on health – e.g. radon, building design, indoor air pollutants – people will spend more time in the built environment*

*Lower funds for research and KT/support therefore less relevant knowledge*

*Electric cars become a reality – grow in numbers relative to fossil based cars*



## Preparing for Change

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*Increasing reliance on technology and innovation – shorter term 2035 increased focus on performance based incentives to stimulate innovation, after 2025 attitude change. E.g. economic and market based instruments, dissemination of information*

*Nuclear energy and carbon capture clear the air over AB!*

*Industrial growth and increased vehicle use, e.g. population locally and internationally (China/India) will increasingly impact air quality*

*Oil sands emissions growth dominates air quality issues in AB*

*Coal burning – power generation is phased out, replaced with gasification and with gas and renewable, drop in pollutants*

### *Driving Forces of Change*

Need for psychological safety - People will seek this but have difficulty finding or generating it.

Water wars

Narrative wars - lots of different often contradictory yet well argued and substantiated positions - all pursuing territory in the psychosphere

International advocacy to challenge Canadian resource development

Defense of status quo or sense of 'good old days'

Anxiety that large systems and programs are not helping me.- drives more governance-type citizen engagement at more local level.

Mistrust of government, industry, and engo's.

Rise of self reliance movement – net zero energy homes, local food.

Youth today = leaders tomorrow – shift in values, based on demographics. Increased in entitlement, shorter attention spans, lower expectations for information to be credible (poor screening).

A demographic shift – greater percentage of population from countries that have a different perspective of the environment. The values of gen Y.

Demographic shift – shift in values, shift in decision making process. How new/younger and future generations make decisions is a blind spot for me.

Changing demographics (e.g. Age, migration, political ideology, education levels, etc)

Shifting population and affluence

Population growth – both trend and driver

Placing the economy above the ecology in terms of importance. This is a cultural driver that influences decision making at every level of society. A belief that a strong economy will save us

Awareness of ecological limits

Focus on adaptation versus addressing the actual causes of poor air quality.

Scarcity of resources (fresh water, arable land, clean air, fuel)

## Preparing for Change

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More than ever before, organizations must be approachable, flexible, and able to simplify life – in order to succeed and be sustainable. When CASA can bring clarity to an issue, lower stress and time wasting, and help individuals to achieve their basic needs (Maslow) their future will flourish.

Economic instability – environmentally progressive voters increase in number.

Global economic stability – wealth shifts to readjustment of resources, debt spending, etc – during changes stability decreases

Global economic stability/instability – recognition of impacts on AB

Changing model of health services delivery and funding putting more emphasis on the individual.

Declining immunological respiratory health for boomers and their kids

Health issues associated with coal fire electricity leads to movement to other feasible options – CCS, natural gas, nuclear.

Climate change

Climate change impacts globally and in AB|

Resource depletion and price increases

Need for politicians to appear to act to address issues, where status quo was accepted before.

Technology – increased ability to measure with more accuracy and more detail (environment, as well as anything else we can measure. – Increased ability to influence our environment (bigger mines, bigger plants, more intense activity, more mitigation technology)

Increased global spotlight and use of social media

Technological advances

More effective technologies that facilitate informed stakeholder dialogue (Web 2.0)

Internet connectedness – decreased reliance on experts and everyone can access information (democratization of knowledge) – change in expectations for how decisions are made and expectation for participation/consultation – broader awareness of issues – lower interest/engagement with the same issues (information overload, fatigue)

More widely available info that compels more effective environment mgt

## Preparing for Change

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Strong need for measurement, management, and education of regional air quality and other environmental factors

Proliferation of information and data with questionable accuracy and unknown filtering

Access to too much information – what is credible is hard to determine for society

Access to data driven by technology – ability to access data radically increases as need to trust any authority declines

Appendix H  
Spectra of Possible Future Conditions

# Spectra OF Possible Futures

## CASA/Foresight Canada Foresight Project

### 1. Air Quality Data for Decision Making (reliability and availability)

#### **Unreliable/ Inaccessible Data**

- Inconsistent data (reliability and availability) - uncertainty in decision making
- Uncertainty for individuals, government, industry
- Lack of interest/commitments to get reliable data
- Ad hoc decisions
- Proprietary data – little sharing
- No innovation monitoring technology
- Poor data collection standards
- Not aware of some problems and the fact/cost of lower quality decisions

#### **Reliable/Readily Available High Quality Data**

- Good, consistent data is defined, agreed upon and collected
- Good assessment of risk
- Air quality available in open system
- Good basis for consensus decision making
- Better data interpretation
- Robust system for data collection and quality
- Stronger regulations/standards
- Innovative monitoring technology
- Stakeholder support and interest and good real time distribution (gov, ind, ngo)
- Transparency

### 2. Willingness to Exercise Leadership on Air Quality Issues

#### **Minimal Action**

- Minimal focus on air quality
- Minimal compliance, minimal incentive for continuous improvement
- Uncertainty for industry in standards and regulations
- No individual action
- Avoid decisions
- Ignore risks –
- Risk aversion
- Expecting others to take the lead
- Afraid to be out of sync with other jurisdictions

#### **Proactive Leadership**

- Ensure all air quality issues are addressed
- Willing to face and embrace conflicts
- Positive momentum/buy in of stakeholders
- Certainty in air quality standards and expectations
- Compliance is required and expected

- Proactive action in all sectors
- Aware that lack of direction = bad results
- Increased focus on air quality

### 3. Size & Scope of Carbon Pricing and Its Impacts

#### **Unified Global Action**

- Price higher than \$200/ton global price)
- Global agreement on climate change
- Strong incentives send signal to investors/consumers to move to lower energy/lower carbon options
- Alternate fuels are viable and affordable
- Green economy thrives; new jobs created
- High air quality

#### **Competitive Protectionism**

- Low carbon priced from \$0 to \$30/ton (national price)
- Little impact on transportation, more on industry
- Barely adequate air quality
- Cost absorbed as cost of business -no behaviour change, no air quality improvement
- No incentives for advanced technology use or development
- No shift in technology or investment therefore, no green jobs incentive

### 4. Nature of Impacts of Climate Change on Alberta

#### **Unfavourable/Accelerated Climate Change Impacts**

- Global economic instability affects Alberta
- Variable/unpredictable impacts on agriculture
- Extreme weather experienced; effects of normal scale
- Water supply and flow unhistorical, unpredictable
- More diseases/new diseases
- Climate change crisis, focus moves from traditional air quality issues (criteria pollutants)
- Loss of species
- Negative industry impacts (shorter drilling season, loss of tourism, switch to golf)
- Forest fires increase in number and scale; air quality deteriorates further.

#### **Minimal/Dampened Climate Change Impacts**

- Climate effects occurring slowly, un-dramatically
- Nicer weather in some areas
- Longer growing season
- New agricultural crop opportunities
- More cycling/longer season,
- Continuity in forest industry (minimal impact)
- Greater focus on other criteria pollutants

### 5. Holistic Economy: prominence of Natural Capital in Human Economic Decision-Making

#### No-Value on Natural Capital

- GDP-based economy continues to ignore externalities and value of natural capital
- Infinite growth paradigm dominates
- Acceptable destruction of nature/natural capital
- “Trade-offs” between environment and economy favour the economy
- Confrontational activism
- Humans consider themselves separate from natural ecosystems

#### Ecological Beings

- Human economy fully integrates natural capital
- Humans satisfy economic needs by restoring ecosystems
- Economy respects ecosystems natural carrying capacity and has methods to account for natural carrying capacity
- human actions have positive environmental, social, and economic outcomes

### 6. Seat of Power: Role of Non-government Players in Environmental

#### Decision-making

##### Survival of the Fittest (Central authority with lobbyist)

- No collaboration among industry, bureaucracy, and engos in developing policy recommendations
- Relationships are combative, competitive, conflict-driving in nature
- Power resides with the most effective 'lobbyist'; therefore non-political players assume a lobbyist role
- Solutions characterized as zero sum games, creating winners and losers
- Government serves as unilateral decision-maker

##### Collective Interest

- Industry, bureaucracy, and engos collaborate to develop mutually acceptable policy recommendations
- Consensus recommendations are more 'powerful' so power resides in the solution developed
- Partnership approach is taken in decision-making
- Decision making maximizes inclusion of affected groups or interests
- Takes Longer time to make decisions but results in more buy-in on decisions
- Requires greater trust amongst parties and forum to collaborate

### 7. The Ability of the GOA to Influence Alberta's Future

#### Strong External Influence

- GOA only affects on matters that do not effect others beyond Alberta.
- International crises have convinced Canadians they need a strong Federal government, even if the constitution is overridden.
- Beyond Canada the USA and China have taken on Imperial roles, and are able to dictate to Canada and much of the world.



### **Alberta-Focused Control**

- The Federal government is weak; fearful to exercise its powers.
- The regions have strengthened and are in constant conflict.
- Internationally, shifting alliances of big and middle nations are the norm.
- No nation can dictate to the others.

Coherent international action is not possible regarding climate disruption

## **8. Impact of Air Quality on Individual Albertans' Well-Being**

### **Gasping for Air**

- Severe negative health impacts
- Shortened life expectancy
- More individuals, older individuals, more sensitive, individuals suffer
- Air quality worse thereby resulting in less economic development/jobs constrained
- Air quality impacts vistas, views and Quality of Life (restricts activities)
- Need to put resources into creating/maintaining high quality Air Quality
- Environment degrading

### **Mountain Fresh**

- Air quality high
- Public transit/telecommuters common; few single occupancy vehicles
- Vehicle efficiency outstrips VKT –
- Absolute pollutants within mandated ranges
- Individuals - less time in hospitals, more on ski slopes/trails
- Jobs created in tourism
- New power demand met by "green" power
- Good air quality systems maintained; impacts of degraded air quality well managed

## **9. Degree of Innovation in the Production and Use of Hydrocarbon Resources in Alberta**

Not named or completed:

- Limited/reduced
- Air quality poor
- Airshed capacity reduced resulting in restricted economic growth

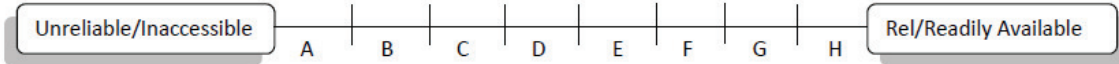
Not named or completed

- Innovative
- Air quality good
- Increased capacity in airshed allowing for increased economic growth

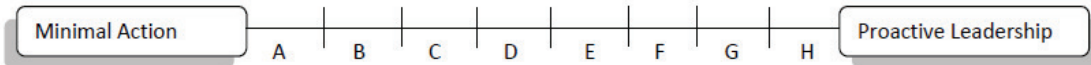
# Preparing for Change

## Possible Future Worlds Generator

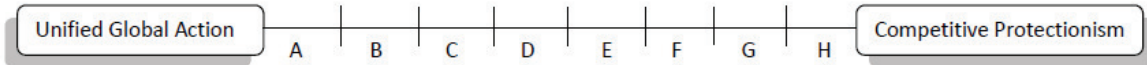
### 1. Air Quality Data for Decision-making



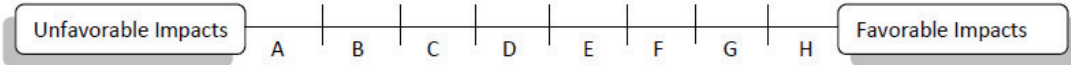
### 2. Willingness to Exercise Leadership on Air Quality Issues



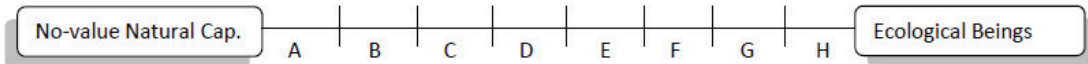
### 3. Scope/Size Carbon Pricing & Impacts



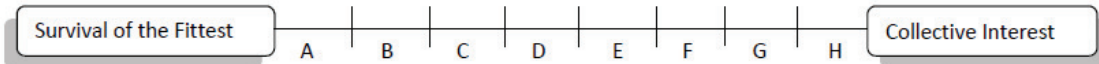
### 4. Nature of Impacts of Climate Change on Alberta



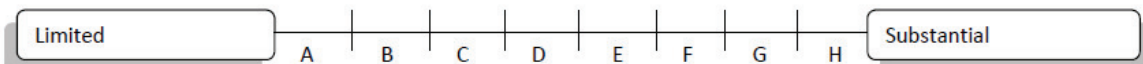
### 5. Holistic Economy: Prominence of Natural Capital in Human Ecological Decision-making



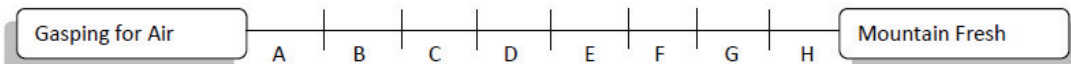
### 6. Seat of power: Role and Relationship of Non-Gov't Players in Environmental Decision-making



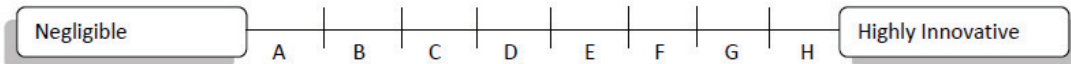
### 7. Ability of the GOA to Influence/Shape Alberta's Future



### 8. Impact of Air Quality on Individual Albertans' Well-Being

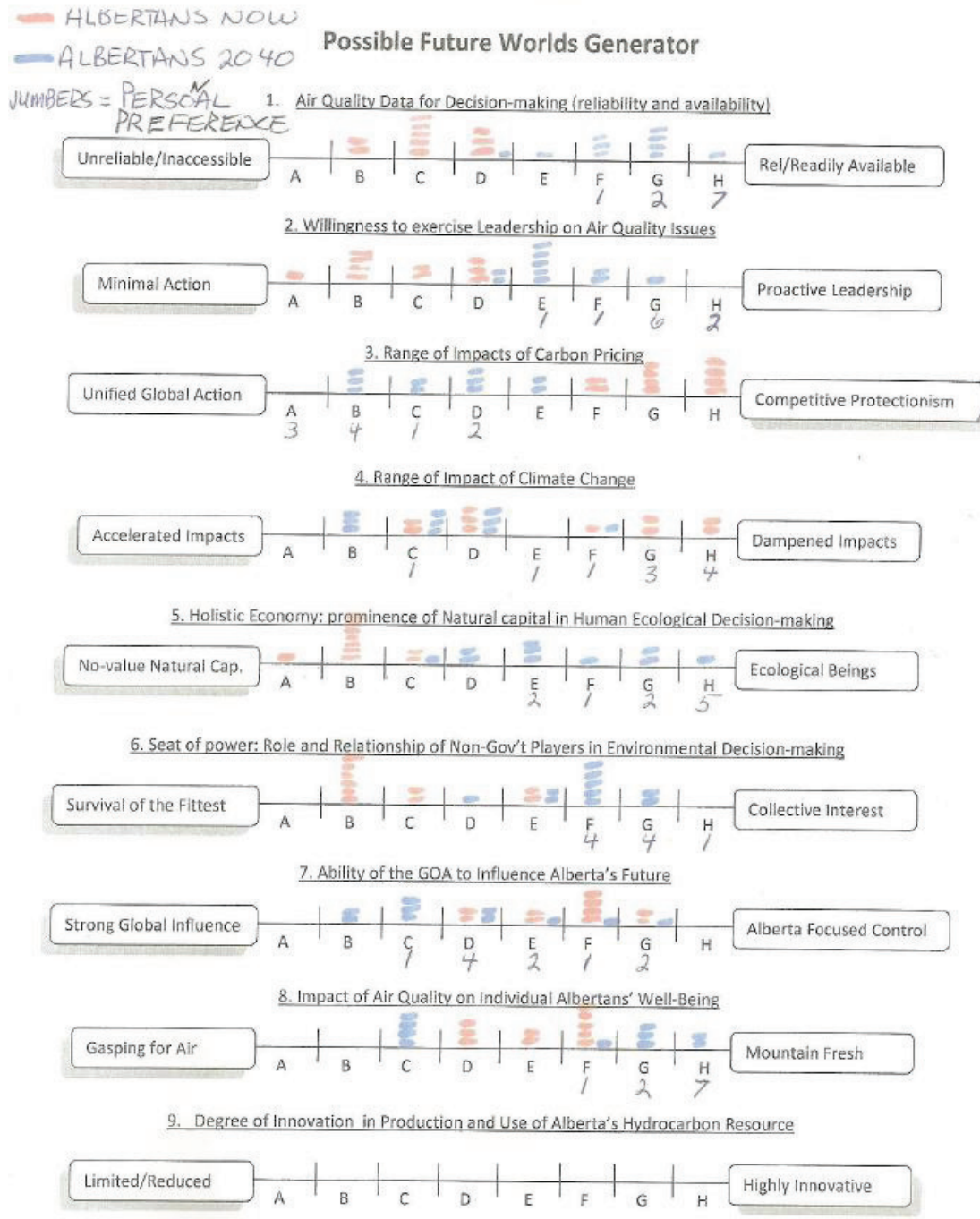


### 9. Degree of Innovation in Production and Use of Alberta's Hydrocarbon Resource



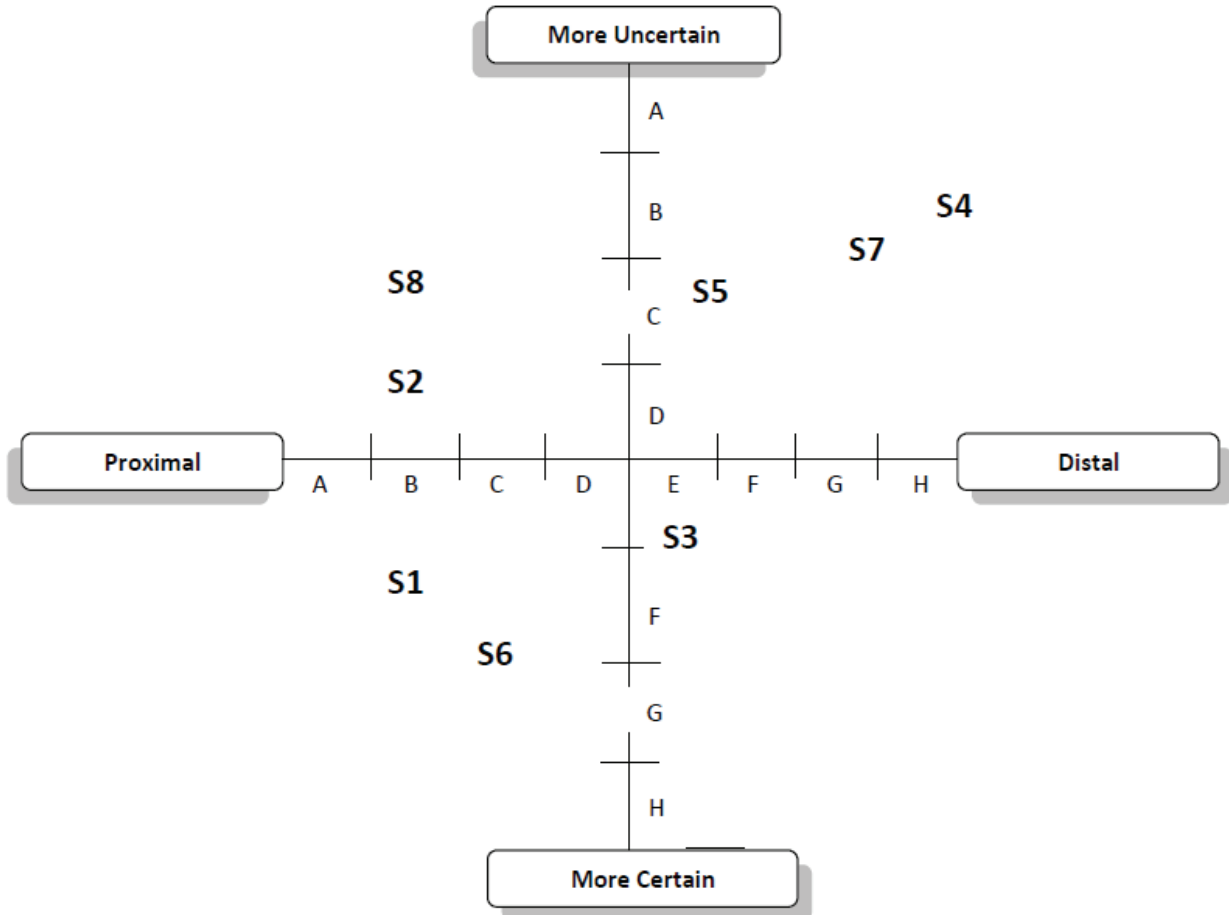
V 3.0

# Preparing for Change



Spectra = the full range of possible futures  
 Pink = Alberta in 2011, the present  
 Blue = Alberta in 2040, probable future  
 Numbers = votes for the Alberta in 2040, preferred future

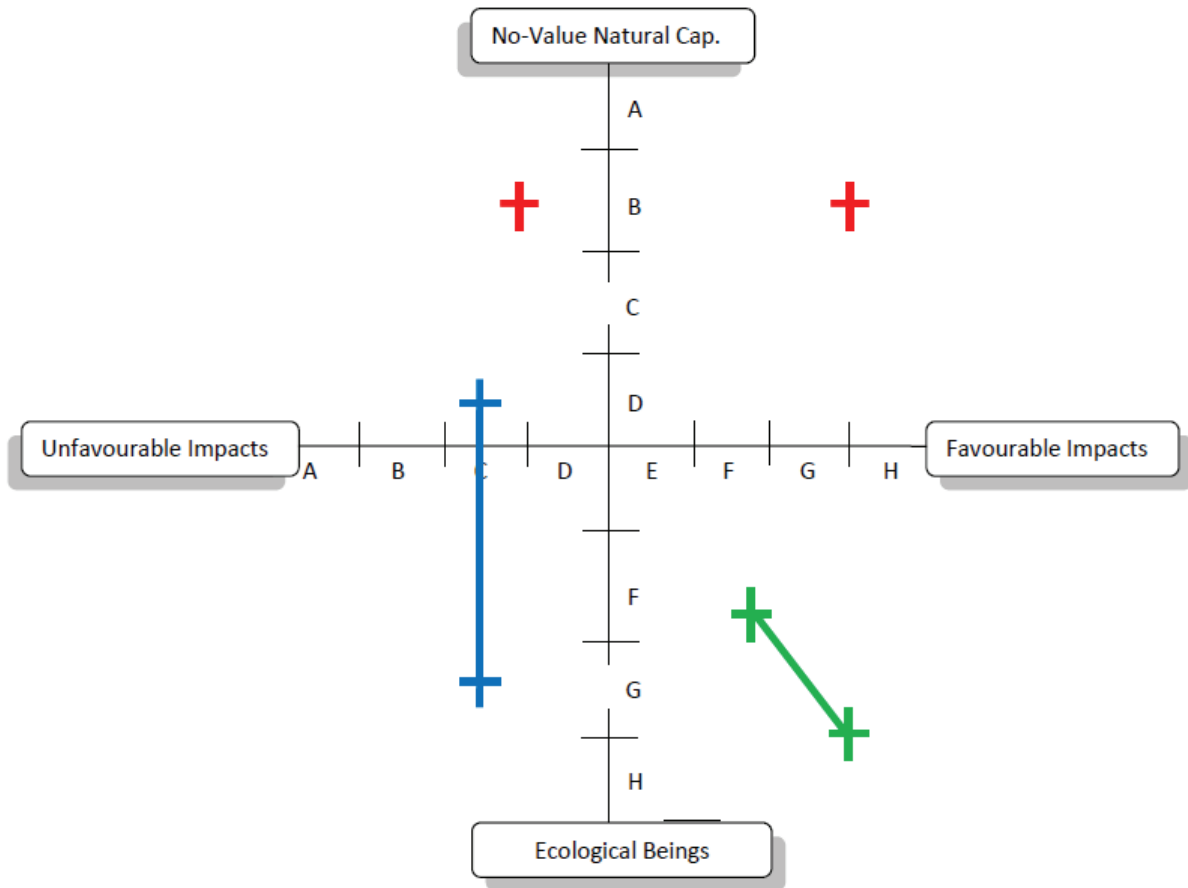
Spectra Placement on Two Dimensions






The nine spectra of future possibilities were placed on this matrix. The three in the top right corner were chosen to work with as they were deemed to be more uncertain and less immediate than the others.

# Preparing for Change

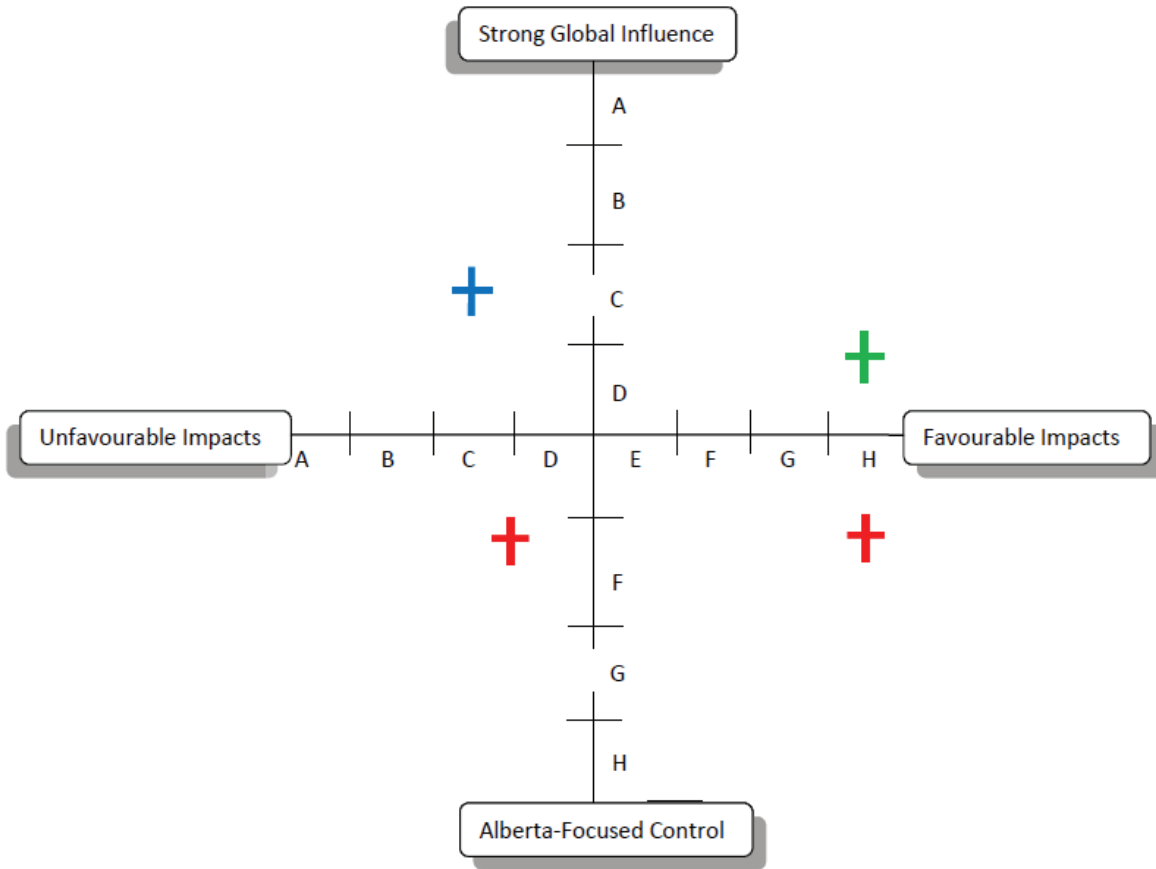
5. Holistic Economy: prominence of Natural Capital In Human-Ecological Decision-Making AND 4. Nature of Impacts of Climate Change on Alberta






-  Group's Personal Opinion of where they want to be in 2010
-  Opinions about where Albertans will be in 2040
-  Opinions about where Albertans are now

# Preparing for Change

7. Ability of the GOA to Influence Alberta's Future AND 4. Nature of Impact of Climate Change on Alberta

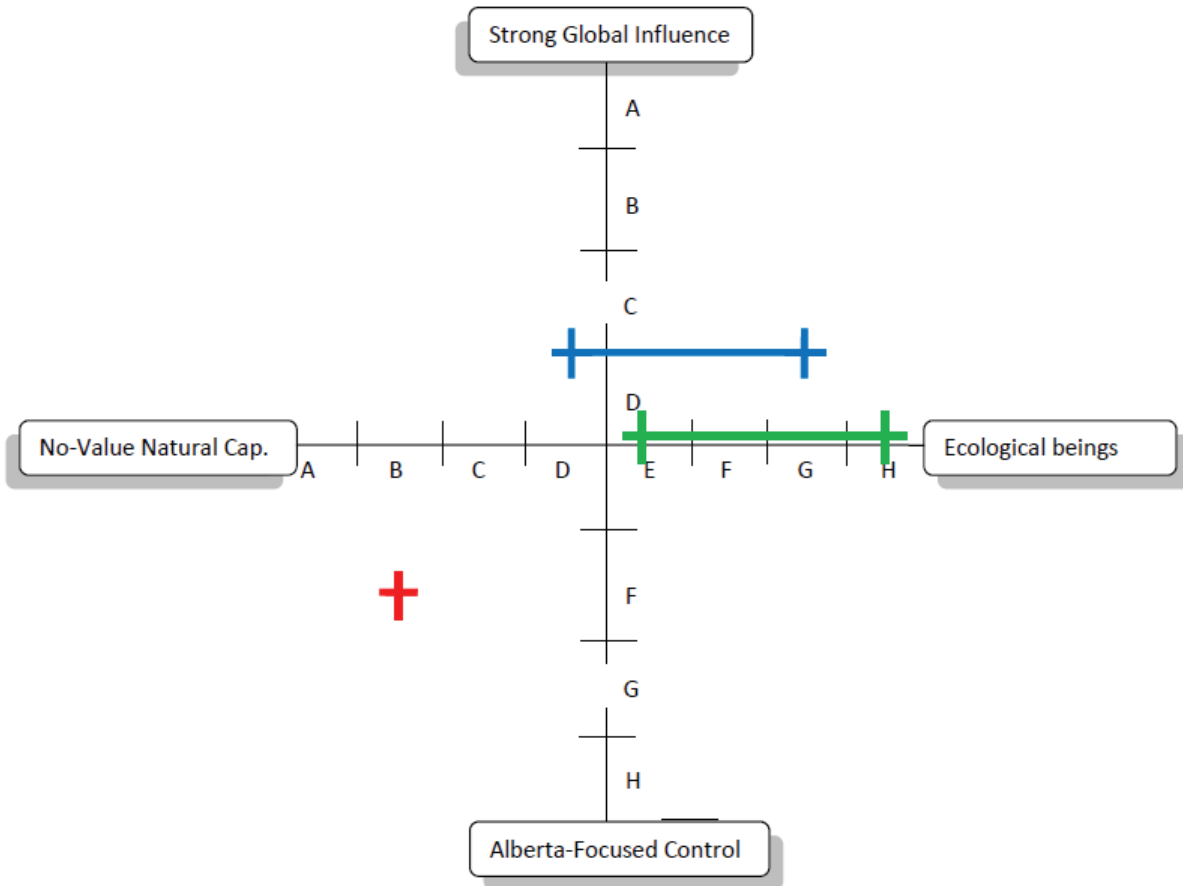


-  Group's Personal Opinion of where they want to be in 2010
-  Opinions about where Albertans will be in 2040
-  Opinions about where Albertans are now

# Preparing for Change

7. Ability of the GOA to Influence Alberta's Future AND

5. Holistic Economy: prominence of Natural Capital in Human-Ecological Decision-Making



- + Group's Personal Opinion of where they want to be in 2010
- + Opinions about where Albertans will be in 2040
- + Opinions about where Albertans are now

**Appendix I**  
**Insights that Illuminate the Focal Question**



### Casa Session 5 – Insight Statements

- Issues are more contentious, complex and important. CASA has been using GOA as a 'hard backup' (will always make the final decision) on these kinds of issues. May need processes to engage stakeholders as well as new internal processes in circumstances where this is not the case.
- To get the future 'right' must explore multiple futures and make significant changes to remain relevant. 'Business as usual' is not an option.
- CASA's true value is process but it needs to uncouple the process from the medium (Air). Other issues are beginning to overshadow Air (don't lose a great process if Air issues become less important). CASA must consider developing the capacity for a wider focus
- CASA's scope, reach, network and focus must all change if it is to effectively serve its present and future stakeholders as a vehicle of collaboration on issues of importance to them as Alberta changes. (presently CASA focuses on regulatory policy issues – is this too narrow?)
- Commit to a new direction and manage the implications. Change is imperative. The question is the timing of change and this is the real question for the Board. Once direction set and commitment gained, develop new capacities.
- A fundamental risk facing CASA is 'relevance'. The issue is about context not about effectiveness and efficiency.
- Set of messages are required:
  - Define the need to change
  - Commit to the change
  - Sniff out and articulate alternatives
  - Know nothing is immutable
  - Become flexible and anticipatory
  - Make this change a learning journey
- A CASA-like body can retain its core values, sound technical advice, collaborative methods while becoming more flexible and less focused on one medium. Begin to see non-consensus as a useful product (the process is of great value).

- Are we supplying a product/service that our clients need? We need new clients and customers. We need to think carefully about new customers, new products and develop the appropriate capacity to deliver same.

### **CASA INSIGHTS –4<sup>th</sup> Foresight Meeting - Jan 11, 2011**

This list was compiled from the notes submitted from some members of the CASA Foresight team at the 4<sup>th</sup> Foresight meeting held in Calgary on Jan 11, 2011.

We are pretty negative about leadership and impact of climate change.

Our thinking has been heavily influenced by how the province has been run for the last lifetime (40 yr) – but that could also change in the next 3 to 5 years. Ex. Wild rose party, strong opposition, Nenshi type switch/breakthrough

Alberta could decide to change tactics with respect to the oil sands public relations campaign. That would be a sea change and affect many of these.

We are missing something about need to manage multi-media issues – not just air. That is so 2002.

Business as usual is not an option for CASA. CASA's relevance is greatly diminished if their scope is restricted to conventional air pollutants.

CASA must expand to include climate change (at the very least). This means CASA may need to rethink their consensus approach to recommendations. There are other options that add value.

I can clearly see the potential roles CASA could play in almost all the 'future worlds'. But CASA is going to have to be willing to change the way we do business. We need a new trajectory, we need to realign with the changing world.

Action oriented implications of any particular spectrum are generally contributing factors to another spectrum. As such, an array of potential initiatives emerge that are valued added to any possible future – CASA should focus on these areas. e.g. Need for education/awareness building beyond "air quality"; acquisition of reliable information; availability of information; continuous improvement; best practices and technology, etc.

Where people have influence, I expect and hope that Alberta will create a good future. Things will be better. Where have no influence it is already too late and future will be worse.

When asked what future we want everyone generally agreed, regardless of the sector. We all want the same things. This is probably true, so if this is true, why are we having such a difficult time working together to create the future?

The description of the no-value natural capital alludes to the influence/effect that financial institutes and the financial sector has on the shape and direction of society. This is sector which indirectly but none the less affects the environment but is not present at any environmental forum to answer for or help remedy this.

There is a great difficulty in looking beyond current conditions, current interests, and personal value judgments to see the full range of spectra and possibilities.

## Preparing for Change

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CASA is very much a process oriented organization and our foresight work has been dominated by process considerations at the expense of real air quality issues.

The nature of air quality challenges that will confront stakeholders in Alberta will require a renewed focus on fostering informed dialogue, building relationships and rethinking the way we reach decisions. (Improved collaboration)

The cultural context of decision making will have to have a greater impact on the decisions that are made and how they are made than the other facts of the situation (actual state of the environment). E.g. air quality in Vancouver was better than air quality is now in populated parts of Alberta when they started working prescriptively on pollutions mitigation.

Even though we mostly imagine getting better with sustainable planning (5) and stronger leadership (2) we also get worse (8) and climate change impacts won't be abated significantly (4). Does this mean that we all believe or perceive that our mechanism for planning and management is fundamentally broken or ineffective?

CASA might consider building its face/name capacity with more stakeholders such that more Albertans are actively engaged in a way that helps CASA to drive the spectra in meaningful ways/degrees. This would be regardless of what other leaders/decision makers/lobbyists are doing but influenced by these entities actions and beliefs.

CASA might consider repeating this foresight process as a routine and necessary exercise through the years.

CASA might include Foresight terms into its documents and or policies to allow a mini-foresight reflection to be assimilated into daily business and to discourage compliancy or lack of reflection.

CASA might anticipate barriers to realization of the desirable spectra and begin identifying solutions to pave the way for others to join or follow. (I.e. lead in a much more proactive and complete way)

CASA might restructure board meetings to allow for more exploration of emerging trends and drivers. Consider for example – does air quality include electronic factors?

Need to consider the impact of public perception of what CASA/Government should be doing otherwise we will not be successful. Public needs to understand what we are doing and why.

Need to consider CASA's role in climate change.

There are a number of process things we can make progress on; however, the key is to make progress on outcomes. (i.e. Improve Air quality) which everyone wants.

Air quality issues are not readily visible so it will be hard to ensure the public understanding and need for proactive measures.

*Item 2.4*

*CASA Environmental Scan  
Report*



# CASA Environmental Scan Report

2011

Center for Applied Business Research in Energy and Environment  
(CABREE)

Alberta School of Business

**March 2011**



CENTRE FOR APPLIED BUSINESS RESEARCH  
IN ENERGY AND THE ENVIRONMENT

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## Executive Summary

This report identifies and analyzes risks pertaining to air quality in Alberta. The e-scan analysis is carried out under the Social, Technology, Environment, Economy and Political (STEEP) perspectives with examples of international environment efforts (e.g. US, Europe). In doing so, the report strives to bring out the impacts, implications and considerations of trends and their relevance to CASA initiatives.

### Social perspective

As the society progresses towards growth and development it feels the increased pressure of urban population, industrialisation and energy consumption on environment and air quality. Air quality is increasingly identified in the society as one of the top three environmental issues impacting human health. As the protest against oil sands activities is highlighted by the First Nations on the local level and by the environmental groups and communities on the global level, debates between governments, industry and communities take center stage. On one hand there is an increase in pressure on the government to resolve issues between local communities and industry while on the other hand there is a rise in social awareness leading to “shareholder activism” demanding companies to be more transparent.

### Technology impacting air quality

Growing concerns are leading the government to move industries to adopt greener technologies and better environmental management practices. The latest technologies such as carbon capture and storage (CCS), waste heat recovery units, (toe-to-heel air injection (THAI) along with developments in coal fired generation technologies are being recognized by the government and the industry as some of the key factors to mitigate the air pollution/ GHG emission issues. However, new developments in pipeline systems and capacities, and the expansion of oil sands upgrading capacity continue to pose adverse impact on air quality.

### Environmental/ Climate change

Oil sands activities continue to have environmental impacts including those from tailing ponds. Emissions of volatile organic gases and sulphur based pollutants are projected to grow in the future. Higher emission levels of pollutants will lead to further debates between industries, government, ENGOS, and communities on the effects of long-term exposure to pollutants on environment and human health. The increasing concerns of climate change within the country and internationally have led the provincial government to take measures in response. In an effort to reduce pollution the government continues to monitor the air quality through air sheds while trade-offs exist between equipment cost, complexity, reliability and performance. Trend analysis of international ENGO activity suggests that a major 'iconic' campaign targeting oil sands on environmental issues including air quality in the medium-term future is in the offering

### Economic growth affecting air quality

Alberta had one of the highest economic growth rates among Canadian provinces in the past decade and is poised to lead the economy in the coming years. The high growth results in increased demand for fossil fuel, electricity, domestic consumption of consumer goods, growth of agriculture and industrial sector – all this leading to current and future environmental challenges. Despite the recent economic slowdown, the investment in oil sands projects and activities is rising again. At the same time, increased investor interest in energy technology and CCS projects could help mitigate some of the emissions. The challenge for the government, as the society recovers from economic slowdown, will be to reduce the environmental effects of renewed growth and economic recovery.

### Political / Regulatory impacts

International political pressure and policy alignments continue to exert pressure on Alberta to adopt more environmental friendly regulations. Changes in regulations are also prompted by changing public attitudes, values and perception. While debates continue in the United States (currently more at a state level) and Canada over carbon taxes, cap and trade and other financial instruments to manage GHG emissions, these lack the same intensity of past years. A shift is occurring towards energy efficiency as a key driver in this area. As the provincial government looks for measures to achieve a greener sustainable growth, the development of regulatory frameworks to support this and economic development continue to evolve. Hopefully, these



factors will support the industries in implementing cleaner technologies to combat air quality issues.

## 1.0 Risk evaluation

Risk is defined as the combination of probability of an event and its potential impact.<sup>1</sup> The evaluation of the risks seen in the trends and patterns impacting or potentially impacting air quality begins with an examination of the frequency of occurrences of events and the degree of potential impact.

### Risk Parameters

Qualitative values of high, medium and low are assigned against the probability of occurrences and the degree of impact against each of the trends to identify the trends risk. Also, the nature of impact is described with respect to the scope of impact (local, regional, national, global) and the duration of impact (long-term/ short-term consequences)

Impacts / consequences both in terms of threats (downside risks) and opportunities (upside risks) may be high, medium or low.

### Consequences/ Impact – Threats and Opportunities

Qualitative Parameter	What it means
High	Significant Impact on environment/ air quality
Medium	Moderate Impact on environment/ air quality
Low	Low Impact on environment/ air quality

### Probability of Occurrences

Qualitative Parameter	Indicators
High	Frequency 1-2 years
Medium	Frequency 2-5 years

Low	Frequency 5-10 years
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The following are the identified trends within the social perspective potentially impacting the environmental/ air quality in Alberta. The direct/ indirect consequences of events building up to trends may impact the air quality at a local, regional, national and global level. Based on the nature of trends the impact may overlap the drivers for other trends therefore, wider view of the trends and drivers needs to be taken to have a holistic understanding of the issue.

#### A) Nature of trend: Social

<b>Trends</b>	<b>Probability of occurrences (Based on recent past years)</b>	<b>Impacts/ consequences</b>	<b>Nature of impact (scope, time)</b>
Growing public awareness and concern	High	High	Regional to Global, Long term
Increased protests by indigenous communities	High	High	Local, Short term
Increasing campaigns by global communities and environment groups	High	High	Global, Long term
Studies and assessment by environment groups	High	Medium	National, Long term
Bio-monitoring/ scientific studies on environment air quality	High	Medium	Local to National, Long term

## B) Nature of trend: Technological

<b>Trends</b>	<b>Probability of occurrences (Based on recent past years)</b>	<b>Impacts/ consequences</b>	<b>Nature of impact (scope, time)</b>
Rise of green innovation – green technologies (CCS)	High	High	Regional to Global, Long term
Technologies for in-situ extraction	High	High	Local, Long term
Technological developments in coal fired generation	Medium	Medium	Local and regional, Long term
Waste Heat Recovery Units	Medium	Medium	Local, short term

## C) Nature of trend: Environmental

<b>Trends</b>	<b>Probability of occurrences (Based on recent past years)</b>	<b>Impacts/ consequences</b>	<b>Nature of impact (scope, time)</b>
Tailing ponds	High	High	Local and regional, Long term
Increase and expansion of oil and gas activity	High	High	Local to global, Long term
Environment monitoring	High	Indirect.*	Local and regional, Long term

*\*Impact depends on effective implementation of strategies for expanding use environment/ air quality maintenance (CEMS).*

D) Nature of trend: Economy

<b>Trends</b>	<b>Probability of occurrences (Based on recent past years)</b>	<b>Impacts/ consequences</b>	<b>Nature of impact (scope, time)</b>
Increased investment in oil and gas	High	High	Provincial to national, Long term
Demand and supply	High	High	Provincial to national, Long term
Increased interest in shale gas	High	Medium	National to international, Medium term

E) Nature of trend: Political

<b>Trends</b>	<b>Probability of occurrences (Based on recent past years)</b>	<b>Impacts/ consequences</b>	<b>Nature of impact (scope, time)</b>
Air quality governance	High	High	Provincial, national, international, Long term
Policy alignment	High	Medium	Provincial, national, international, Long term
Regulatory change	High	Medium	Provincial, national, international, Long term

## Regional distribution of contaminants

Regional distribution of CAC (criteria air contaminants) by sector as per assessment by Alberta Environment<sup>2</sup> can be given as follows.

<b>Emission Trends</b>	<b>Region</b>
Upstream oil and gas developments	Northwest – Southwest Alberta
Agriculture	Throughout arable region (mostly in Central and South half)
Transportation	Urban areas (Edmonton, Calgary)
Chemical and Petrochemical	Industrial heartland (East of Edmonton)
Power generation, coal mining	West of Edmonton (Lake Wabamun)
Wood and wood product facilities	Throughout (Regional concentration in Northwest Alberta)

Based on the risk estimation of the identified trends and regional distribution of contaminants, it appears that north-west and southern (urban areas, Edmonton, Calgary) Alberta are likely to be under high environmental / air quality pressure (local) in the long-term.

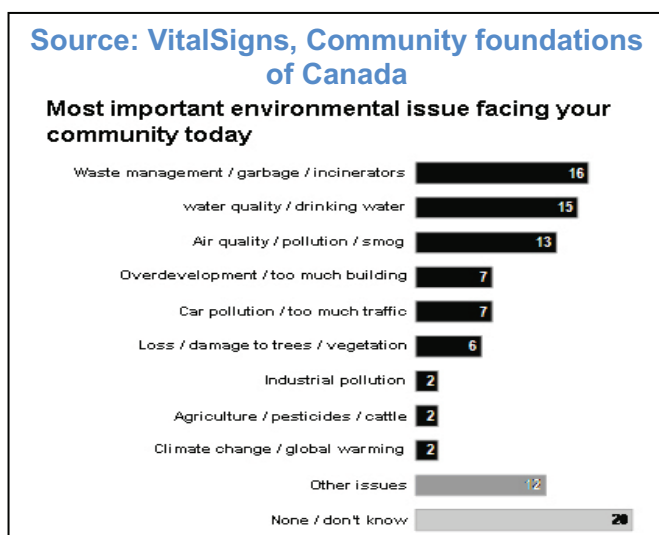
## 2.0 Social perspective

### 2.1 Growing public awareness and concern

As the society continues to grow and develop there is a rise in public awareness about the environmental and air quality issues.<sup>3</sup> The media, environmental groups, academia, communication and information technology, internet (social networking sites such as blogs, Facebook, Twitter, etc.) have been instrumental in generating increasing levels of awareness on specific issues impacting human health and environment.<sup>4</sup> Environmental issues such as climate change, oil sands, industrial emissions and spills continue to be high on the public agenda in Canada and around the globe.

For example, in a recent national public opinion survey conducted by Vitalsigns, Canadians identified air quality as the third most important environmental issue impacting their community<sup>5</sup>. The survey also suggests that the public perceives the government as being most responsible for protecting environment quality in their community.

Organizations such as the Canadian Public Health Association (CPHA) also raise public awareness about health effects of air pollution and facilitate dissemination of information and issues on an international level<sup>6</sup>. Increased awareness is also fostered by partnering with other



voluntary organizations, medical community, schools and industries to enhance the knowledge on air quality issues. With these health promotional and public awareness initiatives and through the aid of electronic media the public awareness on air quality issues is most likely to trend upwards.

As public awareness and concern about air

emissions continues to grow, the information, knowledge sharing, collaborative efforts and public outreach initiatives can help change attitudes and encourage responsible individuals and groups to take necessary actions to reduce emission levels.<sup>7</sup> While the recent years have witnessed the growing consciousness with respect to general impact of air pollution and climate change, gaps still continue to persist in general awareness.

### Implications, impacts and considerations

- Increased public awareness through outreach initiatives may influence attitudes of individuals and groups towards air quality issues on a more proactive level. This might lead to increased participation of communities through non-profit / non-governmental societies that provides landowners and key stakeholders an opportunity to learn, network and share information.
- An environmentally aware society would expect the government to be more transparent and to respond more quickly to public issues pertaining to environment and air quality. Given the role of modern information technology, government would be required to engage and inform public through newer and faster ways of communication.
- The overload of available information about climate change, air quality, diverse viewpoints and conflicting expert opinion about health impacts from different sources may cause greater confusion and doubt. This might lead to a perceived lack of credibility of any information and increased scepticism.
- In view of the above, a continued opportunity exists for CASA to contribute to a reliable, comprehensive, objective base of knowledge and information on emissions, ambient air quality, health and environmental impacts and potential management and mitigation.

## 2.2 Increasing Protests by Indigenous Communities

As the oil sands industry continues to expand in Alberta, the exploitation of hydrocarbons has caused a greater concern about oil sands impacts on human health, particularly the First Nations and indigenous communities. In recent years there has been growing instances of protests against



oil sands operations at national and international levels. For example, during the Copenhagen COP meeting a large number of Canadian youth led a protest against Alberta oil sands, calling for a moratorium on further oil sands development.<sup>8</sup> Furthermore, last year representatives of 61 First Nations came together in Vancouver to deliver a signed declaration stating their opposition against the proposed Enbridge pipeline in northern B.C.<sup>9</sup> Such incidents are data points of this continuing trend of protests against oil sands projects.

The implications of oil sands operations on local communities involve multiple dimensions such as human rights issues, environmental justice issues and indigenous treaty rights issues. It is contended that the proximity to the oil sands operations, mine site and tailing ponds area pose direct impact on air quality / environment and human health. The toxic releases from the tailing ponds are an increasing source of concern to these communities.

Amidst increasing protest the government faces challenges to sustain growth and development of natural resources while taking efforts to reduce the environmental footprint of oil sands operations. The leadership of the indigenous and First Nations face challenges to preserve the boreal habitat while addressing the need for economic development. Under such circumstances, the need for negotiations and dialogue becomes crucial. However, due to the ambiguity of issues (i.e. nature and scope of health impacts, standardisation of emission levels, monetary quantification of environmental footprints on local ecosystem, and high pressure on judicial systems) it is expected that there will be added pressures on time and increased expenditures.

#### Implications, impacts and considerations

- Increased protest is likely to spawn further debates and dialogues between industry, government and communities.
- As a result of an increasing campaign against oil sands projects there could be the delay or slowdown of current and future oil sands operations as the issues centering around environment and air quality are resolved.

- To address the direct impact of oil sands operation on local communities in the vicinity of oil sands operations and mine sites, efforts by government and industries could lead to implementation of different environmental practices.
- To effectively spearhead the cause of environment preservation and natural habitat, the First Nations and indigenous groups would feel the need to be more united and cohesive in their mandate for protests. This would give rise to the need for strong leadership at the local level.

### 2.3 Increasing Campaigns by Global Communities and Environment Groups

Awareness of environmental / air quality issues have increased during the recent years as environmental groups and global communities have ramped up their campaigns against emissions from industrial activities. Environmental groups intend to continue exerting pressure on the oil industries.<sup>10</sup> As increased campaigns heighten environmental issues at the global level making “environment” a focus in international energy summits, it may also bring changes in international and national policies on GHG emissions standards. The Sierra Club, Greenpeace and 28 other North American groups have been making attempts to call on United States and Canada to boost investments in cleaner energy, protect fish habitat in the Arctic and freeze expansion of Alberta’s oil sands to control the GHG emission for better environment / air quality.<sup>11</sup> The strong actions by environment groups is a growing lobbying force that will continue to generate awareness and influence major political decisions at international level. Changes in environmental policies in the United States are likely to influence Canada at the national and provincial level as Alberta oil sands become a critical issue on the North American green agenda.

While the environmental groups hope to intensify North American green action, the key challenge for continued cooperation could be the development of a common framework for regulating GHGs and air quality. The awareness and environmental consciousness generated could lead to newer ways of green initiatives from the public expressed in such things as “shareholder activism”. These steps, plus the introduction of new accounting standards (IFRS) in North America could serve as an internal force within the industry to increasingly address the

impacts of its practices and operations. Eventually, these efforts would help the innovation, research and development of efficient and cleaner technologies.

#### Implications, impacts and considerations

- Debate between government on a much higher level about the industries' impact on air quality and human health in the future.
- Increased social awareness leading to newer ways to address environmental causes such as “shareholder activism” and accounting systems like IFRS demanding companies to be more transparent.
- As the continued cooperation in the international level faces challenges to develop common framework for GHG emissions and air quality, there would be more research to establish and redefine the air quality standards and permissible limits.

## 3.0 Technology impacting air quality

### 3.1 Rise of Green Innovation

As the environmental pressure on energy industries and government continue to increase, green innovations increasingly become a means to combat air pollution. Carbon capture and storage (CCS) is being recognized by industry and government as a promising innovation to help reduce GHG emission.<sup>12</sup> Other green measure such as adoption of Waste Heat Recovery Units by companies seems to provide answers for future air pollution challenges.<sup>13</sup>

Carbon capture and storage complements approaches for GHG reduction (i.e. improving energy efficiency) and increased use of non-carbon sources of energy generation. As CCS is very compatible with large energy production and delivery infrastructure, there has been increasing interest in the technology as a sequestration option.<sup>14</sup> All the approaches (i.e. improved energy efficiency, use of non-carbon energy sources and sequestration) will be required to play a significant role in order to meet emission objectives.<sup>15</sup> Opposition to CCS as a viable solution continues to be an issue – it is uncertain what the impact of this opposition will be and whether the opposition itself will increase or decrease as more CCS initiatives become reality.



Apart from CCS, energy companies have been increasingly investing and adopting innovative technologies such as waste heat recovery units. The adoption of these waste heat recovery projects on a commercial level and the provision of regulatory approvals to develop these units indicate active measures by the companies and the government towards efficient and greener

operations.<sup>16</sup> Among available renewable sources of electricity generation, waste-heat-to-power (WHP) has one of the lowest electricity generation costs. Being a true base load capacity, it helps reduce green house gas emission and overall dependence on fossil fuel.<sup>17</sup>

### Implications, impacts and considerations

- Government and industry recognize that CCS is a promising innovation to reduce GHG emission in the coming days. CCS is likely to play key role in the future.
- High initial cost and long term environmental benefits of CCS would encourage financing activities from institutions for CCS projects.
- Potential benefits to Albertans and Canadians as new jobs will be generated to build and operate CCS infrastructure and jobs created in expanded enhanced oil recovery (EOR) industry.
- Energy companies are showing increased interest in Waste Heat Recovery Units. Adoption of waste heat projects would lead to low CO<sub>2</sub> emission and lower cost to companies. As a consequence more waste heat pilot projects are expected in the future.

### 3.2 New technologies for in-situ extraction

The technology for in-situ extraction of oil sands such as SAGD (Steam Assisted Gravity Drainage) is now being implemented on a wide scale and the newer in-situ technologies such as THAI (Toe to Heel Air Injection) seems to hold promise for better environmental quality.

It is estimated that about 80% of oil sands reserves cannot be produced by surface mining methods would require in-situ technologies such as SAGD, THAI, VAPEX (Vapour Extraction), CSS (Cyclic Steam Stimulation) and Cold Flow.<sup>18</sup> SAGD is one of the most common in-situ technologies and is being applied at a number of oil sands projects including Encana's Forest Creek and Christina Lake projects, Nexen's Long Lake project and Suncor's Firebag project.<sup>19</sup> One of the environmental concerns arising from SAGD implementation is the GHG generation as a result of burning fuel to generate steam. The use of natural gas as the fuel source for steam generators and low NO<sub>x</sub> boilers to generate the steam decreases pollutants but as production

volumes grow, the absolute exhaust from boilers increase as well.<sup>20</sup> Like CSS and SAGD, THAI technology also uses heat to extract the bitumen. However, the heat is generated underground by the combustion of small portion of bitumen. THAI has the potential to be much less energy intensive as compared to other in-situ technologies as it uses less natural gas and also it reduces the amount of energy-intensive upgrading the produced oil has to otherwise undergo. Overall, THAI produces 50% less GHG than other oil sands production methods while having minimal surface footprints.<sup>21</sup> Although the process is at initial stages of implementation (e.g. pilot projects at Petrobank and Whitesands), it is poised for commercialization in other oil sands and heavy oil reserves in western Canada and around the world.<sup>22</sup>

With the increase in in-situ oil production from Alberta oil sands, the environmental concerns from the in-situ technologies are expected to increase. The GHG emission from high energy-intensive technologies such as SAGD is the prime concern. The big players in SAGD operations (i.e. ConocoPhillips) however, is assessing alternative fuel sources for SAGD and new steam generation technologies that may help to reduce future gas emissions from oil sands production.<sup>23</sup> THAI technology holds promise as it is energy efficient, low cost and less polluting, however, given its early stage and complex nature of operation it might take a while for it to be implemented on a wide scale.

#### Implications, impacts and considerations

- Wide scale implementation of SAGD is likely to exert considerable pressure on environmental quality despite using natural gas and low NOx boilers.
- Expect THAI to be one of the key thermal methods for in-situ bitumen extraction as environmental concern mounts; however, it will take time for wide scale commercialization of projects.
- Need for research to seek alternative fuel for SAGD for steam generation and to gain better understanding of THAI.
- Low operating cost and better efficiency of new technologies such as THAI and VAPEX would drive oil and gas companies to further invest in research and development.

### 3.3 Technological developments in coal-fired generation

Canada has abundant coal reserves. It currently holds 8.7 billion tonnes of proven resources of coal in place, 6.6 billion tonnes (of that amount) are deemed recoverable using existing technology under current and expected economic conditions.<sup>24</sup> Over half of Canada's production is used domestically for electricity generation and various industrial appliances while the remaining production is exported. Coal mining and electricity generation pose significant threats to the air quality. Coal consumption may eventually decline in Canada as a result of environmental policies.<sup>25</sup> On the other hand, new technologies in coal fired power generation aimed at reducing air pollution may enable coal industry to continue to thrive.

A potential decline in coal consumption in Canada could result from environmental regulations for emissions generated by coal based power plants. Such developments are likely to adversely affect the coal production in Canada's western provinces which is home to Canada's largest resources and its most active producers.

Coal is considered the dirtiest of all fossil fuels and contributes to the emission of significant amount of pollutants (GHG, particulate matter, sulphur dioxide, nitrogen oxides and mercury) which impact environment, air quality, health and economy.<sup>26</sup> Canada's coal industry is actively seeking ways to address environmental concerns on three fronts (i.e. mine sites, power plants and global issues) in a hope to impact practices, introduce better technologies and foster global cooperation.<sup>27</sup> The latest technological developments in coal fired generation are Supercritical-Pressure Pulverized Coal Combustion (SPPCC) Technology and Integrated Gasification Combined Cycle (IGCC).<sup>28</sup> The benefits from these technologies is lower fuel consumption, less GHG emission, higher efficiency and ability to scrub pollutants such as sulphur and heavy metals.

### Implications, impacts and considerations

- IGCC and SPPCC have the potential to become preferred method to generate electricity from coal in the future as the technology matures.
- Given the abundance of coal reserves and new technological advancements, the coal fired generation is likely to remain a significant component of Canada's power production mix although uncertainty in GHG regulations remains a major challenge.
- GHG regulations, cost and reliability of new technologies would be prime drivers for air quality.



## 4.0 Environment/ Climate change

### 4.1 Increasing perception of emissions from tailing ponds

As an undesirable side-effect of oil sands development, tailing ponds continue to be a major environmental concern. Considerable efforts by the industries, academia and government have been underway in term of research to provide solutions for tailings management / site reclamation. The unified efforts by major oil sands companies strive to advance tailings management through collaboration in research and development related to tailings issue.<sup>29</sup>

However there is an increasing perception of emissions from tailings ponds and hence creates a concern. So far it is ENGOs that are releasing reports raising this concern. For example, Environment Defence sees tailings as a major source of air pollution, particularly in summer months when the heat causes volatile organic compounds (VOCs) from the ponds to vaporize into the air. They estimate that emissions of VOC (benzene) alone are now about 100 tonnes a year and could grow to 800 tonnes by 2015.<sup>30</sup> There is no peer reviewed research currently available on this topic.

The challenge for the government to arrive at accepted benchmarks for emission, neutral / third party monitoring practices and transparency is expected to increase. The collaborative efforts of industry and academia to foster research, open discussion and innovation in tailings management and reclamation efforts could go a long way in mitigating impacts on environment, air quality and health.

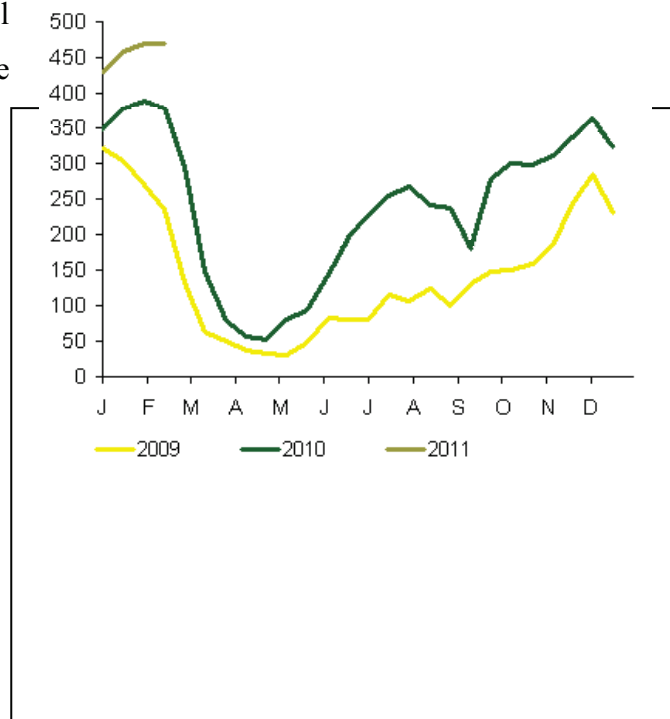
#### Implications, impacts and considerations

- Increased emissions may lead to more air quality impacts on people and the environment such as smog, acid rain and reduced visibility.
- Alberta Health and Wellness has started a review of the scientific literature investigating health effects associated with chronic H<sub>2</sub>S exposure.<sup>31</sup> More such efforts by government

and the health community are expected as the ambiguity about the actual impacts of emission and air quality intensifies in the future.

## 4.2 Increase and expansion of oil and gas activity

The returning demand for energy has led to an increase and expansion of oil and gas activity in the province. The increase and expansion is seen in drilling activities, wide scale oil sands development, expansion of pipeline systems and activities, and increase in oil sands upgrading capacity. These developments impact the surrounding ecology<sup>32</sup> and will continue to impose environmental challenges at the local and regional levels.



The growth in the oil sands development activities is expected to increase in the future to the tune of three or four times, increasing to a range of 3.1 to 5.7 MMbbl/ d by 2030.<sup>33</sup> The report from

IHS CERA suggests that Canadian oil sands have increasingly become an important source of global oil supply growth. Closely following the growth and development of the upstream sector there has been a similar trend of growth and development in the downstream. The proposed Enbridge Northern Gateway pipeline project is one such example creating a link between oil sands of Alberta and British Columbia coast.<sup>34</sup> Government approvals in 2008 for Alberta Clipper Expansion and Southern Lights Pipeline projects exemplifies the trend of expansive growth of pipeline project in Alberta.<sup>35</sup> Oil sands upgrading capacity in the province is also on an increasing trend as a consequence of increased production from oil sands.<sup>36</sup>

These activities (e.g. drilling, oil sands, etc.) are ultimately associated with increased emissions. Alberta has the highest greenhouse gas emissions in Canada, largely as a result of energy-sector activities.<sup>37</sup>

#### Implications, impacts and considerations

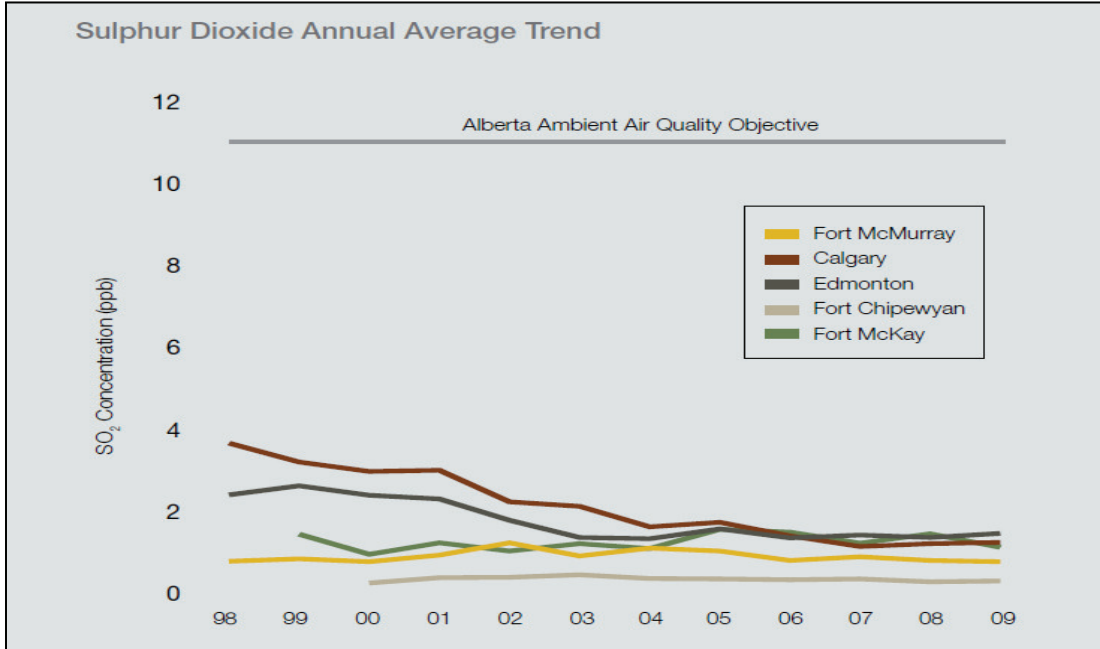
- Increased level of GHG emissions from increased operation of energy industries.
- Absolute scale of drilling/ oil gas activities may offset the benefits of efficient and cleaner technologies and impact environment/ air quality in future.
- Increased pipeline capacity would lead to growth in oil sands production and environmental air/ quality concerns.
- Increase in the density and capacity of up-graders may lead to the increase in concern for health issues in the urban areas.
- Increased debate/ conflicts between environmental groups, government and industries leading to slow down of oil and gas operations, need for better practices and newer technologies.

### 4.3 Continuous Environment Monitoring

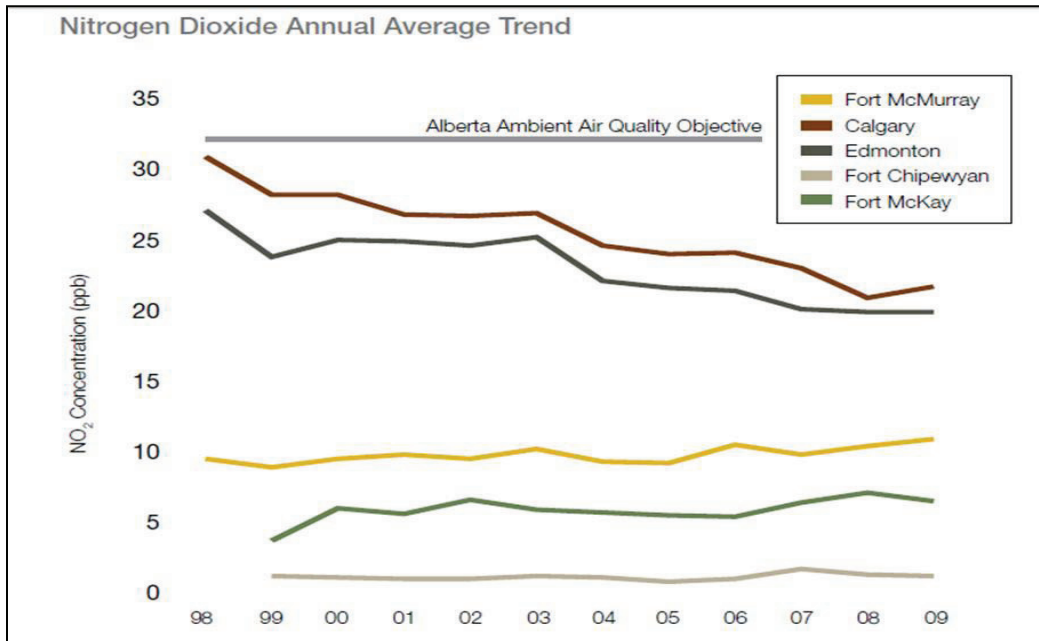
As the challenges pertaining to air quality and environment continue to grow due to increased industrial and human activities the issues related to the effectiveness and efficiency of air monitoring systems takes center stage. The current measured air quality index (AQI) is based on outdoor concentrations of carbon monoxide, fine particulate matter (PM 2.5), nitrogen dioxide, ozone and sulphur dioxide. Air quality is currently monitored by network of stations operated by Alberta Environment, Air Shed Zones (air quality management zones), Environment Canada and industry.<sup>38</sup>

Data collected over the past 10 years at monitoring stations across Alberta indicate an improving or static trend in air quality throughout the province.<sup>39</sup> As indicated by the annual average concentrations of common air pollutants, monitored ambient concentrations do not reflect any deterioration in air quality despite an increase in emissions-associated activities and growth in

population. Below is an annual trend of Sulphur dioxide and Nitrogen Dioxide in five different cities of Alberta.



(Source: Alberta Environment)



(Source: Alberta Environment)

It can be observed that the levels of concentrations in Calgary and Edmonton are relatively higher than those in other areas. Concentrations of PM<sub>2.5</sub> at stations in the Regional Municipality of Wood Buffalo have shown a decrease in the past decade. However, no annual ambient Air Quality Objective has been set for PM<sub>2.5</sub> (CAPP). As per predicted CAC (Criteria Air Contaminants) by Census Division, 2015, the highest emissions are predicted to be in the Edmonton, Calgary and Fort McMurray areas.

#### Implications, impacts and considerations

- In view of the predicted emission trends and the relative emission impact on different regions of Alberta; the monitoring system update, new station establishment, reviews and modification of the existing system is needed to be looked into against the rising new challenges to air quality.
- The relevance of third part monitoring is expected to further increase in future.
- Not all ambient air data collected in Alberta is displayed in real-time to the current air quality website.<sup>40</sup> In future, the need to include more air data may increase.
- Trade-offs exist between cost of the monitoring equipment/systems and their complexity, reliability and performance.

## 5.0 Economic growth affecting air quality

### 5.1. Increased investment in oil and gas

With the world showing signs of a general economic recovery<sup>41</sup>, investments in Alberta are expected to rise. As a result, sectors like transportation, infrastructure, and exploration & production (E&P) activities are also growing<sup>42</sup>. This directly co-relates to the increase in the amount of GHG emissions<sup>43</sup>. However, rising interest among investors in renewable and alternative energy sectors, carbon capture & storage (CCS) and carbon sequestration projects<sup>44</sup> points to a potential solution to overcome the rise in the amount of GHG emissions<sup>45</sup>. CCS projects are expected to reduce the GHGs at coal fired power plants, and upgraders, by about 15 million tons annually starting from 2015<sup>46</sup> <sup>47</sup>. The Alberta government is investing heavily into carbon sequestration projects as part of its climate change strategy.

#### Implications, impacts and considerations

- The uncertainty that is associated with the investments in CCS, carbon sequestration and renewable energy supplies research implies that large capital expenditures by the companies may potentially be sunk costs. So the government is required to take steps to minimize the uncertainty associated with these investments. Uncertainty in the investment growth in the above projects could well mean that there could be increasing air quality issues.
- Low oil prices could hamper companies from investing in projects aimed at reducing GHG emissions. However, a low oil price also pushes the companies to become operationally efficient. By being operationally efficient, companies reduce wastage and this could lead to reduced GHG emissions.
- Governmental policies and regulations affect the investment patterns in Alberta. A highly regulated environment could be beneficial towards the maintenance of air quality in the province but it could also work the other way with protectionist measures so that investments in Alberta are hampered. The latter would mean less investment in the province. With lower investments towards carbon reduction projects, addressing air quality issues would be a challenge.

## 5.2 Increased demand and consumption

Some of the major factors which affect demand and supply are population, GDP growth, weather, increase in transportation, and external demand<sup>48</sup>. Air quality issues are related in part to demand and supply for hydrocarbon fuels and its consumption.

Alberta's population has been increasing over the last decade and in 2010 the population has grown by 1.4% which is higher than Canadian growth rate of 1.2%<sup>49</sup>. With the increase in population, there is an increased demand for electricity, heating, fuel for automobiles, food production, etc. Consumption of petroleum and its products is one key indicator of economic growth. Greater production of petroleum, increased investments in the energy sector or importing of petroleum from other places increases the carbon emissions associated with these activities<sup>50</sup>. This leads to clean air quality issues. In Alberta's case, more coal power plants are being developed<sup>51</sup>. This increases the amount of GHG emissions.

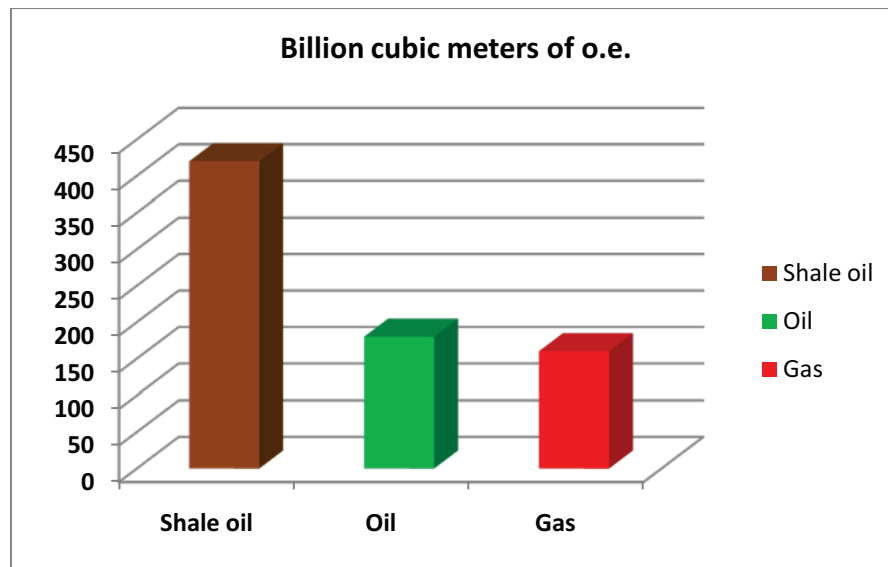
In case of demand for agricultural products, the demand for fertilizers goes up as the production rate increases. Since natural gas is one of the main raw materials for fertilizers, the carbon emissions due to the usage of natural gas go up<sup>52</sup>.

### Implications, impacts and considerations

- Growth of population in Alberta can be both an opportunity as well as threat to the province. Opportunity exists due to the abundance in supply of labour leading to growth in internal demand for products which could make Albertan businesses sustainable in the long run; on the other hand increased consumption of energy can cause higher GHG emissions.
- Air quality issues are also determined by the trade with external players. Alberta's investment and oil production growth depends on the demand from the US to a large extent. Air quality issues are bound to increase if the demand for Alberta's oil grows in the US.

### 5.3 Increasing interest in Shale Gas and Oil Shale

There has been considerable interest towards shale gas production<sup>53</sup>. Shale gas and oil shale have great potential to have a significant impact on Albertan economy in the next decade<sup>54</sup>.



(Source – GeoExpro)<sup>55</sup>

Oil shale contains significant amounts of kerogen which is harder to process than crude oil<sup>56</sup>. Therefore oil shale requires more processing than the normal crude oil. This raises environmental concerns about the processing of kerogen being GHG intensive<sup>57</sup>. Although there are massive discoveries of shale gas, cost of production of shale gas and oil shale is capital intensive<sup>58</sup>. The companies which have invested in shale gas are finding cost effective ways to bring it to commercial production. Natural gas extracted from shale is a clean source of fuel and emits out half the carbon dioxide coal and 30% less than fuel oil when burnt<sup>59</sup>.

Early stages of drilling for shale gas typically involve transportation of heavy equipment, rigs and engines which are generally fuelled by gasoline or diesel<sup>60</sup>. This is a source of air pollution. The drilling process for shale gas and oil shale involves a process called fracking. The fluids used for fracking could evaporate during the drilling process and methane which is one of the major sources of GHG emissions and contributes towards the rise in GHG emissions<sup>61</sup>. Oil shale when burnt in oil shale fired power plants produces nitrogen oxides, sulphur dioxides, hydrogen



chloride and other particulate matter (fly ash)<sup>62</sup>. The problem of particulate matter is on the rise in Alberta and with extensive use of oil shale, this problem is expected to aggravate further<sup>63</sup>. Particulate matter like oxides of carbon, sulphur and nitrogen have the capacity to combine with water vapour in the air and water on the surface and cause acid rain and increase the pH levels of the lakes<sup>64</sup>. Other particulate matter like benzene and volatile organic compounds (VOCs) have known to cause health hazards among people and this could mean an economic implication for the government which now has to spend more for health care. Ozone and VOCs are the main components of urban smog. Urban smog has economical implications and is another source of air pollution in the cities<sup>65</sup>.

Currently huge shale gas reserves are found in the US. If this is commercialized, then US dependence on Canadian oil sands could reduce<sup>66</sup>. This coupled with the negative image of the oil sands could in effect reduce the demand and any economic incentive that is associated with the oil sands. This could well mean that environmentally Canada could gain through reduced GHG emissions. If proper methods are used to harness shale gas, it could transform US to a low carbon economy<sup>67</sup>. What this means to Alberta is that with development of shale gas in other regions, further development of oil sands could be a challenge.

#### Implications, impacts and considerations

- Increased levels of particulate matter like sulphides, nitrogen oxides, fly ash, VOCs could have multi fold effects varying from respiratory disorders, Acid rain to pH level alterations in the water system. This could increase government spending on health and welfare.
- There is a need for technological advancements shale gas could benefit Albertan economy in the long run.
- Likelihood of low carbon economy in North America utilizing shale gas and lesser dependence on oil sands would force Alberta to develop technology to reduce GHG emissions and also to make oil sands competitive in terms of maintaining the current levels of production by diversification.

## 6.0 Political / Regulatory impacts

### 6.1 Air Quality Governance

Several steps are being taken towards the governance of air quality issues. Canadian Council of Ministers of the Environment (CCME) is leading a National Comprehensive Air Management system (NCAMS). This system is expected to include regional planning, harmonization of standards nationally and internationally, set sector based minimum standards for emissions and follow a graduated approach towards management's action based on ambient air quality<sup>68</sup>.

The Government of Alberta is developing the Alberta Cumulative Effects Management System (CEMS) which takes on a multimedia approach towards environmental management in the province<sup>69</sup>. Multimedia approach implies that CEMS is outcomes based, risk based, considers health, economic and social perspectives, collaborative and involves many parties and adaptive with mechanisms built in to allow flexibility and assure achievement of outcomes<sup>70</sup>. This represents a shift in focus on managing air quality from provincial area to regional area while also considering the effects on land and water<sup>71</sup>.

Proper governance is required for management of odour. In Alberta, the main sources of odour come from Intensive Livestock Production<sup>72</sup> and oil & gas operations. Ammonia is a major component in odour in the Livestock Production Process. People are becoming increasingly intolerant to malodour. Current storage methods include anaerobic storage to retain odours in a solution. Disturbance of these solutions could cause odorous events. There is little data that is available on acceptable odour exposure in terms of duration, intensity and frequency.

### Implications, impacts and considerations

- Setting sector based emission standard helps in greater accountability of emissions and also indicates a uniform measure by which different sectors are weighted with regards to the ambient air quality.
- Planning regionally and harmonizing standards nationally and internationally would bring in uniformity and eliminates differences in jurisdictions. This step makes emerging air issues part of a larger problem with a single focused approach.
- Shifting focus of the management of air quality from provincial to regional localizes the problem and makes it easier to handle. By localizing the issue, it is also possible to find customized solutions to these problems.
- Lack of data makes it difficult to address the problem of odour management in Livestock Production. This only means that the problem of GHG emissions from Livestock would continue to remain for some more time until technological advancements are made to gather the required data and also contain the odour to one location.
- Excessive regulations of air quality in and around the oil sands area could raise many compliance issues and may deter oil sands investments. With technological improvements this regulation / governance policy would have to be re-aligned in order to accommodate the changing standards.

## 6.2 Policy Alignment

Air quality/ odour management arising out of oil and gas operations and live stock production are expected to have jurisdictional problems since it is considered to be municipalities' responsibility to manage odour problems currently<sup>73</sup>. A lack of communication between municipalities and also between different governments departments could well be the root cause of jurisdictional problems<sup>74</sup>.

There is a growing public interest for monitoring, gathering information for credibility of existing environmental monitoring and air quality information<sup>75</sup>. As a result greater access to data is necessary and this is expected to come under greater scrutiny by the public. There is a

need to accommodate local third party reviews for environmental monitoring. The current independent perspectives do not reflect the local values<sup>76</sup>. Also it is touted that the current model of environmental monitoring and reporting is indirectly influenced by the industry and therefore it leads to “industry – friendly” interpretations of data<sup>77 78</sup>.

Issue of relevance for CASA would be the external groups (not part of CASA) which take up environmental issues in a campaign styled environmental activism<sup>79</sup>. With Alberta Environment focusing more towards regional / air shed air quality management, the role of CASA could be re-examined as a provider of provincial recommendations to Alberta Environment. CASA could also play a potential role in developing provincial standards or thresholds or outcomes with the CAMS or the National AQMS.

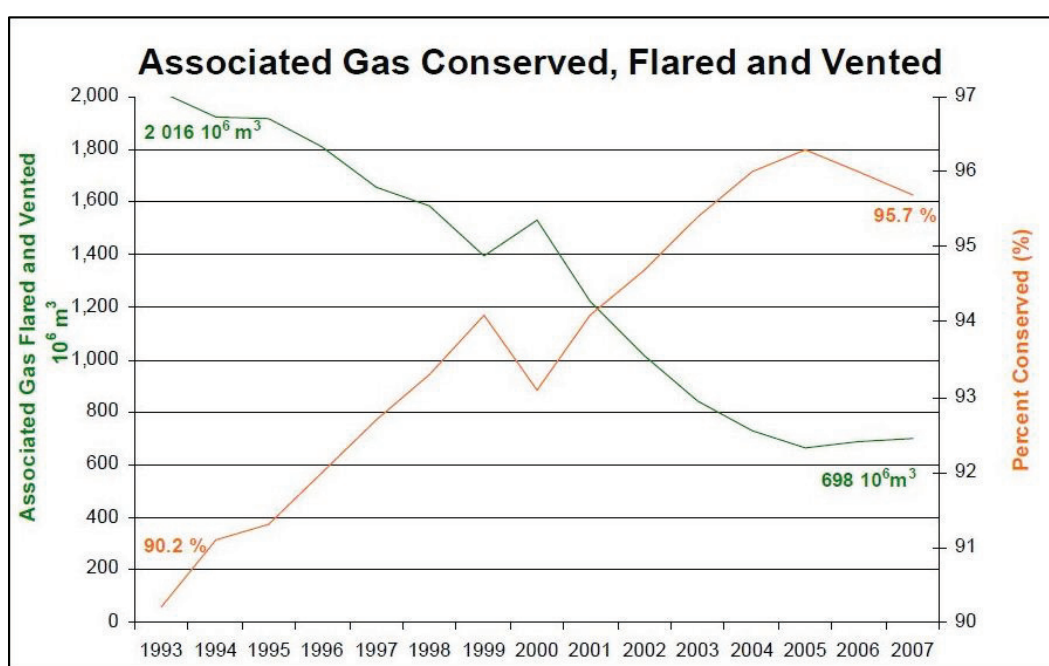
#### Implications, impacts and considerations

- Re-examination of role played by CASA as a provider of provincial recommendation, developer of provincial standards or thresholds could add a lot more credibility to the work CASA has been doing and can also be considered as a “win – win – win” situation since Clean Air Strategic Alliance is made of the representatives from industry, government and NGOs.
- Growing public interest towards monitoring and information gathering for credibility of existing environmental monitoring and air quality information reiterates the need to a greater and easier data access. Greater scrutiny by the public would mean that greater accountability is required and also a way to manage responses and criticisms from the public is necessary.
- Different policies within each jurisdiction of the municipalities lead to confusion and implementation challenges for the air quality/ odour management system.
- If there is a general shift in the US federal policy direction on emerging clean air issues and that if it tends to shift towards a higher regulation for achieving climate change, it could mean that Alberta would have to align its policies on clean air. This potentially includes a greater role for CASA, CAMS and CEMS to recommend provincial and national policy

standards and harmonize provincial and national climate change schemes while focusing on regional issues.

### 6.3 Regulatory changes

Alberta is a world leader in reducing natural gas flaring or venting. Approximately 96% of all the natural gas is conserved helping to conserve about 7.2 million tons of CO<sub>2</sub> each year<sup>80</sup>.



(Source: – ERCB)

There is a possibility that conventional oil and drilling associated with it might have resurgence. But Alberta being a world leader in conserving natural gas flaring / venting can still do a commendable job in terms of controlling flares. In addition to this the government of Alberta has set the minimal levels of safety and environmental protection standards related to air quality. This regulation is one of the most stringent in Canada<sup>81</sup>. In case of resurgence in the conventional oil and gas, slight improvement in the current regulations with regards to flaring or incineration should be able to achieve the required objective of having reduced GHG emissions due to flares or vents. Imposition of carbon tax is one way to ensure that the industries reduce

their carbon footprint. Alberta Government can then use this money to fund projects and technology which aim at reducing GHG emissions<sup>82</sup>.

Climate change is one of the most widely discussed topics and is expected to be dominant issue as ecological and regulatory issues continue to rise<sup>83</sup>. The Cancun protocol aims to reduce GHG emissions by 20% of the 2005 GHG emission levels by 2020 and by 60% of 2005 levels by 2050<sup>84</sup>. If the US government re-aligns its policies to achieve this target, one of the steps would be to increase regulations on import of Canadian crude i.e. Alberta's oil sands. The US EPA's work on feedlot operations could increase pressure on Alberta to remove agricultural exemption from environment management that the industry currently enjoys<sup>85</sup>. Lastly, the unproven nature of CCS technologies will help keep the climate change issue at the forefront.

#### Implications, impacts and considerations

- Although Alberta is performing well with respect to reduced flaring, there is still scope for further improvements.
- Sustainable way to back GHG reduction projects is by Carbon Tax applied by the way of cap and trade of emissions. With policy alignment identifying emission limits based on sector, this could be a fair game for all players involved.
- Climate change issue will continue to remain a dominant issue in the coming years. Alberta still has to work substantially to reduce the GHG emissions from the current levels since this is attracting international attention and the anti oil sands movements are growing stronger exerting more pressure each day.

## European and American Environment Initiatives

### A) Impact of EU policies on air quality

The EU has introduced a range of policies on controlling pollutant emissions in the recent decade. Some of the key initiatives in this regard are:<sup>86</sup>

- Euro emission standards for road vehicles.
- Integrated pollution prevention and control (IPPC).
- Large combustion plants (LCP).

The new EEA (European Environment Agency) study, “Impact of selected policy measures on Europe’s air quality”, aims to analyze and assess the impact of the above key initiatives on air quality as compared to “no-policy” scenario. A summary of this policy follows.

- Road Transport – Introduction of vehicle standards led to a reduction of transport emissions of Carbon monoxide (80%), Volatile organic compounds (68%), Nitrogen oxide(40%) and particulate matter (60%) over the years 1990-2005 as compared to no-policy scenario.<sup>87</sup>
- Industrial combustion – There is a significant reduction of particulate matter in major industrialised areas such as Germany, Italy, Netherland and Poland.
- Emissions could be further reduced if latest vehicle standards and LCP were fully applied in all European countries.
- National emission ceilings directive (NEC) – European parliament and council on national emission ceilings for certain pollutants sets upper limits for member states (in 2010 for SO<sub>2</sub>, NO<sub>x</sub>, VOC and NH<sub>3</sub>), but leaves it largely to the member states to decide which measures to take in order to comply with standards.<sup>88</sup>
- There is scope for even further reducing emission as many countries have not yet achieved their binding emissions reduction under NEC.
- The overall goals of bringing emissions down below the agreed ceilings are supported by sector-specific emission reduction measures.

## B) Clean Air for Europe (CAFE) program

CAFE is an EU initiative to establish a long-term, integrated strategy to tackle air pollution against its effects on human health and environment.<sup>89</sup> The key features of the CAFE program are as follows:<sup>90</sup>

- ❖ To develop, collect and validate scientific information concerning air pollution.
- ❖ Supporting the correct implementation and reviewing the effectiveness of existing legislation and developing new proposals as and when required.
- ❖ Developing structural links at relevant policy areas.
- ❖ Disseminating the information among general public.

### Implications, impacts and considerations

- CAFE program fosters links with EU's framework programmes of research and development. This aids in accessing scientific input vital for the successful implementation of the program.
- CAFE is a transparent and open program making reports, results readily available on European Commission website and allowing interested parties to supply information and submit comments.
- The programme facilitates cooperation with the United Nations Economic Commission for Europe Convention on Long-range Trans-boundary Air Pollution and the World Health Organisation. These initiatives help in developing synergy and collaborative effort between agencies for mutual success of their respective objectives.

## C) Norway's environment policies and standards

In the Norwegian regulations relating to pollution control, statutory limit values for particulate matter (nitrogen dioxide, sulphur dioxide, benzene, carbon monoxide and lead) are based on EUs directives on ambient air quality.<sup>91</sup> The national targets for air quality are based on socio-economic considerations as well as considerations of public health. Traffic/ transport pollution is



a key identified source of emission. Measures to reduce road traffic pollution are divided into two broad categories: those designed to reduce the volume of traffic and those designed to reduce emissions.

Some of the key initiatives under Norway's pollution control program are:<sup>92</sup>

- ❖ Setting up new limits for sulphur content for various oil products.
- ❖ Introduction of the sulphur tax and new requirements introduced under Pollution Control Act.
- ❖ Operation of VOC (volatile organic compound) during loading of crude oil. The recovery of more oil vapour during loading and storage of crude oil and the effect of the new exhaust standards for road vehicles.

#### Implications, impacts and considerations

- Norway has greatly reduced its sulphur dioxide emissions since 1980. Total Norwegian emissions dropped from 136,000 tonnes in 1980 to 16,000 tonnes in 2009, according to preliminary figures from Statistics Norway.
- There has been considerable reduction in VOC level in the atmosphere. In 2001, VOC emissions totalled 397,000 tonnes while in 2009 emissions totalled 161,000 tonnes.

On a recent study trip in the UK, CABREE Researchers discussed air quality issues with Department of Energy and Climate Change (DECC). A new learning is the coming reduction in Europe of oil refining capacity in favour of fuels transported from new refineries in the Middle East. Three factors are at play. First, older refineries in Europe have long outlived their economic usefulness. Many are up for sale and with the high cost of refitting few are actually being sold or even anticipating having buyers. Second, like North America there are no new refineries being built. Key reasons are the low economic margins for refineries and the high cost of building particularly vis-à-vis environmental impact requirements. And third, Germany's requirements for lower sulphur fuels is driving the demand for European refinery products. The result of this is an anticipated reduction in air emissions.

The potential lessons and impacts for Alberta are long-term and complicated. First, our refineries are also old and running at near full capacity. This is not expected to change. However the reductions in European emissions could be significant as they essentially “outsource” their emissions to the Middle East. This will create an interesting dynamic in international GHG reduction negotiations that is of particular interest to Alberta. However, this is a long-term issue that one would expect to see in about 2020.

#### D) Role of US EPA (Environment Protection Agency) and CARB (California Air Resources Board)

EPA is currently targeting electricity sector for new standards in GHG emission and other pollutants. The clean energy act aims to reduce sulphur dioxide and nitrogen dioxide emission in the east and mid west states. The second part of the toxics rule aims to limit hazardous chemicals like mercury, arsenic, lead and hydrochloric acid<sup>93</sup>.

The electricity sector in Alberta is primarily coal based (44%) and natural gas (40%) power plants<sup>94</sup>. This means that the waste products could be sulphur dioxide, fly ash, etc. With higher regulations in the US mainly on reducing particulate matter and other emissions<sup>95</sup>, the electricity sector in Alberta might face more pressure to reduce particulate matter and other emissions resulting from the coal and natural gas based electricity sector in Alberta. So these may have a bearing on Alberta.

EPA is also working to reduce emissions from agricultural feedlot operations<sup>96</sup>. If this work comes across then it exerts pressure on Alberta to stop exempting agricultural feedlot operation from environmental management that the industry currently enjoys<sup>97</sup>.

While the EPA is working towards GHG emissions reduction there is a republican movement which is attempting to curb emissions regulations<sup>98</sup>. At this point in time it looks as if the US will not be pursuing ahead with many initiatives with the EPA since the focus is to revive the US economy rather than expensive green solutions<sup>99</sup>.

The EPA has also been active in identifying corporations violating the clean air act and making them pay penalties for violations and also pursue programs to reduce emissions from their plants<sup>100</sup>.

CARB has also been active in trying to curb emissions. The recent dispatch of letters to disavow claims made by the Alliance of Automobile Manufacturers<sup>101</sup> suggests that CARB has been voicing out the need to curb emissions in the US.

CARB has also been actively trying to get California's new Carbon trading rules but has its efforts stymied by the critics who claim that California would be putting itself at an economic disadvantage. So the situation in the US is that the states do not want to take action against climate change just because they know that the federal government at the centre will not change its stance anytime soon<sup>102</sup>.

What this means for Alberta is that the US will not be changing its policies on oil sands anytime soon and therefore emissions regulations in Alberta is likely to be placed on the back burner as far as international politics and regulatory regime is considered.

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## *Item 2.5*


# *Social, Technology, Environment, Economy, and Political (STEEP) Analysis*




**Social**

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"><li>Increasing protest against oil sands operations by first nation/ indigenous communities (rising concern about air pollution and health hazards)</li></ul>	<ul style="list-style-type: none"><li>Increasing debate between government, industry and community.</li><li>Slow down of operational activities.</li><li>Implementation of better environmental practices in local areas by the industries.</li></ul>	<ul style="list-style-type: none"><li><a href="http://www.nodirtyenergy.org/index.php?option=com_content&amp;task=view&amp;id=113&amp;Itemid=162">http://www.nodirtyenergy.org/index.php?option=com_content&amp;task=view&amp;id=113&amp;Itemid=162</a></li><li><a href="http://www.ienearth.org/tarsands.html">http://www.ienearth.org/tarsands.html</a></li><li><a href="http://www.cbc.ca/canada/british-columbia/story/2010/12/02/bc-first-nations-enbridge-pipeline.html">http://www.cbc.ca/canada/british-columbia/story/2010/12/02/bc-first-nations-enbridge-pipeline.html</a></li></ul>
<ul style="list-style-type: none"><li>Increasing campaigns of global communities and environmental groups against the impact of oil sands operations (health issues and human rights)</li></ul>	<ul style="list-style-type: none"><li>Debate between governments on a much higher level about industries impact on air quality.</li><li>Social awareness leading to “shareholder activism” demanding companies to be more transparent.</li><li>More research and investigation to establish and redefine the air quality standards and permissible limits.</li></ul>	<ul style="list-style-type: none"><li><a href="http://dirtyoilsands.org/news/article/power_struggle_over_canadas_dirty_oil_sands/">http://dirtyoilsands.org/news/article/power_struggle_over_canadas_dirty_oil_sands/</a></li><li><a href="http://www.cbc.ca/canada/calgary/story/2010/12/28/oilsands-environment-campaigns.html">http://www.cbc.ca/canada/calgary/story/2010/12/28/oilsands-environment-campaigns.html</a></li><li><a href="http://www.tarsandswatch.org/u-s-canadian-groups-gear-halt-oil-sands-development">http://www.tarsandswatch.org/u-s-canadian-groups-gear-halt-oil-sands-development</a></li><li></li></ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
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<ul style="list-style-type: none"> <li>• Public perception on air quality.               <ul style="list-style-type: none"> <li>- Air quality issue identified among the top three environmental issues</li> <li>- Majority believe that environmental responsibility lies with government and individual.</li> <li>- Obstacles to greater citizen action is attributed to "behavioral or motivational barriers"</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Increased participation of communities through non-profit/ non-governmental societies (i.e. Synergy Alberta) that provides Alberta landowners and key stakeholders, who share their land base with industry activities, an opportunity to learn, network and share information.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: (National Public Opinion Survey, Community Foundations of Canada). Website: <a href="http://www.vitalsignscanada.ca/nr-2010-public-opinion-survey-e.html">http://www.vitalsignscanada.ca/nr-2010-public-opinion-survey-e.html</a></li> <li>• Source: Canadian Association of Petroleum Producers: <a href="http://www.capp.ca/environmentCommunity/relationshipPartners/Pages/Community.aspx#eyokXsMLvJoU">http://www.capp.ca/environmentCommunity/relationshipPartners/Pages/Community.aspx#eyokXsMLvJoU</a></li> </ul>
<ul style="list-style-type: none"> <li>• Growth and expansion of airports in Alberta               <ul style="list-style-type: none"> <li>- New airport development at Fort McMurray (municipality signed over new rights to Fort McMurray airport authority).</li> <li>- 2.1 Billion\$ to be invested in</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• High environmental pressure caused by high and fast growth in aviation leading to higher emission level.</li> </ul>	<ul style="list-style-type: none"> <li>• FortMcmurraytoday.com: <a href="http://www.fortmcmurraytoday.com/ArticleDisplay.aspx?e=2888046">http://www.fortmcmurraytoday.com/ArticleDisplay.aspx?e=2888046</a></li> <li>• "Fort McMurray is one step closer to gaining a new airport after the municipality signed over land rights to the Fort McMurray Airport Authority Friday, giving it new potential to finance its ambitious expansion project. (Planned for completion, 2014)."</li> <li>• Calgaryairport.com: <a href="http://www.calgaryairport.com/Default.aspx?cid=26&amp;lang=1">http://www.calgaryairport.com/Default.aspx?cid=26&amp;lang=1</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p>Calgary Int. airport over 10 years to meet the projected growth and demand.</p> <ul style="list-style-type: none"> <li>- Edmonton airport is redefining its Air Terminal Redevelopment Project against high growth and demand</li> </ul>		<ul style="list-style-type: none"> <li>• “Passenger growth is expected to continue to increase at a rate of 3-4% annually, eventually reaching more than 27 million passengers by 2025. (Planned for completion 2014)”.</li> <li>• Edmonton airport corporate Information site: <a href="http://corporate.flyeia.com/media_resources/media_releases_list/2006/">http://corporate.flyeia.com/media_resources/media_releases_list/2006/</a></li> </ul>
<p><b>Green wave boost</b></p> <ul style="list-style-type: none"> <li>▪ The trend is that the unprecedented Green Wave is still continuing and has not yet peaked. While environment may not be the front and centre electoral issue in recent provincial elections it is a growing value of Canadians that must be addressed.</li> <li>• The need to be green for corporations and governments at all levels.</li> <li>• Increasing level of commitment to stewardship</li> <li>• Increasing environmental activism</li> <li>• Environmental activism and First Nations</li> <li>• Stewardship increasingly seen as a social obligation and a market opportunity in some economic sectors</li> <li>• Requests for subsidies, grants, incentives</li> </ul>	<p>Media and public surveys indicate that a massive change in societal values is underway. Commonly shared values are a driver of policy and strongly interact with the pace of economic development to define the overall quality of life for Albertans.</p> <p>An increase in environmental activism will challenge our commitment to open and transparent government and our governance for natural resource management and development. There is potential for impacts on market access and GOA credibility.</p> <p>Consumer preferences for social goods are increasing - such as how agriculture production practices impact and potentially improve the environment. This expectation is being seen as an opportunity rather than a cost for production. I.e. There is a growing market for stewardship and animal husbandry practices.</p>	<p>Corporate social responsibility and stewardship</p> <p>Corporate Social responsibility trend in climate change – influentials</p> <ul style="list-style-type: none"> <li>• <a href="http://www.sciencedaily.com/releases/2010/01/100128165119.htm">http://www.sciencedaily.com/releases/2010/01/100128165119.htm</a></li> <li>• <a href="http://www.sciencedaily.com/releases/2010/04/100413131051.htm">http://www.sciencedaily.com/releases/2010/04/100413131051.htm</a> <a href="http://www.reportonbusiness.com/servlet/story/RTGAM.20071203.wagendachort1203/BNStory/robAgenda/home?cid=al_gam_nletter_maropen">http://www.reportonbusiness.com/servlet/story/RTGAM.20071203.wagendachort1203/BNStory/robAgenda/home?cid=al_gam_nletter_maropen</a></li> <li>• New RBC Retail Banking and Insurance Locations to be Green powered TORONTO, Sep. 21, 2007 (Canada NewsWire via COMTEX)</li> <li>• Liberal Green Plan</li> </ul>  <p>liberalgreenplan.pdf</p>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>Environmental information and public credibility</b></p> <ul style="list-style-type: none"> <li>• Competing credible voices</li> <li>• Emerging issue- biomonitoring study in Alberta and competing studies a key example of issues and public expectations</li> <li>• Rapid advance of information technologies and access tools</li> <li>• GOA credibility in question</li> <li>• What GOA needs to be a credible Voice on environmental and natural resource issues</li> </ul>	<p>GOA and public agencies are continuing to lose credibility, documented in public surveys and evident in issues tracking and the media, an area of weakness for the GOA. Increasing public concern about environment issues and impacts of environmental quality on health – perception is reality.</p> <ul style="list-style-type: none"> <li>• Due to low credibility, GOA is at risk of losing ground with Albertans on key policy issues and in international and national forums. Other individuals and organizations are competing successfully as the most credible voice on environmental issues.</li> <li>• As information technology changes, the GOA must enhance its capacity to use these technologies in order to ensure our communications reach intended audiences and are more timely/ real time.</li> <li>• To be a credible voice on environmental issues GOA must have the best information, manage it well and make it accessible to Albertans.</li> </ul>	<p>Competing credible voices and concerns about information access</p> <ul style="list-style-type: none"> <li>• <a href="http://list.sierraclub.ca/national/green-gazette/2006-03.html">http://list.sierraclub.ca/national/green-gazette/2006-03.html</a></li> <li>• <a href="http://www.aenweb.ca/taxonomy/term/2?page=1">http://www.aenweb.ca/taxonomy/term/2?page=1</a></li> <li>• <a href="http://newenergynews.blogspot.com/2007/09/twisted-logic-in-alberta-nuke-energy.html">http://newenergynews.blogspot.com/2007/09/twisted-logic-in-alberta-nuke-energy.html</a></li> <li>• "Halt oilsands: water expert" <a href="http://www.canada.com/edmontonjournal/news/story.html?id=733f4e03-543d-43be-a3a2-deceb621d4fe&amp;k=8360">http://www.canada.com/edmontonjournal/news/story.html?id=733f4e03-543d-43be-a3a2-deceb621d4fe&amp;k=8360</a></li> </ul> <div style="text-align: center;">  </div> <p>CEUS-EIS-PastPresentFuture2001...</p> <p>A media perspective on info trends</p> <ul style="list-style-type: none"> <li>• <a href="http://www.stateofthenewsmedia.org/2007/narrative_overview_eight.asp?cat=2&amp;media=1">http://www.stateofthenewsmedia.org/2007/narrative_overview_eight.asp?cat=2&amp;media=1</a></li> </ul> <p>New communication for a in old, reported in Wall Street Journal – blogs</p> <ul style="list-style-type: none"> <li>• <a href="http://blogs.wsj.com/energy/category/blog-roll/">http://blogs.wsj.com/energy/category/blog-roll/</a></li> </ul> <p>Role of influentials in environmental credibility</p> <ul style="list-style-type: none"> <li>• <a href="http://www.reuters.com/article/email/idUSN2629719920070927">http://www.reuters.com/article/email/idUSN2629719920070927</a></li> </ul> <p>ENV monitoring explained</p> <ul style="list-style-type: none"> <li>• <a href="http://www3.gov.ab.ca/env/protenf/approvals/factsheets/compuls.html">http://www3.gov.ab.ca/env/protenf/approvals/factsheets/compuls.html</a></li> <li>• <a href="http://www.environment.alberta.ca/872.html">http://www.environment.alberta.ca/872.html</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>Bio-monitoring links environment and health issues - emerging</b></p> <ul style="list-style-type: none"> <li>Major bio-monitoring study in Alberta underway and expected to be completed in coming months</li> <li>Changing expectations of the role of government in environment and health issues – to ensure credibility on these issues we need scientific capacity, information sharing/ awareness capacity and policy credibility.</li> </ul>	<ul style="list-style-type: none"> <li>Investigates body burden of artificial chemicals with potential health implications. Several other studies have been done and issued, but often using poor methods or broad assumptions (WHO data). Because the Alberta study is a large study and well designed, it is likely to be recognized globally – could be a tipping point on public concern about environment and health issues</li> <li>Potential for negative public perception (even if study is neutral or positive) and the risk of misuse of the information by vested interests when the Alberta study is released</li> <li>Long term vulnerability of Alberta to information in other jurisdictions raising public concern, to perception that Alberta does not have up to date information (current study reduces this vulnerability) or that another party has better or best information on environment and health issues</li> </ul>	<p>Environmental concern and health links – perception is reality</p> <ul style="list-style-type: none"> <li><a href="http://www.sciencedaily.com/releases/2007/11/071126141550.htm">http://www.sciencedaily.com/releases/2007/11/071126141550.htm</a></li> <li>Title: ScienceDaily: Pollution Cuts Life Expectancy, Threatens Child Development In Europe Link: <a href="http://www.sciencedaily.com/releases/2007/10/071010131201.htm">http://www.sciencedaily.com/releases/2007/10/071010131201.htm</a></li> <li>Title: ScienceDaily: Microscopic Pollution May Trigger Heart Attacks And Strokes By Spurring Blood ClotsLink: <a href="http://www.sciencedaily.com/releases/2007/09/070921130738.htm">http://www.sciencedaily.com/releases/2007/09/070921130738.htm</a></li> <li>Title: ScienceDaily: Air Pollution Linked To Premature Birth In Pregnant Women Link: <a href="http://www.sciencedaily.com/releases/2007/08/070823150343.htm">http://www.sciencedaily.com/releases/2007/08/070823150343.htm</a></li> <li><a href="http://www.sciencedaily.com/releases/2007/08/070815152912.htm">http://www.sciencedaily.com/releases/2007/08/070815152912.htm</a></li> <li>Title: ScienceDaily: Death Rates Will Rise Because Of Global Warming, Researchers Warn Link: <a href="http://www.sciencedaily.com/releases/2007/07/070702145431.htm">http://www.sciencedaily.com/releases/2007/07/070702145431.htm</a></li> <li>Title: ScienceDaily: Climate modeling system now online Link: <a href="http://www.sciencedaily.com/upi/index.php?feed=Science&amp;article=UPI-1-20070606-13133000-bc-us-climate-modeling.xml">http://www.sciencedaily.com/upi/index.php?feed=Science&amp;article=UPI-1-20070606-13133000-bc-us-climate-modeling.xml</a></li> <li><a href="http://www.sciencedaily.com/releases/2006/10/061016105750.htm">http://www.sciencedaily.com/releases/2006/10/061016105750.htm</a></li> </ul>

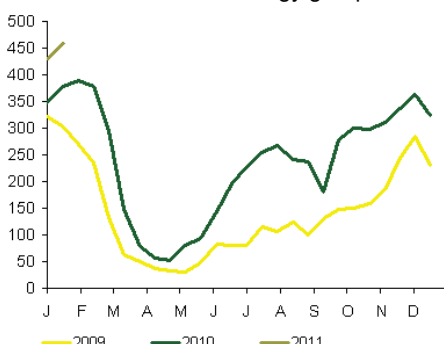
TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>• Growth and expansion of airports in Alberta               <ul style="list-style-type: none"> <li>- New airport development at Fort McMurray (municipality signed over new rights to Fort McMurray airport authority).</li> <li>- 2.1 Billion\$ to be invested in Calgary Int. airport over 10 years to meet the projected growth and demand.</li> <li>- Edmonton airport is redefining its Air Terminal Redevelopment Project against high growth and demand</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• High environmental pressure caused by high and fast growth in aviation leading to higher emission level.</li> </ul>	<ul style="list-style-type: none"> <li>• FortMcMurraytoday.com: <a href="http://www.fortmcmurraytoday.com/ArticleDisplay.aspx?e=2888046">http://www.fortmcmurraytoday.com/ArticleDisplay.aspx?e=2888046</a></li> <li>• "Fort McMurray is one step closer to gaining a new airport after the municipality signed over land rights to the Fort McMurray Airport Authority Friday, giving it new potential to finance its ambitious expansion project. (Planned for completion, 2014)."</li> <li>• Calgaryairport.com: <a href="http://www.calgaryairport.com/Default.aspx?cid=26&amp;lang=1">http://www.calgaryairport.com/Default.aspx?cid=26&amp;lang=1</a></li> <li>• "Passenger growth is expected to continue to increase at a rate of 3-4% annually, eventually reaching more than 27 million passengers by 2025. (Planned for completion 2014)".</li> <li>• Edmonton airport corporate Information site: <a href="http://corporate.flyeia.com/media_resources/media_releases_list/2006/">http://corporate.flyeia.com/media_resources/media_releases_list/2006/</a></li> </ul>

Technological		
TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>Provincial government requires industries to adopt latest technology and better practices to manage and reduce air pollution.</li> </ul>	<ul style="list-style-type: none"> <li>Research and development efforts by industry to sought energy efficient and clean technologies for better air quality.</li> </ul>	<ul style="list-style-type: none"> <li>Edmonton journal, January 10, 2008: "Alberta Environment spokesman Jim Law said that as companies come in to the oilsands business and as technology improves, the department does require that the new technology be implemented. As for the older companies, the department does require continuous improvement in environmental performance, he said."</li> </ul>
<ul style="list-style-type: none"> <li>Increasing impact of wide scale oil sands exploitation on air quality (as per existing technology)</li> </ul>	<ul style="list-style-type: none"> <li>Producing a barrel of bitumen creates more than twice as much nitrogen oxides and sulphur dioxides emission as producing a barrel of conventional oil.</li> <li>Projected annual emissions from oil sands operation in 2015 as compared to 2005: <ul style="list-style-type: none"> <li>- 196,000 t of nitrogen oxides (70,000 t in 2005)</li> <li>- 166,000 t of sulphur dioxide (147,000 t in 2005)</li> <li>- 300,000 t of volatile organic compound (59,000 t in 2005)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Oil SandsWatch.org, The Pembina Institute (<a href="http://www.pembina.org/oil-sands/os101/air-pollution">http://www.pembina.org/oil-sands/os101/air-pollution</a>).</li> <li>Environment Canada, "Nitrogen Oxides (NOx) Emissions for Canada" <a href="#">↗</a> (accessed September 11, 2007).</li> <li>Environment Canada <a href="#">↗</a>(accessed March 2009).</li> <li>Environment Canada, "Volatile Organic Compounds (VOC) Emissions for Canada" <a href="#">↗</a>(accessed September 11, 2007).</li> </ul>



TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>• CCS is increasingly being adopted as a significant technology to reduce GHG emission.               <ul style="list-style-type: none"> <li>- Activities to capture CO<sub>2</sub>, store and transport it to conventional oil and gas wells have increased.</li> <li>- Efforts to fund and establish CCS technology have increased (Canada and worldwide).</li> <li>- Increased support by provincial government to establish regulatory framework industry needs to continue to invest in CCS.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Government and industry recognize that carbon capture and sequestration (CCS) is a promising innovation to help reduce GHG emissions.</li> <li>• CCS likely to play key role in the future to reduce GHG.</li> <li>• High initial cost and long term benefits of CCS would encourage financing activities from institutions.</li> <li>• Potential benefits to Albertans and Canadians as new jobs will be generated to build and operate CCS infrastructure and jobs created in expanded enhanced oil recovery (EOR) industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: Canadian Association of Petroleum Producers: <a href="http://www.capp.ca/energySupply/innovationStories/Air/Pages/capturingStoringCarbon.aspx#wclA5zntHE8X">http://www.capp.ca/energySupply/innovationStories/Air/Pages/capturingStoringCarbon.aspx#wclA5zntHE8X</a></li> <li>• Source: <a href="http://www.marketwire.com">www.marketwire.com</a>: ICO<sub>2</sub>N (Dec 7, 2010) <a href="http://www.marketwire.com/press-release/ICO2N-Alberta-Government-Legislation-is-Welcome-Necessary-Step-Make-Carbon-Capture-Storage-1365112.htm">http://www.marketwire.com/press-release/ICO2N-Alberta-Government-Legislation-is-Welcome-Necessary-Step-Make-Carbon-Capture-Storage-1365112.htm</a></li> <li>• <a href="http://www.sequestration.mit.edu">www.sequestration.mit.edu</a></li> </ul>
<ul style="list-style-type: none"> <li>• Waste Heat recovery, new technology to reduce emission               <ul style="list-style-type: none"> <li>- Energy companies showing interest in waste heat recovery technology</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Fuel gas saving (expected to be 300 thousand cubic feet per day).</li> <li>• Lower cost to industry and lower CO<sub>2</sub> emission.</li> <li>• Increased pilot activities for waste heat recovery in future.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: Canadian association of petroleum producers. <a href="http://www.capp.ca/energySupply/innovationStories/Air/Pages/TalismanBigstone.aspx#KCKuUTnFmZ2U">http://www.capp.ca/energySupply/innovationStories/Air/Pages/TalismanBigstone.aspx#KCKuUTnFmZ2U</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>• THAI (Toe to Heel Air Injection) process increasingly being tested and applied               <ul style="list-style-type: none"> <li>- THAI to be one of the key thermal processes to exploit in-situ oil sands which constitute 80% of resources</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Energy efficient and cleaner technology as heat is generated in-situ as compared to SAGD where natural gas is used to generate steam.</li> <li>• Greenhouse gas emission reduction to 50%, lesser surface footprint and easier reclamation.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: Canadian association of petroleum producers <a href="http://www.capp.ca/energySupply/innovationStories/Water/Pages/undergroundCombustion.aspx#Jh0GqNb4u54Q">http://www.capp.ca/energySupply/innovationStories/Water/Pages/undergroundCombustion.aspx#Jh0GqNb4u54Q</a></li> </ul>
<ul style="list-style-type: none"> <li>• Latest Technological Developments in Coal-Fired Generation               <ul style="list-style-type: none"> <li>- Supercritical-Pressure Pulverized Coal Combustion Technology (Genessee 3 near Edmonton, which has been in operation since March 2005)</li> <li>- Integrated Gasification Combined Cycle (IGCC)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• (SPPCC) Reduction in fuel consumption by approximately 18 per cent and as a by-product GHGs would also decrease.</li> <li>• (IGCC) Improved efficiency, decrease in the production of GHGs, ability to scrub pollutants like sulphur and heavy metals. It can produce a concentrated carbon dioxide (CO<sub>2</sub>) stream which can make CO<sub>2</sub> storage more economical.</li> <li>• IGCC has the potential to become the preferred method to generate electricity from coal in future.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: National Energy Board. "Coal-Fired Power Generation - An Overview - Energy Brief" <a href="http://www.neb-one.gc.ca/clf-nsi/rnrgynfntn/nrgyrprt/lctrcty/clfrdpwrgnrtn2008/clfrdpwrgnrtnnrgybrf-eng.html">http://www.neb-one.gc.ca/clf-nsi/rnrgynfntn/nrgyrprt/lctrcty/clfrdpwrgnrtn2008/clfrdpwrgnrtnnrgybrf-eng.html</a></li> </ul>


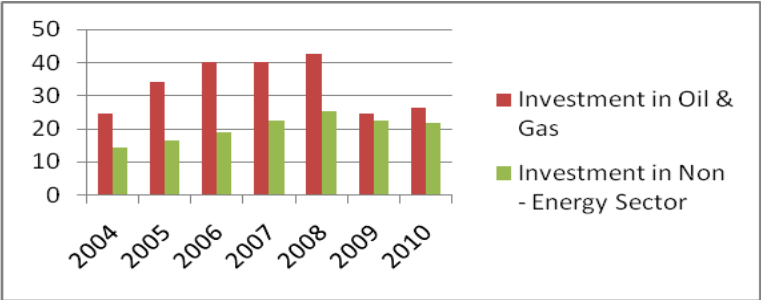

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>Air quality monitored by a network of stations operated by Alberta Environment, airsheds (air quality management zones), Environment Canada and industry.</li> </ul>	<ul style="list-style-type: none"> <li>The current measured Air Quality Index is based on outdoor concentrations of carbon monoxide, fine particulate matter (PM2.5), nitrogen dioxide, ozone and sulphur dioxide.</li> <li>Airsheds use continuous monitoring and passive monitoring systems.</li> <li>Not all ambient air data collected in Alberta is displayed in real-time to the Current Air Quality Website.</li> <li>Clear trade-off between equipment cost, complexity, reliability and performance.</li> </ul>	<ul style="list-style-type: none"> <li>Source: Regional airshed monitoring in Alberta. <a href="http://www.fortair.org">www.fortair.org</a></li> <li><a href="http://environment.alberta.ca/0977.html">http://environment.alberta.ca/0977.html</a></li> </ul>
<ul style="list-style-type: none"> <li>Increased drilling activities <ul style="list-style-type: none"> <li>The number of oil and gas wells drilled annually increased from 8,400 in 1995 to more than 16,500 in 2007. The number of coal-bed methane wells increased from less than 1,100 wells in 2003 to 12,500 in 2007.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Increased level of GHG emissions</li> <li>Although better/ efficient / cleaner/ latest technologies are being sought after but the scale of drilling activities is likely to impact the overall emission levels and leave a larger carbon footprint.</li> </ul>	<ul style="list-style-type: none"> <li><a href="http://www.albertabydesign.ca/issues">http://www.albertabydesign.ca/issues</a></li> <li>Source: Junewarren-nickels energy group</li> </ul>  <p>(Alberta Drilling rigs) Source: <a href="http://www.riglocator.ca/zoom.asp?img=abactive_z%2Egif&amp;title=Alberta+Drilling+Rigs">http://www.riglocator.ca/zoom.asp?img=abactive_z%2Egif&amp;title=Alberta+Drilling+Rigs</a></p>




TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>• New developments of pipeline systems and capacities               <ul style="list-style-type: none"> <li>- The Enbridge Northern Gateway Project involves a new twin pipeline system running from near Edmonton, Alberta, to a new marine terminal in Kitimat, British Columbia to export petroleum and import condensate</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Increased pipeline capacity would lead to growth in oil sands production and increased environmental / air quality concerns.</li> <li>• Increased efforts by the environmental groups to call for a pause until better environmental rules are in place to protect the environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: Enbridge Northern Gateway Pipelines. <a href="http://www.northerngateway.ca/">http://www.northerngateway.ca/</a></li> <li>• Source: The Pembina Institute. <a href="http://pubs.pembina.org/reports/gateway-upstream-fs.pdf">http://pubs.pembina.org/reports/gateway-upstream-fs.pdf</a></li> <li>• Source Edmonton Journal: “\$5 billion Alberta pipeline projects clear government hurdles “ <a href="http://www.journalofcommerce.com/article/id27721">http://www.journalofcommerce.com/article/id27721</a></li> </ul>
<ul style="list-style-type: none"> <li>• As oil sands upgrading capacity is increasing in Alberta</li> </ul>	<ul style="list-style-type: none"> <li>• Increased levels of GHG emission.</li> <li>• Increased level of health concerns in the urban areas as the density of upgraders increase.</li> <li>• Increased debate/ conflict between agencies leading to better practices and newer technologies.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://www.nrcan.gc.ca/mms-smm/busi-indu/cmy-amc/2008revu/htm-com/sul-sou-eng.htm">http://www.nrcan.gc.ca/mms-smm/busi-indu/cmy-amc/2008revu/htm-com/sul-sou-eng.htm</a></li> </ul>





**Environmental**

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>Tailing ponds resulting from oil sands operation continue to emit GHG and other harmful air pollutants.               <ul style="list-style-type: none"> <li>Environment Canada has estimated that emissions of just one VOC – benzene, a human carcinogen – are now about 100 tonnes a year and could grow to 800 tonnes by 2015.</li> <li>Steady increase in the occurrences of sulphur based pollutants (H<sub>2</sub>S) in the tailings around FtMcMurray in the past 5 yrs (Mildred lake).</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Increasing emissions may lead to future exceedances of Canada-wide Standards in urban areas of the province.</li> <li>Increasing emissions may lead to more air quality impacts on people and the environment such as smog, acid rain and reduced visibility.</li> <li>Ensuing debate between industry and the provincial government about the long term exposure to low concentrations of gas (hydrogen sulphide).</li> <li>Alberta Health and wellness starting review of the scientific literature investigating health effects associated with low-level chronic H<sub>2</sub>S exposure.</li> </ul>	<ul style="list-style-type: none"> <li><a href="http://environmentaldefence.ca/articles/tar-sands-tailings-directive-fails-health-test">http://environmentaldefence.ca/articles/tar-sands-tailings-directive-fails-health-test</a></li> <li>Edmontonjournal.com: “Environmental Defence Canada analyzed air quality data collected by industry-funded monitors over the past six years and found companies violated the province's air quality standards more than 1,500 times in 2009, up from fewer than 50 times in 2004” (<a href="http://www.edmontonjournal.com/health/Alberta+oilsands+pollution+worsens/3075300/story.html#ixzz1BXd286BQ">http://www.edmontonjournal.com/health/Alberta+oilsands+pollution+worsens/3075300/story.html#ixzz1BXd286BQ</a>) Read more: <a href="http://www.edmontonjournal.com/health/Alberta+oilsands+pollution+worsens/3075300/story.html#ixzz1BXcZ5PqG">http://www.edmontonjournal.com/health/Alberta+oilsands+pollution+worsens/3075300/story.html#ixzz1BXcZ5PqG</a></li> <li><a href="http://www.tarsandswatch.org/poisonous-hydrogen-sulphide-gas-bubbles-oilsands-tailings-pond-during-company-reclamation-efforts">http://www.tarsandswatch.org/poisonous-hydrogen-sulphide-gas-bubbles-oilsands-tailings-pond-during-company-reclamation-efforts</a></li> </ul>
<ul style="list-style-type: none"> <li>New motor vehicles sales in Alberta outpacing national average.</li> <li>Increases in the number of vehicles on the road and the size of these vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Although better technologies/ efficient vehicles are being adopted, the volume of motor vehicles likely to impact the absolute scale of emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Calgary Herald: <a href="http://www.calgaryherald.com/business/Alberta+motor+vehicle+sales+outpace+national+average/4108683/story.html?cid=megadrop_story">http://www.calgaryherald.com/business/Alberta+motor+vehicle+sales+outpace+national+average/4108683/story.html?cid=megadrop_story</a></li> </ul>


**Economy**

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES																								
<p><b>Investment pattern in Alberta</b></p> <p>The investment in Alberta is primarily driven by Oil Sands projects which have become a growing concern for the emergence of air quality issues. Key points in this trend are:</p> <ul style="list-style-type: none"> <li>• Increase in GHG emissions               <ul style="list-style-type: none"> <li>○ Methane releases</li> <li>○ Burning fuels</li> <li>○ Release of CFC's</li> </ul> </li> <li>• Increase in Exploration &amp; production and petroleum operations activities</li> <li>• Increase in infrastructure in Alberta</li> <li>• Increase in transportation</li> <li>• Increase in the number of related industries</li> <li>• Role of CCS in improving air quality</li> </ul>	<p>The investment pattern in Alberta has been steadily increasing over the year. Recent economic developments have constricted the flow of investments into Alberta but with the economy coming back to life, the investment seems to be on the rise again.</p> <ul style="list-style-type: none"> <li>• The impacts include the increase in GHG emissions with an increase in investment in oil sands projects. With the increase in the GHG emissions the smog levels and particulate matter in the air rises.</li> <li>• Buildings, Exploration &amp; Production activities are a result of the infrastructure projects and these along with transportation increase the amount of GHGs spewed into the atmosphere.</li> <li>• Carbon Capture &amp; Storage plays an important role in reducing the amount of Carbon content from the atmosphere. The potential impact is expected to reduce GHGs at facilities like coal fired power plants, oil sands upgraders, etc by about 5 million tones annually starting from 2015.</li> <li>• As part of its climate change strategy, Alberta Government is investing heavily into Carbon Sequestration projects which involve nitrogen deposition methods and also by creating carbon sinks by enhancing the land covered under Boreal Forests.</li> </ul>	<ul style="list-style-type: none"> <li>• Investment patterns in Alberta – A Smart Investment in Alberta               <div style="margin-top: 5px;">  <p>Alberta_A_smart_investment_April_2010.t</p> </div> <div style="margin-top: 10px;">  <table border="1" style="display: none;"> <caption>Investment in Oil &amp; Gas vs. Non-Energy Sector (2004-2010)</caption> <thead> <tr> <th>Year</th> <th>Investment in Oil &amp; Gas</th> <th>Investment in Non-Energy Sector</th> </tr> </thead> <tbody> <tr> <td>2004</td> <td>25</td> <td>15</td> </tr> <tr> <td>2005</td> <td>35</td> <td>18</td> </tr> <tr> <td>2006</td> <td>40</td> <td>20</td> </tr> <tr> <td>2007</td> <td>40</td> <td>22</td> </tr> <tr> <td>2008</td> <td>42</td> <td>25</td> </tr> <tr> <td>2009</td> <td>25</td> <td>22</td> </tr> <tr> <td>2010</td> <td>28</td> <td>22</td> </tr> </tbody> </table> </div> </li> <li>• Total E &amp; P Canada Ltd., president and CEO Jean Michel Gires at University of Alberta on the presentation 'Energy, Oil Sands &amp; Sustainable Development' on January 18<sup>th</sup> 2011.               <div style="margin-top: 5px;">  <p>Energy Oil Sands and Sustainable Developn</p> </div> </li> <li>• <a href="http://www.energy.alberta.ca/Initiatives/1769.asp">http://www.energy.alberta.ca/Initiatives/1769.asp</a></li> </ul>	Year	Investment in Oil & Gas	Investment in Non-Energy Sector	2004	25	15	2005	35	18	2006	40	20	2007	40	22	2008	42	25	2009	25	22	2010	28	22
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TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>Investment in Carbon Sequestration projects</li> <li>Increasing investor interest in Alternative energy sources in Alberta</li> </ul>	<ul style="list-style-type: none"> <li>Increased investor interest in Alternative Energy sources could potentially skew the investment pattern more towards the renewable energy sector.</li> </ul>	<ul style="list-style-type: none"> <li><a href="http://green.blogs.nytimes.com/2009/07/28/accelerating-carbon-sequestration-in-alberta/">http://green.blogs.nytimes.com/2009/07/28/accelerating-carbon-sequestration-in-alberta/</a></li> <li>Carbon Capture &amp; Storage – Government of Alberta              FactSheet_CCS - GoA.pdf</li> <li>Investor interest in alternative energy sources:  <a href="http://www.canada.com/edmontonjournal/news/business/story.html?id=78328496-2c80-47f8-a7ba-7a2fc03fcd70&amp;k=87408&amp;p=2">http://www.canada.com/edmontonjournal/news/business/story.html?id=78328496-2c80-47f8-a7ba-7a2fc03fcd70&amp;k=87408&amp;p=2</a></li> <li><b>Consumer interest in green products international trend</b></li> <li><a href="http://www.tdctrade.com/econforum/tdc/tdc050802.htm">http://www.tdctrade.com/econforum/tdc/tdc050802.htm</a></li> <li><a href="http://www.lohas.com/articles/100785.html">http://www.lohas.com/articles/100785.html</a></li> <li><a href="http://www.marketresearch.com/map/prod/1282418.html">http://www.marketresearch.com/map/prod/1282418.html</a></li> </ul>
<p><b>Economics of Demand and Supply</b></p> <ul style="list-style-type: none"> <li>Increasing internal demand for Fuels for heating and automobiles</li> <li>Population increase in Alberta</li> <li>Weather</li> <li>Increase in transportation</li> <li>External demand for petroleum from other provinces or other countries</li> </ul>	<ul style="list-style-type: none"> <li>Demand and supply patterns for various sectors of the economy have directly or indirectly contributed to the emerging air quality issues. Some of the potential impacts of the demand and supply patterns in Alberta are:</li> <li>Canada's internal demand for oil and gas is fuelled by sectors like transportation, infrastructure projects and providing heat during the winters to the houses. Population is also one of the reasons for a higher internal demand.</li> <li>Demand patterns in the Albertan economy over these sectors have been steadily increasing over the last decade</li> </ul>	<p><b>Economy:</b></p> <ul style="list-style-type: none"> <li>Alberta Economy's quick facts:              SP-EH_AlbertaEconomicQuickFacts.pdf</li> <li>Alberta Air emissions trends and projections data:              Alberta Air Emissions and projections.pdf</li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
	<ul style="list-style-type: none"> <li>• As a result of increase in the burning of the fuels, demand generated by Albertan economy has increased the amount of air pollution in Alberta</li> <li>• Greater number of infrastructure projects causes an increase in transportation which directly correlates with the increase in GHG emissions.</li> <li>• A colder than usual weather would mean that there is higher consumption of fuel used for heating.</li> <li>• Alberta 's economic growth and increasing population are putting unprecedented pressure on our natural resources. Increased rate of domestic consumption.</li> </ul>	<ul style="list-style-type: none"> <li>• Alberta Air quality monitoring and deposition networks: <ul style="list-style-type: none"> <li> Air pollution and monitoring networks i</li> </ul> </li> <li>• Canadian Society for Unconventional Gas – Environmental issues and mitigations <ul style="list-style-type: none"> <li> SPE-138977-MS-P.pdf</li> </ul> </li> <li>• <a href="http://c1.ecolocalizer.com/files/2008/12/foodfootprint2.jpg">http://c1.ecolocalizer.com/files/2008/12/foodfootprint2.jpg</a></li> <li>• <a href="http://ecolocalizer.com/2008/12/23/there-is-no-point-in-calculating-your-carbon-footprint-you-need-to-understand-it/">http://ecolocalizer.com/2008/12/23/there-is-no-point-in-calculating-your-carbon-footprint-you-need-to-understand-it/</a></li> </ul>
<p><b>Economic Volatility</b></p> <ul style="list-style-type: none"> <li>• Recent economic developments have affected oil &amp; gas development in Alberta</li> <li>• Low oil prices increases demand and restricts supply</li> </ul>	<ul style="list-style-type: none"> <li>• A volatile economy would mean lesser investment into Albertan Oil Sands or development of alternative energy sources</li> <li>• With cost of production of oil from the oil sands hovering around \$30 for a barrel, low oil prices make investment into oil sands as projects with negative Net Present Value</li> <li>• With oil sands operations slowing down, there is a push for cost effective technologies which have reduced GHG emissions</li> </ul>	<ul style="list-style-type: none"> <li>• Alberta's Air projection trends and Alberta's Economy – quick facts <ul style="list-style-type: none"> <li> SP-EH_AlbertaEconomicQuickFacts.pdf</li> <li> Alberta Air Emissions and projections.pdf</li> </ul> </li> </ul>



TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>Pattern: Effect of Nitrogen, Sulphur, Benzene and other fine particulate matter</b></p> <ul style="list-style-type: none"> <li>• Odor problems</li> <li>• Large Economic implications</li> <li>• Increased use of Nitrogen as a tool for Carbon Sequestration</li> </ul>	<ul style="list-style-type: none"> <li>• This pattern is mainly caused by the oil sands operations. When fossil fuels are produced or burned they increase the particulate matter and also cause an increase in sulphur, benzene and other particulate matter to increase in concentration with the result being massive respiratory problems in humans. This carries a major economic and health implications</li> <li>• Odour problems also arise when nitrogen compounds, benzene and ozone are in the atmosphere.</li> <li>• Nitrogen deposition methods could significantly alter the carbon levels in the atmosphere by helping to sequester CO<sub>2</sub> in air.</li> </ul>	<ul style="list-style-type: none"> <li>• Current Indicators - <a href="http://environment.alberta.ca/02509.html">http://environment.alberta.ca/02509.html</a></li> <li>• Hydrogen Sulphide levels - <a href="http://environment.alberta.ca/01646.html">http://environment.alberta.ca/01646.html</a></li> <li>• Benzene Levels - <a href="http://environment.alberta.ca/01711.html">http://environment.alberta.ca/01711.html</a></li> <li>• Sulphur Levels - <a href="http://environment.alberta.ca/01652.html">http://environment.alberta.ca/01652.html</a></li> <li>• Fine particulate matter - <a href="http://environment.alberta.ca/01645.html">http://environment.alberta.ca/01645.html</a></li> <li>• Nitrogen levels - <a href="http://environment.alberta.ca/01643.html">http://environment.alberta.ca/01643.html</a></li> <li>•  Nitrogen - carbon sequestration.pdf</li> </ul>
<p><b>GDP Growth</b> - Alberta had the highest economic growth rate among Canadian provinces at 3.3% per year over the last 20 years, and is poised to lead economic growth by 2011</p> <ul style="list-style-type: none"> <li>• Growth in agriculture</li> <li>• Growth in industries <ul style="list-style-type: none"> <li>- Growth and expansion of airports in Alberta</li> <li>- New airport development at Fort McMurray (municipality signed over new rights to Fort McMurray airport authority).</li> <li>- 2.1 Billion\$ to be invested in Calgary Int. airport over 10 years to meet the</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Growth in Canada's western province economies directly results in increased demand for goods movement, transportation services, and tourist travel and thus commercial traffic volumes at northern Montana ports (border crossings) and connecting roadways.</li> <li>• High environmental pressure caused by high and fast growth in aviation leading to higher emission level.</li> <li>• Alberta's load growth in 2007 was equal to that of Ontario-a province with a population three times larger. There is now over 194,000 kilometres of electrical transmission lines (250 and 500 kV) in Alberta.</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://www.mdt.mt.gov/research/docs/research_proj/canada_impact_nhwy/project_summary.pdf">http://www.mdt.mt.gov/research/docs/research_proj/canada_impact_nhwy/project_summary.pdf</a></li> <li>• Government of Alberta "A smart investment, April 2010"</li> <li>• <a href="http://www.albertabydesign.ca/issues">http://www.albertabydesign.ca/issues</a></li> <li>• FortMcMurraytoday.com: <a href="http://www.fortmcmurraytoday.com/ArticleDisplay.aspx?e=2888046">http://www.fortmcmurraytoday.com/ArticleDisplay.aspx?e=2888046</a></li> <li>• "Fort McMurray is one step closer to gaining a new airport after the municipality signed over land rights to the Fort McMurray Airport Authority Friday, giving it new potential to finance its ambitious expansion project. (Planned for completion, 2014)."</li> <li>• Calgaryairport.com: <a href="http://www.calgaryairport.com/Default.aspx?cid=26&amp;lang=1">http://www.calgaryairport.com/Default.aspx?cid=26&amp;lang=1</a></li> <li>• "Passenger growth is expected to continue to increase at a rate of 3-4% annually, eventually reaching more than 27 million passengers by 2025. (Planned for completion 2014)".</li> </ul>



projected growth and demand.



- Edmonton airport is redefining its Air Terminal Redevelopment Project against high growth and demand
- Higher standard of living
  - Alberta's need for electricity has grown strongly over the past decade, and this growth is expected to continue.


- Edmonton airport corporate Information site: [http://corporate.flyeia.com/media\\_resources/media\\_releases\\_list/2006/](http://corporate.flyeia.com/media_resources/media_releases_list/2006/)
- <http://www.energy.alberta.ca/Electricity/684.asp>
- "Almost 45 percent of Alberta's electricity generation capacity is from coal and almost 40 percent from natural gas. Alberta also uses water, wind, biomass and waste heat as forms of electricity generation." - <http://www.energy.alberta.ca/Electricity/681.asp>

**Sector Totals (Trillions of BTUs)**

	Residential	Commercial	Industrial	Transportation	Electricity Generation	Total
2004	21,177.889	17,664.445	33,609.067	27,899.279	38,876.247	100,350.624
2005	21,697.240	17,875.276	32,545.253	28,361.295	39,798.935	100,484.758
2006	20,769.777	17,723.994	32,541.235	28,840.577	40,542.007	99,875.196
2007	21,619.373	18,287.222	32,523.120	29,134.189	40,542.007	101,553.855
2008	21,636.900	18,541.387	31,210.299	27,924.560	40,090.347	99,303.634
2009	21,244.465	18,146.624	28,242.741	27,034.648	38,303.569	94,659.806

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>pH levels in lakes</b></p> <ul style="list-style-type: none"> <li>Increased use of sulphur and nitrogen containing compounds as pesticides and fertilizers for Agriculture</li> <li>Increase in industrialization in Alberta increases the amount of emissions which alter the pH levels in the water.</li> <li>Increased rate of human activities which change the pH levels in the lakes and rivers in Alberta</li> </ul>	<ul style="list-style-type: none"> <li>Creates ecological imbalance in the water ecosystem. Fish stops reproducing in waters which have a pH level below 5.4.</li> <li>Sulphur and Nitrogen emissions mixes with the water vapor in the atmosphere to form particles of acid which then precipitates as acid rain. This increases the acidification of the lakes or lowers the pH value of the lakes.</li> <li>Acid rain also dissolves the minerals present on the top soil layer and this strips the soil of its nutrient value.</li> </ul>	<ul style="list-style-type: none"> <li>Research Paper on acidification of Albertan Lakes due to Athabasca Oil Sands.              Hazewinkel_et_al_CJ_FAS_08.pdf</li> <li>Information which provides valuable insight into acid rain, its causes and effects.              pHLakes_AWQA.pdf</li> <li><a href="http://www.sciencemag.org/content/228/4706/1395.abstract">http://www.sciencemag.org/content/228/4706/1395.abstract</a></li> </ul>
<ul style="list-style-type: none"> <li>Alberta had the highest economic growth rate among Canadian provinces at 3.3% per year over the last 20 years, and is poised to lead economic growth by 2011.</li> </ul>	<ul style="list-style-type: none"> <li>Growth in Canada's western province economies directly results in increased demand for goods movement, transportation services, and tourist travel and thus commercial traffic volumes at northern Montana ports (border crossings) and connecting roadways.</li> </ul>	<ul style="list-style-type: none"> <li><a href="http://www.mdt.mt.gov/research/docs/research_proj/canada_impact_nhwy/project_summary.pdf">http://www.mdt.mt.gov/research/docs/research_proj/canada_impact_nhwy/project_summary.pdf</a></li> <li>Government of Alberta "A smart investment, April 2010"</li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<ul style="list-style-type: none"> <li>Alberta's need for electricity has grown strongly over the past decade, and this growth is expected to continue.</li> </ul>	<ul style="list-style-type: none"> <li>Alberta's load growth in 2007 was equal to that of Ontario—a province with a population three times larger. There is now over 194,000 kilometers of electrical transmission lines (250 and 500 kV) in Alberta.</li> <li>Capacity increase being planned at a number of coal fired plants in Alberta</li> <li>Increased environmental pressure wrt GHG emissions.</li> <li>R&amp;D projects to seek better and cleaner technology to generate electricity while reducing the amount of GHG emission.</li> <li>Likely long term plan to replace old coal fired power plants by a combination of coal and oil sands cogeneration plant which will likely to be powered by natural gas or bitumen.</li> </ul>	<ul style="list-style-type: none"> <li><a href="http://www.albertabydesign.ca/issues">http://www.albertabydesign.ca/issues</a></li> <li>Source: National Energy Board. <a href="http://www.neb-one.gc.ca/clf-nsi/rnrqynfmrtn/nrgyrprt/lctrcty/clfrdpwrgnrtn2008/clfrdpwrgnrtnnrgybrf-eng.html">http://www.neb-one.gc.ca/clf-nsi/rnrqynfmrtn/nrgyrprt/lctrcty/clfrdpwrgnrtn2008/clfrdpwrgnrtnnrgybrf-eng.html</a></li> </ul>
<p><b>Trend 6: Interest in Shale Gas</b></p> <ul style="list-style-type: none"> <li>Cost of production</li> <li>Demand for Shale Gas</li> <li>Ability to supply</li> </ul>	<ul style="list-style-type: none"> <li>Shale gas could potentially reduce the pressure on conventional oil used for heating. But this could also mean that there is an increased emission rate. Currently Shale gas and oil shale has greater demand and the companies which are into Shale Gas development are finding cost effective ways to ensure supply.</li> <li>So, a greater interest in shale gas or oil shale could potentially increase the GHG emissions in the atmosphere.</li> </ul>	<ul style="list-style-type: none"> <li> CERI – Economic impacts of Petroleum Industry in Canada CERI - Economic Impacts of Petroleum</li> <li>Total Canada, CEO Jean Michael Gires, presentation at the University of Alberta on Oil sands, Energy and sustainable development –  Energy Oil Sands and Sustainable Developn</li> <li><a href="http://www.eia.doe.gov/oiaf/ieo/nat_gas.html">http://www.eia.doe.gov/oiaf/ieo/nat_gas.html</a></li> </ul>

Political / Regulatory		
TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>Change in Regulations</b></p> <ul style="list-style-type: none"> <li>• Change in regulations is prompted by some of the following drivers:</li> <li>• International political pressure and alignments;</li> <li>• Public attitudes/ values and perception (see above);</li> <li>• Global energy markets/ global economy, and (emerging);</li> <li>• International re-insurance sector, banking sector and corporate risk management . <ul style="list-style-type: none"> <li>- None of these drivers are within the control of GOA, although Alberta can influence some of them and can choose how to respond.</li> </ul> </li> </ul>	<p>Key Impacts are:</p> <ul style="list-style-type: none"> <li>• Climate change is occurring. Effects are being seen globally and in Alberta. Effects will continue and likely will increase in magnitude. Alberta is completing a vulnerability assessment on actual and potential impacts but a mountain pine beetle infestation is but one example.</li> <li>• Acceptance of climate change science, especially by younger adults, will impact the nature and content of the political debate concerning this issue.</li> <li>• GOA needs to maintain a current awareness of what is happening in the science and monitoring of CC - positioning for successful adaptation and continued prosperity. GOA understanding of climate change vulnerabilities and opportunities will also need to be updated periodically</li> </ul>	<ul style="list-style-type: none"> <li>• Federal Regulatory Framework for Air Emissions 2007: <a href="http://www.ec.gc.ca/doc/media/m_124/report_eng.pdf">http://www.ec.gc.ca/doc/media/m_124/report_eng.pdf</a></li> <li>• <a href="http://www.uofaweb.ualberta.ca/govrel/news.cfm?story=61822">http://www.uofaweb.ualberta.ca/govrel/news.cfm?story=61822</a></li> <li>• <a href="http://www.businessedge.ca/article.cfm/newsID/15030.cfm">http://www.businessedge.ca/article.cfm/newsID/15030.cfm</a></li> <li>• <a href="http://www.sciencedaily.com/releases/2007/05/070514145322.htm">http://www.sciencedaily.com/releases/2007/05/070514145322.htm</a></li> <li>• See slide 13 for energy flows, also good summary of issues, Bob Page</li> </ul>  <p>bob_page_gov_07 (2).pdf (274 K...</p> <ul style="list-style-type: none"> <li>• <a href="http://www.sciencedaily.com/releases/2007/12/071203173031.htm">http://www.sciencedaily.com/releases/2007/12/071203173031.htm</a></li> <li>• <a href="http://www.sciencedaily.com/releases/2007/11/071126143646.htm">http://www.sciencedaily.com/releases/2007/11/071126143646.htm</a></li> </ul>
<p><b>Policy alignment is a moving target</b></p> <ul style="list-style-type: none"> <li>• Possible changes to USA federal policy direction</li> <li>• Likely new international treaty within 2 years</li> <li>• International influentials speaking out on need for action, including industry, government leaders, celebrities</li> <li>• Harmonization of federal and provincial schemes, a challenge</li> <li>• Growing public interest in and viability of alternative energy sources</li> <li>• Growing debate in the United States and Canada over carbon taxes, cap and trade</li> </ul>	<p>Impact messages include:</p> <ul style="list-style-type: none"> <li>• Climate change and energy policy external drivers are linked and Alberta is increasingly vulnerable. Potential for the current global economic divide to become an environmental divide.</li> <li>• Increasing international and national consensus on need for action. Issues include alternative energy, carbon capture and storage, carbon markets (some provinces and states signing onto EU scheme) Impact is that Alberta potentially left behind or not seen as being able to manage the environmental aspects of its resource</li> </ul>	<p><b>Policy Alignment:</b></p> <p>Alberta approach summary, update to Albertans and Climate Change: Taking Action 2002: <a href="http://environment.alberta.ca/1319.html">http://environment.alberta.ca/1319.html</a></p> <p>Wikipedia summary of political alignment issues on climate change</p> <ul style="list-style-type: none"> <li>• <a href="http://en.wikipedia.org/wiki/Politics_of_global_warming">http://en.wikipedia.org/wiki/Politics_of_global_warming</a></li> <li>• Federal Regulatory Framework for Air Emissions 2007: <a href="http://www.ec.gc.ca/doc/media/m_124/report_eng.pdf">http://www.ec.gc.ca/doc/media/m_124/report_eng.pdf</a></li> </ul> <p>Recent summary of action options</p>

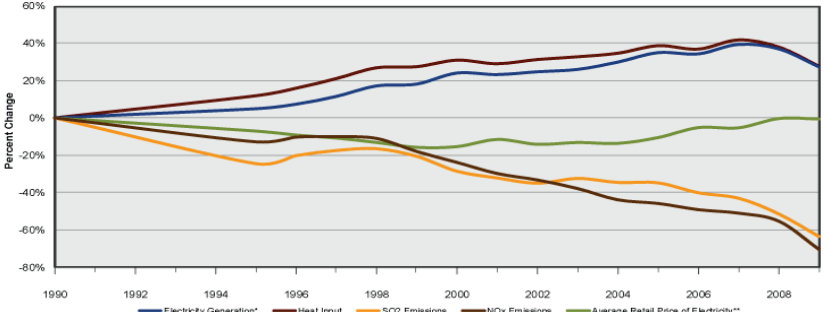

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p>and other fiscal solutions for GHG emissions.</p> <ul style="list-style-type: none"> <li>• Harmonization of federal and provincial climate change schemes.</li> <li>• Movements in some markets toward low carbon fuel standards.</li> <li>• Related to issue of Alberta's image as "not green" energy source</li> <li>• Carbon capture and storage. Long-term liability, tenure issues, competing use for pore space.</li> </ul>	<p>development.</p> <ul style="list-style-type: none"> <li>• A new international treaty on CC is anticipated within 2-3 years, with potential for a series of increasingly stringent treaties on GHG emissions every 4 to 5 years. This will impact Alberta's options and choices in dealing with its resource and environmental management.</li> <li>• Deep emission reductions will be mandated in some jurisdictions. Canada will be pressed to act by foreign customers/competitors, public pressure and electoral competition among federal parties over median voters (Ontario and Quebec). Jurisdictions with the most aggressive targets and strongest alignments will control the (public/media/policy) agenda and avoid future blame for outcomes. Alberta could easily lose control of the national climate change agenda to Ottawa and also lose our current first-mover advantage. This means losing: <ul style="list-style-type: none"> <li>- Ability to retain proceeds of market instruments to fund R&amp;D, adaptation</li> <li>- Ability to ensure instruments applied in most cost-effective way for Alberta industry</li> <li>- Opportunity to become supplier of emission-reduction technology</li> </ul> </li> </ul> <p>Both industry and citizens critically need clear direction, economic signals, assurance, certainty, and infrastructure investment from government, including a harmonized federal-provincial approach - challenging in the next few years, as federal policy is likely to be driven by elections and partisan approaches.</p>	<p><b>REFERENCES</b></p> <ul style="list-style-type: none"> <li>• <a href="http://www.reportonbusiness.com/servlet/story/RTGAM.20071203.wrstrategymaly03/BNStory/robAtWork/?cid=al_gam_nletter_maropen">http://www.reportonbusiness.com/servlet/story/RTGAM.20071203.wrstrategymaly03/BNStory/robAtWork/?cid=al_gam_nletter_maropen</a></li> <li>• <a href="http://www.sciencedaily.com/releases/2007/11/071130171840.htm">http://www.sciencedaily.com/releases/2007/11/071130171840.htm</a></li> </ul> <p>USA changing policy directions</p> <ul style="list-style-type: none"> <li>• Title: ScienceDaily: EPA to issue CO2 sequestration rules Link: <a href="http://www.sciencedaily.com/upi/index.php?feed=Science&amp;article=UPI-1-20071011-14303300-bc-us-epa.xml">http://www.sciencedaily.com/upi/index.php?feed=Science&amp;article=UPI-1-20071011-14303300-bc-us-epa.xml</a></li> <li>• Bingaman/Spector Low Carbon Economy Act, submitted to the US Senate on 11 July 2007: <a href="http://energy.senate.gov/public/index.cfm?FuseAction=IssueItems.View&amp;IssueItem_ID=55">http://energy.senate.gov/public/index.cfm?FuseAction=IssueItems.View&amp;IssueItem_ID=55</a></li> <li>• State of California Executive Order S-01-07, Low-Carbon Fuel Standard for transportation fuels (Adopted by MOU by Ontario and B.C.): <a href="http://gov.ca.gov/index.php?/executive-order/5172/">http://gov.ca.gov/index.php?/executive-order/5172/</a></li> <li>• Globe and Mail Nov 16 PB9 extract from the Wall Street Journal : Jeffery Ball – US (Federal) Court rejects Washington's fuel-economy standards (for light trucks for not being stringent enough) " Yesterday's decision is the latest sign of how the fast-changing politics of global warming in the U.S. are buffeting multiple industry sectors." writes Ball.</li> <li>• Joint Federal/Provincial ecoEnergy Carbon Capture and Storage Task Force. <a href="http://www.pm.gc.ca/eng/media.asp?id=1564">http://www.pm.gc.ca/eng/media.asp?id=1564</a></li> </ul> <p>Global policy - UN Secretary General and IPCC summary for policy makers and Bali 2007 data, new global alignments and call for action</p> <ul style="list-style-type: none"> <li>• <a href="http://www.un.org/apps/sg/sgstats.asp?nid=2869">http://www.un.org/apps/sg/sgstats.asp?nid=2869</a></li> <li>• <a href="http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf">http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf</a></li> <li>• <a href="http://www.cbc.ca/world/story/2007/12/03/un-climate.html#skip300x250">http://www.cbc.ca/world/story/2007/12/03/un-climate.html#skip300x250</a></li> </ul> <p>Impacts of climate change on infrastructure</p> <ul style="list-style-type: none"> <li>• <a href="http://www.ec.gc.ca/climate/overview_science-e.html">http://www.ec.gc.ca/climate/overview_science-e.html</a></li> <li>• <a href="http://www.infrastructure.gc.ca/research-recherche/alt_formats/pdf/rs14_e.pdf">http://www.infrastructure.gc.ca/research-recherche/alt_formats/pdf/rs14_e.pdf</a></li> <li>• <a href="http://adaptation.nrcan.gc.ca/perspective/transport_3_e.pdf">http://adaptation.nrcan.gc.ca/perspective/transport_3_e.pdf</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>Air quality governance issues and initiatives</b></p> <ul style="list-style-type: none"> <li>• Carbon taxes</li> <li>• Carbon credits</li> <li>• Regulatory linkages between climate change and air quality issues</li> </ul> <p>Alberta's transportation infrastructure is being expanded to address dramatic economic (Asia Pacific Gateway), and population growth with a significant impact on the environment.</p> <ul style="list-style-type: none"> <li>• Total Alberta GHG emissions were estimated at 235 mega tonnes in 2004; 78% were in the form of CO<sub>2</sub>.</li> <li>• Transportation was accountable for 27% of GHGs</li> <li>• Transportation was accountable for 13% of CO<sub>2</sub> in 2004.</li> <li>• Transportation ranks the third highest emitter of GHG's, behind Fossil Fuel Production (36%) and Electricity Generation (22%)</li> <li>• CO<sub>2</sub> capture not suitable for transportation; emissions reduction through technology and incentive programs are more effective</li> <li>• Incentive programs have removed over 1,200 high-polluting vehicles from Edmonton and Calgary</li> <li>• Technology will be a main driver in emissions control</li> </ul>	<p><b>Air governance impacts:</b></p> <ul style="list-style-type: none"> <li>• we expect a significant challenge to avoid conflicting federal-provincial direction on climate change and air quality Carbon management rules in other jurisdictions, especially key markets can impact Alberta – carbon risk, USA</li> <li>• market based approaches to air management are in trial (at the same time as clean air strategy and regulatory processes are being updated)</li> <li>• Transportation emissions are increasing rapidly and are difficult to manage under the provincial mandate. Federal approaches may be anticipated (Clean air Act, federal budget 2007).</li> </ul>	<p><b>Air Quality Governance:</b></p> <ul style="list-style-type: none"> <li>• <a href="http://en.wikipedia.org/wiki/Carbon_tax">http://en.wikipedia.org/wiki/Carbon_tax</a></li> <li>• <a href="http://en.wikipedia.org/wiki/Carbon_Credit">http://en.wikipedia.org/wiki/Carbon_Credit</a></li> <li>• <a href="http://www.bouldercolorado.gov/index.php?option=com_content&amp;task=view&amp;id=7698&amp;Itemid=2844">http://www.bouldercolorado.gov/index.php?option=com_content&amp;task=view&amp;id=7698&amp;Itemid=2844</a></li> <li>• Stern Report and Dr. Paul Boothe, Stern Report and its implications for Alberta, Report to Alberta Environment's Hot Topics</li> <li>• <a href="http://www.canadians.org/campaignblog/?p=3028">http://www.canadians.org/campaignblog/?p=3028</a></li> <li>• <a href="http://www.envinfo.gov.ab.ca/AirQuality/">http://www.envinfo.gov.ab.ca/AirQuality/</a></li> </ul> <p>Better monitoring and modeling</p> <ul style="list-style-type: none"> <li>• <a href="http://www.sciencedaily.com/releases/2007/12/071203173031.htm">http://www.sciencedaily.com/releases/2007/12/071203173031.htm</a> <a href="http://www.sciencedaily.com/releases/2007/11/071126143646.htm">http://www.sciencedaily.com/releases/2007/11/071126143646.htm</a></li> <li>• Science vol 318 p171 October 12, 2007 reports that Santer et al, used new microwave based satellite data to show a trend of increased water vapor content in the atmosphere over the oceans of 0.41 kg/ square metre per decade since 1988 – this trend is consistent with climate models and can be explained only if the primary cause is human induced increases in GHG concentrations.</li> <li>• <i>Science</i> 10 August 2007: Vol. 317, no. 5839, pp. 796 - 799 DOI: 10.1126/science.1139540</li> </ul> <p><b>REPORTS</b></p> <p><b>Improved Surface Temperature Prediction for the Coming Decade from a Global Climate Model</b></p>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p>Alberta's climate change action plan targets a 50% reduction in GHG emissions intensity relative to GDP based on 1990 levels</p>		<p><b>Doug M. Smith, Stephen Cusack, Andrew W. Colman, Chris K. Folland, Glen R. Harris, James M. Murphy</b></p> <ul style="list-style-type: none"> <li>• <a href="http://www.sciencedaily.com/releases/2007/12/071203090131.htm">http://www.sciencedaily.com/releases/2007/12/071203090131.htm</a></li> <li>• <a href="http://www.sciencedaily.com/releases/2007/12/071203173031.htm">http://www.sciencedaily.com/releases/2007/12/071203173031.htm</a></li> </ul> <ul style="list-style-type: none"> <li>• <i>Albertans &amp; Climate Change: Taking Action</i>. Oct, 2002. Alberta Environment</li> <li>• <i>Albertans &amp; Climate Change: Facts About Climate Change</i>. 2007. Alberta Environment.</li> <li>• <i>IPCC Special Report on Carbon Dioxide Capture and Storage</i>. Gale, John; Bradshaw, John; et al. 2005.</li> </ul> <p><b>Carbon capture and storage and clean coal</b></p> <ul style="list-style-type: none"> <li>• Canada's CO2 Capture &amp; Storage Technology Roadmap <a href="http://www.nrcan.gc.ca/es/etb/cetc/combustion/co2network/htmldocs/roadmap_e.html">http://www.nrcan.gc.ca/es/etb/cetc/combustion/co2network/htmldocs/roadmap_e.html</a></li> <li>• Summary of Input on Alberta's Climate Change Action Plan: <a href="http://environment.alberta.ca/documents/CCC_Summary_Report.pdf">http://environment.alberta.ca/documents/CCC_Summary_Report.pdf</a></li> <li>• <a href="http://www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/cl11618">http://www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/cl11618</a></li> <li>• Investor interest in alternative energy sources: <a href="http://www.canada.com/edmontonjournal/news/business/story.html?id=78328496-2c80-47f8-a7ba-7a2fc03fcd70&amp;k=87408&amp;p=2">http://www.canada.com/edmontonjournal/news/business/story.html?id=78328496-2c80-47f8-a7ba-7a2fc03fcd70&amp;k=87408&amp;p=2</a></li> <li>• Joint Federal/Provincial ecoEnergy Carbon Capture and Storage Task Force. <a href="http://www.pm.gc.ca/eng/media.asp?id=1564">http://www.pm.gc.ca/eng/media.asp?id=1564</a></li> <li>• Canada's CO2 Capture &amp; Storage Technology Roadmap <a href="http://www.nrcan.gc.ca/es/etb/cetc/combustion/co2network/htmldocs/roadmap_e.html">http://www.nrcan.gc.ca/es/etb/cetc/combustion/co2network/htmldocs/roadmap_e.html</a></li> <li>• International opportunities for CO2 management technologies</li> <li>• <a href="http://www.sciencedaily.com/releases/2007/11/071120104545.htm">http://www.sciencedaily.com/releases/2007/11/071120104545.htm</a></li> </ul> <p>Transportation and emissions</p> <ul style="list-style-type: none"> <li>• <i>Albertans &amp; Climate Change: Taking Action</i>. Oct, 2002. Alberta Environment</li> <li>• <i>Albertans &amp; Climate Change: Facts About Climate Change</i>. 2007. Alberta Environment.</li> <li>• <i>IPCC Special Report on Carbon Dioxide Capture and Storage</i>. Gale, John; Bradshaw, John; et al. 2005.</li> <li>• <i>Alberta Environment Summary Report on 2005 Greenhouse Gas Emission</i>. Alberta Environment 2007.</li> </ul> <p>Climate Change Central, last accessed October 22, 2007 from: <a href="http://www.climatechangecentral.com/default.asp?V_DOC_ID=838">http://www.climatechangecentral.com/default.asp?V_DOC_ID=838</a></p>



## European and American Standards Comparison / References

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>Environmental Protection Agency (EPA) Programs and Regulations:</b></p> <ul style="list-style-type: none"> <li>Acid Rain Program                             <ul style="list-style-type: none"> <li>Traditional Market based approaches for controlling air pollution. Overall goal of significant health and public health benefits through reductions of SO<sub>x</sub>, NO<sub>x</sub>.</li> </ul> </li> <li>US – Canada</li> </ul> <p><b>Cap &amp; Trade system:</b></p> <ul style="list-style-type: none"> <li>Designed to control emission levels from a group of sources</li> <li>Sources must surrender allowances for compliance to match its actual emissions</li> </ul> <p><b>Allowance Trading:</b></p> <ul style="list-style-type: none"> <li>Total amount of emissions are controlled by a cap.</li> <li>Sources can buy or sell allowances on open market</li> </ul> <p><b>Emissions monitoring:</b></p> <ul style="list-style-type: none"> <li>Includes mercury and other compounds monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>The Acid Rain Program has led to significant environmental and health benefits.</li> <li>Reductions in acid depositions</li> <li>Beginnings of recovery from acidification in lakes</li> <li>Improvement in visibility</li> <li>Reduced risk to forests materials and structures</li> </ul> <p>Joint international agreements between US and Canada to reduce emissions is a progressive step taken towards a cleaner air</p> <p><b>Cap &amp; Trade system:</b></p> <ul style="list-style-type: none"> <li>Greater environmental protection at lower cost</li> <li>Broad regional reductions, facilitating state efforts to address local impacts</li> <li>Early reductions, a result of allowance banking and market incentives</li> <li>Environmental integrity and transparent operations and results</li> <li>Fewer administrative costs to government and industry</li> <li>Efficiency and innovation incentives</li> <li>Incentives for doing better and consequences for doing worse</li> <li>Accounting for all emissions</li> <li>Partnership with existing requirements to ensure protection of the local population and environment</li> </ul>	<ul style="list-style-type: none"> <li><a href="http://www.epa.gov/airmarkets/progress/ARP09_3.html">http://www.epa.gov/airmarkets/progress/ARP09_3.html</a></li> <li><a href="http://www.epa.gov/airmarkets/progress/ARP09_1.html">http://www.epa.gov/airmarkets/progress/ARP09_1.html</a></li> <li><a href="http://www.epa.gov/airmarkets/progress/ARP09_2.html">http://www.epa.gov/airmarkets/progress/ARP09_2.html</a></li> </ul>  <p>The graph displays the percentage change in five key metrics from 1990 to 2008. Electricity Generation (blue line) shows a steady increase from 0% to approximately 25%. Heat Input (red line) increases to about 35% by 2006 before a slight dip. SO2 Emissions (orange line) decreases to about -60% by 2008. NOx Emissions (brown line) decreases to about -70% by 2008. Average Retail Price of Electricity (green line) fluctuates slightly around 0%.</p> <ul style="list-style-type: none"> <li><a href="http://www.epa.gov/airmarkets/progress/ARP09_data_access.html">http://www.epa.gov/airmarkets/progress/ARP09_data_access.html</a></li> <li>US – Canada EPA report on Air Quality Agreement for 2010</li> </ul> <p> EPA US Canada Report 2010.pdf</p> <ul style="list-style-type: none"> <li><a href="http://www.epa.gov/captrade/basic-info.html">http://www.epa.gov/captrade/basic-info.html</a></li> <li><a href="http://www.epa.gov/airmarkets/trading/basics.html">http://www.epa.gov/airmarkets/trading/basics.html</a></li> <li><a href="http://www.epa.gov/airmarkets/trading/index.html">http://www.epa.gov/airmarkets/trading/index.html</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p><b>California Air Resources Board (CARB)</b> Major program areas include:</p> <ul style="list-style-type: none"> <li>• Agricultural activities</li> <li>• Climate change</li> <li>• Smoke management</li> <li>• Particulate matter</li> <li>• Energy activities</li> </ul>	<p><b>Emissions Monitoring: (for Mercury)</b></p> <ul style="list-style-type: none"> <li>• Establishes quantitative output</li> <li>• Determines the expanded, combined uncertainty values of gas standards</li> </ul> <p>Agriculture related activities:</p> <ul style="list-style-type: none"> <li>• Cap and trade</li> <li>• GHG emissions from Nitrogenous fertilizers</li> <li>• Manure management</li> <li>• High global warming potential</li> </ul> <p>Climate Change:</p> <ul style="list-style-type: none"> <li>• Reporting inventory and verification</li> <li>• Early action measures</li> <li>• Low carbon fuel standard</li> <li>• GHG protocols</li> </ul> <p>Smoke Management:</p> <ul style="list-style-type: none"> <li>• Alternatives to burning</li> <li>• Public education and outreach</li> <li>• Air quality smoke management forecasting</li> </ul> <p>Particulate Matter:</p> <ul style="list-style-type: none"> <li>• Premature deaths associated with fine particle pollution in California</li> <li>• Monitoring program</li> <li>• Health research program</li> </ul> <p>Energy Activities:</p> <ul style="list-style-type: none"> <li>• Comprehensive multi year program to reduce GHG emissions to 1990 levels by 2020</li> <li>• More focus on Clean energy in California</li> <li>• Push for greater energy efficiency</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://www.epa.gov/airmarkets/emissions/mercury/hgmonitoring.html">http://www.epa.gov/airmarkets/emissions/mercury/hgmonitoring.html</a></li> <li>• <a href="http://www.epa.gov/airmarkets/emissions/rules.html">http://www.epa.gov/airmarkets/emissions/rules.html</a></li> <li>• <a href="http://www.epa.gov/airmarkets/business/ecmps/reporting-instructions.html">http://www.epa.gov/airmarkets/business/ecmps/reporting-instructions.html</a></li> </ul> <ul style="list-style-type: none"> <li>• Agriculture related activities - <a href="http://www.arb.ca.gov/ag/ag.htm">http://www.arb.ca.gov/ag/ag.htm</a></li> <li>• Climate change - <a href="http://www.arb.ca.gov/cc/cc.htm">http://www.arb.ca.gov/cc/cc.htm</a></li> <li>• Smoke Management - <a href="http://www.arb.ca.gov/smp/smp.htm">http://www.arb.ca.gov/smp/smp.htm</a></li> <li>• Particulate matter - <a href="http://www.arb.ca.gov/pm/pm.htm">http://www.arb.ca.gov/pm/pm.htm</a></li> <li>• Energy Activities – <a href="http://www.arb.ca.gov/energy/energy.htm">http://www.arb.ca.gov/energy/energy.htm</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p>EEA Analysis (Impact of EU policies on air quality)</p> <ul style="list-style-type: none"> <li>• EU introduced range of policies to improve air quality by controlling emissions: <ul style="list-style-type: none"> <li>- Euro emission standards for road vehicles</li> <li>- Integrated pollution prevention and control (IPPC)</li> <li>- Large combustion plants (LCP)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Road transport <ul style="list-style-type: none"> <li>- Reduced road transport emissions of carbon monoxide (CO) by around 80 %, non-methane volatile organic compounds (NMVOC) by 68 %, nitrogen oxides (NO<sub>x</sub>) by 40 % and fine particulate matter (PM<sub>2.5</sub>) by 60 % compared to a no-policy scenario.</li> <li>- concentrations of particulate matter over Europe have also been reduced far below. Less frequent high daily concentration over most part of Europe.</li> </ul> </li> <li>• Industrial Combustion <ul style="list-style-type: none"> <li>- NO<sub>x</sub> and sulphur oxides (SO<sub>x</sub>) are significantly below. The largest reductions have occurred in major industrialized areas such as Germany, Italy's Po Valley, the Netherlands and Poland.</li> <li>- Europe's air quality has improved significantly in terms of both acidifying pollutants (NO<sub>x</sub>, SO<sub>x</sub>) and fine particulate matter.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Source: European Environment Agency. <a href="http://www.eea.europa.eu/highlights/has-policy-improved-europe2019s-air-quality">http://www.eea.europa.eu/highlights/has-policy-improved-europe2019s-air-quality</a></li> <li>• EEA Report "Impact of selected policy measures on Europe's air quality". Report No. 8/ 2010</li> </ul>
<p>Clean Air for Europe (CAFE) Program</p> <ul style="list-style-type: none"> <li>• Establishing a long-term, integrated strategy to tackle air pollution and to protect against its effects on human health and the environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop, collect and validate scientific information on the effects of air pollution</li> <li>• Support the correct implementation and review the effectiveness of existing legislation</li> <li>• Ensure that the requisite measures are taken at the relevant level</li> <li>• Disseminate the information gathered during</li> </ul>	<ul style="list-style-type: none"> <li>• Source: European Commission Environment <a href="http://ec.europa.eu/environment/air/index_en.htm">http://ec.europa.eu/environment/air/index_en.htm</a></li> <li>• <a href="http://europa.eu/legislation_summaries/environment/air_pollution/l28026_en.htm">http://europa.eu/legislation_summaries/environment/air_pollution/l28026_en.htm</a></li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
	<p>the program among the general public.</p> <ul style="list-style-type: none"> <li>The <a href="#">Clean Air For Europe (CAFE)</a> initiative has led to a thematic strategy setting out the objectives and measures for the next phase of European air quality policy.</li> </ul>	
<p>Norway's environment policies and emission standards.</p> <ul style="list-style-type: none"> <li>New limits for the sulphur content of various oil products, the introduction of the sulphur tax and new requirements introduced under the Pollution Control Act</li> <li>Operation of VOC recovery equipment during loading of crude oil. The recovery of more oil vapour during loading and storage of crude oil, and the effect of the new exhaust standards for road vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>Norway has greatly reduced its sulphur dioxide emissions since 1980. Total Norwegian emissions dropped from 136 000 tonnes in 1980 to 16 000 tonnes in 2009, according to preliminary figures from Statistics Norway.</li> <li>In 2001, VOC emissions totaled 397 000 tonnes. Since then, they have been cut sharply. In 2009 emissions totaled 161 000 tonnes.</li> </ul>	<ul style="list-style-type: none"> <li>Source: Statistics Norway and Climate and Pollution Agency State of the Environment Norway (<a href="http://www.environment.no">www.environment.no</a>)</li> <li><a href="http://www.miljostatus.no/en/Goals-and-indicators/Goals-and-indicators/Long-range-air-pollution/">http://www.miljostatus.no/en/Goals-and-indicators/Goals-and-indicators/Long-range-air-pollution/</a></li> </ul>
<p>Cluster of European Air Quality Research (CLEAR initiative)</p> <ul style="list-style-type: none"> <li>Assembling several EU projects which, although pursuing individual programs, provide a complementary 'critical mass' of talent in urban air quality research</li> <li>Funding the environmental projects, synergizing researchers from across the Europe.</li> </ul>	<ul style="list-style-type: none"> <li>Improvement underpinning scientific understanding of urban air pollution and providing next generation tools for end users and stakeholders to manage the air quality in cities.</li> <li>Collaborative effort to achieve the environmental objective of improving the air quality across Europe.</li> </ul>	<ul style="list-style-type: none"> <li>Source: CLEAR: <a href="http://www.nilu.no/clear/">http://www.nilu.no/clear/</a></li> <li>Source: <a href="http://ec.europa.eu/research/environment/newsanddoc/article_2382_en.htm">http://ec.europa.eu/research/environment/newsanddoc/article_2382_en.htm</a>            "With €15 million in EU funding from the Fifth Framework Programme (FP5), CLEAR comprises 11 projects with anything between seven and 19 partners per group. Combined, the cluster involves some 200 researchers in over 25 locations across Europe."</li> </ul>

TRENDS / DRIVERS	ACTUAL / POTENTIAL IMPACTS	REFERENCES
<p>Scottish Environment Protection Agency (SEPA) initiative</p> <ul style="list-style-type: none"> <li>• Regulating activities that can cause harmful pollution. SEPA currently regulates over 500 major industrial sites that have the potential to cause air pollution.</li> <li>• Working with and directing local authorities and other partners to manage and improve air quality. Providing policy and operational advice to government, industry and the public on pollution control and other environmental issues.</li> <li>• Organizing urban air quality conferences.</li> </ul>	<ul style="list-style-type: none"> <li>• Initiatives help business and industry to understand their environmental responsibilities, enable customers to comply with legislation and good practice and to realize the economic benefits of good environmental practice.</li> <li>• Facilitates discussion about the air quality/ environment issues. The brainstorm helps to bring about how local authority land use planners, transport planners and sustainability staff can help to improve air quality, minimize the risk to human health and reduce greenhouse gas emissions.</li> </ul>	<ul style="list-style-type: none"> <li>• Source: Scottish Environment Protection Agency (SEPA) <a href="http://www.sepa.org.uk/air.aspx">http://www.sepa.org.uk/air.aspx</a></li> </ul>

*Item 2.6*

*2010 Business Plan –  
Monitoring and Evaluation  
Report*





### Introduction

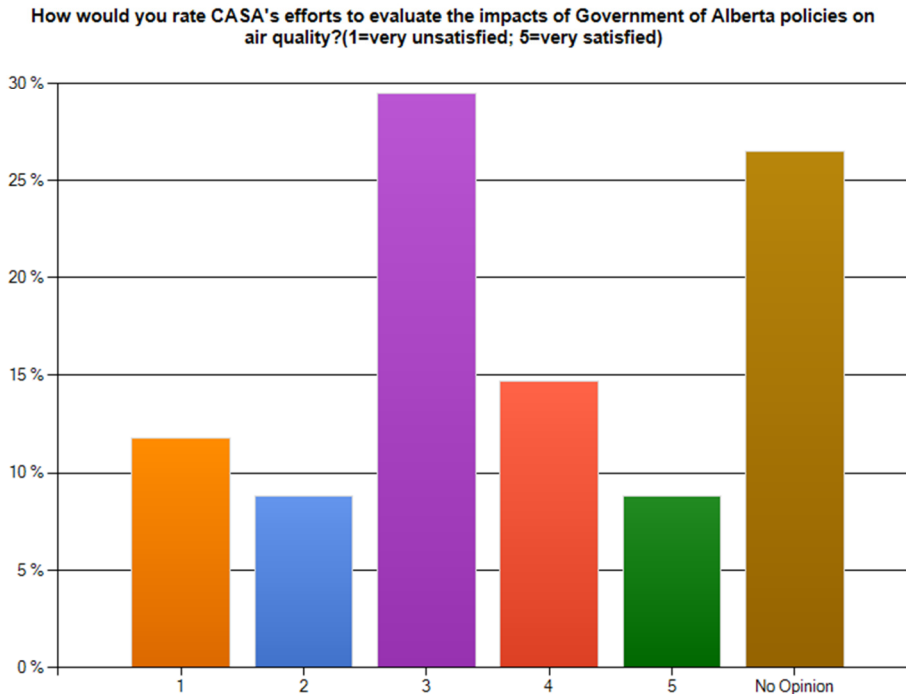
CASA’s three year business plan outlines specific goals and strategies to help fulfill our vision and mission. The monitoring and evaluation plan will inform our progress toward realizing our goals and completing the strategies. Although this Monitoring and Evaluation report describes our progress on the actions in the 2010 Business Plan, completing these actions does not necessarily mean that the intent of the strategy has been fulfilled. Each time the Business Plan is renewed, the relevance of each strategy should be considered – new actions could be assigned to existing strategies that are still relevant.

### Goal 1

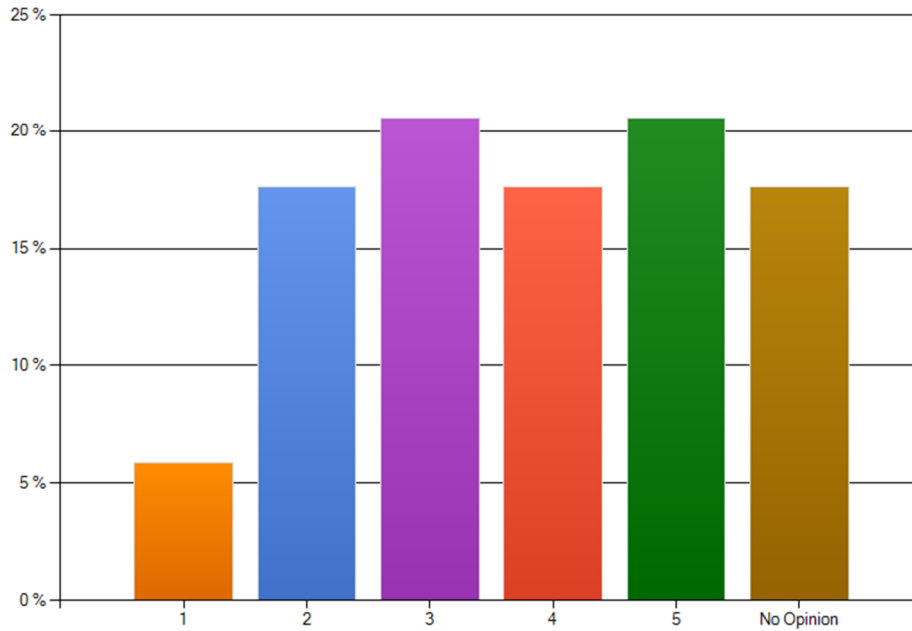
Provide strategic advice on emerging air quality issues and the impacts of major policy initiatives on air quality.

#### Status:

The indicator for this goal was a survey of CASA stakeholders during the stakeholder satisfaction survey, via question 26 and 27. The results are shown below.



How would you rate CASA's efforts to prioritize future air quality issues for policy action?(1=very unsatisfied; 5=very satisfied)



### Strategy 1.1

Conduct a strategic environmental scan to determine and prioritize emerging air quality issues and identify sectors and stakeholders associated with these issues.

*Status:*

- In March 2010, the Board reviewed and approved a Terms of Reference for a committee to oversee the e-scan process. Therefore, this strategy is in Stage 2 in the Business Plan Monitoring and Evaluation Plan.
- As part of the scoping process for an e-scan, the committee realized that more in-depth discussions about CASA's future would better equip the Board to explore, anticipate, and prepare for a wide range of possible future scenarios. The committee agreed to embark on a strategic foresight (visioning) process. An environmental scan should still be initiated, as it is an essential activity to enable the Board to determine and prioritize emerging air issues (e.g. odour from confined feeding operations or ultrafine particulate matter). The results of the environmental scan should be considered at the Board Strategic Planning Retreat in June 2011. The Board may also consider the results of the strategic foresight process, this Business Plan report, and other discussion documents as part of their retreat.



## Strategy 1.2

Establish a process to evaluate and prioritize the impacts of major policy initiatives on air quality and the determinants of air quality and identify potential inconsistencies among various policies and frameworks.

### *Status:*

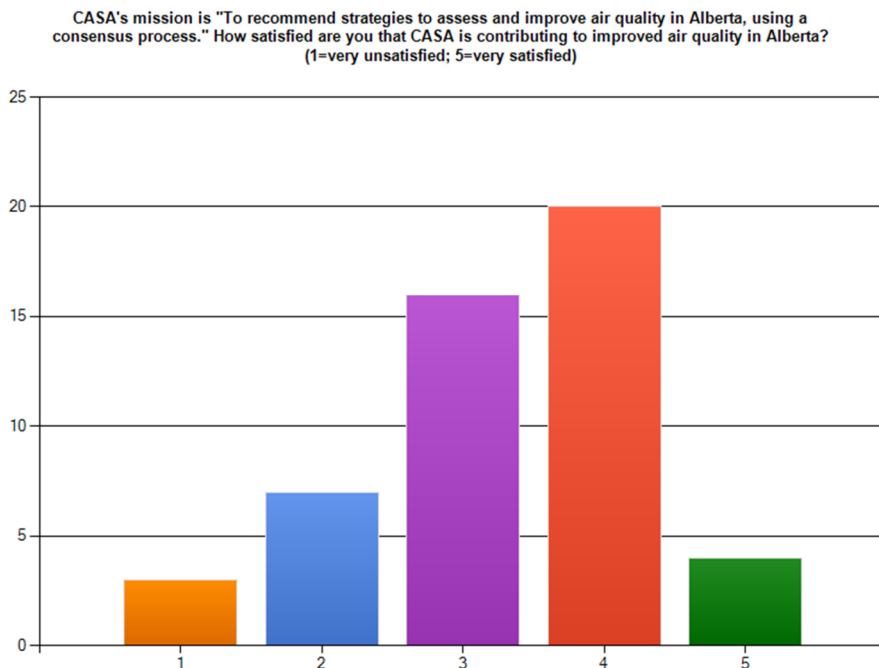
- The specific actions listed in the Business Plan have not been initiated (i.e. establish a Board Committee; establish a screen and scope process; and assign government representatives to update the Board on upcoming policy initiatives). However, the Board has requested presentations on relevant emerging and existing policy initiatives (e.g. Land Use Framework, Cumulative Effects Management System).
- As one of their key tasks, the CASA and Alberta Airsheds Council (AAC) Joint Standing Committee will contribute to this strategy by identifying, discussing and making recommendations related to government policies and strategies that could potentially affect CASA and AAC and its members.
- Evaluating the impacts of existing and emerging policy initiatives is typically something that is done by each project team.

## Goal 2

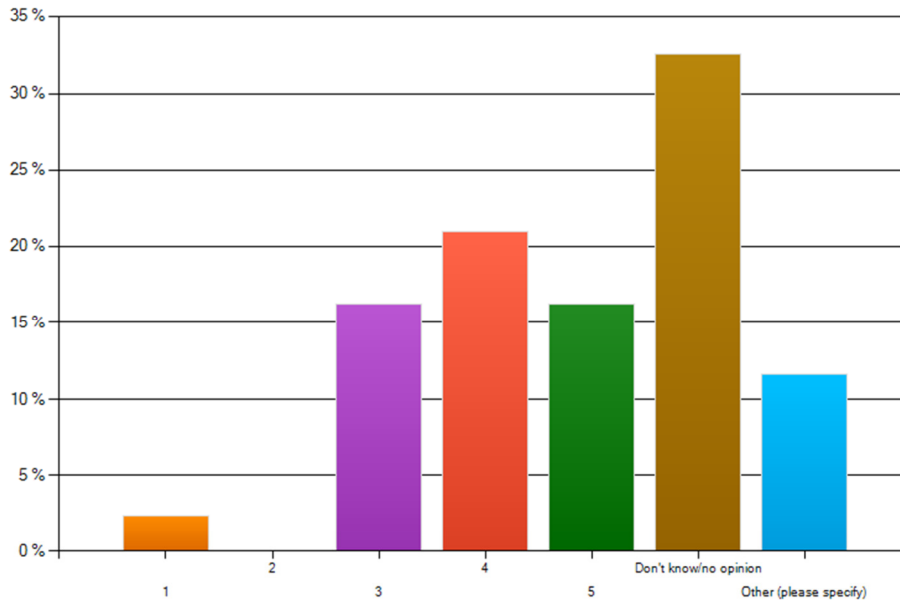
The continued development and implementation of effective and efficient air quality management is supported.

### *Status:*

The indicator for this goal was a survey of CASA stakeholders during the stakeholder satisfaction survey, via question 1 and 13. The results are shown below.



CASA assists airshed zones, on request, with start-up, consensus decision-making and links to other air issues work. How satisfied are you with CASA's support to airshed zones?(1=very unsatisfied; 5=very satisfied)



### Strategy 2.1

Explore the role of CASA in supporting airshed zones.

*Status:*

- The specific action in the Business Plan is to develop a Statement of Opportunity for a future project team. In one respect, Stage 2 in the Business Plan Monitoring and Evaluation plan has been achieved since the Board has approved the Terms of Reference for the CASA and AAC Joint Standing Committee. However, the Joint Standing Committee is just one of the potential means for making progress on this strategy. More consideration should be given to the potential to draft a Statement of Opportunity.

### Strategy 2.2

Explore the role of CASA in regional planning, e.g. the *Land Use Framework*.

*Status:*

- Action on this strategy has not been initiated. Initiating action on this strategy is the sole responsibility of the Board. The Executive Committee has discussed progress on this strategy and feels the Board needs more specific information on how air quality management and air issues link to regional planning in the Land Use Framework and other place-based initiatives. The Executive Committee has assigned Peter Watson and the secretariat with the task of gathering more information about CASA's potential role in regional planning activities.

### Strategy 2.3

Develop a framework to guide air quality management planning, including a description of how to:

- Determine the “green”, “yellow”, and “red” trigger levels (e.g. see PM and Ozone Management Framework), and which air pollutants require trigger levels.
- Ensure that appropriate and timely actions are identified to prevent AAQO exceedances; this represents the existing provincial commitments to keeping clean areas clean and continuous improvement.

*Status:*

- Action on this strategy has not been initiated. The Executive Committee has discussed concerns with moving forward on this strategy. It was noted that other policy initiatives (such as the Lower Athabasca Regional Plan and the federal Comprehensive Air Management System) have developed similar trigger level systems. The Board may require more information with respect to how a CASA framework to guide air quality management could integrate and align with these and other initiatives. CASA’s potential role in regional planning activities (see Strategy 2.2) could be a first step in determining how to proceed.

### Strategy 2.4

Review and assess the components of the Air Quality Management System and the resources required to support the system to ensure the components are clearly defined.

*Status:*

- Specific action on this strategy has not been initiated.

### Goal 3

Pollution prevention and continuous improvement principles are promoted in all air quality management decision-making at CASA.

*Status:*

Since the specific actions related to this goal have yet to be completed, it would not be useful to report on the indicator for this goal as described in the Monitoring and Evaluation plan.

### Strategy 3.1

Encourage project teams to consider pollution prevention as the strategy of choice for protecting the environment and improving economic efficiency when developing recommendations.

*Status:*

- The specific action in the Business Plan is to create a Project Management Guidance Document. The secretariat has developed an initial draft and will be seeking input from stakeholders at the December 2010 Board meeting and other venues. These actions move this strategy into stage 2 of the Business Plan Monitoring and Evaluation plan.

### Strategy 3.2

Review issues requiring pollution prevention measures and identify the most beneficial opportunities for making the most significant impact to reduce emissions from point and non-point sources, using information gathered in the strategic environmental scan (see Strategy 1.1).

*Status:*

- Action on this strategy can not be initiated until after the environmental scan is completed.

### Goal 4

Contribute to the development of a reliable, comprehensive, objective base of knowledge and information on emissions, ambient air quality, health and environmental impacts and potential management and mitigation mechanisms.

*Status:*

No action has been initiated to measure the effectiveness of CASA's outreach program. With a view to streamline CASA's surveying functions, it may be necessary to consider how to incorporate these types of questions into an existing survey.

### Strategy 4.1

Increase awareness of CASA's mandate and activities through targeted outreach to all sectors.

*Status:*

- A list of potential audiences for outreach was developed and meetings have been completed or scheduled. Therefore, this strategy is in stage 4 of the Business Plan Monitoring and Evaluation plan. Implementation of the specific action is on-going, as new potential audiences are identified. Presentations completed or scheduled by the Executive Director and/or Executive Committee in 2010 include Government of Alberta ministries and agencies, associations, and other groups with an interest in air quality. All CASA staff members have worked to increase outreach to parties with an interest in air quality, such as municipalities, educational institutions, and professional associations.
- CASA hosted a Coordination Workshop on September 29 in Calgary; one of the goals of the workshop was to ensure all participants were aware of CASA and its teams.
- CASA developed several publications in 2010, including 'Partnering for Success', the Consensus Decision-Making Toolkit, and the 2009 Annual Report. In addition, CASA distributes the Clean Air Bulletin to over 1,000 stakeholders several times a year. All these publications serve to increase awareness about CASA's mandate and activities.
- On Clean Air Day in June 2010, CASA participated in an information fair, along with the Alberta Airsheds Council, the Alberta Lung Association, the City of Edmonton, and many other organizations interested in air quality.

### **Strategy 4.2**

Assemble and share cross-jurisdictional information on air monitoring, mitigation measures and best managements practices that could be effective in Alberta.

*Status:*

- Work has not begun on the specific action of exploring the creation of an information repository; this work will be initiated in June 2011. However, a recommendation for teams to consider sharing cross-jurisdictional information will be included in the Project Management Guidance Document.
- The Coordination Workshop, held on September 29 in Calgary, also contributed to this strategy by enabling information sharing on various federal and provincial initiatives, such as the Comprehensive Air Management System; the Integrated Monitoring, Evaluation, and Reporting Framework; and the Land Use Framework.
- In July 2010, the CASA Data Warehouse moved to a system of data collection that will enable industry to submit data electronically to the CDW. The Operations Steering Committee has also authorized an upgrade to the server along with the incorporation of a web interface system.

### **Strategy 4.3**

Facilitate economic and other analysis on policy measures and the associated costs of action and inaction to reduce air emissions.

*Status:*

- To address two of the specific actions in the Business Plan, research centers (e.g. universities) have been identified as appropriate groups for targeted outreach activities and a recommendation to include economic and other analyses in project team work will be included in the Project Management Guidance Document. The Board still needs to consider establishing a working group to determine how to engage economic expertise on a macro-scale for specific project team issues.

### **Conclusion**

Overall, there has been satisfactory progress on many of the strategies and related actions that were expected to be underway this year. Much of this progress was made on initiatives for which a process or mechanism was already in place. It seems that when the initiative required a change in direction or a new committee, team, or process, progress was slow or uninitiated. This may have been partly due to the transition phase that the secretariat experienced while a new Executive Director was hired on a permanent basis.

There have been outstanding efforts to increase awareness of CASA's mandate and activities through outreach initiatives related to Strategy 4.1. As well as the outreach activities that were initially envisioned in the specific action for the Executive Director and Executive Committee, all CASA staff members have worked to increase outreach to parties with an interest in air quality.

There has also been considerable work to fulfill strategic planning requirements such as initiating the performance evaluation and the strategic foresight committee. These activities will all contribute to the Board Strategic Planning Retreat in June 2011 and better position the Board to make informed decisions at their retreat.

Some strategies have been deferred (e.g. Strategy 2.2 and 2.3). The CASA Executive Committee has directed Peter Watson and the secretariat to gather more information on regional planning initiatives before proceeding. Action on Strategy 2.3 could also be affected by the federal Comprehensive Air Management System. Before initiating action on these strategies, there needs to be more clarity on CASA's role and linkages to these initiatives.

Strategy 1.1 on the environmental scan could also be considered deferred, as the committee realized that more in-depth discussions about CASA's future would better equip the Board to explore, anticipate, and prepare for a wide range of future scenarios. The committee agreed to embark on a strategic foresight process. However, an environmental scan should still be initiated and the results should be considered at the Board Strategic Planning Retreat in June 2011. At the retreat, the Board will also be considering the results of the strategic foresight process, this Business Plan report, and other discussion documents.

The existing strategies and actions are broad enough to allow the comprehensive implementation of the existing Business Plan. No new decisions or amendments are required at this time.