

CASA Strategic Planning Session

October 31-November 1, 2018

Government House, 12845 102 Ave, Edmonton

Session Agenda

Session Objectives

The objectives for the session are to:

- Develop a collective appreciation of the strategic environment, key opportunities and emerging risks facing CASA and their implications for the CASA strategic priorities and direction.
- Develop or refine a common definition of success for CASA by exploring questions about relevance, value and impact.
- Crystalize a series of priorities and course of action that will serve as the basis of the CASA strategic plan.
- Briefly assess and continue to align the CASA governing model and approach to maximize the role and value of the Board of Directors.

Session Preparation

The following documents will inform the discussion. It is important that board members review the information prior to the session.

- Summary Report
- Board Survey Results
- Alberta Environment and Park 2018 – 2021 Business Plan
- Alberta Energy 2018 – 2021 Business Plan
- Alberta Agriculture & Forestry's 2018 – 2021 Business Plan
- Alberta Health 2018 – 2021 Business Plan
- Renewed Clean Air Strategy

Session Agenda

Wednesday October 31, 8:30 AM – 4:00 PM

Timing	Agenda Item
8:30 AM	Welcome and Introductions <ul style="list-style-type: none">• Opening Comments from the Board Chair and Executive Director• Review of session objectives and approach
9:00 AM	Context for the Strategic Planning Process <ul style="list-style-type: none">• Teach piece:<ul style="list-style-type: none">○ The foundations of good governance○ The foundations of effective strategy
10:00 AM	Break
10:15 AM	Presentation from Government of Alberta (topic TBC)
11:00 AM	Review and discussion of survey findings and conclusions <ul style="list-style-type: none">• What are the predominant factors that impact CASA, it's relevance and priorities?• What do these forces imply for the broad direction of CASA
12:00 PM	Break for Lunch
1:00 PM	Breakout Group Discussion: Defining Long Term Success for CASA <ul style="list-style-type: none">• What constitutes success for CASA?• What attributes best describe a successful CASA?• What are the major opportunities and barriers to achieving this vision• What will CASA have achieved, delivered or influenced?
2:15PM	Break
2:30 PM	Testing the CASA vision and mission statements <ul style="list-style-type: none">• To what extent do the current statements reflect CASA's core purpose and reason for being?• How might they need to shift or change to reflect the changes in the strategic environment?
3:30 PM	Wrap and Up <ul style="list-style-type: none">• "Homework" assignment

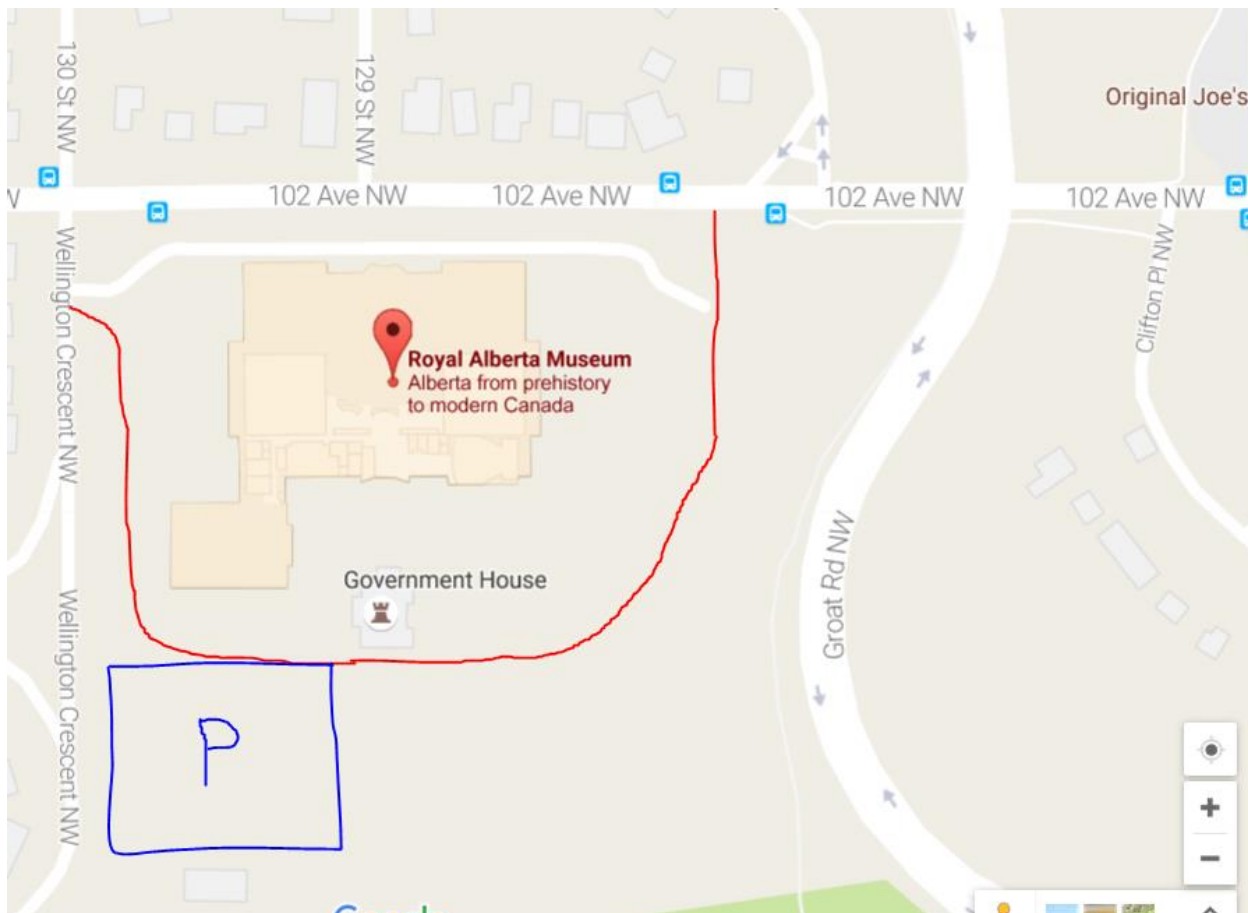
Thursday November 1, 8:15 AM – 12:00 PM

Timing	Agenda Item
8:15AM	Welcome and Recap of Day 1 discussion
8:30 AM	Breakout Group Discussion: Implications for the CASA Strategic Priorities <ul style="list-style-type: none">• Given the definition of success, what are the critical priorities CASA will need to pursue?
9:30 AM	Break

9:45 AM	Advancing the Strategic Priorities <ul style="list-style-type: none">• What activities are required to make traction?• What are the key measures and milestones that reflect traction and success?
10:45 AM	Break
11:00 AM	Implications for the Board's governing practices and processes
11:45 AM	Wrap up and next steps for the planning process

**Logistical Information: GhUH[]WD`Ubb]b[`K cf_g\ cd
Government House
12845 102 Avenue
Edmonton**

Government House is co-located with the former Royal Alberta Museum just west of Edmonton's downtown core and south of 102 Avenue. Government House is a separate building just south of the museum, and the entrance faces east. Access the grounds from 102 Avenue, either by turning south at the entrance of the Royal Alberta Museum and Government House immediately west of the bridge on 102 Avenue (drawn-in red line), or by turning south from 102 Avenue onto Wellington Crescent NW and then entering the grounds. Circling the grounds will inevitably lead you past to the lovely Government House. A wider-angle map is provided below as well.



Parking and Public Transit

Plentiful above-ground free parking is available in the blue drawn-in square. You **do not need** to register your car's licence plate. This venue is **not** within walking distance of the light rail transit (LRT) system, however there is a bus stop a few minutes' walk away, across the street from the Museum and Government House, that runs from the downtown core west along Jasper Avenue (101 Avenue). The bus stop is indicated by the small blue icon on the north side of 102 Avenue and the bus is numbered "1 West Edmonton Mall". The ETS Trip Planner can assist you if you choose to take the bus: <http://etstriplanner.edmonton.ca/PlanYourTrip.aspx>

Wide-angle map



CASA Strategic Planning 2018

Summary Report

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A New Way to Find Solutions

In the late 1970s and early 80s, Alberta was facing low commodity prices for oil (\$12 to \$17/bbl) and high unemployment and sought to diversify the economy. The government of the day was trying to expand economic development beyond energy and agriculture by stimulating pulp and paper, tourism, oil sands, meatpacking, and petrochemical sectors. However, these initiatives came with environmental implications and inherent tensions between stakeholder groups. Industry, environmental groups, and governments were all advocating for what they viewed as the best courses of action. The challenge was balancing economic development and respect for the environment.

At the same time, global concerns about acid rain, climate change, smog, and toxic air pollutants led to various international commitments to stabilize or reduce emissions. These concerns had special significance to Alberta's economy and it became clear to the government that changes were needed.

In 1990, the Government of Alberta (GoA) initiated an extensive consultation on energy and air quality, which resulted in a call for a more comprehensive air quality management system. Ultimately, it was determined the best way to do this would be through a non-profit organization with three categories of membership: governments, industrial associations, and public interest groups from environment and health sectors that would provide consensus-based advice to the government and others. In 1994, the Clean Air Strategic Alliance (CASA) was established as a new way of finding solutions to current and emerging air quality issues, with the mandate noted in the box below.

In a 1994 Ministerial Order, the Minister of Environmental Protection 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 corroborative approach. Planning shall include, but is not limited to:*
 - i. *clear identification of issues and problems,*
 - ii. *priorization of specific problems;*
 - iii. *allocation and coordination of resources*
 - iv. *development of actions plans;and*
 - v. *evaluation of results*
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.*

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; and.

Reports will be submitted jointly to the Ministers of Environmental Protection and Energy.

The Alliance represented a move away from the confrontational and adversarial positioning that characterized discussions about the environment and the economy in the 1980s, to a collaborative, consensus-building, and problem-solving approach.

Since that time the organization has matured and has seen many changes - the commercialization of wind and solar power, the phasing out of coal-fired generation, improvements in energy efficiency, tightened emission standards, and the growing significance of climate change and greenhouse gases (GHGs) as policy drivers. Despite the improvements in air quality, many challenges remain. Criteria air contaminants (sulphur oxides (SO_x), oxides of nitrogen (NO_x), volatile organic compounds (VOCs), carbon monoxide (CO), particulate matter less than 2.5 micrometers in diameter (PM_{2.5}), ammonia (NH₃)) are generally decreasing, yet GHGs are increasing. Even though emission intensity is decreasing, there is an overall increase in the volume of emissions. Population growth and the associated demand for energy, coupled with a resistance to change the status quo are greater than the rate of improvement in air quality. The challenges still outweigh the gains.

Looking to the future, CASA will need to redefine its role in finding solutions to those challenges.

Success Stories

CASA is building its future on a considerable body of work and experience accumulated over a quarter century. Some notable successes are described below.

Coal-to-Gas Emission Standard

CASA responded to a high-priority request from the Deputy Minister of Alberta Environment and Parks (AEP), to address a significant policy gap associated with the accelerated phase-out of coal-fired plants. Consensus was reached under tight timelines between industry, environmental non-government organizations, and GoA stakeholders on a Coal-to-Gas Unit Conversion Nitrogen Oxides (NO_x) Emission Standard Agreement that could be applied to coal-fired electricity generation units to be converted to burn natural gas instead of coal. The recommendation was developed during the fall of 2017 and delivered to the GoA as advice in late December 2017.

Electricity Management Framework

In January 2002, the Minister of Environment asked CASA to develop an approach for managing air emissions from the electricity sector. The management framework that resulted recommended that as of January 1, 2006, all standards for new units be based on Best Available Technology Economically Achievable (BATEA) and would be reviewed every five years. The framework was to provide flexibility in reducing emissions and encouraging continuous improvement of the overall management system.

A key component of the framework was a comprehensive monitoring system to ensure compliance with emissions reductions targets as well as special provisions to address concerns about potentially emerging “hotspots”. CASA also recommended a defined multi-stakeholder process to evaluate the performance of the framework at 5-year intervals, involving stakeholders from all sectors including the public. The framework also introduced the use of economic instruments such as emissions trading.

Five-Year Electricity Management Framework Reviews

As directed in the Electricity Management Framework, CASA has completed two multi-stakeholder reviews of the Framework.

The first five-year Electricity Framework Review started in 2008, and in 2009 the project team reported on ten consensus recommendations and one non-consensus item. The consensus items included revisions to the PM, NO_x, and sulphur dioxide (SO₂) emission standards for new coal-fired units based on improvements in emission control technologies. The non-consensus item related to NO_x emission standards for new gas-fired generation for both peaking and non-peaking units. A final report was forwarded to the Government of Alberta in May 2010 for decision.

The second Five-Year Review started in 2013. In addition to environmental and economic triggers, the project team worked to identify potential implications and emissions management issues of the Framework created by the implementation of federal GHG regulations. The group was unable to reach consensus on the need to review or adjust the Framework, given divergent views of the members as to what was required to allow changes to the Framework. An interim report identifying the key issues and differing perspectives was submitted to the CASA board and the GoA was asked to provide some guidance. In August 2014, Alberta Environment and Sustainable Resource Development (now AEP) advised it was working with Alberta Energy and Alberta Health to review the interim report and determine the next steps for the Framework. In 2015, AEP announced the GoA would continue to make

regulatory decisions in accordance with the existing 2003 Framework in the absence of a decision on the interim report and Framework.

In March 2015 the project team provided 13 recommendations to the CASA board, one of which was non-consensus (recommendation 3, emissions standards for gas-fired generation).

Flaring and Venting

Flaring and venting of solution gas has been a long-standing concern that was first brought to CASA in November 1996. Since that time, CASA has created several iterations of a Flaring and Venting Project Team (FVPT). In turn, these teams have created recommendations to achieve the goal of reducing routine flaring and venting of solution gas. A number of these recommendations have been implemented through regulations and best management practices and resulted in significant reductions in flaring and venting. The most recent team looked at previous recommendations from 2004 and 2005, which recommendations were implemented, and current trends in solution gas conservation. The Team identified a number of technical and economic topics for further exploration that could have the potential for further reductions in routine solution gas flaring and venting.

However, at the conclusion of its work in 2010, the FVPT could not agree on how to achieve further reductions in routine solution gas flaring and venting. The team was able to agree on areas of work needed to fill information gaps and hoped the information would help to reduce routine solution gas flaring and venting in the future.

Non-Point Source Air Emissions

The Non-Point Source Project Team developed 19 consensus recommendations in eight topic areas, ranging from transportation to open-air burning and land use planning. The project was intended to help address non-point source air emissions that contribute to ambient fine particulate matter and ozone standard non-achievement in Alberta. CASA considers this project to be a starting point for continued, coordinated efforts to manage non-point source emissions to improve air quality.

Odour Management Guide

The Odour Management Team engaged in focused discussions around odour management in Alberta, and created a guide for assessing and managing odour in Alberta which addressed the following topics:

- Odour assessments
- Complaints management
- Health
- Prevention and mitigation
- Enforcement and role of regulation
- Education, communication, and awareness
- Continuous improvement

The Good Practices Guide for Odour Management was completed in fall 2015.

Particulate Matter and Ozone Management

In 2003, the CASA project team on Particulate Matter (PM) and Ozone developed a PM and Ozone Management framework and guidelines, aimed at implementing the Canada Wide Standard within an Alberta context. A subsequent project team was tasked with reviewing the status of the implementation

of the framework every two years starting in 2006, and to provide support in implementing as necessary. This continued until 2012, when it was determined the adoption of the national Air Quality Management System (AQMS) and Canadian Ambient Air Quality Standards (CAAQS) superseded the framework, and the team was disbanded.

CASA has completed numerous projects on a wide range of air quality management issues, several of which have received national and international recognition. A full list of completed and current projects is available on the CASA website at www.casahome.org.

Work Underway

Five-Year Electricity Framework Review

As directed in the Electricity Management Framework, CASA has launched the third five-year review in 2018. The project team was struck in July and will provide recommendations on Phase 1 of the review in December 2018, and report and provide recommendations on Phase 2 in summer 2019.

Ambient Air Quality Objectives (AAQO)

The Ambient Air Quality Objectives (AAQO) Project Team began its review of AAQO in 2017 with the goal of recommending objectives for fine PM, SO₂, ozone, nitrogen dioxide, total reduced sulphur, and hydrogen sulphide in response to the development of CAAQS. The AAQO are used to assess compliance near major industrial emissions sources and to report on the state of Alberta's air. During 2017, the team and its subgroups gathered a great deal of scientific, technological, and economic information, as well as information on adverse health and ecosystem effects of each substance. The work is continuing in 2018. Recommendations to AEP will be provided sequentially as the assessment for each substance is completed.

Rover III

This project will measure emissions from the in-use on-road transportation sector, particularly diesel-fuelled trucks, to inform management actions and next steps for transportation emissions management to help achieve the CAAQS in Alberta. Remote sensing technology will be used to test emissions from in-use on-road vehicles, primarily heavy-duty and light-duty vehicles (diesel-fuelled trucks, buses, and light-duty personal vehicles). The project is focused on NO_x, PM, volatile organic compounds, carbon monoxide, and carbon dioxide, but recommendations to reduce these substances are expected to have the co-benefit of reducing other emissions.

The CASA Approach

Since its inception in 1994, CASA has matured into an organization with well-developed operating policies and procedures, and a proven track record of success in delivering projects identified for action by the board. CASA has taken on a variety of projects of differing formats and lengths, using a well-established process for completing projects over approximately two years and producing consensus recommendations. As projects have been completed, some work has transitioned to focus on

implementation, maintenance, and review of these completed projects and the status of the recommendations stemming from them.

CASA has taken on other types of projects (Science forums, Coal to Gas, EFR Phase 1) in response to specific requests, and CASA will continue to respond to its clients’ needs in a nimble fashion.

The survey undertaken as part of the 2018 strategic planning process showed that both specific projects and CASA’s overall approach were valuable to respondents.

CASA’s management system is based on tested principles and processes to reach consensus outcomes. While the administrative procedures that were developed to support the consensus model worked for the purposes for which they were originally designed, they may need to be revisited to ensure that they support CASA in the diverse types of projects CASA is starting to do.

The table below shows the range of the types of CASA projects. The duration is noted across the top and the specific administrative components for each type of project in the left column.

	Short	Medium	Classic	Ongoing
Format	Single event (e.g. workshop, symposium, webinar)	Medium term projects (less than 18 months)	Longer term projects (24+ months) with a clear end date	Longer term projects (24+ months) with no clear end date
Scope	Project scope is well defined and specific	Project scope is well defined and specific	Project scope is broad, potentially not well defined	Project scope is well defined and specific
Information Needs	Required information is available	Required information is available	Information needs not known at project start, or require collection	Information needs dependent on project, may require collection
Outcomes	Information sharing	Small number of recommendations or a range of options	Recommendations, potentially in a variety of topic areas	Consensus recommendations
Consensus Requirement	No consensus sought	Consensus preferred but not necessary	Consensus sought	Consensus sought
Examples of Client Projects	Priority Setting Workshops, Martha Kostuch Legacy Workshop, Science Symposiums	Coal to Gas Project, ROVER III Project, EFR Phase 1	Non-Point Source Project, Electricity Framework Review, Good Practices Guide for Odour Management Project	Electricity Framework Review (scheduled every 5 years), Ambient Air Quality Objectives

CASA also works on internally focused projects for board governance purposes (annual reports, annual performance measures, strategic plans, procedural guidelines) and issue-specific or ongoing periodic projects by internal board committees (communications, strategic foresight, performance evaluation, data issues, and strategic planning).

Planning for Change

“The only thing constant is change” - Heraclitus

CASA has not completed a strategic plan since 2011 (2012-16 Strategic Plan) and that exercise was a very comprehensive review of corporate direction. The most recent performance evaluation which should have fed into a strategic planning cycle was Performance Evaluation 2011-2014 (the “Norm Report”).

As the rate of change of knowledge, technology, and attitudes continues to increase, CASA will need to be able to respond to the challenges created by that change. So much information is now readily available that perceptions and opinions and decisions are made faster than ever. As an influencer of policy direction, CASA necessarily needs to be able to increase its ability to provide valuable input into the decision-making process in a timely fashion, or risk losing relevance.

While there will still be a place for detailed projects that take 24 or more months to move from conception to board approval, more and more value will lie in providing input within timelines measured in weeks.

This strategic review is well timed to map out the shifts CASA will need to make to adjust to the changes in its world.

CASA's Operating Environment

CASA and the environment in which it operates have undergone significant changes in the recent past:

Funding challenges for core operations and projects

- The economic climate has been such that discretionary funding is hard to come by from the GoA, CASA’s traditional core funder. In 2016, Alberta Energy stepped back from funding CASA’s core operations, but AEP stepped in to fill the gap, although at a reduced funding level to reflect the economic environment.
- As many sectors have been affected by the economic climate, project funding has also been more difficult to raise from all sectors. Fortunately, CASA has set aside excess funds from past projects that will support project work to continue for perhaps a couple years.

Office Move

- The GoA gave up the lease in July 2017 on the Centre West Building, which required CASA to find a new office location. Space was available at the Alberta Water Council (AWC) offices (which is also provided in-kind by the GoA) in South Petroleum Plaza and CASA moved there.

Administrative merger and staffing changes

- In 2017, CASA’s and AWC’s administrative functions merged, although both organizations remain separate entities with separate budgets. Both organizations share an executive director, administrative staff, and program and project managers.
- In 2017 CASA welcomed a new executive director - the third in four years.
- In recent years, there has been a full turnover in CASA staff members and a reduction in the number of staff, from six project managers in 2015 to two project managers in 2018.

Board membership and participation

- A wide variety of interests participate on the board regularly, however there have been some gaps in participation from some formerly active members.
- Alberta Energy and Alberta Health are no longer members of CASA, but they feed input to the board through AEP via the GoA's Cross Ministry Steering Committee and participate on project teams as appropriate.
- Oil and Gas-Small Producers have not named a director or alternate for some time.
- The local government sector seat, held by AUMA, has not had a director or alternate on the board for some time but some of the AUMA's members participate on project teams as appropriate.
- Métis Peoples and Communities have not been represented on the board for several years.

Political landscape

- Five Premiers from two different parties since 2012 (Stelmach, Redford, Hancock, Prentice, Notley)
- Three AEP Deputy Ministers in four years (Werry, Corbould, Denhoff)
- Provincial budget spending restrictions
- Provincial election will be held between March 1 and May 31, 2019 – there will be a changed mandate for AEP and other government departments regardless of outcome, meaning there may not be policy certainty until sometime in 2020.
- Climate change and GHGs likely to remain an important focus (either for or against)
- Trans-Mountain pipeline approvals and construction, and market access for oil and gas in general will continue to be an issue for the government.
- Regulatory and policy changes?
 - Air Monitoring Directive updated in 2016
 - CAAQS introduced in 2012
 - Renewed Clean Air Strategy and Clearing the Air Action Plan – 2012
 - Acid Deposition Management Framework (2008)
 - Alberta's Climate Change Strategy
 - *Renewable Electricity Act* – 30 percent of energy produced to come from renewable sources by 3020
 - Specified Gas Emitters Regulation, Federal Coal Regulation

Socio-economic landscape

- Recession and recovery
 - Alberta is in the second year of its recovery from one of the worst recessions on record. Retail sales and new vehicle sales have led the way. Employment followed, although wages have remained somewhat flat. Exports of goods and energy products are recovering. Benchmark oil prices have improved. Investment in commercial projects and the oil sands remains subdued.
- Alberta's population increased by 492,000 between 2012 and 2018.
- Changing oil and gas markets

- The West Texas Intermediate price for oil was 106.24 (\$US/bbl) in August of 2013 and reached a five-year low of 30.32 (\$US/bbl). Today, it has recovered to nearly 70.00 (\$US/bbl).
- In May 2016, oil production dropped to a low of 63,934,040 bbl – a level first exceeded in November 2010.
- Natural gas prices dropped from a five-year high of 5.20 (\$CDN/GJ) in February 2014 to 0.94 (\$CDN/GJ) in May 2016. This price recovered somewhat in 2017 but is once again low at 1.26 (\$CDN/GJ).
- Electricity load growth is anticipated to flatten somewhat depending on the rate of oil sands activity and the price of oil, according to the [AESO long term outlook](#).
- Moving goods and people
 - Between 2013 and 2017, the number of registered passenger vehicles increased by 211,000, while the number of registered commercial vehicles fell by 3,500.
 - In 2012, Alberta exported \$94.51-billion worth of goods to international markets (65% through pipeline, 10% using roads). That year, Alberta imported \$27.25-billion in goods (16% through pipeline, 38% using roads). In other words, Alberta exports \$9.5-billion using roads, and imports \$10.4 billion using roads.
 - In 2016, Alberta exported \$78.9-billion worth of goods to 187 countries, a decrease of 15% from 2015 due to depressed prices for crude oil and natural gas. Alberta also exports an increasing amount and variety of manufactured products such as petrochemicals, food products, and metals and machinery. Although manufacturing exports declined during the recent recession to \$21.6-billion in 2016, they are still six percent higher than in 2006. Exports of crops and livestock rose 64% between 2006 and 2016, while processed food exports increased by 80%.
- Changes to air quality monitoring
 - The Alberta Environmental Monitoring, Evaluation and Reporting Agency was dissolved in spring 2016 and its staff and work (including evaluation and reporting responsibilities) were moved into AEP's Environmental Monitoring and Science Division.
 - Passive monitoring networks have been under review in several Airsheds. The passive monitoring programs were scaled back by PAMZ, PAZA, and PAS and suspended by CRAZ. At the same time, the ACA developed a new passive monitoring program that serves ten communities.

Moving Forward

Political and policy uncertainty means that despite AEP and GoA being the principal clients, CASA initiatives will need to focus on solutions that are valued by all sectors and are linked to an overall government direction but not necessarily attached to a specific policy direction.

AEP's [2018-21 Business Plan](#) highlights protecting natural areas and biodiversity; implementation of the [Climate Change Leadership Plan](#) (including reducing coal-fired emissions by 2030, carbon levies on GHGs, methane emission reductions, oil sands emissions limits); and expanding the monitoring of ambient conditions and trends. It also seeks to promote sustainable economic diversity through investments in carbon emission and pollution reduction, increased efficiency in energy and resource

use, and prevention of biodiversity and ecosystem service loss. [Alberta Energy's business plan](#) acknowledges the need to shift from high-emission electricity generation leading to emissions being eliminated from coal-fired electricity by 2030. The potential for opportunities around emissions reduction and climate change adaptation are also recognized [in Alberta Agriculture and Forestry's business plan](#).

Future focus

CASA board members and stakeholders were surveyed to provide input on what sort of work CASA should focus on. Twelve board members representing their sectors and nine stakeholders responded providing feedback on identified outstanding issues, and direction on specific projects and an overall approach in general.

Several air quality issues were identified as significant challenges: NO_x, SO_x, GHGs, dust, criteria air contaminants, PM_{2.5}, ozone, methane, smoke, vehicle-related emissions and agricultural non-point sources.

Respondents predicted there would be challenges in achieving the CAAQS.

Respondents recommended that CASA should focus on projects involving:

- CAAQS/NO_x;
- dust management;
- engaging municipal governments;
- implementation of provincial clean air strategy;
- studies around gas-fired generation;
- identifying smaller, numerous contributors to emissions;
- greenhouse gases;
- transportation related emissions; and
- providing interest-based negotiation training.

Respondents noted a need to increase public awareness and literacy of air quality issues. The need to expand monitoring and related funding was also mentioned.

Sector-specific issues identified were particulate emissions and fugitive dust, climate change policy, and challenges in raising public awareness and support around air quality issues.

Future approach

More generally, the types of projects that were recommended were those that align with political and government priorities; those that match CASA's resources and strengths (consensus-based, multi-stakeholder); those that support airsheds, education, and advocacy; and those that lever opportunities in the relationship between climate change and air quality.

It was also suggested that smaller point and non-point emitters across sectors be included in emission reduction strategies (possibly through a cross-industry sector system wide approach), recognizing a future need to make room within emission caps to allow for economic development.

It was also suggested CASA be nimble, timely, provide value, and use a narrow scope in its approach to projects.

Board members identified the following key activities for future focus:

- Be fiscally responsible with the funding we currently have, look for cost saving options (for conducting meetings), and find other funding sources to diversify.
- Develop insight into emerging issues and those needing to be addressed by AEP and the GoA. Focus on their key projects and priorities.
- Anticipate the implications of a change of government.
- Engage with Indigenous people to determine if they see value in being at the CASA table.
- Ensure the board is clear on its roles and responsibilities (board vs. project teams).
- Improve project team functionality and manage the size and tenure of project teams.

Adding value

The survey results showed that CASA's role as a stakeholder forum for impartial and unbiased discussions between diverse groups on difficult issues was widely valued, even if consensus was not always possible.

Interest-based negotiation training was also cited as a specific benefit of CASA.

The GoA, stakeholders, municipalities, and sectors were identified as beneficiaries of CASA's work and approach.

Risks and Concerns

The survey showed that a change in government leading to a shift in priorities was the most noted risk to CASA, followed by concerns around funding. Other identified risks included:

- CASA's ability to respond to issues in a timely manner in a rapidly shifting policy environment,
- a drift from solution-based discussions to positional negotiations (and a loss of value to the GoA),
- GoA not implementing recommendations,
- Desire for economic growth leading to downgrading of environmental side of sustainable development, and
- a public lack of concern or awareness about air quality.

Sectors raised concerns about decreased investment stemming from political uncertainty, the ENGO sector not being heard by the public or the government, a government that is hostile and does not engage with industry, generational knowledge transfer, additional time and expense to sectors without the CASA multi-stakeholder approach, and overall apathy towards air quality issues.

Work to be Done

Based on the results of the board and stakeholder surveys, and environmental scanning, CASA has the following challenges to consider in planning what its priorities will be over the next four years:

- Aligning with AEP direction
- Matching priorities with resources.
- Achieving CAAQS targets
- Securing new and continued funding

- Identifying new clients and new work – statements of opportunity
- Engaging the Indigenous Communities-in air quality discussions
- Membership renewal and refreshment
- Revisiting and re-prioritizing past recommendations

CASA Strategic Planning 2018

Survey Results

Overview

Separate surveys were sent to CASA board directors and alternates, and to those stakeholders or individuals who had participated in CASA projects over the last three years. There were 12 responses from board directors and alternates, and nine responses from stakeholders. Questions 6, 7, 9, and 14 were common to both surveys. In this document, the survey questions are shown in bold text along with a summary of responses. Italicized text in the sections titled “input provided” appears verbatim from the submitted responses.

Survey Responses

1) What sector do you represent on the Clean Air Strategic Alliance?

Sectors represented in the board responses were:

- Petroleum Products
- Mining
- Oil & Gas – Large Producers
- Forestry
- Utilities
- NGO Rural
- NGO Urban
- NGO Consumer Transportation
- First Nations
- Provincial Government
- Local Government-Rural

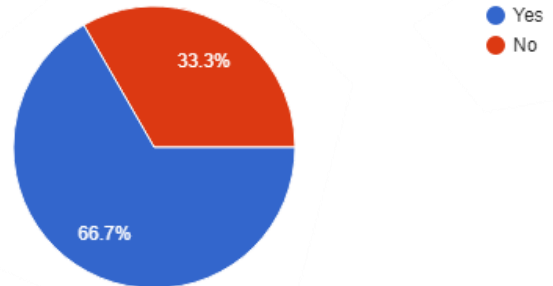
2) The functions of the Board have been described in the 2012-16 Strategic Plan as follows:

- *Advises the Alberta Government, stakeholders and the public on effective strategies for managing air quality*
- *Sets policies on CASA direction and priorities, with a focus on long-term direction*
- *Creates and disbands Board committees, other than the Executive Committee*
- *Coordinates and commits resources*
- *Evaluates results of CASA projects*
- *Assesses Board progress and functions*
- *Establishes and oversees work of Board, committees and project teams*
- *Engages in strategic planning exercises and provides overall direction to the organization*
- *Oversees and engages in CASA communications*
- *Promotes CASA, its process, priorities and its outcomes*

Should these still be the functions of the Board?

67% of respondents thought the functions should stay the same.

33% thought they should change.



3) Which functions should be changed, added to, or removed?

The following recommendations were made for changes to the functions of the board:

- CASA's role within the government's approach to air quality policy development and management needs to be clarified. A clear mandate is needed before functions on how to achieve the mandate can be determined.
- The executive committee should be the body who coordinates and commits resources, and not the board.
- An overall communications strategy should apply across projects and project teams and should not be done on a project by project basis.
- Members need to collect information from their organizations and sectors to share with the board, and to share board information with their sectors and organizations.
- The board should identify and seek sources of funding in addition to GoA funds.
- The board should provide advice to the government, rather than be advisors.
- The board should maintain an ongoing understanding of the state of air quality in Alberta, air quality trends, pressures, and opportunities.
- The board should evaluate the results of CASA projects and overall effectiveness and success of CASA.

Input provided:

- *As CASA was created by Ministerial Order, the functions of the Board need to be linked to the Government of Alberta's vision for air quality management. We agree that there have been significant changes. Several of these changes create uncertainty about the relevance of and role of CASA in the Government of Alberta's approach to air quality policy development and management. This clarity is necessary before determining the core functions of CASA and its Board.*
In order for CASA to play an effective role in advising the Alberta Government, stakeholders and the public on strategies for managing air quality, it requires a clear mandate and buy-in from the Alberta Government. For this reason, the CASA Board should consider its functions to enable fulfillment of air quality priorities as determined by the provincial government. In this way we can ensure that the CASA work will have a value specifically tailored to government policy makers. This approach will also ensure that projects are properly resourced as clear government prioritization should coincide with firm budgeting and deliverables.
- *The coordination and commitment of resources should be transferred to the Executive Committee as a operations support function.*

- *There should be solid processes in place that guide CASA communications and project teams consistently across CASA projects; these should not be determined on a project-by-project basis.*
- *Someone needs to stand up and take the lead on Air Quality*
- *Bulk of Board duties outlined above should continue unchanged. The role "Evaluates results of CASA projects" should be broadened to "Evaluates results of CASA projects and overall effectiveness and success of CASA".*
- *Also, add a new role: "Maintains ongoing understanding of the state of air quality in Alberta, air quality trends, pressures and opportunities."*
- *Each Board member needs to communicate with their own organization - the information sharing is necessary to get input from others on the value of the work CASA does.*
- *For the Board, pursuit of sustainable funding from a broader source than currently used.*
- *To be honest I don't have any reservations regarding the current functions.*
- *Function of the Board-Provide advice to gov't --we are not advisors*

4) The Board's functions are supported by various project teams and committees. How should the Board's role differ from the roles of the project teams and committees?

Members generally thought the board should provide high level direction, coordination, advice, and oversight to project teams and committees. The board should set strategic direction and approve budgets and final products for release. Project teams are more technical and are subject matter experts who do the project work.

Input provided:

- *I think the Board should respond as the 'owner' of the project to ensure the project team meets its deliverable (on time, scope and budget).*
- *Board should be strategic in terms of direction and intent; project teams are more technical.*
- *Board should be high level and strategic. Project teams should get into details.*
- *The Board should serve as an advisory role, providing direction to the project teams.*
- *The Board's role with both is to set the strategic direction for the committee or project team work, approve terms of reference and budgets, ensure necessary resources are in place, provide direction if requested or required, and consider final reports/recommendations for approval and public release.*
- *Board provides an oversight and approval function; project teams and committees undertake the project work.*
- *The role of the Board should be one of coordination, oversight, and encouraging consensus building at all team levels.*
- *Board operates at a higher level, providing advice to project teams and offering suggestions to bring teams to consensus*
- *The Board essentially oversees the work of each project team as well as the operations of CASA. The Project managers are vital when it comes to keeping the teams on track, ensuring they fulfill their mandate and complete their work in a timely fashion. At each Board meeting, the project team updates provide important details to Board members, providing them the opportunity to question the direction of the team and the value of their work. The Executive Director and Secretariat have to be prepared to deliver accurate information to Board members so that they can make informed decisions. The effectiveness of the Board is dependent on the accuracy and completeness of the information they receive.*
- *If directed to by the province, the Board should consider the interaction between projects and the bigger picture on air quality both provincially and federally, and make sure that these interactions are reflected in every project charter and committee mandate. By monitoring and*

working on multiple projects, the Board should be better equipped than project teams to understand competing interests at a macro level. This should allow them to reach consensus recommendations across various projects to then forward those recommendations to government.

- *Board merged with AWC, and empower project teams*
- *The project teams and committees should serve as subject matter experts, developing advice and recommendations for board consideration as identified by project TORs.*
- *Project teams, which have a finite term and ongoing Board Committees both have a narrower, more specific focus than the Board. Both are accountable to the Board and submit recommendations to it for approval, recognizing both project teams and Board Committees may make certain decisions without reference to the Board as allowed by their terms of reference.*
- *Address First Nation Sector*
- *Stronger government representation and direction*

5) What are the strengths and challenges of CASA's present governance model?

CASA's multi-stakeholder approach and consensus-based decision making were widely considered by members to be its strengths.

Board members identified several challenges for the governance model: the need for fair representation on project teams, the need for all stakeholder groups to participate equally, managing aggressive stakeholders, the need for sectors to be able to be heard, to not require consensus so that perspectives may be gathered, the need for a more consistent and systematic approach across project teams, the need to be nimble, and the need to get more people involved. The diminished participation by the GoA at the board level was also raised as a concern.

Input provided:

- *Strength is the multi stakeholder governance, but it can also be a weakness if aggressive stakeholders are not managed.*
- *CASA's multi-stakeholder collaborative process gives credibility to the recommendations that come from the project teams. All the Statements of Opportunity need to be approved by consensus by the Board before work is initiated on any project.*
- *Having all three sectors represented at the table ensures everyone has a voice when it comes to any decisions the Board makes. The "level" playing field is an essential element when it comes to CASA's success.*
- *Multi stakeholder with industry & NGOs, working with Government*
- *The strengths of CASA stem from the diversity of individuals that sit on the Board and that participate on project teams.*
- *Broad representation, e.g. government, industry, environment and other NGOs is a strength. Recent diminished government involvement is a concern.*
- *I think the challenge is to ensure there is fair representation on project teams. The other challenge is to come to consensus within the project team in order to deliver a valued product.*
- *CASA's consensus decision-making model and equality of stakeholders are a distinct source of strength ensuring results are widely supported by differing stakeholders. Consensus decision making also supports the identification of more creative solutions to air quality problems.*
- *Collaborative consensus decision making*
- *Can be too focused on consensus at times rather than ensuring that all perspectives are captured. We should aim for consensus but capturing views is a good outcome too.*

- *For CASA to succeed, the Board, primarily the Executive Committee needs to have a good relationship with AEP. Since Alberta Health and Alberta Energy's withdrawal from the Board, we need to pay attention to the needs of AEP.*
- *Finding individuals to participate can also be a challenge in today's busy and demanding world. Many people do not want to get involved when it comes to addressing air quality issues, either because they don't have the time or they're the type of individual who likes to complain to others so someone else will hopefully get involved!*
- *One challenge for CASA recently has been to apply its model to projects with an urgent, short-term timeline. To this point, CASA has been successful meeting this challenge.*
- *The two-tiered governance model creates confusion regarding governance responsibility. Having multiple sectors represented is beneficial, but clear processes must be in place to ensure that sectors are fairly represented and heard.*
- *NGO's and environmental group seem to have a larger presence with CASA, resulting in unequal voices at the table. As a multi-stakeholder organization, CASA's main clients should be all participating stakeholder groups equally.*
- *The division of responsibility among the Board, the Executive Committee (a sub-set of the Board with distinct responsibilities particularly between Board meetings) and the Secretariat with its administrative and support role has worked well. Currently, with the transition to a single Secretariat a few adjustments in thinking may be necessary to accommodate the fact that the Secretariat role may not be the same for the AWC and CASA, nor necessarily should it be. Similarly, there may be other differences in the roles of the parts of the governance structure, and that is likely for the best and quite appropriate.*
- *Past experience demonstrated that CASA did not have a systemic approach to managing projects. Incorporating consistent processes, templates, and practices (similar to what the Alberta Water Council uses) would create value for those participating in project teams and ensure that recommendations being proposed are able to be monitored for accountability in reporting.*
- *Challenge is funding, currently almost exclusively GoA.*

6) What has CASA done that is valued? Who has benefitted from CASA's work?

The survey showed that both specific projects and CASA's overall approach were seen as being valuable to respondents. Valued projects named were non-point source, past EFRs, PM and Ozone framework, ROVER, coal-to-gas, odour management, clean air strategy, and AAQO. CASA's role as a stakeholder forum for impartial and unbiased discussions between diverse groups on difficult issues was widely valued, even if consensus was not always possible. Interest-based negotiation training was also cited as a specific benefit.

The GoA, stakeholders, municipalities and sectors were named as beneficiaries of CASA's work and approach.

Input provided:

- *Past successes are numerous, and CASA is cited as an example by other jurisdictions.*
- *Non-point source work was of value, informing government*
- *Non-point source project; airshed consensus model*
- *Over its history, CASA has done a lot of valuable work. Most recent accomplishments include the projects on odour management, Non-point sources of problematic CAAQS emissions and requirements for coal to gas conversion. These are valued by all parties but may be of relevance*

to the province with its air management responsibilities and - in the case of odour management and NPS, municipalities.

- *Emerging work on AAAQOs will be helpful.*
- *NOx emission standard for coal to gas converted units.*
- *I think phasing out the coal fired plants should be considered one of the most significant successes.*
- *The coal to gas conversion project has proven to have high value to the public. Concern for jobs has created some issues but overall the health benefits have to be considered as a win!*
- *The NPS team and the Odour Project team both were valuable to AEP as will the Rover III team. The federal government is tackling the emissions from the "heavy truck" transportation sector so this team is timely and will provide valuable information.*
- *Recently odour management and non-point source work.*
- *Electricity Framework, Clean Air Strategy, PM Ozone Framework good products that have been implemented. All stakeholders benefit from these items.*
- *Specifically relating to my organization's interests are its past, and present, work regarding vehicle related emissions.*
- *All is valuable; but I see that there needs to be more involvement from First Nations*
- *CASA has responded to a variety of the Alberta Government requests in a timely and economical way.*
- *GOA has benefited from work on key policy issues, even if outcome is non-consensus, helps to define poles on the spectrum.*
- *CASA adds credibility to a government process or a project*
- *To date, all the work that CASA has done in dealing with recognized air quality issues is valued, especially by the public who have been affected by these issues. Improved air quality and human health effects should be on everyone's list of priorities and the direction of CASA's work is to address both without adversely affecting industry. However, Industry may not agree as many have had to change their practices; some at their own expense. Profit is a primary gauge when looking at a company's success, so industry may be reluctant to tackle some issues because of what they have at stake.*
- *Gaps in government legislation have explained to the public why some issues have not been addressed to the extent they should have been e.g. agriculture is exempt through AOPA - e.g. odor is considered a "nuisance". Government and agriculture may not appreciate the public being informed of these gaps! Knowledge is a powerful tool, so some may fear the public being informed of these gaps.*
- *Air frameworks, the public benefits - also G of A they do not need to take ownership on air.*
- *The multi stakeholder approach provides value in bringing multiple sectors together to discuss a common issue. Sectors have benefited from learning from other perspectives, developing recommendations that balance multiple perspectives.*
- *Multi-stakeholder consensus on difficult issues, i.e. odour management, non-point source emissions*
- *Bring various stakeholders together into a safe space to discuss these issues.*
- *Bringing diverse groups together is useful*
- *The value CASA brings is a fair representation of view points and the ability to conduct an impartial and unbiased consultation process if necessary*
- *Collaboration among many sectors and arriving at recommendations for action to support clean air*
- *CASA is a consensus-based organization capable of providing a forum where stakeholders from Governments, Non-Governmental Organizations and the Industry sectors can come together and support the Government of Alberta (GoA) in developing air quality policies in the province.*

- *Reaching consensus - while it's not always possible, it does make implementation significantly easier from a GOA point of view.*
- *Over the years, there's been a lot, including interest-based negotiation training.*
- *Identified options to mitigate the above-mentioned concerns*

7) What do you believe are the most significant air quality-related issues? What are the issues facing your specific sector?

Several air quality issues were raised as significant challenges: NO_x, SO_x, SO₂, greenhouse gases, dust, criteria air contaminants, PM_{2.5}, ozone, methane, smoke, vehicle-related emissions and agricultural non-point sources. More broadly speaking, respondents saw a need to expand monitoring and related funding and predicted challenges in achieving CAAQS. Higher level air quality related issues are an overall need to increase public awareness and literacy and recognizing a future need to make room within emission caps to allow for economic development.

Sector specific issues identified were particulate emissions and fugitive dust, climate change policy, and challenges in raising public awareness and support around air quality issues.

Input provided:

- *In addition to criteria air contaminants, there should be a focus on greenhouse gas emissions*
- *I believe the most significant air quality related issues are NO_x and SO_x.*
- *The CAC (Criteria Air Contaminants), namely PM_{2.5} and Ozone and their precursor gases such as NO_x and SO₂ will continue to be the main focus of our organization.*
- *The implementation of the Canadian Ambient Air Quality Standards (CAAQS) will be the main air issue the province will face and, by way of consequence, our members as well.*
- *Maintaining and improving air quality in urban areas is a major challenge, particularly in light of new more stringent CAAQS that better reflect what air quality should be.*
- *New CAAQs for NO₂,*
- *Exceeding the CAAQS standards in Alberta communities, public understanding of what the standards represent and the health implications. Poor air quality is directly linked to lung diseases, breathing disorders, and heart health.*
- *Ambient NO_x, PM and Ozone are the emerging issues. For the electricity sector the climate policy drives many of our issues.*
- *Issues are dust, smoke*
- *The issues facing my industry are particulate emissions and specifically fugitive dust emissions. The issue is recognized but the solutions are not so easy in certain circumstances.*
- *NPS from agriculture*
- *Also, there is a need to better understand and address specific air quality concerns in rural Alberta.*
- *Methane of course seems to be an issue at the present time. It's felt government has not taken advantage of the opportunities they may have had if they had implemented a more stringent approach. As well, the work of the NPS team has created awareness of human influence on the environment and what we can do to help reduce our own personal impact.*
- *Some land use districts of the province are experiencing problems with high levels of particulate matter, despite CASA's ozone and pm framework. Maybe in the future this is something a project team should revisit*
- *PM_{2.5} literacy is also a challenge.*

- *Vehicle related emissions, both from a climate forcing and pollutant perspective. It is challenging to convince many Albertans that their transportation choices have real, meaningful, and sustained impacts on air quality for example.*
- *The transportation sector is a significant contributor of air pollutants, particularly when diesel is combusted. We typically see this with heavy duty (on and off-road) vehicles. Another strong contributor is the production of asphalt and concrete.*
- *Addressing the transportation sector and evaluation of the impact of emissions from vehicles in larger urban centers.*
- *Transportation emissions in urban areas,*
- *Non-point source emissions,*
- *Consistent monitoring across all areas of the province is an ongoing issue.*
- *Additional challenges are that air quality monitors are not all located in the best locations (i.e. beside dirt roads)*
- *Setting a base. monitoring required to see air quality in my area*
- *Funding for Airsheds is getting critical in places (reduced support by Gov, reduced funding by emitters due to fewer companies/less emissions and in some places, emitters choosing not to pay). The result of this will be less monitoring and data. Gov has also chosen to remove all funding to the Airsheds Council which was invaluable in providing support to Airsheds.*
Roles of monitoring is very confusing. Airshed monitoring provides the backbone of data throughout Alberta, including for trends analysis, management activity and public information (i.e. AQHI). Airsheds monitor the ambient air within communities, which is often paid for by larger emitters (due to absence of anything else). Why does AEP EMSD manage a few stations in Edmonton and Calgary, that are not well connected to all other stakeholders through Airsheds?
- *Citizen science/low cost sensors*
- *Rapidly evolving given shut down of coal sector over time.*
- *Our sector is faced with challenges related to specific air or other environmental recommendations being made without consideration as to the practical applicability of addressing an issue or recommendation. Municipalities have multiple, often competing, priorities and understanding how addressing air quality issues impacts other activities, such as resource extraction, is necessary in trying to find feasible solutions.*
- *Cumulative industrial emissions in the Capital region*
- *Impossibility to build new generation facilities due to air shed concerns and the overall perception that Gas is becoming the new coal.*
- *The electricity sector is heavily regulated with respect to emissions and coordinating the various levels of regulation to achieve sensible reductions is time consuming. We are looking to other sectors to begin more productive reductions*
- *As we approach the assimilative capacity of airshed zones (as outlined under CAAQS), Alberta needs to reduce emissions in order to meet ambient standards as well as to create "room" for future economic development.*
- *Bureaucrats are arbitrarily applying increasingly stringent air quality standards than are in regulation based on the false assumption that Alberta air quality is poor.*
- *Despite the downturn, oil and gas emissions - particularly in the LAR - remain a focus.*
- *One concern for the ENGO sector is how to raise public awareness about air quality challenges, support for necessary action by governments and industry and willingness to take personal action to improve air quality.*
- *No leadership on air*

8) Who have been CASA 's main clients? Who should they be?

In general, the GoA and Alberta Environment and Parks were regarded as the main clients of CASA's work, although industry, NGOs, CASA stakeholders and the public were also recognized. Recommendations for additional clients were Alberta Energy, Indigenous Peoples, public interest groups, and the public.

Input provided:

- *Alberta Environment to date. Should also target Alberta Energy*
- *I think the Alberta Government have been the main clients. I believe CASA could add First Nations, Industry and public interest groups as potential clients.*
- *The Government of Alberta must be CASA's main client.*
- *In most cases, the province is the major party using CASA products, but other sectors such as industry and municipalities often do as well. NGO stakeholders may not implement CASA products and recommendations in the same way, but value and support them, and may "use" them in other initiatives in which they are involved (e.g. Capital Region Air Quality Framework Oversight Advisory Committee, etc.).*
- *Government has been CASA's main client. The recommendations from CASA project teams have provided important information to the government that has helped with creating effective legislation.*
- *If group is to provide policy advice to government, it should be GOA or Municipal government who then set guidance for industry and others through legislation and regulation.*
- *G of A- public*
- *All the sectors that participate in the project teams are clients although the primary customer is the GOA.*
- *Governments and industry. These should continue to be the groups that can most benefit from CASA's work.*
- *CASA's main clients have been NGO's and the Government of Alberta.*
- *Industry. I would say NGO*
- *Industry has received some benefits as well as viable options have been provided to them to help address air quality problems they may have been contributing to.*
- *Electricity sector*
- *Taking "clients" to mean those who need and use CASA products, the stakeholder sectors represented on the CASA Board are also clients.*

9) What type of outputs or projects could CASA be doing to increase its value?

Respondents recommended that CASA should focus on projects involving greenhouse gases; CAAQS/NOX; dust management; engaging municipal governments; implementation of provincial clean air strategy; studies around gas generation; identifying smaller, numerous contributors to emissions; transportation related emissions; providing interest-based negotiation training.

Types of projects in general that were recommended were those that align with political and government priorities, those that match CASA's resources and strengths (consensus-based, multi-stakeholder); that support airsheds, education and advocacy.

It was also suggested CASA be nimble, timely, provide value, and use a narrow scope in its approach to these works.

Input provided:

- *I think CASA is on track with key projects.*
- *GHGs*
- *See the first bullet under “input provided” for question 3 and the sixth bullet under “input provided” for question 10.*
- *We need to work on the NOX issue. Alberta as a whole will be at levels that will exceed the CAAQS. There are some areas already in the "red zone" and are developing management plans to try and reduce levels. The increase in the transportation sector is a huge contributor to the problem. Hopefully the Rover III project will provide more insight into the levels of emissions from the sector and recommendations that may help to reduce the emission levels in Alberta.*
- *The Rover III project is very useful for Alberta Transportation. Any projects that link our current forms of transportation to air quality is welcomed.*
- *All emissions need to be treated equally and identifying the smaller contributors needs to be a focus to ensure a level playing field for all in Alberta. example trucking that have decentralized emissions but large overall impacts.*
- *More studies around gas generation: its importance and relative low environmental footprint*
- *Identify how to engage municipal governments more in air quality management activities, especially as citizens look to their local government for local solutions. Assess opportunities and challenges for use of citizen science and low-cost air sensors.*
- *I suggest there is room for work on dust management in or near urban areas, i.e. from construction and aggregate operations*
- *Review and make recommendations to modernize the AQ Station Directives to reflect current AQ monitoring technology*
- *CASA's focus should be on outputs or projects that would benefit from CASA's unique consensus approach, would substantially benefit air quality or the policy determining the state of our air quality and that are seen as the highest priority by CASA Board member stakeholders. They must also be products that can be successfully provided by CASA given its strengths and resources.*
- *As much as possible, CASA projects should be those that are seen as a high priority by the provincial government's political leadership, since the province is a both a key user and key CASA funder.*
- *Projects that are highly valued by government and address critical issues as identified by government and other CASA stakeholders.*
- *CASA could be identifying or offering education programs for individuals at the community level (e.g. hosting air education workshops, partnering with health agencies, sharing the ROVER data).*
- *More community engagement to increase air literacy*
- *Increasing shared understanding of the impacts of poor air quality on the environment and human health because the average Albertan does not know why they should be concerned and therefore the decision makers don't have this topic as high a priority as they could.*
- *CASA could be advocating for government actions to take place (i.e. at the municipal and provincial level) for non-point sources (e.g. no community in Alberta would want to be seen as having dirty water or as being a water waster so it is common for communities to offer rebates on rain barrels, to host river clean ups, to report on water consumption. But, why when we go to talk air do municipalities not have the same heightened level of responsibility or offer similar supports? Even if a community is concerned - what are the best practices to protect the air?).*
- *Support to the Airsheds Council, interest-based negotiation training, partnering with the Council on PM literacy.*
- *Focused relevant projects with timely recommendations. Keep a narrow scope to be more effective.*

- *Nimbleness is super important. If it's a bigger project, break it into chunks with deliverables that are produced at regular intervals. Or consider breaking the work into phases.*

10) How will we know if we're successful?

Respondents described success in several ways. Implementation of recommendations and continued support and mandate from the government were common metrics. More empirical measures of success suggested were a reduction in emissions as monitored, and improved health indicators. Some saw increased public interest, increased participation by Indigenous People and stakeholders, and high satisfaction by board members as signs of success. Others suggested having a good reputation and subsequent requests for work to be undertaken as good measures.

Input provided:

- *Implementation by government on recommendations*
- *Recommendations are implemented and GOA continues to fund CASA*
- *High degree of implementation of CASA project recommendations*
- *Improved recommendation development by future project teams may translate into increased successful implementation of identified recommendations down the road. Making unrealistic recommendations for multiple sectors provides little value.*
- *Cross sector support for recommendations and advice*
- *A strong go-forward mandate from the provincial government, with clear asks from the government on air quality management and a clear understanding of how consensus recommendations are to be implemented.*
- *We will continue to be engaged by government to provide a perspective on air management in Alberta.*
- *Monitoring emission levels will help to determine if we are successful. As the population increases, the pressure on the environment will be enhanced. There is a definite need to improve accessibility to public transportation in cities to reduce single vehicle use. This of course will depend on government funding to cities and municipalities.*
- *In some cases, health statistics can serve as a gauge to determine success. Decreased numbers of asthma cases and respiratory problems can indicate some degree of success.*
- *Could be easier to breathe*
- *Another gauge of success could be an increase in public interest in air quality as well as increased interest in the work CASA does. Increased web site visits and CASA inquiries may be an indication of interest in the organization.*
- *When the CASA name is commonly used in key air quality type projects (the 'go-to' organization), including in the media.*
- *Output is delivered on time and budget and provides government and stakeholders with a collaboratively developed solution.*
- *Subsequent high priority projects are directed to CASA by CASA stakeholders*
- *CASA core funding is stable or increases with greater ongoing certainty*
- *Stakeholders step forward to meet specific proposed project funding needs.*
- *To see more representatives at table from First Nations*
- *High satisfaction of Board members in satisfaction surveys*

11) What are the most significant risks facing CASA in considering changes to our political, economic, social and technological environments? What are the significant risks your sector faces?

A change in government leading to a shift in priorities was the most noted risk to CASA, followed by concerns around funding.

Other identified risks included CASA's ability to respond to issues in a timely manner in a rapidly shifting policy environment, a drift from solution-based discussions to positional negotiations (and a loss of value to the GoA), GoA not implementing recommendations, desire for economic growth leading to the downgrading of the environmental side of sustainable development, and a public lack of concern or awareness.

Sector concerns raised were decreased investment stemming from political uncertainty, ENGO sector not being heard by the public or the government, a government that is hostile and does not engage with industry, generational knowledge transfer, additional time and expense to sectors without the CASA multi-stakeholder approach, and overall apathy towards air quality issues.

Input provided:

- *Change of government, and the flip-flop on policies*
- *Shift in government resulting in shift in policy priorities*
- *Policy changes*
- *A change in politics or leadership could end the CASA organization very quickly.*
- *A change in politics is the most significant risk facing my sector. Political uncertainty as far as legislative direct kills investment.*
- *Electoral change and a new government less supportive of environmental action and collaboration with stakeholders.*
- *Upcoming provincial election could result in change to how CASA is perceived and funded. Diminishing government involvement could result in a decreased perception of CASA need and/or value. Complacency is a significant risk.*
- *Without a clear mandate from government, CASA's relevance and resources are at risk.*
- *The most significant risks appear to be funding.*
- *Loss of funding,*
- *Risk to CASA- Continued funding, relevance to government, relevance to stakeholders.*
- *Risk to sector- Government that is hostile and refuses to engage with industry*
- *CASA's most significant threat is government!! Reduced funding has already been initiated and if AEP feels our work is not of value, loss of their support would devastate the organization! In my sector, apathy is a problem. Everyone wants someone else to get involved in dealing with problems, but they don't want to be committed themselves! This may be because life is already so busy that spare time is hard to find. I'm not sure what the problem is.*
- *The challenges for CASA are huge: sustainable funding is solely dependent on government grants. If the government does not support the work CASA does, all it needs to do is cut funding and CASA will be history! This dependency is a problem yet ensured sustainable government funding can also be a strength!*
- *If the multi-stakeholder nature of CASA allows its priorities to drift too far from those of government, its work and recommendations will have no audience, and the hard work undertaken by CASA teams may be irrelevant.*
- *Similarly, if priorities and projects are not thoughtfully scoped and structured in their initial stages, discussions at the CASA table can turn away from nuanced solutions-oriented discussions, toward positional negotiation.*

- *If the GOA no longer supported a provincial level multi-stakeholder forum to provide policy advice. Our sector would face additional time requirements and expense if the CASA multi-stakeholder approach was not supported.*
- *Continued public lack of awareness/concern about air quality and need for air quality action.*
- *Desire for economic growth leading to downgrading of environmental side of sustainable development and lack of support for new controls needed by industry to make increasing stringent CAAQS.*
- *Lack of implementation from G of A*
- *For ENGO sector, risk its voice is not heard by the public or given adequate attention by government.*
- *Need as well for generational transfer.*
- *Policy affecting First Nations*
- *Rapidly evolving given shut down of coal sector over time.*

12) Does CASA have the sectors and members around the table we need to be successful going forward to 2022?

Specific groups that board respondents thought should be included were the commercial trucking sector, Alberta Health, AEP's Environmental Monitoring and Science Division, urban municipalities, more Indigenous and Métis participants, and more from the renewable energy sector. NGO sectors were seen to be heavy on representation.

Input provided:

- *Looking to 2022, we need to consider what other industries should be represented at the table.*
- *Be accountable*
- *Yes, I think CASA has the appropriate sectors represented to be successful.*
- *No, the Board would be better prepared to respond to the complexity of the Albertan legal and policy landscapes if it had representation from Ministries beyond Alberta Environment and Parks (AEP). To enable linkages between the government, the Alberta Airsheds Council and the CASA data warehouse, the CASA board may also consider representation from AEP's Environmental Monitoring & Science Division, given this division's responsibility for province-wide monitoring.*
- *We also need to have committed representation from the Aboriginal and Metis sectors on the Board.*
- *We need increased representation from the Aboriginal and Metis sector.*
- *Two key gaps are urban municipalities and First Nations and Metis, still recognizing we have one very good indigenous Board member. There may be a number of options on the indigenous side, not all involving new Board membership. These are being developed by the Secretariat.*
- *Generally, yes. Alberta Health should probably be at the table as well.*
- *Should consider Commercial Trucking*
- *I believe so but someone from the renewable sector may be of value (one Board member now represents but is that enough?)*
- *CASA is heavy on the NGO representation. Ensuring that all sectors that will be expected to carry forward recommendations identified through CASA processes are at the table would help in creating buy-in.*

13) Considering CASA will be working with a reduced budget compared to previous years, what are the top 3 things our organization should be doing?

Board members identified the following key future activities:

- Be fiscally responsible with the funding we currently have, look for cost saving options (for conducting meetings), and find other funding sources to diversify.
- Develop insight into emerging issues and those needing to be addressed by AEP. Focus on their key projects and priorities.
- Anticipate the implications of a change of government.
- Engage with Indigenous People to determine if they see there is a value for them to be at the table.
- Ensure the board is clear on its roles and responsibilities (board vs project teams).
- Improve project team functionality and manage the size and tenure of project teams.

Input provided:

- *Keep in touch with government on emerging policies*
- *Be very focused on key projects (i.e. ensure these are the key projects for our client)*
- *Be very budget conscious*
- *Find other funding sources (i.e. clients)*
- *We believe the Government of Alberta is best placed to determine what are the top 3 things CASA should be doing.*
- *Fiscal responsibility,*
- *Managing size and tenure of project teams and sub teams,*
- *Providing value to members*
- *We need to have insight into what air quality issues are emerging and being recognized by AEP.*
- *We also need to anticipate the implications of a change in government. A government that does not recognize the value of the multi-stakeholder process will be problematic, especially for NGOs. The "back room deals" that exclude the NGO voice are a concern to my sector.*
- *Recommend, implement and engage*
- *Additional concrete projects of high priority to stakeholders and, to the extent possible, provincial political leadership- where CASA can add unique value.*
- *Administrative support to the Board, Executive Committee and, first and foremost, CASA's projects.*
- *Evaluation and assessment of CASA's success and effectiveness - and taking action to increase both in the context of implementation of the CASA Strategic Plan.*
- *The strategic review is timely; increased focus might be needed; delivering solutions regarding highest priority issues.*
- *Engagement with First Nations. Determine if there is value for First Nations at the table for the First Nations*
- *Focused projects that are relevant to GOA needs, look for cost saving opportunities (how we conduct meetings)*
- *Strong focus on commonly held and important outcomes.*
- *Improve project team functionality,*
- *Invest in solid project managers,*
- *Ensure board is clear on roles and responsibilities both when participating on project teams and in providing governance*

14) Do you have any other comments about the Clean Air Strategic Alliance that will help inform the 2019 to 2022 Strategic Plan?

Respondents commented that more board members need to bring forward Statements of Opportunity. As well, CASA needs to consider the relationship between climate change and air quality and how to lever opportunities, include the smaller point and non-point emitters in emission reduction strategies (possibly through a cross-industry sector system wide approach), and that CASA and airshed associations have a leadership role in improving air quality in Alberta.

Input provided:

- *There should be a focus on total Industry in the Edmonton area, similar to the work done by the Sarnia Lambton community. We may wish to be pro-active to work with NGOs and Government, to avoid the type of issues recently encountered in the Sarnia area.*
- *I value the work CASA does so it is extremely important to my organization as well as to myself that CASA continues to exist!!*
- *CASA is in a good place and well positioned to continue to produce quality work*
- *Someone needs to take the lead and be accountable for air quality in this province*
- *There is a great deal of cross over between the sources (both point and non-point) of poor air quality and GHG emissions leading to climate change. Leveraging this relationship and opportunity may be timely for CASA given both the provincial and federal attention to reduction in GHG emissions.*
- *We need CASA and Airsheds to be strong. Multi-stakeholder organizations seem to be under attack from various interests wanting to expand government ranks and decrease public transparency.*
- *The Electricity sector has been a major focus and the incremental benefits for continued focus in this sector have diminished. A shift towards other emitters needs to be planned out. example: transportation, buildings etc.*
- *There is an entanglement between climate change and air quality, and the approaches in some cases align, but in some cases they don't. As the primary focus is currently on climate change, there needs to be a focus also on air quality.*
- *CASA needs to encourage all board members to bring forward Statements of Opportunities. Right now, only GOA is bringing work forward. When others aren't bringing work forward, it gives the impression that there's nothing that they want to work on/that there's nothing around air that is important to them and/or that they don't find value in bringing items to CASA to work on.*

Business Plan 2018–21

Environment and Parks

Accountability Statement

This business plan was prepared under my direction, taking into consideration the government's policy decisions as of March 7, 2018.

original signed by

Shannon Phillips, Minister

Ministry Overview

The ministry consists of the Department of Environment and Parks, the Climate Change and Emissions Management Fund, Energy Efficiency Alberta, the Land Stewardship Fund, and the Natural Resources Conservation Board. Within the department's budget, funding is provided for the Land Use Secretariat, the Environmental Appeals Board, and the Public Lands Appeal Board. The Climate Change Office functions within the ministry to coordinate implementation of Alberta's Climate Leadership Plan in collaboration with other ministries.

Six delegated administrative organizations, which are accountable to the minister, are the Alberta Conservation Association, Alberta Professional Outfitters Society, Alberta Recycling Management Authority, Alberta Used Oil Management Association, Beverage Container Management Board, and Emissions Reduction Alberta.

Albertans are proud of the province's environment, natural resources, and provincial parks and protected areas system. Alberta's vision is for a healthy and clean province where Albertans are leaders in environmental conservation and protection, enjoy sustainable economic prosperity and a great quality of life. Environment and Parks works to protect and enhance Alberta's environment and ecosystems to ensure a sustainable future, making life better for Albertans. Integration between government departments and agencies, boards and commissions is vital to managing development pressures on the landscape and expectations from Albertans for responsible resource development. The ministry works with Albertans, Indigenous communities and stakeholders to ensure the province's environmental, social and economic outcomes for the future are met. Strategic partnerships such as the Integrated Resource Management System Secretariat, provide collaborative forums to leverage resources, capacity and a shared responsibility for environmental stewardship. The Government of Alberta is committed to implementing the principles of the *United Nations Declaration on the Rights of Indigenous Peoples* consistent with the Canadian Constitution and Alberta law. The ministry engages Albertans to listen and understand the challenges in ensuring Alberta's natural resources are managed using innovative and responsible approaches. To ensure the sustainability of Alberta's air, land, water and biodiversity, all Albertans need to play a strong role.

A more detailed description of Environment and Parks and its programs and initiatives can be found at www.aep.alberta.ca and www.alberta.ca/climate.aspx.

Strategic Context

The outcomes and key strategies identified in this business plan are aligned with and support the Government of Alberta strategic direction. Alberta is famous for its diverse ecologically rich natural regions (Boreal Forests, Canadian Shield, Grasslands, Parklands, Foothills and Rocky Mountains) that offer a range of outdoor recreational opportunities to residents and visitors. Alberta's provincial parks and protected system offers areas ranging from developed recreation areas supporting nature-based outdoor recreational experiences to pristine wilderness areas that

preserve natural landscapes, ecological processes and biological diversity. These areas also provide opportunities for heritage appreciation and tourism. Albertans have told their government to protect the province's environmental health and integrity, as well as the public's health and safety from environmental conditions and events. This includes opportunities to sustainably develop natural resources and adapt and respond to natural disasters. Alberta will diversify its economy and create new jobs without sacrificing its air, land, water, and biodiversity. The province plays a key role in providing strategic science-based knowledge, policies and regulations that guide how activities can sustainably take place. The Government of Alberta is committed to ensuring human activities are balanced with the need to protect biodiversity, sensitive fish and wildlife habitats, watersheds, and drinking water.

Alberta continues to collaborate with its government partners to align implementation of the Climate Leadership Plan with the Pan-Canadian Framework on Clean Growth and Climate Change. Alberta's Climate Leadership Plan has protected Albertans by ensuring solutions are not imposed on the province by the federal government. The Plan is making life better for Albertans by supporting jobs, creating new sustainable industries and reducing emissions to improve Albertans' health and communities' well-being. These measures help reduce risks and costs, prevent damage and allow Alberta to be a leader in innovation, technology and clean jobs.

The Government of Alberta works closely with Indigenous peoples, federal and local governments, neighbouring jurisdictions, industry and Albertans to collectively respond to changing ecological and socio-economic climates. In particular, Indigenous peoples in Alberta have been stewards of the land for countless generations. First Nations and Métis play a vital role in cooperative management, creating employment and economic opportunities for the entire province. Albertans want access to premium outdoor experiences, where natural landscapes are protected and the economy can grow and diversify. Our province is not only one of traditions, achievements, culture and experiences; it is rich in possibilities. By showcasing these possibilities to the world, Alberta creates a positive image of the province around the world and contributes to the social well-being of Albertans.

Environment and Parks works collaboratively to support the Government of Alberta's efforts in advancing gender equality. Gender equality is intrinsically linked to social and economic growth and is vital to realization of human rights for all. The ministry has adopted Gender-based Analysis Plus (GBA+) and established a Centre of Responsibility to assess the gender and diversity implications of engagement processes, policies, programs and initiatives.

Outcomes, Key Strategies and Performance Measures

Outcome One: Environment and ecosystem health and integrity

Albertans care about the health and integrity of their environment and ecosystems, and the ministry is committed to supporting that need. Productive relationships and partnerships are required to achieve clean air, reduced greenhouse gas emissions, quality water, sustainable water supplies, productive and sustainable lands, conserved natural landscapes, protected areas and ecosystem services. The ministry works with partners to conserve landscapes representative of Alberta's natural regions and ecosystems that protect biodiversity and provide habitat for common, vulnerable, and endangered species.

Leadership and direction to achieve the desired outcomes are provided through legislation, policy, regional plans and frameworks supported by engagement, education, outreach, authorizations, monitoring and compliance programs. Examples of ongoing ministry initiatives include: incenting economy wide greenhouse gas emission reductions; undertaking biodiversity and landscape management actions such as identifying and recovering species at risk; and enabling the Land Trust Grant Program and the Land Purchase Program to help address habitat fragmentation, maintain biodiversity and preserve intact landscapes. The ministry provides an environmental stewardship framework based on planning and policy, and then regulates natural resource access, allocation and use. To protect and conserve Alberta's environment and ecosystem health and integrity it is essential for all users to comply with limits, standards and requirements to enable Alberta to meet the environmental, economic, and social needs for present and future generations.

Key Strategies:

- 1.1 Continued coordination of Alberta's Climate Leadership Plan implementation through collaboration between the Climate Change Office and ministries by:
 - phasing out emissions from coal-fired sources of electricity and developing cleaner sources of energy generation;
 - implementing a carbon levy on fuels that emit greenhouse gas and invest in economic diversification, energy efficiency programs and infrastructure that reduce greenhouse gas emissions, for example the Calgary Light Rail Transit Green Line;
 - implementing a legislated oil sands emission limit; and
 - employing a new methane emission reduction plan.
- 1.2 Continue collaborative development and implementation of regional plans under *Alberta's Land-use Framework* including:
 - developing or completing sub-regional air, land, water, biodiversity and recreational use frameworks and management plans that include cumulative effects triggers and thresholds for priority areas; and
 - developing, implementing and revising landscape level species recovery plans and ecosystem plans, including caribou range plans and associated landscape recovery actions.
- 1.3 Enhance the Alberta Parks system by:
 - implementing Alberta's response to "Pathway to Canada Target 1 – Achieving Canada Target 1 in Alberta" to conserve 17 per cent of Alberta's terrestrial area and inland waters;
 - advancing co-operative management of Alberta's Parks with Indigenous peoples; and
 - developing new Alberta Parks capital infrastructure and investing in maintenance and renewal of existing Alberta Parks infrastructure.
- 1.4 Implement higher scientific standards and expanded provincial monitoring efforts to assess and report on Alberta's ambient environmental conditions and trends including:
 - implementing a multi-year strategic science plan;
 - developing and implementing a multiple evidence-based approach to knowledge co-production between Indigenous and scientific knowledge systems; and
 - developing, supporting and growing community based monitoring and citizen science programs.
- 1.5 Implement higher environmental standards for air, land, water and biodiversity by addressing issues through a variety of tools (e.g., policies, regulations, frameworks, strategies, plans, programs, reviews, recommendations).

Performance Measures	Last Actual (Year)	Target 2018-19	Target 2019-20	Target 2020-21
1.a Priced greenhouse gas emissions: • Percentage of priced provincial CO ₂ equivalent emissions ¹	45% (2015)	70%	70%	70%
1.b Protected and conserved areas: • Percentage of recognized protected or conserved areas of Alberta ²	12.5% (2016-17)	16.0%	16.5%	17.0%

Notes:

¹ Targets for this three-year business plan are based on legislation and regulation changes with anticipated pricing coverage increasing from 45 per cent in 2015 to 70 per cent in 2018 and 2019. The expiry of the carbon levy exemption for upstream oil and gas and the full application of the Carbon Competitiveness Incentive Regulation will contribute towards a target of 90 per cent in 2023. The results reported are based on a 2-year reporting lag time, and will be compared to corresponding targets for that year.

- ² This measure includes, as progress towards the achievement of Canada Target 1 of at least 17 per cent by 2020, protected areas that meet the International Union for Conservation of Nature (IUCN) definition, national and provincial conserved areas that align with the IUCN definition of Other Effective Area-Based Conservation Measure (OECM). Although other areas, such as areas under municipal or private management, may meet the definition of a protected area or an OECM, they are currently excluded from this measure as data is not complete. They are estimated to represent less than 0.25 per cent of the 17 per cent target.

Linking Performance Measures to Outcomes:

- 1.a Priced greenhouse gas (GHG) emissions performance measure tracks progress toward pricing a broader range of provincial GHG emissions, extending from carbon pricing based only on emissions intensity limits for large final emitters to an economy-wide price on combustion fuels. Emissions pricing systems are understood to be an effective and efficient means of reducing emissions. Pricing coverage increases the breadth of reductions pursued and will ultimately help achieve reduced GHG emissions in Alberta. Environmental and ecosystem health and integrity is impacted by GHG emissions as they are a major contributor to climate change.
- 1.b Protected and conserved areas contribute to biodiversity and provision of ecosystem services such as water quality and quantity, air purification, and nutrient recycling. Protected areas are recognized as essential mechanisms to improve biodiversity worldwide and are the cornerstone governments must rely on to achieve biodiversity conservation objectives. This performance measure tracks progress toward Environment and Parks, and Alberta, meeting its commitment to Canada Target 1 of the 2020 Biodiversity Goals and Targets. The goal is to achieve at least 17 per cent of Canada's terrestrial area and inland waters in networks of protected areas and Other Effective Area-Based Conservation Measures (OECM).

Performance Indicators	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)
1.a Provincial air quality index: • Percentage of good air quality days in urban areas based on Alberta's ambient air quality objectives for fine particulate matter, ozone, carbon monoxide, nitrogen dioxide and sulphur dioxide ¹	96.7% (2012)	96.4% (2013)	96.6% (2014)	95.0% (2015)	97.0% (2016)
	Good air quality days				
1.b Species at risk: • Percentage of vertebrate species including mammals, birds, amphibians, reptiles and fish designated as 'at risk' ²			3.4% (2005)	3.7% (2010)	4.2% (2015)
1.c Total greenhouse gas emissions: • Total million tonnes of CO ₂ equivalent (greenhouse gas) emitted from source categories ³	246 (2011)	260 (2012)	272 (2013)	276 (2014)	274 (2015)
1.d Municipal solid waste to landfills: • Kilograms of municipal solid waste, per capita, disposed of in landfills ⁴	691 (2012)	911 (2013)	669 (2014)	661 (2015)	565 (2016)
1.e Transboundary waters outflow obligations: • Number of inter-provincial and international transboundary rivers for which Alberta delivers its river water quantity outflow obligations, out of the total number of outflow obligations ⁵	7 out of 7 (2012)	7 out of 7 (2013)	7 out of 7 (2014)	6 out of 7 (2015)	7 out of 7 (2016)
	Transboundary outflow obligations met				

Notes:

- ¹ The Air Quality Index reflects the overall provincial air quality based on ambient air quality objectives of five major pollutants: fine particulate matter, ozone, carbon monoxide, nitrogen dioxide and sulphur dioxide. The Canadian Ambient Air Quality Standards focus on long-term ambient levels of fine particulate matter and ozone resulting from human activity in the province's six air zones and complement the Air Quality Index by guiding air quality management actions.

- 2 Species at risk data are provided by universities, colleges and expert biologists, and are assessed by the provincial government against established criteria. Results are reported once every five years as committed to as a signatory of the Accord for the Protection of Species at Risk in Canada.
- 3 Greenhouse gas emissions have a two year reporting lag period. The following table demonstrates the forecasted impacts of the Climate Leadership Plan, and potential reductions from research and innovation.

Year and Considered Policy/Economic Expectations	Reported Results			Forecasted Results							
	2010	2012	2014	2016	2018	2020	2022	2024	2026	2028	2030
2014 Government of Canada Emissions Trends	241	260	274	277	282	287	297	306	312	315	317
2017 Economic Trends and Federal Climate Policies, 2014 Alberta Policies (No CLP)*	241	260	274	274	285	286	289	296	296	297	293
2017 Policy and Economic Expectations (with CLP)*	241	260	274	273	267	270	264	256	255	255	254
2017 Policy and Economic Expectations (with CLP)* plus Potential Reductions from Innovations	241	260	274	273	267	268	256	243	235	229	222

* Includes Alberta's Climate Leadership Plan and federal climate policies.

- 4 The 2013 actual is not reflective of historical trends due to the Southern Alberta floods.
- 5 Interim data from administrative bodies have been used to populate 2015 and 2016 results.

Outcome Two: Sustainable economic diversification

Albertans wish to generate economic diversification through a green economy that improves human well-being and social equity, while significantly reducing environmental risks and ecological imbalances. This includes growth in income and employment driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource use efficiency, and prevent the loss of biodiversity and ecosystem services. Investing in a diversified and greener economy through utilization of green spaces and diversification of land use will expand rural economies and their sustainability. The Government of Alberta will utilize policy, regulations and economic instruments to enable an economy that promotes investment and development by Albertans in green sectors such as waste, water, renewable energy, ecotourism and outdoor recreation. The provincial agency, Energy Efficiency Alberta, exemplifies this by providing programs and services to help Albertans save money and energy, while lowering Alberta's carbon footprint and developing micro-generation, small scale energy systems and an energy efficiency services industry in Alberta. The development of a green economy promotes the government's desire to sustain and advance economic, environmental and social well-being now and into the future.

Key Strategies:

- 2.1 Through the Climate Change Office and in collaboration with other ministries and Energy Efficiency Alberta implement energy efficiency initiatives.
- 2.2 Support economic investment opportunities focused on environmental conservation and green jobs.
- 2.3 Complete review of public land utilization and fees, and implement accepted recommendations.
- 2.4 Continue to develop and implement opportunities for revenue generation, partnerships and program financial sustainability within the Alberta Parks system.
- 2.5 Participate in collaborative development of a Castle Region Tourism/Economic Development Strategy.

Performance Measure(s) under Development:

Performance measure(s) are under development that reflect progress toward achieving sustainable economic diversification through nature-based tourism and outdoor recreation on public lands and provincial parks and protected areas.

Outcome Three: Social well-being

Albertans love the province and wish to maximize the social benefits and social equity a high quality natural environment provides. To complement the overall mental and physical health benefits derived from a healthy environment and ecosystem, the ministry manages Alberta's Parks system land base, facilities and infrastructure, and access to public lands. Opportunities are provided for Albertans and visitors to explore natural landscapes, engage in nature-based experiences or outdoor recreational activities, and learn about Alberta's natural heritage through the ministry's many educational, interpretative and experiential programs. Additional outdoor recreational activities are provided through management of water reservoirs and fish hatcheries. These interactions enhance social well-being and quality of life while contributing to the provincial green economy through Alberta's recreation and tourism industry. To ensure these opportunities are available to future generations, the ministry works with Albertans including Indigenous populations, to protect and conserve the province's air, land, water and biodiversity.

Key Strategies:

- 3.1 Enhance Alberta Parks system through continuous improvement of park operations and implementation of the Alberta Parks' Inclusion Strategy and Visitor Experience Strategy.
- 3.2 Implement and expand community based monitoring pilots and citizen science programs to enhance public understanding and increase participation.
- 3.3 Enhance public and key stakeholder environmental literacy programs for responsible stewardship and healthy living.
- 3.4 Implement a recreation management strategy for public lands that fosters outdoor recreation planning, management, development and nature-based tourism.

Performance Measures	Last Actual (Year)	Target 2018-19	Target 2019-20	Target 2020-21
3.a Hunting wildlife certificate and Canadian sportfishing licence sales ¹ :				
• Percentage of Albertans who have a hunting wildlife certificate	3.1%	3.1%	3.1%	3.1%
• Percentage of Albertans who have a Canadian sportfishing licence	7.1% (2016)	7.1%	7.1%	7.1%
3.b Alberta Parks visitation				
• Percentage of Albertans who visited an Alberta Parks location in the last 12 months	36.5% (2016-17)	33.0%	33.0%	33.0%
3.c Alberta Parks visitor satisfaction				
• Percentage of Albertans who visited an Alberta Parks location in the last 12 months and are satisfied with the quality of services and facilities	91.2% (2016-17)	95.0%	95.0%	95.0%

Note:

¹ The measure description has been amended to more accurately reflect the calculation.

Linking Performance Measures to Outcomes:

- 3.a Nature-based activities provide social and economic benefits to Albertans and foster communities that are engaged in environmental stewardship and responsible use of nature. The ministry issues hunting and fishing licences which provide opportunities for Albertans to engage in hunting and fishing and to connect with nature while developing an appreciation and respect for the outdoors and wildlife. Licensing also provides revenue for wilderness development and outdoor recreation management and has direct tourism and economic benefits.
- 3.b Albertans and visitors to Alberta's provincial parks and protected areas system have opportunities for enjoyable and safe experiences in nature and a variety of nature-based outdoor recreation activities, which contributes to overall social well-being and resiliency.

- 3.c The park visitor satisfaction performance measure tracks progress toward Albertans' satisfaction with the ministry's delivery of Alberta's provincial parks and protected areas system, infrastructure, and operating facilities. Targets for this performance measure reflect an increased emphasis on Alberta parks facilities and services and an expectation that this emphasis and investment will result in increased levels of visitor satisfaction.

Outcome Four: Protected public health and safety from environmental conditions and events

Scientific evidence indicates the frequency and severity of catastrophic events like floods, fires and drought is expected to increase due to climate change. The ministry helps protect Albertans through delivery of the Climate Leadership Plan and significant investments for flood protection and resilience. The Climate Leadership Plan will significantly reduce air pollution from generation of electricity by phasing out coal-fired emissions and transitioning to cleaner sources of electricity by 2030.

Environment and Parks continues to work with other ministries and agencies to assure the public is prepared for and protected from the adverse effects of environmental conditions and events. This includes regulation of drinking water facilities requiring an approval or registration under the *Environmental Protection and Enhancement Act*; flood hazard mapping, forecasting, recovery and mitigation by water infrastructure operations management; problem wildlife management; flood and drought adaptation funding and enhanced flow monitoring. Collaborative efforts by Albertans including municipalities and First Nations and Métis are key to assure protected public health and safety and to build community resilience to the impacts of catastrophic events.

Key Strategies:

- 4.1 Develop and implement policy, plans and programs to anticipate and minimize impacts of catastrophic events including floods, droughts, invasive species and human-wildlife conflicts.
- 4.2 Complete upgrade of capital infrastructure in the Alberta Parks system and other public lands.
- 4.3 Develop and implement a ministry emergency management plan and continuity plan to enhance preparedness.
- 4.4 Implement a water management strategy for safe and quality drinking water for Albertans and Indigenous communities.
- 4.5 Monitor and report on the changes in environmental conditions with the potential to effect health and safety related to climate change, catastrophic events, and declining air and water quality.

Performance Measure(s) under Development:

Performance measure(s) are under development that reflect progress toward achieving protected public health and safety from environmental conditions and events.

Risks to Achieving Outcomes

Environment and Parks identifies and manages key strategic risks that may influence or impact the ministry's ability to achieve outcomes and implement key strategies. The following represent risks to ongoing work:

- Responding and adapting to future climate scenarios, including extreme events, climate variability, and biodiversity changes, is a risk that affects all ministries. Environment and Parks will work closely with the Alberta Climate Change Office to implement the government's Climate Leadership Plan.
- Demonstrating cohesive and integrated resource management through collaboration with Indigenous peoples, other governments, industry and other stakeholders will be a critical component to ensure shared responsibility in sustainable resource development and management of cumulative effects.
- Albertans expect clear and accurate information on environmental issues. Environment and Parks must ensure communications are timely and consistent to meet this expectation.

STATEMENT OF OPERATIONS

(thousands of dollars)

	Comparable			2018-19 Estimate	2019-20 Target	2020-21 Target
	2016-17 Actual	2017-18 Budget	2017-18 Forecast			
REVENUE						
Internal Government Transfers	1,354	78,181	78,986	126,729	37,065	33,636
Transfers from Government of Canada	1,531	4,966	3,073	29,074	50,192	29,139
Investment Income	3,574	439	4,445	4,507	4,524	5,541
Premiums, Fees and Licences	114,146	119,621	127,578	127,253	127,830	128,424
Climate Change and Emissions Management Fund	160,414	196,000	206,000	537,000	645,000	972,000
Other Revenue	53,451	90,036	88,440	85,281	86,714	83,848
Ministry Total	334,470	489,243	508,522	909,844	951,325	1,252,588
Inter-Ministry Consolidations	(1,378)	(93,154)	(93,959)	(141,547)	(51,883)	(48,454)
Consolidated Total	333,092	396,089	414,563	768,297	899,442	1,204,134
EXPENSE						
Ministry Support Services	59,412	68,604	70,620	65,042	64,547	63,235
Air	23,892	17,276	17,684	18,867	19,063	18,588
Land	54,241	52,088	51,790	58,789	57,677	56,881
Water	73,360	155,261	209,055	108,275	137,329	136,797
Fish and Wildlife	29,006	45,349	45,438	54,821	46,343	45,917
Integrated Planning	35,298	37,499	37,655	36,201	36,344	35,698
Parks	98,855	102,900	108,903	106,634	112,031	120,213
Land Use Secretariat	4,699	10,263	10,269	6,134	6,174	5,987
Science and Monitoring	64,616	75,798	74,080	82,264	83,695	80,519
Climate Leadership Plan	93,151	453,963	353,056	300,156	372,894	497,248
Quasi-Judicial Bodies	15,533	9,324	17,531	9,068	9,103	8,950
2013 Alberta Flooding	94,684	20,050	16,470	13,309	4,475	5,571
Ministry Total	646,747	1,048,375	1,012,551	859,560	949,675	1,075,604
Inter-Ministry Consolidations	(651)	(15,323)	(15,633)	(23,768)	(15,168)	(15,168)
Consolidated Total	646,096	1,033,052	996,918	835,792	934,507	1,060,436
Net Operating Result	(313,004)	(636,963)	(582,355)	(67,495)	(35,065)	143,698
CAPITAL INVESTMENT						
Ministry Support Services	1,871	3,425	4,100	2,725	3,152	2,875
Land	3,260	5,602	5,784	5,602	5,602	5,602
Water	-	73,127	73,127	122,375	32,284	29,132
Fish and Wildlife	9	9,027	5,527	10,057	5,433	3,662
Integrated Planning	7	-	-	-	-	-
Parks	25,970	47,932	48,422	37,932	42,932	42,932
Science and Monitoring	2,089	1,000	3,900	1,000	1,000	1,000
Climate Leadership Plan	-	118,247	13	-	-	-
Quasi-Judicial Bodies	-	17	17	17	17	17
2013 Alberta Flooding	33,873	44,533	13,256	8,378	-	-
Ministry Total	67,079	302,910	154,146	188,086	90,420	85,220
Inter-Ministry Consolidations	-	(76,127)	(76,932)	(124,675)	(35,011)	(31,582)
Consolidated Total	67,079	226,783	77,214	63,411	55,409	53,638

Business Plan 2018–21

Energy

Accountability Statement

This business plan was prepared under my direction, taking into consideration our government's policy decisions as of March 7, 2018.

original signed by

Margaret McCuaig-Boyd, Minister

Ministry Overview

The ministry consists of the Department of Energy, the Alberta Energy Regulator, the Alberta Utilities Commission, the Alberta Petroleum Marketing Commission, the Post-closure Stewardship Fund, and the Balancing Pool. The ministry ensures sustained prosperity in the interests of Albertans through responsible resource development and the stewardship of energy and mineral resource systems.

- The Department of Energy enables responsible energy and mineral resource development that considers the social, economic and environmental outcomes that support Albertans' quality of life and the prosperity of the province. The department oversees Alberta's royalty and tenure systems; collects revenues from energy resource development; leads and coordinates strategic energy related policy discussions; develops strategic and integrated policies and plans for sustainable energy and mineral development; enables markets and Alberta's electricity system, and administers the Post-closure Stewardship Fund.
- The Alberta Energy Regulator is funded through an industry levy and is responsible for oil, natural gas, oil sands and coal development in Alberta. It ensures the safe, efficient, orderly and environmentally responsible development of Alberta's energy resources. This includes allocating and conserving water resources, managing public lands and protecting the environment while securing economic benefits for all Albertans.
- The Alberta Utilities Commission's operations are funded by Alberta rate payers through an administrative fee on Alberta's utilities and the independent system operator, and regulates the utilities sector, natural gas and electricity markets to protect social, economic and environmental interests of Alberta where competitive market forces do not.
- The Alberta Petroleum Marketing Commission is responsible for marketing the Crown's share of crude oil production. The Alberta Petroleum Marketing Commission supports projects that economically benefit the province through improving market access or maximizing the value of Alberta's non-renewable resources.
- The Post-closure Stewardship Fund, financed by carbon capture and storage operators in Alberta, is a liability fund that became active in 2015. Its role is to help provide for the maintenance of carbon capture and storage sites by the Government of Alberta, after carbon capture and storage operations cease and the government assumes liability for any stored carbon dioxide.
- The Balancing Pool supports a fair, efficient and openly competitive electricity market in Alberta by performing the legislated duties and responsibilities set out in its mandate, including managing the risks and maximizing the value of certain generating assets held on behalf of Alberta's electricity consumers.

A more detailed description of Energy and its programs and initiatives can be found at www.energy.alberta.ca.

Strategic Context

The outcomes and key strategies identified in this business plan are aligned with the strategic direction of the Government of Alberta.

Energy is a cornerstone of Alberta's economy and way of life. The mining, quarrying, and oil and gas extraction sector made up 27 per cent of provincial Gross Domestic Product, the value of all goods and services, in 2016. Alberta produced about 80 per cent of Canada's oil and 67 per cent of Canada's gas in 2016, and was the world's eighth largest producer of crude oil, and eighth largest producer of natural gas.

The Government of Alberta is committed to making sure the world knows that Alberta is the most forward-looking, responsible and progressive energy producer in the world. Climate change poses a business risk to natural resource companies. Anticipating this, Alberta's goal is to be seen as the preferred supplier of competitive oil and gas products providing the best products, in the safest manner, with low carbon intensity. The province's made-in-Alberta Climate Leadership Plan has demonstrated Alberta's commitment to being a sustainable energy producer and has helped to improve global perception of Alberta's oil and gas resources. Alberta will be able to continue to proudly supply oil to every corner of the globe because it will be the "best barrel" produced in the world.

The amount of non-renewable resource royalties collected each year depends on the prices that energy companies receive for these products and how much oil and natural gas is produced. As resource prices and production levels change over time, so do the royalties collected by the government. The amount of royalties collected by the Government of Alberta has fallen over the past few years due to declines in world energy prices.

Alberta's oil and gas industry has been negatively affected by falling energy prices brought on by rising North American crude oil and natural gas production, and limited access to new international markets. This has created significant challenges for the sector, particularly around industry investment and employment.

Oil prices significantly declined in late 2014, and remained relatively low throughout 2015 and 2016. West Texas Intermediate, the benchmark for the North American price of oil, decreased by 52 per cent from US\$ 99.05 per barrel in 2013-14 to US\$ 47.93 per barrel in 2016-17.

Natural gas prices also declined because of increasing production in the United States, large storage additions, and weak-to-moderate demand throughout the year. The Alberta Gas Reference Price decreased by 39 per cent from \$3.28 per gigajoule in 2013-14 to \$2.01 per gigajoule in 2016-17. Drilling activity for natural gas decreased because of lower natural gas prices and reduced demand from Alberta's traditional markets, due to higher production in the United States.

The lower oil price environment affected investment in both Alberta and competing jurisdictions. The significant oil price decline in late 2014 did not prevent total mining, quarrying, and oil and gas extraction sector investment in that year from setting an all-time Alberta record at \$61 billion. However, the price decline has impacted the industry since then. In 2015, Alberta experienced a significant decline in investment in this sector, down to \$40.3 billion, or a 34 per cent year-over-year decline. Preliminary actual results point to a further decline in 2016, at \$25.8 billion, an estimated 36 per cent decline from the 2015 level.

Alberta also has an abundance of natural gas liquids such as propane and butane, and heavier hydrocarbons like condensate. Natural gas liquids are driving much of Alberta's oil and gas exploration, as these get higher prices than natural gas. These liquids are used extensively in Alberta's oil sands to dilute thick bitumen to help transport it through pipelines.

Alberta's royalty systems are designed to be sensitive to economic factors so that they encourage continued activity and production when prices are low, and obtain a larger share of revenues when prices are high. Signs are visible that things are improving in Alberta in almost every facet of our economy, including the energy industry. Oil prices have been climbing, although they are not expected to return to the high levels experienced in the past, and activity in the energy industry is increasing once again as companies have adjusted to lower commodity prices. The result is more good jobs and hiring in Alberta.

To become more resilient to the effects of a volatile global energy market, Alberta is taking advantage of opportunities to diversify by creating value in downstream industries. This will enable a broader, stronger and more resilient economy. The Petrochemicals Diversification Program will provide support for new investment in projects that will create jobs and provide long term benefits to Albertans. Implementation of the Energy Diversification Advisory Committee recommendations will lead to increased value for the province from Alberta's resources by encouraging value-added processing in Alberta. A substantial long-term investment in downstream diversification is the commitment to provide bitumen, pay tolls at the Sturgeon Refinery which is planned for startup in 2018, and lend subordinated debt to North West Redwater Partnership pursuant to a number of agreements.

The Alberta government is continuing to pursue and advocate for increased market access for Alberta's energy products. Getting a Canadian pipeline to Canadian tidewater is the best way for our world-class energy producers to sell our oil at world prices on the global market. The federal approval of the Trans Mountain expansion project in the fall of 2016 was a significant step forward in gaining tidal access to new markets in Asia and Alberta's efforts to reduce emissions was a key factor in gaining this approval. The United States presidential permits issued for the Keystone XL pipeline in spring 2017 and Enbridge's Line 67 expansion in fall 2017 were also positive steps forward in supporting investment in the province. Alberta will continue to build on this momentum and strengthen relationships across Canada and around the world to find ways to get Alberta's energy products to new markets.

There has been a recent global shift away from high-emission sources of electricity to cleaner sources of generation. Coupled with this is the need for significant investment in new generation to meet future needs. In 2016, the province made landmark decisions about Alberta's electricity system that would eliminate emissions from coal-generated electricity by 2030 and help transition to a low-carbon economy. Results from the most recent Renewable Electricity Program auction, a program designed to expedite Alberta's transition to a cleaner electricity system, have resulted in about \$1 billion of private-sector investment in green power generation in Alberta. The province is moving towards a capacity market to ensure that Albertans have a reliable supply of electricity at stable, affordable prices. A capacity market pays electricity generators for having the ability to make power reliably and selling energy to the grid.

Alberta operates in a complex and competitive global marketplace with increasing development pressures on the landscape, and growing expectations from Albertans, and the world, for responsible resource development. Industry is also challenged to address these expectations while remaining competitive, and government must work to balance and optimize economic, social and environmental outcomes. Energy is committed to collaborating and engaging through forums such as the Integrated Resource Management System with other ministries and sectors, Indigenous communities, and various stakeholders to support integrated management and stewardship of Alberta's natural resources.

The Government of Alberta has identified equality as a priority and has made public commitments to advance equality specific to gender, age, cultural ethnicity, education, race, ability, language, geography, income, faith, family status and sexual orientation. Achieving equality of outcomes is intrinsically linked to social and economic growth and is vital to the realization of human rights for all. Energy is working collaboratively to operationalize this commitment through the establishment of a Centre of Responsibility and adoption of Gender-based Analysis Plus (GBA+) to assess the gender and diversity implications of engagement processes, policies, programs and initiatives.

Outcomes, Key Strategies and Performance Measures

Outcome One: Albertans benefit economically from responsible energy and mineral development and access to global markets

The ministry develops and manages policies and programs related to the province's royalty system. It accurately calculates and fully collects revenues from energy and mineral royalties, mineral rights leases, bonuses and rent. The ministry explores ways to encourage value-added processing within the province through the diversification of the energy resource value chains. This includes management of its processing and other agreements respecting bitumen processing at the Sturgeon refinery through the Alberta Petroleum Marketing Commission. It continues to seek opportunities to increase access to global markets to strengthen both provincial and national economies. The ministry represents Alberta at intergovernmental tables such as the Canadian Energy Strategy to shape initiatives to ensure they reflect Alberta's interests.

Key Strategies:

- 1.1 Develop policies and initiatives that support the diversification of energy resource value chains and value-added processing in the province.
- 1.2 Improve market access for Alberta's energy resources and products by emphasizing Alberta's commitment to reducing carbon emissions and fostering and strengthening energy-related relationships nationally and globally.

Performance Measures	Last Actual (Year)	Target 2018-19	Target 2019-10	Target 2020-21
1.a Revenues from oil, oil sands, gas, land sales and bonuses are fully collected				
• Percentage of amounts collected compared to owed	100% (2016-17)	100%	100%	100%
1.b Alberta's oil sands supply share of global oil consumption	2.6% (2016)	2.8%	2.9%	3.0%

Linking Performance Measures to Outcomes:

- 1.a It is the responsibility of the department to collect the Crown's share of energy and mineral development revenues on behalf of Albertans. This measure provides assurance that the government is collecting all revenues owed from the development of Alberta's resources.
- 1.b The increasing importance of Alberta oil sands in the global energy mix is a measure of success in being recognized as a responsible world-class energy supplier.

Performance Indicators	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)
1.a Price ¹				
• West Texas Intermediate (US\$/ barrel)	99.05	80.48	45.00	47.93
• Alberta Gas Reference Price (C\$/GJ)	3.28 (2013-14)	3.51 (2014-15)	2.21 (2015-16)	2.01 (2016-17)
1.b Production				
Alberta's crude oil and equivalent annual production ²				
• Volume (thousands of barrels/day)	2,657	2,912	3,097	3,091
• As a percentage of Canadian production	76.4% (2013)	77.6% (2014)	80.0% (2015)	79.8% (2016)
Alberta's total marketable natural gas annual production ³				
• Volume (billion cubic feet/day)	9.69	9.90	10.14	10.17
• As a percentage of Canadian production	69.0% (2013)	67.5% (2014)	67.7% (2015)	66.8% (2016)

Performance Indicators	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)
1.c Investment ⁴				
Upstream: Mining, Quarrying, and Oil and Gas industry investment in Alberta				
• Cdn\$ Billions	55	61	40	26
• Mining, Quarrying, and Oil and Gas investment in Alberta as a percentage of Canadian investment	66% (2013)	67% (2014)	63% (2015)	57% (2016)
Downstream: Petroleum, Coal and Chemical Manufacturing				
• Cdn\$ Billions	1.04	1.15	1.30	1.11
• Alberta as a percentage of Canadian investment	31% (2013)	34% (2014)	36% (2015)	33% (2016)
1.d Employment ⁵				
• Direct employment in Mining, Quarrying and Oil and Gas Extraction (thousands)	171 (2013)	175 (2014)	155 (2015)	136 (2016)
1.e Market Access				
• Total percentage of crude oil leaving Alberta	82%	83%	85%	86%
• Total percentage of natural gas leaving Alberta	67% (2013)	65% (2014)	63% (2015)	62% (2016)

Notes:

- 1 Alberta's oil and gas industry has been negatively affected by falling energy prices brought on by rising North American crude oil and natural gas production, and limited access to new international markets. This has created significant challenges for the sector.
- 2 Data source has been changed for interprovincial comparison of production and includes bitumen production. Oil prices, which the government cannot control, significantly declined in late 2014, and remained relatively low throughout 2015 and 2016. West Texas Intermediate, the benchmark for the North American price of oil, has decreased by 52 per cent from US \$99.05 per barrel in 2013-14 to US\$ 47.93 per barrel in 2016-17.
- 3 Natural gas prices, which the government cannot control, also declined because of increasing production in the United States, large storage additions, and weak-to-moderate demand throughout the year. The Alberta Gas Reference Price decreased by 39 per cent from \$3.28 per gigajoule in 2013-14 to \$2.01 per gigajoule in 2016-17. Drilling activity for natural gas has decreased because of lower natural gas prices and reduced demand from Alberta's traditional markets, due to higher production in the United States.
- 4 The decline in oil prices had a major impact on industry investment. The lower oil price environment affected investment in both Alberta and competing jurisdictions. The significant oil price decline in late 2014 did not prevent the total mining, quarrying, and oil and gas extraction sector investment in that year from setting an all-time Alberta record at \$61 billion. However, the price decline has impacted the industry since then.
- 5 The decline in oil prices had a major impact on industry employment.

Outcome Two: Effective stewardship and regulation of Alberta's energy and mineral resources

The ministry engages with all stakeholders on issues involving responsible resource development of Alberta's energy and mineral resources. A strategic and integrated system approach to responsible resource development in the province strengthens the overall environmental, economic and social outcomes for the benefit of Albertans and demonstrates the province's commitment to addressing climate change. Through the Alberta Energy Regulator, the ministry collaborates with other ministries to regulate Alberta's energy industry to ensure the efficient, safe, orderly and environmentally responsible development and sustainable management of energy resources. Through the Alberta Utilities Commission, the ministry further supports the interests of Albertans by ensuring that the delivery and regulation of Alberta's utility service is fair and responsible.

Key Strategies:

- 2.1 Collaborate with other ministries to establish a balanced and sustainable approach to resource management to manage the combined or cumulative effects of resource development, including regional planning, and promote a positive legacy from non-renewable resource development.

- 2.2 Optimize regulation and oversight to ensure the safe, efficient, effective, credible and environmentally responsible development of Alberta's energy resources.
- 2.3 Enhance regulation and oversight of Alberta's utilities to ensure social, economic and environmental interests of Alberta are protected.
- 2.4 Collaborate with the Alberta Climate Change Office and other ministries to develop and implement regulatory standards as part of Alberta's Climate Leadership Plan to reduce greenhouse gas emissions by:
 - Reducing methane levels for the upstream oil and gas sector by 45 per cent from 2014 levels by 2025; and
 - Limiting emissions from oil sands development.

Performance Measure	Last Actual 2016	Target 2018-19	Target 2019-20	Target 2020-21
2.a Timeliness of the needs and facility applications (Alberta Utilities Commission)				
• Percentage of needs and facility applications determined within 180 days of the application being deemed complete	96.7%	100%	100%	100%

Linking Performance Measures to Outcomes:

- 2.a Trust in the utility regulator is enhanced by efficient regulation and oversight. This measure provides assurance that Alberta Utilities Commission regulatory decisions for approvals, permits or licences in respect of a needs identification document, transmission line or part of a transmission line are made in a timely, fair and transparent manner.

Performance Indicators	Actual 2013-14	Actual 2014-15	Actual 2015-16	Actual 2016-17
2.a Regulatory compliance (Alberta Energy Regulator) ¹				
• Percentage of inspections that are in compliance with regulatory requirements	n/a	99%	99%	99%
2.b Pipeline safety (Alberta Energy Regulator)				
• Number of high-consequence pipeline incidents ²	53	51	31	33

Notes:

- ¹ The result for 2014 is based on the available data since July 2014, when the Alberta Energy Regulator began transitioning to a new compliance assurance framework.
- ² High-consequence pipeline incidents include those that could have significant impacts to the public, wildlife or the environment, or that involve the release of substance that affects a large area or body of water.

Outcome Three: Albertans benefit from a stable, reliable electricity system that protects consumers, attracts investment, and has improved environmental performance

An electricity system that has reasonable prices, eliminates emissions from coal-fired electricity, and creates a positive investment climate is vital to the social and economic foundation of Alberta. A modern electricity system is needed in Alberta to support the transition to a cleaner energy future and meet the needs of a growing province. Energy collaborates with other ministries, agencies, stakeholders, and Indigenous communities to develop and deliver effective electricity system policies and programs.

Key Strategies:

- 3.1 Collaborate with other ministries to implement recommendations and manage regulatory requirements from Alberta's Climate Leadership Plan to transition Alberta's electricity system to a lower carbon system, including:
 - Implementing a plan to phase out coal fired electricity generation by 2030; and
 - Delivering on Alberta's commitment of 30 per cent electricity production from renewables by 2030.

- 3.2 Develop and implement policy to efficiently regulate Alberta's electricity retail system to protect consumers.
- 3.3 Create a reliable electricity system that is affordable for Albertans and attractive to investors by implementing an electricity capacity market.

Performance Measures	Last Actual 2016	Target 2018-19	Target 2019-20	Target 2020-21
3.a Transmission losses ¹	3.4%	3.7%	3.7%	3.7%
3.b Percentage of electricity produced in Alberta from renewable sources (megawatts)	10%	30% of electricity generation from renewables by 2030		

Note:

¹ Methodology for this measure has been changed to provide consistency with Alberta Electric System Operator reporting and for better accuracy of actual transmission losses.

Linking Performance Measures to Outcomes:

- 3.a A reliable and efficient electricity transmission system is important to ensure electricity can be delivered when needed. By measuring transmission losses, the department will demonstrate to generation developers the efficient movement of electricity to market which will, in turn, build industry confidence to develop new generation infrastructure.
- 3.b Through its policy framework, the Government of Alberta will enable the transition of the electricity system towards more renewable generation and a low-carbon electricity system.

Risks to Achieving Outcomes

Climate change poses business risks to natural resource companies. Alberta Energy is working closely with the Alberta Climate Change Office to implement the government's Climate Leadership Plan and support business to adapt to those risks. In the course of achieving its outcomes, the ministry also considers and manages the key risks that may impact its ability to implement its strategies and complete its day-to-day business. The ministry's key risks include:

- The flow of capital investment into Alberta for the development of energy and mineral resources will continue to be affected by geopolitical uncertainty and continued commodity price volatility. Market demand for Alberta's energy products affects this risk. Since the United States is currently the largest market for Alberta's energy products, this demand is also connected to future United States production capacity and the construction of new pipelines delivering products to other markets. The value of the Canadian dollar and the potential impact of changes to the North American Free Trade Agreement may also affect this risk.
- The electricity system transition is a complex multi-year exercise requiring careful analysis and extensive collaboration. Risk drivers, such as the long-term reliability of Alberta's current electricity system and level of infrastructure investment needed for new or replacement generation capacity, transmission and distribution are some of the factors driving the change.
- Decisions on energy resource development require careful consideration of economic, environmental and social outcomes. In maintaining the balance, coordination across ministries and agencies, and collaboration with Indigenous peoples, other governments, industry, environmental nongovernmental organizations and stakeholders will continue to be essential. Policy and political decisions made at the federal level as well as inter-provincial relations may impact this risk.

STATEMENT OF OPERATIONS

(thousands of dollars)	Comparable			2018-19 Estimate	2019-20 Target	2020-21 Target
	2016-17 Actual	2017-18 Budget	2017-18 Forecast			
REVENUE						
Internal Government Transfers	-	-	626	-	-	-
Freehold Mineral Rights Tax	57,059	90,000	73,000	87,000	92,000	100,000
Natural Gas and By-Products Royalty	519,746	455,000	557,000	541,000	590,000	585,000
Crude Oil Royalty	716,329	476,000	883,000	1,053,000	981,000	1,035,000
Bitumen Royalty	1,483,459	2,546,000	2,358,000	1,785,000	2,184,000	2,926,000
Coal Royalty	26,182	12,000	20,000	11,000	10,000	10,000
Bonuses and Sales of Crown Leases	203,276	148,000	577,000	327,000	312,000	343,000
Rentals and Fees	148,170	117,000	139,000	112,000	106,000	101,000
Energy Regulation Industry Levies and Licences	269,222	274,847	259,847	297,841	306,841	300,204
Utility Regulation Industry Levies and Licences	30,628	34,929	34,929	34,724	34,724	35,724
Investment Income	1,240	1,167	1,167	1,167	1,167	1,167
Other Revenue	9,356	4,372	7,267	7,267	7,867	7,267
Net Income Alberta Petroleum Marketing Commission	30,108	69,000	39,300	118,798	66,104	34,940
Net Income Balancing Pool	(1,952,003)	-	770,450	160,931	86,430	86,430
Ministry Total	1,542,772	4,228,315	5,720,586	4,536,728	4,778,133	5,565,732
Inter-Ministry Consolidations	(246)	-	(626)	-	-	-
Consolidated Total	1,542,526	4,228,315	5,719,960	4,536,728	4,778,133	5,565,732
EXPENSE						
Ministry Support Services	6,303	5,696	5,868	5,721	5,720	5,720
Resource Development and Management	72,936	70,898	70,361	71,940	70,789	70,790
Cost of Selling Oil	57,752	85,000	74,000	79,600	85,000	90,000
Energy Diversification	-	-	-	-	10,000	10,000
Climate Leadership Plan	1,118,787	34,884	34,884	106,435	134,670	160,073
Carbon Capture and Storage	30,659	214,984	51,184	273,504	72,614	59,654
Energy Regulation	245,959	251,256	251,256	253,250	253,250	246,613
Orphan Well Abandonment	31,028	30,500	15,500	45,500	60,500	60,500
Utilities Regulation	31,123	36,129	36,129	35,924	35,924	35,924
Post-Closure Expense	-	230	230	-	-	-
Ministry Total	1,594,547	729,577	539,412	871,874	728,467	739,274
Inter-Ministry Consolidations	(777)	-	-	-	-	-
Consolidated Total	1,593,770	729,577	539,412	871,874	728,467	739,274
Net Operating Result	(51,244)	3,498,738	5,180,548	3,664,854	4,049,666	4,826,458
CAPITAL INVESTMENT						
Resource Development and Management	812	899	1,525	899	899	899
Climate Leadership Plan	412	-	-	-	-	-
Energy Regulation	11,697	9,000	9,000	15,000	9,000	9,000
Utilities Regulation	921	1,000	11,500	1,000	1,000	2,000
Ministry Total	13,842	10,899	22,025	16,899	10,899	11,899
Inter-Ministry Consolidations	-	-	(626)	-	-	-
Consolidated Total	13,842	10,899	21,399	16,899	10,899	11,899

Business Plan 2018–21

Health

Accountability Statement

This business plan was prepared under my direction, taking into consideration our government's policy decisions as of March 7, 2018.

original signed by

Sarah Hoffman, Minister

Ministry Overview

The ministry consists of the Department of Health, Alberta Health Services and the Health Quality Council of Alberta.

The Department of Health implements the Government of Alberta's direction for health and is responsible for the overall design, strategic policy direction, legislation and establishment and monitoring of the health system's performance. In this role the department ensures the health system is delivering value in terms of health outcomes, including patient experience, and investment for Albertans. Core functions include: advising the minister and government on health policy, supporting policy implementation, funding the health system, and carrying out a general oversight role.

Alberta Health Services is the provincial health authority responsible for the delivery of a substantial portion of health care services across the province. The Health Quality Council of Alberta is a legislated council responsible for improving health service quality and patient safety.

More details about each organization can be found at www.health.alberta.ca, www.albertahealthservices.ca, and www.hqca.ca

Strategic Context

The outcomes and key strategies identified in this business plan are aligned with the strategic direction of the Government of Alberta.

The Government of Alberta is committed to ensuring our province's health care system delivers high-quality services that support the best possible health outcomes for Albertans. Our vision is to improve Albertans' health and well-being through an integrated health system that is planned and structured around individuals and communities, connecting people to needed care and services. Health facilities and the services they provide remain very important, but a shift to a stronger emphasis of supporting people and communities is also key to achieve and maintain better health outcomes.

The need for change in how we deliver health care is recognized by governments, health providers and service delivery organizations across Canada and around the world. In Alberta, this need for change is being driven by increasing health care costs, population changes, and evidence supporting the effectiveness of person and community centered care. The Government of Alberta recognizes these trends and has directed policy and activity to protect the long-term sustainability and quality of our health system.

While Alberta has one of the youngest overall populations in Canada, seniors (people 65 years of age or older) continue to represent an increasing percentage of our population. Today, seniors make up about 12 per cent of the population and this proportion is expected to increase to almost 17 per cent by 2028. Alberta also remains the province of choice for 16 per cent of immigrants to Canada. Overall, Alberta's population is forecast to grow from 4.3 million to 5.1 million by 2028. Building an increasingly efficient and integrated health system will be crucial to meeting the complex and changing needs of Alberta's changing demographics.

There are populations across the province experiencing inequities in their health outcomes and access to services. Indigenous peoples make up 6.5 per cent of Alberta's population and are among the fastest growing population in the province. Despite recent actions, Indigenous peoples continue to have shorter life expectancies and higher rates of infant mortality, diabetes and suicide compared to non-Indigenous people. To narrow the gap, government will continue to collaborate with Indigenous communities and organizations to design and implement appropriate services that are culturally focused. Government will also continue to use Gender Based Analysis Plus (GBA+) to ensure health-related policies are more responsive to the needs of diverse peoples of all genders.

The government is committed to supporting Albertans in remaining independent and active in their communities as they age. Providing continuing care close to home is a priority. Continued investment in new continuing care spaces and expansion of home care services, such as personal care and other support services, will lead to better patient and family experiences and outcomes.

Opioid use continues to be an urgent public health crisis, requiring an ongoing and coordinated response across multiple levels of government, the health sector and social support organizations. In collaboration with health and community partners, the government continues to lead an aggressive response to the opioid crisis, focusing on prevention, harm reduction, targeted actions and expanded access to treatment.

Diagnostic and laboratory services are a critical component into medical decisions. The creation of a new publicly funded and operated laboratory hub, and consolidating laboratory services under Alberta Health Services, will improve the efficiency and quality of Alberta's laboratory system, and lead to greater integration, capacity and efficiency of diagnostic services.

Mental health issues affect 20 per cent of Albertans and it is estimated that over 10 per cent of the population will require addiction treatment at some point in their lives. The government is working closely with health and community partners to improve how programs and services are coordinated within the health sector and connected with social services such as housing and employment supports.

Overall, Alberta's health system will increasingly focus on providing enhanced health services to people in their communities and on promoting the health and well-being of populations most in need. Alberta's primary health care providers are already leading the way in community-based care, working in collaborative team-based settings that include physicians, nurses, psychologists, pharmacists, dietitians, counsellors, rehabilitation therapists, and social workers, among others. Continued improvements to community-based health care will further strengthen Albertans' connections to health care services and health providers, giving them more access to comprehensive and integrated care.

To ensure access to physician services is appropriately balanced and targeted to needs across the province, the government continues to work with physicians to plan and align physician capacity to the diverse needs of Albertans. New compensation models for physicians will support better integration between family physicians and specialists, allowing physicians to spend more time with patients which, in turn, will improve Albertan's health outcomes.

Strategic capital investments in health infrastructure are needed to support the delivery of publicly funded health programs and services. The government continues to build high-quality health facilities such as the Edmonton Clinical Laboratory Hub and the Calgary Cancer Centre, and maintain other facilities to meet Albertans' needs and support integration across the health system. Further, advances in health information technology are pivotal to building the future of integrated health care in Alberta. The development of a single Alberta Health Services clinical information system and enhancements to existing systems, including the provincial electronic health record, will continue to contribute to a single integrated health record for every Albertan, providing more timely and accurate patient

information. In addition, the personal health record will provide Albertans with a secure place to record their health information, as well as access to other information related to their treatment such as prescription drugs, laboratory and other diagnostic test results. Together, these systems will support team-based, integrated care with a focus on the patient, while empowering Albertans with the information they need to become partners in managing their own health.

Alberta has a strong foundation on which to enhance its health care system, where individuals, government, communities and organizations work collaboratively. The inter-related components of the key initiatives underway will directly support a sustainable, high-quality, and integrated health system so Albertans receive the right care, in the right place, at the right time.

Outcomes, Key Strategies and Performance Measures

Outcome One: Improved health outcomes for all Albertans

Albertans' health and well-being is improved through an integrated health care system that is person-centered and structured around individuals, families, and communities. Services will be seamless across the continuum of care and support individuals throughout their lives, ensuring every Albertan has access to appropriate services that are close to home.

Key Strategies:

- 1.1 Expand home care services to increase access to health services, reduce reliance on acute care facilities, and enable Albertans to stay at home longer.
- 1.2 Develop a targeted approach for new continuing care spaces and upgrading or replacing existing sites, focusing on complex populations and communities in greatest need.
- 1.3 Enhance care for persons with dementia so they receive timely diagnosis and support in their communities with accessible, integrated and high-quality care and services.
- 1.4 Implement the Valuing Mental Health: Next Steps to move toward a more coordinated and integrated addiction and mental health system.
- 1.5 Implement a system-wide response to chronic conditions and disease prevention and management by aligning and integrating work across the province.

Performance Measures	Last Actual 2016-17	Target 2018-19	Target 2019-20	Target 2020-21
1.a Percentage of clients placed in continuing care within 30 days of being assessed ¹	56%	58%	61%	64%
1.b Percentage of mental health patients with unplanned readmissions within 30 days of leaving hospital	8.7%	8.6%	8.6%	8.5%

Note:

¹ Facility-based (i.e. Designated Supportive Living Level 3 or 4, 4-Dementia, or Long-term Care).

Linking Performance Measures to Outcomes:

- 1.a Access to a continuing care option that best meets the client's needs and preferences, as soon as possible after being assessed, supports their health and well-being.
- 1.b A relapse or complication after an in-patient stay could compromise health outcomes.

Performance Indicators	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Actual 2016
1.a Emergency visits due to substance use (per 100,000 population): ¹					
• Alcohol	876	922	937	940	944
• Opioids	89	99	107	139	171

Performance Indicators	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Actual 2016
1.b Prevalence of cigarette smoking among Albertans (per cent): ²					
• Aged 12–24 years	16.4%	19.5%	14.7%	9.8%	13.0%
• Aged 25 years and older	22.8%	20.7%	19.8%	20.4%	19.1%
1.c Ambulatory care sensitive conditions: ³					
• Hospitalization rate (per 100,000) for patients under 75 years of age with conditions that could be prevented/reduced if they received appropriate care in an ambulatory setting (i.e. out-patient care)	369	367	365	349	346

Notes:

- ¹ Includes primary diagnostic code as well as the diagnostic codes of other contributing factors when a patient presents to an emergency department or urgent care centre, resulting in a higher number of incidents.
- ² Percentage of respondents to the Canadian Community Health Survey who self-identified as daily or occasional cigarette smokers.
- ³ Includes any most appropriate diagnosis code of grand mal status and other epileptic convulsions, chronic obstructive pulmonary diseases, acute lower respiratory infection, asthma, diabetes, heart failure and pulmonary edema, hypertension, and angina.

Outcome Two: The well-being of Albertans is supported through population health initiatives

Healthy populations and communities are shaped through a range of social, economic, and physical environmental factors, also known as the determinants of health. The ministry will continue to work with its partners to address health inequities among and within vulnerable populations and to encourage Albertans to stay healthy supported by policies, programs and initiatives focused on prevention of injury and disease.

Key Strategies:

- 2.1 Engage with community partners on wellness initiatives to enhance and support equitable approaches that enable Albertans to be active partners in the prevention and management of chronic disease.
- 2.2 Engage with Indigenous communities and other organizations in the design and delivery of culturally appropriate health care services that address inequities in access and support improved health outcomes.
- 2.3 Lead an urgent response to reduce harms associated with opioid use and oversee the implementation of priority activities to address overdoses and deaths related to fentanyl and other opioids.
- 2.4 Improve maternal, infant and child health by supporting initiatives that foster maternal-infant health and early childhood development.
- 2.5 Develop and implement evidence-based environmental public health policies and practices by addressing a range of public health protection issues in the natural and built environment.
- 2.6 Safeguard Albertans from communicable disease through increased immunization and initiatives aimed at decreasing sexually transmitted infections.

Performance Measure	Last Actual 2016-17	Target 2018-19	Target 2019-20	Target 2020-21
2.a Percentage of Albertans who have received the recommended annual influenza immunization: ^{1,2}				
• Seniors aged 65 or older	62%	64%	66%	68%
• Residents of long-term care facilities	89%	91%	93%	95%

Notes:

- ¹ National targets are set at a level required to prevent disease outbreaks and protect vulnerable populations. The ministry is committed to the goal of reaching the national targets for influenza immunization of 80 per cent for seniors aged 65 or older and 95 per cent for residents of long-term care facilities.
- ² National targets for influenza immunization are no longer being set for children aged 6 to 23 months; the ministry is working to set new Alberta-based targets.

Linking Performance Measures to Outcomes:

2.a This population health initiative is intended to decrease the risk of influenza outbreaks, illness and death, particularly among seniors and other vulnerable populations.

Performance Indicators	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Actual 2016
2.a Childhood immunization rates (by age two): ¹					
• Diphtheria, tetanus, pertussis, polio, Hib	75%	75%	76%	76%	77%
• Measles, mumps, rubella	86%	86%	88%	87%	88%
2.b Life expectancy at birth (years):					
• First Nations	72.1	72.4	71.5	70.3	71.4
• Non-First Nations	82.0	82.1	82.2	82.3	82.3
2.c Infant mortality rate (per 1,000 live births):					
• First Nations	8.8	9.6	9.6	7.8	6.9
• Non-First Nations	3.8	4.1	4.3	4.2	3.7

Note:

¹ The national targets for childhood immunization rates were revised to 95 per cent in 2017 for both vaccines. The ministry remains committed to these targets which are aimed at protecting children and adults from a number of vaccine preventable diseases.

Outcome Three: **Albertans receive care from highly skilled health care providers and teams, working to their full scope of practice**

Health care providers are vital to delivering high quality and safe care. This includes physicians, nurses, pharmacists, paramedics, psychologists, dietitians, dentists, counsellors, rehabilitation therapists, chiropractors, massage therapists, and social workers, among others. The right number, mix, and distribution of providers must align with health needs across the province.

Key Strategies:

- 3.1 Enhance the delivery of primary health care services through patient attachment to providers and health care teams, increased integration of services, timely access, and improved quality and safety.
- 3.2 Develop sustainable physician resource plans and compensation models which enable the provision of high quality care and support collaborative practice within an interdisciplinary team-based environment.
- 3.3 Improve access to health care providers across the province and develop sustainable strategies that ensure the appropriate education, scope of practice, supply, mix and distribution of health care providers.
- 3.4 Enhance accountability and promote practice excellence among regulated health care providers.
- 3.5 Improve the effectiveness and efficiency of Alberta's emergency medical services system, and support the expanded role of paramedics in the delivery of patient care.

Performance Measure	Last Actual 2016-17	Target 2018-19	Target 2019-20	Target 2020-21
3.a Access to primary care:				
• Percentage of Albertans enrolled in a Primary Care Network (PCN) ¹	80%	80%	81%	82%

Note:

¹ Albertans are considered to be enrolled in a PCN when they are assigned to a physician, nurse practitioner, or pediatrician that is registered to a PCN, based on the provider most involved in the individual's care over the previous three year period.

Linking Performance Measures to Outcomes:

3.a PCNs are comprised of groups of family physicians working with other health care professionals such as nurses, nurse practitioners, dietitians, pharmacists, social workers and mental health professionals to provide comprehensive patient care.

Performance Indicator	Actual 2012-13	Actual 2013-14	Actual 2014-15	Actual 2015-16	Actual 2016-17
3.a Emergency department wait times:					
• Median earliest patient time (minutes) to see an emergency doctor (17 ¹ busiest sites; patient level of urgency):					
▪ CTAS ² 1	9	12	13	12	11
▪ CTAS 2	51	55	61	56	56
▪ CTAS 3, 4 and 5	86	84	90	84	84

Notes:

- 1 Chinook Regional Hospital, Medicine Hat Regional Hospital, Alberta Children's Hospital, Foothills Medical Centre, Peter Lougheed Centre, Rockyview General Hospital, South Health Campus, Red Deer Regional Hospital Centre, Grey Nuns Community Hospital, Misericordia Community Hospital, Northeast Community Health Centre, Royal Alexandra Hospital, Stollery Childrens Hospital, Sturgeon Community Hospital, University of Alberta Hospital, Northern Lights Regional Health Centre, Queen Elizabeth II Hospital.
- 2 Canadian Triage and Acuity Scale. CTAS 1: Resuscitation; CTAS 2: Emergent; CTAS 3: Urgent; CTAS 4: Less Urgent; CTAS 5: Non-Urgent.

Outcome Four: A high quality, stable, accountable and sustainable health system

The design of Alberta's health system is based on access to safe, consistent, and readily available health care services where all health care stakeholders are accountable for health outcomes. Barriers to accessing care are reduced through innovative and evidence-informed best practices. Balancing physical and technological infrastructure to enable high-quality, integrated care with alternative solutions focused on efficiency and cost effectiveness are necessary to ensure health system sustainability and reduce the ever-growing costs of care.

Key Strategies:

- 4.1 Slow the rate of growth in health spending through increased efficiencies, while continuing to enhance the delivery of appropriate and high quality health care services and ensuring appropriate and reasonable access to pharmaceuticals and supplemental health benefits for Albertans.
- 4.2 Repair aging health infrastructure and build new health care facilities, where appropriate, to ensure such infrastructure meets current and future health care needs.
- 4.3 Enhance data sharing, research, innovation, health technology assessment and knowledge translation to support evidence-informed policy, planning and practice.
- 4.4 Set health system expectations through a focus on appropriate access, patient safety, effectiveness, and patient experience, to reduce variations in clinical practice and health outcomes.
- 4.5 Enhance a patient-centred, integrated health record to support decision-making by health providers and enable Albertans to take an active approach in managing their health by providing them with secure access to their own health information.
- 4.6 Develop an integrated plan for provincial laboratory services that will establish a centralized, single system for medical testing to meet growing demand.

Performance Measures	Last Actual 2016-17	Target 2018-19	Target 2019-20	Target 2020-21
4.a Financial sustainability:				
• Annual rate of growth of Ministry of Health operational expenditures ¹	3.1%	3%	3%	3%
4.b Number of health care professionals with access to Alberta Netcare, Alberta's provincial electronic health record	42,090	46,234	49,008	51,948

Note:

¹ Consolidated Ministry of Health Statement of Operations, excludes Infrastructure Support. The historical average annual growth rate was 4.2 per cent from 2012-13 to 2016-17; the actual for 2016-17 and targets for 2018-19 to 2020-21 reflect implementation of a strategy to lower the annual rate of growth of operational expenditures.

Linking Performance Measures to Outcomes:

4.a Slowing the rate of growth of ministry operational expenditures contributes to health system sustainability.

4.b The broader adoption and utilization of Alberta Netcare enables enhanced quality of care by providing better access to patient information at point of care.

Performance Indicator	Actual 2013	Actual 2014	Actual 2015	Actual 2016	Actual 2017
4.a Per capita provincial government health expenditures (actual dollars) ¹	\$4,631	\$4,676	\$4,804	\$4,897 ²	\$5,012 ²

Notes:

¹ Includes spending by the Ministry of Health and health-related spending by other government departments and agencies, as compiled by the Canadian Institute of Health Information.

² Results for 2016 and 2017 are forecast rather than actual as there is a two-year lag in available results.

Risks to Achieving Outcomes

Alberta Health has identified the following strategic risks that could impact the ability to achieve outcomes:

Financial Sustainability – Economic pressures continue to impact government revenues. Further, continued population growth with growing demand for health care services, coupled with the high costs of delivering those services, are causing financial constraints on the publicly funded health system. This may slow the ministry's investment in health system improvement priorities and negatively impact both the achievement of ministry outcomes and progress towards financial sustainability.

Shared Stewardship and Accountability – Successful transition to community-based health care requires shared stewardship of resources and accountability for change among health system leaders and stakeholders. The ministry, professional colleges and associations, unions, and community partners need to effectively work together to coordinate, align and prioritize actions around a long-term vision. Inability to develop a cohesive and synchronized approach to system-wide planning and change will hinder innovation and improvements in quality, integration, value for investment, and governance.

Integration across the Continuum of Care – Shifting to a more person-centred, and sustainable health system, while maintaining quality and safety, is dependent on the integration of efforts within the ministry and with health professions, post-secondary institutions, stakeholder organizations, and Albertans. Failure in overcoming barriers to adopting a new team-based, holistic approach to healthcare will hinder establishing the right mix of health workers, particularly in areas of high-need and for underserved populations.

Information and Technology – Stable, secure information management and information technology systems, as well as comprehensive data analysis, is crucial to optimizing services, patient care, and health outcomes for all Albertans. While the ministry develops and evolves its information systems, including a clinical information system, electronic health records, and a personal health portal, any possible barriers to data sharing could limit engagement and access to health information as well as integration of health care.

Public Expectations and Lifestyle – A healthy society is one that has health woven throughout its institutions and culture. All of government has a role to play in addressing the social determinants of health. A person's lifestyle choices may also negatively impact their health outcomes. Influencing people's behaviours and lifestyle through public health initiatives aimed at keeping them healthy will help shift demand away from high cost acute care services.

STATEMENT OF OPERATIONS

(thousands of dollars)

	Comparable			2018-19 Estimate	2019-20 Target	2020-21 Target
	2016-17 Actual	2017-18 Budget	2017-18 Forecast			
REVENUE						
Internal Government Transfers	423,541	418,000	427,000	417,000	437,000	453,000
Transfer from Alberta Cancer Prevention Legacy Fund	22,175	25,000	12,878	25,000	25,000	25,000
Canada Health Transfer	4,200,830	4,360,247	4,324,618	4,520,887	4,745,834	4,956,878
Transfers from Government of Canada	7,085	8,000	8,000	10,000	10,000	10,000
Other Health Transfers	1,427	36,200	36,360	102,400	132,400	150,400
Investment Income	65,557	68,006	76,006	68,006	68,006	68,006
Supplementary Health Benefit Premiums	45,533	48,000	45,000	46,000	45,000	45,000
Other Premiums, Fees and Licences	479,181	475,002	475,003	488,001	488,001	488,001
Refunds of Expense	164,458	164,040	171,255	169,105	169,105	170,105
Other Revenue	488,368	415,421	437,194	407,278	404,607	404,395
Ministry Total	5,898,155	6,017,916	6,013,314	6,253,677	6,524,953	6,770,785
Inter-Ministry Consolidations	(484,356)	(475,800)	(472,678)	(472,800)	(490,800)	(506,800)
Consolidated Total	5,413,799	5,542,116	5,540,636	5,780,877	6,034,153	6,263,985
EXPENSE						
Ministry Support Services	62,236	80,305	67,305	77,304	77,275	77,273
Physician Compensation and Development	5,081,857	5,197,241	5,250,366	5,296,164	5,394,240	5,505,858
Drugs and Supplemental Health Benefits	1,998,862	2,143,354	2,155,354	2,273,974	2,388,504	2,500,745
Population and Public Health	560,010	681,891	650,022	668,480	682,918	713,534
Acute Care	4,094,255	4,038,398	4,145,698	4,116,877	4,254,460	4,361,683
Continuing Care	1,031,436	1,071,620	1,046,620	1,107,000	1,133,000	1,155,000
Ambulance Services	494,648	478,000	495,000	524,000	546,000	576,000
Community Care	1,238,845	1,389,000	1,335,750	1,482,000	1,543,000	1,593,000
Home Care	582,335	646,000	631,250	691,000	740,000	830,000
Diagnostic, Therapeutic and Other Patient Services	2,400,166	2,390,664	2,420,664	2,458,648	2,541,231	2,624,105
Administration	512,099	551,062	534,862	559,504	563,535	567,535
Support Services	2,110,071	2,118,000	2,175,000	2,190,000	2,267,000	2,318,000
Information Technology	577,946	599,580	588,580	579,345	577,390	573,390
Research and Education	98,629	162,000	106,000	154,000	154,000	154,000
Debt Servicing	16,871	15,000	15,000	16,000	15,000	14,000
Infrastructure Support	59,268	122,325	49,225	48,990	47,455	51,223
Cancer Research and Prevention Investment	8,270	12,100	1,100	12,800	12,900	16,000
Ministry Total	20,927,804	21,696,540	21,667,796	22,256,086	22,937,908	23,631,346
Inter-Ministry Consolidations	(254,721)	(232,192)	(229,414)	(183,360)	(183,605)	(182,277)
Consolidated Total	20,673,083	21,464,348	21,438,382	22,072,726	22,754,303	23,449,069
Net Operating Result	(15,259,284)	(15,922,232)	(15,897,746)	(16,291,849)	(16,720,150)	(17,185,084)
CAPITAL INVESTMENT						
Health Facilities and Equipment	596,860	1,003,252	930,492	1,277,659	1,327,110	1,477,400
2013 Alberta Flooding	238	-	1,968	876	-	-
Ministry Support Services	10	-	-	-	-	-
Population and Public Health	45	-	-	-	-	-
Information Technology	12,629	22,230	15,230	22,230	22,230	22,230
Ministry Total	609,782	1,025,482	947,690	1,300,765	1,349,340	1,499,630
Consolidated Total	609,782	1,025,482	947,690	1,300,765	1,349,340	1,499,630

Business Plan 2018–21

Agriculture and Forestry

Accountability Statement

This business plan was prepared under my direction, taking into consideration our government's policy decisions as of March 7, 2018.

original signed by

Oneil Carlier, Minister

Ministry Overview

The ministry consists of the Department of Agriculture and Forestry, the Agriculture Financial Services Corporation and the Environmental Protection and Enhancement Fund. The ministry is also responsible for the Office of the Farmers' Advocate, Irrigation Council, and the Alberta Agricultural Products Marketing Council for which funding is included in the department's budget. The Forest Resource Improvement Association of Alberta and Livestock Identification Services Ltd. are delegated administrative organizations operating outside of government and are accountable to the minister.

The ministry is responsible for the policies, legislation, programs and services to support the growth, diversification and sustainability of Alberta's agriculture and forest industries; and works collaboratively with other Government of Alberta ministries to enable resilient rural communities. The agriculture and agri-food sector is composed of all industries whose primary role is to produce food and agricultural products. It encompasses raising livestock and growing crops (e.g., primary production) as well as the refining of raw commodities to increase their value (e.g., agri-food). Agriculture and Forestry inspires public confidence in wildfire and forest management, quality and safety of food, and environmentally sustainable resource management practices through its programs and services.

A detailed description of Agriculture and Forestry and its programs and initiatives can be found at www.agriculture.alberta.ca.

Strategic Context

The outcomes and key strategies identified in this business plan are aligned with the strategic direction of the Government of Alberta.

Agriculture and forestry are, respectively, the second- and third-largest resource-based industries in Alberta. In 2016, agriculture covered a total farm area of 20.3 million hectares, while Alberta's forests covered 38 million hectares, of which an estimated 22.5 million hectares are available for timber harvest.

Market access, commodity market swings, agronomic conditions, rising production costs and supply chain logistics are some of the key issues impacting the agriculture industry. Variable weather conditions across the province in 2017 impacted crop production and grain prices. In 2016, the discovery of six cases of bovine tuberculosis in Alberta has had some market disruption effects. However, the province worked with the Government of Canada in providing assistance to affected producers, and the beef sector continues to be vibrant, with Alberta being the largest beef producer in Canada.

Key issues facing the forest industry include market access, commodity market swings and secure access to fibre. The November 2017 imposition of the final countervailing and anti-dumping duties by the United States on Canadian softwood lumber has created uncertain market access. Additionally, wildfires and the mountain pine beetle continue to threaten communities, forest health and long-term wood fibre access.

Despite challenges, Alberta producers and exporters continue to do well overall. In 2016, more than 90,000 Albertans were employed in the two industries. The revenues from primary production of Alberta farm businesses, or farm cash receipts, totalled \$13.5 billion in 2016, while total food and beverage manufacturing sales reached a record \$14.5 billion and was the highest among all manufacturing industries in the province. Alberta's agriculture and forest exports remain strong, reaching a combined total of \$13 billion in 2016. Both industries are also well positioned to capitalize on the Government of Canada's efforts to secure favourable trade access to other key markets. Overall, for the agriculture industry, adapting to changing demographics of both consumers and producers, monitoring consumer demand trends, safe food and assurance systems, and market access are critical to ensuring this continued success. For the forest industry, success depends on secure access to fibre, aggressive wildfire and mountain pine beetle management, and predictable and fair access to the United States market.

As consumer demand evolves and as forest and wildfire management become more complex, expectations increase for open, transparent management of land and natural resources by the province. Agriculture and Forestry is committed to collaborating and engaging across multiple sectors, government departments, and user groups to support integrated management of Alberta's natural resources (e.g., Integrated Resource Management System). The department will also continue to engage with Indigenous peoples on the stewardship of traditional lands based on the principles and objectives of the United Nations Declaration on Rights of Indigenous Peoples.

Industry is also challenged to address societal expectations while remaining competitive, and government must balance economic, social and environmental outcomes. Canada's international commitment to reducing greenhouse gas emissions and improving adaptability to climate change creates opportunities for the agriculture and forest industries to capitalize on competitive advantages in global markets, supported by the Climate Leadership Plan and the ministry's unique scientific and research capabilities, and the role Alberta's vast forests play in helping manage carbon.

Agriculture and Forestry also works collaboratively to support the Government of Alberta's efforts in advancing gender equality. Gender equality is intrinsically linked to social and economic growth and is vital to the realization of human rights for all. The ministry has operationalized this commitment through the adoption of Gender-based Analysis Plus (GBA+) and establishment of a Centre of Responsibility to assess the gender and diversity implications of engagement processes, policies, programs and initiatives.

Outcomes, Key Strategies and Performance Measures

Outcome One: Alberta's agriculture and forest industries are innovative, diversified and competitive

Alberta's agriculture and forest industries are important contributors to the province's economy. Alberta maintains its excellence by working with partners to improve domestic and international market access. Similarly, actively promoting the province as an attractive option for investment and supporting access to capital contributes to a robust and competitive business environment.

Value-added production and commercialization ensure that Alberta has a variety of high-quality products and services to meet domestic and global consumer demand. Maintaining a strong science and technology base, as well as adopting innovative processes and technologies, drives productivity, growth and economic diversification.

Key Strategies:

- 1.1 Provide focused trade services for Alberta's agricultural and forest product companies to secure current markets and access new growth markets.
- 1.2 Increase Alberta's capacity to grow the agriculture and forest industries by:
 - Attracting investment to Alberta's value-added processing sector;
 - Expanding food processing capacity at the Agrivalve Processing Business Incubator to accelerate the scaling up of food product development and the establishment of new business ventures; and,
 - Developing a forest products sector strategy including an Alberta Wood Charter initiative to grow and diversify the industry.
- 1.3 Develop and implement programs under the Canadian Agricultural Partnership to drive sustainable growth, innovation and competitiveness in the agriculture industry.
- 1.4 Develop and implement a Science and Innovation Framework that supports ministry research priorities.

Performance Measures	Last Actual (2016-17)	Target 2018-19	Target 2019-20	Target 2020-21
1.a Number of value-added agriculture products developed and successfully introduced into the market with assistance from Agriculture and Forestry ¹	315	245	255	265
1.b Agriculture research and development investment by collaborators leveraged through ministry resources (\$ millions)	6.3	6.5	6.7	6.9

Note:

- ¹ The target for 2018-19 is lower than the last actual due to significant product commercialization activities in 2016-17 that are not expected to be repeated.

Linking Performance Measures to Outcomes:

- 1.a Tracks progress of product development and commercialization activities of companies that are adding value to agricultural products, servicing niche markets and advancing economic diversification.
- 1.b Tracks funds leveraged to develop technologies and knowledge applied to agricultural problems and opportunities. Collaboration with industry is important for targeting investment efficiently and effectively.

Performance Indicators	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)
1.a Alberta's agri-food exports by market (\$ millions):					
• United States	2,967 32%	3,050 35%	3,945 40%	3,998 39%	4,046 40%
• Rest of the World	6,243 68% (2012)	5,662 65% (2013)	5,809 60% (2014)	6,183 61% (2015)	5,946 60% (2016)
1.b Alberta's agri-food exports by sector (\$ millions):					
• Primary commodities	5,529 60%	5,061 58%	5,476 56%	5,380 53%	4,956 50%
• Processed / manufactured products	3,681 40% (2012)	3,651 42% (2013)	4,278 44% (2014)	4,802 47% (2015)	5,036 50% (2016)

Performance Indicators	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)	Actual (Year)
1.c Alberta's market cash receipts ¹ (\$ millions); and the share of Canadian market cash receipts	11,174 22% (2012)	11,148 21% (2013)	12,345 22% (2014)	12,940 22% (2015)	12,802 22% (2016)
1.d Alberta's food and beverage manufacturing sales (\$ millions); and the share of Canadian food and beverage manufacturing sales	12,600 13% (2012)	11,971 12% (2013)	12,265 12% (2014)	13,330 13% (2015)	14,538 13% (2016)
1.e Timber royalties and fees from harvested timber (\$ millions)	46.2 (2012-13)	61.2 (2013-14)	57.4 (2014-15)	51.3 (2015-16)	69.9 (2016-17)
1.f Sales of Alberta's forest products (\$ millions)	5,440 (2012)	6,080 (2013)	6,190 (2014)	6,115 (2015)	6,205 (2016)

Note:

¹ Market receipts refers to cash income from the sale of agricultural commodities (crops and livestock), but excludes direct program payments to producers.

Outcome Two: Alberta's agriculture and forest assurance systems are effective

The ministry is committed to ensuring Albertans have safe food and sustainably-produced forest products. Through traceability, surveillance and inspection, Alberta's robust food safety system enhances the province's reputation as a supplier of quality and safe food products. Albertans also want assurance that all forest management plans and timber harvest activities are compliant with all provincial legislation and that forest ecosystems, communities and infrastructure are protected from the negative impacts of wildfires. Evidence-based policies, education, sharing of scientific and technological information, compliance activities and enforcement build trust and create reliable, cost-effective assurance systems. These systems protect human health, animal health and welfare, as well as Alberta's crops and forests.

Key Strategies:

- 2.1 Implement refinements and enhancements to the wildfire management program to reduce the risk of wildfires to communities and to promote healthy ecosystems.
- 2.2 Develop and implement effective animal health policies and programs to reduce the risks associated with antimicrobial resistance in Alberta.
- 2.3 Enhance risk- and science-based inspection and surveillance systems and policies.
- 2.4 Effectively protect animals from distress and drive continuous improvement in animal welfare.

Performance Measures	Last Actual 2016	Target 2018-19	Target 2019-20	Target 2020-21
2.a Percentage of wildfires contained before 10 a.m. the day following assessment ¹	97.1%	97%	97%	97%
2.b Percentage of active provincial licensed abattoirs that meet provincial slaughter and meat processing requirements ²	86%	100%	100%	100%

Notes:

¹ Results and targets have been revised to reflect the increase in the length of the legislated fire season. In December 2016, the *Forest and Prairie Protection Act* was amended to start the fire season one month early, from March 1 to October 31 (previously April 1 to October 31). The targets reflect the five-year average of the most recent published results. The targets are updated annually to account for new results and information, and reflect external variables that are outside the control of the ministry, such as wildfire conditions, location and activity.

² The last actual result represents the combined animal slaughter and meat processing functions for which Agriculture and Forestry has an oversight responsibility.

Linking Performance Measures to Outcomes:

- 2.a Tracks wildfire containment time. Prompt containment reduces rapid spread, size and intensity of wildfire and impacts. It helps protect Albertans from the risk of wildfire and minimizes losses and costs.
- 2.b Linked to advancement of food safety culture through education and regulatory activities under the *Meat Inspection Act* and Meat Inspection Regulation.

Outcome Three: **Alberta's land and natural resources are managed in an environmentally responsible and sustainable manner**

The ministry emphasizes evidence-based decision-making to drive sustainable resource management. Natural resources, such as clean water, healthy forests, and agricultural land are important for all Albertans.

Integrated environmental policy encourages the adoption of beneficial management practices for sustainable resource development and enhances environmental stewardship throughout the province. Research and knowledge transfer will help drive mitigation and adaptation strategies to effectively respond to climate change effects.

Key Strategies:

- 3.1 Support Alberta's Climate Leadership Plan through energy efficiency programs to reduce greenhouse gas emissions.
- 3.2 Encourage the adoption of environmentally sustainable agriculture practices through research, extension and programs.
- 3.3 Support irrigated agriculture to increase water-use efficiency through improved water application technology, conveyance infrastructure and management techniques.
- 3.4 Deliver programming and education to enhance public trust in the agriculture and forest industries.
- 3.5 Review forestry practices to ensure the ongoing sustainability, economic viability, health and resilience of Alberta's forests.
- 3.6 Develop and implement an innovative program, in collaboration with Environment and Climate Change Canada, to enhance carbon sequestration in Alberta's public forests.

Performance Measures	Last Actual 2015-16	Target 2018-19	Target 2019-20	Target 2020-21
3.a Average percentage of improved environmentally sustainable agriculture practices adopted by producers (biennial survey)	55%	n/a	59%	n/a
3.b Sustainable timber harvest by: <ul style="list-style-type: none">• Annual allowable cut (million cubic metres)• Harvest (million cubic metres)	31 22	Harvest does not exceed the approved harvest level		
3.c Percentage of forest regrowth as a result of reforestation ¹	98.3%	97.7%	97.8%	97.8%

Note:

¹ The target is set to a five-year rolling average and adjusted for management's expectations for changes in silvicultural practices including site preparation, quality of planting stock and control of competitive tree species (e.g., herbicide to remove deciduous trees within coniferous cutblocks). No significant changes are expected/anticipated in these factors for the next three years.

Linking Performance Measures to Outcomes:

- 3.a Tracks producers' progress in mitigating farm-level agri-environmental risks in a responsible and sustainable manner. Long-term agricultural productivity is dependent on appropriate conservation, stewardship of agricultural lands and the environment.
- 3.b Reflects a timber harvest level that ensures timber resources meet current environmental and economic needs for present and future generations. The volume of timber harvested must be less than or equal to the approved harvest level in order to achieve sustainable forest management goals.

3.c Reforestation is a critical component of forest sustainability following industrial harvesting. Attainment of predicted forest regrowth rates resulting from Alberta’s forest regeneration standards ensures sustainability of timber resources to meet current and future economic needs.

Outcome Four: Alberta has thriving rural communities

A thriving rural Alberta contributes to the long-term resiliency of the provincial economy and strengthens the agriculture and forest industries. Rural communities succeed when residents and businesses have the means to adapt to and benefit from a range of opportunities that leads to growth in diverse rural businesses, self-reliance and an improved quality of life.

Prosperous agriculture and forest industries, and related business services, contribute to the success of rural Alberta through community capacity building, job creation and business growth. The Agriculture Financial Services Corporation supports this by assessing credit market needs and tailoring its lending efforts in response to dynamic, changing conditions. Improved market-based insurance products, lending services and disaster recovery options help provide a stable platform from which businesses can achieve their full economic and growth potential. The ministry’s investment in people, businesses, communities and infrastructure enhances the quality of life for rural Albertans.

Collaboration with rural stakeholders, educational institutions and other ministries is fundamental to delivering new learning and skill development opportunities, enhancing farm and community safety, and increasing awareness of local food production.

Key Strategies:

- 4.1 Support access and awareness of local food to build capacity and strengthen Alberta’s local and regional food systems.
- 4.2 Implement the Agriculture Financial Services Corporation’s updated lending mandate to support the development and competitiveness of the agriculture industry.
- 4.3 Support the adoption of safe practices on Alberta farms through farm safety education and training.

Performance Measures	Last Actual (Year)	Target 2018-19	Target 2019-20	Target 2020-21
4.a Total investment leveraged in rural businesses facilitated through Agriculture Financial Services Corporation (AFSC) lending services (\$ million) ¹	526 (2016-17)	454	487	523
4.b Percentage of eligible seeded acres for major crop categories insured under Production Insurance:				
• Annual Crops	77%	74%	75%	76%
• Perennial Crops	29% (2016)	27%	27.5%	28%

Note:

¹ The target for 2018-19 is lower than the last actual due to current lower levels of AFSC farm and commercial loan approvals that are not expected to fully recover until 2020-21.

Linking Performance Measures to Outcomes:

- 4.a Gauges success of AFSC in ensuring farm and rural businesses can access capital to foster development and growth.
- 4.b Indicates success of AFSC in providing insurance options to offset the risks of agriculture production.

Risks to Achieving Outcomes

Key strategic risks include uncertain or reduced market access, major disease and pest outbreaks and extreme weather and wildfire events. Managing these risks requires collaboration with other ministries, industry, communities and governments.

International market access is crucial to the success of Alberta's agriculture and forest industries. While Canada continues to open new prospects through trade agreements and works to maintain and enhance market access, there remain obstacles to capitalizing on market opportunities. Key issues include the softwood lumber trade dispute, the renegotiation of the North American Free Trade Agreement, non-tariff barriers such as phytosanitary and technical standards, and export restrictions.

Outbreaks of foodborne, livestock or plant diseases and forest pests are a potential challenge for Alberta and pose a major risk to both industries and Albertans. The economic, social and environmental impacts of a disease or pest outbreak could be substantial, and the ministry would need to manage human and animal health issues, monetary losses, access to fibre, and consequences of cross-border trade closures, etc.

Finally, extreme weather events create challenges for both the agriculture and forest industries. For example, dry or hot conditions can lead to water shortages that affect crop and forage productivity and livestock water needs, as well as increasing the risk of extreme wildfires that threaten human lives, communities, ecosystems and economic interests.

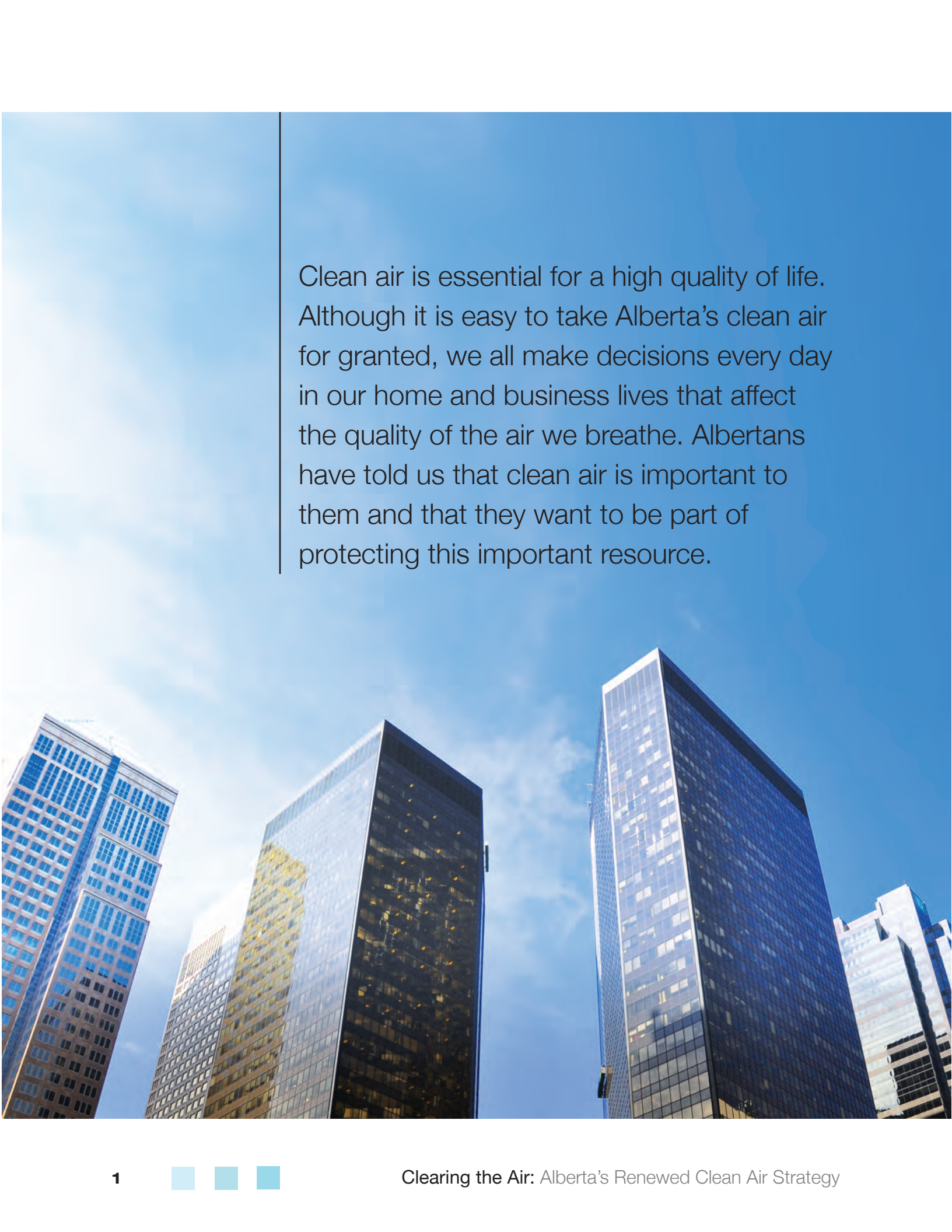
STATEMENT OF OPERATIONS

(thousands of dollars)	Comparable			2018-19 Estimate	2019-20 Target	2020-21 Target
	2016-17 Actual	2017-18 Budget	2017-18 Forecast			
REVENUE						
Internal Government Transfers	789	370	1,642	-	-	-
Transfers from Government of Canada	394,552	297,734	381,780	314,998	333,047	325,521
Investment Income	129,924	142,434	125,793	136,149	146,007	157,578
Premiums, Fees and Licences	460,660	428,625	453,940	484,098	501,465	516,406
Other Revenue	17,725	10,197	11,951	8,856	7,639	6,978
Ministry Total	1,003,650	879,360	975,106	944,101	988,158	1,006,483
Inter-Ministry Consolidations	(1,472)	(1,120)	(2,392)	(1,150)	(1,150)	(1,150)
Consolidated Total	1,002,178	878,240	972,714	942,951	987,008	1,005,333
EXPENSE						
Ministry Support Services	23,276	22,008	22,016	23,412	23,400	25,035
Intergovernmental Relations, Trade and Environment	49,009	51,244	51,356	45,917	41,597	40,893
Food and Value-Added Processing	86,260	100,272	99,415	91,990	91,303	93,493
Livestock and Crops	52,909	58,346	57,282	55,936	55,294	57,702
Lending	31,737	38,433	37,708	34,825	35,636	36,738
Insurance	683,273	476,341	572,064	493,330	512,253	494,078
Agriculture Income Support	187,835	122,144	256,365	120,487	120,861	121,466
Forests	424,187	201,702	406,760	202,450	205,867	209,059
Climate Leadership Plan	5,980	8,434	19,384	41,640	39,200	10,000
Canadian Agricultural Partnership	56,888	36,115	37,095	46,630	46,630	46,630
Debt Servicing Costs	68,664	70,735	69,010	71,153	72,740	76,118
Ministry Total	1,670,018	1,185,774	1,628,455	1,227,770	1,244,781	1,211,212
Inter-Ministry Consolidations	(10,742)	(11,304)	(11,312)	(12,004)	(11,704)	(11,704)
Consolidated Total	1,659,276	1,174,470	1,617,143	1,215,766	1,233,077	1,199,508
Net Operating Result	(657,098)	(296,230)	(644,429)	(272,815)	(246,069)	(194,175)
CAPITAL INVESTMENT						
Ministry Support Services	11	1,250	1,250	1,248	1,248	1,248
Intergovernmental Relations, Trade and Environment	585	570	570	200	200	200
Food and Value-Added Processing	1,493	796	1,638	796	796	796
Livestock and Crops	5,428	1,000	1,200	650	600	600
Lending	1,896	1,876	1,876	1,877	1,877	1,877
Insurance	3,940	4,044	4,044	4,046	4,046	4,046
Agriculture Income Support	1,530	1,650	1,650	1,650	1,650	1,650
Forests	11,037	12,643	12,613	11,611	11,343	11,343
Climate Leadership Plan	104	975	975	200	-	-
Canadian Agricultural Partnership	117	-	-	-	-	-
Ministry Total	26,141	24,804	25,816	22,278	21,760	21,760
Inter-Ministry Consolidations	-	(370)	(1,642)	-	-	-
Consolidated Total	26,141	24,434	24,174	22,278	21,760	21,760



Clearing the Air
Alberta's Renewed
Clean Air Strategy

2012



Clean air is essential for a high quality of life. Although it is easy to take Alberta's clean air for granted, we all make decisions every day in our home and business lives that affect the quality of the air we breathe. Albertans have told us that clean air is important to them and that they want to be part of protecting this important resource.



INTRODUCTION

The Government of Alberta has been a global leader in its approach to air quality management, building a system that has responded well to the issues of the last 40 years¹. Alberta's Air Quality Management System includes a comprehensive approach to managing air quality, using scientific, economic and social information to achieve its objectives. Components of Alberta's Air Quality Management System include ambient air monitoring², regulation of large point-source emissions³, setting of air quality objectives, and continuous reporting of the air quality health index for communities across the province.

Existing and emerging growth and development realities are challenging us to build on this foundation. Updating the Clean Air Strategy is an opportunity to ensure that Alberta's Air Quality Management System addresses emerging issues, remains adaptable to meet future needs, and supports the implementation of the national Air Quality Management System. The national Air Quality Management System requires that Alberta make modifications to the Alberta Air Quality Management System to incorporate the national requirements. Renewing the strategy is also an opportunity to remind Albertans that caring for our air is everyone's responsibility.

In 2008, Alberta's then Minister of Environment asked the Clean Air Strategic Alliance⁴ to develop recommendations for the Government of Alberta to consider as it renewed the original 1991 Clean Air Strategy⁵. The Clean Air Strategic Alliance held public consultations and provided 14 recommendations to the Government of Alberta in 2009. The alliance recommendations are reflected in this renewed Clean Air Strategy, which is intended to serve Alberta for the next 10 years or longer.

Alberta's renewed Clean Air Strategy does not focus on air quality issues directly related to climate change, as these are addressed in *Alberta's Climate Change Strategy*. The renewed Clean Air Strategy also does not focus on indoor air quality issues, as the built environment is managed through other provincial initiatives (e.g., building codes, worker health and safety).

In this renewed Clean Air Strategy, the Government of Alberta reaffirms its commitment to the wise management of air quality for the benefit of Albertans and outlines its vision and desired outcomes for the future.

1 See the Alberta Environment and Sustainable Resource Development website at <http://www.environment.alberta.ca/02241.html> and <http://environment.gov.ab.ca/info/library/8137.pdf> for information on air quality management in the province.

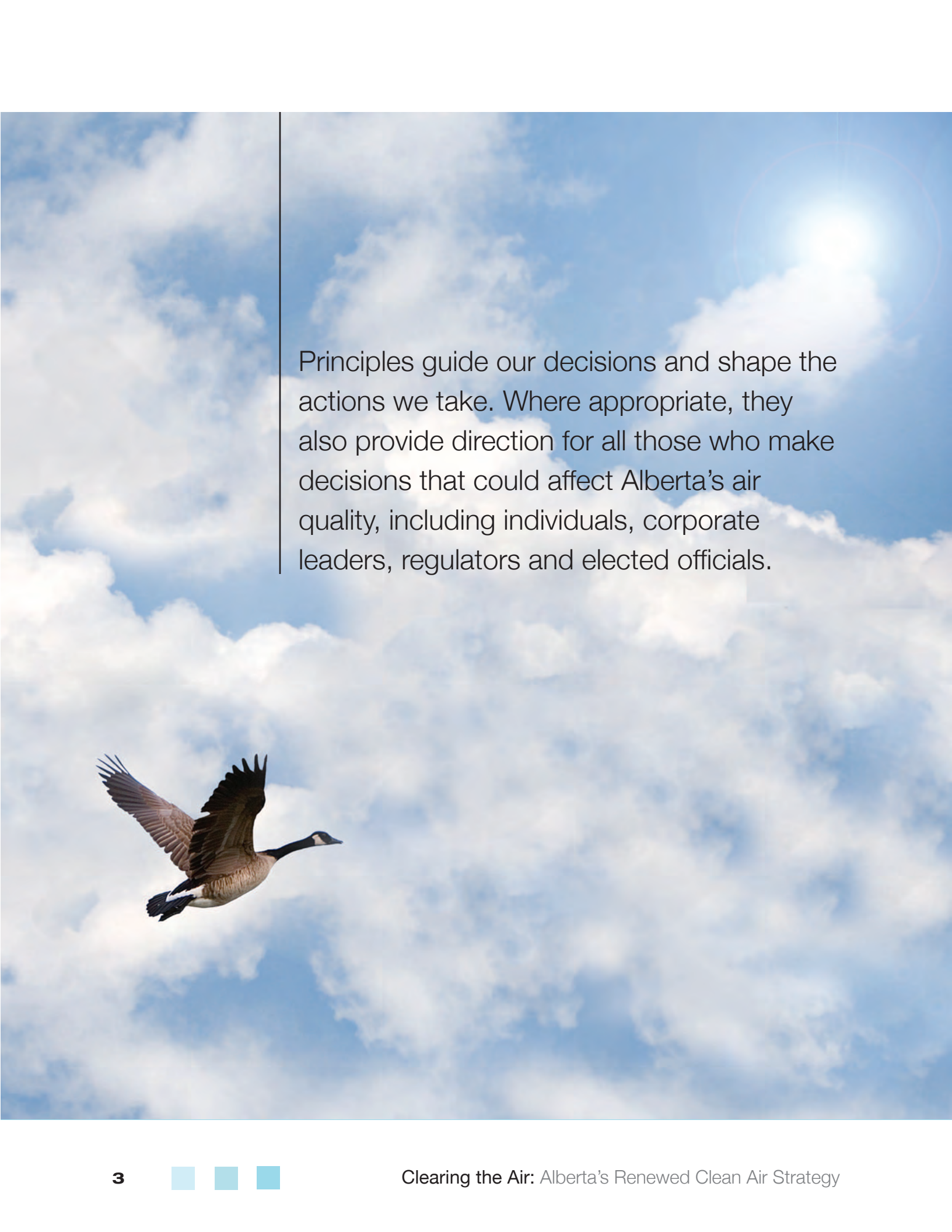
2 All air that humans, plants and animals breathe, except the air inside buildings [Clean Air Strategic Alliance Recommendations Glossary; http://casahome.org/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=517&PortallId=0&TabId=78].

3 Stationary locations or fixed facilities from which pollutants are discharged (e.g., smokestacks). Point-source regulation may apply to a whole sector of the economy or to a process used by several sectors [Alberta Environment and Sustainable Resource Development, Glossary of Environmental Tools Guide; http://environment.alberta.ca/ETG_Definition.aspx?Term=120].

4 See the Clean Air Strategic Alliance website at www.casahome.org for more information.

5 The Clean Air Strategy for Alberta: Report to the Ministers is available from the Alberta Environment and Sustainable Resource Development website: <http://environment.gov.ab.ca/info/posting.asp?assetid=5867&searchtype=asset&txtsearch=ENV-119>.





Principles guide our decisions and shape the actions we take. Where appropriate, they also provide direction for all those who make decisions that could affect Alberta's air quality, including individuals, corporate leaders, regulators and elected officials.



GUIDING PRINCIPLES

The Government of Alberta has identified the following guiding principles for this renewed Clean Air Strategy and for working with partners to manage air quality in Alberta:

1

Sustainability | Decisions related to the management of air quality will balance social, environmental and economic interests and consider cumulative impacts. By making wise choices based on the principles of sustainability, we will have options for future generations, without compromising our ability to secure the things we need today.

2

Continuous improvement | Continuous improvement will play an important role in moving the focus of our air quality management system from meeting standards to reducing emissions from all sources. Under this principle, all emitting sources must strive to improve their emissions performance.

3

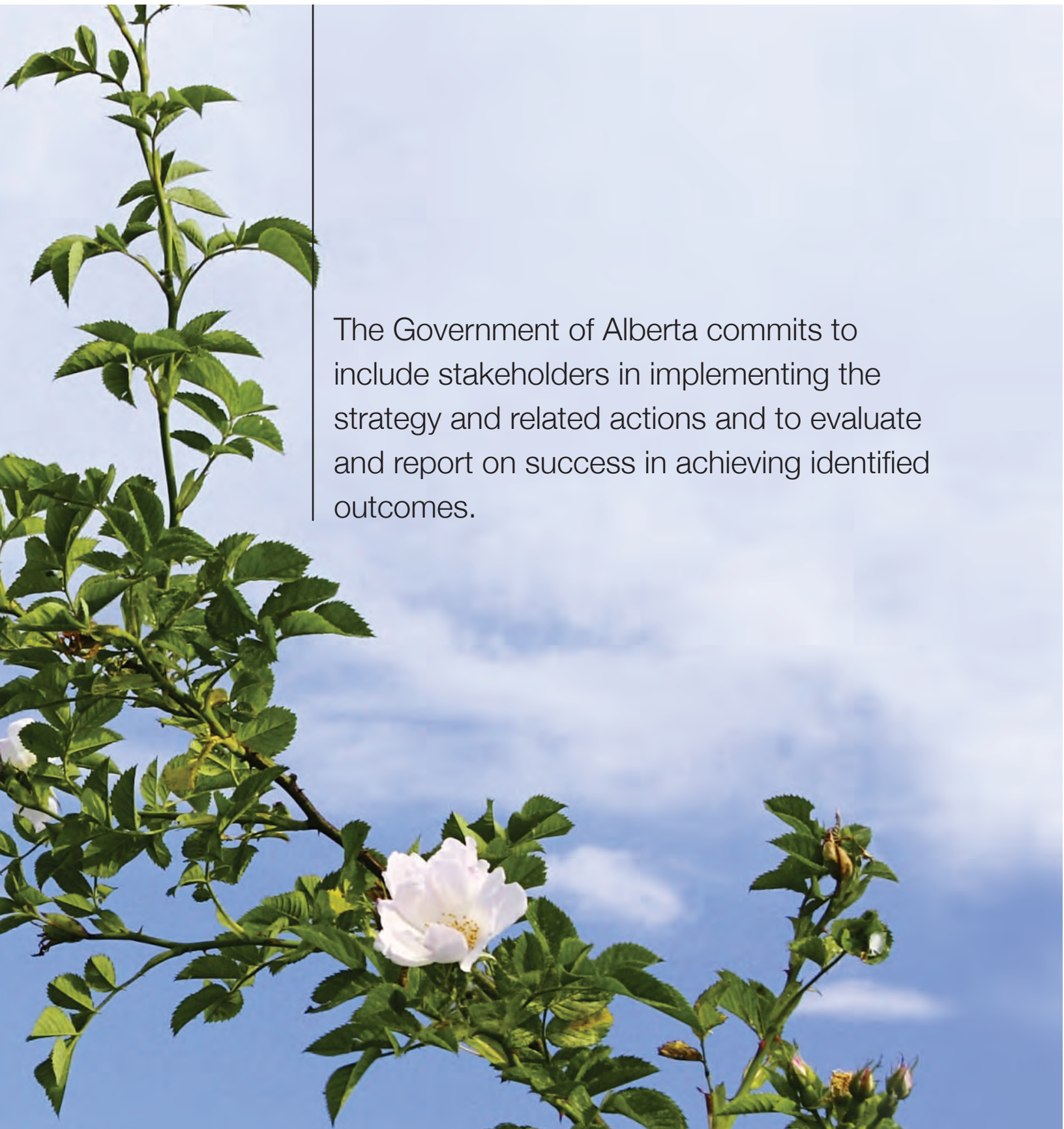
Inclusiveness | Air quality management activities will continue to provide opportunities for public participation and for working with partners to protect Alberta's air quality. Decision-making will be equitable, informed and free of a singular vested interest.

4

Policy efficiency | Decision-makers will ensure that Alberta's environmental legislation, regulations and policies are aligned, efficient and seek solutions that satisfy multiple policy objectives.

5

Transparency | Information will continue to be shared through enhanced transparent reporting and open communication with stakeholders and the public. Education and knowledge-sharing will be important components of a transparent system.



The Government of Alberta commits to include stakeholders in implementing the strategy and related actions and to evaluate and report on success in achieving identified outcomes.



WHERE WE HAVE BEEN

Alberta produced its original Clean Air Strategy in 1991. This strategy reflected the economic and environmental significance of fossil fuel production, processing and manufacturing to the province and the country. The strategy also gave rise to the Clean Air Strategic Alliance, a multi-stakeholder advisory group, and to airshed zone organizations that monitor regional ambient air quality.⁶ Both the Clean Air Strategic Alliance and the airshed zone organizations play important roles in Alberta's Air Quality Management System.

Many things have changed since the original Clean Air Strategy was developed. Alberta has experienced significant population and economic growth, with a resulting increase in emissions. This has increased pressure on our airsheds, which have a finite carrying capacity with respect to sustaining air quality.⁷ Public interest in health-related air quality issues has also increased and air quality can be a public health concern at specific times in some regions. Our Air Quality Management System has resulted in improved air quality and emissions management, along with substantial reductions in industrial point-source emissions. A number of our most populated areas now have plans to manage ozone, one of the contributors to urban smog. Despite this progress, air quality management issues need renewed attention, especially the prevention and control of emissions from non-point sources⁸.

In the past, projects were assessed for their potential impacts to air quality on an individual basis. Since at least the 1990s, Alberta's Air Quality Management System has used a cumulative effects approach with respect to industry approvals⁹. This approach considers development proposals in the context of all existing and potential future industrial emissions. Enhancements to our Air Quality Management System will further allow us to take advantage of opportunities to improve air quality management, to address emerging issues and to accommodate future growth.

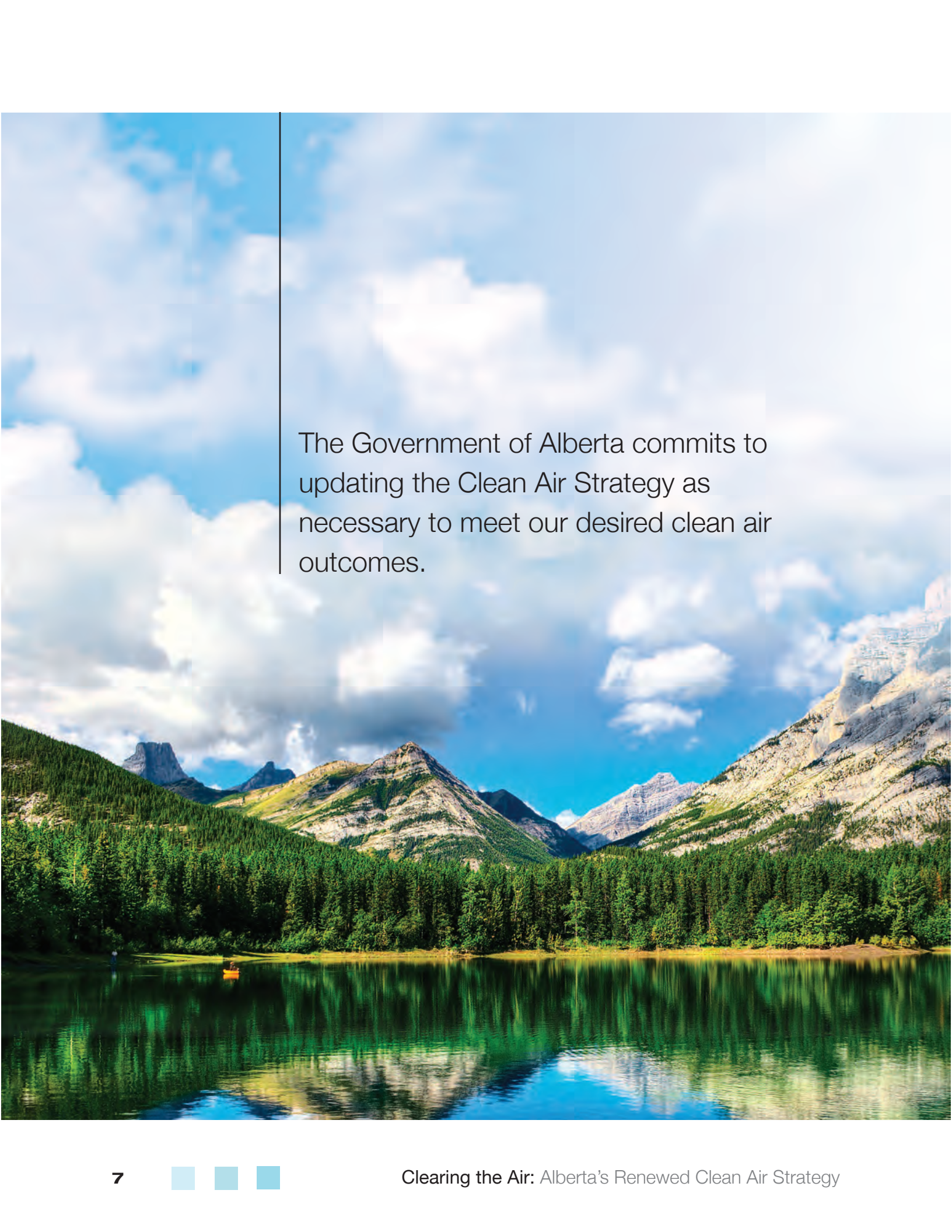
Renewal of the Clean Air Strategy represents an opportunity to consider the cumulative impacts of all point and non-point source emissions and to develop systems to monitor, evaluate and manage their effects on our society, environment and economy. Combined emissions from non-point sources, including residential and commercial heating, transportation and agriculture, contribute to the overall emissions load and can influence air quality. Some non-regulatory management tools (e.g., economic incentives, education, best management practices) have been used to manage non-point source emissions associated with agricultural activities. Due to their dispersed nature, however, many non-point source emissions remain largely unmanaged and additional management tools are required.

6 Organizations that enable stakeholders to design local solutions to address local air quality issues. These organizations are guided by multi-stakeholder non-profit societies who use the Clean Air Strategic Alliance consensus model to make decisions.

7 Geographic areas that, because of emissions, topography and meteorology, typically experience similar air quality [Clean Air Strategic Alliance Recommendations Glossary].

8 A pollution source that is not recognized to have a single point of origin. Common non-point sources include agriculture, forestry, urban, mining, construction and city streets [Clean Air Strategic Alliance Recommendations Glossary].

9 Granting a right or responsibility to carry out a project or activity under the authority of law. An industry approval is site-specific, issued by a Director, and contains conditions that the Director determines are appropriate [Alberta Environment and Sustainable Resource Development, Glossary of Environmental Tools Guide].



The Government of Alberta commits to updating the Clean Air Strategy as necessary to meet our desired clean air outcomes.



Our future well-being will depend on managing all activities related to air quality. Cumulatively, air emissions should neither exceed the capacity of airsheds nor add an additional burden to water or land. Foresight and careful planning will be necessary to enable us to keep the air quality gains we have made since 1991 and make further improvements to air quality management, even as the pace of Alberta's growth increases.

The purpose of this renewed Clean Air Strategy is to position the province to better anticipate and prevent impacts that could negatively affect air quality.

WHERE WE WANT TO BE

Alberta desires a future where existing good air quality is maintained, where all air quality issues are addressed and where economic growth does not compromise air quality. Our aspiration is to facilitate smart growth through a Cumulative Effects Management System¹⁰. This system will not mean halting development or adding on to existing management approaches—it will mean managing growth by anticipating future pressures and establishing acceptable limits on the effects of development on the environment.

Alberta's Cumulative Effects Management System will guide how our tools, resources and relationships will work together to comprehensively manage activities that affect our society, environment and economy. It will be an adaptive management system that will include setting, meeting and evaluating regional place-based outcomes for air, land, water and biodiversity.

Knowledge and performance measurement will be a foundation of Alberta's Cumulative Effects Management System. Our monitoring system will need to provide the necessary data to identify and address emerging issues. An integrated monitoring, evaluation and reporting system for air, land, water and biodiversity will ensure that we have the best possible information. A strong information base and knowledgeable citizens will contribute to choices that support social well-being, environmental sustainability and economic prosperity.

Alberta will continue to work with federal, provincial, and territorial governments to implement the new national Air Quality Management System. The national system will protect human and environmental health by addressing all sources of air pollution. Federal, provincial and territorial governments have been collaborating and engaging with stakeholders to develop national standards and work towards continuous improvement in overall air quality in Canada.

¹⁰ A Cumulative Effects Management System establishes outcomes for areas by balancing social, environmental and economic considerations and implementing appropriate plans and tools to ensure those outcomes are met. CEM is: outcomes-based, place-based, performance management-based, collaborative, and comprehensively implemented [Alberta Environment and Sustainable Resource Development, Cumulative Effects Management System; <http://environment.alberta.ca/0890.html>].

Our vision is that the Air Quality Management System supports healthy people and ecosystems and strives to enable continued economic growth without compromising air quality.



STRATEGY OUTCOMES

1

The well-being of Alberta's population is supported by effective air quality management.

The Government of Alberta remains committed to safeguarding our air quality. This means ensuring that:

- Alberta's air quality is managed to protect the health of Albertans.
- Alberta's air quality is assessed and managed in areas where undesired impacts are occurring or could occur.
- Albertans have access to reliable information so that they can become engaged and make decisions that positively impact air quality.

2

Air quality will maintain, protect and sustain healthy ecosystems.

Growing pressure on Alberta's air, land, water and biodiversity requires that resource management decisions are integrated to minimize cumulative environmental effects. This means ensuring that:

- Air quality management is integrated with land, water and biodiversity management.
- Existing good air quality is maintained.
- Air emissions from point and non-point sources are managed.

3

Air quality management supports economic sustainability.

A sustainable future means having a healthy economy as well as a healthy environment. The Government of Alberta will continue to provide opportunities for economic development that are in the public interest and respect the carrying capacity of our airsheds, while ensuring that economic benefits do not come at the expense of air quality. This means ensuring that:

- Innovative research and technology development increase the potential to reduce and prevent emissions.
- Regional air quality objectives are met so that there is capacity to accommodate future economic growth.

STRATEGIC DIRECTION Four strategic directions have been identified to guide planning to achieve our desired clean air outcomes:

1

Regional air management including complementary management of point and non-point emission sources

Alberta will manage air from both regional and project-specific perspectives. The Cumulative Effects Management System will be the basis for regional planning. Regional planning under the Land-use Framework will set place-based outcomes that are tailored to the particular needs of each region. These outcomes will be achieved using a comprehensive and flexible set of regulatory and non-regulatory tools and incentives.

A place-based approach will be a key enhancement to Alberta's Air Quality Management System. We will need to better understand, prevent and manage the impacts of emissions from all sources. Management of emissions from non-point sources will need to complement the management of point-source emissions. The involvement of local stakeholders is important to achieving regional objectives.

Decision-makers will need to consider the implications of their decisions on air quality. Future air quality management may include the development of regional air management frameworks to address air quality issues.¹¹ These frameworks may include triggers that could result in progressively more stringent actions to address air quality issues.¹² Regional decision-makers may use the frameworks to help determine the acceptability of new activities, the requirements for continuous improvement, and the need for additional management actions.

11 Comprehensive air quality management frameworks that identify desired regional objectives, limits and triggers for key indicators, and approaches and actions to achieve objectives. Frameworks also set the foundation for ongoing monitoring, evaluation and reporting [Alberta Environment and Sustainable Resource Development, Lower Athabasca Regional Plan, Air Quality Management Framework Factsheet; <http://environment.alberta.ca/03422.html>].

12 Increasingly high levels of air pollutant concentrations that lead to (trigger) increasingly stringent management actions. Triggers could be used in local air zones to prioritize air management action. [Comprehensive Air Management System: A Proposed Framework to Improve Air Quality Management, Glossary; http://www.ccme.ca/assets/pdf/cams_proposed_framework_e.pdf].





Regional air management, including complementary management of point and non-point emission sources, will involve enhancements in the following action areas:

- Coordinated regional air management across land use regions, air zones and air shed zone organization boundaries;
- Development and implementation of provincial and regional management mechanisms, including frameworks, to address air quality issues;
- Development of options to understand and prioritize non-regulated and non-point sources, including options for assessing non-point emission sources;
- Development and implementation of policies and management tools for non-regulated and non-point sources. This will involve:
 - Prioritizing management of key non-point sources:
 - Working with stakeholders to determine appropriate education strategies to address non-point sources: and,
 - Developing the appropriate tools to manage non-point source emissions.

2

Shared responsibility and partnerships

The Government of Alberta will have a consistent approach to managing air quality and will work effectively with other jurisdictions and partners. Shared responsibility for air quality management with Alberta stakeholders will mean using a partnership approach in the delivery of Alberta's Air Quality Management System. This collaborative approach will include:

- Coordinating communication between governments and stakeholders;
- Enhancing policy integration and role coordination across Government of Alberta departments;
- Clarifying the roles of government and non-government partners in the system; and
- Government and partners working together in both the decision-making process and the delivery system.

This strategic direction recognizes the importance of the contribution of partnerships towards the effectiveness of Alberta's Air Quality Management System and the implementation of a Cumulative Effects Management System. As part of this strategic direction, the Government of Alberta will work with multi-stakeholder organizations, including the Clean Air Strategic Alliance and airshed zone organizations to clarify and formally recognize their future roles.





Shared responsibility and partnerships will involve enhancements in the following action areas:

- Clarification and articulation of the roles of cross-government and cross-ministry departments and partners, including:
 - Clarification of roles related to management of non-point source emissions; and,
 - Clarification of the roles of partners in regional planning initiatives as it relates to air quality management.

- Coordination of policy development and integration of policies to achieve environmental outcomes, including:
 - Establishment of a process to assess the impact of major policy initiatives on air quality management and the achievement of environmental outcomes; and,
 - Working with neighbouring jurisdictions to manage transboundary emissions.



STRATEGIC DIRECTION

3

Integrated monitoring, evaluation and reporting

Alberta will have an integrated monitoring, evaluation and reporting system that will support regional planning and the Cumulative Effects Management System. Alberta already has a database of air emission and ambient air quality data that is used for assessment, planning and policy development. Decision-makers, interested parties and members of the public currently have timely access to reliable information about air quality in Alberta.

Regional planning and the Cumulative Effects Management System will rely on an effective and efficient environmental monitoring program. We will need to collect the right information to help us make decisions and determine whether we are meeting regional outcomes. Information and data must be housed in a convenient, easily accessible repository that is integrated with other environmental databases. Albertans will continue to need timely access to air quality data and information so that they can make informed choices about their well-being. There will also be a need for ongoing performance measurement at the policy level.





Integrated monitoring, evaluation and reporting will involve enhancements in the following action areas:

- Development of comprehensive monitoring programs, including:
 - Strengthening the provincial ambient monitoring system;
 - Ensuring the relevance and accuracy of monitoring data;
 - Enhancing funding options to support the ambient air monitoring system; and,
 - Developing integrated environmental service delivery.

- Enhancements to the data management and access system, including:
 - Developing and maintaining an integrated database for ambient air quality data;
 - Coordinating sharing of ambient and emission data and information; and,
 - Ensuring clarity and public accessibility to information.

- Strengthening the evaluation system, including:
 - Developing monitoring indicators needed to assess the state of Alberta's air; and,
 - Developing performance indicators to continuously improve policies.

- Enhancements to the data reporting system.

4

Knowledge enhancement

Alberta will have a comprehensive air quality information system that collects and interprets data to inform decision-makers, interested parties and members of the public about whether outcomes are being met. Albertans will be knowledgeable about air quality and motivated to take personal steps to reduce emissions.

Alberta is always striving to improve air quality. Knowledge is essential to achieving this. We need to understand the sources of emissions as well as their impacts on people and the environment. Albertans need to be knowledgeable about the state of Alberta's air and have access to information to become engaged and take an active role in reducing emissions. Research is also necessary to improve our understanding of air quality and its effective management, and to identify methods and tools to improve technology.

Knowledge enhancement will focus on the following action areas:

- Increasing public knowledge related to air quality and its management, including:
 - Improving public knowledge of emission sources and state of the air quality;
 - Increasing public knowledge of health effects related to air quality; and,
 - Enhancing tools to help Albertans make consumer choices that positively impact air quality.





- Enhancements to air research and innovation, including:
 - Collaborating with relevant Government of Alberta ministries and partners to develop a comprehensive air research and innovation strategy; and,
 - Creating a community of practice to exchange scientific, technical and other information on air research and management practices.
- Encouraging continuous improvement in emissions reduction technology, including:
 - Developing regulatory and non regulatory tools to encourage implementation of new technology to support continuous improvement.
- Improving knowledge of emissions sources through emissions inventories including:
 - Developing and continuously improving air emission inventories and emission projections for significant point and non-point sources.

ENHANCED AIR QUALITY MANAGEMENT SYSTEM

The outcomes of the renewed Clean Air Strategy will be achieved mainly through enhancements to our existing Air Quality Management System. Alberta's Air Quality Management System has evolved over time and will continue to evolve in order to respond to changing circumstances and the needs of Albertans.

Figure 1 illustrates the main components of the existing Air Quality Management System and linkages between components. It also identifies key components that will be strengthened to meet the outcomes identified in this renewed Clean Air Strategy.

Enhancements to Alberta's Air Quality Management System will support the provincial Cumulative Effects Management System. These enhancements will also support implementation of the new national Air Quality Management System in Alberta.

FIGURE 1 | Alberta's Enhanced Air Quality Management System



FUTURE INTEGRATED AIR QUALITY MANAGEMENT IN ALBERTA

This renewed Clean Air Strategy is intended to meet Albertans' expectations for clean air and economic prosperity, now and in the future. To do this, we will need better integration and coordination within the provincial government, as well as with other orders of government and stakeholders. Alberta will also need to align our strategies and actions so that our renewed strategy works effectively with other relevant provincial and federal policies and strategies.

National Strategic Direction

Alberta is helping to inform a new national Air Quality Management System, to be implemented beginning in 2013. This new national system will create a collaborative approach between federal, provincial and territorial governments. Governments will engage with stakeholders to develop national standards and work toward continuous improvement in overall air quality in Canada.

The new National Air Quality Management System will address all sources of air pollution and will include the following components:

- Canadian Ambient Air Quality Standards, with associated management levels as drivers within the system.
- Place-based air quality management through 'air zones' within provincial and territorial boundaries.¹³ Larger, trans-boundary 'regional airsheds' will also be delineated to address both inter-provincial and Canada / U.S. trans-boundary air quality issues.¹⁴
- Base-level industrial emission requirements for major industrial sectors, with regulatory assurance. These minimum standards will provide a good base level of environmental performance for industrial facilities, wherever they are in Canada, regardless of air quality.
- Collaboration to reduce emissions from mobile sources, initially focusing on the transportation sector. Some work will be done collaboratively at the national level. Provincial-level action on mobile and other non-point sources may also be needed to support air quality management within air zones.

Clearing the Air: Alberta's Renewed Clean Air Strategy, along with associated enhancements to the provincial Air Quality Management System, will play a key role in implementing the national approach in Alberta.

¹³ Finite areas within a single province or territory that exhibit similar air quality issues and challenges [Comprehensive Air Management System: A Proposed Framework to Improve Air Quality Management, Glossary].

¹⁴ Parts of the atmosphere that exhibit similar characteristics with respect to the movement/dispersion/levels of air pollutants. Regional airsheds are intended to assist in the coordination of trans-boundary air quality issues [Comprehensive Air Management System: A Proposed Framework to Improve Air Quality Management, Glossary].



Provincial Strategic Direction

Alberta's Land-use Framework provides overall strategic direction to guide development to achieve the province's long-term social, environmental and economic goals. The Land-use Framework and associated regional planning will identify place-based outcomes and indicators for air, land, water and biodiversity.

Alberta's Cumulative Effects Management System will comprehensively manage activities that affect our society, environment and economy. The Cumulative Effects Management System will provide implementation tools for provincial and regional initiatives and will address environmental quality issues to ensure that place-based outcomes are met. Alberta's renewed Clean Air Strategy is part of the Cumulative Effects Management System. Implementation of the Cumulative Effects Management System could, in turn, inform the development of additional air quality objectives.

Other key provincial government strategies that affect air quality include:

- *Launching Alberta's Energy Future: Provincial Energy Strategy*: promotes cleaner energy production, wiser energy use and the pursuit of renewable energy and other sustainable options that also support clean air objectives.
- *Alberta's Climate Change Strategy*: promotes energy conservation and efficiency to reduce air pollution and greenhouse gas emissions.

Integration between Provincial Government Initiatives

Figure 2 depicts how the renewed Clean Air Strategy and the provincial Air Quality Management System link with other provincial and national initiatives:

- Provincial strategies translate strategic government direction into specific provincial outcomes for water, biodiversity, waste, energy, and climate change.
- This renewed Clean Air Strategy identifies desired provincial outcomes for air quality.
- The Land-use Framework provides a blueprint for land management and decision-making. Provincial outcomes are considered in conjunction with place-based challenges and opportunities to generate place-based outcomes identified through regional planning.
- The provincial Cumulative Effects Management System will provide implementation mechanisms to achieve place-based air quality outcomes and could inform the development of additional air quality objectives.
- The new national Air Quality Management System will provide strategic direction to the provincial Air Quality Management System.
- The provincial Air Quality Management System will operationalize the new national Air Quality Management System in Alberta.



GOVERNMENT DIRECTION

FIGURE 2 | Provincial and National Integration for Air Quality Management

