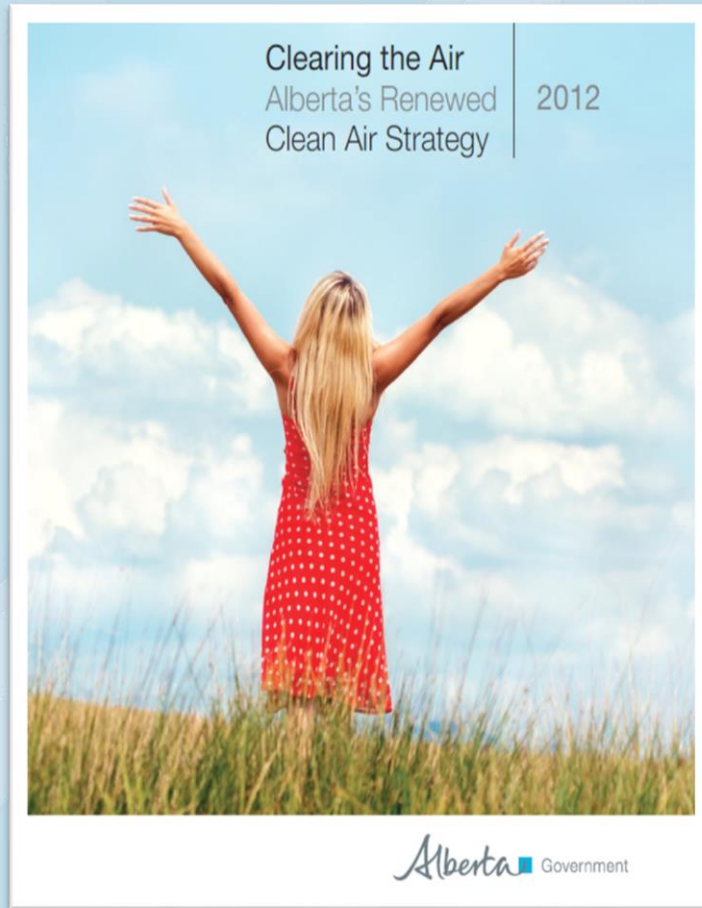


# Clean Air Strategic Alliance Non-Point Source Workshop

Government of Alberta

Presented by  
Environment and Sustainable Resource Development  
and  
Agriculture and Rural Development

# Alberta's Renewed Clean Air Strategy



Clearing the Air  
Alberta's Renewed  
Clean Air Strategy | 2012

## Action Plan

This action plan specifies key actions, with associated timelines for implementation, to support the outcomes and strategic directions identified in the Renewed Clean Air Strategy.

In reading this action plan, it is important to recognize the following:

- Most actions will require more detailed implementation plans that will be developed in collaboration with stakeholders.
- Some actions have a longer-term focus and will require further scoping.
- The actions identified in this document are not an exclusive list. Provincial government departments may undertake additional actions that contribute to air quality management.
- Some actions are already being implemented as part of other provincial strategies and initiatives. Examples include regional planning under the Land-use Framework, the provincial Cumulative Effects Monitoring approach, and the development of an integrated monitoring, evaluation and reporting framework.
- The action plan does not include specific regulatory initiatives related to industry approvals, compliance and environmental impact assessments, as these would be considered as part of other provincial initiatives.

Timeframe to Implement

Indicates when bulk of work will occur

0 3 5 10  
years

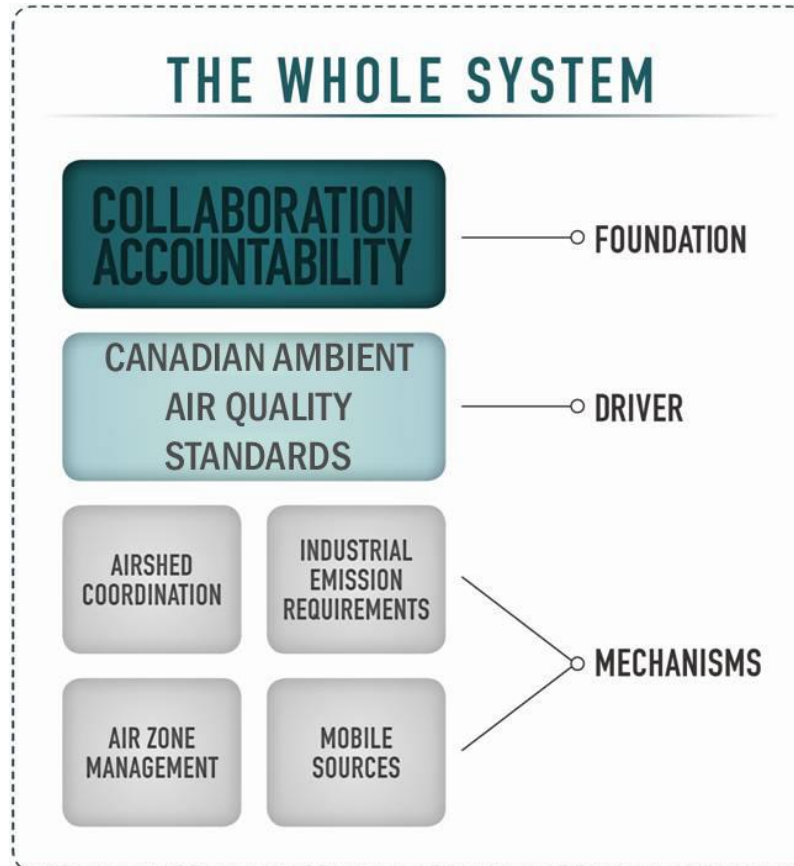
Alberta Government

# Alberta's Renewed Clean Air Strategy

- **Current and emerging realities:**
  - Changes in Federal regulatory requirements,
  - Need for more integrated policy and planning,
  - Increased development and population growth, and
  - Greater public interest in air quality issues and their impact on health.
- **Need to manage all types of emissions – including non-point**
  - Consider cumulative impacts of all point and non-point emissions.
- **Integrated monitoring, evaluation and reporting system**
- **Strong information base and knowledgeable citizens**

# National Air Quality Management System

- **Objective:**
  - Protect human health and the environment through continuous improvement of air quality.



# GoA Background Information (Part 1 ESRD)

## Highlights

Martina Krieger,  
Strategy Division  
Environment and Sustainable Resource Development

# Overview of NPS Systems Mapping Exercise

- **Four types of non-point sources (NPS)**
  - Area, Volume, Line, Mobile
- **Multiple pollutants contributing to NPS**
  - PM (TPM, PM2.5, PM10), SO2, NOX, VOC, CO, NH3
- **Examples of sources**
  - Agriculture,
  - Transportation,
  - Construction,
  - Road Dust,
  - Urban,
  - Industrial
- **Sources may vary from region to region**
- **Variety of governance actors**

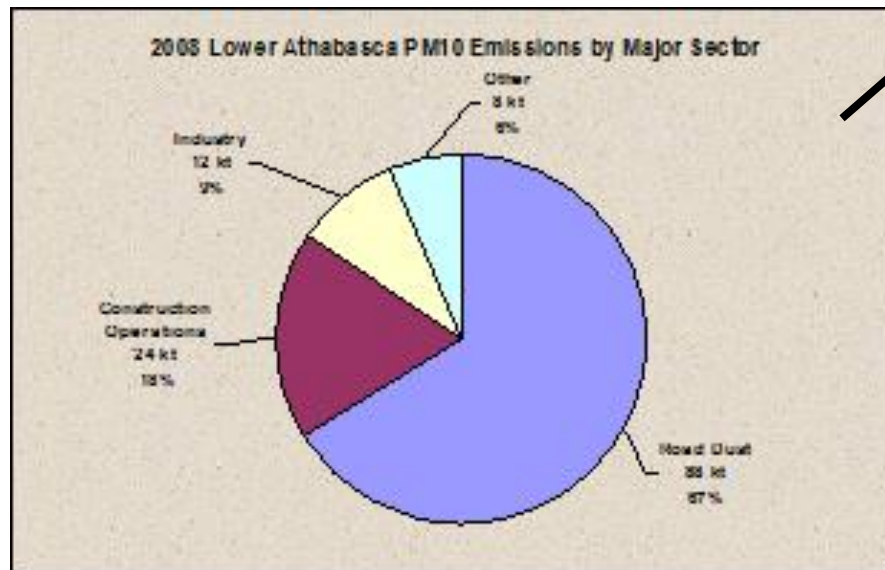
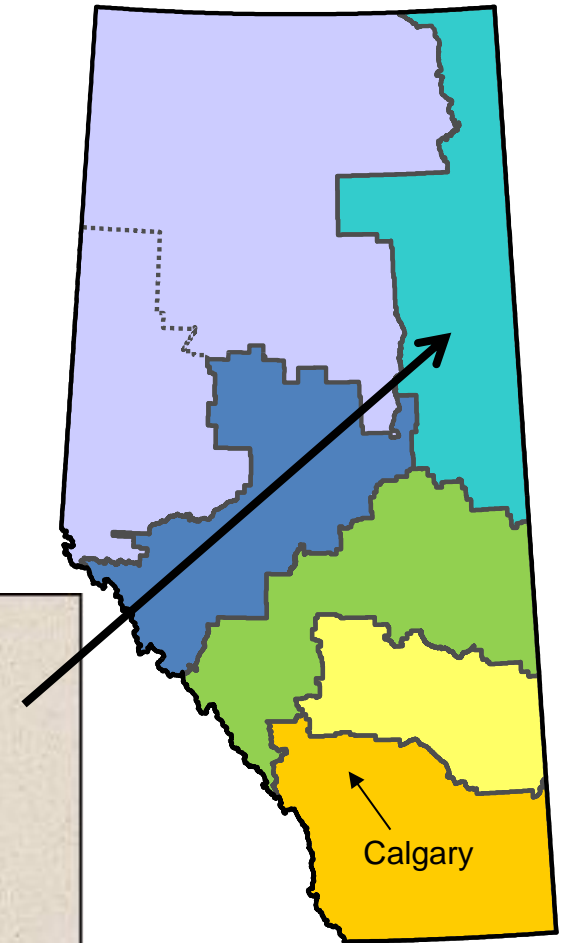
# Systems Mapping Exercise Results

- Identified major sectors and their sub-categories
- Governance actors
  - Federal, Provincial, Municipal, Public, Industrial, Agricultural producers, and NGOs
- Levers of influence
  - Management options
- Example:

<u>Municipal</u>		
Emissions Sources	Governance Actors	Levers
Residential Fuel Combustion (e.g. home furnaces)	● ● ● ● ●	Education, Awareness Incentives Building Codes
Commercial Fuel Combustion (e.g. commercial heaters and boilers)	● ● ● ●	Building Codes Technology
Residential Wood Combustion (e.g. wood burning fireplaces, stoves, etc)	● ● ● ●	Education Municipal bylaws
Lawnmowers and Garden Equipment †	● ● ● ●	Education Products standards Incentives
Drycleaners	● ● ●	Zoning Emissions Control Technology

# Systems Mapping Exercise Results

- Using Alberta Land-Use Framework (LUF) Planning Regions
- Identified emissions in each region
  - by sector, and
  - by pollutant





# Regional Plans and Cumulative Effects Management

Kim Lalonde

Land Use Framework Regional Planning Branch  
Environment and Sustainable Resource  
Development

# Regional Plans



- Key strategy under the Land-use Framework policy released in 2008, and supported by the *Alberta Land Stewardship Act, 2010*
- Define economic, environmental, and social outcomes for a region in relation to land-use
- Align provincial policies related to land/ environment at a regional level
  - involves specific tradeoffs – clean air & energy strategy
- Define the **cumulative effects management approach** for the region – managing impacts to air, land, water, and biodiversity

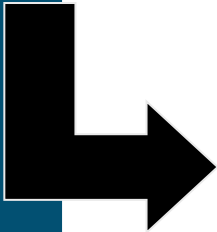
# Management Framework Approach

Regional Plan Outcomes and Objectives



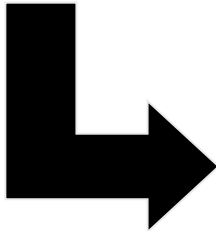
Indicators,  
Triggers  
and Limits

- Indicators are chosen
- Triggers and limits (thresholds) are set



Monitoring  
and  
Modeling

- Monitor and assess ambient conditions relative to triggers and limits



Management  
Response and  
Reporting

- Exceeding triggers or limits requires a response
- Results reported

# Draft Air Quality Management Framework for the South Saskatchewan Region

- **Non-point source and point source emissions come together in the SSR to contribute to ambient concentrations and must be understood to ensure appropriate actions are taken**
- **The framework adds the opportunity for collective direction and commitment among various parties to manage all sources**

# **GoA Background Information (Part 2 ARD) Non-Point Source Air Quality Management**

## **Agriculture**

Sandi Jones,  
Policy and Environment Division  
Agriculture and Rural Development

# Sources of Emissions

- Fertilizer Application
- Harvesting
- Livestock
  - Housing
  - Manure Processing
  - Manure Storage
  - Manure Application
- Residue Burning
- Tilling (facilitates wind erosion)
- Transportation



Odour

# Particulate Matter





# What Has Been Done

## Research

- Odour Control Initiative
  - Development of Odour Monitoring Procedures for Alberta Livestock Operations: Measuring Odour with Confidence (techniques, modeling, electronic nose)
- Livestock Odour Control Technology Assessment and Development – Beneficial Management Practices (BMP)
- Emission Inventory
  - Development of a New Emissions Inventory (CASA CFO Strategic Plan Recommendation #1)
- AQM – Monitoring for  $\text{NH}_3$ ,  $\text{H}_2\text{S}$ , PM and VOCs (CASA CFO - Ambient Air Quality Monitoring Around Confined Feeding Operations in Alberta)

# What Has Been Done

## Research

- Manure Research Findings and Technologies: Odour Emissions (literature review)
- Jurisdictional Review of Odour and Ammonia Management Frameworks and Policies
- Odour Screening Tool - Simple Calculation of Atmospheric Impact Limits (SCAIL Agriculture, SNIFFER, UK)
- Development of a Calculator to Estimate Ammonia Losses from Field-Applied Manure
- Manure Research Findings and Technologies: Ammonia and Hydrogen Sulphide (literature review)
- Paper Study on Potential Management Mechanisms (CASA CFO Strategic Plan Recommendation #6)
- TAN-based mass balance model for estimating ammonia volatilization from beef cattle in Western Canada (Agriculture and Agri-Food Canada, AAFC)

# What Has Been Done

## Extension & Education

- Historical – Nasal Ranger™ Training (2001), Livestock Odour Measurement Training (2002), Odour Control Initiative: Odour Control Manual
- CASA CFO Strategic Plan – Odour Management Plan Template
- Odour Measurement (2005 Airshed Zones Conference)
- Approaches to Odour Measurement and Management (2006 CASA Science Symposium on Nitrogen)
- Defining Odour as a Single Parameter Workshop (2008)
- Ammonia – Volatilization from Manure Application Factsheet, Ammonia Emissions from CFOs: Control and Mitigation Factsheet, Ammonia Emissions Estimator (online calculator), Ammonia Losses from Liquid Manure Application (online calculator)

# What Has Been Done Policy

- Agricultural Operation Practices Act (AOPA)
  - Setback (Minimum Distance Separation, MDS)
  - Manure Incorporation (48 h time limit)
- CASA CFO Strategic Plan Recommendation #8
  - Managing Odour in Problem Areas

# What Is Planned?

- **Policy**

- Odour and Air Quality Strategic Plan Implementation
- CFO Air Quality BMP Research Plan Development
- CFO Air Quality BMP Extension Plan Implementation
- Air Quality Public Outreach Plan Development

- **Collaboration**

- CASA Odour Management Framework
- Alberta Ambient Air Quality Objectives
- LUF Regional Air Quality Management Frameworks
- CCME Air Quality Management System

# Summary and Opportunities

Lisa Sadownik,  
Strategy Division  
Environment and Sustainable Resource Development

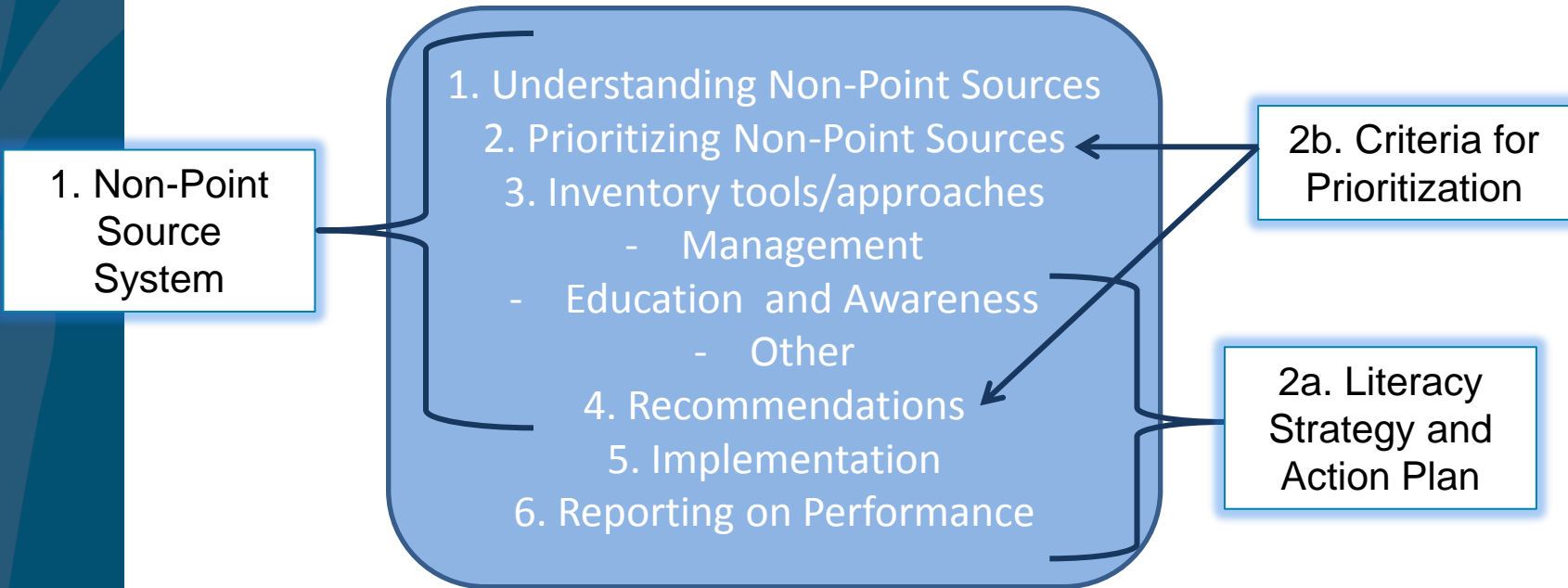
# Summary

- **Managing cumulative effects:**
  - Consider the cumulative impacts of all point and non-point source emissions and develop systems to monitor, evaluate, and manage their effects on our society, environment and economy.
- **Renewed Clean Air Strategy provides the strategic direction on cumulative effects management and non-point sources**
- **National Air Quality Management System provides an all-source approach to managing air quality**
- **Regional plans provide opportunity for place-based implementation**

# Opportunities

First Option Focus/Product for CASA:  
*Identifying best tools to manage NPS emissions*

Second Option Focus/Product for CASA:  
*Creating stewards and changing behaviour;  
Develop criteria for prioritizing NPS emissions*



Renewed Clean Air Strategy: Actions

1. **1.2.1 – Implement a collaborative process to identify the gaps in the management of air quality**  
**1.3.1 – Assess non-point source emissions and identify possible key sources for management**  
**1.4.1 – Develop policy recommendations and corresponding management actions to address non-point source emissions**

**1.4.2 – Engage stakeholders involved in air quality management to implement community education programs and community relations**  
**1.4.3 – Identify specific actions that could be undertaken by Albertans to reduce emissions from non-regulated and non-point sources**

2.



# Opportunities continued

- **Collaborate with the Mobile Sources Working Group of the national AQMS**
- **Action Plan Themes:**
  - Reducing emissions with advanced transportation technologies,
  - Reducing emissions with proper vehicle maintenance,
  - Reducing emissions from in-use diesel vehicles and engines, and
  - Reducing emissions by greening fleets.

**Thank You**

Questions?