

Non-Point Source Air Emissions Workshop Proceedings



Prepared by the
CASA Secretariat

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Workshop Description

A one day workshop was held in Calgary on October 22, 2013 with a multi-stakeholder group of 35 participants. The purpose of this workshop was to provide advice to the CASA Board of Directors on how to proceed regarding non-point source air emissions (NPS). The workshop objectives were:

- Develop a common understanding of non-point source air emissions.
- Discuss needs, gaps, and opportunities with respect to non-point source air emissions.
- Discuss how CASA can add value to non-point source air emission management in Alberta.

The day was broken into two components: 1. Presentations on NPS from a broad range of perspectives, and 2. Interactive group work addressing a series of targeted questions.

1. Presentations

Participants heard presentations related to NPS, including a general overview of the issue, stakeholder perspectives and initiatives, and a description of past CASA project work that preceded this workshop. Participants were also given the opportunity to ask questions.

NPS Overview #1

Presentation Highlights:

This presentation focused on air monitoring in Alberta. Broad estimates of emissions are based on a regional monitoring network that is sparsely dispersed across the province, and that does not provide granular localized information. Stations tend to be located in areas where there is industrial activity and associated funding. This may create data gaps with respect to NPS, as they are by definition often too small and numerous, too geographically dispersed, or too geographically large to be estimated or represented by a single point. The extent of street level variability in Alberta's urban areas, based on information sources such as mobile monitoring, building emissions data (and other area sources), and traffic volume, is unknown.

Discussion Highlights:

- Conditions may change in the areas where monitoring stations are sited. This means that monitoring stations can exist in locations where air quality is not currently an issue, though it may have been a "hot-spot" in the past.
- Mobile monitoring can give a snap-shot of conditions in an area, but does not necessarily show trends because the data collection window is limited.

- Cost of monitoring is an important limiting factor in establishing monitoring stations or mobile monitoring programs. Often monitoring occurs in response to specific emissions from a specific industry or facility, and may not contribute to our understanding of aggregated NPS emissions. A balance must be struck between achieving broad monitoring coverage and cost.
- An industrial non-point source approach to monitoring may not be an appropriate approach for NPS based on cost. An approach that seeks alternative ways to get information may be more appropriate. In the U.S. creative means of gathering information are being explored, such as crowd-sourcing for incidence of asthma inhaler-use to generate proxy data (for instance <http://propellerhealth.com/>).

NPS Overview #2

Presentation Highlights:

This presentation provided a general introduction on ways to describe and quantify NPS. NPS (as opposed to point sources or stacks) are commonly described as line, area, or volume sources based on geometry. Emissions relating to air quality that are associated with NPS include PM, NO_x, O₃, SO₂, CO, NH₃, and VOC, and are more difficult to quantify than stack emissions. NPS, point sources, and background contributors such as forest fires and intercontinental PM transport all contribute to air quality, and in many cases, it may be challenging to determine their respective contributions. Additionally, NPS contributes to a wide range of air quality issues that have differing spatial and temporal scales. An overview was given for each of the three main assessment tools, being the emissions inventory, ambient monitoring, and simulation modelling. A list of existing management tools was provided, based on jurisdiction. It was emphasized that given the complex nature of NPS, multiple management and mitigation approaches will be required.

Discussion Highlights:

- With respect to modelling NPS sources effectively, some emission inventory databases have been developed in the Land-Use Framework regional plans, but there is uncertainty about the accuracy and representativeness of the data. The NPS emissions databases tend to be more applicable to a regional rather than a local scale.
- Generally, emissions from small sources, like brick burners, are not fully captured by emission inventories. Mobile monitoring, such as the CASA ROVER initiative, could be used to identify emissions at specific points.
- A question was raised with respect to the availability of studies regarding the impact of emissions on health, specifically in Edmonton and Calgary. Such studies may exist, but no one in the group was aware of any.

The group had a brief discussion on whether anything had been missed in the NPS overview presentations. Participants noted that certain emission “hot-spots” are not necessarily recognized, such as high PM events resulting from agricultural activity. Participants felt that it would be useful to know what has been done already to address NPS. Presentations that followed provided an overview of relevant work related to NPS from the perspective of the Government of Alberta, non-government organizations, Canadian Fuels Association, and CASA.

Government of Alberta (GoA)

Presentation Highlights:

This presentation provided an overview of a variety of existing government initiatives that have relevance to NPS, outlined below.

With respect to Alberta’s Renewed Clean Air Strategy (CAS) and Action Plan, the presentation emphasized:

- The need for more integrated policy and planning with federal (i.e. National Air Quality Management System) and regional (i.e. Land Use Framework Regional Plans) initiatives.
- The increasing integration of monitoring, evaluation, and reporting systems.
- The role of CAS in providing strategic direction on cumulative effects management for point-source air emissions and NPS.

GoA conducted a systems mapping exercise in preparation for this workshop by. The exercise outlined:

- Major sectors that contribute to NPS, and associated emissions sources;
- Governance actors for each source;
- Levers of influence for each source;
- Regional emissions by sector and pollutant, using the Land Use Framework Planning Regions.

Initiatives of Alberta Agriculture and Rural Development were summarized, specifically with respect to odour and PM research, extension and education activities, and policies that either exist currently or are being planned.

Finally, the development of regional plans under the Land-use Framework was discussed. Regional Plans are expected to:

- Define economic, environmental, and social outcomes for a region
- Align with provincial policies related to land and environment
- Define the cumulative effects management approach for the region, to manage the impacts to air, water, land, and biodiversity.

Regional Plans represent an opportunity for place-based implementation of the broader CAS strategic goals. Stakeholder input will soon be requested on the Draft Air Quality Management Framework for the South Saskatchewan Regional Plan.

Following the initiatives overview, GoA suggested two opportunities for a potential CASA Project Team:

Opportunity 1: Identifying best tools to manage NPS emissions.

- Key tasks could include:
 - Assess, understand and prioritize non-point sources in Alberta and by region.
 - Compile a list of tools and approaches in Alberta, and other jurisdictions, to manage the priority non-point sources. This could include developing a decision matrix for selecting the best tool to achieve the desired outcome.

Opportunity 2:

2a) Creating stewards and changing behaviour.

- Key tasks could include:
 - Develop a non-point source literacy strategy to enhance understanding of non-point sources (cause and effect) and individuals' contributions (internalization to make decisions that affect change).
 - Develop an action plan for Alberta to identify specific actions for stakeholders, public, etc.
 - Implement the action plan and report on performance.

2b) Develop criteria for prioritizing NPS emissions.

- Key tasks could include:
 - Develop criteria for prioritizing NPS emissions and carry out the prioritization exercise.
 - Identify incentives to make practical changes (either in programs or initiatives).

Discussion Highlights:

- A question was asked regarding the legal force of the Alberta Land Stewardship Act specific to Regional Plans. It was explained that Regional Plans are considered regulatory instruments, which apply to GoA and local governments. Plans have 3 sections: the plan (strategic element); a commitment from GoA to implement; and regulatory details. Triggers and limits are incorporated into the regulatory details. If a trigger is reached,

there must be a management response. The type of response depends on the trigger and circumstances, but often takes the form of stakeholder engagement on the issue.

- To support continuous improvement, Regional Plans should be reviewed every 5 years and updated every 10 years in an adaptive management strategy.

Non-government organizations

Presentation Highlights:

In Alberta's three largest urban centres, two significant NPS emissions (PM and ozone) have either exceeded or reached the upper limits of the Canada-Wide Standards (CWS). Growth in Alberta's industrial activity and population will continue to increase pressure on Alberta's air quality. A number of recent developments represent an opportunity to address air quality in Alberta. For example, the Canadian Ambient Air Quality Standards (which are replacing the CWS) feature more stringent standards, and air quality limits are being included in emerging Regional Land Use Plans. Capacity for monitoring and reporting will be increasing through the work of the new Alberta Environmental Monitoring, Evaluation, and Reporting Agency and the airshed zones. Public interest in air quality is on the rise, as links to human health and environment become more evident. The presentation stressed the need for action to meet existing air quality standards, taking into account ways to cost-share, avoid redundancy, and complement existing work locally and nationally. CASA could be well suited to the task, but that any project would have to be targeted, necessary, and important.

Discussion Highlights:

No discussion.

Canadian Fuels Association

Presentation Highlights:

This presentation focussed on emissions from the on-road transportation sector. Information was shared on a number of initiatives that have been or are currently being put in place to reduce vehicle emissions. Since the early 1990's, significant work has been done by the transportation sector on this issue, and there have been consistent reductions in emissions of NO_x, VOCs, SO₂, and TPM. In some instances, it may take time for reduction initiatives to have an impact, because of a lag between changes made and the effect on emissions. Regardless, changes that have been made recently and newly announced measures will continue to effect improvements in emission levels. The presentation raised a number of points for consideration regarding potential work on NPS issues, including:

- Need for a provincially-federally coordinated approach to avoid duplication and overlap where possible. E.g. The apparent overlap between pieces of this discussion and the work of CCME Mobile Sources Working Group;

- Importance of addressing NPS through a multi-stakeholder group as a means to develop consolidated advice to policy makers; and

Discussion Highlights:

- Further explanation was requested regarding an assertion that PM emissions are falling, in light of the greater number of vehicles in use. It was clarified that as the fleet evolves, old vehicles represent a smaller portion of the total fleet, which causes an overall drop in pollution. New emissions standards are much more stringent than the old, and new vehicles pollute much less than old. Large polluters however, such as big trucks, pose a challenge because they tend to stay in use longer.
- A question was asked regarding off-road vehicles. The presenter indicated that, although he was aware of models that estimate overall emissions based on fuel consumption in a particular area, the Canadian Fuels Association has not fully researched the issue to date.

CASA Initiatives

Presentation Highlights:

This presentation provided an overview of past CASA initiatives which lead to the development of this NPS workshop. The Vehicle Emissions Implementation Design Team (VEIDT), active from 1998 to 2000, had a mandate to implement initiatives to help protect human health and the environment from vehicle emissions produced in Alberta. A list was provided of the VEIDT initiatives that had been implemented. The VEIDT was succeeded in 2000 by the Vehicle Emissions Team (VET), which renewed the previous mandate, and continued until 2007. In 2010, the CASA Board of Directors received the VET Final Report, and assessed that the two teams had made a significant contribution to the management of vehicle emissions. The Board agreed that transportation air emissions continue to exist, that the Clean Air Strategy should inform future work, and that in order to further address vehicle emissions, stakeholders would be encouraged to bring forward a Statement of Opportunity when appropriate.

As is usual practice, the CASA secretariat engaged stakeholders the following years to learn which air quality issues were of interest. The secretariat noted that conversations regarding vehicle emissions frequently evolved into broader discussions of NPS. In 2012, the Government of Alberta released the Renewed Clean Air Strategy and Action Plan; the plan contains frequent references to NPS. Vehicle emissions were seen by CASA stakeholders as one piece of the greater NPS issue. This led to the collaborative development of an NPS Statement of Opportunity, which was presented to the CASA Board of Directors in June, 2013. The Board agreed that NPS was an important issue, but it was observed that further scoping and prioritization was required prior to reconsideration of NPS by the Board. . The Board requested that a workshop be convened, with the purpose of providing advice to the Board on how to proceed regarding NPS.

Discussion Highlights:

- No discussion

2. Group Work

The second part of the workshop was designed to generate feedback on NPS by asking participants to list priority concerns, brainstorm existing initiatives, and identify potential opportunities. Participants began in small breakout groups, then came together for a plenary discussion.

Breakout Groups:

Participants were divided into four facilitated breakout groups, each of which discussed the following questions:

1. What is your most serious concern regarding NPS?
2. What NPS initiatives are you involved in/do you know about?
3. What do you believe are the most significant opportunities in Alberta to reduce NPS emissions and their impacts?

This sequence of questions allowed participants to first articulate where problems exist and how those problems are or are not currently being addressed. Having framed the issue of NPS in this way, participants were then able to consider which of the problem areas could be regarded as significant opportunities for work. Each breakout group reported the results of their discussion to the plenary session. Opportunities for addressing NPS were consolidated into one list, and then refined to remove repetition. Cross-cutting opportunities began to emerge. The final consolidated list of opportunities was posted on the wall and participants were asked to vote for those they felt were of highest priority. Detailed notes from each breakout group can be found in Appendix C.

3. Top Three Priorities to Address NPS

The voting exercise resulted in a prioritized list of opportunities, and the group was led in a plenary session to discuss the outcomes.

Top three opportunities identified, *in no particular order*, for addressing NPS are:

- Understanding the NPS issue: emissions inventory, data management, and modeling
- Assessing options for action: templates and tools
- Building awareness and support

Understanding the issue: emissions inventory, data management, and modeling

While it is clear that information exists for some NPS elements, questions remain regarding NPS on the whole. Gaining an improved understanding would be critical, not only to build a solid foundation for future work on NPS, but to help focus efforts on work that will have the most impact for resources invested.

A number of gaps exist that could be addressed. There is an opportunity to develop inventories of NPS emissions and sources, in order to understand the relative contribution of each to ambient air quality, as well as any trends that may exist. Related to this is understanding the relationship between NPS and point source emissions, and their respective contributions to ambient air quality.

The issue of confidence in information was raised, and an opportunity was identified to verify the relevance of existing information for addressing NPS issues in an Alberta context. Participants felt that commonly-referenced statistics on NPS in Alberta may not be reliable, as they are often broad averages extrapolated from data that is not representative across the province. Similarly, questions were raised regarding the validity of existing models for the management of NPS, which are often based on data from other jurisdictions.

As this work is highly technical, the assistance of individuals with specialized skills would be required. CASA could play a role as an oversight committee for coordination of this work.

Assessing options for action: templates and tools

This opportunity speaks to the need for a clear process for responding to NPS-related air quality issues. While the Renewed Clean Air Strategy and Action Plan discusses in broad strokes the importance of NPS management, and Regional Land-Use Plans are beginning to specify air emissions thresholds that will trigger a management response, there is limited guidance on what type of management response could or should be employed. The development of a process template to support air quality objectives in regional management plans would greatly increase their effectiveness by laying out tangible steps that can be taken. In addition to outlining key considerations and information needed, this template could include a list of options for action to address NPS issues, complete with a cost-benefit analysis of each. It would be important to develop this process template with particular regard for the Alberta context and actions that would generate cross-cutting impacts.

Building awareness and support

There is an opportunity to develop an understanding and appreciation for the significance of NPS issues with the public, industry, and government. With respect to the public, in order for initiatives addressing NPS to gain traction, individuals must have an understanding of how their personal choices contribute to NPS, and potential mitigation opportunities. Combined with an understanding of the impacts on the public of NPS, individuals could be encouraged to make

well-informed and responsible personal decisions, and to support targeted regulation that may result from potential project work. The concept of a public awareness campaign was introduced.

Engagement with stakeholders will need to be ongoing and bolstered by a clear articulation of the case for support, specifically with respect to the CASA process. This will facilitate further championing of the issue within industry, government, and non-government organizations.

It was noted that the top three priority opportunities are necessarily interrelated. For example, in order to build awareness of NPS, there must be a significant issue about which you are trying raise awareness, and an action to address that issue. The decision of which issues to address must be based on solid NPS data and/or models. As such, rather than being a linear process, addressing the priority opportunities is likely to be somewhat iterative in nature.

4. CASA and the Priority Opportunities

Participants were asked to consider the three identified priority opportunities in the context of a potential CASA project by answering each of the following questions:

1. Which are best suited to a multi-stakeholder dialogue, and why?
2. What are the key barriers that an NPS Project Team would have to overcome, and how would you advise them to accomplish this?
3. What else should CASA consider in moving forward with an NPS initiative?

The following is a summary of the subsequent plenary discussion.

Multi-stakeholder dialogue

A multi-stakeholder approach will be important for each of the three opportunities to address NPS air emissions. In terms of understanding the issue, data inventories, and assessing options for action, information will need to come from a wide variety of sources. CASA has a unique ability to build relationships and provide a neutral forum in which the work can be done. It was suggested that the work be divided into two parcels: one with a focus on technical work done by specialists, and one with a focus on broad oversight and direction provided by a wider range of interested stakeholders. This would ensure that reliable information is produced in a manner that is transparent and inclusive.

Key barriers

While the three identified opportunities hold the potential for progress in addressing NPS, there are also inherent challenges. A balance must be struck where the scope of work for a potential NPS project team is both realistic and valuable. Participants stressed that in order to avoid a project whose objective is overly ambitious, clear intended outcomes and overall purpose must be developed recognizing existing resource limitations. It is equally important that the focus of

project work not be governed solely by factors such as perception of importance, “pet projects” of particular groups, or areas that are the least challenging.

The highly technical nature of understanding the issue led participants to question the extent to which CASA could realistically be involved. A point was also made regarding access to data, as much of the resources and expertise required for this type of work reside with the Government of Alberta and Environment Canada. It was felt that the pursuit of a better understanding through a multi-stakeholder process is nonetheless necessary to ensure that decisions can be made with a high level of confidence in the data.

Regardless of scope, this type of work will be time and labour-intensive. Duplication of work must be avoided, and existing efforts must be supported wherever possible. Developing work to support Regional Land Use Plans was highlighted as an opportunity to leverage resources and increase efficiency.

The broad nature of NPS will challenge a team’s ability to build awareness and support. Generating ownership for such a broad issue may be difficult both with stakeholders of the CASA process and with the public. It will be essential to ensure that coordinated and focused messaging is developed concurrently with any project work. This may mean the development of different messaging for different audiences.

Other considerations

Participants were asked to provide CASA with any final considerations regarding a potential NPS initiative. The group re-emphasized the importance of learning from other jurisdictions such as the U.S., and that there is no interest in repeating existing work. Participants felt that immediate action was warranted, noting that there will never be a time when conditions are perfect and all variables are known. Lastly, the connection between health and NPS was discussed. Although health is not necessarily in and of itself an opportunity for a potential NPS project, it is the rationale for proposed work.

5. Conclusion and Next Steps

The CASA Secretariat committed to creating a proceedings document, to be shared with workshop participants. As was the original intent of the workshop, information collected will contribute to advice to the Board on how to proceed regarding NPS. In closing comments, Norm MacLeod indicated that a revised NPS Statement of Opportunity will be developed based on this workshop for consideration at the December Board meeting. The Secretariat may draw upon the experience of certain workshop participants to help frame the proceedings document and Statement of Opportunity. Norm also asked that attending Board members act as advocates and describe their experience in the NPS workshop to the Board, including the multi-stakeholder process, and resulting agreements. Norm brought the day to a close by thanking workshop

participants for attending and providing valuable information. Special thanks were given to individuals who provided presentations in the morning.

Note:

This document is a facilitators summary of workshop proceedings that characterizes the range of views expressed with respect to NPS emissions and, where warranted, any convergence of opinion.

Appendix A: Workshop Participant List

Name	Affiliation
Joannes Wong	Alberta Municipal Affairs
Kim Lalonde	Alberta Environment and Sustainable Resource Development
Martin Chamberlain	Alberta Energy
Merry Turtiak	Alberta Health
Peter Dzikowski	Alberta Transportation
Rhonda Lee Curran	Alberta Environment and Sustainable Resource Development
Lisa Sadownik	Alberta Environment and Sustainable Resource Development
Sandi Jones	Alberta Agriculture and Rural Development
Sean Royer	Alberta Agriculture and Rural Development
Martina Krieger	Alberta Environment and Sustainable Resource Development
Robin Suave	City of Calgary
Tanya Moskal-Hebert	Alberta Agriculture and Rural Development
Al Shulz	Chemistry Industry Association of Canada
Brian Ahearn	Canadian Fuels Association
Brock Helm	Alberta Sand and Gravel Association
Dan Thillman	Alberta Chamber of Resources
Koray Onder	CAPP
Rich Smith	Alberta Beef Producers
Claude Chamberland	CAPP
Cory Colbran	SWANA Northern Lights Chapter
Gilles Morel	Canadian Fuels Association
Ann Baran	Southern Alberta Group for the Environment
Bill Calder	Prairie Acid Rain Coalition
Don Wilson	Alberta Motor Transport Association
Eugene Mohareb	Pembina Institute
Leonard Standing on the road	Ponoka Fish and Game
Ruth Yanor	Mewassin Community Council
Scott Wilson	Alberta Motor Association
Mandeep Dhaliwal	Alberta Airsheds Council
Bob Scotten	Alberta Airsheds Council
Facilitation Team	
<i>Alex Grzybowski</i>	<i>Facilitator</i>
<i>Celeste Dempster</i>	<i>CASA</i>
<i>Robyn Jacobsen</i>	<i>CASA</i>
<i>Michelle Riopel</i>	<i>CASA</i>
<i>Norm MacLeod</i>	<i>CASA</i>

Appendix B: Workshop Agenda

Tuesday, October 22, 2013 Headspace (1817 10th Avenue SW, Calgary)	
8:30 am	Registration
9:00 am	Welcome, Introduction & Agenda Review <i>Alex Grzybowski, Facilitator</i> <i>Norm MacLeod, CASA Executive Director</i>
9:20 am	Panel Discussion <ul style="list-style-type: none"> • Overview of non-point source emissions • Significance of the issue in Alberta • Questions & Clarification
10:15 am	Networking Break
10:35 am	Non-Point Source Perspectives and Initiatives <ul style="list-style-type: none"> • Government of Alberta • Non-Government Organizations • Canadian Fuels Association • Clean Air Strategic Alliance • Questions & Clarification
12:00 pm	Lunch
1:00 pm	Breakout Group Discussions Four breakout groups consider the challenges they have experienced, as well as initiatives they are aware of/involved in, and identify key opportunities for a CASA initiative.
2:30 pm	Breakout Group Reports & Prioritization <ul style="list-style-type: none"> • Presentation of group highlights and plenary discussion. • Key opportunities are prioritized.
3:00 pm	Networking Break
3:20 pm	Breakout Group Discussions Four breakout groups discuss barriers and considerations for CASA moving forward with a NPS initiative.
4:20 pm	Breakout Group Reports Presentation of group highlights and plenary discussion.
4:45 pm	Next Steps and Closing <i>Alex Grzybowski, Facilitator</i> <i>Norm MacLeod, CASA Executive Director</i>
5:00 pm	Adjournment

Appendix C: Breakout Group notes

Group 1

NPS Workshop: Small Group #1 discussions

1. Identifying the Sources

Concern:

- What are the emissions?
- What are the trends?
- What problems are we trying to solve (focus)?
- Building a common understanding

Initiatives:

- We know some of the big pieces already (sources) ex. road dust
- Capital Region is doing fine PM modelling (see GoA backgrounder for details)
- CCME Mobile Sources Working Group
- Environment Canada, MOVES program (non-road modelling, includes industrial and recreational sources)
- World Bank is doing satellite monitoring

Opportunities:

- Inventory of NPS (this is also referenced in Clean Air Strategy Action Plan)
 - Improving existing inventories
 - Validating existing inventories
 - Establishing a baseline
- Trend modelling specific to all of Alberta (not just Edmonton and Calgary)
- This information can show us where we can focus our effort in order to make the biggest different
 - Knowing what the issue(s) is/are
 - Start with the big pieces
 - Need to prioritize – we know some of the big sources and could use this to do some initial prioritization
- Can we coordinate with the work being done under the Land-use Framework?
- This work feeds into other pieces, other steps flow from this information

2. Bringing Parties Together Effectively

Concern:

- To work on creative solutions

Initiatives:

- CASA NPS workshop
- Airshed zones
- Regional planning process (LUF)
- Clean Air Strategy

Opportunities:

- All of the initiatives listed above
- Engaging municipalities
- CASA
 - Provincially
 - Feeding into the federal process

3. Emissions (PM and VOCs) from Agricultural Operations

Concern:

- Health impacts associated with these emissions
 - For people, crops and animals
- Implementation of currently available tools to reduce emissions

Initiatives:

- Beneficial management practices for agricultural sector
- Various health effects studies
- Several initiatives were mentioned by AARD during the GoA presentation this morning
- PM and Ozone Management Plans (airshed zones)

Opportunities:

- PM and VOC monitoring
- Health effects studies
- Using this information to build management strategies

4. Legislation

Concern:

- Consistent application of legislation
 - Using appropriate tools to achieve the best result

- First Nation consultation process
 - Alignment between different processes
 - Agreeing on how we'll all work together

Initiatives:

- Clean Air Strategy
- AER – Peace River proceeding 1769924

Opportunities:

- Plugging into regional planning process
- Plugging into rollout of AQMS (eg. CAAQS)

5. Funding

Concern:

- To fund air quality monitoring
 - NPS helping to fund (eg. Transportation)
- Funds for any implementation costs associated with work that is chosen to be done

Initiatives:

- CRAZ and the GoA did some work around charging a fee on vehicle registration, but it ultimately didn't lead anywhere

Opportunities:

- This is probably something that should be considered later on in the process rather than at the beginning
- Could be a technological solution to funding air quality monitoring
- Polluter pays principle
 - Could look at smaller sources (eg. Paintshops) to fund monitoring (eg. Part of licensing fee)
- Funding could be one tool to solve issue of how to support air quality monitoring

6. Awareness

Concern:

- About the issue of NPS, resources that are available to do work
- Bringing people in
- Understanding the effects of NPS

- Helping individuals understand their contribution including cumulative daily activity
- How individuals can make changes

Initiatives:

- Capital region modelling on non-road
- CRAZ has a Community Based Social Marketing Project
- WHO
- Clean Air Strategy Action Plan

Opportunities:

- Air literacy and education strategy
- Leverage work currently being done on energy literacy
- Leverage local sustainable communities work
- Providing technical support to municipalities
- Promoting CASA and CASA's work
 - Leverage airshed zone outreach work
- Incentives for students
 - Challenge them to study air quality issues

7. Jurisdiction:

Concern:

- Where can we make a difference?
 - Work to undertake should be practical
 - Should consider cause and effect – where we can get the most for our sweat equity
- No duplication of work
- Solutions need to work for Alberta

Initiatives:

- None

Opportunities:

- This is really about finding a scope where we can do good work
- This concern is a prioritization tool for focusing scope
- It is more of a process concern/consideration

Group #1 also had some thoughts about NPS initiatives in general:

- What's happening in other provinces?

- Ex. Ontario
- What happening outside of Canada?
 - USA? Europe?

General Discussion:

After working through the three questions, the group was asked which opportunities rose to the top. Group 1 identified that, in terms of sequencing, #1 (Identifying the sources) and #2 (Bringing parties together effectively) are first pieces - #1 creates an information base and helps to prioritize and focus action while #2 creates the condition for a successful process to achieve outcomes.

Group 2

1. Ammonia

Concern:

- The group did not articulate specific reasoning or explanation of this concern.

Initiatives:

- AAAQO is assessing ammonia for setting objectives
- Alberta Agriculture has initiatives to address ammonia

Opportunities:

- No opportunities were identified

2. Total Particulate Matter

Concern:

- The group did not articulate specific reasoning or explanation of this concern.

Initiatives:

- The Capital Regional Air Management Framework provides advice to Alberta Environment regarding TPM

Opportunities:

- No opportunities were identified

3. Lack of good emissions data

Concern:

- Lack of inventory of emissions
- Lack of evidence base to guide efforts
- Lack of confidence in existing models:
 - Potentially based on data that isn't transferrable to Alberta
 - Estimates are extrapolations of few localized monitoring sites to broad-scale averages.

Initiatives:

- Alberta Environmental Monitoring and Evaluation Agency has made large investments in monitoring capacity.

Opportunities:

- Develop an evidence-based inventory of NPS
- Develop confidence in NPS estimates and modeling.
 - Relevance to Alberta
 - Assumptions underlying data averages

4. Understanding the relative contribution of sources

Concern:

- We don't currently have a good understanding of the full list of contributors to NPS, the relative significance of each, or the interactions among them.
- NPS and Point Source air emissions act together to impact ambient air quality. The relationship between these isn't well-understood.

Initiatives:

- Subsets of data exist for many individual contributors of NPS
- Alberta Environmental monitoring and Evaluation Agency has ambient information. The group was unclear whether the Agency has localized emissions inventories.

Opportunities:

- Explore completeness of total list of NPS Contributors
- Explore issue of combined/cumulative effects of contributors to NPS on ambient air quality.
- Explore significance of NPS on ambient air quality, relative to Point Source.

5. The solution that is developed doesn't fit the problem

Concern:

- If the solution isn't designed to fit a known problem, there is potential for undue burden or negative effect on impacted stakeholders,
- Solution cannot focus on only known, easily understood sources (ie. low-hanging fruit), with abundant data just because it's easier. It must consider that source of the problem may be poorly understood (such as cumulative impact of multiple sources), but no less significant to ambient air quality.

Group 3

1. Templates, tools, methods
2. Adapt models
3. PM Fines
4. Solutions-focused work
 - a. Hotspots
 - b. Triggers/targets management response
 - c. Clean energy
 - d. Carbon Footprint
5. Identify significant unregulated sources

Group 4

A. Data and information management

What it means: Coordination within the province and across jurisdictions.

Related issues:

1. Provincial requirements for the in-use fleet don't match other Canadian jurisdictions
 - Includes light duty, heavy duty, on-road, off-road, etc.
 - E.g. Federal anti-tampering legislation not implemented in Alberta; out-of-province inspections.
 - There has been some past Government of Alberta work, but there doesn't seem to be anything happening currently.
 - The federal Mobile Sources Working Group may address this issue, but the group is still in the formative stage.
2. Lack of data and/or coordination of existing sources of information.
 - CEMA has developed an emissions inventory for Wood Buffalo.
 - The Acid Deposition Framework developed an emissions inventory.
 - Alberta Agriculture has an emissions inventory.
3. Reducing emissions from light-duty vehicles.
 - Reducing fuel use; informing consumers of money-saving opportunities; building awareness.
4. Cumulative effects and thresholds in Land Use Framework.

- Need to know how thresholds in regional plans under the Land Use Framework will effect new development? Could result in stranded resources.

Potential Actions

1. Vehicle inspection and maintenance program
 - Could be mandated inspections, voluntary program, or incentivized program.
2. Public awareness-to-action program to drive the development of appropriate government policy.
3. Technology – could we develop an app?
4. Beneficial Management Practices that target large fleets.

B. Assessing options for action

What it means: Develop a list of potential actions for managing NPS emissions. Analyze potential actions to identify 1) cross-cutting actions that would be applicable in regions across Alberta; 2) actions that would have the most impact for the least effort (best bang for the buck).

Related issues:

1. Lack of data – need to know what portion of emissions is coming from non-point sources. This is directly linked to developing an emissions inventory and data/information management.
2. Regions that have exceeded the PM/O triggers are developing individual action plans, but there could be the opportunity for coordinated actions.
 - The Capital Region Airshed Zone is developing an action plan.
 - Regional plans under the Land Use Framework have regional air quality plans.
 - The Clean Air Strategy has an action plan.
 - Airsheds and municipalities have many on-going initiatives.
3. Need better management of urban NPS.
 - Urban centers have the highest levels of pollution and also the highest density of potentially affected people.
 - There are many data gaps related to priority emissions and sources of NPS emissions.
4. Cumulative Effects – how will thresholds in regional plans under the Land Use Framework effect new development? Could result in stranded resources.

Potential Actions

1. Develop a list of actions that could apply across regions.
2. Cost/benefit analysis of actions.
3. Short list of the “best” actions.
4. Tool box or a guide for regions that is Alberta-specific.
5. Better data management and/or emissions inventory.
6. Better coordination across regions and initiatives.
7. Public awareness of which *individual* actions could have the most impact for the least effort.

C. Public awareness

What it means: Building support for individual action and government action. Envisioning a role for CASA.

Related issues:

1. Ensuring responsible and informed personal/individual decision-making.
 - Helping people to make connections between NPS and their own individual decisions.
 - Ensuring people take personal responsibility for their contribution to NPS.
 - Developing tools to help people make informed decisions.
 - Understanding the role of government.
 - Reducing emissions from light-duty vehicles.
 - Reducing fuel use; informing consumers of money-saving opportunities; building awareness.
 - There are already many initiatives (car-pooling, TDM, transit, cycle lanes, urban densification, etc.) but a lack of coordination.
 - Many airsheds have some public awareness initiatives.
 - The Capital Region Airshed Zone releases public information – Annual Assessment of Air Quality and 2014 reporting against CAAQS.
 - The AQHI is an outreach program.
 - The federal government has public education programs, e.g. responsible fuel consumption.
 - There are many initiatives at the municipal level.
 - Alberta Agriculture has an extension program.
2. Building support and awareness of government decisions
 - Building acceptance/buy-in from the public for tough government decisions regarding regulation and policy developments.
 - Related to all levels of government.

Potential Actions

1. A stronger role for CASA in education.
2. Strategies for make NPS meaningful . . . “sexy”.
3. Getting people to think differently about their role in NPS.
 - A multi-stakeholder forum, such as CASA, means better buy-in across the range of interests.
4. Awareness of the individual impact on NPS emissions – how they contribute, how they can have the most impact.
5. Better provincial coordination of on-going public awareness initiatives (led by airsheds, municipalities, etc).
6. Government should take the lead.
7. Better data to develop a base line against which to measure progress.
8. Awareness of which individual actions could have the most impact for the least effort.

D. Emissions Inventory

1. Links to Public awareness:
 - Better data to develop a base line against which to measure progress.
2. Links to Assessing options for action:
 - Lack of data – need to know what portion of emissions is coming from non-point sources.
 - Need to be able to identify priority emissions and priority sources.
3. Need to know how thresholds in regional plans under the Land Use Framework will effect new development? Could result in stranded resources.