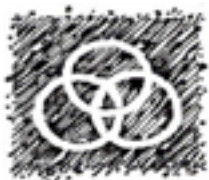




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Why should we care about air quality?

With studies in hundreds of cities in North America and around the world having demonstrated a strong link between elevated levels of air pollutants and impacts on human health, the provincial government has identified air quality as a priority issue. For particulate matter (airborne particles of a microscopic size) and ground-level ozone (the main component in smog) these effects have been detected at a range of concentrations, indicating that there is no real safe level. This is particularly the case with the elderly, children, and those with pre-existing cardio-respiratory conditions. Beyond this, it has been shown that agricultural crops, forests, and plants are affected. Local air quality is affected by industrial activity, transportation (e.g. marine, diesel, etc), commercial and residential development, wood smoke, road dust and natural circumstances. As a result, there is a need for a shared effort involving a variety of groups, individuals and organizations to protect air quality. In some instances, the issues relating to air quality go beyond local political boundaries and require that management take place through a partnership of neighboring communities. For these reasons, the British Columbia Ministry of Environment (Ministry) is advancing airshed planning as a means for managing local air quality.

Is airshed planning a new idea?

As described above, airshed planning provides the means for addressing complex air quality issues by providing a comprehensive, stakeholder-driven process of coordinating activities in a defined area or airshed. To-date, all such efforts in British Columbia have been voluntary in nature keeping with the spirit of a shared stewardship approach. Airshed plans are currently in place in seven communities or regions of the province and plans are nearing completion in two additional areas. Several more communities have initiated actions to improve local air quality.

What role does the Provincial government currently play in airshed management?

Air quality in the province is currently being managed through various pieces of legislation and regulations. The Environmental Management Act (EMA) provides the provincial government with the authority to develop standards, objectives and guidelines for the protection of air quality, and to regulate industrial point sources through site-specific permits, regulations and codes of practice. The EMA enables the use of administrative penalties, orders and economic instruments to assist in achieving compliance, along with modern environmental management practices such as area-based planning to protect human health and air quality. The EMA also provides the Greater Vancouver Regional District with delegated authority to manage air quality within its boundaries.

The Ministry Air Protection program is supported by eleven Victoria-based and seventeen regional staff, with responsibilities that include the operation and maintenance of an air quality monitoring network and data management systems. In addition to this, there are a range of initiatives and programs supporting airshed planning, as well as the ongoing conduct of scientific research and the use of both regulatory and non-regulatory tools.



What is the Provincial government trying to achieve by advancing airshed plans?

With increasing interest in airshed planning across the province, there have been concerns about consistency in practice and ensuring the most efficient use of both available funds and the time and energy of the people involved. One of the ways in which the Ministry has responded is to lead the establishment of a provincial airshed planning framework (“framework”). This framework, once in place, is intended to address:

- **Provincial commitments** in support of the Canada-wide Standards for air quality.
- The need to **accommodate growth and protect the quality of life** for all citizens of the province.
- **Integration** of air quality considerations into community planning and decision processes.
- A process and framework for **collective action**.
- **Consistency** in approach to airshed planning across the province.
- The **effective use of resources** and avoided duplication in effort.

For particulate matter (PM_{2.5}) and ozone, the provincial government has committed to meeting the Canada-wide Standards by 2010 and must also demonstrate its contributions towards two principles of Continuous Improvement and Keeping Clean Areas Clean. The provincial government has further committed to meeting these requirements in all communities for which air quality is monitored, and not just those of a certain population.¹ For most communities in British Columbia, the emphasis will be on improving their air quality, or maintaining good conditions.

How far have we gotten with the discussions on a provincial airshed planning framework?

The Ministry commissioned a paper in 2005 that reviewed existing research and principles of airshed planning, with this providing the beginnings of an airshed planning framework.² In early 2006, this initial work was further informed through the facilitation of two consultation meetings with key stakeholders in Vancouver and Prince George. These consultations on airshed planning sought the views and comments of individuals representing industry, local government and communities on the design of a province-wide approach that would foster collaboration and shared stewardship. Specific areas of discussion included the principles and goals of a province-wide framework along with how the planning process should be structured and resourced. The results of these consultations were provided to the Ministry, and form the foundation for advancing the discussions on a provincial framework.

¹ - Often there is a limit set of 100,000 population and higher in targeting certain communities.

² - Development of a Provincial Approach to Airshed Planning and Continuous Improvement/Keeping Clean Areas Clean: A Discussion Paper – Draft, Schutte and Mazzi, Levelton Consultants Ltd., 2005.



What will guide the continued evolution of this provincial airshed planning framework?

There are a number of principles that represent the fundamental beliefs underlying the adoption of a framework to guide and support airshed planning across British Columbia. Briefly, these include:

- ***Shared stewardship:*** This principle is manifested through the promotion and acceptance of shared responsibilities in the stewardship of the natural environment of British Columbia.
- ***Advancing sustainable development:*** This principle acknowledges the importance of balancing protection and stewardship of the environment with economic growth.
- ***Integration in planning:*** This principle reflects the importance of ensuring that airshed planning is consistent with and builds on other related efforts such as community energy planning, greenhouse gas management plans; informs other levels of local or regional plans, including Official Community Plans; and, makes the most out of limited community resources by avoiding overlaps. It also recognizes the role of local government in planning and managing economic development and regulating pollution sources.
- ***The avoidance of future problems with air quality:*** This principle is reflected in the use of tools and information (e.g. best management practices, sound science³, etc.) in a manner that is focused on prevention.
- ***Flexibility:*** This principle allows for sufficient flexibility within a provincial approach so that communities can develop their own solutions to address local air quality issues.
- ***Adaptive and innovative management:*** This principle is based on an appreciation of the importance of learning from past successes and failures, developing new approaches to meet emerging challenges, and striving to take advantage of new knowledge in decision-making.

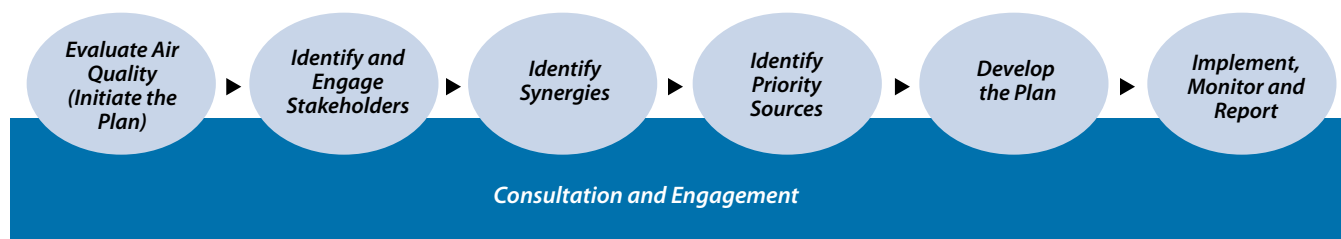
As noted earlier, the two principles associated with the Canada-wide Standards for air quality, namely Continuous Improvement and Keeping Clean Areas Clean, are also important considerations given the obligations of the provincial government to demonstrate progress in this regard.

How will the framework be reflected in actual practice and available support?

Fully achieving the principles and commitments as described earlier in this paper implies that the majority of the province will be covered by an airshed plan of some sort. While it is not expected that every community will have a detailed airshed plan, it is important that choices made by local government, businesses, citizens and other agencies reflect an effort to proactively avoid future air quality problems.

³ - Sound science encompasses information and modeling techniques that support an increased understanding of emission sources, reduction technologies and natural atmospheric processes in airsheds.

For the purposes of the provincial framework, it is anticipated that there will be six major stages to the airshed planning process.



These stages, along with the associated roles and contributions of the Ministry, local government and other interests, are described in greater detail below and on the following pages.

Initiate the planning process


In practice, it is expected that airshed plans will be triggered by factors such as population growth, air quality levels and trends, new development or projects, perceived or actual health risks, and to a lesser degree, Ministerial orders. In general, local governments or other community interests will initiate planning, although the provincial government may lead planning in areas subject to poor air quality where there is little local support or capacity for action, and in other areas on a priority basis. Some guiding questions that can be followed at this point in the process include:

- Is there access to air quality monitoring data?
- Are there concerns being identified by community interests in the airshed, or based on available information (i.e. provincial air quality objectives or the Canada-wide Standards being exceeded)?
- If such concerns exist, how significant is/are the problem(s)?
- Could air quality become an issue in the future (e.g. given geographic location, industrial make-up, traffic or growth patterns, etc)?
- Would a comprehensive air quality management plan be warranted, or could a simplified “planning lite” approach be undertaken at this time, based on early actions.⁴

At this stage, the Ministry plays a key role in its operations and oversight of air quality monitoring stations as well as supplying information including expert scientific advice. In addition, outreach and education materials are available through the Ministry and targeted to local politicians, local government staff, community stakeholders and citizens. Local governments can play, as noted above, a leadership

An airshed can be defined on the basis of geography, or meteorological conditions, but in many cases political boundaries (e.g. municipal) are used given what can be managed at the practical level.

⁴ - A planning “lite” approach is outlined in the airshed planning tool developed for the Ministry of Environment and that can be found at: <http://www.airqualityplanning.ca>.



role in the early stages of initiating the planning process and building local support, along with community-based interest groups, industry and, ultimately, citizens.

Discussion question: What types of information and support would assist with generating local commitment for an air quality planning process?

Identify and engage stakeholders


Current airshed planning exercises have relied on decision-making groups to provide the needed leadership and guidance. In general, these airshed planning groups are comprised of representatives from various organizations, local government, industry and other community interests who have a stake in local air quality. The format that these groups take, such as a formal committee or a roundtable, along with the number of participants and mandate will often reflect the size of the community, the resources that are available, the extent of the related issues and the level of community interest. In smaller communities, it's likely that a single committee will suffice. In larger communities faced with more complex air quality problems, there may be more than one committee comprising decision makers, technical experts and a range of local along with regional (possibly provincial) stakeholders.

Whatever form it may take, the functions of an airshed planning group may include:

- Identify a “champion” to lead the process;
- Provide for overall administration and facilitation;
- Look for opportunities involving integration with other planning processes;
- Leverage financing where possible;
- Set local objectives;
- Educate and publicize the process (i.e. a communications role);
- Promote inclusion and consensus;
- Conduct, or provide for the use of, needed research;
- Provide oversight of related data collection and analysis;
- Report on activity and progress.

In keeping with this, the initial tasks will be to establish a budget, finalize funding and designate a planning timeline.

The Ministry provides for direct funding support on a priority basis, with this funding (which takes the form of community grants) being allocated on the basis of a number of factors, including the severity of air quality problems, population growth rates, level of local support and potential for partnerships. Coupled with this, the Ministry facilitates collaboration among government agencies and can support planning



efforts through the in-kind contributions of technical specialists and by identifying “expert resources”. Local governments can also provide resources or funding for planning processes.

Discussion questions:

Given the present role of the Ministry as defined earlier, what roles would you like to see for other stakeholders in relation to the airshed planning process?

What approaches do you recommend to engage those key stakeholders that may be unwilling to participate in airshed planning?

Of the range of possible functions for an airshed planning group, which do you consider to be the most important?

Are there specific criteria that should be applied to those who participate on airshed planning committees?

Should these criteria differ depending on whether decisions are based on a consensus-approach versus a majority voting model?

Identify synergies with other planning processes


Many activities within an airshed can affect air quality and are subject to a variety of plans or related processes. Transportation, regional growth strategies, greenhouse gas management plans and energy plans can all affect air quality and have similar objectives. The airshed planning group(s) described above needs to identify ongoing and planned initiatives in the region to determine if a more integrated approach would be beneficial and appropriate (i.e., this is explored further in the Holland Barrs study on integrating planning processes ⁵ and is demonstrated in Whistler’s Integrated Energy, Air Quality and Greenhouse Gas Management Plan ⁶). To frame it differently, there may be planning processes already in place that can be taken advantage of in terms of advancing air quality considerations without embarking on a new planning process. Specific questions to be contemplated at this stage include:

- Are there critical issues within the community (region) that relate to air quality, greenhouse gas management, and energy use (costs)?
- Are such issues currently being addressed through a planning process such as greenhouse gas management or community energy plans?
- Is pursuing more of an integrated planning process or, at the very least, a complementary approach a feasible option (e.g. emission sources are compatible, the community has the necessary resources, etc)?

If there is little opportunity to pursue an integrated planning process, then ensuring that air quality related initiatives do not conflict with greenhouse gas and energy management activities should be kept in mind.

5 - Holland Barrs Planning Group Inc. (2005) “Integration of Air Quality-related Planning Processes: Report”, prepared for B.C. Ministry of Environment, May 2004. http://www.env.gov.bc.ca/air/airquality/pdfs/int_aq_rep_may04.pdf

6 - http://www.whistler.ca/files/PDF/Engineering_PW/Energy_Plan_.pdf



The Ministry can assist with understanding current planning processes as well as any related policies, regulations and other relevant requirements. In addition, local governments can seek to integrate air quality, greenhouse gas, and energy management directions, priorities and initiatives with Official Community Plans and other planning processes.

Identify priority sources

There are a number of techniques that can be used to establish airshed management planning priorities. The most basic is the emission inventory, which describes the contaminants released into the air, their sources and locations. Inventories can be used to gauge the relative contributions of each source to the level of pollution that is being witnessed in an airshed. The Ministry maintains a provincial emissions inventory for criteria air contaminants, and using GIS tools, can estimate emissions at the local level. For smaller communities, or in areas where the sources are simple to understand and quantify, this may be sufficient.

As the number of sources increases in an airshed, their relative contribution becomes more difficult to understand. For these situations, the application of additional tools may be contemplated:

- Local air quality and meteorological monitoring, where available.
- Detailed “micro” emissions inventory.
- Models to estimate how various sources affect air quality.


The application of models is usually reserved for assessments of more complex situations.

***Discussion question:** What additional types of support would be valuable at this stage of the airshed planning process, especially for communities where there is no monitoring?*

Develop the plan

An airshed management plan builds on the earlier steps by documenting the efforts that are needed to either maintain or improve local air quality. It does this by describing:

- **Air quality goals** that can reflect the need for “keeping clean areas clean” as well as “cleaning up areas with poor air quality”; continuous improvement; protection of human health and the natural environment; public awareness; and local action.
- **Indicators** to evaluate progress towards these goals (e.g. number of odor complaints, number of severe asthma cases reported, number of times that air quality objectives or standards are exceeded, etc).

- 
- **Targets** for the indicators that describe future expectations for performance (e.g. zero exceedances of the Canada-wide Standards by 2007).
 - The **strategies** for meeting the targets and ultimately the goals.
 - The **actions** (formally referred to as “emissions reductions measures”) that underlie the implementation of the strategies, along with timelines for implementation and related responsibilities.

Although an iterative approach may be taken to developing the plan, the identification of goals should be done early in the process. Throughout these steps, feedback should be obtained from all relevant community interests and the general public. Ultimately, this part of the process should culminate with the approval from local government politicians for the plan.

The Ministry has ongoing regulatory responsibility for managing industrial point sources, and ensuring that associated requirements along with national and provincial commitments are being met. The Ministry plays an additional role in providing for access to, and broadening the awareness of, best management practices as well as other available tools. To-date, there is no formal approval process or provincial registry of completed plans required by the Ministry. Local governments can use land use planning and zoning to direct development to areas of lower air quality risk, and can apply management practices to reduce emissions.

Discussion question:

What would be the potential benefits and drawbacks of the Ministry reviewing and formally approving airshed plans and/or establishing and maintaining a central registry?

Implement, monitor and report

On a proactive basis, issues of resourcing and budget for the implementation of the plan, as well as moving forward with monitoring of indicators of progress towards the defined goals, will need to be considered. Reporting should occur on a regular basis with major reviews of the plan taking place every year or two years.

Discussion question:

Should the Ministry provide for a periodic “status report” on the state of airshed planning across the province that also includes information on results using a common set of measures?



How can I become involved in this process?

This discussion paper describes the guiding principles and core components that would comprise a provincial airshed planning framework, and is for consideration by stakeholders at the next series of consultations. Comments received at the consultations will be summarized and distributed back to participants. For those that cannot attend the planned consultations, comments can also be forwarded directly to:

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