

February 2020

Provincial Framework for Developing Provincial Air Quality Objectives

Purpose

The intent of this framework is to outline the process and key considerations for developing air quality objectives in British Columbia (B.C.).

Background

The *Environmental Management Act* gives the Minister of Environment and Climate Change Strategy the authority to prepare and publish policies, strategies, objectives, guidelines and standards for the protection and management of the environment. The Ministry of Environment and Climate Change Strategy uses air quality objectives (AQOs) as benchmarks to assess air quality and inform air management decisions. AQOs in B.C. are not legally binding unless referred to in an authorization or regulation, at which point they become binding requirements.

The Ministry developed a risk-based framework in 2011 to guide development of provincial AQOs. The framework identified a three-step process for AQO development: (1) priority setting; (2) risk assessment and (3) risk management, with multiple considerations within each step. Since this time, the development of provincial AQOs has largely been overtaken by the national process to develop Canadian Ambient Air Quality

Standards (CAAQS), of which the Ministry is an active participant.

The CAAQS are a key element of the national Air Quality Management System (AQMS) that is being implemented across Canada (see: <https://www.ccme.ca/en/resources/air/index.html>). The CAAQS are developed under the auspices of the Canadian Council of Ministers of the Environment (CCME) and are intended as a driver for improved air quality. CAAQS development is supported by a comprehensive review of the science and recommendations by a multi-stakeholder CAAQS Development and Review Working Group (CDRWG). To date, CAAQS have been developed for four common air contaminants: fine particulates (PM_{2.5}), ground-level ozone (O₃), sulphur dioxide (SO₂) and nitrogen dioxide (NO₂), for near-term achievement and five years beyond (see <http://airquality-qualitedelair.ccme.ca/en/>).

The Ministry supports CAAQS development through the CDRWG and is also responsible for implementing the CAAQS and annually reporting on CAAQS achievement in designated [provincial air zones](#). Given the growing role of the CAAQS in air management across Canada and in BC, the Ministry would like to leverage the technical and other resources that support CAAQS development in the review of its own provincial AQOs. This is reflected in the updated

Provincial Air Quality Objectives

provincial framework to develop provincial air quality objectives.

Review of Provincial Framework

The Ministry released its [Discussion Paper: Review of Provincial Air Quality Objectives](#) in February 2019 to gain perspectives from various stakeholder groups on a proposed approach to updating provincial AQOs in light of the CAAQS.

Comments were received from representatives of both industry and health agencies. Various stakeholders flagged the need for *a science-based process* and *greater transparency* in decisions. Additional comments related to the intended *application of the CAAQS* (ambient reporting to support air zone management; not “pollute up to” limits) and the need for *clarification on how CAAQS or separate provincial AQOs will be applied* in environmental decision-making. Finally, stakeholders cited *vulnerable populations* and *achievability* as additional considerations in the development of provincial AQOs.

Updated Provincial Framework

The Provincial Framework outlines the key goals, guiding principles and general approach used to develop AQOs.

Goals

The Ministry works to protect the environment by managing environmental risks to BC's water, land and air. A key objective is "Clean and safe water, land and air." The Ministry sets provincial AQOs in support of clean air.

Guiding Principles

Guiding principles to inform AQO development in BC include the following:

- Maintaining and improving human health and the environment are the primary objectives,
- Seek the same degree of protection for all British Columbians,
- Communicate in an effective way,
- Make effective use of sound science, and
- Strive to make the process transparent.

Additional context-setting pieces that guide the AQO-setting process are summarized in Appendix I.

Approach

The Provincial Framework lays out an approach for setting provincial AQOs where CAAQS exist, and a parallel process for where CAAQS have not been developed for a pollutant.

1. Where CAAQS exist, CAAQS and supporting science assessments provide the basis from which provincial AQOs are developed.

The Ministry will then assess the need to adopt more or less stringent AQOs than the CAAQS provide, based on BC-specific factors that include: vulnerable populations and other sensitive receptors in BC, achievability and how AQOs will be applied in this province.

2. Where CAAQS do not exist, criteria from leading Canadian/US jurisdictions and supporting documentation provide a practical starting point for provincial AQO review or development.

The Ministry will identify leading jurisdictions relevant to BC, review supporting science assessments, and assess the need to adopt more or less stringent AQOs based on BC-specific factors that include: vulnerable populations and other sensitive receptors in BC, ability to monitor, achievability and how AQOs will be applied in this province.

3. A guidance document that clarifies AQO application in BC will accompany the adoption of new provincial AQOs.

Under this approach, a more stringent AQO than the CAAQS may be considered, for example, where supported by B.C. health and air quality evidence (e.g. vulnerable populations in B.C., in conjunction with elevated ambient concentrations). A less stringent AQO than the CAAQS may be considered for limited applications on an interim basis, such as to facilitate a transition to the CAAQS over time or to accommodate the conservativeness of model assumptions and predictions while refined guidance to address these issues is prepared.

Ministry Contact

For more information, consult our website at:
<https://www2.gov.bc.ca/gov/content/environment/air-land-water/air/air-quality-management/regulatory-framework/objectives-standards> or e-mail the Ministry at:
BCairQuality@gov.bc.ca.

Appendix I - Additional Context for AQO-setting in BC

- AQOs are benchmarks to assess air quality and guide air management decisions in B.C.
- AQOs are not legally binding unless referenced in an authorization or regulation.
- For several key air contaminants such as fine particulates (PM_{2.5}), ground-level ozone (O₃) and nitrogen dioxide (NO₂), there are no clear thresholds below which health effects do not occur.
- As such, AQOs should not be viewed as pollute-up-to levels and reasonable efforts should be taken to improve air quality over time (i.e. continuous improvement).
- AQOs apply beyond the industrial fence line.
- Where exceedance of AQOs are measured or predicted through dispersion models, such exceedances should be considered in the context of their magnitude, frequency, timing and proximity to sensitive receptors.
- As directed under the [CCME's Air Zone Management Framework](#), where monitored levels exceed the CAAQS and these exceedances are not a result of transboundary flows or exceptional events, actions should be taken across the affected area and include all important sources of emissions.