



Odour Management Policy Development Plan

June 26, 2018



1. Background

Managing emissions of odorous air contaminants has become an important priority for Metro Vancouver, particularly as the number of odour complaints from the public has increased significantly. Between February and May 2018, Metro Vancouver consulted with industry, local governments, the public and other stakeholders on various approaches to enhance Metro Vancouver's current Odour Management Framework. Feedback from the consultation informed the development of this Odour Management Policy Development Plan.

2. Policy Development Plan

During consultation in early 2018, Metro Vancouver presented the following approaches that could be applied alone or in combination through bylaws and permits to reduce odour impacts:

- outcome-based criteria in the receiving environment,
- performance-based criteria at the emission source,
- technology requirements at the emissions source,
- economic instruments to recover regulatory program costs and encourage a reduction in emissions, and
- the potential for clearer bylaw definitions and provisions related to odorous air contaminants.

In light of the feedback from consultation, the policy development plan outlines regulatory and non-regulatory initiatives that draw on the discussed odour management approaches to meet the following objectives:

- Enhance Metro Vancouver's Odour Management Framework;
- Draw upon successful elements of Metro Vancouver's existing air quality program for managing other air contaminants;
- Apply effective, fair and efficient approaches to managing odorous air contaminants that align with best practices in other regulatory agencies;
- Present new guidance documents that provide assistance and ensure consistency for regulated facilities as well as Metro Vancouver staff;
- Increase the clarity and enforceability of bylaws and permits that improve air quality in the Metro Vancouver region; and
- Maintain effective communication with stakeholders and the public.

Metro Vancouver staff will develop proposals for the Metro Vancouver Regional District (MVRD) Board's consideration, as outlined in this plan. Metro Vancouver staff will seek the MVRD Board's direction to initiate further consultation for any initiatives with significant implications for industry and the public.

2.1 Non-Regulatory Initiatives to Enhance the Odour Management Framework

Metro Vancouver received questions and comments about the discussed odour management approaches that identified a need for further research, technical guidance, and community outreach to enhance Metro Vancouver's Odour Management Framework and support the development of regulatory proposals.

2.1.1 Further research

Odour measurement and assessment

Industry stakeholders expressed concerns about the reliability, consistency, and cost of implementing outcome-based criteria and performance-based criteria, particularly criteria for odorous air contaminants that are measured in odour units (a measure of odour concentration based on the number of dilutions needed to reach the detection threshold for an odorous air contaminant or mixture of odorous air contaminants).

Metro Vancouver uses standard protocols and evidence-based approaches to assess and mitigate the impacts of air emissions, including odorous air contaminants. For the measurement of odour units, Metro Vancouver uses standard protocol EN 13725:2003, which is currently under review by a European Standard Technical Committee as part of a periodic revision process common to all standard protocols. Metro Vancouver staff will stay informed about any changes to this standard protocol and apply these changes when they take effect, while continuing to use existing standard protocols currently in effect. Metro Vancouver will gather information related to measurement methods and best practices for establishing ambient air quality objectives.

Other jurisdictions

Metro Vancouver will continue to look to successful odour management programs in other jurisdictions, in particular other regulatory agencies using criteria for assessing odour levels at the emission source or in the receiving environment. This research will include an assessment of the effectiveness of detection technologies for odorous air contaminants, such as e-noses, in regulatory and operational contexts.

Financial analysis

In addition, Metro Vancouver will assess the benefits and financial implications for various stakeholders that would arise from an enhanced odour management framework, including the resources required for applying any new or amended bylaws.

2.1.2 Odour dispersion modelling guidance

Dispersion modelling can be used to estimate concentrations of air contaminants or odour in the surrounding environment based on input data, including source emission rates (expressed in mass concentration or odour units), source characteristics, land use, topography and meteorological data. Metro Vancouver requires air dispersion modelling for new and amended permits for facilities with a high potential to generate odorous air contaminants. The BC Air Quality Dispersion Modelling

Guideline (2015) provides guidance related to model selection, application of models for regulatory purposes in BC, and best modelling practices. Metro Vancouver will develop a supplemental guidance document that will provide additional direction specific to sources that emit odorous air contaminants. This would be a resource for staff, regulated facilities, and their consultants to ensure that air dispersion modelling for odorous air contaminants is done in a way that is consistent with accepted practices.

Metro Vancouver will explore the feasibility of establishing ambient air quality criteria for odorous air contaminants. Ambient air quality objectives are used in numerous ways in air quality management programs; for example, they are considered in establishing the emission limits and conditions that Metro Vancouver sets in a permit or in emission regulation bylaws to manage the discharge of air contaminants. Metro Vancouver has established ambient air quality objectives for a number of air contaminants, such as nitrogen dioxide and fine particulate matter, which are routinely measured in the region. Within the context of dispersion modelling, ambient objectives could be used for facility design, continuous improvement of technology and management practices, and any other appropriate applications identified in the research of best regulatory practices in other jurisdictions. Metro Vancouver staff will seek direction from the MVRD Board to consult on potential ambient air quality objectives for odorous air contaminants.

2.1.3 Communications and engagement

Different stakeholder groups suggested that Metro Vancouver improve communications and outreach about facilities that emit odorous air contaminants and about Metro Vancouver's odour management program. Metro Vancouver will increase outreach to key stakeholders and the public through an odour communication and engagement strategy, which would aim to raise awareness around expectations about odour detection and odour management in Metro Vancouver, jurisdictional responsibilities, and how the public and industry can help manage odours. Staff will present a detailed proposal for the odour communication and engagement strategy to the MVRD Board for consideration.

Metro Vancouver will continue collaborating and sharing information with municipalities. Metro Vancouver will provide information to municipalities about the types of businesses that are likely to release odorous air contaminants and request notification if municipalities receive a business licence application from such a facility.

Metro Vancouver will approach local analytical laboratories to explore opportunities to enhance the capacity to measure odorous air contaminants in British Columbia. Currently, air emission samples are sent to Ontario and the eastern United States for certain analyses of odorous air contaminants, including olfactometric analysis using standard protocol EN 13725.

2.2 Regulatory Proposals

Metro Vancouver has enacted bylaws that control the discharge of air contaminants and are designed to protect the environment and human health. Facilities and businesses may be authorized to discharge air contaminants through either site-specific permits or sector-specific emission regulation bylaws. Emission regulation bylaws can be an efficient and equitable approach for regulating a large number of similar small to medium-sized facilities that discharge air contaminants. Site-specific permits are a more appropriate tool to regulate emissions from large or unique facilities with a high potential for emitting air contaminants.

As part of the Policy Development Plan, Metro Vancouver would seek to amend *GVRD Air Quality Management Bylaw No. 1082, 2008* (Bylaw 1082) and *GVRD Air Quality Management Fees Bylaw No. 1083, 2008* (Bylaw 1083). Metro Vancouver would also pursue the development of new emission regulation bylaws for existing and emerging sectors with significant potential for emitting odorous air contaminants. Stakeholders would have the opportunity to provide input for each regulatory initiative during each step of regulation development.

2.2.1 MVRD Air Quality Management Bylaws

The Environmental Management Act delegates the authority to regulate the discharge of all air contaminants, including odorous air contaminants, in the Metro Vancouver region to the Metro Vancouver Regional District Board; this authority is exercised through Bylaw 1082. Metro Vancouver collects fees from permitted and regulated facilities to recover the cost of administering the air quality regulatory program. Bylaw 1083 provides the basis for how these fees are assessed. Amendments to Bylaw 1082 and Bylaw 1083 would strengthen the odour management framework.

Metro Vancouver proposes to add the term ‘odorous air contaminant’ to Bylaw 1082 and Bylaw 1083 to support Metro Vancouver’s authority for regulating the discharge of odorous air contaminants. Odorous emissions, like all air emissions, can fall under the definition of air contaminants, where the definition of an air contaminant includes a substance that may cause material physical discomfort, injure a person’s health or interfere with the normal conduct of business. The release of odorous air contaminants has the potential to cause air pollution if present in a way that substantially alters or impairs the usefulness of the environment. Introducing the term ‘odorous air contaminant’ will support the development of regulations and permits for facilities that emit odorous air contaminants, for example, by enhancing Metro Vancouver’s ability to develop specific ambient air quality objectives and establish discharge limits for this category of air contaminants where appropriate.

Metro Vancouver seeks to recover program costs by charging user fees based on the discharge of odorous air contaminants under Bylaw 1083. Additional mechanisms are needed to recover costs associated with the management of odorous air contaminants. The number of odour complaints and related regulatory activities has ballooned in recent years, resulting in a pronounced gap between current program costs and the recovery of costs from emitters of odorous air contaminants. Metro Vancouver would introduce fees for the discharge of odorous air contaminants and identify drivers

for reducing emissions. In addition, Metro Vancouver would increase fees for specific odorous air contaminants, namely total reduced sulphur (TRS) compounds and ammonia, to be consistent with provincial fee schedules.

Any additional proposed amendments to Bylaw 1082 and Bylaw 1083 would be presented to the MVRD Board for consideration when staff seek direction to proceed with further consultation.

2.2.2 Ambient air quality objectives

Ambient air quality objectives are used extensively in air quality management programs, including Metro Vancouver's, to guide air quality management decisions. They are typically used to assess air quality trends, guide permitting decisions, provide context for environmental assessments, inform development of regulatory initiatives, and provide information to the public, including the issuance of air quality advisories.

Metro Vancouver is contemplating establishing ambient air quality criteria for odorous air contaminants. The criteria could be used in conjunction with dispersion modelling for facility design, continuous improvement of technology and management practices, and any other appropriate applications identified in the research of best regulatory practices in other jurisdictions. Metro Vancouver has established ambient air quality objectives for a number of air contaminants, such as nitrogen dioxide and fine particulate matter, which are routinely measured in the region. Ambient air quality objectives influence the emission limits and conditions that Metro Vancouver sets in a permit or in regulations to control the release of air contaminants.

Any regulatory proposal to include outcome-based criteria, such as ambient air quality criteria for odorous air contaminants, in the Odour Management Framework would draw on the findings from further research about measurement methods and the effectiveness of their use in other jurisdictions. Metro Vancouver will conduct this research before the next stage of consultation on bylaw amendments.

2.2.3 Potential new sectoral emission regulation bylaws

In consideration of feedback received during consultation and ongoing analysis of air quality complaints, Metro Vancouver has identified three sectors of immediate interest for the management of odorous air contaminants. Accordingly, Metro Vancouver will develop sectoral emission regulation bylaws that may specify allowable emission levels, monitoring, technology and reporting requirements for groups of similar emission sources. Emissions from larger or unique facilities that emit odorous air contaminants will continue to be authorized by air quality emission permits. If a new emission regulation bylaw is developed, it is possible that emissions from facilities with an air emission permit would be managed under that emission regulation bylaw instead.

Cannabis cultivation facilities

Bill C-45, the proposed *Cannabis Act*, has received Royal Assent. Cannabis (commonly referred to as marijuana) is expected to be legal for recreational use in Canada in the summer or fall of 2018. Cannabis growing, processing, and manufacturing can cause significant emissions of odorous air contaminants and other air contaminants of concern. Medical cannabis production facilities already exist in Metro Vancouver, and it is anticipated that the legalization of recreational cannabis will likely increase the number and scale of cannabis cultivation facilities (CCFs). Ahead of potential changes to federal and provincial policies related to cannabis, vegetable farms have started to convert greenhouses to CCFs across Canada. Between April 19 and June 8, 2018, Metro Vancouver received 102 odour complaints related to CCFs in the Metro Vancouver region, linked to a facility in the Township of Langley. Metro Vancouver staff will outline potential policy options for regulating the discharge of air contaminants from the rapidly emerging sector of CCFs in a proposed discussion paper.

Mid-size organic waste management facilities

There are many steps in the management of organic waste that can potentially release odorous air contaminants. Permits are issued to larger organic waste management facilities that have the potential for significant impacts, or operations that are unique, such that they are best handled in a site-specific manner. Smaller or mid-size facilities can be authorized through a sectoral emission regulation bylaw that specifies requirements for a group of facilities with similar characteristics. Best management practices, emission control works, enclosures and proactive strategies would be considered in the development of a sectoral emission regulation bylaw that would aim to reduce the generation and discharge of odorous air contaminants as well as potential impacts from mid-size organic waste processing facilities.

Currently, three relatively small facilities in the region are authorized to receive food waste under a solid waste licence and do not have an air emission permit. The number of smaller facilities could increase in the future as Metro Vancouver continues to prioritize the diversion of organic waste away from landfills to organics management facilities, and regional population density increases. High demand on the region’s larger facilities and associated issues with emissions of odorous air contaminants may lead generators of organic waste to deliver their material to other local, smaller facilities. Metro Vancouver would propose the cutoff for defining mid-size organics management facilities in a discussion paper that would explore potential regulatory options for facilities that are not currently or imminently authorized by a Metro Vancouver air emission permit, while larger organic waste management facilities would continue to be authorized through the permitting system. A new sectoral emission regulation bylaw would provide assurance to the public that there will be oversight of air emissions from the operation of mid-size facilities.

In addition to air quality regulatory measures, Metro Vancouver’s Solid Waste Services Department will review and consult on options to update the *Greater Vancouver Sewerage & Drainage District Municipal Solid Waste and Recyclable Material Regulatory Bylaw No. 181, 1996* (Bylaw 181) with the goal of identifying and proposing potential changes to Bylaw 181 to ensure facilities licenced under

that bylaw are designed and operated in a manner to prevent community impacts from odour. Metro Vancouver staff will work to ensure strong connections between the air quality and solid waste regulatory frameworks.

Food processing facilities

A number of food processing activities including but not limited to roasting, frying, smoking, baking, milling, and butchering can release emissions of odorous air contaminants and, in some cases, other air contaminants of concern such as fine particulate matter and volatile organic compounds. Further research is required to identify which sectors would be appropriate to regulate through specific sectoral emission regulation bylaws, in order to reduce air quality impacts in surrounding communities.

3. Next Steps

Staff will begin further research on implementing ambient and source criteria for odorous air contaminants, develop technical guidance, and enhance the communications and engagement strategy to support the development of the proposed regulatory initiatives. In early 2019, staff will seek approval to initiate consultation on ambient air quality objectives and amendments to the Air Quality Management Bylaws, followed by consultation on other regulatory initiatives related to managing odorous air contaminants. The development of further emission regulation bylaws will be considered for emerging sectors or other sectors that generate repeat complaints, as the need arises.