

**Ministry of the
Environment**

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**Ministère de
l'Environnement**

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MAY 22 2012

His Worship Rob Burton
Mayor
The Corporation of the Town of Oakville
P.O. Box 310
1225 Trafalgar Road
Oakville ON L6J 5A6

And

Gord Lalonde
Acting Town CAO
5207 Mulberry Drive
Burlington ON L7L 3P6

RE: EBR #: 10EBR001.R
Application for review of the need for a new air pollution Act or regulation.

May 22, 2012

Dear Mayor Burton and Mr. Lalonde

Thank you for your application for review, submitted under Part IV of the *Environmental Bill of Rights, 1993* (EBR). I am writing you to inform you that the Ontario Ministry of the Environment has completed its review of Ontario's fine particulate matter (PM_{2.5}) management framework.

In accordance with section 117 of the EBR, the consideration of and decision on the review have been delegated by the Minister to me as the Assistant Deputy Minister of the Integrated Environmental Planning Division.

For details on the outcome of the review, please see the attached notice of completion of review.

I would like to thank you for your interest in regional air issues. If you have any questions regarding the review, please contact Adam Redish, Director, Air Policy and Climate Change Branch (416-314-5148).

Yours truly,

Paul Evans
Assistant Deputy Minister
Integrated Environmental Planning Division
Ontario Ministry of the Environment

cc: P. Lapp, Environmental Commissioner's Office (file #: R2011008)
Environmental Bill of Rights Office, MOE
Adam Redish, Air Policy and Climate Change Branch, MOE

Environmental Bill of Rights Section 71 Notice of Completion of Review

EBR Application for Review 10EBR001.R – Request for review of the need for a new air pollution Act or regulation

Background

On January 5, 2010, the Ministry of the Environment (MOE) received an application that requested a review of the need for a new air pollution Act or regulation to address fine particulate matter (PM_{2.5}). On November 15, 2010, the MOE responded to the applicants that it will undertake a scoped review examining the effectiveness of Ontario's policy framework and determine if there is a need to revise Ontario's approach to PM_{2.5}.

Summary of Analysis

Ontario has a comprehensive framework of regulations and programs to address PM_{2.5}, which has resulted in measurable reductions in emissions of PM_{2.5} and its precursors, leading to improvements to air quality. In addition, ongoing implementation of Ontario's Toxics Reduction Strategy and updated standards under O. Reg. 419/05, as well as upcoming initiatives such as the proposed national Air Quality Management System, will provide additional tools to address PM_{2.5}. The review's findings are summarized below.

The Nature of Fine Particulates (PM_{2.5})

Our review looked at the nature of PM_{2.5}, including why it is a unique pollutant and the human health impacts associated with exposure. PM_{2.5} in outdoor air presents an air quality management challenge because it is the result of emissions from a variety of sources such as industry, vehicles, and residences. In addition, PM_{2.5} is unique in that fine particles can be directly emitted (primary particulate) or can be formed in the atmosphere as a result of chemical reactions involving gaseous precursors (secondary particulate).

Human exposure to outdoor PM_{2.5} is associated with negative health effects because the small particles are easily inhaled and absorbed into the lungs. Health impacts include decreased lung function, increases in respiratory stress, and reduced life expectancy due to cardiopulmonary and lung cancer mortality. Adding to the challenge of PM_{2.5} management is the fact that it is difficult to set acceptable human exposure levels for PM_{2.5} as it is a "zero threshold" or "non-threshold" pollutant. Scientific research regarding the health impacts of PM_{2.5} is continuously evolving by further establishing links between health effects and particle size as well as links between health effects and the composition of particles.

How Other Jurisdictions Manage PM_{2.5}

The review also examined how outdoor PM_{2.5} is managed in leading jurisdictions including the United States, British Columbia and Alberta. The PM_{2.5} management approach in these other jurisdictions is based on regulating primary PM_{2.5} for local air quality improvement and

secondary PM_{2.5} for regional air quality improvement. The review found that each jurisdiction used an airshed approach for management of PM_{2.5} and other key air pollutants with actions tailored to address area-specific concerns. Airshed actions will address all major sources of PM_{2.5} present in an airshed, which may include wood burning, road dust, industrial, agricultural, and/or vehicle emissions. Many sources are managed through municipal actions such as by-laws restricting residential wood burning and street sweeping to prevent windblown dust. Industrial facilities have to comply with permitting requirements such as emission reductions, technology standards, and/or compliance with an outdoor air quality standard.

What PM_{2.5} Emissions and Concentrations Look Like in Ontario

The review also looked at what PM_{2.5} emissions and concentrations trends look like across the province. Primary PM_{2.5} emissions in Ontario come from many sources including residential, transportation, and industrial. Historically, industrial emissions were a significant contributor to Ontario's emissions, emitting over half of the province's emissions in 2000. Over the past decade, however, primary PM_{2.5} emissions contributions have shifted such that residential emissions are now the largest contributor (approximately 40% in 2010).

As is the case with many pollutants, the overall trend in Ontario shows significant reductions in primary PM_{2.5} and precursor emissions:

- Provincial emissions of primary PM_{2.5} have decreased by approximately 33% from 2001 to 2010.
- Ontario has achieved its emission reduction targets for PM_{2.5} precursors nitrogen oxide (NO_x) and sulphur dioxide (SO₂) ahead of schedule. In 2010, a 45% reduction was achieved from 1990 levels of NO_x emissions. In 2010, sulphur dioxide emissions were 77% lower than 1990 levels.
- Annual outdoor levels of PM_{2.5} in Ontario have decreased by 30% from 2003 to 2010.
- Since 2008, Ontario has achieved the Canada-wide Standard for PM_{2.5}.

How Ontario Manages PM_{2.5}

The review included an assessment of how Ontario currently manages PM_{2.5}. In 2000, Ontario adopted the Canada-Wide Standard (CWS) for PM_{2.5} developed by the Canadian Council Ministers of the Environment. In order to achieve the CWS for PM_{2.5}, the province has developed and implemented a regional air management strategy which includes comprehensive regulations and programs. Ontario's actions address emissions of both precursors (including nitrogen oxides, sulphur dioxide, and volatile organic compounds) and primary particulate matter. These actions include:

- Ramping down coal-fired generation and replacing that power with cleaner energy sources such as wind and solar
- Reducing smog-causing emissions from cars and trucks through Drive Clean emissions testing
- Implementing emissions trading for the electricity (O. Reg. 397/01) and industrial sectors (O. Reg. 194/05)
- Developing stronger regulations to reduce industrial emissions

- Planning and decision-making through the Environmental Assessment process
- Environmental Compliance Approvals for industrial facilities

The review also noted that there are current and upcoming programs and initiatives which will, taken together, further address PM_{2.5}, including updated standards under O. Reg. 419/05, implementation of Ontario's Toxics Reduction Strategy, and the proposed national Air Quality Management System (AQMS). Under this proposal, Ontario would have opportunities to further address PM_{2.5} through updated outdoor air quality standards, new industrial emission requirements, and a local air quality management framework which assesses all sources of emissions in an area.

Conclusion

Based on the review's findings, the MOE has concluded that there is no need to take further action to revise Ontario's approach to the management of PM_{2.5}. The elements of the review point to the overall efficacy of Ontario's existing and evolving approach to managing air pollutants, including PM_{2.5}. Ontario's ongoing commitment to improving air quality management will build on these good results and continue to protect human health and the environment in Ontario.