

"To be the most livable town in Canada"

Town of Oakville

Health Protection

Air Quality By-law

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**Air & Waste Management Association
Ontario Section Annual Conference
October 6, 2010**





Health and Air Quality Context for the By-law

Rationale for Focusing on Fine PM

- Fine PM are airborne particles less than 2.5 micrometres in size – listed as a CEPA toxic substance
- Abundance of scientific and government studies showing serious, fatal health effects from airborne fine PM
- Regulatory gap; no regulatory standards for fine PM emissions or ambient levels
- Part of the Town's effort to reduce the overall airshed burden
- Highlights the public health implications of air emissions and air quality in Oakville

Health Effects of Fine PM

- Considerable scientific evidence of serious health impacts
- Numerous published peer-reviewed studies of health effects associated with exposure to fine PM published in the last 4 years
- Surveys of Oakville residents consistently raise air quality as a key priority
- A positive linear relationship between health effects with exposure to fine PM



Overview of the HPAQ By-law

Town By-law – Authority

Municipal Powers (*Municipal Act, 2001, as amended*)

- Power to pass by-laws
 - re “health, safety, and well-being”
 - prohibit / regulate “public nuisances”

By-law is:

- a health protection and public nuisance by-law
- a reporting and disclosure by-law

Town By-law – Purposes

- Protect human health from airborne fine PM
- Collect and disclose information on sources of emissions of fine PM to public
- Regulate major emitters of fine PM
- Designate any major emission of fine PM presenting unacceptable risks to human health
- Reduce over time levels of fine PM in the Town's ambient air

Part III – Emissions Reporting

- **Facility:** a building, structure, equipment and other stationary items on a site or at a location that is under common operation, management, and/or control, but does not include:
 - (i) a residential site that contains less than 25 dwelling units; or
 - (ii) a commercial, business or institutional site or location that is less than 0.1 ha (1000 m²) in size

Part III – Emissions Reporting

- **Health-risk air pollutant:**
 - Fine Particulate Matter (PM_{2.5}); and
 - Precursor pollutants:
 - Nitrogen oxides (NO₂),
 - Sulphur dioxide (SO₂),
 - Ammonia (NH₃), and
 - Volatile organic compounds (VOCs)

Part III – Emissions Reporting

- **Negligible quantity** of any health-risk air pollutant:
 - Fine Particulate Matter ($PM_{2.5}$) < 1 kg
 - Precursor pollutants < 10 kg:
 - Nitrogen oxides (NO_2) < 10 kg
 - Sulphur dioxide (SO_2) < 10 kg
 - Ammonia (NH_3) < 10 kg
 - Volatile organic compounds (VOCs) < 10 kg

Part III – Emissions Reporting

- Who needs to report?
 - Proposed and existing facilities that:
 - Have emissions greater than the negligible quantity of any health-risk air pollutant

Part III – Emissions Reporting

- Exemptions
 - Not a facility
 - Have emission(s) less than the negligible quantity of any health-risk air pollutant
 - Emissions from routine testing of emergency (backup) generators

Part III – Emissions Reporting

- How often to report?
 - Once
 - Except when there are changes to facility emissions

Part III – Emissions Reporting

- What is needed for the report?
 - Daily emissions: average and worst-case
 - Annual emissions: average and worst-case
- of FPM and precursor pollutants
(PM_{2.5}, NO₂, SO₂, NH₃ and VOCs)
- Supporting calculations & documents

Part IV – Major Emission Approval

- Major emission thresholds of health-risk air pollutants:
 - Fine Particulate Matter ($PM_{2.5}$) > 300 kg
 - Precursor pollutants:
 - Nitrogen oxides (NO_2) > 20,000 kg
 - Sulphur dioxide (SO_2) > 20,000 kg
 - Ammonia (NH_3) > 10,000 kg
 - Volatile organic compounds (VOCs) > 10,000 kg

Part IV – Major Emission Approval

- Who needs approval?
 - Proposed and existing facilities that:
 - Have emissions greater than the major emission thresholds of any health-risk air pollutant

Part IV – Major Emission Approval

- What is needed for the approval application?
 - Information Requirements:
 - Project description
 - Evaluation
 - Mapping
 - Assessment
 - Appraisal

Part IV – Major Emission Approval

Comparison of Regulatory Thresholds (kg/yr)

Health Risk Air Pollutant	Town of Oakville By-law	City of Toronto By-law	Toxics Reduction Act (Ontario)	National Pollutant Release Inventory (Federal)
PM _{2.5}	300	30	300	300
VOCs	10,000	100	10,000	10,000
NO _x	20,000	200	20,000	20,000
SO ₂	20,000	-	20,000	20,000
NH ₃	10,000	-	10,000*	10,000*

* Consumption based threshold

Part IV – Major Emission Approval

Comparison of CofA information

Process Step	CofA (Air)	Town of Oakville Assessment
1	Identify all sources for all listed MOE contaminants (300+)	Identify sources for health risk air pollutant sources only
2	Estimate worst-case emissions over varying averaging times	Estimate worst-case emissions over 24-hour and annual time periods
3	Model Impacts: Use screening tools where possible	Model Impacts: Use screening tools where possible
4	Assess worst-case results against MOE standards	Assess average & worst-case results against public health effects
5	Must be in compliance to obtain CofA	If not in compliance – present reasonable mitigation plan

Part V / VI – Review Process

- Town Decision-Making Process
 - Town retains peer reviewer to ensure “complete application” and then evaluates completed application
 - Public process prior to decision-making
 - Application fee: \$25,000 maximum
 - covers administration and peer review

Part V – Review Process

Town Decisions

Existing Emitters	New Emitters
(A) Approved - not significant public health effect	(A) Approved - not significant public health effect
(B) Approved - significant public health effect, but 25% emissions reduction proposed over 5 years	(B)(i) Refused - significant public health effect
(C)(i) Refused - significant public health effect	(B)(ii) Approved - significant public health effect, but in the public interest
(C)(ii) Approved - significant public health effect, but in the public interest	

By-law Phase-In Timeline

- **Report to town**
All Existing facilities: by February 1, 2011
- **Obtain approval from town**
Existing facilities (major emitters)
 - with C of A (Air): by February 1, 2011
 - without C of A (Air): by February 1, 2012
- **Already in effect for proposed facilities with major emissions**

Town Assistance

- Town Staff will assist businesses and facilities to address the by-law requirements
- Especially for those facilities that **do not**
 - (i) have a C of A (Air) or (ii) report to the NPRI
 - as to whether the by-law could apply, or
 - where the by-law applies, provide information on how to calculate emissions (guidance documents and staff consultation)

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