



OAKVILLE

## REPORT

COUNCIL MEETING

MEETING DATE: FEBRUARY 1, 2010

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**FROM:** Legal Department and Environmental Policy

**DATE:** January 25, 2010

**SUBJECT:** Health Protection Air Quality By-law

**LOCATION:** Town wide

**WARD:** Town wide

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### RECOMMENDATION:

That by-law 2010-035, a by-law to assess and control the health effects of major emissions of fine particulate matter in the Town of Oakville, be passed.

### KEY FACTS:

The following are key points for consideration with respect to this report:

- Fine particulate matter ("fine PM") is airborne particles less than 2.5 microns in size
- There is considerable scientific evidence of serious impacts to human health associated with exposure to fine PM
- The community has expressed long-standing concerns about Oakville's air quality and its health impacts, and the town is committed to addressing these concerns
- There are presently no regulatory standards for fine PM emissions or ambient levels
- Municipalities have authority under the *Municipal Act, 2001* to pass by-laws respecting the health, safety and well-being of persons

By-law 2010-035 is attached as Appendix A. The purpose of the proposed by-law is to protect the health of Oakville residents from the effects of fine particulate matter (fine PM) by collecting information on emissions from facilities within Oakville and implementing regulatory controls.

### BACKGROUND:

At its meeting on December 22, 2009, Council passed the following resolution:

"That the by-law to assess and control the health effects of major emission of fine particulate matter in the Town of Oakville, be circulated for public review

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and comment, to come back to Council for passage at the Council meeting of February 1, 2010.”

Attached as Appendix B is a copy of draft by-law 2009-197 that was presented to Council at its meeting on December 22, 2009. The by-law implements a process for the review and approval by Council of facilities that produce a major emission of fine particulate matter and/or ‘precursor pollutants’, namely substances which, when emitted into the air, produce fine particulate matter, referred to collectively in the by-law as “health-risk air pollutants”.

The by-law imposes two levels of requirements. The first is a reporting requirement. Under the by-law, where a facility may emit at least one health-risk air pollutant, its owner or operator shall report the emission to the town. Such information will be maintained in a database of health-risk emissions throughout the town. The town will post on its web-site a current list of all facilities subject to the by-law, and whether the facility is a source of a major emission of such pollutants. The requirement to report is a one-time requirement, unless there is a change to the emissions from the facility. There is no fee associated with the reporting to the town of existing or proposed emissions of one or more health-risk air pollutants.

The second level of requirement is an approval by Council of facilities that cause a “major emission” of a health-risk air pollutant, which are emissions of one or more health-risk air pollutants that exceed certain levels as established under the by-law. Under the by-law, proposed or existing facilities that produce a major emission would be subject to an approval process involving assessment of health impacts from emissions, and implementation of regulatory controls where necessary.

The application for approval includes submission of:

- (a) a description of the facility, including all sources of emissions that may contribute to a major emission of a health-risk air pollutant;
- (b) an evaluation of existing and predicted levels of fine particulate matter using an approved atmospheric dispersion model;
- (c) mapping of the affected airshed;
- (d) an assessment of the public health effects associated with the major emission, taking into account pre-existing levels of fine particulate matter in the affected airshed; and,
- (e) an appraisal of any measures available to reduce risks to public health.

Applications would be subject to a peer review process, posting on the town web-site, and circulation for comment to appropriate agencies, including the Halton Region Health Department. Council would then consider the application and any significant public health effects associated with the proposed facility at a public meeting. Council would determine whether to approve the application with such

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conditions as Council considers necessary, or refuse to approve the application and determine that, in its opinion, the applicant's major emission constitutes a public nuisance. The by-law provides for a fee of \$25,000 to defray the administrative and peer review costs associated with approval applications.

Facilities receiving approval under the by-law are required to submit to the town, each year for three years following approval, and thereafter for such period as the town determines appropriate, a report of the actual emissions of health-risk air pollutants from the facility.

Facilities subject to the by-law that fail to report or obtain an approval would be subject to prosecution, and liable upon conviction to a fine of up to \$100,000 for a first offence, and \$10,000 a day for each day or part of a day that the offence continued for any subsequent offence.

Both the reporting and approval requirements under the by-law apply to existing as well as proposed facilities. The by-law would apply immediately upon enactment to any proposed facilities that may cause an emission of a health-risk air pollutant. For existing facilities in the town, draft by-law 2009-197 proposed a transition to both the reporting and approval requirements, whereby the reporting requirement would not apply for six months, and the approval requirement would not apply for one year, following passage of the by-law.

#### **COMMENT/OPTIONS:**

##### Consultation

At its meeting of December 22, 2009, Council directed staff to consult with the public to obtain input on the proposed by-law. Public consultation was organized for the first three weeks of January, 2010, with two public meetings and an email address set up specifically to receive comments on the proposed Health Protection Air Quality By-law. Notices regarding consultation were provided to a list of businesses that were expected to be potentially impacted, the Oakville Chamber of Commerce, the Canadian Manufacturers & Exporters Association, the Economic Development Department Newsletter, and to the public through emails, media releases, and several advertisements in the local newspapers.

The two public meetings were held on January 19 and 21 to provide the business community and general public information on the proposed by-law, background on the existing air quality and fine particulate levels and related health impacts, and opportunities for questions, comments, and input. Comprehensive details on the public consultation program are provided in Appendix C, including session agendas, presentation and handout materials, summarized questions and answers, emailed comments, and letter submissions.

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The January 19, 2010 event was attended by over 70 people. The majority were local business representatives. All comments/questions from the session were recorded and by accounts from those attending, the event was well organized and provided a good opportunity for businesses to learn about the proposed by-law, voice concerns, and raise questions.

The consultation session held the evening of January 21, 2010 was attended by over 80 people, including some business and community representatives, and the general public, and 13 comment cards were received as of January 25.

The email address set up to receive comments contained 210 emails from businesses and the community received as of January 25, with an additional 14 comments received up to mid-day January 28.

Staff was dedicated to implement a consultation program that was effective over the time available to ensure that potentially impacted businesses, the broader business community, and the general public were aware of the opportunity to engage in the consultation process.

#### Summary of Key Issues Raised in Consultation

A review of the overall summary of comments indicates that about 75 percent expressed support of the by-law, and approximately 25 percent expressed significant reservations and opposition to the by-law. During the consultation period on the draft by-law, there was a wide variation of comments received from the three sources (two public information meetings and through email).

The general sentiment at the first public information meeting (focused on businesses) was that the by-law was unnecessary, created uncertainty for business, and would reduce Oakville's economic competitiveness. Questions and comments at the first meeting focused on the details of the by-law, the need for clear direction, guidance, and a level playing field for businesses.

The general sentiment at the second public information meeting was much more supportive of the town's proposed by-law. Questions and comments at the meeting focused mainly on the public health-based rationale and the enforcement and implementation of the by-law.

Comments and letters received via email fell into three general categories:

- (1) The majority of the emails expressing support of the town's proposed by-law (mainly for health-related reasons);
- (2) Local businesses voicing concerns about the by-law; and
- (3) Questions about the by-law and/or the validity of information sources.

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Town staff has reviewed the results of the discussions at the two public information meetings and comments received in writing through email and comment cards to compile a number of key themes that emerged through the public consultation process. These themes have been organized according to the following categories:

- Comments about the potential effects of the by-law in Oakville
- Comments about the content of the by-law

#### Comments About the Potential Effects of the By-law in Oakville

Comments about the potential effects of the by-law have been separated into comments in *support* of the by-law (75 percent) and those that expressed *concern* about the potential ramifications of the by-law on the Town of Oakville (25 percent).

The majority (75 percent) of the written responses that the town received during the consultation period were positive and supportive of the public health based approach. Some of the positive themes about the by-law include:

- **Addresses long-standing health concerns:** The majority of the comments received via email expressed that the proposed by-law would address the community's long-standing health concerns. For example: "I understand the interests of industry in this area, but I firmly believe that the health and safety of the Citizens of Oakville comes first. If we are to be the most livable city in Canada, then I hope that Oakville continues its fight to keep our air as clean as it can be. This By-Law is a responsible step in the right direction."
- **Protects our airshed:** Many of the comments received by email mentioned the Clarkson Airshed Study as a reference point to illustrate that Oakville's airshed is "stressed to its maximum and any attempt to remedy this situation is beneficial."
- **Increases accountability:** Some residents felt that the by-law and its proposed reporting mechanisms will help to "make businesses accountable for pollution" because information will be publicly available.
- **Shows leadership:** Many residents congratulated the town on taking a leadership role in articulating the gap in fine PM regulation and taking action on behalf of the community.
- **Impact on TransCanada:** The intent of the by-law is not related to any one corporation or facility in Oakville. However, a number of the comments and questions related to TransCanada's proposed gas-fired power plant in Oakville. Many residents questioned whether this by-law was a step towards stopping TransCanada from locating in Oakville.

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- **Spurs innovation:** One resident felt that the by-law was an opportunity for longer-term innovation: “Local businesses may be hurt in the short term, but if they embrace the challenge of controlling FPM, they may develop strategies and technologies which they can market to other companies as the importance of this issue spreads.”

Key comments (25 percent) that expressed concern over the potential effects of the by-law on the Town of Oakville with staff response follow. Responses to these comments are provided in order to address the concerns raised:

- **Creates uncertainty:** Many business owners felt that the by-law, as written, creates considerable uncertainty. The comment was made that there was no “back end” to the proposed by-law and consequently, business owners could not assess the potential impact of the by-law on their businesses. Participants and commenters stressed the need for transparency in the by-law and protocols for the mitigation plan. They also wanted some mechanism or standards to ensure consistency in the peer reviews.

#### Response

*Changes to the Dec. 22 version of the by-law are being recommended to increase the certainty in terms of who will be impacted, improve definitions for better clarity, and introduce a transition phase to allow for impacted businesses to better understand and prepare for the by-law requirements. The by-law contemplates the town assisting impacted businesses by encouraging consultation, and through the development guidance documents to support by-law implementation and consistency in peer reviews.*

- **Questionable value:** Many commenters wanted the town to weigh the benefits of having such a by-law relative to the time and cost of its implementation. They felt that businesses are only one part of the problem of poor air quality, and if they are required to reduce emissions, the resulting benefit would be minimal in the overall context of health protection. They cited vehicle emissions as the major problem; “given that the industries are not the major producer of fine particulate matter in this region, we are not convinced that this by-law will achieve the desired effect of significantly reducing the level of fine particulate matter”. Some businesses also felt that there would be a significant number of smaller companies affected by the by-law, such as body shops and paint shops; one company estimated that 80-200 companies would be affected based on the exiting criteria.

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Other respondents felt that the major issue affecting air quality in Oakville was trans-boundary air pollution; and since the by-law only addresses the fraction that local industry contributes, they found it ineffective.

#### Response

*Local contributions of fine particulate matter in Oakville are about one-third from industrial sources, and two-thirds from the vehicular and residential sectors (Source: Clarkson Airshed Study Part III, 2008). Local sources can account for about 50 percent of fine PM, while long-range transport can account for 50 percent, especially during smog events. The health effects in Oakville will be 80 premature deaths per year attributable to fine PM. More detail on the health effects and fine PM levels in Oakville are provided in Appendix C under the section Presentation Materials.*

*It is acknowledged that the vehicular sector is one of the major sources of direct fine PM emissions and also emissions of precursor pollutants (compounds that “mix” to form “secondary” fine PM). It is also acknowledged that actions to reduce fine PM contributions should be underway in all sectors to improve local air quality and reduce fine PM emissions. In this respect, the town is committed to protecting the health of its citizens and is acting on all sources of emissions as it reasonably can in the most efficient way possible.*

*For example, the town is addressing vehicular sources through the implementation of master plans: for transportation focused on promoting alternate modes of transportation rather than by single occupancy vehicle. Further, the town is supporting the development of sustainable neighbourhoods through the new Official Plan Livable Oakville addressing vehicular and residential sources, and energy efficiency and conservation actions. In addition, the town is addressing its own operations through building LEED buildings with green energy generation features, greening the fleet and Town buildings, and promoting environment and energy stewardship and conservation throughout the community. In summary, the town is undertaking many initiatives directed to achieving air quality improvements and are documented in the 2008 and 2009 Let's Go Green Together and State of the Environment Reports.*

*Actions by other levels of government and individuals are also required to reduce the emissions from the vehicle and residential sectors. The town has advocated for Provincial and Federal levels of government to address trans-boundary air pollution as well as vehicular and residential sources.*

*Proposed changes to the Dec. 22 version of the by-law have been recommended to provide greater certainty in terms of who will be impacted,*

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*so that it is unlikely that a small business would be considered a source of a major emission under the by-law.*

- **Onerous regulations:** There was a sense that the by-law was an example of an onerous regulation, especially for small businesses. The uncertainty related to the lower threshold for emissions created uncertainty among many small business owners. One suggestion was to target businesses with major emissions, such as factories and power plants, not small ones such as shops and offices.

#### Response

*The purpose of the by-law is to protect human health from airborne fine PM, gather information on emissions of fine PM and precursors, and regulate major emitters of fine PM and precursors. A review of applicable health and air quality regulation in Ontario and Canada has established that there is no existing regulation on fine PM and precursor pollutant emissions to protect public health. The Town has the authority to pass this By-law under the Ontario Municipal Act, 2001.*

*The proposed changes to the Dec. 22 version of the by-law have been recommended to enhance certainty regarding who will be impacted, improve definitions, and include a transition phase. It is being recommended that the threshold levels in the by-law be consistent with the National Pollutant Release Inventory reporting thresholds. The initial screening tool of Certificate of Approval (Air) permit holder under the Environmental Protection Act results in initial estimates that the reporting section of the by-law will apply to perhaps a few hundred companies in Oakville, but that only two dozen or so may be required to conduct a health impact assessment as a source of a major emission. For each individual company conducting a health impact assessment, non-compliance with the Town's health-based air quality limit will require emission reduction actions or plans.*

*Facilities required to report their emissions of fine PM and precursor pollutants but who are not major emitters will not pay any fees. Major emitters could pay up to \$25,000 plus additional fees for external consulting to conduct the required assessments — estimated at \$5,000 to over \$40,000 depending on the size of the major emitter's operations and complexity of emissions; however, it is expected that these costs will reduce over time as consultants become more experienced and efficient, and as the town develops datasets and screening tools.*

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- **Rushed process:** Many comments were made about the speed of the public consultation. There was a sense that the process was being driven to derail the power plant project. Some business owners felt as though they were being caught in a process that was being rushed for this purpose. Others asked that the town wait for a response from the province about their intent to regulate fine particulate matters before proceeding with the by-law.

#### Response

*At the Dec. 22, 2009 Special Meeting of Council, Council directed staff to engage the public in consultation regarding the proposed by-law and report back on Feb. 1, 2010. Staff developed and implemented an effective consultation program over the time available to ensure that those potentially impacted businesses, the broader business community, and the general public were aware of the opportunity to engage in the consultation process. Approximately 375 comments in total were received from the business community and general public through participation in the consultation process.*

*Both the provincial and federal governments have researched the health effects of fine PM and prepared reports on the serious harm to human health it can cause, but neither has passed regulations that limit total concentrations of fine PM within an airshed, evaluate existing ambient conditions together with new emissions of fine PM, or assess the health impacts of those conditions.*

*Through federal law, all American states regulate fine PM. While there is no federal standard in Canada, several provinces have implemented their own regulations. There is presently a regulatory gap with respect to fine PM in Ontario. The City of Toronto has recently enacted a by-law to report on and monitor emissions of toxic compounds, including fine PM.*

*Subject matter experts have been retained on environmental law (Mr. Rod Northey of Folgers, Rubinoff LLP Barristers & Solicitors), health impacts of air pollution (Dr. David Pengelly), and air quality modelling (Dr. Franco DiGiovanni, Airzone One) to support the development of a sound health and science-based by-law. The cumulative investment in staff and subject matter experts' time in the development of the proposed by-law to date is in the order of 7 months.*

*In the absence of actions and regulations to improve local air quality by other levels of government and address the continued pressures on the airshed, Council and staff have embarked on this course of action to realize local air quality improvements to protect the health of residents.*

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*This by-law addresses concerns with the health impacts of the poor air quality in the Oakville-Clarkson airshed. This problem has gone on for a considerable length of time and should the by-law be approved, the town would be committed to implementing the by-law whether a power plant is built in the community or not.*

- **Creates an un-level playing field and erodes the tax base:** Some participants felt that if Oakville were to pass the by-law, it would encourage companies to locate in other communities that do not have such regulations. There is a risk for Oakville to gain a reputation as not "business friendly". The potential loss of businesses (those that move away from, or do not locate in, Oakville) could erode the tax base.

#### Response

*Businesses are important to Oakville, and in implementing this by-law, the town will endeavour to be as clear on requirements as possible so that companies can easily assess the by-law's applicability to their business. The by-law would affect existing and proposed facilities that emit fine PM or precursor pollutants (substances that could produce fine PM when combined with other substances in the air).*

*Many other jurisdictions in North America outside of Ontario already regulate fine particulate matter. It is expected that other municipalities in Ontario will want to adopt similar restrictions once they become aware of the health benefits, similar to what happened with municipal regulation of pesticides and smoking through by-laws. Adherence to this by-law will create a level playing field between Oakville facilities and those in the rest of North America.*

*Industry is required to comply with air quality regulations under the Ministry of Environment's Certificate of Approval (Air) requirements for certain air contaminants. The regulation of fine particulate matter at a Provincial level would create a level playing field for industries located in other parts of Canada and the US, not unlike regulations of other air contaminants and wastewater and waste discharges to the environment, and address the scientifically-documented and clear health impacts of fine particulate matter emissions on public health across the Province. There is presently no Provincial regulation of fine PM in Ontario.*

*In the by-law there are varying requirements depending on whether the facility emits fine PM or other health-risk air pollutants and to what degree they are emitted. If the business falls under the by-law, but is not a "major*

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*emitter,” then no fees will apply. If the facility is a major emitter, the \$25,000 fee is an upper-limit application fee, depending on the actual cost of the peer review process contemplated in the by-law.*

*Most other jurisdictions in North America do regulate fine PM, and the fee proposed by the Town is less than some provincial Certificate of Approval fees for major industrial facilities.*

*The Town has been developing the proposed by-law through the assistance of subject matter experts very familiar with the Provincial and Federal requirements. It is hoped that both Federal and Provincial initiatives to regulate fine PM and precursor pollutants will be developed, and the town would look forward to involvement in their development.*

*On September 30, 2009, the Province of Ontario announced a plan to improve air quality in the southwest GTA to reduce emissions and industrial energy consumption. The plan included an Ontario Power Authority investment of up to \$30 million over five years for a new industrial energy efficiency program to reduce both electricity and gas consumption in the southwest GTA working with local electricity and gas distributors. This fund may be available to Oakville industries to make facility, technological, or other improvements to reduce emissions and electricity and gas consumption, and may aid compliance with the by-law by major emitters within the town.*

- **Creates stigma:** Some participants felt that the reporting requirements in the by-law had the potential to ‘stigmatize’ businesses. One comment stated: “The proposed posting of all facilities subject to this by-law on a website, whether or not the facility is a source of major emission, can lead to misunderstanding with the public at large. The listing of facilities subject to this by-law on a website (even if the company is not a source of major emission) will lead to stigmatization. This can result in the creation of an unfair competitive disadvantage for such companies...”

#### Response

*There are reporting and information disclosure requirements related to other Provincial and Federal reporting programs, such as the federal National Pollutant Release Inventory and new provincial Toxics Reduction Act, 2009. The City of Toronto has enacted a by-law to report on and publicly disclose emissions and monitor emissions of toxic compounds, including fine PM. Many other jurisdictions in North America outside of Ontario already regulate fine particulate matter. The provision of information on emissions to the community is becoming more common and would not be expected to create a*

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*stigma or competitive disadvantage to local businesses reporting under the proposed by-law.*

*The community provided comments on the Town's proposed by-law indicating that the proposed reporting mechanisms will help the public to understand the emissions of fine PM occurring in their community. Confidential information provided to the town is subject to the provisions of the Municipal Freedom of Information and Protection of Privacy Act.*

- **Burdens the town:** There was a concern in some comments that this by-law could be a burden on the tax-payer based on the town's cost to administer it. Participants were curious to know if the economic development impact of the by-law had been assessed. Does the town have the enforcement capability to effectively monitor this by-law? Or the review capacity to address all of the applications?

#### Response

*Should Council pass the proposed by-law, the by-law would be enforced. The inclusion of an application fee is intended to cover the administration and peer review costs for the procession of approval applications for existing and proposed facilities causing a major emission in the town. There is a revised transition period that is being proposed to Council that would phase in enforcement for existing businesses. Staff is currently determining the possible new staffing and budget allocations that would be involved with effective enforcement of the by-law, including periodically retaining peer reviewers and air quality modelers, assigning staff to carry out education and outreach to support by-law implementation and data management, and retaining a consultant to develop guidance documents for general assessment and air modelling. The outline of the options for implementation resourcing will be provided to Council when the detailed resource needs assessment is complete.*

*The implementation process will involve the screening of businesses with Certificates of Approval (Air) before the requirement for payment of the application fee and an ability to have the \$25,000 as a maximum fee, with the actual fee calculated to include \$5,000 administrative fee plus actual cost for peer review.*

*The by-law is not intended to place undue burden on businesses within the Town, with the focus intended to be on major emitters of fine PM. There would not be an expectation that businesses will be pushed into economic hardship in order to comply with the by-law requirements.*

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- **No overall net benefit to community:** Some commenters did not see any net benefit to the community associated with this by-law. One argument was that if businesses leave the community, there will be fewer employment opportunities, which will lead to residents working outside of the community. This could increase commuting, which could result in more cars on the road, thus worsening air quality.

#### Response

*The purpose of the by-law is to protect human health from airborne fine PM, gather information of emissions of fine PM, and regulate major emitters of fine PM.*

*Overall, however, the Town is committed to protecting the health of its citizens. The onus is being placed upon major emitters to prove that they are not causing a significant public health impact.*

*In the absence of actions and regulations to improve local air quality by other levels of government to address the continued pressures on the airshed, Council and staff have embarked on this course of action to realize local air quality improvements to protect the health of residents. The by-law seeks to achieve a net benefit to the community in terms of reduced fine PM emissions, reduced health impacts, and improved air quality, with their own inherent cost savings.*

#### Comments About the Content of the By-law

Comments and questions were raised regarding specific provisions of the proposed by-law. A number of those comments and questions have resulted in revisions to the by-law.

The following chart presents a summary of substantive changes being recommended to the by-law, as a result of both the consultation process and on-going review by staff and subject matter experts:

December 22, 2009 Draft By-law	Proposed	Comment
<b>DEFINITIONS</b>		
<p>1. "affected airshed" means the airshed receiving any increase of more than one microgram per cubic metre in concentrations of fine particulate matter due to a major emission;</p>	<p>1. "affected airshed" means the airshed receiving any increase in concentrations of fine particulate matter of more than 0.2 micrograms per cubic metre, expressed as an annual average, due to a major emission;</p>	<p>Proposed from technical review: this reflects change in definition of "significant". In particular, for Oakville, any increase above 0.2 micrograms per cubic metre in annual ambient air quality will exceed the threshold for a significant adverse effect on public health (i.e., an increase in non-injury-related mortality of 1 death per year per hundred thousand population).</p>
<p>1. "facility" means a site or location that, under common operations, management and/or control, operates as a single unit, and includes one or more related works or processes;</p>	<p>1. "facility" means 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:</p> <ul style="list-style-type: none"> <li>(i) a site that contains less than 25 dwelling units; or,</li> <li>(ii) a commercial, business or institutional site or location that is less than 0.1 ha in size;</li> </ul>	<p>Proposed from consultation: concern was expressed that small facilities, including businesses, would be unnecessarily subject to the by-law as the by-law had no exemptions.</p>
<p>1. "fine particulate matter" means both:</p> <ul style="list-style-type: none"> <li>(a) airborne particulate matter that is less than ten microns in size ("PM10"); and</li> <li>(b) airborne particulate matter that is less than 2.5 microns in size ("PM2.5");</li> </ul>	<p>1. "fine particulate matter" means airborne particulate matter that is less than or equal to 2.5 microns in aerodynamic mass median diameter ("PM<sub>2.5</sub>");</p>	<p>Proposed from technical review: The by-law should address PM<sub>2.5</sub> only as PM<sub>2.5</sub> is considered to be more toxic than PM<sub>10</sub>. Also, this reflects the focus of the most recent studies into human health, and provides the basis for the ICAP 3.0 coefficients cited in the Town approval process found in PART IV, below.</p>

<p>1. "major emission" means an emission from a facility into the air of a health-risk air pollutant that exceeds at least one of the following thresholds:</p> <p>(a) for directly emitted particulate matter less than ten microns in size, more than 500 kilograms per year;</p> <p>(b) for directly emitted particulate matter less than 2.5 microns in size, more than 300 kilograms per year;</p> <p>(c) for volatile organic compounds, more than 1,000 kilograms per year;</p> <p>(c) for nitrogen oxides (as NO<sub>2</sub> equivalent), more than 2,700 kilograms per year; or</p> <p>(d) for sulphur dioxide, more than 2,000 kilograms per year;</p>	<p>1. "major emission" means an emission from a facility into the air of a health-risk air pollutant that exceeds at least one of the following thresholds:</p> <p>(a) for directly emitted fine particulate matter, more than 300 kilograms per year;</p> <p>(b) for volatile organic compounds, more than 10,000 kilograms per year;</p> <p>(c) for nitrogen oxides (as NO<sub>2</sub> equivalent), more than 20,000 kilograms per year;</p> <p>(d) for sulphur dioxide, more than 20,000 kilograms per year; or,</p> <p>(e) for ammonia, more than 10,000 kilograms per year;</p>	<p>Proposed from technical review:</p> <ol style="list-style-type: none"> <li>1. Ammonia added as it is also a major precursor of fine PM.</li> <li>2. PM<sub>10</sub> removed for reasons set out above regarding the changed definition of "fine particulate matter".</li> </ol> <p>Also proposed from consultation: thresholds for precursor pollutants are raised up to Federal National Pollutant Release Inventory levels for all identified pollutants. Previously, only PM<sub>2.5</sub> was set at NPRI levels.</p>
<p>None</p>	<p>"negligible quantity of any health-risk air pollutant" means, in respect of directly emitted fine particulate matter, the emission of less than 1 kilogram of fine particulate matter in total per year, and in respect of precursor pollutants, the emission of less than 10 kilograms of any precursor pollutant in total per year;</p>	<p>Proposed from consultation: concern was expressed that, after the transition periods, the by-law contained no exemptions for small facilities that emitted negligible quantities of health risk air pollutants.</p>

<p>1...                  "precursor pollutant" means a pollutant which, when emitted into the air, participates in atmospheric mixing or chemical transformation, or both, to produce fine particulate matter, including:</p> <ul style="list-style-type: none"> <li>(a) nitrogen oxides;</li> <li>(b) sulphur dioxide; and,</li> <li>(c) volatile organic compounds; and</li> <li>(d) such other pollutants as are specified by the Town;</li> </ul>	<p>1...                  "precursor pollutant" means a pollutant which, when emitted into the air, participates in atmospheric mixing or chemical transformation, or both, to produce fine particulate matter, including:</p> <ul style="list-style-type: none"> <li>(a) nitrogen oxides;</li> <li>(b) ammonia;</li> <li>(c) sulphur dioxide;</li> <li>(d) volatile organic compounds; and,</li> <li>(e) such other pollutants as are specified by the Town;</li> </ul>	<p>Proposed from technical review: ammonia added as it is also a major precursor of fine PM.</p>
<p>1....                  "public health effect" means the risk of an adverse impact on public health within the affected airshed, derived from acute (1 to 3 days) or chronic (1 to 7 years) exposure to PM<sub>10</sub> or PM<sub>2.5</sub>;</p>	<p>1....                  "public health effect" means the risk of an adverse impact on public health within the affected airshed, derived from chronic exposure to PM<sub>2.5</sub>;</p>	<p>Proposed from technical review: by-law should focus on chronic exposure as, for PM<sub>2.5</sub>, the public health effects due to chronic exposure are ten times greater than those associated with acute (short-term) exposure.</p>
<p>1....                  "significant" means, in relation to a public health effect, the risk of an adverse health outcome expressed, for each outcome, as a 0.2% increase in base incidence rate, as defined in ICAP Version 3.0; for the purposes of this by-law, the outcome of interest shall be total non-traumatic mortality, or such other outcome as from time to time Council may direct;</p>	<p>1....                  "significant" means, in relation to the assessment of a public health effect,</p> <ul style="list-style-type: none"> <li>(a) an increased rate of premature non-traumatic mortality of one or more premature deaths per one hundred thousand population per annum, based on annual exposure; or</li> <li>(b) such other outcome as from time to time Council may direct;</li> </ul>	<p>Proposed from technical review: it is well accepted scientifically that there is no safe level of exposure ("threshold") for PM<sub>2.5</sub>. In this case, following accepted public health practice in Canada, the by-law seeks to identify as significant any health effect that involves one increased mortality per hundred thousand population. It may be noted that the risk of mortality associated with H1N1 influenza in Canada in the recent pandemic is approximately one per hundred thousand.</p>

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<b>PART I - PURPOSES</b>		
None	2.(d) to reduce over time the levels of fine particulate matter in the ambient air of the Town	Proposed from consultation: further confirmation that the Town seeks overall reductions in levels of fine particulate matter in the ambient air of the Town.
<b>PART III - REPORTING</b>		
4. (1) Where a proposed or existing facility may emit at least one health-risk air pollutant into the air, its owner or operator shall advise the Town forthwith of the emission source or sources, and provide an estimated annual quantity of any emitted health-risk air pollutant.	4. (1) Subject to subsection (3), where a proposed or existing facility may emit at least one health-risk air pollutant into the air, its owner or operator shall advise the Town in writing forthwith of the emission source or sources, and provide the average and worst-case rates of daily and annual emissions of any emitted health-risk air pollutant facility-wide.	Proposed from consultation: there was public concern on whether reporting would be reliable.
None	(3) This section does not apply to an owner or operator of a facility that emits only a negligible quantity of any health-risk air pollutant.	Proposed from consultation: concern was expressed that, after the transition periods, the by-law contained no exemptions for small facilities that emitted negligible quantities of health risk air pollutants.
None	(4) For the purposes of addressing the reporting obligation in this section, an owner or operator may, unless the Town provides otherwise, include in its submission to the Town a copy or part of a copy of any completed form with relevant information filed pursuant to the National Pollutant Release Inventory or the Ontario Toxics Reduction Act, 2009.	Proposed from consultation: concern was expressed that this reporting would unnecessarily add to the existing reporting burden for businesses reporting to the National Pollutant Release Inventory (NPRI). Proposed change would allow use of NPRI submission to the extent relevant.

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PART IV REQUIREMENTS FOR TOWN APPROVAL		
<p>Proposed Facilities</p> <p>5. (3) The application shall include payment of the prescribed fee and submission of the following information:</p> <p>(b) evaluation: an evaluation, using a Town-approved atmospheric dispersion model, of the combined air concentrations across the affected airshed resulting from average and worst-case emissions of:</p> <p>(i) the predicted levels of fine particulate matter due to direct emissions and secondary formation from facility-emitted precursor pollutants; and</p> <p>(ii) the existing levels of fine particulate matter in the affected airshed;</p>	<p>Proposed Facilities</p> <p>5. (3) The application shall include payment of the prescribed fee and submission of the following information:</p> <p>(b) evaluation: an evaluation, using a Town-approved atmospheric dispersion model, of the air concentrations across the affected airshed resulting from average and worst-case annual emissions of:</p> <p>(i) the predicted levels of fine particulate matter emitted by the proposed facility due to direct emissions and secondary formation from facility-emitted precursor pollutants;</p> <p>(ii) the existing levels of fine particulate matter in the affected airshed; and,</p> <p>(iii) (i) and (ii) combined.</p>	<p>.</p> <p>Proposed from technical review: clarification that information should be provided on facility and cumulative impacts.</p>

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<p>(c) mapping: three-dimensional mapping that illustrates:</p> <p>(i) the affected airshed, considering average and worst-case daily and annual emissions; and,</p> <p>(ii) within the affected airshed, different anticipated concentrations of fine particulate matter due to the proposed major emission as contour plots, at one microgram per cubic metre intervals, or at such formatting as deemed appropriate by the Town;</p> <p>(d) assessment: an assessment of the public health effects associated with predicted ambient air concentrations of fine particulate matter in the affected airshed, based on the combination of:</p> <p>(i) predicted ambient levels of fine particulate matter resulting from the major emission, together with</p> <p>(ii) pre-existing ambient levels of fine particulate matter in the affected airshed; and,</p>	<p>(c) mapping: mapping that illustrates:</p> <p>(i) the extent of the affected airshed, considering predicted average and worst-case annual emissions of fine particulate matter due to the proposed major emission, in such formatting as deemed appropriate by the Town; and,</p> <p>(ii) within the affected airshed, the average and worst-case annual ambient concentrations of fine particulate matter, as contour plots, at one microgram per cubic metre intervals, or at such formatting as deemed appropriate by the Town;</p> <p>(d) assessment: an assessment of the public health effects associated with:</p> <p>(i) the predicted levels of fine particulate matter in the affected airshed resulting from the major emission, and</p> <p>(ii) the existing levels of fine particulate matter in the affected airshed; and,</p>	<p>Proposed from technical review: clarification on mapping requirements regarding the extent of the airshed and concentration variations within the airshed.</p> <p>Proposed from technical review: clarification that mapping is required of average and worst-case daily and annual emissions.</p> <p>Proposed from technical review: clarification that two different scenarios must be assessed.</p>
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<p>Existing Facilities                  6. (1)                  Where a person owns or operates a facility in Oakville that may cause or increase a major emission to the air, that person shall apply to the Town for a facility-specific approval or amendment to an existing approval.</p>	<p>Existing Facilities                  6. (1)                  (a) Where a person owns or operates a facility in Oakville that causes a major emission to the air, that person shall obtain a facility-specific approval of its air emissions.</p>	
	<p>(b) Where a person owns or operates a facility in Oakville that causes a major emission to the air, and proposes a change that will increase the major emission, that person shall obtain a facility-specific approval of its air emissions, or amendment to an existing approval, before implementing any change that will cause such increase to its emissions.</p>	<p>Proposed from technical review: clarification that this section applies to facilities that now cause a major emission and that, in the future, increase a major emission</p>
<p>6. (3) The application shall include payment of the prescribed fee and submission of the following information: ...                  (b) evaluation: an evaluation, using a Town-approved atmospheric dispersion model, of the air concentrations across the affected airshed resulting from average and worst-case emissions of:                  (i) the estimated levels of fine particulate matter due to direct emissions and secondary formation from facility-emitted precursor pollutants; and                  (ii) the existing levels of fine particulate matter in the affected airshed;</p>	<p>6. (3) The application shall include payment of the prescribed fee and submission of the following information:                  (b) evaluation: an evaluation, using a Town-approved atmospheric dispersion model, of the air concentrations within the affected airshed resulting from average and worst-case annual emissions of:                  (i) the estimated levels of fine particulate matter emitted by the existing facility due to direct emissions and secondary formation from facility-emitted precursor pollutants;                  (ii) the existing levels of fine particulate matter in the affected airshed;</p>	<p>Proposed from technical review: clarification that evaluation is based on annual emissions and annual-averaged concentrations.                   Proposed from technical review: clarification that evaluation identifies facility-based and cumulative levels of fine PM.</p>

<p>(c) mapping: three-dimensional mapping that illustrates:</p> <p>(i) the affected airshed, considering average and worst-case daily and annual emissions;</p> <p>(ii) within the affected airshed, different estimated concentrations of fine particulate matter due to the existing major emission as contour plots, at one microgram per cubic metre intervals, or at such formatting as deemed appropriate by the Town;</p> <p>(d) assessment: an assessment of the public health effects associated with:</p> <p>(i) estimated ambient levels of fine particulate matter resulting from the major emission; and</p> <p>(ii) ambient levels of fine particulate matter in the affected airshed; and</p>	<p>(c) mapping: mapping that illustrates:</p> <p>(i) the extent of the affected airshed, considering estimated average and worst-case annual emissions of fine particulate matter due to the proposed major emission, in such formatting as deemed appropriate by the Town; and,</p> <p>(ii) within the affected airshed, the average and worst-case annual ambient concentrations of fine particulate matter, as contour plots, at one microgram per cubic metre intervals, or at such formatting as deemed appropriate by the Town;</p> <p>(d) assessment: an assessment of the public health effects associated with:</p> <p>(i) the estimated levels of fine particulate matter in the affected airshed resulting from the major emission; and</p> <p>(ii) the existing levels of fine particulate matter in the affected airshed; and,</p>	<p>Proposed from technical review: clarification that mapping requirements address the extent of the airshed and concentration variations within the airshed.</p> <p>Proposed from technical review: clarification on the two scenarios that an assessment must address.</p>
<p><b>PART V – TOWN DECISION-MAKING PROCESS</b></p>		
<p>11.(4) Where Council has before it the required information, it shall make one of the following decisions, as applicable:</p>	<p>Existing Facilities</p> <p>13. Where, in relation to an application for an approval of an existing facility which causes a major emission, Council has before it the required information, Council shall make one of the following decisions, as applicable:</p>	<p>Proposed from technical review: use of two distinct frameworks for decision-making to address the different circumstances associated with existing and proposed major emissions.</p>

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<p>(a) Where, following consideration of health risk, Council concludes that the application is not likely to cause a significant impact on human health, Council may approve the application, with such conditions as Council considers necessary to meet this standard; or</p> <p>None</p> <p>(b) Where, following consideration of health risk, Council concludes that the application is likely to cause a significant impact on human health, Council shall:</p> <p>(i) refuse to approve the application and, in such case, also decide that in its opinion the applicant's major emission constitutes a public nuisance; or</p> <p>(ii) approve the application on the basis that the public interest favours allowing the applicant's major emission to occur, with such conditions as Council considers necessary to address the public interest.</p>	<p>(a) Where, following consideration of the application, Council concludes that the major emission of the facility is not likely to cause a significant public health effect in the Town, Council shall approve the application, subject to such conditions as Council may deem appropriate;</p> <p>(b) Where, following consideration of the application, Council has before it an application that does not meet paragraph (a), but proposes an overall 25 percent reduction in health-risk air pollutants over the next five years, and the peer review agrees the proposed reduction is achievable, Council shall approve the application, and authorize a five-year approval of the facility causing the major emission, subject to such conditions as Council may deem appropriate; or,</p> <p>(c) Where, following consideration of the application, Council concludes that paragraph (b) does not apply, and the major emission of the facility is likely to cause a significant public health effect in the Town, Council shall:</p> <p>(i) refuse to approve the application and, in such case, also decide that in its opinion the major emission of the facility constitutes a public nuisance; or</p> <p>(ii) approve the application on the basis that the public interest favours allowing the major emission of the facility to occur, subject to such conditions as Council may deem appropriate.</p>	<p>Proposed from technical review: clarification that Council shall approve an application meeting this criterion.</p> <p>Proposed from consultation: addition of a further source of mandatory approval for an existing major emission.</p> <p>Proposed from technical review: clarification that this Council power does not apply where paragraph 13(b) applies.</p>
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<p>11.(4) Where Council has before it the required information, it shall make one of the following decisions, as applicable:</p> <p>(a) Where, following consideration of health risk, Council concludes that the application is not likely to cause a significant impact on human health, Council may approve the application, with such conditions as Council considers necessary to meet this standard; or</p> <p>(b) Where, following consideration of health risk, Council concludes that the application is likely to cause a significant impact on human health, Council shall:</p> <p>(i) refuse to approve the application and, in such case, also decide that in its opinion the applicant's major emission constitutes a public nuisance; or</p> <p>(ii) approve the application on the basis that the public interest favours allowing the applicant's major emission to occur, with such conditions as Council considers necessary to address the public interest.</p>	<p>Proposed Facilities</p> <p>12. Where, in relation to an application for an approval of a proposed facility that may cause a major emission, Council has before it the required information, and all required land use approvals have been obtained for the proposed facility, Council shall make one of the following decisions, as applicable:</p> <p>(a) Where, following consideration of the application, Council concludes that the major emission of the proposed facility is not likely to cause a significant public health effect in the Town, Council shall approve the application, subject to such conditions as Council may deem appropriate; or,</p> <p>(b) Where, following consideration of the application, Council concludes that the major emission of the proposed facility is likely to cause a significant public health effect in the Town, Council shall:</p> <p>(i) refuse to approve the application and, in such case, also decide that in its opinion the major emission of the proposed facility constitutes a public nuisance; or</p> <p>(ii) approve the application on the basis that the public interest favours allowing the major emission of the proposed facility to occur, subject to such conditions as Council may deem appropriate.</p>	<p>Proposed from technical review: use of two distinct frameworks for decision-making to address the different circumstances associated with existing and proposed major emissions.</p>
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<b>PART VI - FEES</b>		
None	14. (2) The fee prescribed in subsection (1) includes \$5,000 for administration and \$20,000 to carry out the peer review of the application pursuant to sections 7, 8 and 9 of this by-law.	Proposed from consultation: clarification that the required fee is not intended to generate revenue to the Town.
<b>PART VII – EMISSIONS MONITORING</b>	<b>PART VII EMISSIONS MONITORING AND TOWN REPORTING</b>	
None	16. Each year, based on the most current information provided under this by-law, the Town shall prepare a report on health-risk air pollutants, including the estimated total emissions, expressed in kilograms, of each health-risk air pollutant from:	Proposed from consultation: an additional means of addressing the Town objective of seeking overall reductions in levels of fine particulate matter over time.
	(a) all facilities causing major emissions approved under this by-law; and,	
	(b) all other facilities reporting under Part III.	
<b>PART VIII OFFENCES</b>		
14. (1) Any person, being the owner or operator of a facility that is subject to this by-law, is guilty of an offence, if that person:  (a) fails to provide the Town with estimated annual emission information of the facility in accordance with Section 4 of this by-law;  (b) fails to submit an application for approval for the facility required under Section 5 or 6 of this by-law;  (c) operates or permits the operation of the facility without an approval required under Section 5 or 6 of this by-law;	17. (1) Any person, being the owner or operator of a facility that is subject to this by-law, is guilty of an offence, if that person:  (a) fails to provide the Town with emission information in accordance with Section 4 of this by-law;  (b) fails to submit an application for approval for the facility required under Section 5 or 6 of this by-law;  (c) operates or permits the operation of the facility without an approval required under Section 5 or 6 of this by-law;	

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<p>(d) operates or permits the operation of the facility other than in compliance with a condition of approval of a facility imposed under Section 11 of this by-law,</p> <p>(e) fails to provide a report under Section 13 of this By-law.</p> <p>None</p>	<p>(d) operates or permits the operation of the facility other than in compliance with a condition of approval of a facility imposed under Section 12 or 13 of this by-law;</p> <p>(e) fails to provide a report under Section 15 of this by-law; or</p> <p>(e) provides false information to the Town under any provision of this by-law.</p>	<p>Proposed from consultation: there was public concern that emitters might not provide accurate emissions information to the Town.</p>
<b>PART IX – TOWN GUIDANCE</b>		
<p>None</p>	<p>18. (1) The Town may issue guidance documents to assist with the implementation and administration of this by-law.</p>	<p>Proposed from technical review: this power provides an additional means for the Town to assist persons subject to this by-law.</p>
	<p>(2) Areas of guidance may include, but are not limited to:</p>	
	<p>(a) information to be submitted under PART III and use of equivalent reporting regimes;</p>	
	<p>(b) exemption from PART III and examples of emissions of a negligible quantity of any health-risk air pollutant; and,</p>	
	<p>(c) information to be submitted under PART IV, including protocols for assessment, mapping, modeling, evaluation, and appraisal.</p>	

PART IX – TRANSITIONAL MATTERS		
<p>15.(1) Subject to subsection (2), this by-law shall apply immediately on its passage by Council.</p> <p>(2)(a) For any person owning or operating a facility subject to subsection 4(1) or 4(2) of this by-law, the Town will suspend the operation of the obligation to advise the Town forthwith for the first six months following the passage into law of this by-law.</p>	<p>19. (1) Subject to subsection (2), this by-law shall apply immediately on its passage by Council.</p> <p>(2) Despite any other provision of this by-law:</p> <p>(a) For any person owning or operating a facility subject to section 4 of this by-law:</p> <p>(i) the Town will suspend the operation of this section for the first six months following the passage of this by-law;</p> <p>(ii) after six months from the passage of this by-law, the operation of this section shall remain suspended, except for those persons who have a certificate of approval for air emissions under section 9 of the Environmental Protection Act;</p> <p>(iii) the suspension set out in paragraph (a)(ii) shall be lifted after one year from the passage of this by-law, or after such further time as Council may determine.</p>	<p>From technical review: these amendments provide</p> <p>(a) confirmation that the transition provisions prevail over the rest of the by-law; and</p> <p>(b) additional transition timeframes for all persons subject to the by-law.</p>

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<p>(b) For any person owning or operating a facility subject to subsection 6(1) of this by-law, this by-law will apply to such a facility that may cause a major emission only after one year has lapsed following its passage, or after such further time as Council determines is required for Council to receive information on existing sources of major emissions in the Town and the most appropriate attributes to consider when applying this by-law to their emissions and their health impacts.</p>	<p>(b) For any person owning or operating a facility subject to section 6 of this by-law:</p> <p>(i) the Town will suspend the operation of this section for the first year following the passage of this by-law;</p> <p>(ii) after one year from the passage of this by-law, the operation of this section shall remain suspended, except for those persons who have a certificate of approval for air emissions under section 9 of the Environmental Protection Act;</p> <p>(iii) the suspension set out in paragraph (b)(ii) shall be lifted after two years from the passage of this by-law, or after such further time as Council may determine.</p>	
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**CONSIDERATIONS:**

**(A) PUBLIC**

The by-law seeks to protect the health, safety and well-being of persons in the town of Oakville. The by-law has been circulated and information meetings have been conducted for the purposes of public review and comment.

**(B) FINANCIAL**

An application fee of \$25,000 is proposed to implement and administer approval applications under the by-law.

**(C) IMPACT ON OTHER DEPARTMENTS & USERS**

An application for approval will be circulated for internal and external agency comment and input.

**(D) CORPORATE AND/OR DEPARTMENT STRATEGIC GOALS**

This report addresses the corporate strategic goal to:

- be the most livable town in Canada

**(E) COMMUNITY SUSTAINABILITY**

This report addresses the pillars of environmental and social sustainability by recommendation of a process to assess and control the health effects of major emissions of fine particulate matter in the town.

- Appendix A: By-law 2010-035  
Appendix B: Draft By-law 2009-197  
Appendix C: Summary of Comments Received During the Consultation Period (all emails received are available for review in the Environmental Policy Department)

Prepared and Submitted by:  
Cindy Toth, Director of Environmental  
Policy

Prepared and Submitted by:  
Douglas Carr, Town Solicitor