



INFORMATION REPORT

TO:	Mayor and Members Board of Health
COMMITTEE DATE:	July 13, 2017
SUBJECT/REPORT NO:	An Assessment of the Town of Oakville's Health Protection Air Quality By-law (BOH17025) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Andrea McDowell (905) 546-2424, Ext. 5288
SUBMITTED BY:	Kevin McDonald A/Director, Healthy Environments Division Public Health Services Department
SIGNATURE:	

Council Direction:

At the April 1, 2015 meeting of the Hamilton Board of Health, members approved the following motion:

- (a) That staff be directed to report to the Board of Health with a review of the Town of Oakville's Health Protection Air Quality By-law, incorporating an examination of all City departments, to determine the feasibility of implementing such a by-law in the City of Hamilton; and
- (b) That the impacts of introducing a Health Protection and Air Quality By-Law for the City of Hamilton be assessed with respect to existing businesses, and future businesses, moving forward.

The following information provides outcomes related to the above direction.

Executive Summary

The Oakville By-law requires existing and new facilities emitting "major" amounts of five pollutants to model and report on their emissions, and submit the model to Town staff for a two-part review in order to receive approval to operate. A Council vote is required on the results of the reviews.

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The consultation was carried out and the City departments consulted (Planning & Economic Development, Public Works and Public Health Services) unanimously felt that the negative impacts heavily outweighed any potential benefit.

The completion of a Hamilton Airshed Model, already underway, will allow Public Health Services (PHS) and other Departments to assess alternatives that will target PM 2.5 and other emissions more cost effectively. The delivery of the airshed model is currently expected in Q3/2017.

Information:

In 2010, the Town of Oakville passed a by-law requiring facilities that emit a “major” amount of five air pollutants (Particulate Matter 2.5, Nitrogen Oxides, Ammonia, Sulphur Dioxide, and Volatile Organic Compounds [VOCs]) to apply to the Town for permits to either continue operating or begin operating. The by-law allows the Town to charge current and proposed facilities who wish to operate in the Town a \$25,000 fee, used to cover costs of an internal review of their application and external peer review (carried out by consultants). Applicants are required to produce a model of their emissions within a given airshed, showing the average and annual worst-case emission scenarios for the five pollutants.

Emissions must be shown not to have a “significant” public health impact for the facility to be allowed to operate. The Town has the option for facilities that cannot operate to the emission thresholds of either creating a five-year plan with the facility to reduce emissions at least 25% or of rejecting the application. This decision is voted on by Council. Facilities are required to report annually on their emissions for a period of at least three years. A change in operations that can affect emissions requires a new application. Failure to comply with the by-law can result in a fine of \$100,000 for a first offence.

Approximately 170 facilities in Oakville report annually under the by-law, including public schools, hospitals, recreation facilities and fire halls.

Of the reporting facilities, only five are “major emitters” required to apply and report as described in the by-law due to the potential to release “major emissions.” Two of these are hospitals. One is known to be an industrial facility.

Major Emitters are defined in the by-law as releasing into the air one or more of the following:

- More than 300 kg per year of directly emitted fine PM (PM 2.5);
- More than 10,000 kg per year of volatile organic compounds (VOCs);
- More than 20,000 kg per year of nitrogen oxides (as NO₂ equivalent);
- More than 20,000 kg per year of sulphur dioxide; and,

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- More than 10,000 kg per year of ammonia.

Major emitters are required to apply to the Town to either operate or continue operating, depending on whether the facility is existing or proposed. These facilities are required to submit an Emissions Summary Dispersion Model (ESDM) report, including modelled emissions over the range of the potentially affected airshed with maps showing results for annual average and worst-case scenario ambient concentrations depicted as contour plots at one microgram per cubic metre intervals. The application goes through a two-step external peer review by consultants. The first step is to assess whether the application is complete. Once complete, the application is then assessed for its accuracy and any potential exceedances. This is paid for with a \$25,000 application fee the proponent is required to submit with the report.

Hamilton staff provided feedback on the costs of creating the models and submitting the reports required by the by-law:

- Cost of ESDM report using AERMOD (Ministry of Environment and Climate Change [MOECC] approved modelling technology): \$10,000-\$36,000, and,
- Cost of ESDM using Reg 346: (MOECC older approved modelling technology): \$6,000-\$30,000.

This is in addition to the \$25,000 application fee and would be incurred again whenever a facility changes its operations, making for a total cost to each Hamilton facility of \$31,000 to \$61,000. In addition, the time to review the applications is a cost to businesses, as a potential delay to operations.

Following this process, Town staff:

1. Post notices regarding the application and peer review results to the Town website and a local newspaper,
2. Post on the website the complete application and the peer review report, and,
3. Circulate a request for comment to relevant agencies including the Halton Region Health Department.

At a Council meeting, Council hears delegations regarding the application and decides upon the application by vote, based on whether the "major emission" described in the report will have significant impacts on public health.

A "significant" impact on public health means that there is an increased rate of premature non-traumatic mortality of at least one premature death per 100,000 population annually, or "such other outcome as from time to time Council may direct."

Of the five "Major Emitters" in Oakville, one has a modelled emission that was determined under this process to potentially impact public health. That one modelled

emission is an annual worst-case scenario emission on a provincial highway, with no sensitive receptors nearby. That facility is currently undertaking a five-year emissions reduction plan and continues to operate. (Further details on the extent of the exceedance, the specific pollutant and the reduction steps taken were not shared with Hamilton PHS staff; however given that only one exceedance was modelled and it was in an area of already high air quality pollution leads PHS staff to believe that the contribution by the industrial facility was minor).

“Negligible” emissions have been defined in the by-law as, in total in any year:

- Less than 1 kg of fine particulate matter (PM 2.5), and
- Less than 10 kg of any precursor pollutant.

There is a substantial grey area between what's defined as negligible (1 or 10 kg emitted annually) and major (300 kg of PM 2.5, 10kg-30kg of any precursor), leaving a large number of facilities in the middle zone where applications are not required but reporting is. There are no other provincial or federal laws or regulations requiring these facilities to report on quantities of these pollutants, so this is a new reporting requirement with new costs for these organizations.

There is no evidence that the implementation of the by-law has improved air quality or benefited public health in the Town of Oakville.

The Town of Oakville reported that the major emitters were determined by a search of the provincial Environmental Bill of Rights (EBR) registry for Environmental Compliance Approval (ECA) recipients for air emissions. Accordingly, PHS staff did identical searches for air-ECA postings in Oakville and Hamilton on the EBR. There were 2.5 times as many postings in Hamilton than Oakville (105 vs. 41). Therefore, the City can plan on having 2-3 times as many reporters and mandatory participants as Oakville. The MOECC recently changed their air compliance instruments (ECA to EASR) so it is impossible to compare directly at the moment; this rough estimate is the best information available.

Financial

The Town of Oakville is the only municipality in Ontario that has such a by-law. Oakville is not an industrial town, and so the impact on Oakville of discouraging industrial businesses from locating there has presumably not been significant (specific data are not available). However, Hamilton has a strong industrial base and the economic impacts to the City of this by-law are anticipated to be significant. Not only businesses considering locating in Hamilton, but also businesses already in Hamilton considering expansion, could be dissuaded by the time and monetary costs of participating in this program (\$31,000-\$61,000 per application, plus time costs of application process).

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Hamilton would be competing for industrial businesses with other Ontario municipalities, none of which have such a by-law. Any lost business represents a loss in tax revenue.

Other facilities with more than negligible, but less than major annual emissions would be required to report, which is an additional expense for them and a potential disincentive to locate in Hamilton.

Additionally, the by-law in Oakville does apply to municipal facilities. Hamilton facilities such as wastewater treatment plants, landfills, recreation centres, and so on, would be subject to such a by-law and the costs it entails. Most would likely not be "major emitters" and so would not be applying to operate or continue operating, but many would be in the middle zone of reporting annually (again, Oakville has five "Major Emitters" and 170 facilities that report annually, many of which are Town and Regional facilities such as fire halls, schools and recreation centres).

Staffing

One full-time staff person with support from legal, health and management is required to run this program in Oakville. Likely three people would be required to run this program in Hamilton.

A Council vote is required on the approval or rejection of any application. Not only is this a cost to the City in terms of staff and Council time devoted to preparing for and carrying out such a vote, it also puts Councillors in the position of needing to vote on each and every large employer seeking to locate or continue operating in Hamilton. This could be a very contentious and politically draining process.

Legal Implications

The Oakville by-law was well-constructed to withstand legal challenges. However, TransCanada Energy, the proponent of a gas-fired generating plant, was challenging the by-law when the Province cancelled the project and it is possible that similar litigation could result if Hamilton adopts a similar by-law.

Relevant Consultation

PHS consulted with the Planning & Economic Development (P&ED) and Public Works (PW) departments internally. All three departments unanimously considered the By-law to be expensive for Hamilton with little potential benefit toward population health protection, as well as increased risk of losing economic development opportunities, or being challenged in court. Legal Services was also consulted and commented as above.

PHS staff also discussed the by-law and its implementation with Town of Oakville staff. Town of Oakville staff was generally supportive of the by-law but did not supply evidence that it had positive impacts on public health. Oakville posts annual reports on

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the by-law online, however while these reports include the reporting facilities and their results, no analysis of the health impacts is included. In Oakville, responsibility for public health rests at the Regional Government level.

Conclusion

Essentially, the Oakville Health Protection Air Quality By-law mandates a lengthy and expensive process for facilities, the City and businesses to comply with for questionable or potentially no air quality or health benefit. Based on preliminary results of the Hamilton Airshed Model, Industry and large facilities are not a primary contributor in Hamilton to PM 2.5, transportation is the major source. The potential for discouraging businesses from locating or expanding in Hamilton, the high cost of administering the program, and the uncertain benefit to health outcomes, make this by-law, as written a poor choice for the City of Hamilton.

However, PM 2.5 is a known pollutant with health impacts in the City. It is important to pursue cost-effective means of reducing this pollutant. Strategies for doing so can best be informed by using scientific data and evidence to pinpoint major sources and areas within the City most exposed to PM 2.5, and taking targeted steps to reduce. City staff (PHS, P&ED, PW), as well as representatives from the MOECC, the Ontario Ministry of Labour and Clean Air Hamilton have been working to identify and develop dust abatement and management strategies as part of a Dust Management Working Group. Also, the Hamilton Airshed Model (expected delivery in October 2017) will provide additional information that will identify priority areas within Hamilton where dust abatement strategies should be implemented.

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