



SUBJECT: Health Protection and Air Quality By-law

TO: Environment, Infrastructure & Community Services Cttee.

FROM: City Manager's Office

Report Number: CM-22-22

Wards Affected: All

File Numbers: 155-03-01

Date to Committee: September 15, 2022

Date to Council: September 20, 2022

Recommendation:

Receive and file city manager's office report CM-22-22 providing a response to staff direction SD-06-21 regarding the review of the feasibility of a city-wide Health Protection and Air Quality By-law.

PURPOSE:

Vision to Focus Alignment:

- Support sustainable infrastructure and a resilient environment

Background and Discussion:

The initial discussion at Council concerning a Health Protection and Air Quality By-law dates back to 2010. It coincided with the Town of Oakville taking similar By-law action in response to a gas generating plant that was proposed within its boundaries.

- On February 22, 2010, Council approved the following staff direction:

Direct the Executive Director of CSI to prepare a report related to the Health Protection and Air Quality By-law adopted by Oakville Town Council on February 1, 2010, including information on the resources required to develop the by-law and the rationale for and purpose of the by-law.

On September 14, 2010, staff presented a report to Committee that provided an overview of the Oakville Health Protection and Air Quality By-law (see Appendix A).

This report provides the purpose of the Oakville By-law, the rationale and resources needed to develop a By-law, municipal authority and air quality impacts in Burlington. Council received the report and no further action was taken.

- On December 3, 2019, Council approved the following staff direction (SD-32-19):

Direct the Executive Director of Community Planning, Regulation and Mobility to investigate the Air Quality By-law for Oakville and report back to Council with a recommendation for a similar by-law for Burlington by Q2 2020; and

Direct the Executive Director of Legal Services and Corporation Counsel to retain an environmental lawyer to advise on the municipal role in the Aldershot Quarry, the potential air quality by-law and other matters arising; and

Direct the Executive Director of Community Planning, Regulation and Mobility to review and report back on the peer reviews of the studies done by Meridian/Aldershot Quarry and requirements for ongoing monitoring and potential impacts on human health. As part of the review, report back on the cost and process to conduct an independent peer review of studies conducted to date; and

Direct the Director of Roads, Parks and Forestry to review the forestry plan for phased removal and replacement of trees at the Aldershot Quarry, and report back with an assessment to Council in Q2 2020.

- On February 2, 2021, the Community Planning, Regulation and Mobility (CPRM) Committee received and filed community planning report PL-04-21 providing a response, in part to staff direction SD-32-19 regarding the Meridian Brick Aldershot Quarry. <https://burlingtonpublishing.escribemeetings.com/filestream.ashx?DocumentId=45952>.

Legal Services & Corporation Counsel Report No. L-1-21 addressed the staff direction pertaining to legal advice relating to the municipal role in the Aldershot Quarry and potential for an air quality by-law.

This report was also on the February 2, 2021 CPRM Agenda.

- Following the February 2, 2021 Committee meeting, in a memo regarding the feasibility of a city-wide Health Protection Air Quality By-law, the City Manager advised:

In response to a number of questions raised by members of Committee, staff offered to draft a terms of reference for a study including the potential scope, cost and resourcing. A question was also raised about the impacts that such a study may have on strategic work that is currently planned and/or underway in respect of Council's strategic plan and 2018-2022 Vision to Focus workplan. Committee referred consideration of the motion to Council for the additional information.

Staff met to discuss this matter and reported that this issue is extremely complicated. There was concern about the impact on work plans of the City's environmental staff and environmental change initiatives including the City's Climate Adaptation Plan. Importantly, consultation is needed with Halton Region in order to better assess whether a health protection by-law is better suited to the Region having jurisdiction over health issues, and issues that transcend the boundaries of any one municipality.

- On February 16, 2021, Council approved an updated staff direction:

Direct the Executive Director of Legal Services to undertake a detailed review of the feasibility of enacting a city-wide health protection by-law to be funded from the Contingency Reserve fund and report back by Q2 2021.(SD-06-21)

This report (CM-22-22) from the City Manager's office is in response to Council direction SD-06-21.

Considerations:

There are a broad range of complex issues that are associated with the development and implementation of a Health Protection and Air Quality by-law. This report is informative in that it provides a general overview of the major considerations/implications for proceeding. A City of Burlington by-law will not be applicable to wind-borne emissions from surrounding areas.

Purpose of By-law

The introduction of a Health Protection and Air Quality By-law would be intended to protect Burlington residents from the negative effects of fine particulate matter emissions from Burlington industrial facilities by implementing regulatory controls for significant emitters.

Jurisdictional Roles

Province

Ontario actively monitors and regulates air emissions under Ontario's Environmental Protection Act.

Ontario municipalities except for Oakville, and Toronto - to a different degree, do not regulate air quality (fine particulate matter). Oakville and Toronto requirements are discussed in this report.

There is risk that the continued implementation of a stand-alone municipal air quality by-laws could be seen as the Province permitting an assortment of standards across Ontario. This outcome could also be seen as incompatible with the Provincial government's efforts to streamline municipal approvals and support economic development.

Overall, air quality in Ontario has improved significantly over the last decade with a substantial decrease in harmful pollutants such as nitrogen dioxide, sulphur dioxide and carbon monoxide that are emitted by vehicles and industry.

In 2019, the province published a report regarding the state of ambient air quality, and 10-year trends for key airborne pollutants affecting Ontario's air quality. It noted the following:

- Overall, air quality in Ontario has improved over time as both ambient concentrations of common air pollutants and emissions to air have decreased. Over the last 10 years, fine particulate matter concentrations have decreased by 20%, nitrogen dioxide concentrations by 22%, and sulphur dioxide concentrations by 63% on average across the province; and,
- Air quality in Ontario can vary from year to year due to a variety of factors including pollutant emissions, weather, natural events such as forest fires, and the long-range transport of air pollutants from the United States and elsewhere.

There has also been a major decrease in fine particulate matter which is emitted directly into the atmosphere as a by-product of fuel combustion or formed indirectly in the atmosphere through a series of complex chemical reactions. Fine particulate matter includes aerosols, smoke, fumes, dust, fly ash and pollen, and can have various negative health effects, especially on the respiratory system.

Halton Region

Public health matters are the responsibility of Halton Region Health Department. The Health Department administers health promotion and disease prevention programs to inform the public about healthy life-styles, communicable disease control including

education, immunization, food premises inspection, healthy growth and development, health education for all age groups and selected screening services.

Halton Region previously had an air quality monitoring program that has since been decommissioned. The City Manager has had discussions with the Region and at this time, there are no plans or direction for moving forward with a region-wide air quality by-law.

Municipal Authority

The authority for municipalities to regulate air quality is a fundamental question relating to initiating a Health Protection and Air Quality By-law. For example, in referring to the Town of Oakville, it proceeded with its By-law in 2010 on the basis that the Municipal Act, 2001, as amended provided:

- Power to pass by-laws re: Health, safety and well-being;
- Power to pass by-laws to prohibit/regulate public nuisances and to decide what constitutes a public nuisance; and,
- Limits: cannot conflict with provincial law; cannot frustrate the purpose of provincial law.

Municipal Survey

Staff have surveyed other municipalities to learn about the extent of the use of health protection and air quality by-laws in Ontario. There are currently only two to our knowledge – City of Toronto and Town of Oakville with existing by-laws. Both initiatives generated environmental interest from other municipalities; however, decisions were made in many of these municipalities such as Peel and Hamilton to not proceed with the creation of a By-law for a number of reasons, including:

- Air quality emissions from the business sector are regulated under Ontario's *Environmental Protection Act* and O. Reg 419;
- Resources and time involved to develop and implement a municipal air quality by-law are extensive (and in cases such as Mississauga are affected by a large industrial base);
- It's unclear if a by-law modelled after either Oakville's or Toronto's would measurably improve local air quality;
- Continued education programs can effectively respond to community concerns; and,
- There are other measures and strategies to achieve air quality improvement targets.

City of Toronto

The City of Toronto adopted an Environmental Reporting and Disclosure (ERD) By-law in 2008. Toronto Public Health led the development of an ERD By-law that requires businesses to track and report on the manufacture, process, use and release of 25 priority substances. The associated program, ChemTRAC, provides information that will support emissions reduction from smaller businesses across the City.

ChemTRAC helps to identify the substances of concern as well as the locations of sources which can support pollution prevention programs for specific substances, geographic areas, source types or industrial processes. The program also provides new data on industrial and commercial sources of pollutants and will be used to support future local air quality modelling studies. With the major sources identified, businesses can develop plans to reduce the use and release of these substances in their facilities.

Toronto Public Health reported that the biggest local source of air pollution is vehicular traffic. Residential and commercial sectors were reported as the next most important local contributors to health impacts from air pollution. The main source of emissions from residential and commercial properties is combustion of natural gas to heat homes and buildings, as well as heating water.

Town of Oakville

On February 1, 2010, Council for the Town of Oakville adopted Health Protection Air Quality By-law 2010-035, becoming the first municipality in the Province to regulate air quality; and as well, the first level of government to regulate fine particulate matter. The By-law was associated with public concern for a proposed natural gas electrical generating facility in Oakville.

The By-Law requires that all facilities located in the Town that may cause a “major emission” obtain from the Town a facility-specific approval for such emissions, regardless of whether or not the facility holds provincial Certificates of Approval for the air emissions. A “major emission” is defined in the by-law as “an emission from a facility into the air of a health-risk air pollutant that exceeds at least one of the following thresholds:

- a. for directly emitted fine particulate matter, more than 300 kilograms per year;
- b. for volatile organic compounds, more than 10,000 kilograms per year;
- c. for nitrogen oxides (as NO₂ equivalent), more than 20,000 kilograms per year;
- d. for sulphur dioxide, more than 20,000 kilograms per year; or,
- e. for ammonia, more than 10,000 kilograms per year.”

When the By-law was passed, both proposed and existing “major emissions” facilities were required to apply to the Town for approval (fee \$25,000). Existing facilities that held a provincial Certificate of Approval C of A (Air) had one year to apply for Town approval, while those that did not hold a provincial C of A (Air) had two years. Reportedly the Health Protection and Air Quality By-law arrived with business community concern, being the first of this type in Ontario.

City of Hamilton

In order to understand the air quality impacts in Burlington, it’s important to look at neighbouring Hamilton’s airshed and the actions Hamilton has taken in regard to improving air quality.

In July 2017, Hamilton’s Board of Health discussed the similar implementation of the Town of Oakville’s Health Protection and Air Quality By-law. However, a decision was made to take no action to initiate but instead to request that the province implement new enhanced regulations for fine particulate matter.

The Board of Health acknowledged the challenge of monitoring directly emitted fine particulate from industrial operations across the City. Hamilton has a large industrial base and the adverse economic impacts to the City of this by-law were anticipated to be significant.

There was a motion requesting the Province to act “to establish legally enforceable regulatory limits for PM2.5 and PM10 for inclusion in O. Regulation 419”, and for the City to enforce the bylaw prohibiting track-out of dust onto City streets and more street sweeping in the industrial areas of Hamilton.

In January, City of Hamilton Public Health Services presented a report, *Clean Air Hamilton 2020 Progress Report* to the Hamilton Board of Health. This report showed a "significant reduction city-wide" in air pollutants between 1996 and the end of 2020.

Particulate matter levels from combustion, road dust, pollens and other forms of pollution, have mostly fallen. However, Hamilton has had the highest levels of these super fine particles compared to other Ontario cities since 2013. That includes downtown Toronto, Burlington, Oakville, St. Catharines, Kitchener, London, Windsor, Chatham and Sarnia.

When comparing nitrogen oxides, the report found Hamilton had more than Toronto, Burlington, Oakville, St. Catharines and Kitchener and specifically has experienced the highest levels compared to those cities since 2018.

The City of Hamilton’s key objectives are to continue monitoring air pollutant levels, trying to get fewer people using vehicles and helping industry efforts to reduce their pollution levels.

Health Protection and Air Quality By-law Implications

Business/Industrial Uses

The City of Burlington currently has no data do accurately assess the impacts a Health and Air Quality By-law could have on existing City businesses.

There are a number of challenges that can be expected to accompany a By-law, including the potential impact of attracting and retaining industrial businesses locating in Burlington.

Based on experiences with the introduction of a municipal by-law, it is reasonable to expect that a new by-law will bring criticism from the business community and possibly negatively impact relations with the City, especially over the impact of imposed financial burden. Reportedly the Oakville By-Law requires “major” emitters of five types of air emissions to register and pay a \$25,000 fee to the Town which is used by the Town to monitor and review emissions.

In Oakville these emitters must also complete an Emissions Summary Dispersion Model report. The major emitter’s application is then processed, ultimately leading to a Council decision to approve or deny the land use of the emitter’s operations.

Burlington has no information and data on businesses that contribute air emissions. The fine particulate matter and other compounds that the by-law could regulate are not currently subject to approval limits provincially or federally. The question then becomes if businesses are fully compliant with their provincial approvals, could a by-law with new regulations force them to close. If concerned residents complain about air emissions from a specific business, the province may refer them to the City to address the concerns, given the City has taken on the role as a regulator. Administering and enforcing air quality regulations requires highly specialized technical skills and knowledge which the City currently lacks. As such, the City would need to procure these skills directly either with hiring qualified internal staff or through an external contracted service agreement.

With respect to municipal air quality overall , air study reports have looked beyond industrial emitters and established that some of the highest levels of air pollution typically occur along the major highways where vehicles travel along a concentrated route, all releasing emissions. Burlington can be expected to have consistent air quality impacts originating from the corridors and crossings of Highway 407, Highway 403 and the Queen Elizabeth Way.

Burlington Environmental and Climate Action Initiatives

With the full support of City Council, the City is on the leading-edge of taking action on climate change and adopting green initiatives and best practices aimed to reduce carbon emissions from the city operations and within the community. Council has

approved targets for city operations to be net carbon neutral by 2040 and to become a net carbon neutral community by 2050.

In 2019, Council declared a climate emergency and directed staff to apply a climate lens to all City policies, plans and the budget. That same year, Council approved the Corporate Energy and Emissions Management Plan providing a pathway to reduce emissions from city operations (buildings and fleet). In 2020, Council approved the Climate Action Plan with seven key program areas to help meet the community net carbon neutral target. Most recently Council approved the City's first climate adaptation plan, Climate Resilient Burlington: A Plan for Adapting to Our Warmer, Wetter and Wilder Weather. This plan identifies Burlington's risks and vulnerabilities from climate change and builds on a number of existing actions and programs already in place.

The following is a list of recent climate related actions that the city is undertaking, including many that will result in a reduction of equivalent carbon dioxide emissions and may have the co-benefit of achieving a reduction in air emissions such as PM2.5, particularly those targeting reductions in the burning of fossil fuels for transportation and thermal energy in buildings:

- Integrated Mobility Plan (focusing on active and public transportation)
- Cycling Plan, a component of the Integrated Mobility Plan, which includes projects such as the Plains Road bikeway improvements
- Rural Active Transportation Strategy
- Ongoing expansion of the City's electric vehicle charging stations
- Electric Mobility Strategy (to be approved September 2022)
- Corporate Green Fleet Strategy (under development)
- Anti-idling campaign and bylaw
- Home Energy Efficiency Retrofit Program (budget business case under development for the resources to implement)
- Sustainable Building and Development Guideline
- Planning for Major Transit Station Areas (MTSA) with climate supportive policies
- Municipal facilities – feasibility studies for deep energy efficiency retrofits
- Solar capital plan for city facilities
- City View Park pavilion and solar installation (designed to be net zero carbon operation with no use of fossil fuels)-Opened to the public June 2022
- Skyway Arena and Community Centre redevelopment – designed with low carbon footprint – Council approval of construction August 2022
- Urban Forest Master Plan

Actions supporting climate resiliency:

- Alert Burlington – Community Notification System
- Cooling and Warming Centers in partnership with Burlington Public Library

- Home Flood Protection Assessment Program
- Plumbing Permit Fee Grant Program
- Stormwater infrastructure improvements such as larger creek culverts and creek channel improvements
- Burlington Stormwater Management Design Guidelines
- Municipal Natural Assets Initiative – Grindstone Creek Watershed Project
- Spencer Smith Park and Beachway stabilization and wave breaks
- Asset Management Plan
- Other projects

The City is clearly well-positioned to continue its focus on the benefits of the significant environmental initiatives that are currently in place.

Municipal Interests

Municipalities can impose standards that are higher/stricter than the provincial/federal government, provided the municipal standards don't conflict or frustrate the purpose of the provincial/federal regulation.

City Staff's 2010 report submitted in 2010 regarding Oakville's By-law (Appendix A) still remains a relevant assessment of the complexities that apply to the development and implementation of a by-law. It points out that at the time of the new By-law, Oakville had a significant community-wide concern regarding a proposed new industrial source of air emissions (natural gas fired plant). The report also identifies the significant resources that were used by the Town for research and development, expert external consultants and implementation budget.

The determination as to whether a Health Protection and Air Quality By-law can actually make a difference to Burlington's air quality is heavily influenced by the fact that Burlington is downwind from Hamilton (see above reported state of air quality and impacts) and the U.S.. It's also widely accepted that transportation is a major source of air emissions, particularly from the provincial highways and major arterials.

In looking at the potential effectiveness of a by-law, the Oakville By-law appears to be tied to the fact that it predominantly applies to large emitters. An assessment of the effectiveness of the by-law has not been formally completed to-date to confirm if it's achieving it's overall objectives. The primary real benefit of the by-law may therefore be as a deterrent to a prospective new large industrial air emitter. Burlington has not experienced situations where a proposed new business would fall within the By-law categories.

Options Considered

This report is presented to Committee to provide an overview on the challenges that will be faced in proceeding with a new municipal Health Protection and Air Quality By-law. Since air pollution in Burlington originates from a number of different sources, both within and beyond our boundaries, the benefits to overall City air quality are indeterminate. There will also be significant cost in resourcing to develop the by-law and the design and implementation of the processes and enforcement of a by-law.

A Health Protection and Air Quality By-law process will also compete for cross-functional resources needed to implement the City's Climate Action Plan, the Corporate Energy & Emissions Management Plan and the new Climate Resilient Burlington strategy (climate adaptation). With limited financial resources available and from a cost benefit perspective, climate change action initiatives could be viewed as outweighing the environmental targets of a Health Protection and Air Quality By-law.

Financial Matters:

A decision to proceed with a Health Protection and Air Quality By-law will require a future budget commitment to increase internal resources and engage external consultants. External specialists in environmental law, the health impacts of air pollution and air dispersion modelling are some knowledge areas of need. As an example, in 2010 Oakville estimated \$350,000 as a budget for the consultant retainers. Some 12 years later, the projected cost for expert support is expected to be considerably higher. Additional internal staff will also be needed for by-law implementation. In 2010, Oakville included a \$1 million fund to deal with an Environmental Review report as well as a court challenge.

Staff need to determine more accurate estimates if this by-law were to proceed to the next phase of development.

Climate Implications

By applying a climate lens to City plans, policies and the budget, and through the implementation of the two plans focused on mitigation of carbon emissions (the Climate Action Plan and the Corporate Energy and Emissions Management Plan), a co-benefit will be achieved to reduce related air emissions. These actions can help to achieve the Vision 2040 goal on being a Healthy and Greener City that improves energy efficiency, protects the natural environment and mitigates climate change impacts.

Council's approved Climate Action Plan that outlines a strategy for the community to be net carbon neutral by 2050 addresses two major sources of emissions being, fossil fuel use in heating homes and hot water and transportation. The plan through Better Homes Burlington has as a major strategy the shifting of space heating to utilizing Air Source Heat Pumps powered by electricity. Electrification of transportation is another major theme and will also have a significant impact on improving air quality along highways as well as municipal roads.

Engagement Matters:

A Health Protection and Air Quality By-law development process requires a carefully staged and consultation plan. There are many interests that will be affected including the Province (Ministry of the Environment, Conservation and Parks; Ministry of Environment, Conservation and Parks and the Ministry of Natural Resources and Forestry), Halton Region, neighbouring municipalities, local businesses and stakeholders, Burlington Economic Development and the Chamber of Commerce, and residents.

The Province and Region are ultimately responsible for air quality and public health. Communication of intent to develop a By-law with all affected interest and should begin with notice to Burlington's MPP (Natalie Pierre) and Halton Region's Medical Officer of Health.

Conclusion:

Report CM-22-22 provides information regarding the potential development and implementation of a Health Protection and Air Quality By-law, including the complexities and challenges. Air quality in Burlington is affected by a number of different sources both internal and external to its boundaries. The overall conclusion derived by this report is that the intended benefits of implementing a new by-law will be limited since it will only target a very small portion of potential sources. The purpose of the by-law and its ability to be effective also needs to be weighed against the requirement for significant incremental resources to develop, implement and administer the by-law as a new regulatory city service.

The City is on the leading-edge of adopting green initiatives and best practices aimed to reduce carbon emissions from the City's operations and within the community, with the co-benefit of reducing health related air emissions. To this end, the City is well-positioned to continue its resource placement on the benefits of the environmental and climate action initiatives that are currently in place. The development of a Health Protection and Air Quality By-law process will compete with the limited resources

required to implement the City's current environmental and climate action program – which have the potential of delivering more effective and broader community benefits.

Overall this report recommends that the Corporate and Community Services, Strategy and Risk Committee receive and file city manager's office report CM-22-22 providing a response to staff direction SD-06-21 regarding the review of the feasibility of a city-wide Health Protection and Air Quality By-law.

Respectfully submitted,

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Appendices:

- A. Staff Report– Oakville Health Protection Air Quality By-law (CSI-20-10)

Report Approval:

All reports are reviewed and/or approved by Department Director, the Chief Financial Officer and the Executive Director of Legal Services & Corporation Counsel.