




CITY OF HAMILTON
HEALTHY AND SAFE COMMUNITIES DEPARTMENT
Hamilton Fire Department

TO:	Chair and Members Healthy and Safe Communities Committee
COMMITTEE DATE:	October 19, 2023
SUBJECT/REPORT NO:	Large Volume Hazard Storage Database and Program (HSC23068) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Debbie Spence (905) 546-2424 Ext. 3395 Trevor Haalstra (905) 546-2424 Ext. 7120
SUBMITTED BY:	David Cunliffe Chief, Hamilton Fire Department Healthy and Safe Communities Department
SIGNATURE:	

RECOMMENDATIONS

- (a) That the Chief of the Hamilton Fire Department be directed to implement a Large-Volume Hazard Storage Database that will focus on commercial, industrial, and agricultural properties using the Ontario Fire Code as a reference for volumes, storage, and types of flammable and combustible substances; and,
- (b) That the Chief of the Hamilton Fire Department be directed to investigate the staffing and resources required to launch and manage the program associated with the inspections and maintenance of the Large-Volume Hazard Storage Database to be discussed through the 2024 budget process; and,
- (c) That the Outstanding Business List Item 23-O be considered completed and removed from the list.

EXECUTIVE SUMMARY

At the January 12, 2023 General Issues Committee meeting, a motion was passed: “That staff be directed to report back to the Emergency and Community Services Committee on whether the City has the authority to require any property owner to report on the storage of hazardous materials over a specified volume to the Hamilton Fire Department.”

The City has the authority – through the creation of a bylaw – to require property owners to report on the storage of hazardous materials over a specified volume to the Hamilton Fire Department. However, the Hamilton Fire Department does not recommend the creation of a by-law. Instead, staff recommend that Council directs the Fire Chief to develop and implement a Large-Volume Hazard Storage Database focusing on commercial, industrial, and agricultural properties using the Ontario Fire Code as a reference for volumes, storage locations, and types of flammable and combustible substances. The database would require additional staff to oversee this work and Council would review the business case for staffing for this new program through the 2024 budget process.

To understand the risks and right-size the oversight of a database, staff looked at the potential number of properties in Hamilton that could be storing large volumes of hazardous materials. The data reviewed included the number of Hamilton-based properties on the Ministry of the Environment’s Waste Registry and number of businesses in certain industries (i.e. those that would have a higher likelihood of using flammable or combustible substances) via Statistics Canada’s business counts. As a starting point, staff estimate that there are 2,400+ properties that will need to be visited to determine if they would become part of the Database. This approach aligns directly with the Hamilton Fire Department’s 10-Year Service Delivery Plan that includes an enhanced focus on proactive measures to effectively mitigate risk to residents, but without the higher and wider-ranging costs (i.e. staff costs of enforcement) of development and management of a new by-law. The implementation and oversight of the database would not be without cost; specifically additional staffing as this would be a new program and cannot be managed with the current staff levels. It should also be noted that when staff visit properties, they could find items unrelated to large-volume hazards, but they would need to follow up with anything that falls under the Ontario Fire Code.

If a program with staffing was launched, staff would borrow from Toronto’s approach where staff have been successful in proactively gathering information from businesses without a by-law. Hamilton’s program would include proactive visits and be enhanced to include a formal database. Staff would also continue their collaboration efforts with other City Divisions such as Municipal Bylaw, Licensing, and Building for this new program. From both a strategic and tactical perspective, this program would help build the

Hamilton Fire Department's knowledge about building stock; uses of buildings; and potential risks all which aid in driving and managing Fire's three lines of defence: public safety and education; fire safety standards and enforcement; and emergency response.

Alternatives for Consideration – See Page 6

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: n/a

Staffing: n/a

Legal: n/a

HISTORICAL BACKGROUND

Hamilton has experienced a number and variety of fire-related incidents connected with properties that store hazardous materials with both large and small or short and longer-term impacts. One of the larger incidents was the 2007 Biedermann Fire. The Biedermann Packaging fire happened on July 26, 2007 and resulted in a warehouse that housed high hazard liquids being destroyed and “sending a million litres of poisonous, pesticide-laced, firefighting water into Spencer Creek and Cootes Paradise, killing thousands of fish and smaller aquatic creatures” (source: Hamilton Spectator). More recent examples of larger properties/impacts storing flammable or combustible liquids happened on August 11, 2022; an agricultural property that was storing a large quantity of hand sanitizer resulted in a fire that took much longer than average to extinguish resulting in more significant impacts to staffing and apparatus plus \$1M in property damages.

Defining Hazards or Hazardous Materials:

The term hazardous materials has varying definitions and is not used consistently throughout different legislation. Because the focus is on storage of fire hazards, the definition and scope will align and be enforceable with the Ontario Fire Code. The Ontario Fire Code defines and uses the terms: flammable and combustible liquids (Class 2 and 3 liquids) and outlines specific volumes and locations where these substances are allowed to be stored (See Appendix A).

Large-Volume Hazard Storage and those properties that would be included in the database would be defined as any properties that store (a) any flammable or combustible liquids based on the maximum quantities (volumes) as defined by the Ontario Fire Code, with the exception of those liquids overseen by Environment and Climate Change Canada's E2 Regulations (E2 Regulations refer to 249 substances that pose an acute hazard to the environment or to human health should an accidental

release occur); and/or (b) large volumes of lithium batteries in volumes as outlined by the Ontario Electrical Safety Code and Ontario Building Code. Hamilton Fire Department staff will review, on a property-to-property basis the types of materials, and their quantities and locations and storage that is deemed to be of high risk will be added to the database and monitored.

Provincial and Federal Legislation related to Hazardous Materials Terminology: Staff reviewed different legislation, codes, and regulations from provincial and federal organizations that included Canadian Labour Code's Workplace Hazardous Materials Information System, Ministry of the Environment, Ministry of Transportation (transport of dangerous goods), Ministry of Labour, Ontario Fire Marshal, Ontario Fire Code, and Environment and Climate Change Canada as it relates to hazardous materials. The review (Reference: Appendix A) of terminology, volumes, and organizations that most impact the work of the Hamilton Fire Department (i.e. Ontario Fire Code and Ontario Fire Marshal) are what led to the development of the proposed large-volume hazard definition. The definition will be used internally by staff and used in a policy connected to the Database and proactive Large-Volume Hazard Program Team.

Examples of highly flammable or combustible liquids that create a significant risk in large volumes include acetone, aerosols, butane, charcoal lighter fluid, diesel fuel, diethyl ethers (synthetic dyes and plastics typically found in manufacturing), ethanol, gasoline, hexane, kerosene, methanol, paint, petroleum ether, oils, organic peroxides, oxidizing substances, rubbing alcohol, varnishes etc. The inclusion of lithium batteries is due to the severity and the number of lithium battery-fire occurrences across Canada that is of concern to cities and the Ontario Fire Marshal. (See Appendix A)

Potential Number of Properties in Hamilton that could contain large volumes of hazards: To help determine the potential number of properties in Hamilton that could be storing large-volume hazards staff reviewed the Ministry of the Environment Waste Program Registry (See Appendix A); Stats Canada business counts; and GIS data to help identify an estimate of industrial, commercial, and agricultural properties that may be storing large-volume hazards that should be placed on the Database. In 2021 Hamilton had 84 businesses/locations that had generators or were carriers and receivers of hazardous liquid industrial waste as reported to the Ministry of the Environment through the Ministry's Waste Program Registry. In the same year Mississauga had 51, Toronto had 93 (includes Etobicoke, North York, and Scarborough), Windsor had 12, Ottawa had 35, and London had 29 of properties in their cities on the Waste Registry. The 2021 Statistics Canada business counts has a total of 2,394 business in Hamilton in the sectors of manufacturing (669); administration, waste management and remediation (733), and transportation and warehousing (992).

Consultation and Potential Collaboration with Internal City Divisions:

Staff reached out to internal divisions such as Municipal Bylaw, Licensing, and Building that conduct regular proactive and reactive enforcement and site visits of properties related to City Bylaws and the Ontario Building Code. Based on initial conversations Municipal Bylaw, Building, and Licensing may be able to assist with identifying potential properties by letting Fire Prevention know if they find anything during their property visits. Hamilton Fire Department staff would provide background information to these teams to assist these efforts. This potential approach would help Fire build and maintain the Large-Volume Hazard Database.

Comparable City Approaches:

Staff reviewed five (5) comparable cities that included Toronto, Mississauga, Ottawa, Windsor, and London. None of these cities have bylaws requiring property owners to let their Fire Departments know when they are storing hazardous materials (flammable or combustible liquids) over a specified volume. Toronto conducts proactive site visits focused on industrial properties with their hazmat teams asking owners to share, through a walk-through of the property, what high volumes of hazardous and/or combustible liquids they store. Toronto has been quite successful with property owners sharing this information in the absence of a bylaw. In staffs' conversations with other cities Ottawa noted that they track hazmat concerns within Fire Safety Plans and some municipalities noted that the E2 Plans don't cover some high hazards due to labelling conventions (i.e. jet fuel).

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

n/a

RELEVANT CONSULTATION

The external agencies and cities staff consulted included Environment and Climate Change Canada Government of Canada; Ontario Fire Marshal; Ministry of the Environment; City of Toronto; City of Mississauga; City of Ottawa; City of Windsor; and City of London.

The internal staff and divisions staff consulted include the Fire Chief, Deputy Chiefs; Licensing and Bylaw Services; Building Division; Planning and Economic Development's General Manager's Office; Clerks (FOI); and Legal and Risk Management Services.

ANALYSIS AND RATIONALE FOR RECOMMENDATION

Importance of Defining Large-Volume Hazards

Varying definitions and use of the term hazardous materials is used inconsistently. Aligning with the Ontario Fire Code will provide clarity for staff and property owners/members of the public and enforcement of infractions can be dealt with through the Ontario Fire Code and Ontario Fire Marshal.

Development of a Database and Large-Volume Hazard Program

In addition to the costs and scope of creating a new by-law the recommendation of a Database and Program team comes from a review of:

- Provincial and federal legislation and definitions to ensure that the City avoids duplication of efforts and seeks opportunities to align and collaborate;
- Local and provincial data to determine community risk and associated resourcing;
- Consultation and potential collaboration with internal city divisions; and
- Better practices and approaches from similar-sized cities.

The qualitative and quantitative data staff used to determine that Hamilton would benefit from a database and proactive approach is based on community risk factors such as incident trends; estimate of potential properties in Hamilton that may be storing large volumes of hazards; overall trends related to fire and explosion and chemical release identified in the 2022 Hazard Identification Risk Assessment report; and the number of Hamilton properties on the 2021 Ministry of the Environment's Hazardous Waste Registry. The development of this approach will enable us to:

- Further align and seek opportunities to improve on the work of the 10-Year Fire Service Delivery plan and our three lines of defence: public fire safety education (prevention), fire safety standards and enforcement (compliance), and emergency response (suppression) as it relates to high-volume hazards; and
- Seek continued opportunities to collaborate with internal divisional partners and external provincial and federal agencies to increase education to property owners and the public about hazards to help reduce community risk.

The database and program would have the enhanced benefit of assisting with the goals of the 10-Year Fire Service Delivery Plan specifically assisting with:

- Reduced risk for a healthier and safer community;
- Identify resource gaps needed to mitigate increased risk to be integrated into the City's operating and capital budget process; and
- Delivering enhanced emergency preparedness, fire protection and rescue services.

OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

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For example, properties that are on the database would be accessed and used by Fire's dispatch team who could provide details to Fire Suppression teams.

ALTERNATIVES FOR CONSIDERATION

Develop of a City Bylaw in conjunction with the Large-Volume Hazard Storage Program

APPENDICES AND SCHEDULES ATTACHED

Appendix A: Definitions, Legislation, Regulations, and Volumes relating to Hazardous Materials