



Report
Staff Report
The Corporation of the City of Brampton
10/21/2024

Date: 2024-09-11

Subject: **Information Report – Potential Zoning Permissions for the Use of Outdoor In-Ground Waste Bins (i.e. Molok brand bins) for Restaurant (Organic) Waste, In Lieu of Indoor Climate-Controlled Rooms**

Contact: Charles Ng, Planner I, Development Services & Design
Alex Sepe, Manager, Development Services & Design

Report number: Planning, Bld & Growth Mgt-2024-692

RECOMMENDATIONS:

1. That the report from Charles Ng, Planner, Development Services & Design to the Planning and Development Committee Meeting of October 21, 2024, re: **Information Report – Potential Zoning Permissions for the Use of Outdoor In-Ground Waste Bins (i.e. Molok brand bins) for Restaurant (Organic) Waste, In lieu of Indoor Climate-Controlled Rooms**, be received; and
2. That Staff be directed to develop Zoning By-law performance standards for in-ground waste storage units and incorporate those performance standards through the City's Comprehensive Zoning By-law Review.

OVERVIEW:

- **Land developers have requested that Development Services and Design staff consider changes to the Zoning By-law to allow restaurant (organic) refuse to be stored in outdoor in-ground bins (i.e. Molok brand bins), rather than continuing to require it to be contained in indoor climate-controlled garbage rooms. To date, restaurant waste has been required to be stored in indoor climate-controlled garbage rooms in order to help manage odours, pests and unsightly views.**
- **Outdoor in-ground waste storage units are a type of waste receptacle that is located partially below grade, sheltering waste from environmental conditions, keeping internal waste at lower temperatures than the ambient air temperature, thereby helping to reduce odours.**

- Land developers and manufacturers of these in-ground waste bins have informed staff that restaurant (organic) waste can be managed appropriately in outdoor in-ground waste bins, and that this has worked well in other municipalities, including Burlington, Vaughan, and Mississauga. They have noted that allowing in-ground bins for restaurant waste will reduce the amount of land, and costs, that are currently needed to provide the Zoning By-law required indoor climate-controlled rooms for restaurant waste.
- Staff's review of cases where outdoor in-ground waste bins have been used for restaurant waste show that they may be effective and have similar performance to an indoor climate-controlled waste room with respect to managing odour, pests, and appearance.
- Staff will consider allowing these outdoor in-ground waste bins for restaurant waste through the Comprehensive Zoning By-law Review, and prior to that, via the minor variance process – conducting further research as deemed appropriate.
- Morguard has an active request with staff (minor variance application) to permit an outdoor in-ground waste bin, in lieu of an indoor climate-controlled room (n/e corner of Kennedy Rd and Steeles Ave) to accommodate the development of a new restaurant (Chic-fil-A).
- The recommended actions are:
 - Staff to develop Zoning By-law performance standards for in-ground waste storage units and incorporate those performance standards through the City's Comprehensive Zoning By-law Review.
- There are no financial implications associated with the recommendation of this report.

BACKGROUND:

Outdoor in-ground waste storage units are a type of waste receptacle that features an underground component where waste is stored, and an above-ground component that functions as the interface for users to operate the receptacle. One popular manufacturer of these types of bins is Molok, but there are other manufacturers as well.

Figure 1 – Rendering of In-ground Waste Bins (i.e. Molok bins)



In-ground waste bins are currently being used to accommodate ‘standard’ types of waste within the City – some location of which are noted below:

- Southwest corner of Queen Street and Chinguacousy Road;
- Southeast corner of Mayfield Road and McVean Drive;
- Northwest corner of Airport Road and North Park Drive;
- Northwest corner of Mississauga Road and Financial Drive; and
- Various parks across the City of Brampton including Emancipation Park, Sesquicentennial Park, Teramoto Park and others.

However, the Zoning By-law does not currently allow restaurants to use these bins as the sole means of managing organic waste. As restaurant (organic) waste can more easily cause nuisances relating to odours, pests and unsightly views, the Zoning By-law currently requires that restaurants have their waste be stored within an internal climate-controlled room.

CURRENT SITUATION:

Staff are currently speaking with developers about the possibility of allowing zoning permissions for in-ground waste bins to be used to manage restaurant (organic) waste. Developers of commercial plazas and restaurants, and manufacturers of the in-ground waste bins are sharing information with City staff to demonstrate that outdoor in-ground bins can be just as effective at limiting nuisances (odour, pests, unsightly views) from restaurant organic waste as the currently required indoor climate-controlled rooms. They have noted that allowing in-ground bins for restaurant waste will reduce the amount of land needed for this purpose, and will be less costly.

Performance of In-Ground Waste Storage Units

Odour and Temperature

An independent study conducted by The Earth Rangers Centre for Sustainable Technology (Molok – Independent Temperature & Odour Test Report, 2019) evaluated the effectiveness of Molok brand bins (one of several brands that manufacture in-

ground waste bins) with respect to odour containment. The study found that the temperature of Molok bins at a depth of 50 inches was sufficient in effectively reducing odour emissions from waste, including organic waste, since there is a positive correlation between the rate of decomposition and temperature; cooler temperatures result in slower decomposition, which produces less odours. Utilizing an odour meter, the study also found that odour emissions from Molok bins did not exceed odour emissions from a climate-controlled waste room. The study was conducted over a period of two years.

Molok bins are installed at a depth of 1.5-1.6 metres below the ground, depending on the model (other brands may vary). At a depth of 1.5 metres, the underground soil temperature is generally lower than the ambient air temperature. The underground component of Molok bins combined with the enclosed design is considered to be adequate at maintaining odours. Developers and manufacturers note that the underground and closed design of these units contain the majority of odours.

Additionally, the manufacturers of in-ground waste storage units offer various models of receptacles for different types of waste including organics and grease. These units may have additional features that can mitigate the adverse effects associated with organic waste.

Energy

In-ground waste storage units do not require an external energy source. Its cooling properties come from the nature of its underground design whereby sub-surface temperatures are generally cooler than the ambient air temperature.

It is anticipated that the exclusive use of in-ground waste storage units for restaurants may result in a net decrease in overall energy consumption as a climate-controlled waste storage room would not be required.

Pests - Animals, Insects, and Vermin

The key factors that attracts and fosters animals, insects, and vermin is the presence of odour and waste. The Earth Rangers study found that Molok bins produced less odour than a climate-controlled waste room when using an odour measuring tool. The storage of waste underground eliminates the presence of waste on the surface, and the enclosed design of in-ground waste storage units prevents animals, insects and vermin from accessing the stored waste.

Appearance

In-ground waste storage units can store a significant amount of waste, which is comparable to typical front-end load bins (dumpsters). The large capacity may also reduce the frequency of waste pickup, which reduces the presence of waste trucks on

municipal roads, and may also prevent waste overflow, which helps maintain a clean and sanitary waste storage area.

Figure 2 – Photo of Molok Bins at Hyatt Restaurant, Brampton



Figure 3 – Photo of Molok Bins at North Park Drive & Airport Road, Brampton



Since the main storage component of in-ground waste storage units is underground, its overall appearance is less intrusive than a typical dumpster. The above-ground portion is relatively smaller, provides for a pedestrian scale, and may not require additional screening to mask its appearance. Customizable exterior shells are also available to help meet local contexts to reduce its overall impact to the urban environment. This may

include material selection, colours, or graphical designs. It should be noted that through the Site Plan Approval process, City staff are able to implement measures such as screening and location.

Examples of the use of In-Ground Waste Storage Units in Ontario

In-ground waste storage units have been deployed within the Province of Ontario for several decades. The following provides a benchmarking of underground waste storage initiatives throughout Ontario.

City of Vaughan

The City of Vaughan permitted a site plan application on January 18, 2023 (file: DA.21.013, address: 3255 Rutherford Road) for the construction of a restaurant with an associated outdoor in-ground waste bin. This includes bins for garbage, recycling, and grease. City of Vaughan staff confirmed that the underground waste storage on the subject property has continued to operate since its approval.

City of Mississauga

The City of Mississauga permits the use of outdoor waste storage areas if they are appropriately screened and not visible from the public realm or residential areas. In-ground waste storage units are considered an acceptable alternative to the City of Mississauga's standard outdoor waste storage area but screening may be required depending on location, number of units, and the use of the units themselves such as for restaurants and food service establishments.

Region of Peel

The Region of Peel has some experience with in-ground waste storage units, particularly Molok bins, as they have been used during the Region's operation of the Britannia Landfill Site for organic waste collection. Through conversation with the Region, Regional Staff notes that there are several benefits to Molok bins that addressed concerns related to odour, animals, insects, and vermin. They provided the following anecdotal insight regarding the use of Molok Bins at the Britannia Landfill site:

- The underground design of the Molok Bins maintained a temperature that diminished odours, which also helped manage animals, insects, and vermin.
- The design and construction of the bins contained odours and prevented animals, insects, and vermin from accessing waste. It was noted that odours were present during hot days when the lid was left open and when emptying the bins.
- Collection frequency was reduced due to the bin's large capacity, which reduces the operation's carbon footprint by having less trucks on the road. Warmer weather required a more frequent collection schedule. During cooler months, collection was approximately once a week whereas during warmer months, collection was approximately three times a week.

City of Burlington

The City of Burlington permits the use of in-ground waste storage units in lieu of a climate-controlled waste room for permitted uses in their commercial zones, which are Regional Commercial (CR), Employment Commercial (CE), Community Commercial (CC), and Neighbourhood Commercial (CN). A restaurant use is permitted in all of these commercial zones including convenience restaurant and fast-food restaurants. As per the City of Burlington Zoning By-law 2020, Part 4 (Commercial Zone):

“Perishable waste must be kept in refrigerated storage within a building.

Alternatively, perishable waste may be stored outside if a deep collection waste disposal system, comprised of a sealed container with a lockable lid located primarily below grade, is used.”

City of Ottawa

The City of Ottawa is currently using in-ground waste storage units in approximately 79 of its municipal parks and a small number of multi-residential properties. As per the City of Ottawa’s Solid Waste Master Plan, 2019, they are considering expanding its use throughout its jurisdiction.

As noted in the City of Ottawa’s Solid Waste Master Plan, 2019, The City of Ottawa recognizes that in-ground waste storage units:

- are a proven waste collection technology;
- can reduce collection frequency which also reduces noise pollution generated from collection trucks;
- contributes to sustainable waste management design and the embracement of innovation;
- limits and controls odour and vermin;
- limits waste overflow;
- saves space leaving more opportunities for parks and green space;
- increases accessibility; and
- are aesthetically pleasing.

Town of Newmarket

In 2019, the Town of Newmarket’s Council approved a pilot project for the installation and use of in-ground waste storage units in their downtown area for its commercial businesses. Local restaurants were permitted to dispose of organic waste in the bins. The in-ground waste storage units were considered to have improved the overall aesthetic of the area, and reduced odour when compared to the previous waste storage and collection method. This pilot project is part of the Town’s overall downtown revitalization efforts and beautification plan.

City of Toronto

The City of Toronto has tested the use of in-ground waste storage units in 2002. This pilot project involved the installation of in-ground waste storage units at a 20-unit condominium for garbage, recycling, and organic waste. It was noted that the pilot project reduced the frequency of waste collection, and reduced animal and vermin presence.

Some odour was reported during a hot day, which suggests that fine-tuning collection schedules was in order.

County of Peterborough

The County of Peterborough has integrated in-ground waste storage units as part of its waste management system. These units are located at the County's waste transfer stations whereby residents can drop off waste including organic waste. The County recognizes that these units are designed to keep vermin and animals out since waste is stored underground.

CORPORATE IMPLICATIONS:

Financial Implications:

There are no financial implications associated with the recommendations of this report.

Other Implications:

There are no other Corporate implications.

STRATEGIC FOCUS AREA:

- **Health & Well-being:** evidence suggests that the use of outdoor in-ground waste storage bins for restaurant (organic) waste may not lead to higher odour emissions than a climate-controlled waste room, attract pests, or lead to unsightly views..
- **Environmental Resilience & Sustainability:** outdoor in-ground waste storage units being used for restaurant (organic) waste will not require the use of an external energy source. It is anticipated that the exclusive use of in-ground waste storage units in lieu of a climate-controlled waste room will result in a decrease in overall building energy expenditure.
- **Government & Leadership:** the use of outdoor in-ground bins for restaurant waste may be an effective and innovative waste management method. These units have been effective in other municipalities; require less land area and costs for the development community, requiring less frequent collection due to their large capacity, reducing noise and air pollution from collection trucks;

CONCLUSION:

Outdoor in-ground waste bins have been used for organic waste in various Ontario municipalities since approximately the year 2000. It appears that they have been successful in limiting nuisances, and may be comparable to the current requirement for indoor climate-controlled rooms for managing restaurant waste at managing odour, pests and appearance. Further, it seems that permissions for these types of units could be very beneficial in reducing the land requirements and costs associated with climate-controlled rooms.

City staff will continue to review the potential for allowing outdoor in-ground waste bins to be used in lieu of indoor climate-controlled rooms for restaurant (organic) waste, and will review more details regarding the offerings from these manufacturers for the units that are specifically meant to accommodate organic waste; and how we can use conditions of approval through our development processes to ensure that these issues are adequately managed.

Staff will consider including permissions for this within the Zoning By-law, via the ongoing Comprehensive Zoning By-law review.

Prior to the completion of the Comprehensive Zoning By-law review, staff will consider any requests from developers for these waste units via the minor variance process. Staff have one active minor variance application from Morguard, for their site at the north-east corner of Kennedy Road and Steeles Avenue, to allow the exclusive use of in-ground waste storage units for a new restaurant (Chic-fil-A) that is proposed to be developed at that site.

Authored by:

Reviewed by:

Charles Ng, Planner I
Planning, Building & Growth
Management, Development Services
& Design

Allan Parsons, Director
Planning, Building & Growth Management,
Development Services & Design

Approved by:

Approved by:

Steve Ganesh, Commissioner
Planning, Building & Growth
Management

Marlon Kallideen
Chief Administrative Officer

Attachments:

- Attachment 1 – Earth Rangers Independent Study