

Regulation of Shipping Containers

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Recommended by:	General Manager of Growth and Infrastructure
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Report Summary

This report provides Planning Committee with information concerning the regulation of shipping containers, including a comparative analysis with other Ontario municipalities related to zoning provisions.

Resolution

THAT the City of Greater Sudbury directs Staff to undertake a review of shipping container provisions under the Zoning By-law and prepare recommendations based on the key findings, as outlined in the report entitled "Regulation of Shipping Containers", from the General Manager of Growth and Infrastructure, presented at the Planning Committee meeting on August 14, 2023.

Relationship to the Strategic Plan, Health Impact Assessment and Community Energy & Emissions Plan (CEEP)

The regulation of shipping containers aligns with the strategic goals of strengthening quality of life and place including matters of public safety, while also facilitating business retention and growth through the expansion of as-of-right zoning permissions. There is no conflict with the Community Energy & Emissions Plan.

Financial Implications

There are no financial implications associated with this report at this time.

Report Overview:

This manager's report is intended to provide an overview of issues related to the regulation of shipping containers, which have become increasingly popular as storage units in commercial and industrial settings. Topics covered include an analysis of zoning provisions, matters related to public safety and the issuance of building permits, the impact on community standards, the assessment of modified shipping containers for tax purposes, and potential amendments to the Zoning By-law.

Staff Report: Regulation of Shipping Containers Planning Services Division

Background:

This report is intended to provide Planning Committee with information concerning the regulation of shipping containers, including a comparative analysis with other Ontario municipalities related to zoning provisions. Other topics to be addressed include matters related to public safety and the issuance of building permits, the impact on community standards, and the assessment of modified shipping containers for tax purposes.

In recent years, shipping containers have proliferated throughout the community, as surplus units are relatively inexpensive and easily attainable. In most cases, the shipping containers have been placed on the property in contravention of the Zoning By-law and are typically being used as storage buildings without benefit of a building permit. The latter presents concerns related to public safety given that shipping containers are designed for the intermodal transport of goods and do not meet minimum requirements under the Ontario Building Code related to life safety requirements. There have also been public complaints related to the use of unmodified shipping containers, which are often unscreened and visible from public roads and residential areas. Another evolving trend is the conversion of shipping containers to a habitable use, such as a dwelling unit or commercial space. Such conversions require more substantive retrofits compared to containers used for commercial and industrial storage.

Under Zoning By-law 2010-100Z, the accessory use of shipping containers is limited to specific land uses as set out in Section 4.34 as follows:

4.34 Shipping and storage containers

Shipping and storage containers shall not be placed or used on any lot in a Residential (R), Commercial (C), Mixed Light Industrial/Service Commercial (M1) or Business Industrial (M1-1) Zone and shall only be located on a lot:

- a) As an accessory structure used in conjunction with a permitted agricultural, extractive, transport terminal or warehouse use;*
- b) For the purposes of rental, sale or distribution in a Light Industrial (M2) or Heavy Industrial (M3) Zone for use off site; and,*
- c) In accordance with Sections 4.40.5 and 4.40.7 of this By- law.*

Sections 4.40.5 and 4.40.7 referenced above speak to the temporary use of storage containers for moving and construction purposes:

4.40.5 Temporary Construction Uses

Nothing in this By-law shall apply to prevent the use of any part of any lot for, a tool shed, construction trailer, shipping or storage container, scaffold or other building or structure incidental to construction and the temporary storage of construction supplies and equipment in all Zones within the City on the same lot on which the construction work is in progress or in relation to a road or public utility, so long as it is necessary for the work in progress and until the work is completed or abandoned.

For the purposes of this section, abandoned shall mean the discontinuation of work for more than 90 consecutive days or the failure to maintain a current building permit. (By-law 2011-49Z)

4.40.7 Temporary Shipping or Storage Containers

Nothing in this By-law shall apply to prevent the use of any part of any lot for the placement and use of not more than a total of one shipping or storage container shall be permitted on a residential lot or a lot within a Commercial (C) or Institutional (I) Zone for a maximum of 14 consecutive days for the purposes of being loaded or unloaded where a use, business or the occupants of a dwelling are moving from a premises or lot to another premises or lot.

In regards to Planning approvals, Council has historically maintained a consistent approach. Since the adoption of Zoning By-law 2010-100Z in September 2010, seven of eight applications submitted in order to permit shipping containers on a permanent or temporary basis have been denied by Council. There have been a further 16 applications where one or more shipping containers were determined to be present following a site visit. The typical practice has been to require removal of the shipping container as a condition of approval.

Given the increasing popularity of repurposed containers and the challenges related to enforcement and compliance, this report presents an overview of the regulatory framework, identifies issues, and presents possible options for Council's consideration related to the expanded use of shipping containers.

Discussion:

1. Comparison of zoning regulations applied to shipping containers

A review of Ontario municipalities was conducted in order to determine how shipping containers are regulated from a zoning perspective. The objective was to provide a representative sampling across jurisdictions based on different approaches to regulation. The results were grouped into three broad categories:

Permissive: generally permitted in all zones subject to special provisions;

Moderately permissive: generally prohibited in Residential zones but permitted in Industrial, Commercial and Institutional (ICI) zones subject to special provisions; and,

Restrictive: generally treated as per the intended use (intermodal transport) and restricted by zone and type of use; and/or, permitted as a temporary use only.

Some municipalities do not regulate shipping containers through their Zoning By-laws (e.g., Barrie, Cambridge, Mississauga). Defined terms also vary across Zoning By-laws, with some municipalities using the term *freight containers*, *storage containers*, *intermodal containers* or *sea cans*. Some Zoning By-laws make a distinction between *shipping containers* and *storage/truck trailers* (trailer portion of a tractor-trailer unit).

The results are summarized in the table contained in **Appendix 1**.

The review demonstrated that the regulation of shipping containers through Zoning By-laws varies widely. Some municipalities have adopted broadly permissive provisions whereby shipping containers are permitted in all zones including Residential areas (Burlington, Hamilton). Under this approach, shipping containers are acknowledged as a cost-effective building solution that is gaining in popularity. The containers are essentially treated as another type of accessory structure, where a building permit is required if the size of the unit exceeds 10 m² of floor area.

At the other end of the spectrum, there are municipalities that maintain fairly restrictive provisions, where shipping containers are limited to industrial and/or agricultural uses; or alternatively, permitted as a temporary use only (Greater Sudbury, Waterloo, Bradford-West Gwillimbury). In these cases, shipping containers are generally treated as per their intended use (i.e., intermodal transport).

A number of municipalities fall somewhere in the middle, where shipping containers are permitted as accessory uses in selected zones subject to special provisions addressing the siting, number, size and stacking of containers. In these instances, shipping containers are generally prohibited in Residential zones.

Key findings: For those municipalities that permit shipping containers in ICI zones, the use of a shipping container as a repurposed structure is subject to special zoning provisions including limits on the number, size and stacking of containers. Site plan control is utilized to ensure proper siting and screening.

2. Health and safety concerns

A shipping container is not constructed to function as a building, but rather for the intermodal transport of goods and materials. An unmodified shipping container does not meet the requirements of the Ontario Building Code, and presents specific concerns related to public safety. A particular hazard is the storage of flammable and combustible liquids and gas-powered equipment, which may produce ignitable vapours in a confined space without ventilation. A firefighter was killed in Enderby, BC in December 2011 when flammable liquids being stored in a shipping container vaporized and ignited, resulting in a catastrophic failure of the structure. In Greater Sudbury, it was reported by local media that a shipping container exploded on an industrial site in Coniston on November 18, 2021. In Ontario, explosions are investigated by the Office of the Fire Marshal (OFM).

Although a shipping container is typically constructed of steel and is considered strong, the units also tend to deteriorate over time through exposure to the elements. Many surplus containers are rusted and in poor condition, raising questions about the structural stability. If shipping containers are to be accessed on a regular basis, restrictions on the stacking of containers should also be considered in the interest of workplace safety.

In 2022, amendments were made to the Ontario Building Code (OBC) that potentially impact the regulation of shipping containers by increasing the minimum size of a shed requiring a building permit from 10 m² to 15 m². A shed is exempt from the requirement to obtain a permit under Section 8 of the *Building Code Act* and is exempt from compliance with the Ontario Building Code, provided that the shed,

- (a) is not more than 15 m² in gross area;
- (b) is not more than one storey in building height;
- (c) is not attached to a building or any other structure;
- (d) is used only for storage purposes ancillary to a principal building on the lot; and,
- (e) does not have plumbing.

Many shipping containers being used locally for storage purposes are smaller units measuring 2.44 m (8 ft) by 6 m (20 ft), or 14.64 m². If defined as a shed, these containers would be exempt from permit control and would not have to comply with the Ontario Building Code. Notwithstanding the above, the Ontario Building Code does not define a shed and additional clarification is therefore required. Note, however, that the exemption does not apply to sheds that are attached to buildings or any other structures (i.e., linked or stacked shipping containers would not be exempt even if defined as a type of shed).

Key findings: There are legitimate safety concerns related to the use of a shipping container as an accessory storage building. This is an issue that extends beyond zoning compliance to a matter of public safety.

Notwithstanding the above, shipping containers may be repurposed for an alternative use provided a building permit is issued to address life safety concerns including proper ventilation, structural safety, explosion protection, adequate ingress and egress, proper anchorage, snow loading and other matters.

Additional clarification is required on the regulatory change to the Ontario Building Code that exempts sheds not exceeding 15 m² in building area from the permit process.

3. Impact on community standards

The increasing use of surplus shipping containers has an impact on community standards. In many cases the shipping containers are unscreened and visible from public roadways and/or abutting properties, including residential areas. Surplus containers are often in poor condition with excessive rust and graffiti. This has an impact on community standards and is detrimental towards efforts to improve the quality of the urban environment. It is particularly relevant to an industrial-based city such as Greater Sudbury, which implies strong demand for shipping containers.

Most notably, shipping containers are increasingly used by automotive sales establishments and recreational vehicle sales establishments for storage purposes, including the seasonal storage of snow and summer tires. Although tires are considered relatively stable, if subjected to fire the tires will burn extremely hot and release toxic smoke. The run-off is particularly hazardous because tires are petroleum-based. The radiant heat could be significant enough to ignite adjacent containers.

A visual survey of the City utilizing aerial photography indicated shipping containers present at a number of automotive and RV dealerships in contravention of the Zoning By-law. The analysis revealed 22 dealerships with shipping containers installed on the site, including seven (7) sites with more than five (5) containers. In two cases, there were more than ten (10) shipping containers placed on the property. In many instances, the units are clearly visible from the public right-of-way.

Key findings: Appropriate zone standards, site plan control and enhanced compliance and enforcement are essential tools in ensuring that converted shipping containers do not negatively impact community standards, most notably mixed-use corridors and residential areas.

Although tires do not ignite easily, a concentration of tires in any one area should be considered a potential hazard.

4. Impact on municipal assessment

The following information was provided by the City's Tax Department in consultation with MPAC. In general, shipping containers meet the definition of "land" under the *Assessment Act* and are assessed if the unit is installed with some degree of permanency, most notably for commercial and industrial storage.

MPAC advised that each structure is reviewed on an individual basis. If an unmodified shipping container is installed on the ground with no modifications and no real foundation, a typical 8 by 20 foot container (160 sq. ft./14.64 m²) may produce a value of \$9.37 per square foot, resulting in an assessed value of \$1,499. Based on a commercial tax rate of 3.5%, this would generate \$52 in annual taxes.

Modified shipping containers placed on a foundation with other improvements such as a roll-up door would result in a higher valuation. For example, a typical 8 by 40 foot container (320 sq. ft./30 m²) may produce a value of \$26.56 per square foot. This calculates to approximately \$297 in tax per year. Additional costs may be added for hydro, air conditioning and other improvements.

MPAC does not assess residential sheds under 200 sq. ft. (18.6 m²) Therefore, if a 20-foot shipping container was placed on a residential property as an accessory structure, there would be no assessment and in turn no taxes levied.

5. Other considerations

- How can site plan control be utilized to regulate shipping containers to address aesthetics and ensure compliance with applicable zone standards?

Fort Erie amended their Site Plan Control By-law to include a definition of "Converted shipping/cargo container" and requires the submission of drawings showing elevations, massing, grading, site layout and other matters. Special design options are offered for residential properties in lieu of site plan control.

Options/next steps:

The following options are listed based on degree of change, from lowest to highest level of use:

- Maintain the current provisions as set out in the Zoning By-law, where shipping containers are permitted as accessory uses to specific land uses (agricultural, extractive, transport terminal or warehouse);
- Expand permissions to include Industrial zones and automotive and RV sales establishments subject to appropriate zone standards, building permits and site plan control;
- Expand permissions to include all ICI zones subject to appropriate zone standards, building permits and site plan control;
- Expand Rural and Agricultural zone permissions to allow shipping containers without a permitted agricultural use;
- Expand permissions to include all zones including Residential zones, where shipping containers would be treated as a type of accessory use subject to appropriate zones standards and building permits.

It is recommended that Staff be directed to evaluate the above noted options and prepare a recommendation based on the key findings presented in this report. The recommendation shall include appropriate development standards to be implemented through the Zoning By-law and Site Plan Control.

Appendices:

Appendix 1: Municipal survey

Resources:

City of London. *Information Report on Shipping Containers and Trailers*. City of London, ON, May 9, 2016.
https://kipdf.com/chair-and-members-planning-and-environment-committee-meeting-on-may-9-2016_5ab86b821723dd349c8209f9.html

Delcourt, Don. *Intermodal Shipping Container Fire Safety*. Fire Chiefs' Association of BC, September 2014.
<https://fcabc.ca/Files/FCABC%20Shipping%20Containers.pdf>

Delcourt, Don and Len Garis. *Intermodal Shipping container fire safety: a way towards better practices*. University of the Fraser Valley, July 2014.
<https://www.ufv.ca/media/assets/criminal-justice-research/UFV-Research-Note---Intermodal-Shipping-Container-Fire-Safety.pdf>

"Early morning explosion at industrial park rocks Coniston," *sudbury.com*, November 18, 2021:
<https://www.sudbury.com/local-news/breaking-news-early-morning-explosion-at-industrial-park-rocks-coniston-4770818>

Ontario's Regulatory Registry. *Proposed Interim Changes to the 2012 Building Code to exempt sheds from Building Code requirements*.
<https://www.ontariocanada.com/registry/view.do?postingId=40867&language=en>

Red River Mutual. *Loss Prevention Safety Tip: Tire Storage Safety*. Red River Mutual, n.d.
<https://redrivermutual.com/site-content/uploads/2018/04/Tire-Storage-Safety-new-logo.pdf>

Town of Fort Erie. *Information Report on Shipping/Cargo Containers Zoning By-law Amendment and Changes to the Site Plan Control By-law*. Town of Fort Erie, ON, April 9, 2019.
<https://forterie.civicweb.net/FileStorage/B264DF241A784494B2FC4FE4F7F98CDE-PDS-21-2019%20Shipping%20containers%20information%20report.pdf>

Appendix 1

Municipal review: shipping container provisions

Category	Municipality	Zones	Special provisions	Permit required	Notes
Permissive	Fort Erie	Permitted in all zones	Subject to special provisions dependent on zone and use Stacking not permitted for converted containers Maximum two (2) converted containers in Commercial zones	yes	Site plan fee of \$760 applied to converted containers Development charges applied
	Burlington	Permitted in all zones	Regulated as accessory building Subject to building regulations	yes	Site plan control required if located on ICI property
	Hamilton	Permitted in all zones	Subject to setbacks applied to accessory use in respective zone	yes	Development charges applied Converted containers treated the same as any other building
	Sault Ste. Marie	Permitted in all zones	May not be used to accommodate work areas, shops, office uses, or retail sales Permitted in rear yard only Minimum 4.5 m distance from any building Minimum 9 m setback from any lot line Maximum 3 containers per lot	n/a	Storage trailers (trailer portion of a tractor-trailer unit) only permitted in the rear yard of Industrial and Commercial zones Subject to same provisions as freight (shipping) containers

Category	Municipality	Zones	Special provisions	Permit required	Notes
Moderately permissive	Kitchener	Prohibited in Residential zones	Subject to setbacks applied to accessory use in respective zone	yes	Deemed to be a building if used for purposes other than shipping Subject to site plan control
	London	Permitted in multi-family and non-residential zones	Location, floor area, setbacks and all other regulations of the underlying zone apply Permitted in rear yard only Subject to site plan control (must be screened from public view) Limited to 1 to 2 containers and subject to size and height restrictions	yes	Site plan approval and building permit required when shipping containers used as building additions Also permitted as temporary uses for construction purposes
	North Bay	Permitted in industrial, commercial, institutional and open space zones subject to the provisions applied to the main building	Containers shall not used as workspace, office space or any other use other than storage Not permitted in any yard adjacent to a residential use Prohibited in residential zones except as temporary uses	n/a	Only empty containers may be stacked to a maximum height of two containers
	Ottawa	Restricted use in Residential zones	Unmodified shipping container is a prohibited accessory building in Residential zones except as a temporary use	yes	
	Windsor	Prohibited in Development Reserve Districts and Residential Districts	Subject to setbacks applied to accessory use in respective zone	yes	Exception for temporary construction purposes in Residential Districts Development charges not applied to accessory structures

Category	Municipality	Zones	Special provisions	Permit required	Notes
Restrictive	Bradford West Gwillimbury	Not permitted in Residential, Commercial or Prestige Employment (M2) Zones	Shall only be located on a lot as an accessory structure used in conjunction with a permitted agricultural use, transport terminal or warehouse	n/a	Provisions are similar to those of Greater Sudbury
	Greater Sudbury	Shall not be placed or used on any lot in a Residential (R), Commercial (C), Mixed Light Industrial/Service Commercial (M1) or Business Industrial (M1-1) Zone	Shall only be located on a lot: a) As an accessory structure used in conjunction with a permitted agricultural, extractive, transport terminal or warehouse use b) For the purposes of rental, sale or distribution in a Light Industrial (M2) or Heavy Industrial (M3) Zone for use off site	n/a	Also subject to provisions of Section 4.40.5 (Temporary Construction Uses) and 4.40.7 (Temporary shipping or storage containers for moving purposes)
	Milton	Only permitted in M2, General Industrial zones	Must be accessory to a principal building on a lot having a minimum area of 0.4 ha Must be located in rear yard and no closer than 30 m to a street line Must be screened from view	n/a	
	Oakville	Only permitted on a lot where outside storage is a permitted use Outside storage permitted in Employment zones E2 and E3 as accessory use only	Shall only be used as a building in conjunction with manufacturing, transportation terminal, warehousing	yes	

Category	Municipality	Zones	Special provisions	Permit required	Notes
Restrictive	Waterloo	Permitted as temporary use for storage only in C5, Corridor Commercial and E3, Flexible Industrial zones	Time limits: C5 zone: 30 days E3 zone: 180 days (screening required)	yes	Deemed to be a building if used for the permanent or temporary shelter, accommodation, or enclosure of persons, animals, or chattels May be used as a temporary pop-up commercial establishment, temporary sales centre, community centre, community workshop/studio, makerspace (Class A) or business incubator subject to special provisions including time limits, site plan approval and a zoning certificate