CITY OF VANCOUVER

ENGINEERING SERVICES
WASTE MANAGEMENT & RESOURCE RECOVERY

GARBAGE AND RECYCLING STORAGE AMENITY DESIGN SUPPLEMENT

May 2011
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CITY OF VANCOUVER | GREENEST CITY 2020

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Introduction

For many years, finding space to store waste has been an issue for many buildings in Vancouver because waste storage amenity was never properly designed or incorporated in the building. The City recognized this issue and created the "Garbage and Recycling Storage Amenity Design Supplement" to assist designers and developers on the proper design of waste storage amenities.

The most recent changes in solid waste programs and regulations include Metro Vancouver's Organics Disposal Ban (January 1, 2015) and the Multi-Material British Columbia (MMBC) recycling program (May 19, 2014) which should be included in the waste storage amenity design. Also, City by-laws now require all buildings and businesses to have a plan for organics waste diversion and recycling diversion.

This document can be applied to all planning and development permit applications for new and retrofit buildings including, but not limited to, multi-unit residential, mixed-use residential and commercial buildings and complexes. It presents general strategies and requirements to meet City regulations. Please note that this document should be used with, not in place of, all applicable building codes, City standards and other relevant legislation.

This document outlines:

- Design requirements of a waste storage amenity
- Operational requirements to ensure access to containers, including temporary loading/storage area on collection day
- Steps on how to estimate the number of containers and space required for various buildings
- Tables showing the suggested number of containers required for various building uses based on estimated waste generation rate
- Dimensions and specifications of various commonly used storage containers and collection vehicles (Appendix A & B)

Relatedly, if a rezoning application involves a land parcel (or parcels) with a total site size of 8,000 m^2 (1.98 acres) or more or a total floor area of 45,000 m^2 (484,375 sq. ft.) or more, an additional study focusing on sustainability issues, including waste management, will be required for submission to the City as part of the large site rezoning policy. For more information regarding this policy (Rezoning Policy for Sustainable Large Developments), please visit the following website: https://guidelines.vancouver.ca/policy-rezoning-sustainable-large-developments.pdf

Definitions

For the purposes of this Design Supplement, the following terms are defined as:

City means City of Vancouver;

Commercial Buildings refers to the following types of establishments:

- ***Hospitality Lodging*** means a building containing more than six sleeping units wherein accommodation is provided for transient lodgers, and having a public reception or dining area. Accommodations can be without private cooking facilities or with minor ones that do not exceed the following, namely, a two-burner cook top, a microwave oven, a sink and a small refrigerator;
- ***Large Venue*** means a facility dedicated to cultural and recreational uses, conferences, or conventions that can accommodate 2,000 or more visitors per day;
- ***Office Building*** means a building where the majority of the space is dedicated to conducting business, clerical, or professional activities, excluding retail and industrial activities, and is generally not open to the public;
- ***Restaurant & Food Retail Building*** means an eating establishment where food is sold or given to the public for immediate consumption on the premises, but where no provision is made for the consumption of food in motor vehicles that are parked on site;
- ***Retail Building*** means a building or warehouse where goods, wares, merchandise, substances, articles or things are sold for purposes of consumption, use, or resale, and any retail outlet otherwise classified or defined in the City's zoning bylaw 3575;

Container means any storage container supplied by a waste service provider (hauler) for the purposes of garbage, recycling and organics collection. Examples include front end bin (dumpster), cart (tote), compactor, jug-in-box and drum (for grease/tallow recycling), etc.;

Development Proponent means a developer, architect, builder, engineer or other professional or agency applying for a development or building permit for a new construction or building alteration project subject to the specifications outlined in this supplement;

Garbage means solid waste that is not recyclable materials, source-separated organic waste, or materials defined in Schedules F and G of the City of Vancouver Solid Waste Bylaw No.8417;

Mixed-Use Residential Building means any building consisting of commercial space, plus 1 or more dwelling units, each of which is occupied, or intended to be occupied, as the home or residence of one household only;

Multi-Unit Residential Building means any building consisting of 5 or more dwelling units, each of which is occupied, or intended to be occupied, as the home or residence of one household only;

Recyclable Material means a product or substance that has been diverted from disposal, and usually includes the following:

- Mixed containers (plastic and metal);
- Glass

- Organics
- Mixed papers (cardboard, office, newspapers);
- Or those recyclable items listed in Schedule C to H of the Solid Waste Bylaw No.8417;

The targeted recyclable materials are listed in the Garbage and Recycling Storage Amenity Design Supplement, as provided by the City upon application for a building permit;

Solid Waste means garbage, recyclable materials, source-separated organic waste, and materials listed in Schedules C to H of the City of Vancouver Solid Waste Bylaw No. 8417;

Solid Waste Storage Amenity means the designated centralized space allocated within a property for communal deposit and collection of garbage and targeted recyclable materials between collection days;

Source-Separated Organic Waste means food waste, yard waste, and other items as defined in the City of Vancouver Solid Waste Bylaw No.8417;

Temporary Storage Area means a space that is used for the interim storage of garbage and recycling containers on collection days;

1.0 General Requirements

Development and Building permit applications are reviewed by the City and include the examination of solid waste storage amenity and loading area designs on the submitted drawings to ensure City standards are met. Often, omissions or errors on drawings occur because designers are not aware of specific standards. The following has been compiled to assist in proper design of solid waste storage amenity in new and retrofit buildings. In conjunction with these supplements, good engineering practices are to be followed in all circumstances to ensure public safety.

The following are general requirements for solid waste storage amenity:

1.1 Location of Storage Amenity

Identifying the best location for communal solid waste storage amenity can be challenging and is a balance between conveniences to users, space availability, access, ease of collection, noise, security, planning requirements, and architectural integration. The following should be considered during the design process:

- ☐ Solid waste storage amenity should be located at grade (ground level) and adjacent to the area where collection vehicles are allowed access to the amenity. If at grade amenity is not permissible, the amenity should be placed no more than one level down from grade.

- ☐ Recycling space (including organics) should be located with or adjacent to the garbage space. However, garbage and recycling containers should be kept separated and not intermingled.

- ☐ Storage of containers should not block or impede any fire exits, public right of ways, or pedestrian and vehicular access.

- ☐ If the building is multi-use, separate solid waste amenities should be provided for different types of occupants (i.e. residential units vs. commercial units). When the exact future commercial use is not known, the amenity shall be equal to the space required for the potential commercial use with the highest storage needs.

- ☐ More than one solid waste amenity can be considered provided the total of all amenities allocates sufficient space to store the minimum containers for each waste stream: Garbage, Organics, Mixed Papers (includes papers and cardboard OR includes papers with a separate cardboard bin), Mixed Containers, and Glass (if separate glass collection is provided).

1.2 Design of Storage Amenity

- ☐ Amenity should be built according to the Vancouver Building By-law Section 3.6.2.6. for Combustible Refuse Storage where except as required by Sentence 3.6.3.3.(9), a room for the storage of combustible refuse shall be separated from the remainder of the building by a fire separation with a fire-resistance rating not less than 1 hour, and sprinklered.

☐ Amenity should have at least 2.5 meters in height clearance to allow complete opening of container lids.

☐ Amenity must have sufficient container capacity to store all solid waste generated for a minimum of 7 days.

☐ Proper signage should be placed inside the amenity to ensure acceptable items are placed into the correct container.

"Recycling Lounge" Waste Room (Source: Concert Properties)

☐ Amenity should be secured with locked doors to protect against potential vandalism or pest and wildlife access.

☐ The total area of the amenity should equate to about 2.0 to 2.5 times the physical footprint of the containers to provide adequate space for manoeuvering. It should be configured to allow each garbage and recycling storage container to be individually accessible so as to be removed and replaced without having to take out other containers;

☐ Ideally, the amenity is a separate internal storage room. If a room is not feasible, an enclosure is a viable option provided that:

a) The enclosure should not present a fire hazard by observing the following:
   - does not impede the path of exit from building;
   - located 4 m vertically and 1.5 m horizontally away from any openable windows that serve a bedroom;
   - **NOT** under a fire escape.

b) Enclosure should be located where interference with pedestrian traffic and other vehicular access is minimal.

c) Have a covered roof with adequate drainage.


Waste storage amenity at grade
Mixed use building


Enclosure

The Vancouver Building By-Law shall govern the development, design, and construction of the amenity. All solid waste storage amenities should be equipped with, but are not limited to:

Concrete Pad	• able to withstand 28,000 kg collection vehicle
Drainage	• drain to sanitary sewer • oil separator required
Door	• double doors with a minimum 2 m opening • can be propped or locked open with a bumper guard on the inside facing the door
Electricity	• power shall be provided for equipment inside the amenity
Lighting	• adequate lighting around and inside the amenity as required by the Vancouver Building By-law
Hose Bib	• at least one (1) hose connection for cleaning the area
Ventilation	• release odour/stale air

1.3 Access for Users

☐ The solid waste storage amenity must be accessible to all occupants of the development, including those with restricted mobility.

☐ Amenity should be clean, well lit, regularly maintained, and conveniently located for users to get access to.

☐ Users should be able to access all containers inside the amenity without impediment.

☐ If an auxiliary area is designated for the amenity outside the building, the area should be located adjacent to an entry point into the building for easy access by the users.

1.4 Designated Collection/Loading Area

☐ Collection/loading area must be no higher than 0.6 meters above driveway levels and must be relatively flat (+/-2% grade).

☐ Adequate clearance (height, turning radius, straight approach, etc.) should be provided for collection vehicles to manoeuvre and to collect materials obstruction free (please refer to Appendix B on typical collection vehicle dimensions).

☐ Collection/loading area should be located where interference with pedestrian traffic and other vehicular access are minimal.

☐ Loading pad should be constructed at the loading area and should be able to withstand a 28,000 kg collection vehicle. Dimension of the pad should be based on the number of containers used in the building.

1.5 Temporary Storage Area

Especially for multi-unit residential buildings, if containers are stored underground, they will likely need to be relocated above ground for servicing on collection day (by building staff or a container pullout service provider). Depending on collection schedule and timing, the containers may sit outside throughout the day before being returned to the underground amenity. Thus, a temporary storage area should be incorporated in the building plans. A suitable temporary storage area should meet the following requirements:

☐ Within private property. Other options may be considered upon approval by the City.

☐ Minimal interference with pedestrian traffic and other vehicular access.

☐ Does not present a fire hazard by observing the following:
- does not impede the path of exit from building;
- located 4 m vertically and 1.5 m horizontally away from any openable windows that serve a bedroom;
- **NOT** under a fire escape.

1.6 Access for Collection Vehicle

☐ Adequate clearance (height, turning radius, straight approach, etc) should be provided for collection vehicles to manoeuvre and to collect materials obstruction free (please refer to Appendix B on typical collection vehicle dimensions).

☐ The site plan must include a diagram (for new buildings with more than 20 units) illustrating the anticipated movement of the collection vehicle through the building site, including dimensions for minimum width, height and turning radii throughout.

☐ In general, the collection vehicle access route should be designed in such a way to allow a collection vehicle to enter, collect, and exit the site in a forward motion. Collection vehicle backing up onto a road is not preferred.

☐ Vertical clearance of 4.5 m should be accommodated throughout the entire access route. Where the collection vehicle is tipping a front end bin, allow 6.5 m – 7.5 m vertical clearance.

2.0 Estimating the Number of Containers and the Storage Space Required

Follow the three steps below to estimate the size of waste storage amenity required for your building.

STEP 1 – Estimate Total Volume of Waste Generated

Total volume generated per week = Number of units (or floor area) x Estimated volume generated/unit (or floor area) per week

The following tables show the approximate waste volume generation rates for each building use. Please note the generation rates listed are **only general estimates** and may vary from actual rates. Therefore, please consult with a waste service provider to assist you in estimating the number of containers required.

Multi-Unit Residential Building

Waste Categories	Estimated weekly volume generated per unit (L/unit/week)
Mixed Containers	18.50
Mixed Papers (include papers & cardboard)	42.90
Mixed Papers (include papers exclude cardboard)	15.00
Cardboard	27.50
Garbage	53.00
Glass	2.10
Organics (i.e. food scraps)	14.00

Hospitality Lodging

Waste Categories	Estimated weekly volume generated per room (L/room/week)
Mixed Containers	3.50
Mixed Papers	8.30
Cardboard	14.30
Garbage	47.50
Glass	0.015
Organics (i.e. food scraps)	20.00
Tallow/Grease*	0.33

* No storage of any tallow/grease containers on City property.

Commercial Buildings

Waste Categories	Estimated weekly volume generated per floor area (L/m^2/week)			
	Office Building	Retail Building	Restaurant & Food Retail	Large Venues
Mixed Containers	0.375	0.65	2.00	1.70
Mixed Papers	0.65	1.50	2.05	1.50
Cardboard	0.65	2.30	3.75	2.00

Garbage	1.00	2.25	1.65	3.10
Glass	0.003	0.003	0.015	0.004
Organics (i.e. food scraps)	0.57	-	2.00	1.86
Tallow/Grease*	-	-	0.35	-

* No storage of any tallow/grease containers on City property.

STEP 2 – Estimate Number of Storage Containers Required

Number of storage containers required = Total volume generated per week ÷ Volume of storage container

Commonly used container dimensions are shown in the following table. For more information on the volume capacity of different storage containers, please see Appendix A.

Typical Storage Container Volume	Length (m)	Width (m)	Footprint (m^2)
240 L cart	0.7	0.6	0.42
360 L cart	0.9	0.7	0.63
3 $Yard^3$ Bin (2,294 L)	2.1	1.2	1.98
4 $Yard^3$ Bin (3,058 L)	2.1	1.4	2.52

STEP 3 – Estimate Size of Storage Amenity Required

Estimated size of storage amenity = Number of storage containers x Footprint of each storage container x Manoeuvre factor (2.25)

The manoeuvre factor allocates space required to move the containers inside the storage amenity. A value of **2.25** can be used.

Please note the space allocated through the above equation (Step 3) is based on the number of containers required to provide once per week service.

Section 2.1 shows a summary of the calculated number of containers required for each building use based on the number of total units or total floor area. However, the exact size and location of the waste storage amenity must take into consideration the following factors:

- building use
- building occupancy
- quantities of waste generated by occupants
- spare storage capacity
- space allowance for users to access and manoeuvre containers
- potential future changes to waste collection

2.1 Estimated Waste Storage Containers Required by Building Uses

Unless specified, all options in the proposed supplement are based on an assumed once per seven days pickup schedule. Please note the City of Vancouver Solid Waste By-law No.8417 (www.vancouver.ca/your-government/find-a-bylaw.aspx) Section 7.5 requires minimum twice per month waste disposal for non-residential properties.

2.1.1 Estimated Waste Storage Amenity for Multi-Unit Residential Buildings

The following table is a guide to estimate the number of storage containers required for your multi-unit residential building for weekly collection based on the number of units.

Number of Residential Units (2 residents per unit)	Mixed Containers	Newspapers & Mixed Papers (*without* Cardboard Bin)	Newspapers & Mixed Papers (with Cardboard Bin)[2]	Glass [1]	Compostable Organics (high participation)	Cardboard Bin[2,3]	Garbage[3]
	360 Litre Cart			240 Litre Cart		Cubic Yard Bin (size)	
5-10	1	1	N/A	1	1	N/A	2 yd^3
11-20	1	2	N/A	1	1	N/A	3 yd^3
21-30	1	3	1	1	2	3 yd^3	4 yd^3
31-40	2	4	2	1	2	3 yd^3	2-4 yd^3
41-50	2	5	2	1	3	3 yd^3	2-4 yd^3
51-60	3	6	2	1	3	3 yd^3	2-4 yd^3
61-70	3	7	3	1	4	3 yd^3	3-4 yd^3
71-80	4	8	3	1	4	3 yd^3	3-4 yd^3
81-90	4	9	3	1	4	3 yd^3	3-4 yd^3
91-100	4	10	4	1	5	3 yd^3	4-4 yd^3
101-110	5	11	4	1	5	3 yd^3	4-4 yd^3
111-120	5	12	4	1	6	3 yd^3	4-4 yd^3
121-130	6	13	5	1	6	3 yd^3	5-4 yd^3
131-140	6	14	5	1	7	4 yd^3	5-4 yd^3
141-150	6	15	5	1	7	4 yd^3	5-4 yd^3
151-160	7	16	6	1	8	4 yd^3	6-4 yd^3
161-170	7	16	6	1	8	4 yd^3	6-4 yd^3
171-180	8	17	6	1	9	2-4 yd^3	6-4 yd^3
181-190	8	18	7	2	9	2-4 yd^3	7-4 yd^3
191-200	8	19	7	2	10	2-4 yd^3	7-4 yd^3
201-210	9	20	7	2	10	2-4 yd^3	7-4 yd^3
211-220	9	21	8	2	11	2-4 yd^3	8-4 yd^3
221-230	10	22	8	2	11	2-4 yd^3	8-4 yd^3
231-240	10	23	8	2	11	2-4 yd^3	8-4 yd^3
241-250	11	24	9	2	12	2-4 yd^3	9-4 yd^3
251-260	11	25	9	2	12	2-4 yd^3	9-4 yd^3
261-270	11	26	9	2	13	2-4 yd^3	9-4 yd^3
271-280	12	27	10	2	13	2-4 yd^3	10-4 yd^3
281-290	12	28	10	2	14	2-4 yd^3	10-4 yd^3
291-300	13	29	10	2	14	2-4 yd^3	11-4 yd^3
310-310	13	30	11	2	15	2-4 yd^3	11-4 yd^3

1. Confirm glass collection with your private hauler.
2. The containers for these two streams are used in combination.
3. Assumes front end bins are in underground waste rooms and require container pullout service. At the time, discussions with such service providers indicate a 4 cubic yard bin is the largest size they can handle.

The following assumptions were made:

- Once per week pick-up schedule
- 2 persons per unit
- Additional 10% garbage volume for peak periods
- No onsite compactors (e.g. garbage, cardboard, recycling)
- Some flattening of containers and cardboard boxes occur before putting in bin/cart
- Sufficient height clearance is available for tipping the garbage bin

Note:

- More efficient to use front end bins instead if volume of materials require 5 or more 360L carts or 5 or more 240L carts.
- City will not permit any bins larger than 4 cubic yards on City property.
- Due to their height and weight, 6 and 8 cubic yard bins should only be used where bins are stored outside and easily accessible for collection. Alternatively, more frequent collection of smaller bins or a compactor can be considered.
- Please consult with a waste service provider to assist you in estimating the number of and sizes of containers required.

2.1.2 Estimated Waste Storage Amenity for Hospitality and Commercial Buildings

Hospitality Lodging

Number of Rooms	Mixed Containers	Newspapers & Mixed Papers	Glass[1]	Compostable Organics[2]	Cardboard Bin	Garbage	Grease/ Tallow
	360 Litre Cart		240 Litre Cart		Cubic Yard Bin (size)		18.6 Litre Jug-In-Box (JIB)
1-10	1	1	1	1	3 yd^3	3 yd^3	1
11-20	1	1	1	2	3 yd^3	3 yd^3	1
21-30	1	1	1	3	3 yd^3	3 yd^3	1
31-40	1	1	1	4	3 yd^3	3 yd^3	1
41-50	1	1	1	4	3 yd^3	3 yd^3	1
51-60	1	2	1	5*	3 yd^3	3 yd^3	1
61-70	1	2	1	6*	3 yd^3	4 yd^3	1
71-80	1	2	1	7*	3 yd^3	4 yd^3	2
81-90	1	2	1	8*	3 yd^3	2-3 yd^3	2
91-100	1	3	1	9*	3 yd^3	2-3 yd^3	2

1. Confirm glass collection with your private hauler.
2. If compostable organics container(s) is provided, garbage container capacity should decrease accordingly.

* More space efficient to use bins at this point. Please consult with a waste service provider to discuss which containers are suitable.

Office

Floor Area (m^2)	Mixed Containers	Newspapers & Mixed Papers	Glass[1]	Compostable Organics	Cardboard Bin	Garbage
	360 Litre Cart		240 Litre Cart		Cubic Yard Bin (size)	
1-100	1	1	1	1	3 yd^3	3 yd^3
101-200	1	1	1	1	3 yd^3	3 yd^3
201-300	1	1	1	1	3 yd^3	3 yd^3
301-400	1	1	1	1	3 yd^3	3 yd^3
401-500	1	1	1	1	3 yd^3	3 yd^3
501-600	1	1	1	2	3 yd^3	3 yd^3
601-700	1	2	1	2	3 yd^3	3 yd^3
701-800	1	2	1	2	3 yd^3	3 yd^3
801-900	1	2	1	2	3 yd^3	3 yd^3
901-1,000	1	2	1	3	3 yd^3	3 yd^3
1,001-2,000	2	4	1	5*	3 yd^3	3 yd^3
2,001-3,000	3	6	1	7*	3 yd^3	4 yd^3
3,001-4,000	4	7	1	10*	3 yd^3	2-3 yd^3
4,001-5,000	5	9	1	12*	4 yd^3	2-3 yd^3

1. Confirm glass collection with your private hauler.
* More space efficient to use bins at this point. Please consult with a waste service provider to discuss which containers are suitable.

Retail

Floor Area (m^2)	Mixed Containers	Newspapers & Mixed Papers	Glass [1]	Cardboard Bin	Garbage
	360 Litre Cart		240 Litre Cart	Cubic Yard Bin (size)	
1-100	1	1	1	3 yd^3	3 yd^3
101-200	1	1	1	3 yd^3	3 yd^3
201-300	1	2	1	3 yd^3	3 yd^3
301-400	1	2	1	3 yd^3	3 yd^3
401-500	1	2	1	3 yd^3	3 yd^3
501-600	1	3	1	3 yd^3	3 yd^3
601-700	2	3	1	3 yd^3	3 yd^3
701-800	2	4*	1	3 yd^3	3 yd^3
801-900	2	4*	1	3 yd^3	3 yd^3
901-1,000	2	4*	1	3 yd^3	3 yd^3
1,001-2,000	4*	9*	1	2-3 yd^3	2-3 yd^3
2,001-3,000	6*	13*	1	3-3 yd^3	2-4 yd^3
3,001-4,000	7*	17*	1	3-4 yd^3	3-4 yd^3
4,001-5,000	9*	21*	1	4-4 yd^3	4-4 yd^3

1. Confirm glass collection with your private hauler.
* More space efficient to use bins at this point. Please consult with a waste service provider to discuss which containers are suitable.

Restaurant

Floor Area (m^2)	Mixed Containers	Newspapers & Mixed Papers	Glass[1]	Compostable Organics[2]	Cardboard Bin	Garbage	Grease/ Tallow
	360 Litre Cart		240 Litre Cart		Cubic Yard Bin (size)		45 Gallon Drum (170 Litres)
1-100	1	1	1	1	3 yd^3	3 yd^3	1
101-200	1	1	1	2	3 yd^3	3 yd^3	1
201-300	2	2	1	3	3 yd^3	3 yd^3	1
301-400	2	3	1	4	3 yd^3	3 yd^3	1
401-500	3	3	1	4	3 yd^3	3 yd^3	1
501-600	4*	4*	1	5*	3 yd^3	3 yd^3	1
601-700	4*	4*	1	6*	3 yd^3	3 yd^3	2
701-800	5*	5*	1	7*	4 yd^3	3 yd^3	2
801-900	5*	5*	1	8*	4 yd^3	3 yd^3	2
901-1,000	6*	6*	1	9*	4 yd^3	3 yd^3	2
1,001-2,000	11*	12*	1	17*	3-4 yd^3	4 yd^3	4
2,001-3,000	17*	17*	1	25*	4-4 yd^{3*}	2-4 yd^3	6
3,001-4,000	22*	23*	1	34*	5-4 yd^{3*}	2-4 yd^3	8
4,001-5,000	28*	29*	1	42*	6-4 yd^{3*}	3-4 yd^3	11

1. Confirm glass collection with your private hauler.
* More space efficient to use bins and or compactors at this point. Please consult with a waste service provider to discuss which containers are suitable.

Large Venue

Floor Area (m^2)	Mixed Containers	Newspapers & Mixed Papers	Glass[1]	Compostable Organics[2]	Cardboard Bin	Garbage
	360 Litre Cart		240 Litre Cart		Cubic Yard Bin (size)	
1-100	1	1	1	1	3 yd^3	3 yd^3
101-200	1	1	1	2	3 yd^3	3 yd^3
201-300	2	2	1	3	3 yd^3	3 yd^3
301-400	2	2	1	3	3 yd^3	3 yd^3
401-500	3	2	1	4	3 yd^3	3 yd^3
501-600	3	3	1	5	3 yd^3	3 yd^3
601-700	4*	3	1	6*	3 yd^3	3 yd^3
701-800	4*	4*	1	6*	3 yd^3	3 yd^3
801-900	5*	4*	1	7*	3 yd^3	3 yd^3
901-1,000	5*	4*	1	8*	3 yd^3	4 yd^3
1,001-2,000	10*	9*	1	16*	2-3 yd^3	2-4 yd^3
2,001-3,000	14*	13*	1	24*	2-4 yd^3	3-4 yd^3
3,001-4,000	19*	17*	1	31*	3-4 yd^3	4-4 yd^{3*}
4,001-5,000	24*	21*	1	39*	4-4 yd^{3*}	5-4 yd^{3*}

1. Confirm glass collection with your private hauler.
* More space efficient to use bins and or compactors at this point. Please consult with a waste service provider to discuss which containers are suitable.

Appendix A - General Specification for Different Waste Containers

The following is a general overview of the various waste containers commonly used for solid waste storage. The City does not guarantee the accuracy of the dimensions listed below because of variations between different manufacturers. It is the sole responsibility of the designer to ensure the design of the storage amenity can accommodate the waste containers to be used. Please consult with a private hauler to discuss which containers are suitable for different applications.

Compactor

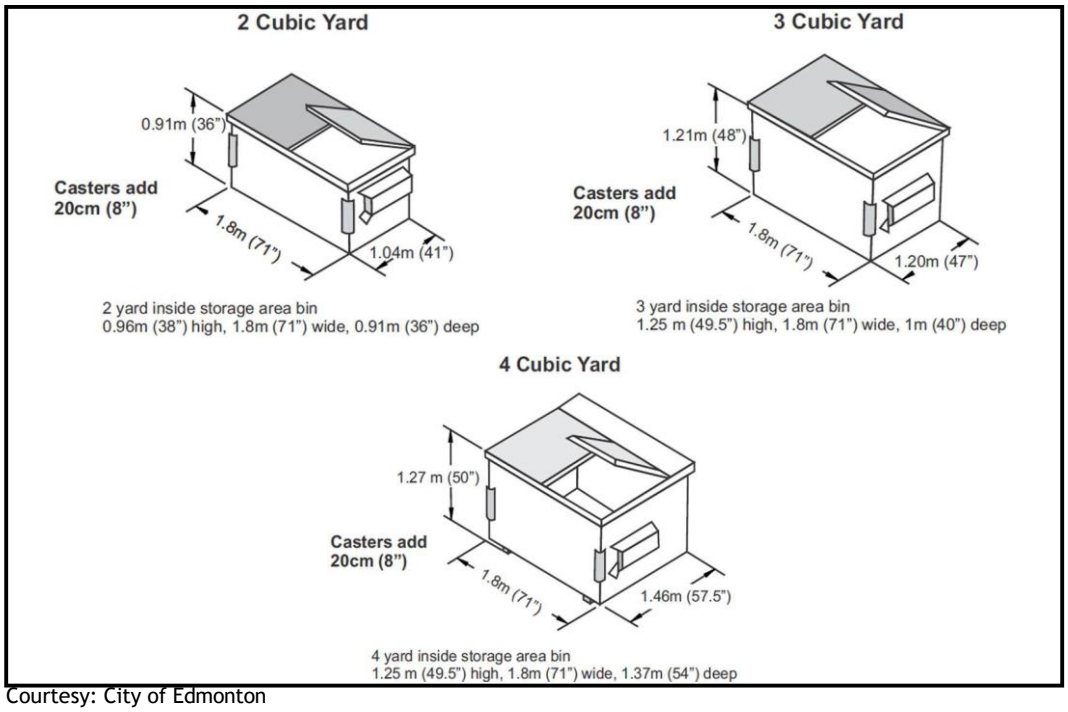
Type of Compactor	Ideal Users	Min Ceiling Height Clearance	Minimum truck clearance
Low Profile Compactor	Multi-unit Residential Building	2.1 m	12.2 m long (in front of bin)
Ground Level Compactor	Multi-unit Residential Building	2.5 m	15.2 m long (in front)/ 7 m high (above)
Ground Level Cardboard Compactor	Commercial and institutional buildings	6.1 m	15.2 m long (in front of bin)
Commercial Compactor	Commercial and institutional buildings	6.1 m	15.2 m long (in front of bin)

Front End Bin

Minimum concrete pad area	1.5 m x 2.4 m
Minimum ceiling height clearance	2.5 m
Minimum truck clearance (in front/overhead)	15.2 m long/6.9 m high

When considering garbage containers, designers must be aware of the size of different containers. Every manufacturer has slightly different measuements for their bins and may or may not include in their measurements the width of metal side brackets or additional heights if container has wheels. For storage space considerations, the side brackets were included in the bin length. The table below presents measurements as general information only.

Container Size (cubic yard)	Common Measurements		
	Length with Side Pockets (m)	Width (m)	Height (m) (bin only, excludes castors)
2	2.1	1.0	0.9
3	2.1	1.2	1.2
4	2.1	1.5	1.3
6	2.1	1.7	1.5
8	2.1	1.7	2.0



Courtesy: City of Edmonton

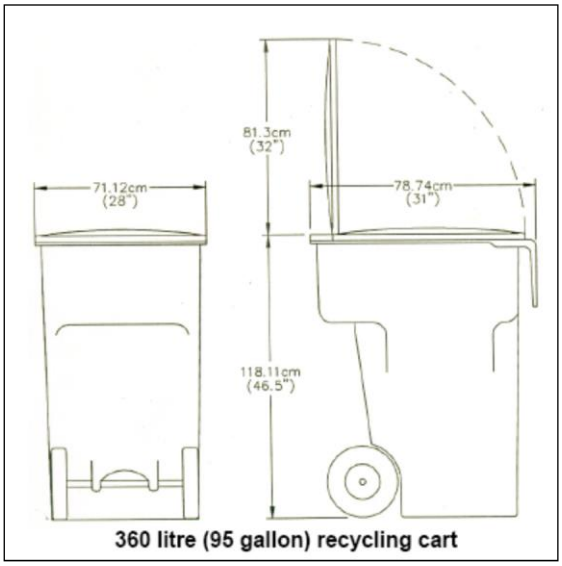
Split bins are recommended where there may be restrictions on storage space as they can store more than one waste stream at a time in a single container. Please consult with your private hauler on availability and options for this type of bin.

Example of a split bin container with recycling and garbage

Cart

Minimum ceiling height clearance	2.5 m
Minimum room size	5 m^2 (min. 1.5 m wide)
Minimum truck clearance (in front/overhead)	15.2 m long/6.1 m high

Container Size	**Common Measurements**		
	Length (m)	**Width (m)**	**Height (m)**
135 L (35 gallon) cart	0.6	0.5	1.0
240 L (65 gallon) cart	0.7	0.6	1.1
360 L (95 gallon) cart	0.9	0.7	1.2



Courtesy: City of Richmond

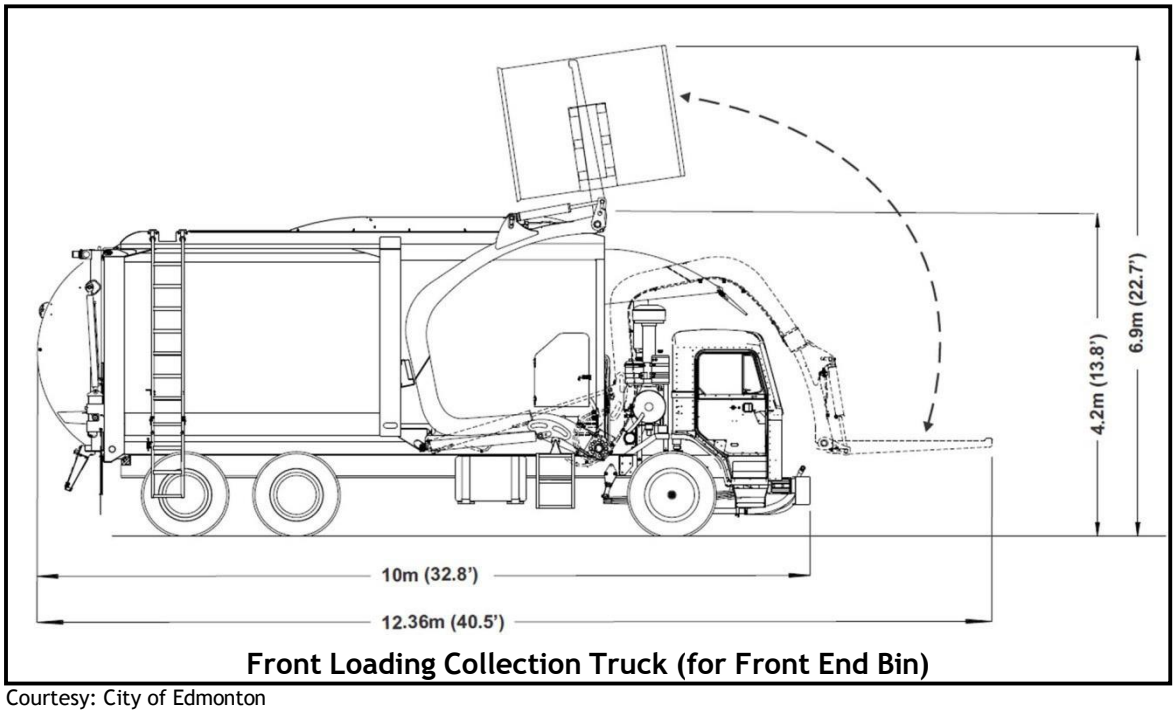
Grease Container

Type of Container	Drum	Bin	Jug-In-Box (JIB)
Description	• Specially designed trucks to either suck out grease with a pump or melt and dump the more solidified grease from top of vehicle • Sit stationary on ground	• Specially designed trucks to either suck out grease with a pump or melt and dump the more solidified grease from the top of vehicle • Requires room for collection • Bins may have wheels to move around	• Haulers collect JIBs from customers by hand into a 1 ton truck • JIBs are easily transported and requires less space for collection than the other two options • Sit stationary on ground
Typical Size	45 gallon (170 L)	• 0.9 m tall, 1.7 m wide, 84 cm deep & taper to 56 cm (2.2 yard^3); • 0.9 m tall, 1.7 m wide, 109 cm deep & taper to 81 cm (2.75 yard^3)	35 cm x 23 cm x 23 cm (18.6 L)
Full Weight	180 kg	545 kg - 910 kg	18 kg
Image			N/A

Appendix B - Collection Vehicles

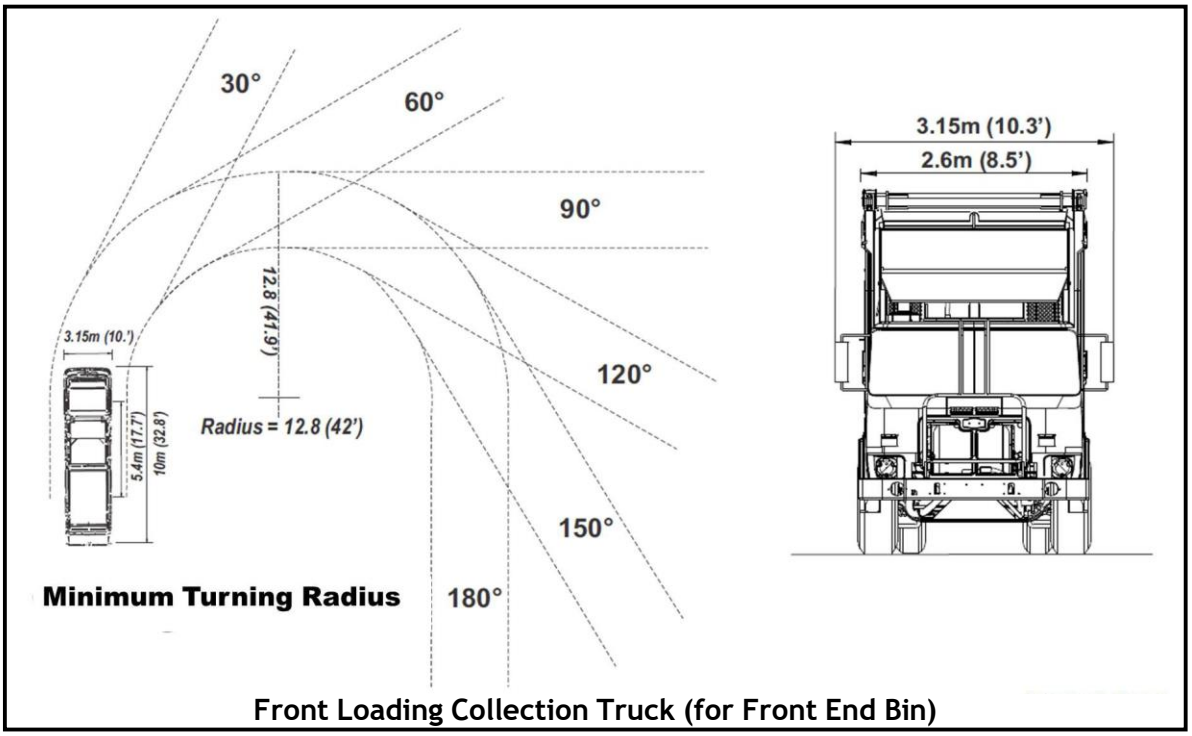
The storage amenity and loading area designs should accommodate the dimensions of the collection vehicles. The following table shows approximate dimensions only. Please consult a private hauler to confirm vehicle requirements.

Typical Collection Truck Dimensions (approximate)	
Length	10.0 m - 12.4 m
Width	3.2 m
Minimum inside turning radius	10.0 m
Minimum outside turning radius	12.8 m
Height clearance	6.5 m - 7.5 m
Width clearance	4.0 m
Length clearance	15.2 m



Front Loading Collection Truck (for Front End Bin)

Courtesy: City of Edmonton



Front Loading Collection Truck (for Front End Bin)

Courtesy: City of Edmonton

Courtesy: City of Richmond

Contact Information:

Development Services
Website: https://vancouver.ca/home-property-development/planning-zoning-development.aspx

For permitting information and site-specific inquiries, please contact the Development and Building Services Centre through the online form at vancouver.ca/building-development-support. All enquiries received through the form will receive a reference number, which can be used to obtain real-time status updates by calling 3-1-1.

Waste Management & Resource Recovery

Website: https://vancouver.ca/home-property-development/single-family-homes-and-duplexes.aspx
Email: engineering@vancouver.ca

Sustainability Group
Website: https://vancouver.ca/green-vancouver.aspx
Email: sustainability@vancouver.ca