

City of North Vancouver Community Development

Guidelines For Recycling And Garbage Storage Space And Access In Multiple Unit Residential, Commercial, Industrial And Institutional Developments

Updated September 2014



INTRODUCTION

I. Purpose

The City of North Vancouver is committed to managing and reducing waste in our community. Solid waste management is an integral part of the development planning process for multiple unit residential, commercial, industrial and institutional developments. Developers and designers are responsible for designing and locating a storage facility that provides sufficient, accessible space that can accommodate all recyclables, compostable materials and garbage between collection days, and that ensures current and future building occupants can meet local and regional waste diversion goals and regulations.

These guidelines identify specific recycling (including recyclable and compostable material) and garbage storage space allocations for new multiple unit residential, commercial, industrial and institutional developments, and assist in siting storage facilities to facilitate access and movement of recycling and garbage containers into and out of the space by both building occupants and collection service providers. Recommendations are also provided to help determine the suggested number of recycling and garbage containers for each building use.

These guidelines are to be used in conjunction with, not in place of, the following bylaws and codes, to ensure all recycling and garbage amenity requirements are appropriately incorporated in the building design:

- Zoning Bylaw, 1995, No. 6700
- Solid Waste Management Service Bylaw, 1997, No. 6920
- Construction Regulation Bylaw, 2003, No. 7390
- All applicable building code, fire code and safety requirements

II. Recycling and Garbage Storage Space Requirements

The City requires that all construction involving the erection of a building, which requires a building permit on any lot zoned multiple unit, commercial, comprehensive development/mixed use, industrial or institutional, provide sufficient space for the shared storage and collection of recyclables, compostable material and garbage, as per the Zoning Bylaw, 1995, No. 6700, Section 417.

Storage space requirements for centralized recycling and garbage facilities have been calculated based on the estimated volume of recyclables, compostable material and garbage generated per dwelling unit for multiple unit residential buildings, or per floor area for commercial buildings.

Specific recycling and garbage storage space requirements for all building uses are identified in the table below:

Table 1. Recycling and garbage storage space requirements

Building Use	Space Requirement	Minimum	Maximum
Multiple Unit Residential (≥ 3 units)	0.486 m ² per unit (5.23 ft ² per unit)	11 m ² (118.4 ft ²)	0.486 m ² per unit (5.23 ft ² per unit) In addition to minimum area required
Tourist Accommodation	0.384 m ² per room (4.13 ft ² per room)	10 m ² (107.6 ft ²)	100 m ² (1076.4 ft ²), at which collection frequency can be increased beyond once per seven days
Commercial – Retail	0.023 m ² per m ² (0.248 ft ² per ft ²)	8 m ² (86.1 ft ²)	90 m ² (968.8 ft ²), at which collection frequency can be increased beyond once per seven days
Commercial – Office	0.010 m ² per m ² (0.108 ft ² per ft ²)	8 m ² (86.1 ft ²)	120 m ² (1291.7 ft ²), at which collection frequency can be increased beyond once per seven days
Commercial – Restaurant	0.026 m ² per m ² (0.28 ft ² per ft ²)	5 m ² (53.8 ft ²)	75 m ² (807.3 ft ²), at which collection frequency can be increased beyond once per seven days
Commercial – Large Venue	0.018 m ² per m ² (0.194 ft ² per ft ²)	6.5 m ² (70 ft ²)	100 m ² (1076.4 ft ²), at which collection frequency can be increased beyond once per seven days
Mixed Use	Shall provide separate recycling and garbage storage spaces for both residential and commercial components, as per the space allocation required above and in compliance with the City's Construction Regulation Bylaw No. 7390 as amended from time to time. When the future commercial use is not known, the recycling and garbage storage space shall be equal to the space needed for the potential commercial use with the highest storage needs.		
Industrial and Institutional	Shall provide adequate recycling and garbage storage space in the building design, to ensure the waste management needs of the building's planned use are met.		
Existing Buildings	The recycling and garbage area specifications will not apply retroactively to existing buildings. Instead, the guidelines will act as a resource should strata councils seek information on best waste management practices.		
Alternative Solutions	If evidence is submitted to the City in connection with an application for acceptance for an alternative solution to satisfy one or more of the space requirements, the Director of Community Development, or their designate, may accept an alternate solution if they are of the opinion that the evidence submitted demonstrates that the alternative solution will address the general intent of the space requirements while addressing site-specific challenges.		

III. Access Requirements for the Recycling and Garbage Storage Facility

Design and siting of the recycling and garbage storage facility must meet the following objectives:

- be well lit and support ease of access for building users, including those with restricted mobility;
- minimize vehicular and pedestrian traffic disruptions; and
- provide direct or reasonable access by collection vehicles to access the loading area and service the containers, avoiding unnecessary manoeuvring by collection vehicles.

The location, design and access criteria shall comply with the Zoning Bylaw, 1995, No. 6700, the Solid Waste Management Service Bylaw, 1997, No. 6920, the Construction Regulation Bylaw, 2003, No. 7390, and all applicable building code, fire code and safety requirements. Developers are encouraged to consider the proposed property configuration in its entirety, at the earliest opportunity.

IV. Recommended Number of Recycling and Garbage Containers

Recommendations are provided to help determine the number of recycling and garbage containers required for each building use, to accommodate the tonnages and corresponding volumes that building users are expected to recycle in accordance with municipal and regional solid waste regulations.

Since mixed use buildings must provide separate recycling and garbage storage spaces for both residential and commercial components in compliance with the City's Construction Regulation Bylaw No. 7390, the recommended number of recycling and garbage containers required should be determined for each anticipated building use. When the future commercial use is not known, the recycling and garbage storage space shall be equal to the space needed for the potential commercial use with the highest storage needs.

Industrial and institutional buildings shall provide adequate recycling and garbage storage space in the building design, to ensure the waste management needs of the building's planned use are met.

The following sections provide specific recommended number of containers for each building use:

- A. Multiple Unit Residential Buildings
- B. Tourist Accommodation Buildings
- C. Commercial – Retail Buildings
- D. Commercial – Office Buildings
- E. Commercial – Restaurants
- F. Commercial – Large Venues

V. Resources

Additional resources, links and contact information are provided in Appendix B.

SECTION A: Multiple Unit Residential Buildings

Number of Recycling and Garbage Containers Recommended

The following table can be used as a guide to assist developers and designers in determining the recommended number of recycling and garbage containers for a multiple unit residential building of up to 99 dwelling units.

The container allocation guidelines are based on a once per seven days pick-up schedule, as well as typical container sizes. Additional container sizes could be considered as well, particularly as recycling and food scraps participation increases over time and garbage generation decreases. The City may also require additional space and access for other materials where applicable, or for future diversion opportunities.

It is the responsibility of the developers, builders and designers to ensure that the correct dimensions and clearances for containers are used for their design. This information can be confirmed by contacting the North Shore Recycling Program (NSRP), the agency responsible for coordinating residential recycling collection and programs in multiple unit residential buildings (contact information in Appendix B), or local waste haulers directly.

Table A: Number of Containers for Multiple Unit Residential Buildings: 4-99 dwelling units

Number of Dwelling Units	Recommended Number of Containers					
	Garbage (3 yd ³)	NSRP Newsprint (360 L)	NSRP Mixed Paper (360 L)	NSRP Mixed Containers (360 L)	Cardboard*	Food Scraps** (240 L)
4-9	77 L cans (max 1/unit)	Suggest single family recycling setup per unit, or a minimum of 3 blue boxes in a common area				1
10-19	1 x 2 yd ³	1	1 (includes cardboard)	1	N/A	1
20-24	1 x 2 yd ³	1	2 (includes cardboard)	1	N/A	1
25-29	1	1	3 (includes cardboard)	1	N/A	1
30-34	1	1	1	1	1 x 2 yd ³	2
35-39	1	1	2	1	1 x 2 yd ³	2
40-44	2	1	2	1	1 x 2 yd ³	2
45-49	2	1	2	1	1 x 2 yd ³	3
50-59	2	1	2	2	1 x 2 yd ³	3
60-69	3	1	3	2	1 x 2 yd ³	4
70-79	3	2	3	2	1 x 2 yd ³	5
80-89	4	2	4	2	1 x 3 yd ³	5
90-99	4	2	4	3	1 x 3 yd ³	6

*Note that cardboard is included with mixed paper for buildings that have up to 20 units. For buildings with more than 30 units, it is recommended that a 2 or 3 yd³ container be provided for cardboard, in addition to those required for mixed paper, as per the table above. NSRP does not provide cardboard-specific containers but many garbage haulers will – please contact the garbage hauler directly.

**Under Metro Vancouver's Integrated Solid Waste and Resource Management Plan, food scraps will be banned from multiple unit residential and commercial buildings by 2015, as such, space will be required for this separation and collection.

For multiple unit residential buildings of 100 units or more, the following equation can be used to calculate the recommended number of containers for each material stream (garbage, newsprint, mixed paper, mixed containers, cardboard, food scraps):

$$\text{Estimated Volume of Material Generated/Unit/Week (L) x Number of Units x} \\ \text{Manoeuvre Factor of 2.5} \div \text{Container Capacity (Volume)} = \\ \text{Recommended Number of Containers}$$

Tables listing the estimated volume of recyclables, compostable material and garbage generated/unit/week (L) and container capacity volumes for commonly used recycling and garbage containers are provided in Appendix A. Please note that volumes generated per building per week are only general estimates and may vary from actual amounts. Please consult with the NSRP to assist with finalizing the number of containers required.

In-Suite Recycling Storage Provisions

In addition to providing a common storage area for recycling and garbage collection, developers of multiple unit residential buildings are encouraged to include sufficient recycling storage space and/or systems within each individual dwelling unit. Space within each unit should be allocated for both current and future waste diversion programs, and could take the form of built-in systems under sinks, in the pantry, or in other convenient locations. A minimum of 0.085 m³ (three cubic feet) of space per unit is recommended.

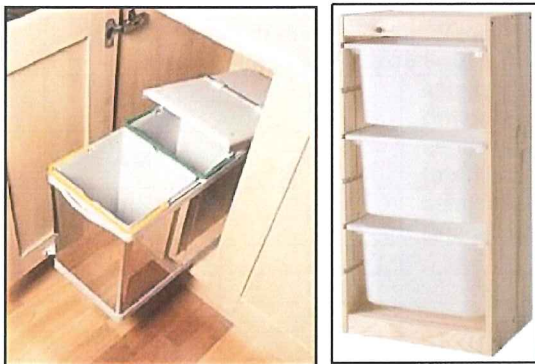


Figure 1: Examples of In-Suite Recycling Storage Systems

(Source: Metro Vancouver Recycling Space and Access Requirements in Multi-Family Residential & Commercial Buildings and Complexes)

SECTION B: Tourist Accommodation Buildings

Number of Recycling and Garbage Containers Recommended

The following table can be used as a guide to assist developers and designers in determining the recommended number of recycling and garbage containers for a tourist accommodation building of up to 100 rooms.

The container allocation guidelines are based on typical container sizes. As collection contracts with private haulers allow for more flexibility, opportunities exist to increase collection frequency or use compactors for storage of recyclable material. Additional container sizes could be considered as well, particularly as recycling and food scraps participation increases over time and garbage generation decreases. The City may also require additional space and access for other materials where applicable, or for future diversion opportunities.

It is the responsibility of the developer to ensure that the correct dimensions and clearances for containers are used for their design. This information can be confirmed by contacting local waste haulers directly.

Table B: Number of Containers: Tourist Accommodation Buildings: 1-100 rooms

Number of Rooms	Recommended Number of Containers					
	Garbage	Mixed Paper (360 L)	Mixed Containers (360 L)	Cardboard	Food Scraps* (240 L)	Tallow/Grease (18.6 L JIB)
1-10	2 x 360 L	1	1	1 x 360 L	1	1
11-30	1 x 2 yd ³	1	1	1 x 360 L	2	1
31-40	1 x 3 yd ³	1	1	2 x 360 L	3	1
41-50	1 x 3 yd ³	1	1	2 x 360 L	4	1
51-60	1 x 3 yd ³	2	1	1 x 2 yd ³	5	2
61-70	2 x 3 yd ³	2	1	1 x 2 yd ³	5	2
71-80	2 x 3 yd ³	2	1	1 x 2 yd ³	6	2
81-90	2 x 3 yd ³	3	1	1 x 2 yd ³	7	2
91-100	2 x 3 yd ³	3	1	1 x 2 yd ³	8	2

**Under Metro Vancouver's Integrated Solid Waste and Resource Management Plan, food scraps will be banned from multiple unit residential and commercial buildings by 2015, as such, space will be required for this separation and collection.*

For tourist accommodation buildings over 100 rooms, the following equation can be used to calculate the recommended number of containers for each material stream (garbage, mixed paper, mixed containers, cardboard, food scraps, and tallow/grease):

$$\text{Estimated Volume of Material Generated/Room/Week (L) x Number of Rooms x Manoeuvre Factor of 2.5} \div \text{Container Capacity (Volume)} = \text{Recommended Number of Containers}$$

Tables listing the estimated volume of recyclables, compostable material and garbage generated/unit/week (L) and container capacity volumes for commonly used recycling and garbage containers are provided in Appendix A. Please note that volumes generated per building per week are only general estimates and may vary from actual amounts. Please consult with private waste haulers to assist with finalizing the number of containers required.

SECTION C: Commercial – Retail Buildings

Number of Recycling and Garbage Containers Recommended

The following table can be used as a guide to assist developers and designers in determining the recommended number of recycling and garbage containers for a commercial (retail) building of up to 5,500 m² total floor area.

The container allocation guidelines are based on typical container sizes. As collection contracts with private haulers allow for more flexibility, opportunities exist to increase collection frequency or use compactors for storage of recyclable material. Additional container sizes could be considered as well, particularly as recycling and food scraps participation increases over time and garbage generation decreases. The City may also require additional space and access for other materials where applicable, or for future diversion opportunities.

It is the responsibility of the developer to ensure that the correct dimensions and clearances for containers are used for their design. This information can be confirmed by contacting local waste haulers directly.

Table C: Number of Containers: Commercial – Retail Buildings up to 5,500 m²

Floor Area (m ²)	Minimum Recommended Number of Containers			
	Garbage	Mixed Paper	Mixed Containers	Cardboard
0-200	1 x 360 L	1 x 360 L	1 x 360 L	1 x 360 L
201-300	2 x 360 L	1 x 360 L	1 x 360 L	2 x 360 L
301-400	3 x 360 L	1 x 360 L	1 x 360 L	3 x 360 L
401-600	1 x 2 yd ³	2 x 360 L	1 x 360 L	1 x 2 yd ³
601-700	1 x 2 yd ³	3 x 360 L	1 x 360 L	1 x 3 yd ³
701-800	1 x 3 yd ³	3 x 360 L	1 x 360 L	1 x 3 yd ³
801-1,000	1 x 3 yd ³	4 x 360 L	2 x 360 L	1 x 3 yd ³
1,001-1,500	1 x 3 yd ³	6 x 360 L	3 x 360 L	1 x 3 yd ³
1,500-2,000	2 x 3 yd ³	8 x 360 L	3 x 360 L	2 x 3 yd ³
2,001-2,500	3 x 3 yd ³	2 x 3 yd ³	4 x 360 L	3 x 3 yd ³
2,501-3,000	3 x 3 yd ³	2 x 3 yd ³	5 x 360 L	3 x 3 yd ³
3,001-3,500	4 x 3 yd ³	3 x 3 yd ³	6 x 360 L	4 x 3 yd ³
3,501-4,000	4 x 3 yd ³	3 x 3 yd ³	7 x 360 L	4 x 3 yd ³
4,001-4,500	5 x 3 yd ³	3 x 3 yd ³	8 x 360 L	5 x 3 yd ³
4,501-5,000	5 x 3 yd ³	4 x 3 yd ³	2 x 3 yd ³	5 x 3 yd ³
5,001-5,500	6 x 3 yd ³	4 x 3 yd ³	2 x 3 yd ³	6 x 3 yd ³

For commercial (retail) buildings over 5,500 m², the following equation can be used to calculate the recommended number of containers for each material stream (garbage, mixed paper, mixed containers, cardboard):

$$\text{Estimated Volume of Material Generated/m}^2\text{/Week (L) x Floor Area (m}^2\text{) x Manoeuvre Factor of 2.5} \div \text{Container Capacity (Volume)} = \text{Recommended Number of Containers}$$

Tables listing the estimated volume of recyclables, compostable material and garbage generated/unit/week (L) and container capacity volumes for commonly used recycling and garbage containers are provided in Appendix A. Please note that volumes generated per building per week are only general estimates and may vary from actual amounts. Please consult with private waste haulers to assist with finalizing the number of containers required.

SECTION D: Commercial – Office Buildings

Number of Recycling and Garbage Containers Recommended

The following table can be used as a guide to assist developers and designers in determining the recommended number of recycling and garbage containers for a commercial (office) building up to 5,500 m² total floor area.

The container allocation guidelines are based on typical container sizes. As collection contracts with private haulers allow for more flexibility, opportunities exist to increase collection frequency or use compactors for storage of recyclable material. Additional container sizes could be considered as well, particularly as recycling and food scraps participation increases over time and garbage generation decreases. The City may also require additional space and access for other materials where applicable, or for future diversion opportunities.

It is the responsibility of the developer to ensure that the correct dimensions and clearances for containers are used for their design. This information can be confirmed by contacting local waste haulers directly.

Table D: Number of Containers: Commercial – Office Buildings up to 5,500 m²

Floor Area (m ²)	Minimum Recommended Number of Containers		
	Garbage	Mixed Paper	Mixed Containers (360 L)
0-500	1 x 360 L	1 x 360 L	1
501-800	2 x 360 L	1 x 360 L	1
801-1,000	3 x 360 L	2 x 360 L	1
1,001-1,500	1 x 2 yd ³	3 x 360 L	2
1,500-2,000	1 x 3 yd ³	4 x 360 L	2
2,001-2,500	1 x 3 yd ³	4 x 360 L	3
2,501-3,000	2 x 3 yd ³	5 x 360 L	3
3,001-3,500	2 x 3 yd ³	6 x 360 L	4
3,501-4,000	2 x 3 yd ³	7 x 360 L	4
4,001-4,500	2 x 3 yd ³	8 x 360 L	5
4,501-5,000	2 x 3 yd ³	2 x 3 yd ³	5
5,001-5,500	3 x 3 yd ³	2 x 3 yd ³	6

For commercial (office) buildings over 5,500 m², the following equation can be used to calculate the recommended number of containers for each material stream (garbage, mixed paper, mixed containers):

$$\text{Estimated Volume of Material Generated/m}^2\text{/Week (L) x Floor Area (m}^2\text{) x} \\ \text{Manoeuvre Factor of 2.5} \div \text{Container Capacity (Volume)} = \\ \text{Recommended Number of Containers}$$

Tables listing the estimated volume of recyclables, compostable material and garbage generated/unit/week (L) and capacity volumes for commonly used recycling and garbage containers are provided in Appendix A. Please note that volumes generated per building per week are only general estimates and may vary from actual amounts. Please consult with private waste haulers to assist with finalizing the number of containers required.

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SECTION E: Commercial – Restaurants

Number of Recycling and Garbage Containers Recommended

The following table can be used as a guide to assist developers and designers in determining the recommended number of recycling and garbage containers for a commercial (restaurant) building up to 5,500 m².

The container allocation guidelines are based on typical container sizes. As collection contracts with private haulers allow for more flexibility, opportunities exist to increase collection frequency or use compactors for storage of recyclable material. Additional container sizes could be considered as well, particularly as recycling and food scraps participation increases over time and garbage generation decreases. The City may also require additional space and access for other materials where applicable, or for future diversion opportunities.

It is the responsibility of the developer to ensure that the correct dimensions and clearances for containers are used for their design. This information can be confirmed by contacting local waste haulers directly.

Table E: Number of Containers: Commercial – Restaurants up to 5,500 m²

Floor Area (m ²)	Minimum Recommended Number of Containers				
	Garbage	Mixed Containers	Cardboard	Food Scraps*	Tallow/Grease
0-100	1 x 360 L	1 x 360 L	1 x 360 L	1 x 360 L	2 JIB
101-200	1 x 360 L	1 x 360 L	1 x 360 L	2 x 360 L	4 JIB
201-300	1 x 360 L	2 x 360 L	2 x 360 L	2 x 360 L	5 JIB
301-400	2 x 360 L	2 x 360 L	1 x 2 yd ³	3 x 360 L	7 JIB
401-500	2 x 360 L	3 x 360 L	1 x 2 yd ³	4 x 360 L	1 170L Drum
501-600	3 x 360 L	3 x 360 L	1 x 3 yd ³	5 x 360 L	2 170L Drum
601-700	3 x 360 L	4 x 360 L	1 x 3 yd ³	6 x 360 L	2 170L Drum
701-800	1 x 2 yd ³	5 x 360 L	1 x 3 yd ³	6 x 360 L	2 170L Drum
801-900	1 x 2 yd ³	5 x 360 L	2 x 3 yd ³	1 x 2 yd ³	2 170L Drum
901-1,000	1 x 2 yd ³	6 x 360 L	2 x 3 yd ³	1 x 3 yd ³	2 170L Drum
1,001-1,500	1 x 3 yd ³	1 x 3 yd ³	3 x 3 yd ³	1 x 3 yd ³	3 170L Drum
1,500-2,000	2 x 3 yd ³	2 x 3 yd ³	3 x 3 yd ³	2 x 3 yd ³	4 170L Drum
2,001-2,500	2 x 3 yd ³	2 x 3 yd ³	4 x 3 yd ³	2 x 3 yd ³	5 170L Drum
2,501-3,000	2 x 3 yd ³	3 x 3 yd ³	5 x 3 yd ³	3 x 3 yd ³	6 170L Drum
3,001-3,500	3 x 3 yd ³	3 x 3 yd ³	6 x 3 yd ³	3 x 3 yd ³	7 170L Drum
3,501-4,000	3 x 3 yd ³	3 x 3 yd ³	6 x 3 yd ³	4 x 3 yd ³	8 170L Drum
4,001-4,500	3 x 3 yd ³	4 x 3 yd ³	7 x 3 yd ³	4 x 3 yd ³	9 170L Drum
4,501-5,000	4 x 3 yd ³	5 x 3 yd ³	8 x 3 yd ³	5 x 3 yd ³	10 170L Drum
5,001-5,500	4 x 3 yd ³	5 x 3 yd ³	9 x 3 yd ³	5 x 3 yd ³	11 170L Drum

**Under Metro Vancouver's Integrated Solid Waste and Resource Management Plan, food scraps will be banned from multiple unit residential and commercial buildings by 2015, as such, space will be required for this separation and collection.*

For commercial (restaurant) buildings over 5,500 m², the following equation can be used to calculate the recommended number of containers for each material stream (garbage, mixed containers, cardboard, food scraps, tallow/grease):

$$\text{Estimated Volume of Material Generated/m}^2\text{/Week (L) x Floor Area (m}^2\text{) x} \\ \text{Manoeuvre Factor of 2.5} \div \text{Container Capacity (Volume) =} \\ \text{Recommended Number of Containers}$$

Tables listing the estimated volume of recyclables, compostable material and garbage generated/unit/week (L) and capacity volumes for commonly used recycling and garbage containers are provided in Appendix A. Please note that volumes generated per building per week are only general estimates and may vary from actual amounts. Please consult with private waste haulers to assist with finalizing the number of containers required.

SECTION F: Commercial – Large Venues

Number of Recycling and Garbage Containers Recommended

The following table can be used as a guide to assist developers and designers in determining the recommended number of recycling and garbage containers for a commercial (large venue) building up to 5,500 m².

The container allocation guidelines are based on typical container sizes. As collection contracts with private haulers allow for more flexibility, it is recommended to increase collection frequency or use compactors for storage of recyclable material. Additional container sizes could be considered as well, particularly as recycling and food scraps participation increases over time and garbage generation decreases. The City may also require additional space and access for other materials where applicable, or for future diversion opportunities.

It is the responsibility of the developer to ensure that the correct dimensions and clearances for containers are used for their design. This information can be confirmed by contacting local waste haulers directly.

Table F: Number of Containers: Commercial – Large Venues to 5,500 m²

Floor Area (m ²)	Minimum Recommended Number of Containers			
	Garbage	Mixed Paper	Mixed Containers	Cardboard
0-100	1 x 360 L	1 x 360 L	1 x 360 L	1 x 360 L
101-200	2 x 360 L	1 x 360 L	1 x 360 L	1 x 360 L
201-300	2 x 360 L	1 x 360 L	1 x 360 L	2 x 360 L
301-400	1 x 2 yd ³	2 x 360 L	2 x 360 L	2 x 360 L
401-500	1 x 2 yd ³	2 x 360 L	2 x 360 L	3 x 360 L
501-600	1 x 2 yd ³	2 x 360 L	3 x 360 L	3 x 360 L
601-700	1 x 3 yd ³	3 x 360 L	3 x 360 L	1 x 2 yd ³
701-800	1 x 3 yd ³	3 x 360 L	4 x 360 L	1 x 2 yd ³
801-900	1 x 3 yd ³	4 x 360 L	4 x 360 L	1 x 2 yd ³
901-1,000	2 x 3 yd ³	4 x 360 L	5 x 360 L	1 x 3 yd ³
1,001-1,500	2 x 3 yd ³	6 x 360 L	6 x 360 L	1 x 3 yd ³
1,500-2,000	3 x 3 yd ³	1 x 3 yd ³	1 x 3 yd ³	2 x 3 yd ³
2,001-2,500	3 x 3 yd ³	2 x 3 yd ³	2 x 3 yd ³	2 x 3 yd ³
2,501-3,000	4 x 3 yd ³	2 x 3 yd ³	2 x 3 yd ³	3 x 3 yd ³
3,001-3,500	5 x 3 yd ³	2 x 3 yd ³	3 x 3 yd ³	3 x 3 yd ³
3,501-4,000	5 x 3 yd ³	3 x 3 yd ³	3 x 3 yd ³	4 x 3 yd ³
4,001-4,500	6 x 3 yd ³	3 x 3 yd ³	3 x 3 yd ³	4 x 3 yd ³
4,501-5,000	7 x 3 yd ³	3 x 3 yd ³	4 x 3 yd ³	5 x 3 yd ³
5,001-5,500	8 x 3 yd ³	4 x 3 yd ³	4 x 3 yd ³	5 x 3 yd ³

For commercial (large venue) buildings over 5,500 m², the following equation can be used to calculate the recommended number of containers for each material stream (garbage, mixed paper, mixed containers, cardboard):

$$\text{Estimated Volume of Material Generated/m}^2\text{/Week (L) x Floor Area (m}^2\text{) x Manoeuvre Factor of 2.5} \div \text{Container Capacity (Volume)} = \text{Recommended Number of Containers}$$

Tables listing the estimated volume of recyclables, compostable material and garbage generated/unit/week (L) and capacity volumes for commonly used recycling and garbage containers are provided in Appendix A. Please note that volumes generated per building per week are only general estimates and may vary from actual amounts. Please consult with private waste haulers to assist with finalizing the number of containers required.

APPENDIX A

Estimated Volume of Recyclables, Compostable Material and Garbage Generated

Multiple Unit Residential Buildings

Material Stream	Estimated Volume Generated/Unit/Week (L)
Garbage	95
Newsprint	8.5
Mixed Papers	15
Mixed Containers	9
Cardboard	30
Food Scraps	14

Tourist Accommodation Buildings

Material Stream	Estimated Volume Generated/Room/Week (L)
Garbage	47.5
Mixed Papers	8.3
Mixed Containers	3.5
Cardboard	14.3
Food Scraps	20
Tallow/Grease	0.33

Commercial Buildings

Material Stream	Estimated Volume Generated/Area/Week (L/m ²)			
	Retail Building	Office Building	Restaurants	Large Venues
Garbage	2.25	1.0	1.65	3.1
Mixed Papers	1.5	0.65	-	1.5
Mixed Containers	0.65	0.375	2.0	1.7
Cardboard	2.3	-	3.75	2.0
Food Scraps	-	-	2.0	-
Tallow/Grease	-	-	0.35	-

(Source: City of Vancouver Solid Waste Storage Facility Design Supplement, May 2011)

Recycling and Garbage Container Dimensions

The tables and schematics shown below provide dimensions for recycling cart, cardboard and garbage container types. It is the responsibility of the designers and developers to ensure the correct containers, dimensions and clearances are used for their building design, in accordance with the Zoning Bylaw, 1995, No. 6700, the Solid Waste Management Service Bylaw, 1997, No. 6920, the Construction Regulation Bylaw, 2003, No. 7390, and all applicable building code, fire code and safety requirements.

Recycling Cart Container Capacity

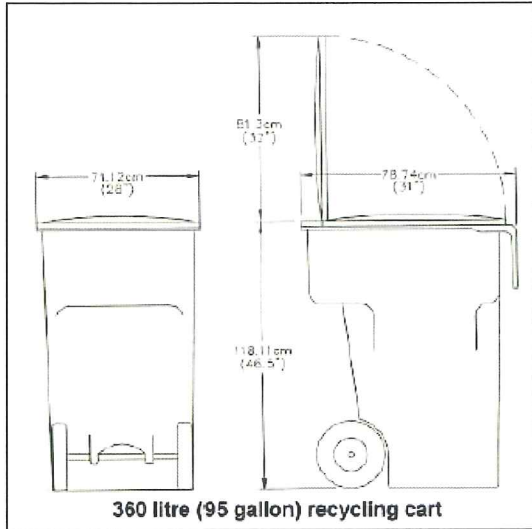
Volume (L)	Length (m)	Width (m)	Height (m)	Container Footprint (m²)
250	0.7	0.6	1.1	0.42
360	0.9	0.7	1.2	0.63
18.6 (Tallow/Grease Jug-In-Box) (JIB)	0.035	0.023	0.023	0.001
170 (Tallow/Grease Drum)	-	-	-	-

(Source: City of Vancouver Solid Waste Storage Facility Design Supplement, May 2011)

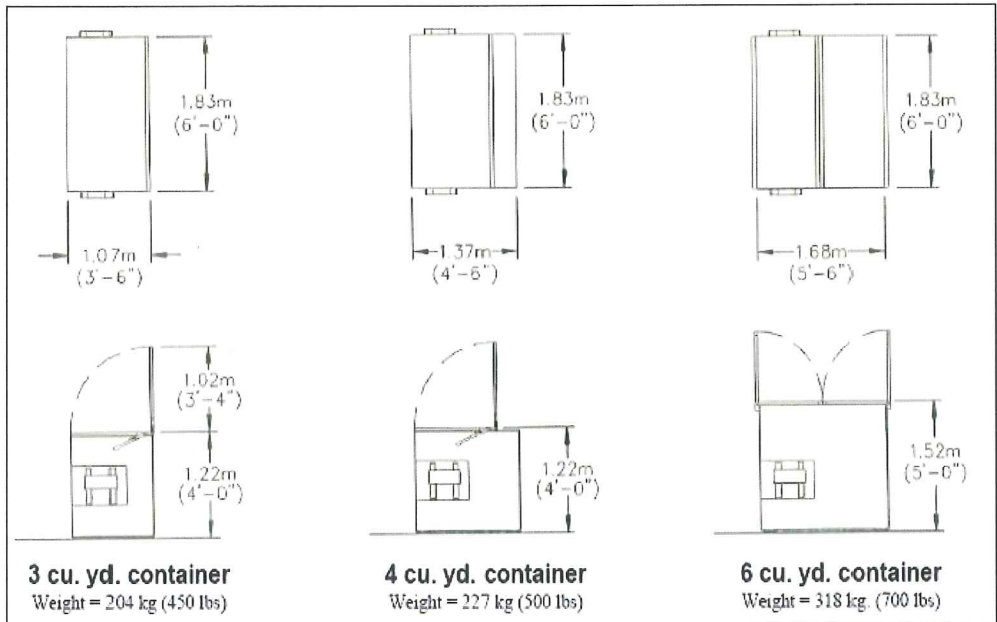
Front End Garbage and Cardboard Container Capacity

Container Size (yd³)	Volume (L)	Length (m)	Width (m)	Height (m)	Container Footprint (m²)
2	1529	1.8	0.9	1.0	1.62
3	2294	1.8	1.1	1.2	1.98
4	3058	1.8	1.4	1.2	2.52
5	3823	1.8	1.4	1.5	2.52
6	4588	1.8	1.7	1.5	3.06
8	6117	1.8	1.7	2.1	3.06

(Source: City of Vancouver Solid Waste Storage Facility Design Supplement, May 2011)



(Courtesy: City of Richmond)



(Courtesy: City of Richmond)

APPENDIX B

Resources and Links

North Shore Recycling Program: www.nsrp.bc.ca | 604.984.9730

A tri-municipal agency responsible for coordinating residential recycling collection and programs in the City of North Vancouver, District of North Vancouver, and District of West Vancouver.

Recycling Council of British Columbia: www.rcbc.bc.ca | 604.732.9253

A non-profit organization that promotes the principles of zero waste and provides information and research regarding almost all recycling programs in BC.

Encorp: www.encorp.ca | 604.473.2400

A non-profit product stewardship corporation that manages and promotes the beverage container deposit recycling program and drop-off electronics recycling program in BC.