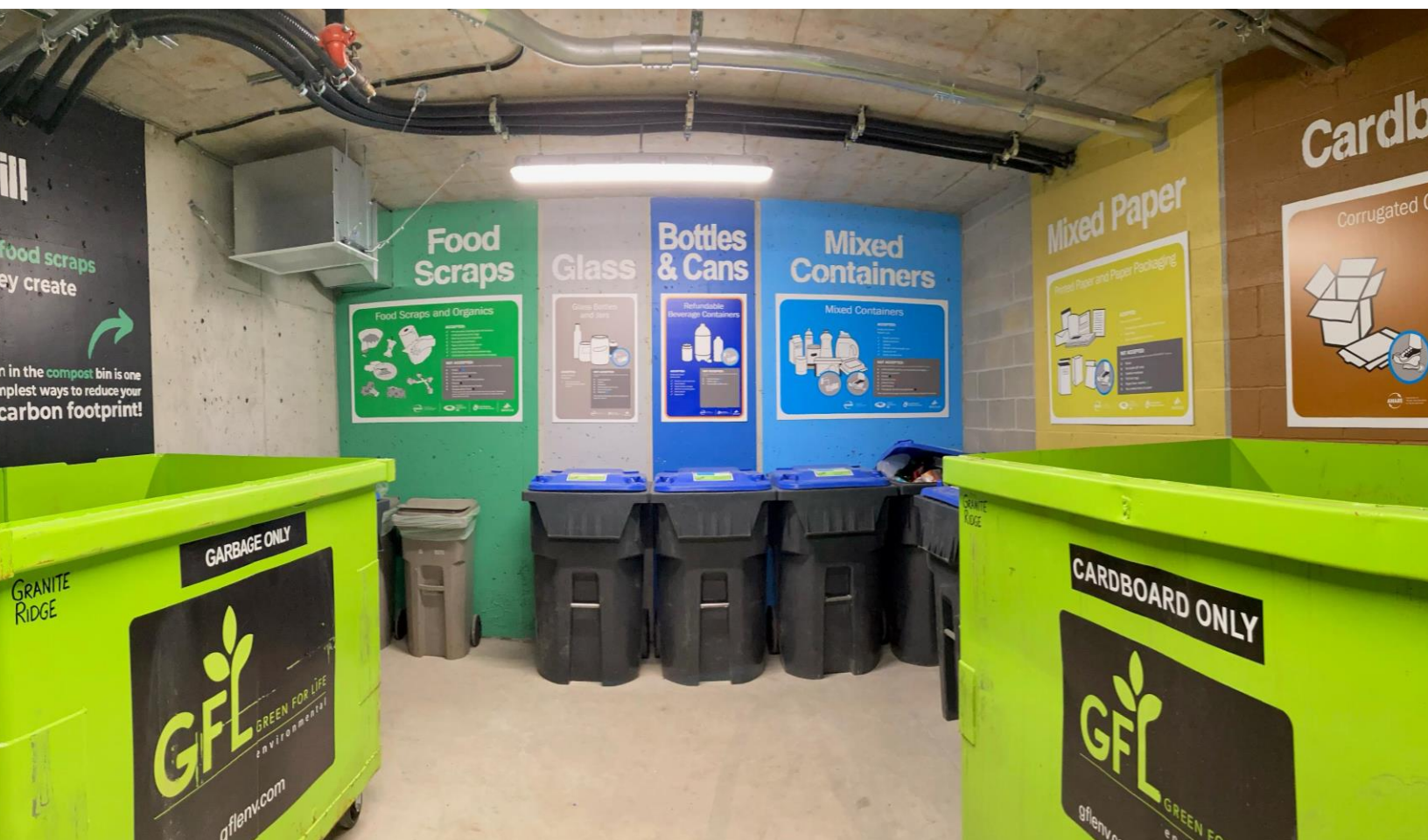


Diversion Storage

Technical Design Guidelines



SQUAMISH - LILLOOET
REGIONAL DISTRICT

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INTRODUCTION

Waste Management in the Squamish-Lillooet Regional District

Solid waste in the Squamish-Lillooet Regional District (SLRD) is governed by municipalities and the SLRD.

All developments in Area D and Area C must follow the Solid Waste Bylaws applicable to the facility the waste is being hauled to. This includes but is not limited to:

- [The Resort Municipality of Whistler Solid Waste Bylaw](#)
- [District of Squamish Solid Waste Utility and Regulation Bylaw](#)

When this document refers to Solid Waste Bylaws, it is referring to the bylaw applicable to the area where development is being considered – Attachment 4.

Recycling, organics, and waste management are an integral part of the development and planning process for commercial, institutional, multi-unit buildings and townhouse developments.

These Diversion Storage Technical Design Guidelines (the Guidelines) will assist developers in meeting service requirements.

The SLRD Solid Waste and Resource Management Plan (2016 - SWRMP) outlines regional solid waste management goals. These goals include:

- Reducing waste sent to landfill to 347kg per person;
- The ultimate goal is zero waste – all of our discards are regarded as resources;
- To the greatest extent possible, these resources are used locally, thereby moving the SLRD towards a circular economy;
- The system to manage discards is financially self-sustaining. Embedded in this goal is to have the cost to purchase a product include the cost of re-resourcing it at the end of its useful life;
- Citizens are actively engaged in behaviours that reflect the waste management hierarchy (i.e. reduce before reuse before recycle...); and
- Until we have achieved zero waste, the infrastructure to manage residual waste meets or exceeds provincial guidelines and regulatory requirements.

THESE GUIDELINES:

- **Help** with the design of suitable diversion storage that meet regulations and diversion targets;
- **Create** diversion storage that are safe, easy to use, and help prevent human-wildlife conflicts;
- **Streamline** the development process by ensuring key requirements are considered and met as part of the initial application;
- **Detail** the key assessment criteria as part of design planning;
- **Provide** tips and formulas for calculating the space required based on use, to ensure that sufficient collection services can be accommodated; and,
- **Outline** property owner and developer responsibilities for the development of diversion storage that properly manages wildlife attractants and meets these Guidelines.

Please note that this document should be used with, not in place of, all applicable building codes, standards and other relevant legislation.

GOALS & OBJECTIVES

These Guidelines were developed to make diversion storage safe, properly sized, and accessible, which will help achieve targeted waste diversion, minimize contamination and reduce human-wildlife conflicts.

OBJECTIVES:

- Support building design that provides residents convenient access to a full range of recycling, organics and waste storage services;
- Create efficient centralized diversion storage with sufficient area for recycling, organic and waste storage containers, minimizing contamination;
- Support building design that provides sufficient space for access to and the removal of recycling, organics and waste by collection vehicles, including the necessary turn radius, height, length, and width clearance;
- Support easy to read and updated instructional material (e.g. signage); and
- Reduce human-wildlife conflict.

Why is Diversion Important?

The Squamish Landfill is expected to reach capacity by 2028, anything residents and businesses can do to reduce the amount they send to the landfill will help expand its lifespan. Reducing waste generated aligns with national and provincial efforts.

DEFINITIONS

Diversion Storage: a centralized physical space allocated within a property for communal deposit and collection of recycling, organics and waste materials.

Extended Producer Responsibility (EPR): products whose end-of-life management is funded by the producers, manufacturers and consumers. The list of materials is outlined in the BC Recycling Regulation, including, but not limited to: beverage containers, electronics, small appliances, batteries, paints, solvents, pesticides and gasoline, pharmaceuticals, tires, light bulbs, used oil and antifreeze and large appliances.

Recyclable Material (or Recycling): a product or substance that should be diverted from landfill disposal, and usually includes the following:

- Organics (including food waste, clean wood and yard waste);
- Mixed containers (hard plastic and metal packaging);
- Glass jars and bottles;
- Mixed paper (cardboard, office paper, newspaper and magazine);
- Flexible plastic;
- Styrofoam; and
- Other recyclable items accepted under the Solid Waste Bylaws

Refuse (Garbage or Waste): any discarded substance, material, or object, whether from domestic, commercial, industrial, institutional or other use that cannot be recycled or composted.

Solid Waste: materials that require management, including recycling, organics and waste.

Solid Waste Management Plan: plan that outlines how solid waste will be managed. The plan includes building information, service and collection details.

Wildlife Attractant / Animal Attractant: any substance or material, with or without an odour, which attracts or is likely to attract wildlife or other animals; and without limitation includes food or other edible products, whether intended for humans, animals, or birds, grease, oil, antifreeze, paint, petroleum products, and compost other than grass clippings, leaves or branches.

Wildlife-proof Enclosure: an enclosed structure having a roof, doors and a latching device, designed to discourage and prevent access by wildlife, and for clarity,

includes a garage, shed, or other structure that is inaccessible to wildlife. For best practices, refer to Attachment 6.

Wildlife Resistant Container: means a fully enclosed container, of sufficient design and strength to prevent access by Dangerous Wildlife that is securely affixed to the ground or to an immovable object or fixture.

GENERAL RESPONSIBILITIES

A developer has four primary responsibilities concerning solid waste (recycling, organics and waste) management:

1. DESIGN ADEQUATE SPACE FOR STORAGE & COLLECTION

An owner or designate is responsible for meeting the property's needs by:

- Providing adequate storage for recycling, organic and waste collection and diversion based on regular service;
- Ensuring any recycling, organic and waste that is an attractant is stored in such a manner that it is not accessible to wildlife;
- Ensuring there are collection services in place; and
- Ensuring there is sufficient space for collection vehicles to access the collection and loading areas.

The SLRD does not provide recycling, organic or waste services to commercial, industrial properties, multi-unit or townhouses. Cost is a private arrangement between the strata's management and a collection service provider. Work with your service provider to establish the service schedule required.

2. COMPLY WITH SOLID WASTE BYLAWS & REQUIREMENTS

Developers must design the diversion storage so occupants can comply with the solid waste bylaws specific to their area. The following materials must be recycled and are banned from landfill disposal:

- Corrugated cardboard
- Food scraps and yard trimmings
- Recyclable paper
- All EPR products
- Clean wood
- Beverage containers
- Glass, metal or plastic containers

This is a representative list only. Please refer to the respective area Solid Waste Bylaws. For more information contact the SLRD Resource Recovery Coordinator. If material loads are audited and found to contain banned items, the agreement holder will be subject to fines.

3. COMPLY WITH STORAGE & DISPOSAL REQUIREMENTS

Poorly designed diversion storage can lead to human-wildlife conflicts.

The SLRD Wildlife Attractant Bylaw (Attachment 4) requires, but is not limited to:

- a person must not store any solid waste that is an Attractant in such a manner that it is accessible to Wildlife.
- a person must not leave, place or store outdoors any solid waste that is an Attractant unless such solid waste that is an Attractant is left, placed or stored in both of the following:
 - a. in a Wildlife Resistant Container; and
 - b. in a Wildlife Resistant Enclosure

For best practices, see Attachment 6 Wildlife-proof Enclosure Guidelines.

4. MEET GOVERNMENT REGULATIONS RELATED TO WASTE MANAGEMENT AND ACCESSORY STRUCTURES

Did you Know?

Recycle BC offers a rebate for Multi-Unit Buildings with an active recycling program. Contact your local collection service provider for details.

BARRIERS & COMMON SOLUTIONS

Since every development is different, it's important for developers to identify specific challenges for their building and develop solutions that will make it easier for occupants to maximize recycling and reduce landfill waste.

Some common barriers that a developer (or occupant) may face include:

Barrier	Solution and Resources
<p>Storage Area Size and Locations</p> <p>Containers for recycling, organics and waste are stored in different locations within the building complex.</p>	<p>It's more convenient for occupants when all containers are in one location.</p> <p>Design and designate a centralized location within the complex so that there is a one-stop disposal. Accessible to all users including those with restricted mobility.</p> <p>See section 5 for further information.</p>
<p>Ambiance of Diversion Storage Locations</p> <p>Poorly lit, odorous and inconvenient to access locations can deter occupants from properly sorting their materials.</p>	<p>Ensure diversion storage are:</p> <ul style="list-style-type: none"> • well-lit internally and externally; • conveniently located; • kept clean; and • accessible. <p>Emptying and cleaning containers frequently will help the ambiance and encourage use.</p> <p>See section 5 for further information.</p>
<p>Diversion Confusion</p> <p>Figuring out what goes where can be confusing and may be complicated by language barriers.</p>	<p>Signs that use images and graphics along with clear colour coding can help explain what can and cannot go into each container.</p> <p>Visit slrd.bc.ca/signage for free signage and communication materials that can be downloaded and used to reduce confusion.</p>

Barrier	Solution and Resources
<p>Clearance Requirements</p> <p>Not enough clearance for collection vehicles to access space and empty containers will increase the service collection cost.</p>	<p>Design the waste management spaces to ensure that the access dimensions are large enough for collection vehicles to enter and maneuver.</p> <p>See Attachment 5 for collection vehicle measurements, clearance and turning radius.</p>
<p>Wildlife Accessibility</p> <p>Wildlife, especially bears, are attracted to odours, creating an unsafe situation for both waste room users and wildlife.</p>	<p>To reduce the potential for human-wildlife conflicts, ensure the waste room is: constructed in such a way that wildlife cannot gain access; is well lit externally and internally; kept clean, sufficient capacity to prevent refuse from overflowing; and odours are minimized by being frequently serviced.</p> <p>See Attachment 6 for guidance.</p>
<p>Visitor Fluctuations</p> <p>If the space is intended for commercial use or short-term accommodation, visitor fluctuations need to be taken into account. There will be a large difference in the amount of waste generated during the busy seasons.</p>	<p>Plan the diversion storage to accommodate the high volume of visitors and the additional bins that will be required.</p>
<p>Multi-use Buildings</p> <p>Multi-use buildings have additional challenges and can potentially lead to conflicts between residential and commercial users as they require different levels of service.</p>	<p>In multi-use buildings, it is best practice to have residential and commercial waste kept in separate diversion storage. This ensures that the residential stratas and commercial stratas can easily track costs of the services required. Separate diversion storage will also reduce cross contamination from commercial recycling services and residential recycling services.</p>

DESIGN GUIDELINES & CRITERIA

The following eight steps are intended to assist developers with planning for a diversion storage in commercial, industrial properties, multi- unit or townhouses.

1. DETERMINE TYPE & VOLUME OF MATERIALS THAT WILL BE GENERATED ON SITE

The first step involves assessing the types of recycling, organics and waste that are likely to be generated by the occupants of the building.

In addition to the common items listed here, EPR or specialized recyclable items may include: grease, clean wood, hazardous materials, glass, beverage containers, Styrofoam or other items banned from disposal in the landfill.

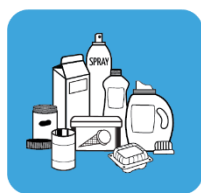
Occupants must have access to recycle or dispose of:



Food Scraps & Organics



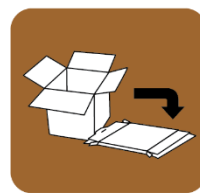
Household Waste to Landfill



Mixed Containers



Mixed Paper

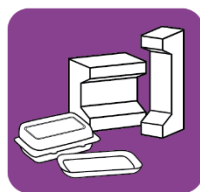


Cardboard



Glass Bottles & Jars

It is recommended that occupants have access to dispose of:



Foam Packaging



Flexible Plastics



Refundable Beverage Containers

2. DETERMINE RECYCLING, ORGANICS AND WASTE COLLECTION SERVICE PROVIDER

Recycling, organics and waste services must be contracted through a private collection service provider. A development is not required to have the same service provider for every single material.

The SLRD does not support individual totes serviced through curbside collection for developments with more than 3 units and neighbourhood waste buildings should be provided for all new developments, where feasible.

3. CALCULATE THE NUMBER & TYPE OF CONTAINERS REQUIRED

It is important for developers to provide enough space for the containers required.

The following is an overview of the types and quantity of containers required. This will help with designing centralized diversion storage with enough space. Remember, you can combine different types of containers depending on what type and the number of occupants or users.

- For a detailed guide to estimate the **number of containers required** for your building, please see Attachment 2.
- For information about **general container measurements, types, size, weight and footprint**, see Attachment 2.

Commercial Grease Collection

Fats, oil, and grease should never be disposed of down sinks, drains or garburators as the material hardens and builds up on the inside of sewage lines, causing blockages. This can lead to breaks, sewage spills and overflows.

Ideally, grease collection containers are stored in a separate area from regular waste and recycling materials, to increase safety and reduce potential spillage. If stored outside, grease must be stored in a wildlife resistant container and be secured to prevent tipping.

Businesses that produce grease by-products must have proper containers and systems in place to collect and safely dispose of oils, grease, and other liquids as per the Squamish-Lillooet Regional District Sewer Source Control Bylaw.

4. CALCULATE THE STORAGE SPACE REQUIRED

Use the formula below to estimate the total waste management space required to house the required number of containers



Please see Attachment 2 and 3 for details.

5. DESIGN THE STORAGE/COLLECTION AREA

A diversion storage should be designed to allow containers to be easily accessed and moved.

Ideally, there is a separate diversion storage or structure designated in new developments. If a separate room is not feasible, a wildlife-proof shed or enclosure can be a viable option. The area must be large enough to store all recycling, organics and waste generated between designated collection days while permitting movement of people accessing the containers, and the movement of the containers on collection day.

Designated areas must also meet requirements around fire safety, flood construction level, wildlife attractants, and all other building requirements. For best practices, all diversion storage structures should be built as per attachment 6. The diversion storage should include but not limited to the following.

Element	Design Considerations
Floor	A hard surface (concrete is required if installing a compactor) that will bear the weight of a 28-tonne collection vehicles, this should be verified with the collection service provider and the construction company.
Drainage	<ul style="list-style-type: none"> • Drain to sanitary sewer. • Oil separator required for food service and restaurants.
Door	<ul style="list-style-type: none"> • Each diversion storage should have 2 doors – a service door for equipment and a personnel door for user access. • Service door must be constructed of heavy duty commercial grade steel and be a garage door style with no latched or opening mechanisms located on the exterior. The bottom of the service door must have slide bolts on each side. • Service door must have a 2.5m (8') minimum opening to allow containers to be removed for service • Personnel doors must be constructed of 18-gauge steel, open outwards, have a reinforced window, a self-closing device, and a lever opening on the interior. The personnel door must be of such design that is accessible to persons with disabilities. • Installed with a minimum gap on tracks and latches on both sides and must close tightly to prevent access by wildlife.
Size	<ul style="list-style-type: none"> • Should be able to accommodate an appropriate number of containers to prevent overflow between collection days. See attachment 2 for more information. • Total area of the diversion storage should be 2.25 times the physical footprint of the containers to allow for adequate space for maneuvering.
Height	<ul style="list-style-type: none"> • The ceiling should allow adequate space for the collection vehicle. • Clearance requirements should be verified with the collection service provider.

Element	Design Considerations
Container Configuration	<ul style="list-style-type: none"> • Configure to allow each recycling, organics and waste container to be individually accessed and serviced without having to take out other containers. • Space allocation for container should be at least 2 metres (width or depth) to allow for access to waste containers. • If height requirement cannot be met, a minimum of 2.5m in height clearance is required to allow complete opening of container lids. • Containers should be able to be stored in a way so as not to block access to either the service or personnel door.
Ventilation	<ul style="list-style-type: none"> • Have adequate ventilation to the exterior of the building, in compliance with the BC Building Code requirements for ventilation. • Be aware of air intakes for other buildings near the diversion storage.
Security	<ul style="list-style-type: none"> • Sufficiently secure to minimize pest and wildlife and other animal access through the use of roofs, fencing, and wheels under gate doors. • Be protected from unlawful entry. • Containers should be locked if they are accessible from outside the building to avoid illegal dumping. • The diversion storage should be equipped with locked doors. Code lock mechanisms provide easier access to the service provider. Avoid key/FOB-only locks.
Location	<ul style="list-style-type: none"> • Within the legal parcel. • Located in/on the ground level. • Located where road access exists for the collection service provider, i.e. at the lane or adjacent the principal driveway. • Located where collection service provider may safely access without backing up across sidewalks, around corners, or onto roads. • Located in a well-lit, area that is easily accessed by tenants. • Co-located with community services such as postal boxes or events board is recommended.

- Containers should be grouped separately by material type to reduce confusion and cross-contamination.
- If more than one diversion storage is necessary, recycling, organics and waste storage should be located within close proximity for convenience and to encourage diversion. to garbage facilities allowing occupants to conveniently recycle and dispose of garbage.

Location of diversion storage should NOT be:

- On publicly owned right-of-ways where it may disrupt traffic circulation patterns.
- In any required driveways, parking aisles, or parking spaces.
- In any location that may block or impede fire exits, public right-of-ways, or pedestrian and vehicular access.
- Likely to be blocked by snow storage, loading vehicles or other temporary blockages.
- Beside a play area or a dog park without adequate fencing.

Element	Design Considerations
Wildlife Accessibility	<ul style="list-style-type: none"> • The structure must be inaccessible by wildlife. For best practices, refer to attachment 6.
Lighting	<ul style="list-style-type: none"> • Be well lit, both as a security measure and for ease of access. • Adequate lighting discourages improper use of the containers and surrounding area.
Access for occupants	<ul style="list-style-type: none"> • Accessible to all occupants of the development, including those with restricted mobility. • If an auxiliary area is designated for the facility outside the building, the area should be located adjacent for to an entry point into the building for easy access by users. • If an auxiliary area is more than 150m from residents, a parking space may be required
Signage	<ul style="list-style-type: none"> • Must have clear signage on and around containers to ensure that materials go in the appropriate container to help prevent contamination.

	<ul style="list-style-type: none"> Consider painting walls behind bins the colour of the recycling stream to help keep the room organized.
Electricity	<ul style="list-style-type: none"> Provide power for equipment inside the diversion storage space. The power requirement will need to be verified with the service provider.
Hose bib	<ul style="list-style-type: none"> Provide at least one (1) hose connection for cleaning the area.
For additional consideration by building type, see attachment 1.	

Is the Diversion Storage in a Separate Structure?

If the diversion storage is located in an accessory structure, rather than within the principal building, please also consider the following items:

- Must be designed to reduce potential wildlife conflicts. For best practices, all diversion storage structures should be built as per the Wildlife-proof Enclosure Guidelines (RMOW, 2022) see attachment 6.
- Must comply with the SLRD Zoning Bylaws (Accessory Buildings, Structures and Uses) and BC Building Code.
- A covered roof with adequate drainage is required.
- Must meet the design considerations of these guidelines.

Considerations

- Will all residents be able to walk to the diversion storage, or is parking required?
- Will residents with accessibility concerns be able to easily dispose of recycling, organics and waste?
- When the diversion storage is being serviced, will the collection vehicle be blocking access to parking stalls or pedestrian doors?
- In the winter, is snow likely to end up piled up in front of the diversion storage becoming a barrier to service or user access?
- Avoid putting a waste room beside a playground or dog park.

Is the diversion storage in a place where the bins cannot be directly serviced by the collection vehicle?

If the diversion storage is located underground, or otherwise in an area where the bins cannot be directly serviced, please also consider the following items:

- The waste equipment will need to either be removed by hand or by a secondary vehicle and brought to a staging area for service
- Slope of servicing area may not exceed 2%.

- Staging area must be available for waste equipment during service hours.
- Staging area cannot be in a public right of way, laneway, or blocking access to fire exists or to the building
- Staging area should be bin footprint X 1.25
- Area should have a drain and hose bib nearby for cleaning if required

6. DETERMINE ACCESS ROUTE FOR COLLECTION VEHICLES

The following design elements address the need to allow a collection vehicle to enter the site, collect the materials and exit safely (ideally without having to back up). Parking areas and driveways must comply with the standards outlined in the both the Zoning Bylaw and Subdivision and Development Control Bylaw.

Element	Design Considerations
Entry and exit	<ul style="list-style-type: none"> • Allow collection vehicles to enter the site, collect the material and leave the site in a forward motion or via the use of a turnabout area allowing for a three point turn of no less than one truck length. • If backing up is the only option, it must not compromise building structure, traffic operations or pedestrian safety. • Truck Collection vehicles may not back around corners, across sidewalks, or onto roads.
Driveway access	<ul style="list-style-type: none"> • Minimum width of 6 metres at the points of entrance and exit for the site.
Slope	<ul style="list-style-type: none"> • Ensure slope of access does not exceed 6%. • Slope of servicing or staging area may not exceed 2%.
Vehicle access route	<ul style="list-style-type: none"> • Minimum width of 4.5 metres throughout vehicle access route.
Vehicle clearance	<ul style="list-style-type: none"> • Maintain a minimum vehicle clearance of 4.5 metres throughout the entire access route.
Turning radius	<ul style="list-style-type: none"> • Provide the collection vehicle a minimum turning radius of 12.5 metres throughout the entire access route. • Building structure, such as an overhang, cannot extend past the turning radius to prevent damage to the building. • Please consult with your collection service provider to confirm.

7. DESIGN COLLECTION/LOADING AREA

Collection service providers use a variety of vehicles and containers. Loading and collection areas must accommodate a mix of vehicle sizes and design. Collection vehicles must have plenty of height clearance and room to turn.

The chart below outlines the minimum dimensions for collection/loading vehicles. For specific details on collection vehicles, contact collection service provider. Note that these loading heights must include clearance from all roof accessories, such as pipes, lights, ventilation or other utilities.

See Attachment 5 for examples of collection vehicles.

Typical collection vehicles dimensions (approximate)					
COLLECTION TYPE	VEHICLE SIZE	LOADING	LENGTH	WIDTH	HEIGHT
Cardboard and garbage containers	Varies	Front/Top loading	10m (collection 12.36m)	3.15m	4.2m (collection 6.9m)
Low profile garbage compactor	Varies	Hauling to off site location	7.62m	2.4m	2.4m (haul offsite to lift to 6.7m)
Garbage and organics carts	Varies	Back loading	14m (collection 15.5m)	2.74m	4.2m-6m

The following are general guidelines for designing the collection/loading area:

Element	Design Considerations
Clearance	<ul style="list-style-type: none"> Maintain a minimum dimension: Height: 7.5m Width: 6m Length: 15m. All dimensions are unencumbered (e.g. unrestricted by fixtures such as sprinkler systems, pipes, meters, surveillance cameras, mirrors, landscaping, etc.).
Floor	<ul style="list-style-type: none"> Accommodate a 28-tonne collection vehicle.
Location	<ul style="list-style-type: none"> Away from fresh air intakes for the building to discourage odour going into the building. Avoid location that interferes with pedestrian traffic and other vehicular access. Connected to the garbage and recycling storage space or temporary storage area via a level grade or continuous slope of no more than 6%.
Slope	<ul style="list-style-type: none"> Maximum slope for is 2%. Wheel blocks may be required at 2% grade.

8. DEVELOP A SOLID WASTE MANAGEMENT PLAN

A Solid Waste Management Plan will help design a diversion storage that will respond to the need of the occupants. The Solid Waste Management Plan will show the location and dimension of waste management spaces, including: the dimensions and locations of collection/loading areas; collection vehicle access and egress; and specifications related to wildlife resistance.

This plan should show the functional design of the diversion storage for the recycling, organics and waste including the following:

- 1.** User access to the diversion storage;
- 2.** Access and egress for collection service provider;
- 3.** Size, capacity, and function;
- 4.** Layout, including an overlay specifying the quantity, type, dimensions, and locations of collection containers;
- 5.** Based on the proposed building uses and the frequency of collection, provide a rationale for the number and size of containers to be used for each stream; and
- 6.** Describe how the diversion storage meets the design standard as per the Wildlife-proof Enclosure Guidelines – Attachment 6.

The Plan will demonstrate that the applicant has considered and addressed all regulations and design requirements covered in these Guidelines. The Plan will provide a clear overview of how the design provides for effective recycling, organics and waste services and addresses the SLRD's SWRMP goals and objectives for waste diversion.

Use the Questionnaire in Attachment 7 as a base to guide your Solid Waste Management Plan.

The Solid Waste Management Plan should be provided along with the diversion storage layout drawing to the SLRD as part of the application package for review and approval.

ATTACHMENTS

- 1** Considerations for different building types
- 2** Guide to Estimating the Recycling and Garbage Containers Your Complex Needs for Weekly Collection
- 3** Container Measurements and Storage Space Required & General Specifications for Different Waste Containers
- 4** Solid Waste Bylaws in the Squamish-Lillooet Regional District
- 5** Collection Truck Measurements (Approximate)
- 6** Wildlife-proof Enclosure Guidelines
- 7** Questionnaire for Solid Waste Management Plan

Attachment 1

CONSIDERATIONS FOR DIFFERENT BUILDING TYPES

Different building designs and uses will require special considerations. The sections below should be considered for the building type.

1. Residential Apartment Building
 - a. With at grade waste room
 - b. With underground or covered waste room
2. Multi-Use Buildings
3. Townhouse Complexes, Duplexes and Triplexes

1. Residential Apartment Building

Best practices are for waste rooms to be located near the parking level elevators, or a place all residents will need to regularly pass.

Consider where the development is in relation to the other recycling depots in the community, and if it will be required to add additional bins to allow residents without vehicles to properly divert all their waste material.

a. With at Grade Waste Shed

In normal practice, each stream is serviced by a separate truck. Consider that each bin may take a few minutes to service a bin, and a truck must be idling to allow the lifting arms to work. Will the service truck be blocking a parking space, laneway, building entrance or exit, or emitting exhaust into a unit's window? Consider providing adequate space for a service vehicle to pull away from buildings, and out of the path of delivery or emergency vehicles.

b. With Underground or Covered Waste Room

The Service vehicle will not be able to collect the waste without adequate clearance. See Attachment 5 for vehicle heights while servicing. Waste and Recycling containers will need to be moved to an area with adequate height for service. This means waste containers are not usable for a period of time and may cause disruption for residents. It will also mean ongoing higher service costs, or requirements for a strata to pull out the bins.

2. Multi -Use Buildings

In Multi-Use Buildings, it is best practice to have residential and commercial waste kept in separate waste rooms or enclosures. This ensures that the residential stratas and commercial stratas can easily track costs of the services required for their services. Separated waste rooms will also reduce cross contamination from commercial recycling services and residential recycling services.

3. Townhouse Complex / Duplexes and Triplexes

Waste rooms should be distributed throughout the complex so that rooms are convenient for each unit. While waste rooms should be placed by other amenities that residents need to visit regularly, such as mailboxes, they should not be located beside amenities where dogs and children may run into the pathway of service vehicles, such as playgrounds or dog parks.

It is recommended to have parking spaces/loading zones for residents with mobility issues to transport material to the waste room.

Consider where the development is in relation to the other recycling depots in the community, and if it will be required to add additional bins to allow residents without vehicles to properly divert all their waste material.

Similar to the waste enclosure requirements, the modified enclosures must have solid walls that connect with the floor and roof and must lock to ensure wildlife resistance. See example drawing below.



Attachment 2

Guide to Estimating the Recycling and Garbage Containers Your Complex Needs for Weekly Collection

Residential Buildings

The following charts show the approximate waste volume generated for different types of building use*.

WASTE CATEGORIES	ESTIMATED VOLUME GENERATED (LITRES/UNIT/WEEK)
Multi-Unit Residential Building	2 Residents per unit. For other calculations, see attachment 3
Garbage	53.00
Glass Jars & Bottles	2.10
Mixed Containers	18.50
Mixed Papers (Including cardboard)	42.90
Mixed Papers (excluding cardboard)	15.00
Cardboard	27.50
Food Scraps & Yard Trimmings	14.00
Hospitality Building	
Garbage	47.50
Mixed Containers	3.50
Mixed Papers	8.30
Cardboard	14.30
Oil/Grease	15.00
Food Scraps & Yard Trimmings	27.50

*Data used with permission from the City of Vancouver

*Note the generated rates listed are only general estimates and may vary from actual rates. It is recommended that developers consult with a collection service provider to assist with estimating the anticipated diversion storage space requirements.

Residential Building

Assumptions:

- Once per week collection pick-up schedule.
- There are no on-site compactors (e.g. garbage, cardboard, recycling).
- Residents flatten their cardboard boxes and some plastic containers before putting them in the bin.
- Sufficient height clearance is available for garbage collectors to tip the container.

Notes:

- Complexes with very active recycling communities will require more recycling bins and garbage volumes will decrease accordingly.
- For efficient use of space, a garbage compactor and a cardboard compactor are suggested for large complexes greater than 240 units.
- Consult with a recycling and collection service provider to assist with estimating the number and size of containers required.

Accommodation Provider

NUMBER OF GUEST ROOMS	360 LITRE CARTS (#)		240 LITRE CARTS (#)	FRONT END BINS (# X SIZE)		18.6 LITRE JUG-IN-BOX (JIB)
	MIXED CONTAINERS	MIXED PAPER (including newspapers)	FOOD SCRAPS & YARD TRIMMINGS	CARDBOARD	GARBAGE	GREASE/TALLOW
5-10	1	1	1	0	1 x 2 yd ³	1
11-20	1	1	2	0	1 x 3 yd ³	1
21-30	1	1	3	1 x 3 yd ³ *	1 x 4 yd ³	1
31-40	1	1	4	1 x 3 yd ³ *	1 x 6 yd ³	1
41-50	1	1	4	1 x 3 yd ³ *	1 x 8 yd ³	1
51-60	1	2	5*	1 x 3 yd ³ *	1 x 8 yd ³	1
61-70	1	2	6*	1 x 3 yd ³ *	2 x 6 yd ³	1
71-80	1	2	7*	1 x 3 yd ³ *	2 x 6 yd ³	1
81-90	1	2	8*	1 x 3 yd ³ *	2 x 8 yd ³	1
91-100	1	3	9*	1 x 3 yd ³ *	2 x 8 yd ³	2

*It may be more space efficient to use an alternative type of container. Consult with a collection service provider to discuss which containers are most suitable.

Office

FLOOR AREA(M ²)	360 LITRE CARTS (#)		240 LITRE CARTS (#)	CUBIC YARD BINS (# X SIZE)	
	MIXED CONTAINERS	MIXED PAPER (including newspapers)	FOOD SCRAPS & YARD TRIMMINGS	CARDBOARD	GARBAGE
1-500	1	1	1	1 x 3 yd ³	1 x 3 yd ³
501-600	1	1	2	1 x 3 yd ³	1 x 3 yd ³
601-900	1	2	2	1 x 3 yd ³	1 x 3 yd ³
901-1,000	1	2	3	1 x 3 yd ³	1 x 3 yd ³
1,001-2,000	2	4	5*	1 x 3 yd ³	1 x 3 yd ³
2,001-3,000	3	6*	7*	1 x 3 yd ³	1 x 4 yd ³
3,001-4,000	4	7*	10*	1 x 3 yd ³	2 x 3 yd ³
4,001-5,000	5*	9*	12*	1 x 4 yd ³	2 x 3 yd ³

*It may be more space efficient to use an alternative type of container. Consult with a collection service provider to discuss which containers are most suitable.

Retail

FLOOR AREA(M ²)	360 LITRE CARTS (#)		FRONT END BINS (# X SIZE)	
	MIXED CONTAINERS	MIXED PAPER (including newspapers)	CARDBOARD	GARBAGE
1-200	1	1	1 x 3 yd ³	1 x 3 yd ³
201-500	1	2	1 x 3 yd ³	1 x 3 yd ³
501-600	1	3	1 x 3 yd ³	1 x 3 yd ³
601-700	1	3	1 x 3 yd ³	1 x 3 yd ³
701-1,000	1	4	1 x 3 yd ³	1 x 3 yd ³
1,001-2,000	4	9*	1 x 3 yd ³	1 x 3 yd ³
2,001-3,000	6*	13*	1 x 3 yd ³	1 x 4 yd ³
3,001-4,000	7*	17*	1 x 3 yd ³	2 x 3 yd ³
4,001-5,000	9*	21*	1 x 4 yd ³	2 x 3 yd ³

*It may be more space efficient to use an alternative type of container. Consult with a collection service provider to discuss which containers are most suitable.

Restaurant

FLOOR AREA (M ²)	360 LITRE CARTS (#)		240 LITRE CARTS (#)		FRONT END BINS (# X SIZE)		18.6 LITRE JUG-IN-BOX (JIB)
	MIXED CONTAINERS	MIXED PAPER (including newspapers)	FOOD SCRAPS & YARD TRIMMINGS (high participation)	GLASS	CARDBOARD	GARBAGE (Moderate recycling)	GREASE/TALLOW
1-100	1	1	1	1	1 x 3 yd ³	1 x 3 yd ³	1
101-200	1	1	2	1	1 x 3 yd ³	1 x 3 yd ³	1
201-300	2	2	3	1	1 x 3 yd ³	1 x 3 yd ³	1
301-400	2	3	4	1	1 x 3 yd ³	1 x 3 yd ³	1
401-500	3	3	4	1	1 x 3 yd ³	1 x 3 yd ³	1
501-600	4	4	4	1	1 x 3 yd ³	1 x 3 yd ³	1
601-700	5	5	6*	1	1 x 3 yd ³	1 x 3 yd ³	2
701-800	5	5	7*	1	1 x 4 yd ³	1 x 3 yd ³	2
801-900	5	5	8*	1	1 x 4 yd ³	1 x 3 yd ³	2
901-1,000	6*	6*	9*	1	1 x 4 yd ³	1 x 3 yd ³	2
1,001-2,000	11*	12*	17*	2	3 x 4 yd ³	1 x 4 yd ³	4
2,001-3,000	17*	17*	17*	2	3 x 4 yd ³	2 x 4 yd ³	6
3,001-4,000	22*	23*	34*	2	4 x-5 yd ³	2 x 4 yd ³	8
4,001-5,000	28*	29*	42*	2	4 x 6 yd ³	3 x 4 yd ³	11

*It may be more space efficient to use an alternative type of container. Consult with a collection service provider to discuss which containers are most suitable.

Attachment 3

Container measurements and storage space required & General Specifications for Different Containers

	HEIGHT (when closed)	LENGTH	WIDTH	FOOTPRINT (Length x Width)	MANOEUVRE FACTOR	STORAGE AREA REQUIRED FOR 1 CONTAINER (Footprint x Maneuver Factor)
3 yd ³ Front-end top loading	1.22 m (4')	1.07 m (3.5')	1.83 m (6.0')	1.96 m ²	2.25	4.41 m ²
4 yd ³ Front-end top loading	1.22 m (4')	1.37 m (4.5')	1.83 m (6.0')	2.51 m ²	2.25	5.64 m ²
6 yd ³ Front-end top loading	1.52 m (5')	1.68 m (5.5')	1.83 m (6.0')	3.07 m ²	2.25	6.91 m ²
46.5 L Cart*	0.69 m (2.25')	0.30 m (1')	0.28 m (0.92')	0.084 m ²	N/A	N/A
80 L Cart*	0.88 m (2.88')	0.51 m (1.67')	0.41 m (1.33')	0.21 m ²	2.25	0.47 m ²
120 L Cart*	0.95 m (3.13')	0.55 m (1.79')	0.48 m (1.58')	0.26 m ²	2.25	0.59 m ²
240 L Cart*	1.09 m (3.58')	0.70 m (2.29')	0.62 m (2.04')	0.43 m ²	2.25	0.97 m ²
360 L Cart*	1.13 m (3.71')	0.88 m (2.88')	0.64 m (2.08')	0.56 m ²	2.25	1.26 m ²
Glass Recycling Bin*	0.36 m (1.17')	0.36 m (1.19')	0.27 m (0.88')	0.10 m ²	N/A	N/A

Front-end top loading containers - additional dimensions

The dimensions noted above reflect the internal measurement of the container. Please allow for an additional 20.32 cm (8") in width for the side brackets on the container.

Consider the users of the bin if selecting larger or taller equipment. Users must be able to easily lift waste over the edge of the bin.

Compactors

Waste compactors range in size from 4 yd³ to 25 yd³ and connect to various sizes of front-end containers. Models have different space and location requirements. Consult a collection service provider for details.

The following is a general overview of the various waste containers commonly used for recycling, organics and waste. The SLRD does not guarantee the accuracy of the dimensions listed below due to the variation between different manufacturers. Every manufacturer has slightly different measurements for their containers and may or may not include in their

measurements the width of metal side brackets or additional heights if container has wheels.

It is the sole responsibility of the developer to ensure the design of the diversion storage can accommodate the containers to be used. Please consult with a collection service provider to discuss which containers are suitable for different applications.

Some examples of collection containers that are often offered:

Carts or totes

	RECYCLING CART Containers & mixed paper	GARBAGE Non-recyclable and non-organic materials	GLASS	ORGANICS Food scraps and yard trimmings
				
Standard Container	360 Litres/95 gallons	360 Litres/95 gallons	240 Litres/63 gallons	240 Litres/63 gallons

Large containers

	FRONT END CONTAINER	COMPACTOR Non-recyclable and non-compostable materials, or cardboard only
		
Container Size	2, 3, 4, 6, and 8-yard options 2–4 yards recommended for residential applications.	

1. Compactor

Compacting systems may be appropriate to deal with materials such as cardboard or garbage in some buildings. Compactors range in size from 4 yd³ to 25 yd³ and connect to various sizes of front-end bins. Models have differing space and location requirements. A collection service provider can assist with choosing the best containers and collection system for different commercial buildings. Before ordering or installing a compactor, confirm the size and ability to service the compactor with your collection service provider.



TYPE	IDEAL USER	MINIMUM CEILING HEIGHT CLEARANCE	MINIMUM CLEARANCE IN FRONT OF BIN	MINIMUM CLEARANCE OVERHEAD OF BIN
Low Profile Compactor	Multi-unit Residential Building	2.1 m	12.2 m long	
Ground Level Compactor	Multi-unit Residential Building	2.5 m	15.2 m long	7 m high
Commercial Compactor	Commercial and institutional buildings	6.1 m	15.2 m long	

Potential Benefits

- Less servicing frequency required compared to other container use.
- Can store more when compacted.
- Less messy; less overflow.
- Ideal for large volume generation (more than 100 units).
- Long life span (15-20 years) if properly maintained.
- Can be more cost effective for larger volumes.

Potential Challenges

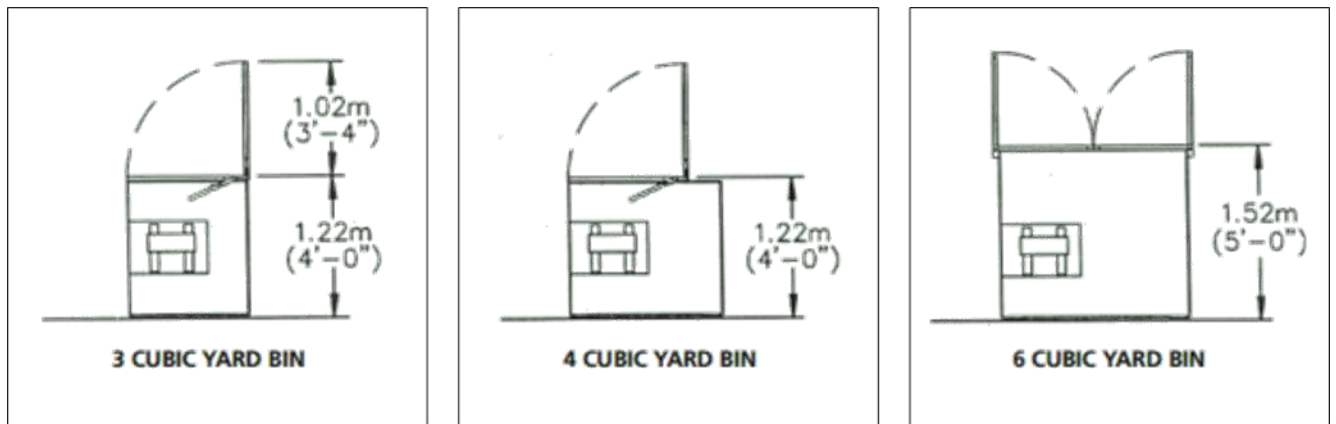
- Most compactors require 3 phase power.
- Cardboard jams easily if not placed in compactor correctly.
- Odour concern if not serviced frequently.
- Not suitable for food scraps collection.
- Noise/vibration concerns - may need isolator to lessen.
- Capital cost may be higher than containers.
- Underground storage may have limited space for trucks to maneuver.
- Must carry entire compactor back and forth to dispose waste; limited number of servicing per collection route.
- Everyone must be trained to operate the compactor.

2. Front End Bins

Front End Bins, also commonly called Dumpsters or abbreviated to FELs, are the most common type of container for waste or cardboard. They range in size from 2 cubic yards to 8 cubic yards, although the larger sizes are not suitable for most purposes. The containers can include wheels and castors, and be made of either metal or plastic. Note that front end bins larger than 4 yards may not be appropriate for residential services as they are too tall for all users to safely put material in. 6 or 8 yard bins may require steps, a loading bay, or other assistance to load material.



Examples of clearance required for opening the lids of front-end bins:



Courtesy: City of Richmond

Potential Benefits

- Applicable for most waste streams including cardboard.
- Capital cost is less than a compactor.
- No electricity required to operate.
- Easily accessible for most occupants.
- Service costs are included.

Potential Challenges

- Require more collection frequency compared to compactors.
- Odour concern if not serviced frequently.
- Surface damage to concrete pad due to frequent collection.
- May cost more than compactor when extra service costs are included.

3. Carts or totes

Totes vary in size and clearance requirements.



Minimum concrete pad area	Minimum ceiling height clearance	Minimum truck clearance In front of Container	Minimum truck clearance overhead of Container
0.88 m x 0.64 m	2.5 m	N/A	5.29 m high

Example of clearance required for opening the lids of front-end bins:

Courtesy: City of Richmond



Potential Benefits

- Smallest footprint compared to a front-end bin or a compactor.
- Less expensive than a front-end bin or a compactor.
- Sealed container such that drainage is not a major concern.
- No electricity required to operate.
- Easier to maneuver than large containers.

Potential Challenges

- Requires high service frequency compared to larger containers.
- Odour may be a concern if not routinely serviced.
- No extra capacity for overflowing waste, may require extra pickup which would result in higher cost.
- Can easily be vandalized or stolen.
- Totes must be secured against wildlife and require storage inside a wildlife proof area.

4. Cooking Oil and Grease Containers

As noted in municipal bylaws, food sector establishments must properly manage used cooking oils and grease to ensure no grease or oil is poured in any sink or floor drain. Proper management includes installing and maintaining grease interceptors and recycling quantities of used oil and grease.

Establishments may require space to store a grease container internal or external to their operation. This storage space should be separated from the recycling and garbage storage areas and must be built or managed in a wildlife-proof manner. To learn more, including companies that recycle used cooking oil and grease, contact the Recycling Council of B.C. Hotline at 604-732- 9253.

Drum



Container



Description	<ul style="list-style-type: none"> • Specially-designed trucks to collect. • Sits stationary on the ground and require a drip-tray below the drums. Drum must be anchored and/or be kept in a wildlife proof enclosure to prevent bears from tipping it over. 	<ul style="list-style-type: none"> • Specially-designed trucks to collect. • Requires room for collection. • Containers may have wheels to move around.
Type/Size	45 gallon (170 L)	<ul style="list-style-type: none"> • 90cm tall, 107cm wide, 84cm deep and taper to 56cm (2.2 yard³) • 90cm tall, 107cm wide, 109 cm deep and taper to 81cm (2.75 yard³)
Full Weight	180 kg	545 kg – 910 kg

Attachment 4

Solid Waste Bylaws in the Squamish-Lillooet Regional District

District of Squamish

Bylaw No. 2870, 2021 Solid Waste Utility and Regulation

<https://squamish.civicweb.net/document/184243/>

Resort Municipality of Whistler

Bylaw No. 2139, 2017 Solid Waste Bylaw

<https://www.whistler.ca/sites/default/files/2022/Aug/bylaws/consolidated/24196/cbyl002139-2022-05-10.pdf>

Squamish Lillooet Regional District Wildlife Attractant Bylaw

Bylaw No. 1551, 2018

<https://slrd.civicweb.net/document/100980/>

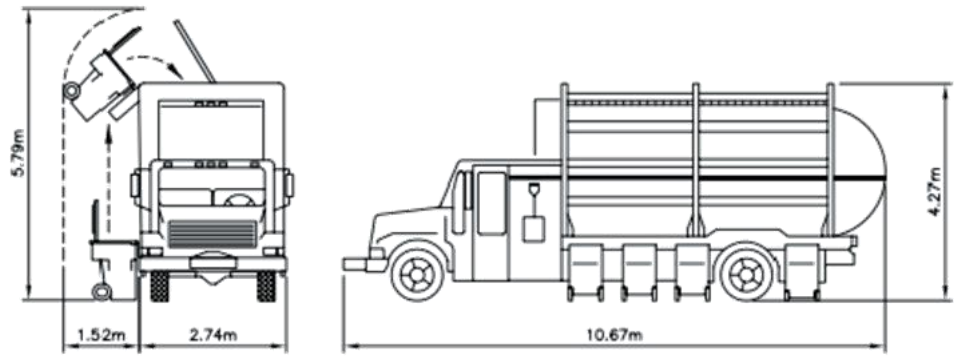
Attachment 5

Collection Truck General Measurements

Blue Cart Recycling

SU9/medium size trucks
Side loading

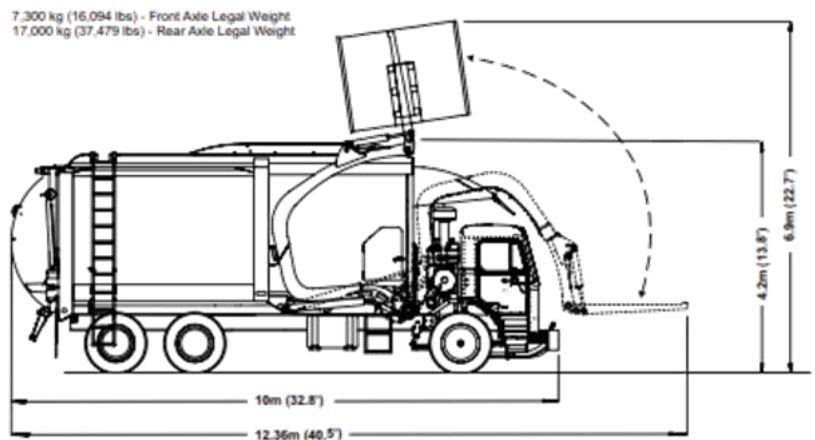
Dimensions:
Length: 10.67 m
Width: 2.74 m
Height: 4.27 m
(collection 5.79 m)



Garbage and Cardboard Containers

SU9/medium size trucks
Front/Top loading

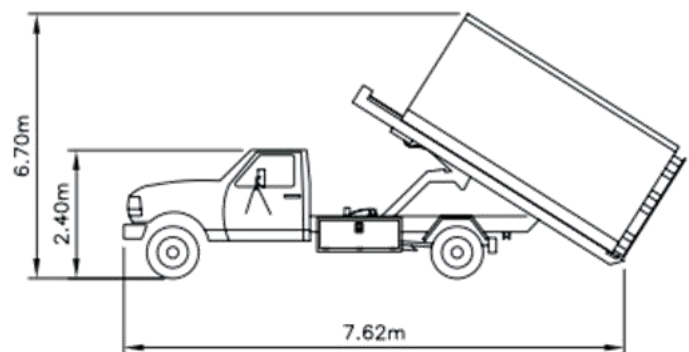
Dimensions:
Length: 10 m (collection 12.36 m)
Width: 3.15 m
Height: 4.2 m (collection 6.9 m)



Garbage and Cardboard Low Profile Compactor

SU9/medium size trucks
Hauling to offsite location

Dimensions:
Length: 7.62 m
Width: 2.4 m
Height: 2.4 m truck height
(Haul off site to lift – 6.7m to lift bin)

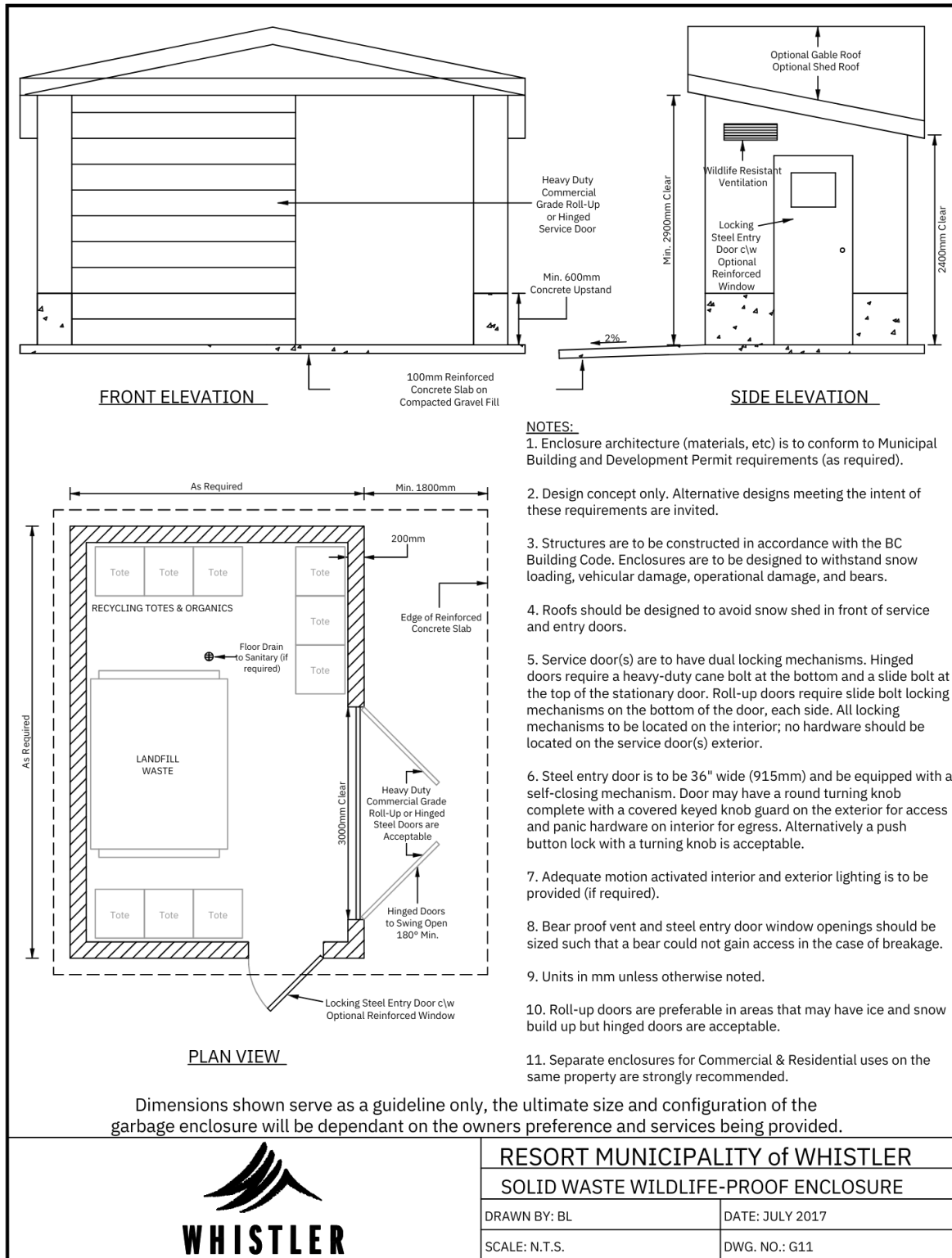


Collection of garbage and/or cardboard using low profile compactor trucks involves a multi-step process. A compactor room is required on site and the smaller “pick-up” like truck is required to load bins from the compactor on site and then haul off site for disposal. The containers then have to be returned to the development. This limits the amount of sites that can be serviced in one day by the collection service provider compared to traditional larger garbage trucks that service multiple locations on one route. As well, the low profile trucks add additional trips to the road system to complete the collections service as disposal occurs off site, which typically involves higher collection costs.

As electric trucks become more common, be aware that their size may be different from standard diesel or CNG collection vehicles. In particular, electric trucks generally have a longer chassis to accommodate the vehicle’s battery. Consult with a collection service provider to determine if they have an electric truck that is likely to do your service, and how that truck may differ in size from the standard collection vehicle.

Attachment 6

Wildlife-proof Enclosure Guidelines



Attachment 7

Solid Waste Plan Questionnaire

ICI Questionnaire

Use additional pages as necessary, and include any additional graphics, plans, photos, etc. as necessary to illustrate the proposed diversion storage.

1. How many units are included in this property?
2. Does this property include any food service or food manufacturing?
3. Will there be tenants requiring specialized waste streams or equipment?
4. Number of Waste Rooms _____
5. Size of Waste Room(s) 1) _____ 2) _____ 3) _____
6. Number of Bins and size for Each Stream:

Garbage Amt__ Size____ Cardboard Amt__ Size____

Organics Amt__ Size____ Containers Amt__ Size____

Paper Amt__ Size____ Glass Amt__ Size____

Other: _____ Amt _____ Size _____

7. If there is equipment other than front end dumpsters or totes, please describe:

8. Does the structure meet the wildlife waste guidelines?
9. Can the entire path from the street to collection area hold a 28 tonne truck?

1. Are there drains? Does this require an oil separator?

2. Is there a hose bib?

3. Can the doors be propped open?

4. Are the doors at least 2.5m (8' 4") wide?

5. Are bins required to be stored in front of the doors?

6. Is there adequate ventilation?

7. Is there adequate lighting both in and around the waste room?

8. Is there access for users with restricted mobility?

9. Is there electricity?

10. Will there be appropriate signs as required by the Solid Waste Bylaw?

11. Describe the pathway the collection vehicle will take to the waste room:

12. If collection area is covered, what is the height allowance, including any HVAC, plumbing, lighting, or other accessories attached to roof or floor?

13. Is there an air intake near the waste storage or collection area?

Residential Questionnaire

Use additional pages as necessary, and include any additional graphics, plans, photos, etc. as necessary to illustrate the proposed diversion storage.

1. Estimated Number of Occupants _____
2. Number of Bins and size for Each Stream:

Garbage	Amt__	Size__	Cardboard	Amt__	Size__
Organics	Amt__	Size__	Containers	Amt__	Size__
Paper	Amt__	Size__	Glass	Amt__	Size__
Other:	_____	Amt_____	Size_____		
3. If there is equipment other than front end dumpsters or totes, please describe:

4. If collection area is covered, what is the height allowance, including any HVAC, plumbing, lighting, or other things attached to roof or floor?
5. If bins cannot be serviced by the waste room, where is the staging or collection area?
6. Is there an air intake near the waste storage or collection area?
7. Is there adequate ventilation?
8. Describe the pathway the collection vehicle will take to the waste room:

9. Describe the pathway users will need to take to get to the waste room:

10. Is the room configured to allow each garbage and recycling container to be individually accessed, removed and replaced without having to take out other containers?
11. Are bins required to be stored in front of the doors?
12. Is there a hose bib?
13. Can the doors be propped open, or is it accessed through an overhead garage door?
14. Are the doors at least 2.5m (8' 4") wide?
15. Is there adequate lighting both in and around the waste room?
16. Is there access for users with restricted mobility?
17. Is there electricity?
18. Will there be appropriate signs as required by the Solid Waste Bylaw?

