

Recycling & Garbage Collection Service Planning Matrix

This document is intended to serve as a resource to City of Gresham Development Planners, private developers, architects and others in determining the minimum space that should be included for recycling and solid waste collection areas in plans for commercial and multifamily developments. These are guidelines based on actual service levels at existing developments. They should be used in conjunction with the relevant sections of the Gresham Development Code and the Gresham Revised Code referenced below to improve collection efficiencies.

Development Code provisions pertaining to solid waste collection areas

See [Section 7.0212](#) -- Standards for Solid Waste Recycling and Service and Collection Areas for new Multi-Family, Commercial and Industrial Development. Each development proposal is unique and the collection efficiency is affected by community design including street and building layout, access and signage.

See attachment 1.1

Gresham Revised Code provisions pertaining to solid waste collection areas

See [Chapter 7.25.415](#) -- Location of Receptacles and Standards for Collection Area (Customer)

See attachment 1.2

Enclosure Roof Height

City code regulates how stormwater run-off must be handled at new commercial, industrial, and multifamily developments. Development applicants should consult the City’s Development Engineering staff for complete information on these requirements. It is important to note that if a developer intends to build a roof over a garbage and recycling collection enclosure as a means of meeting these requirements, the height of the roof and configuration of the enclosure must be compatible with the solid waste hauler’s collection equipment. The development applicant and the hauler should collaborate as early as possible during the project design phase to address roof height and enclosure configuration issues. Roof height requirements are listed in the [City’s Stormwater Manual](#).

Cost Efficiency and Environmental Sustainability

The least expensive solid waste collection service for the owner or tenant of a commercial, industrial, or multifamily property is one that minimizes the number of service stops per week. Service of a larger container collected less frequently provides a business or apartment owner with the opportunity to save a considerable amount of money over time compared to service with a smaller container serviced more frequently. Enclosures, and the truck access to them, should be designed to allow for this more cost-effective service. Refer to the Development Code and Gresham Revised Code provisions noted above for more information on the design parameters.

The City of Gresham is committed to helping build a more sustainable community, one that minimizes its use of natural resources, protects the environment, and creates a healthy and positive setting for its residents. Reducing the frequency of solid waste collection service, as described above, contributes to that by reducing truck trips and their corresponding traffic and emissions impacts.

Contact Information

City of Gresham Development Planning	503-618-2842
City of Gresham Development Engineering	503-618-2424
City of Gresham Recycling & Solid Waste	503-618-2624
Solid Waste Hauling Companies	Visit: https://greshamoregon.gov/Recycling-and-Solid-Waste/

Residential

Service Frequency

Single family or small multi-plex residential customers in the City are provided with weekly curbside garbage, recycling and yard debris service.

Each waste stream is serviced with a separate dedicated truck (garbage, commingled recycling, yard debris and glass). Therefore, the total truck trips in front of a given home equal roughly 130 each year. This high frequency of service means that any service related inefficiencies, barriers, safety hazards or conflicts are magnified significantly.

Access

Efficient, automated service is crucial to mitigate safety, noise and quality of life impacts from inefficient service and workarounds. Access to containers is critical to efficiency. Impediment can include:

- Parked cars that impede the automated truck from reaching containers
- Improperly placed containers
- Narrow or dead-end streets
- Low-hanging building features and vegetation

Truck Size and Turning Radius

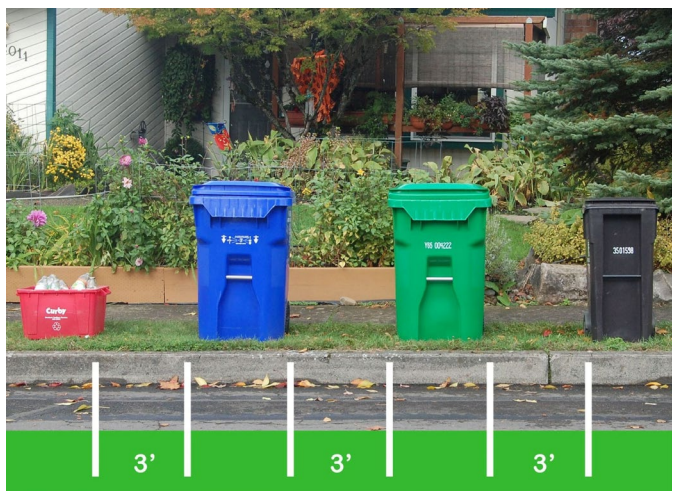
The largest and most common residential garbage truck has a length of 37', which should dictate the design of streets, turnaround areas, etc. Streets should be designed to accommodate trucks with a turn radius of 50', clearance of 18', and weight of 52,000 lbs. Truck dimensions are 37' (L) X 8.5' (W) X 14' (H). The clearance of 18' listed above accounts for the tipping of a waste container in the truck.

A standard emergency services hammerhead turnaround, consistent with the City's standard for road improvements, may be granted in lieu of the cul-de-cac when the design is approved by the fire marshal.

Service Cart Size and Placement Area

Residential customers are serviced with plastic roll carts. For the automated truck to service the carts, there should be a 3' space between each cart placed at the curb, to allow for the hydraulic calipers to grasp each container. Therefore, the area needed for each home should use the following formula:

35 gallon cart (20" w) + 36" gap + 90 gallon recycling cart (28") + glass tub (22") is the maximum width needed per household. The needed area is therefore 106" (or 8'10") per household.



Commercial and Multi-Family

Access

The most important considerations for commercial and multi-family service are enclosure design, capacity and location, and access to containers by automated service. Access to the containers typically happens at the enclosure, but containers can be moved by the property owner to a reasonably accessible location if needed. In those situations, a plan that ensures this movement must be provided.

If enclosures are located inside a property, in a location that is not accessible to the collection truck, the proponent must ensure that the property owner or manager will move the containers to an accessible location for automated service, each service day.

Commercial and Multi-family Truck Size and Turning Radius

The largest and most common commercial garbage truck has a length of 37' which should inform the design, access and turnaround areas, driveways, etc. Driveways/lots should be designed to accommodate trucks with a turn radius of 50', clearance of 22', and weight of 64,000 lbs. Truck dimensions are 36'(L) X 10'(W) X 14'(H). (The clearance of 22' listed above accounts for the tipping of a waste containers into the truck).

Common Issues

Designing enclosures that do not allow direct truck access cause inefficiencies and worker safety issues. Turning radiuses that do not accommodate large trucks reduce access and can cause damage to curbs, in-ground service boxes, etc.



What to avoid

Inadequate size. If the enclosure is too small, people tend to leave bins outside, which is not allowed. If the containers are jammed inside a small enclosure, it is very difficult for collection staff to remove them for trash and recycling collection.

A larger enclosure provides room to allow flexibility in changes in service. **Food generating businesses will need room for food scrap collection containers and oil collection.**

Poor siting. An enclosure at the end of an alley or in a place without adequate maneuvering room for service vehicles creates a dangerous situation for collection staff, as well as for vehicles and pedestrians. Typically, there is no other person aboard a garbage truck to guide the driver out of a narrow driveway or around a blind corner.

Inadequate gates. The gates need to be large enough to pull a container straight out. For most commercial structures, this means a 20-foot wide opening. Gates that do not lock in the open position can swing shut.

Inadequate pad. A Portland cement concrete pad minimizes damage caused by the containers. It should be level and well-drained. The percent of grade for access to the pad shall not exceed 3%.

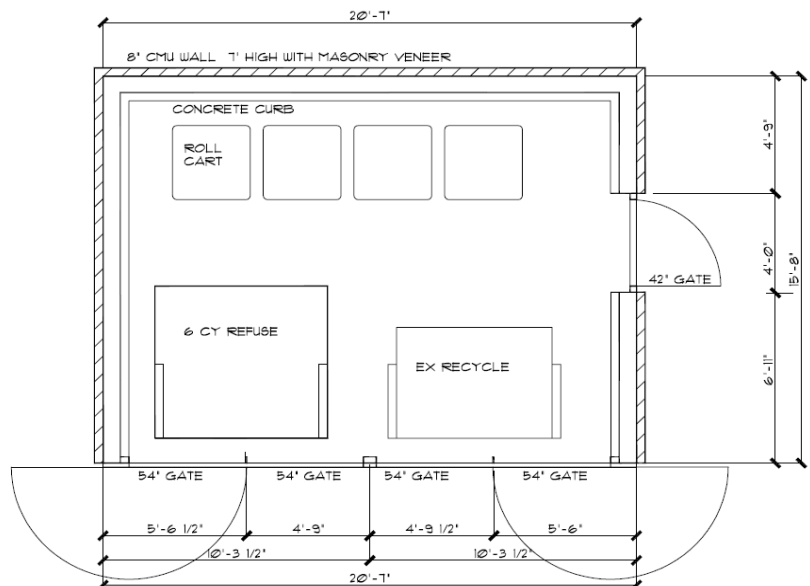
Failure to post no parking signs. Garbage and recycling trucks typically arrive early in the morning, but this is not always the case. If other vehicles are parked in the way it may be impossible to collect the trash or recycling.

No bumpers. Bumpers on the ground or mounted on walls in the interior of the enclosure protect it from the impacts of the heavy containers.

Enclosure Designs

Plans submitted to the City should detail the location and size of the enclosure to demonstrate meeting the standards for Solid Waste Recycling and Service and Collection Areas. The plan should also show container footprints to demonstrate the enclosure is large enough for collection equipment. *See Receptacle Sizes on page 6.*

Applicants can contact the Solid Waste manager for assistance to determine the best service level and size of containers needed.



MULTIFAMILY PROPERTIES

	<i>Capacity per Living Unit per Week</i>	<i>Notes on Equipment</i>
Garbage Service	Suggested 0.36 cubic yards (72 gallons) Required minimum of 0.10 cubic yards (20 gallons)	Larger containers collected less frequently is more cost-effective and environmentally sound than smaller containers collected more frequently.
Recycling -- Paper/Cardboard/Container Mix	Suggested 0.20 cubic yards. (40 gallons) Required Minimum of 0.10 cubic yards (20 gallons)	Sized for adequate capacity for once-per-week collection.
Recycling -- Glass (Recycling capacity assumes 1 collection per week)	Required minimum 0.004 cubic yards (1 gallons)	65-gallon carts.

Refer to Gresham Revised Code 7.25.415(3)(b) & (c) for recycling service requirements at multifamily properties.

COMMERCIAL PROPERTIES

	Garbage Capacity per Week	Most Cost-Effective and Sustainable Garbage Service	Paper, Cardboard & Containers Recycling Capacity	Glass Recycling Cart Capacity	Food Recycling Capacity
Auto Repair	6 cubic yards	One 6-yard container once per week	6 cubic yard container	35 gallons	---
Bakery	3 cubic yards	One 3-yard container once per week	6 cubic yard container	35 gallons	2 yards
Bank	3 cubic yards	One 3-yard container once per week	6 cubic yard container	35 gallons	---

	Garbage Capacity per Week	Most Cost-Effective and Sustainable Garbage Service	Paper, Cardboard & Containers Recycling Capacity	Glass Recycling Cart Capacity	Food Recycling Capacity
Church	4 cubic yards	One 4-yard container once per week	4 cubic yard container	35 gallons	1 yard
Convenience Store	6 cubic yards	One 6-yard container once per week	6 cubic yards	65 gallons	1 yard
Gas Station/Mini-Mart	4 cubic yards	One 4-yard container once per week	6 cubic yard container	65 gallons	1 yard Depending on waste stream
Grocery Store		Compactor	Compactor for cardboard plus 6 cubic yard	65 gallons	15-20 yards
Hotel/Motel	12 cubic yards	Two 6-yard containers once per week	6 cubic yard container	65 gallons	4 yards
Medical	0.0006 cubic yards per square foot of building	Largest containers and fewest pick-ups per week	6 cubic yard container	65 gallons	With cafeteria only – 2 yards With patient room material – 8 yards
Nursing Home	0.0006 cubic yards per square foot of building	Largest containers and fewest pick-ups per week	6 cubic yard container	95 gallons	With cafeteria only – 2 yards With patient room material – 4 yards
Office	0.03 cubic yards per employee	Largest containers and fewest pick-ups	0.04 cubic yards per employee	65 gallons	1 yard
Restaurant – Stand- alone Fast Food	18 cubic yards	Three 6-yard containers once per week	6 cubic yard container	65 gallons	Kitchen material only – 2 yards Kitchen & Customer material
Restaurant – Stand- alone Sit-Down	24 cubic yards	Four 6-yard containers once per week	6 cubic yard container	95 gallons	4 yards
Retail Center	20 cubic yards per each retail	Largest containers and fewest pick-ups	6 cubic yards per each retail space	95 gallons	4 yards per potential restaurant

	Garbage Capacity per Week	Most Cost-Effective and Sustainable Garbage Service	Paper, Cardboard & Containers Recycling Capacity	Glass Recycling Cart Capacity	Food Recycling Capacity
School – Elementary	12 cubic yards	Two 6-yard containers once per week	8 cubic yards	65 gallons	2 yards
School -- Middle	18 cubic yards	Three 6-yard containers once per week	12 cubic yards	65 gallons	4 yards
School – High	24 cubic yards	Three 6-yard containers once per week	12 cubic yards	65 gallons	4 yards

Cooking Grease

Businesses that generate cooking grease should also plan for collection of that material from an appropriate collection company. Collection container sizes are provided in the last chart. Grease containers should have its own area if placed in the enclosure.

Industrial & Light Industrial Facilities

Service standards are not provided for Industrial and Light Industrial facilities because of their unique characteristics. Developers of such facilities or any other commercial facilities not listed above should consult with the designated franchised solid waste hauler to determine expected solid waste services.

Receptacle Sizes – Garbage & Recyclables

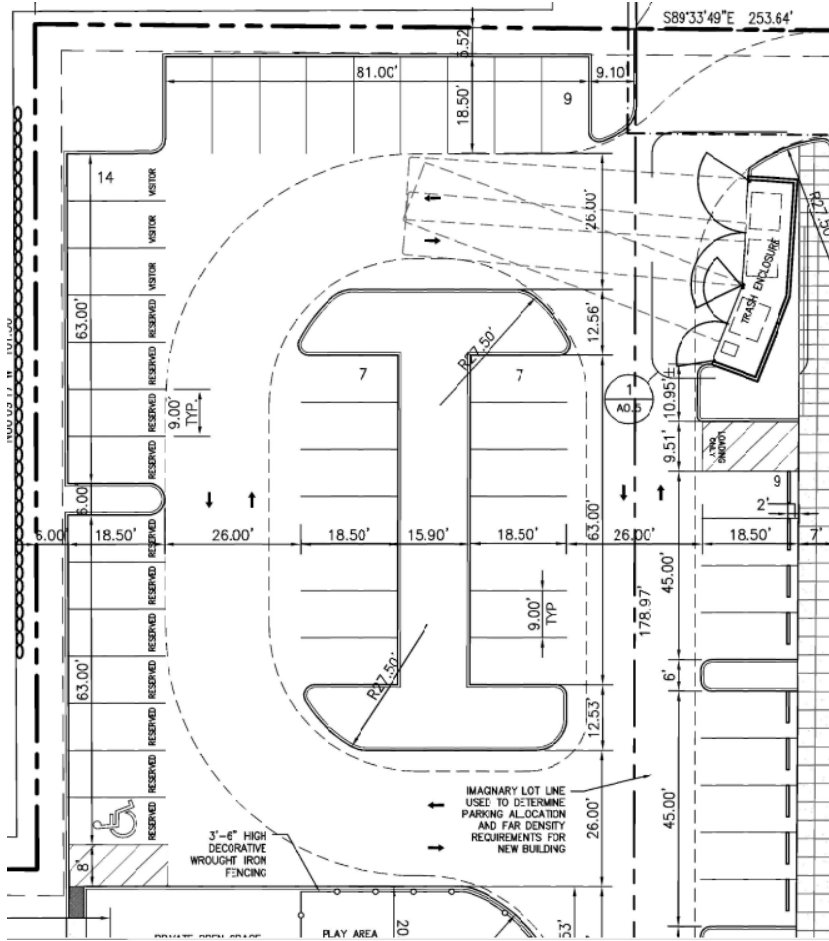
<i>Volume</i>	<i>Foot Print</i>	<i>Height</i>
35-gallon cart (.20 cubic yard)	21" W x 24" D	39 inches
65-gallon cart (.34 cubic yard)	27" W x 29" D	41 inches
95-gallon cart (.52 cubic yard)	30" W x 34.0" D	46 inches
1 cubic yard	84" W x 24" D	37.5 inches (with casters)
1.5 cubic yards	84" W x 36" D	43.5 inches (with casters)
2 cubic yards	84" W x 36" D	49.5 inches (with casters)
3 cubic yards	84" W x 45" D	55.5 inches (with casters)
4 cubic yards	84" W x 54" D	61.5 inches (with casters)
6 cubic yards	84" W x 68" D	60 inches (no casters)

10-yard drop box	8' 3" W x 12' D	54 inches
20-yard drop box	8' 3" W x 16' D	72 inches
30-yard drop box	8' 3" W x 20' D	81 inches
40-yard drop box	8' 3" W x 24' D	103 inches

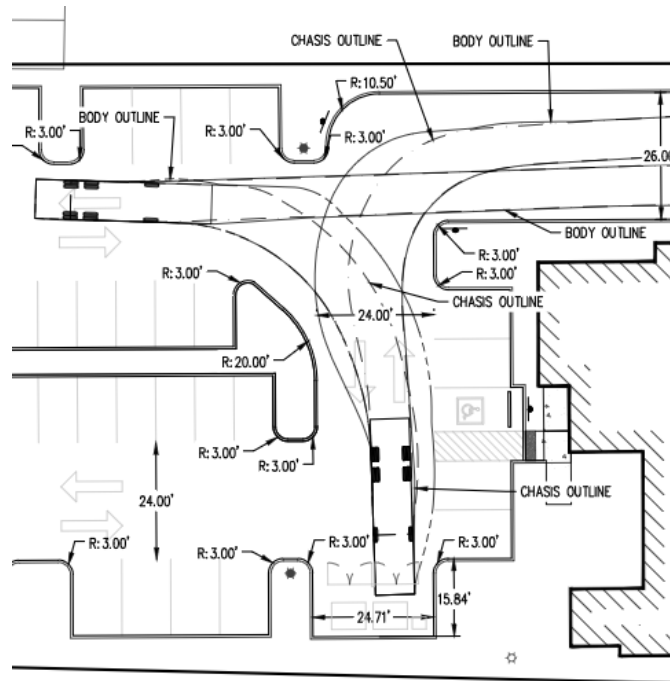
Receptacle Sizes – Cooking Grease – needs separate area if in the enclosure

<i>Volume</i>	<i>Foot Print</i>	<i>Height</i>
106 gallons	33" W x 33" D	36 inches
208 gallons	60" W x 33" D	36 inches
294 gallons	60" W x 43" D	36 inches

Site details demonstrating truck access.



Site details demonstrating truck access.



Storm Water

5.5 Solid Waste Storage Areas, Containers, and Trash Compactors

A Solid waste storage area is a place where solid waste containers are collectively stored. Solid wastes include both food and non-food waste. Typical solid waste collection equipment includes compactors, food scrap containers, grease bins, recycling containers, and garbage containers. Garbage, food scraps and recycling can be collected in yard containers or roll carts depending on waste generation.

Requirements

All roll carts, yard containers and trash compactors used for storage of solid waste and recycling are required to be leak-proof, and must remain watertight and free of holes throughout their period of use per Article 7.25.245(3) of the Gresham Revised Code. In addition to being stored in leak-proof containers, all development, redevelopment and tenant improvements to any portion of the site for one of the following types of waste is required to meet the cover, pavement and drainage requirements in this section.

City of Gresham -Stormwater Management Manual Section 5 Source Control Page 5-8

•Food waste generators.

Restaurants, grocery stores, bakeries, delis, hotels, and other businesses that have waste that is putrescible or likely to attract rodents or insects must meet the cover, pavement and drainage standards below.

•Oil and grease containers.

Restaurants and other businesses that collect and store oil and grease shall create a separate space under their covered enclosure to store the oil/grease container that does not block access to garbage, food, and recycling containers.

•Multi-family residential.

Waste storage for multi-family developments with shared trash areas must be stored in a roofed enclosure that meets the pavement and drainage requirements listed below.

Cover

A permanent canopy, roof, or awning must be provided to cover the solid waste storage activity area. This covered storage area shall be constructed so that rainwater cannot come into contact with waste containers being stored under the cover. The cover size must be relative to the perimeter of the hydraulically isolated activity area it is to cover and must accommodate truck access to the equipment. The cover width and opening height shall meet the following sizing guidelines, unless other dimensions are provided by the City’s recycling and solid waste division.

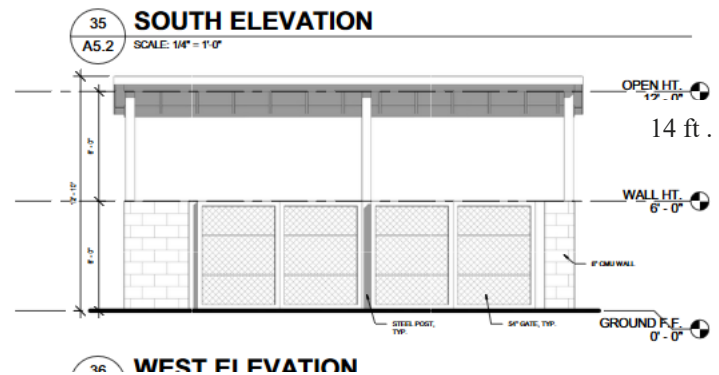
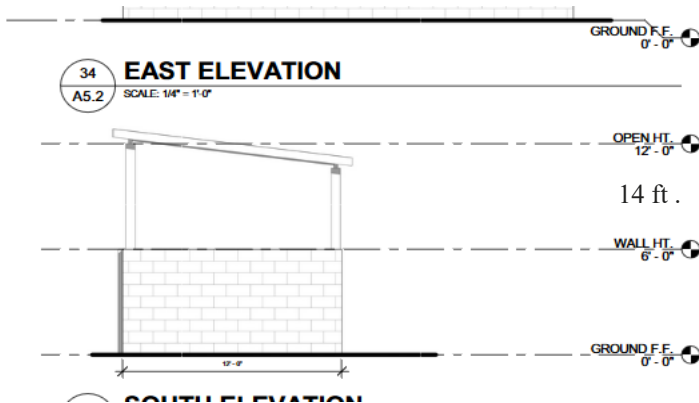


Table 5-1. Minimum Height and Width Requirements for front load pickup

Distance from front of container to exterior entrance or overhang (feet)	Minimum opening Height	Minimum opening Width
0-1'	9'	12'
1-3'	12'	12'
4-6'	14'	13'-6"
7'+	15'-5"	13'-6"

Interior height required to allow full lid opening:

- 6-yard Recycling Container: 11'-6"
- 4-yard Garbage Container: 10'-6"

Table 5-2. Minimum Height and Width Requirements for compacter pickup

Distance from front of container to exterior entrance or overhang(feet)	Minimum opening Height	Minimum opening Width
0-3'	12'	12'
4-6'	18'	13'-6"
7'+	22'	13'-6"

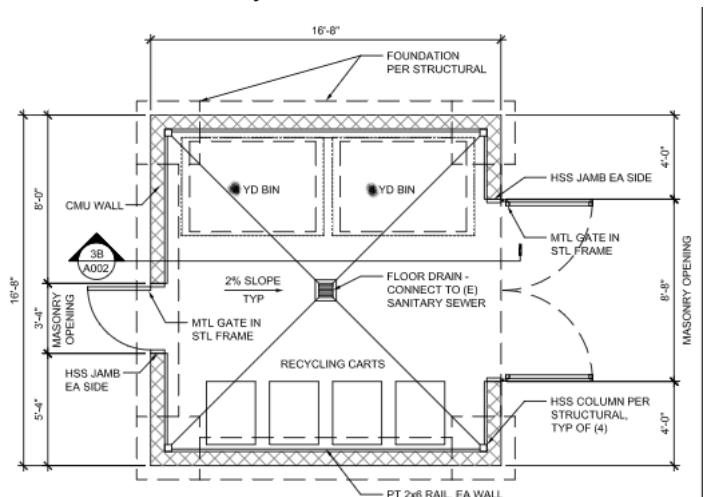
A reflective edge shall be added to the front of the cover to provide added visibility for waste haulers.

Pavement

The area beneath the cover shall be paved with concrete. The paved area must be sized adequately to cover the activity area intended for refuse storage or the trash compactor(s) and associated equipment.

Drainage

The paved area under the cover shall be hydraulically isolated, meaning no stormwater draining into or liquids draining out of the covered storage area. Hydraulic isolation may include installation of a berm or grading that prevents uncontaminated stormwater from running into the waste storage area, and ensures that any fluid under the enclosure drains to sanitary. An oil/water separator may be required as pre-treatment before discharging to sanitary, per Section 5.2.3. Multi-family developments may be able to propose alternative methods to the sanitary plumbing requirement, if they demonstrate they are able to grade the paved surface on which waste containers are stored toward an approved private stormwater treatment facility that can adequately treat any pollutants that might be present.



Attachment 1.1 7.0212 Standards for New Solid Waste and Recycling Collection Areas for Multi-Family, Commercial, Industrial, and Institutional Development

A. Multi-family development of four or more units, commercial development, industrial development, and institutional development shall provide for solid waste and recycling collection areas (collection areas) according to the following standards:

1. There shall be unobstructed and safe access for the local licensed hauler’s equipment and personnel, including unobstructed overhead and vertical clearance for collection.
2. Collection areas shall be adequately sized for the necessary number and size of recycling and solid waste containers to serve the development at maximum occupancy, as outlined in the City of Gresham Solid Waste and Recycling Collection Service Planning Matrix guidelines.
3. An adequate number of collection areas shall be provided in locations that are conveniently accessible by the development’s users, tenants and/or residents.
4. When solid waste and recycling collection areas are not within the same enclosure, they shall be located in close proximity to each other, no more than 20 feet from each other.
5. No collection area shall be located within any required buffer, screening or setback areas.
6. Collection areas shall comply with the Gresham Revised Code, 7.25, related to placement of containers for collection.
7. Exterior collection areas shall be entirely screened by the employment of a vegetative screening and/or minimum six-foot high sight-obscuring enclosure (fence) or wall. Alternatively, they may be screened by a 6-foot high brick or concrete block (or similar material) wall. This applies to single-family attached dwellings only if a shared common collection area is provided for the site.
 - a. Enclosures constructed of wood or chain link fencing material shall contain a bumper curb at ground level inside the enclosure or fencing, at least 8 inches thick and four inches high, and 12 inches from enclosure walls to prevent damage from container impacts.
 - b. Enclosures constructed of concrete, brick, masonry block, or similar type of materials shall contain a bumper curb to prevent damage from container impacts, or a bumper rail. The rail shall be secured by anchor bolts recessed in the rail within the perimeter walls of the enclosure at a height compatible with service container.
8. Enclosure gates shall swing free of obstructions and have restrainers in the open and closed positions. The gate swing should open to a minimum of 120 degrees.
9. “No Parking” signs shall be placed in a prominent location on, or near, the enclosure or painted on the pavement in front of the collection area to provide unobstructed and safe access for servicing containers.
10. The location for collection areas and method of storage shall conform to local fire and structural specialty code provisions and be accepted by the approval authority.

[7.02]-31 City of Gresham Development Code (01/19)

11. Within enclosures, containers shall be located on a level cement concrete pad, a minimum four (4) inches thick, at ground elevation or other location compatible with the local licensed hauler’s equipment at the time of construction. A permanent cover must be added over the entire waste enclosure for multi-family residential developments, businesses generating food waste, and enclosures where oil and grease waste will be stored. The area under the cover shall be hydraulically isolated and drain to the sanitary sewer system. Waste storage areas for all other businesses must provide water quality treatment for any stormwater coming into contact with waste containers.

12. Collection areas designed for containers smaller than three yards shall have a staging area in front of the enclosure with a minimum length and width to allow for a three-foot perimeter around all sides of the container when being serviced outside of the enclosure.

13. The vehicular approach area and staging area shall not have a percent of grade exceeding three (3) percent, sloped in any direction.

14. Adequate room shall be provided within enclosures for length and width of the service containers and for maneuverability in depositing solid waste or recyclable materials.

a. A minimum of two feet, including pad area, shall be provided around the sides and rear of each container.

b. A minimum of three feet, including pad area, shall be provided in front of each container for maneuverability in depositing solid waste or recyclable materials.

c. In cases where the containers face each other, a minimum of four feet shall be provided in between containers.

15. Adequate area shall be provided around the outside or enclosures to allow for maintenance to prevent accumulation of waste.

16. Containers 3 yards and larger must be placed facing the opening of the enclosure.

17. For containers of three yards and larger, including drop boxes and compactors, the minimum safe access to the front of a service container pad or enclosure shall be a length of 65 feet and width of 12 feet.

B. Design and construction of collection areas that accommodate drop boxes and compactors shall comply with the standards listed in subsection (A) above as well as the following standards:

1. The size of the pad for drop boxes and compactors shall be at least 14 feet wide and at least 5 feet longer than the length of the drop box or compactor.

2. The pad shall be located a minimum of two feet from any perimeter wall or structure.

3. Loading dock areas that accommodate drop boxes or compactors shall have a guide rail and bumper stop placed at ground level or at dock level, where the rear of the drop box or compactor is to rest to protect any enclosure, wall, or structure from damage due to loading or unloading.

4. Compactors shall be compatible with collection equipment and weight limits prescribed by State and local law. The local franchised collection firm shall be consulted for equipment compatibility.

[7.02]-32 City of Gresham Development Code (01/19)

C. The on-site storage of special wastes/recyclable materials shall conform to the following standards:

1. Environmentally hazardous wastes defined in ORS 466.005 shall be located, prepared, stored, maintained, collected, transported, and disposed of in a manner acceptable to the Oregon Department of Environmental Quality.

2. Containers used to store food waste, cooking oils, grease or animal renderings shall not be located in the principal recyclable materials or solid waste storage areas. These materials should be stored in separate storage areas designed for this purpose, including a permanent cover and hydraulic isolation to prevent contact of waste containers with rainwater.

D. Exceptions. As part of a Type II development permit procedure, modification to these provisions may be permitted when the changes are consistent with the purpose of these provisions and the City receives written evidence from the local licensed solid waste and recycling firm that the proposed changes:

1. Are compatible with firm’s methods of operations.

2. Will not result in an unreasonable increase in the cost of service.

Attachment 1.2 7.25.415 Location of Receptacles and Standards for Collection Area (Customer).

(1) General. The customer shall place receptacles in a location that does not obstruct mailboxes, water meters, the sidewalk, fire hydrants, driveways, or impede traffic flow or on-street parking. There shall be unobstructed vertical clearance for receptacles picked up away from the curbside or roadside. Solid Waste collection areas shall be at ground level and accessible to the licensed solid waste and recycling hauler.

(2) Residential Service. Receptacles must be placed at the curbside. Special placement arrangements for mobility-impaired customers, or those whose lots are not physically configured to allow curbside placement, may be made by agreement between a customer and licensee.

(3) Multi-family Customers.

(a) General. The customer shall maintain unobstructed access to solid waste, recyclable materials and yard debris receptacles for tenants and haulers.

(b) Opportunity to Recycle. The owner of any multi-family complex with five or more dwelling units shall provide tenants with separate receptacles or areas for the collection of the same materials collected in the residential curbside program except for motor oil.

(c) Number of Collection Areas. In order to ensure that tenants are provided with a convenient opportunity to recycle, the owner of any multi-family complex with five or more dwelling units will establish collection areas at a ratio of one area for recyclable materials for every three areas for solid waste, or at a level established or approved by the manager.

(4) Commercial. The customer shall maintain unobstructed access to solid waste, recyclable materials and yard debris receptacles for users of the receptacles and for haulers.

(5) Location of Roll Carts. The customer shall place roll carts at the curbside, or roadside, or at such other location agreed upon by the customer and their licensee.

(6) Drop Boxes. When possible, the customer should arrange for the licensee to place drop boxes on private property locations.

(7) Collection Enclosures. For solid waste and recycling service areas of developments required to comply with Section 7.0212 of the Gresham Community Development Code (GCDC), the customer:

(a) Shall not reduce the dimensions of the enclosure required by GCDC 7.0212.

(b) Shall maintain adequate room within enclosures to allow reasonable access to solid waste, recycling, and yard debris receptacles for their users, as well as to allow safe movement of the receptacles by the hauler.

(c) Shall not remove any enclosure or structure required by GCDC 7.0212.

(d) Shall maintain any enclosure or structure required by GCDC 7.0212 in good condition.

(e) Shall keep all collection containers within the enclosure required by GCDC 7.0212.

(f) Shall not place containers three yards and larger facing each other. Containers shall be placed with a minimum of two feet around the sides and rear of each container, and a minimum of three feet in front of each container for maneuverability in depositing garbage or recyclable materials.

(g) May place containers of less than three yards facing each other but a minimum of four feet shall be provided between the containers.

(h) Shall maintain the enclosure gate swing free of obstructions and have restrainers in the open and closed positions. The gate swing shall open to a minimum of 120 degrees.

(i) Shall post and maintain "No Parking" signs in a prominent location on or near the enclosure or painted on the pavement in front of the collection area, to provide unobstructed access for servicing receptacles.

(j) Recycling and solid waste areas shall be used only for purposes of storing solid waste and recyclable materials and not be a general storage area to store personal belongings of tenants, leasees, property management or owners of the development or premises.

(k) Compactors and collection containers provided by the Customer shall be compatible with the licensed hauler's collection equipment.

(Ord. No. 1700, Amended, 03/03/2011; Ord. No. 1666, Amended, 04/15/2009; Ord. No. 1647, Amended, 09/20/2007; Ord. No. 1507, Amended, 10/19/2000; Ord. No. 1493, Amended, 02/15/2000; Ord. No. 1441, Enacted, 05/07/1998)

