

SPACE ALLOCATION AND ENCLOSURE DESIGN GUIDELINES FOR SOLID WASTE

For New Residential and Commercial Construction, Additions, and Remodels



If you have any questions regarding the Design Guidelines for Solid Waste, please contact:

> Heather L. Neff Recycling & Waste Manager (916) 478-3686 hneff@elkgrovecity.org

Amendments to the Space Allocation and Enclosure Guidelines for Solid Waste for New Residential and Commercial Construction, Additions, and Remodels approved pursuant to Elk Grove Municipal Code section 30.90.010.

SIGNATURE ON FILE

Jason Behrmann, City Manager Effective Date: March 1, 2019

Table of Contents

Introduction	3
Chapter 1 Solid Waste Storage and Access Guidelines for Single-Family Residential Lo	cations 4
Chapter 2 Solid Waste Enclosure Design Guidelines for Multifamily Properties with Centralized Service Locations	6
Chapter 3 Solid Waste Enclosure Design Guidelines for Commercial Properties	10
Appendix A Design Requirements to Protect Water Quality	16
Appendix B Solid Waste Generation Guidelines	18
Appendix C Illustrations for Reference	20
ILLUSTRATION A	
ILLUSTRATION B	21
ILLUSTRATION C	
ILLUSTRATION D	
ILLUSTRATION E	24
ILLUSTRATION F	25

Introduction

Note: Throughout this document, the term "Solid Waste" shall apply to and include trash, recyclables, green (yard and garden) waste, and organic (food) waste unless otherwise noted.



The purpose of the *Design Guidelines for Solid Waste* (DGSW) is to assist the City of Elk Grove in complying with the Integrated Waste Management Act of 1989 (AB 939) that requires all California cities and counties to reduce the volume of waste deposited in landfills by 50% by the year 2000, and to continue to remain at 50% or higher for each subsequent year. The DGSW provides Solid Waste enclosure design requirements for all new construction Citywide as well as significant additions or remodels to existing structures. Integrated

collection areas with recycling components assist in the reduction of waste materials, thereby prolonging the life of landfills and promoting environmentally-sound practices.

All new construction, additions, and remodeled buildings shall adequately provide outdoor Solid Waste storage pursuant to the DGSW. Interior alteration permits that result in a change to a more intensive use shall not be approved unless adequate new outdoor Solid Waste storage is provided on site.

Upon occupancy of any building space, all businesses and multifamily¹ properties must complete and submit a Recycling Plan to their waste hauler that details how each business will meet its requirement to divert a minimum of 50% of the waste generated from their business or property.

These guidelines specify requirements for adequate capacity to accommodate all types of solid waste including trash, conventional recyclables, green waste, and organic waste. Assembly Bill 1327, *The California Solid Waste Reuse and Recycling Access Act of 1991*, requires new commercial and multifamily developments of 5 units or more, or improvements that add 30% or more to the existing floor area, to include adequate, accessible, and convenient areas for collecting and loading recyclable materials.

SPACE ALLOCATION AND ENCLOSURE DESIGN GUIDELINES FOR SOLID WASTE

¹ Multifamily Properties are defined as any dwelling building or group of buildings that contain five (5) or more individual dwelling units located on a single tax lot regardless of waste collection service level. Multifamily complexes include, but are not limited to, apartment complexes, mobile home parks, senior housing/care facilities, and condominium complexes.

Chapter 1

Solid Waste Storage and Access Guidelines for Single-Family Residential Locations

Trash carts are serviced weekly; recycling and green waste carts are serviced every other week. Residents may be issued up to seven carts total (any sizes), which includes one (1) trash cart, up to three (3) recycle carts, and up to three (3) green waste carts.

A. Exterior Storage Requirements:

Storage space for a minimum of three

 (3) wheeled carts is required (one each for trash, recyclables, and green waste). The following table provides standard dimensions for wheeled carts to assist in planning exterior storage space:



SIZE	HEIGHT	WIDTH	LENGTH
32-gallon cart	38.5 inches	19.25 inches	24.25 inches
64-gallon cart	42.0 inches	24.25 inches	31.75 inches
96-gallon cart	43.25 inches	30.0 inches	35.25 inches

- 2) Cart storage requirements are in addition to required parking areas or storage areas.
- 3) Sufficient space must be provided so that trash, recycle and green waste carts will be hidden from public view from the sidewalk on non-service days.
- 4) Residential complexes that do not allow for adequate space to collect materials may not be offered the same service level provided to residents under the Franchise Agreement with the City's contracted hauler. For example: at a high density development, should the available spacing for cart placement be less than the required spacing listed above, residents of the complex may not be allowed more than one cart each for trash, recycling, and green waste and will still be required to pay the normal residential service rates.

B. Collection Vehicle Access Requirements

- 1) For a dead end street, the turning radius for the hauler's truck shall be a minimum of 45 feet, with the full arc at 90 feet.
- 2) Collection vehicles cannot back up more than 150 feet. Any back up maneuvers must be on an unobstructed straight path.
- 3) Flag Lots and Rural Parcels:
 Collection vehicles cannot drive
 onto private driveways. Residents
 on these properties may be
 required to wheel their carts to
 the public street.



4) Collection vehicles cannot access streets with a slope of more than 15 degrees.

C. Service Day Cart Placement Requirements

- 1) Carts shall be placed curbside on the service day. Sufficient roadway frontage must be provided so that carts can be placed:
 - In a single line along the curb with a minimum of 3 feet between each cart;
 - At least 3 feet away from any car or other stationary object; and
 - Such that they do not block the driveway.

Chapter 2

Solid Waste Enclosure Design Guidelines for Multifamily Properties with Centralized Service Locations

A. Interior Storage Requirements

 Collection containers for trash, recycling, and organics shall be located side-by-side. Adequate indoor space shall be allocated for trash, recycling, and organic waste. When chutes are used, all chutes shall be located side-by-side.



B. Exterior Storage Requirements

- 1) All Solid Waste containers that are stored outdoors shall be in enclosures or roll-off containers that are placed out of view of the general public.
- 2) Solid Waste containers must be located side-by-side in the enclosures or in the same central storage area.
- Signage shall be posted in front of the enclosure to educate residents about contamination and the property owner/manager shall take all necessary measures to prevent contamination within the recyclables and organic containers.
- 4) If green waste is hauled offsite by a landscaping firm, the property owner must have a contract or work agreement with the landscaping company requiring to haul the green waste to a facility where it will be recycled².
- 5) Solid Waste enclosures must be located throughout the property so that no resident will be required to travel more than 250 feet to reach an enclosure. For age-restricted multifamily projects where residents empty their own trash and recycling, a *maximum* distance of 150 feet shall be permitted.
- 6) Consider providing space to compost green waste and organic waste onsite. The use of mulching mowers is recommended for all sites with lawns

² To be considered "recycled", green waste must be taken to a facility where it will be diverted from the landfill consistent with State regulations (e.g. not used as alternative daily cover).

because they reduce the need (and cost) for containers and green waste hauling by mulching and recycling grass clippings in place ("grasscycling").

- 7) The organic container and green waste container can be combined into one container if documentation is provided to the City verifying that the waste hauler or a facility authorized with CalRecycle will accept a mixed organic load.
- 8) Enclosures shall be designed to protect water quality pursuant to the additional guidelines outlined in **Appendix A**.

C. Enclosure Requirements

 Enclosures shall be sized to ensure that the total container capacity for all enclosures combined is sufficient to accommodate the Solid Waste generated by the project.

The space allocated for conventional recyclables shall be at least equal to or greater than the space allocated for trash. Solid Waste container sizes vary by hauler so it is advisable to consult the hauler chosen to service the project to assist in determining the total size needed for a Solid Waste enclosure. Additional capacity may be achieved by increasing the frequency of collection.

For age-restricted multifamily projects where residents take out their own trash, the maximum container size shall not exceed 2 cubic yards. This will mitigate the need for residents with physical limitations to lift trash bags above shoulder height with one hand while lifting the lid with the other hand.

The following table may be used as a guideline to help estimate the amount of Solid Waste generated when designing enclosures:

Trash	Number of units x 0.33 cubic yards/unit = volume of trash generated per week
Recycling	Equivalent to the amount of trash generated per week or greater
Organics	4 gallons per unit per week
Green Waste	Depends on the quantity and type of landscaping included onsite

2) Per California State Access Regulations, an accessible route or path of travel from the building to the enclosure is required, which shall include all walkways, ramps, doors, gates, etc. The path of travel from the building to the dumpster shall be free of stairs, textured surfacing, and other impediments. A pedestrian

- access, separate from the primary service access, is recommended. If a separate pedestrian access is not provided, the primary (service) access must meet California State Access Regulations.
- 3) Solid Waste storage enclosures must be consistent with the architecture of the project with a surrounding wall at least 5 feet high and no higher than 8 feet. All enclosures shall be designed consistent with the following:
 - a. Enclosures shall be built of non-combustible materials (wood is not permitted; masonry is recommended).
 - b. Materials/finishes shall relate to and be of same quality as materials used on building.
 - c. Landscaping and screening shall be included to help visually buffer loading area and enclosure where the enclosure is visible from the public right of way or if required within the project's Conditions of Approval.
 - d. Height shall be a minimum of 10 inches taller than the tallest container that will be stored within the enclosure.
- 4) Enclosures must be sized to allow a minimum of 30 inches separation between containers and a minimum of 12 inches separation between containers and the interior walls of the enclosure. Please refer to **Appendix C** for sample enclosure designs/layouts.
- 5) Access gates should be two inches off the ground and hung on the outside. Gates shall be able to open more than 90 degrees and shall be equipped to prevent accidental swinging.
- 6) Hardware shall be of sufficient strength to accommodate repetitive swinging and of sufficient ease of use so that individuals with gloves will be able to open them.
- 7) The trash enclosure shall be locked when not in use and well maintained at all times.
- 8) Wood or metal bumpers or interior curbs shall be provided to extend enclosure life. Bolts or screws shall be inset on bumpers.
- 9) All containers shall be on a concrete surface with a 2% maximum slope from back to front to provide for surface drainage within the enclosure and shall be placed in position for the collection vehicle or its driver to service the container.

D. Pads and Access Areas

- 1) Enclosures shall be sited to ensure that the maximum roll-out by the collector does not exceed 25 feet from enclosure to truck.
- 2) Roll-out area shall have a 2% maximum slope.
- 3) Front-end loading trucks may weigh up to 30 tons when loaded. All access surfaces shall be engineered accordingly to avoid pavement damage. Concrete surfacing is required in all access and service areas.
- 4) Enclosures shall be sited to ensure that overhead obstructions do not impede the collection vehicle from servicing the Solid Waste containers. A minimum of 25 feet of overhead clearance shall be provided within the apron area in front of the enclosure. See **Appendix C**, Illustration C for a sample clearance diagram.



- 5) Storm drain inlets shall not be placed in the enclosure or on the driving path of collection vehicles.
- 6) Enclosures shall be sited with a turnaround or separate exit that allows the truck to move forward rather than backward.
- 7) Enclosures shall be sited to ensure adjacent parking and/or delivery areas do not impede the servicing of any containers.
- 8) All projects shall provide front entry clearance within the access area for front end loading vehicles, as defined below:

Inside Radius	25'
Outside Radius	45'
Lateral Radius	20'

On a case-by-case basis, parallel access may be allowed for enclosures that are located within an area that is heavily constrained for space and straight in access is not possible.

Chapter 3 Solid Waste Enclosure Design Guidelines for Commercial Properties

A. Interior Storage Requirements

1) Collection containers for trash, recycling, and organics shall be located side-by-side. Adequate indoor space shall be allocated for trash, recycling, and organic waste in all public and service areas as applicable. When chutes are used, all chutes shall be located side-by-side.

B. Exterior Storage Requirements

- 1) All Solid Waste containers that are stored outdoors shall be in enclosures or rolloff containers that are placed out of view of the general public. The enclosure site must be owned, leased or rented by the building occupants.
- 2) Solid Waste containers must be located side-by-side in the enclosures or in the same central storage area.
- 3) Signage shall be posted in front of the enclosure to educate businesses and employees about contamination and the property owner/manager shall take all necessary measures to prevent contamination within the recyclables and organic containers.
- 4) If green waste is hauled offsite by a landscaping firm, the property owner must have a contract or work agreement requiring the landscaping company to haul the green waste to a facility where it will be recycled.³
- 5) Consider providing space to compost green waste and organic waste onsite. The use of mulching mowers is recommended for all sites with lawns because they reduce the need (and cost) for container and green waste hauling by mulching and recycling grass clippings in place ("grasscycling").
- 6) The organic container and green waste container can be combined into one container if documentation is provided to the City verifying that the waste hauler or a facility authorized with CalRecycle will accept a mixed organic load.
- 7) Enclosures shall be designed to protect water quality pursuant to the additional guidelines outlined in **Appendix A**.

³ To be considered "recycled", green waste must be taken to a facility where it will be diverted from the landfill consistent with State regulations (e.g. not used as alternative daily cover).

C. Enclosure Requirements

1) Enclosures shall be sized to ensure that the total container capacity for all enclosures combined is sufficient to accommodate the Solid Waste generated by the project. The space allocated for conventional recyclables shall be at least equal to or greater than the space allocated for trash. Space allocated for organic waste must be sufficient to accommodate



the minimum amount that may be generated by the highest-generating type of commercial use that is allowed to occupy the building based upon current City zoning or applicable land use approvals; space allocated for organic waste may be sized as can be reasonably accommodated in areas where space is constrained. For example, if the property is located in a shopping center zone, it could be occupied by a restaurant. The enclosure should be sized to accommodate the minimum amount of organic waste that may be generated from the restaurant.

Solid Waste container sizes vary by hauler so it is advisable to consult the hauler chosen to service the project to assist in determining the total size needed for a Solid Waste enclosure. Additional capacity may be achieved by increasing the frequency of collection.

Solid Waste enclosures shall be designed to accommodate, at a minimum, 3-yard containers for trash and conventional recyclables (containers for organic waste may be smaller depending upon amount generated and/or frequency of collection). The tenants may choose any container size they need, but the enclosure must be able to accommodate different tenants with varying levels of Solid Waste generation.

Builders may use the City of Elk Grove's Solid Waste Generation Guidelines in **Appendix B** or consult with the City's Recycling & Waste Division to estimate the amount of Solid Waste capacity needed.

Per California State Access Regulations, an accessible route or path of travel from the building to the enclosure is required, which shall include all walkways, ramps, doors, gates, etc. The path of travel from the building to the container shall be free of stairs, textured surfacing, and other impediments. A pedestrian

- access, separate from the primary service access, is recommended. If a separate pedestrian access is not provided, the primary (service) access must meet California State Access Regulations.
- 3) Solid Waste storage enclosures must be consistent with the architecture of the project with a surrounding wall at least 5 feet high and no higher than 8 feet. All enclosures shall be designed consistent with the following:
 - a. Enclosures shall be built of non-combustible materials (wood is not permitted; masonry is recommended).
 - b. Materials/finishes shall relate to and be of same quality as materials used on building.
 - c. Landscaping and screening shall be included to help visually buffer loading area and enclosure where the enclosure is visible from the public right of way or if required within the project's Conditions of Approval.
 - d. Height shall be a minimum of 10 inches taller than the tallest container that will be stored within the enclosure.
- 4) Enclosure shall be located 25 feet from any public street, 15 feet from the edge of pavement of a private street and, in commercial areas, 25 feet from any residential zoned property line.
- 5) Enclosures must be sized to allow a minimum of 30 inches separation between containers and a minimum of 12 inches separation between containers and the interior walls of the enclosure. Please refer to **Appendix C** for sample enclosure designs/layouts.
- 6) Access gates should be two inches off the ground and hung on the outside. Gates shall be able to open more than 90 degrees and shall be equipped to prevent accidental swinging.



- 7) Hardware shall be of sufficient strength to accommodate repetitive swinging and of sufficient ease of use so that individuals with gloves will be able to open them.
- 8) The trash enclosures shall be locked when not in use, and well maintained at all times.
- Wood or metal bumpers or interior curbs shall be provided to extend enclosure life.
 Bolts or screws shall be inset on bumpers.

10) All containers shall be on a concrete surface with a 2% maximum slope from back to front to provide for surface drainage within the enclosure and shall be placed in position for the collection vehicle or its driver to service the container.

D. Pads and Access Areas

- 1) Enclosures shall be sited to ensure that the maximum roll-out by the collector does not exceed 25 feet from enclosure to truck.
- 2) Roll-out area shall have a 2% maximum slope.
- 3) Front-end loading trucks may weigh up to 30 tons when loaded. All access surfaces shall be engineered accordingly to avoid future pavement damage. Concrete surfacing is required in all access and service areas.
- 4) Enclosures shall be sited to ensure that overhead obstructions do not impede the collection vehicle from servicing the containers. A minimum of 25 feet of overhead clearance shall be provided within the apron area in front of the enclosure. See **Appendix C**, Illustration C for a sample clearance diagram.
- 5) Storm drain inlets shall not be placed in the enclosure or on the driving path of collection vehicles.
- 6) Enclosures shall be sited with a turnaround or separate exit that allows the truck to move forward rather than backward.
- 7) Enclosures shall be sited to ensure adjacent parking and/or delivery areas do not impede the servicing of any containers.
- 8) All projects shall provide front entry clearance within the access area for front end loading vehicles, as defined below:

Inside Radius	25'
Outside Radius	45'
Lateral Radius	20'

On a case-by-case basis, parallel access may be allowed for enclosures that are located within an area that is heavily constrained for space and straight in access is not possible.



E. Roll-Off Containers (Debris Boxes)

1) Roll-off containers may be used for those properties generating a

volume of waste that exceeds what can be accommodated within front-load containers serviced twice per week. Enclosures are not required for roll-off containers (debris boxes) as long as the containers cannot be viewed by the general public and cannot be seen from public streets.

Roll-off containers may be placed at a business by an authorized commercial hauler for a maximum of seven (7) days without a building permit. When there is a building permit, the roll-off container shall be serviced, at a minimum, every fourteen (14) days. Nonresidential customers may subscribe to permanent roll-off container service subject to EGMC 23.16.020.

- 2) Roll-off containers may be placed directly behind a building where space is available at a loading dock to allow loading from above. See **Appendix C**, Illustration F for a sample layout.
- 3) Roll-off container should be on a level surface. If placed on an incline, roll-away protection is required. City of Elk Grove Recycling & Waste staff will provide onsite inspections before the placement is final.
- 4) All projects shall provide clearance for roll-off containers and vehicles as follows:

Vertical (rails raised with container) 25' high Lateral 10' wide Service Area Length Minimum 75' long

- 5) Container dimensions vary by hauler. It is advisable to consult the hauler chosen to service the project when designing space to accommodate a roll-off container.
- 6) Roll-off containers must be adequately covered during the rainy season to prevent contaminated run off from within the container.

F. Compacting Units:

 Enclosures are not required for compactors as long as the units cannot be viewed by the general public. Compactors vary in size and so it is advisable to consult the hauler chosen to



service the project when designing space for a compactor unit.

2) Placement of compacting units shall be on a level surface. City of Elk Grove Recycling & Waste staff will provide onsite inspections before the placement is final.

Appendix A Design Requirements to Protect Water Quality

Source: Storm Water Quality Design Manual for the Sacramento Region

DESIGN FEATURE	REQUIREMENT
Location and Enclosure – General	Design enclosures such that containers cannot be knocked over and vandalism is unlikely.
Location/Access – Enclosure Area	Provide adequate room for waste collection trucks to pick up and empty containers to minimize chance of accidents and spillage.
	Collection trucks must have direct access to the containers to enable automated collection vehicles to insert the forks into the sides of the container for servicing. A minimum straight approach of 50 feet is required and 65 feet is recommended to line up directly with the container.
Paving	Pave the waste/recycling storage area with Portland cement concrete.
Space and Waste Segregation	Provide ample space inside the enclosure area for containers to contain the maximum amount of expected Solid Waste to be generated by the project, considering the typical waste collection schedule.
	For areas designated to contain a tallow container, provide a separate enclosed area for storage of the tallow container, segregated from the area used to store Solid Waste, and covered.

Cover	If a cover will be installed, check with the Cosumnes Fire Department about possible sprinkling requirements.
Grading/Drainage	Direct runoff from roof downspouts away from the Solid Waste enclosure if covered. Locate the enclosure at least 35 feet from the nearest storm drain inlet to deter employees/tenants/contractors from directing wash water to the storm drain system. Hydraulically isolate the area; this can be achieved by reverse grading at the perimeter, perimeter curbing or berming, or the use of perimeter or area drains to collect and divert runoff.
Sanitary Sewer Connection	If acceptable to the Sacramento Area Sanitation District, connect the hydraulically isolated area to the sanitary sewer via a trench drain at the back of the enclosure or similar, to facilitate proper disposal of polluted wash water. Provide pretreatment with an approved grease interceptor prior to discharge to the sanitary sewer. Check with the Sacramento Area Sanitation District for specifics and approval. Note that the Plumbing Code limits the number of connections to a single grease interceptor at a facility.
Signage	Post signs inside the enclosure and/or on the containers prohibiting the disposal of liquids and hazardous materials therein. Consider posting signs on the inside of the enclosure walls to educate employees and tenants about proper wash down procedures.

Appendix B Solid Waste Generation Guidelines

Please note that these guidelines are approximate and intended to be a guideline when observation of the current service level is not possible, or during pre-construction planning.

The guidelines are also available in an automatic spreadsheet calculator, which allows the user to input business type and number of anticipated employees to generate a recommended service level for garbage, recycling, and organics collection. Please visit **www.elkgrovecity.org/recycle** to download this free tool.

	Table 1 – Solid Waste Generation Guidelines			
BUSINESS GROUP	GARBAGE GALLONS PER WEEK PER EMPLOYEE	RECYCLING GALLONS PER WEEK PER EMPLOYEE	ORGANICS GALLONS PER WEEK PER EMPLOYEE	NOTES
Arts, Entertainment, & Recreation	35.28	20.27	35.28	Suggested minimum garbage and recycling of 4 CY/Week
Durable Wholesale & Trucking	28.02	28.02	0.00	Suggest scaling for very large employee counts.
Education	16.16	16.16	1.16	
Hotels & Lodging	124.63	85.05	1.47	Suggested minimum garbage and recycling of 8 CY/Week
Manufacturing - All	63.04	40.04	0.36	Suggested minimum garbage and recycling of 4 CY/Week
Medical & Health	24.86	24.86	0.39	
Multifamily	18.61	18.61	10.44	
Other	39.89	39.89	0.31	
Public Administration	12.42	12.42	0.62	
Restaurants	34.24	39.23	31.23	Suggested minimum garbage and recycling of 1 CY/Week
Retail Trade - General	59.61	59.61	0.00	
Retail Trade – General, with some food sales	59.61	59.61	1.16	
Retail Trade - Food & Beverage Stores	36.68	36.68	44.02	Suggest scaling for very large employee counts.
Services – Management, Administrative, Support, & Social	25.55	25.55	60.84	

Services – Professional, Technical, & Financial	52.93	52.93	0.00	
Services – Repair & Personal	26.97	26.97	1.16	Suggest scaling for very large employee counts.

Table 2 – Unit Conversion Table for Containers		
1 gallon	0.005 cu. Yd.	
1 cu. yd.	203 gallons; ~ six 35-gallon carts; ~ three 65-gallon carts; ~ two 95-gallon carts	

Appendix C Illustrations for Reference

ILLUSTRATION A

Front-Loading Container Enclosures (not to scale)

This illustration shows one 3-yard trash container, one 3-yard recycling container and one 3-yard organic waste container.

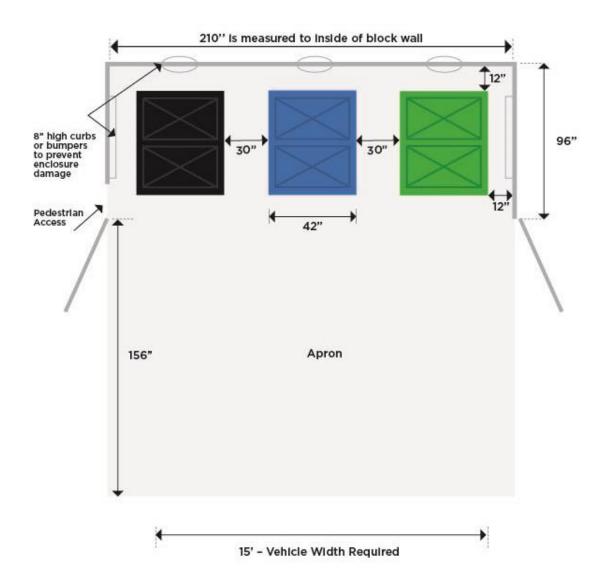


ILLUSTRATION B

Front-Loading Container Enclosures (not to scale)

This illustration shows an alternative alignment for one 3-yard trash container, one 3-yard recycling container and one 3-yard organic waste container.

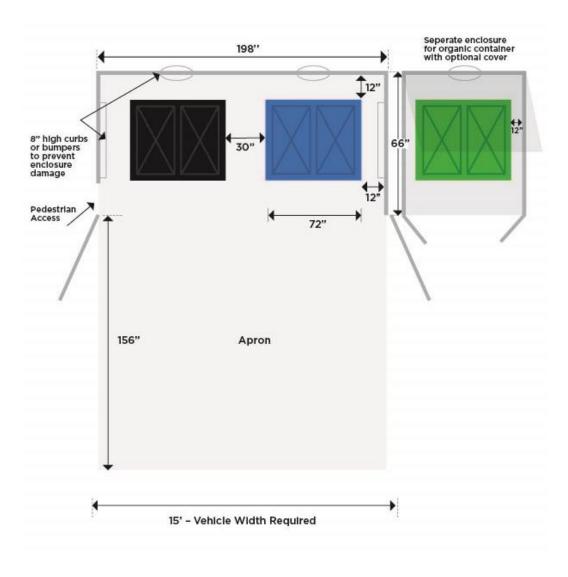


ILLUSTRATION C

Clearance

Twenty-five foot clearance of overhead obstructions is necessary where the vehicle will lift and empty the container. Generally, the driver will move the container out and away from the enclosure about eight feet before dumping.

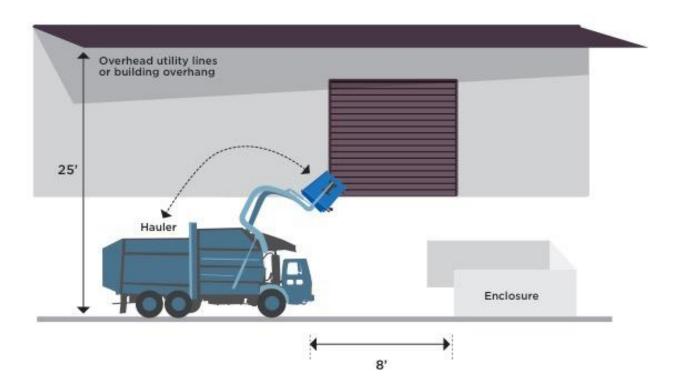
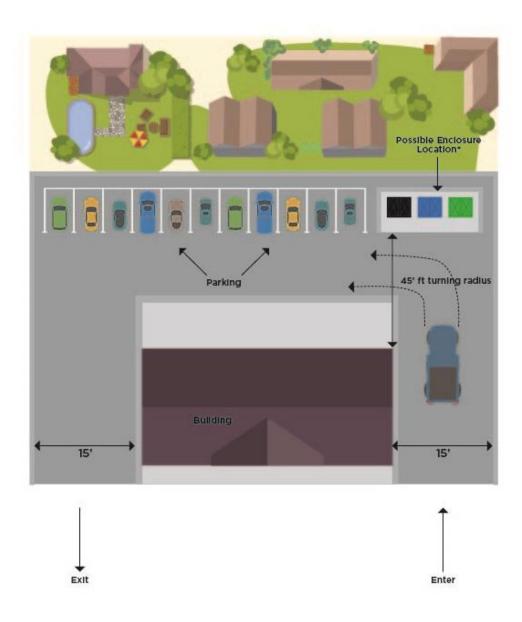


ILLUSTRATION D

Facility Layout and Enclosure Location



*NOTE: A minimum set back of 25 feet from property line is required for projects adjacent to residential-zoned property, unless otherwise approved through Design Review.

ILLUSTRATION E

Roll-Off Container Placement

Allow 10 feet access for driver to check the rear of the container before loading onto vehicle.

This illustration depicts top loading of container. Container gates are at rear of container (next to dock). If container is to be loaded from ground level, allow a minimum of 5 feet to open the gates.

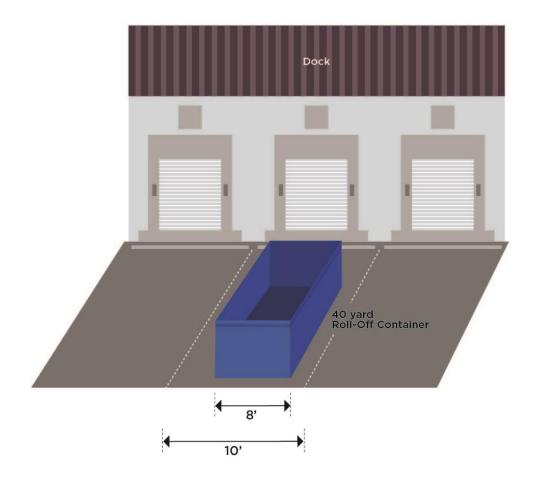


ILLUSTRATION F

Roll-Off Container Placement

Allow minimum of 75 feet to load/unload the container safely. Truck rails may extend to 25 feet high when servicing the container.

