



City of Vaughan

Waste Collection Design Standards

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Note:

**The City's Waste Collection Design Standards have been incorporated into the
City's Engineering Design Criteria and Standard Drawings
(Section 3 – Site Development & Appendix I)**

DEFINITIONS

Definitions in this document are consistent with, where applicable, the City's most current Waste Collection By-law, as amended and the Comprehensive Zoning By-law 1-88, as amended.

"Access Route" means the lane, street, avenue or other means of ingress or egress available for collection vehicles to approach the Loading Area for the purpose of collecting waste materials.

"Diversion Programs" means programs that divert materials for reuse or recycling.

"City" means the Corporation of the City of Vaughan.

"Curbside Collection Service" means the collection of waste materials from an area on, or directly adjacent, to an individual driveway, as close as possible to a roadway or rear laneway.

"Mixed Use Development" means a development/redevelopment designed for two or more uses as a combination of residential and non-residential.

"Multi-residential Development" means a residential building, such as an apartment, condominium or townhouse complex, where each dwelling unit does not front a Public Road, Private road or laneway.

"Municipal Collection Service" means a system for the collection of waste materials provided by the City of Vaughan.

"Loading Area" means the Loading Pad and the space requirement for waste collection vehicles to access the Loading Pad (i.e. an 18.0 metre straight ahead approach).

"Loading Pad" means the area where waste containers will be placed for collection.

"Owner" means any person who is the registered owner of a property and includes, but is not limited to, developers and condominium corporations.

"Private Residential Development" means any development that fronts onto a Private Road or laneways and/or are accessed by a private driveway or laneway and/or are part of a private development (i.e. Multi-residential Developments such as condominium and townhouse condominium developments).

"Private Road" means a road that is privately owned and is not owned by the City, the Regional Municipality of York, a Local Board, the Crown in Right of Ontario, the Crown in the Right of Canada, or any emanations thereof.

"Public Road" means a road that is owned by the City, the Regional Municipality of York, a Local Board, the Crown in the Right of Ontario, the Crown in the Right of Canada, or any emanations thereof.

"Single Family Development" means a residential development of single detached or semi-detached units, a duplex or townhome or small residential buildings where each dwelling unit fronts a Public Road, Private road or rear laneway allowing for Curbside Collection Service.

"Waste Storage Facility" means a room or structure for the intended purpose of storing waste containers and other materials such as appliances and bulky items.

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1.1 OVERVIEW

1.1.1 Purpose and Intent

This document sets out the City's waste collection design standard requirements for the access, internal storage and collection of waste materials specific to various categories of developments/redevelopments and land uses. The City's waste collection design standard requirements allow for safe and efficient collection of waste materials and support the City's waste diversion goals.

It is the responsibility of the Owner to ensure that all developments/redevelopments adhere to all applicable requirements in this document, regardless of whether collection of waste materials is provided by private or municipal collection services.

1.1.2 Waste Management Site Plan Review

To determine if a development/redevelopment application adheres to the City of Vaughan's Waste Collection Design Standards (WCDS), the Environmental Services department or designate reviews development/redevelopment applications, including applications to amend the Official Plan and Zoning By-law, as well as applications for Site Plan and Committee of Adjustment (Minor Variances). Alternative approaches to the requirements and specifications included herein will be considered by the City of Vaughan during the review process; the alternative approach must meet the intent of the requirements and standards.

1.1.3 Other Policies and Legislation

This document shall be used in conjunction with, and not in place of, the Ontario Building Code, the Ontario Fire Code, the Environmental Protection Act, the City's Engineering Design Criteria and Standard Drawings and all other applicable legislation and municipal standards and policies. It is the Owner's responsibility to comply with the most current version of all applicable legislation and municipal standards and policies at time of Site Plan Application. Information concerning the Site Plan Control process may be obtained from the City's Development Planning department.

1.2 MUNICIPAL WASTE COLLECTION SERVICE ELIGIBILITY

1.2.1 Private Residential

Private Residential Developments eligible for Municipal Collection Service are limited to registered condominiums under the Condominium Act, and do not include apartments with rental units. Condominiums are required to complete and submit an Application, facilitate an on-site inspection and execute an Agreement with the City of Vaughan. Contact the Environmental Services Department, Solid Waste Management Division to obtain an Application form.

Private Residential Developments/redevelopments *not* currently eligible for Municipal Collection Services are required to seek a private waste collection service provider¹.

Condominium developments that have facilities, access and containers for the collection of waste materials as approved by the City of Vaughan, upon seventy (70) percent occupancy, will be eligible to apply for Municipal Collection Services.

¹ With the exception of those locations grand-parented by Council on December 12, 2005.

Developments requiring more frequent collection than what is offered by the City of Vaughan will be required to seek private waste collection for those additional days of collection.

1.2.2 Institutional, Commercial and Industrial

Institutional, Commercial, and Industrial developments/redevelopments are not eligible for Municipal Collection Services, and are required to seek a private waste collection service provider².

1.2.3 Mixed Use

Mixed Use Developments may be eligible for Municipal Collection Services for residential waste only, provided that the Owner is able to demonstrate clear separation of residential waste from commercial waste and that all requirements and standards as outlined in this document have been achieved.

1.2.4 General Requirements for Municipal Waste Collection

Outlined in the following section are the general requirements which must be adhered to for Municipal Collection Services to be provided. Specific requirements based on the type of building and use will be in the appropriate section of these standards.

- a) The Owner must comply with all requirements of the Waste Collection By-law to receive Municipal Collection Service.
- b) The City will determine which properties are eligible and the level, type and scheduling of collection services to be provided, and reserves the right to refuse or revoke collection services to any development that does not adhere to the requirements as laid out in this document and the City's Waste Collection By-law.
- c) Collection services for garbage are provided for non-hazardous municipal solid waste only. The City will not collect waste generated by manufacturers, any hazardous or pathological wastes, or construction materials. A complete list of Non-Collectible Waste is provided in Schedule B of the Waste Collection By-law.
- d) Owners must separate material for Diversion Programs when offered as part of Municipal Collection Services.
- e) For Multi-residential Developments, property management is responsible for moving bins during collection if so required. The City will not collect material that is inaccessible to the collection vehicle.
- f) The Owner is responsible for providing waste collection until the City approves and initiates collection, dependent on occupancy and site inspection.
- g) Waste Storage Facilities must be able to store up to eight (8) days of waste generated on the premises.
- h) For detailed information on the City's waste collection services and schedules, refer to the City of Vaughan website at www.vaughan.ca or call 905-832-2281.

1.2.5 Waste Collection By-law 135-2017

Properties are eligible for Municipal Collection Services as outlined in the Waste Collection By-law 135-2017, as amended.

1.3 SUBMISSION AND GENERAL REQUIREMENTS

1.3.1 Submission Requirements

The following must be submitted with the development application:

² With the exception of those locations grand-parented by Council on December 12, 2005.

- a) a Waste Management Site Plan. The Waste Management Site Plan must show the following information:
- Access Route(s), including truck turning movements using 'auto turn' or similar type computer program;
 - designated Loading Area;
 - Waste Storage Facility(s);
 - size, type and number of garbage, recycling and other waste containers to be used;
 - waste diversion method (e.g. recycling using a 3 yd³ front-end container); and
 - any additional details required for Multi-residential Developments. Please refer to Waste Management Site Plan checklist (Appendix A) for additional detailed requirements;
- b) a completed Waste Servicing Details Form (Appendix A - Part 1) for each building within development/redevelopment;
- c) a completed Waste Management Site Plan checklist (Appendix A – Part 2).

For details on the above requirements, please refer to appropriate section(s) in this document.

In all cases, the Waste Management Site Plan (and all other applicable drawings) must be stamped and signed by a Professional Engineer of Ontario, or a registered Architect of Ontario.

Refer to Appendix A of this document for the Waste Servicing Details Form (Part 1) and the Waste Management Site Plan checklist (Part 2).

1.3.2 Mandatory Waste Diversion Programs

It is the responsibility of the Owner to comply with all existing and future government regulations pertaining to waste reduction and waste audit programs and requirements in Industrial, Commercial, and Institutional developments, as well as Mixed Use and Multi-residential Developments.

Refer to the Environmental Protection Act, Ontario Regulation 103/94, as amended, for recycling (Source Separation) requirements specific to the type of development/redevelopment.

1.3.3 General Requirements

It is the responsibility of the Owner to:

- Determine the number and size of waste containers required for the development/redevelopment. All waste containers shall be provided and maintained by the Owner.
- Ensure all waste containers are fully accessible by the property management and waste service provider.
- Ensure the time of waste collection operations is in accordance with all of the City's applicable by-laws, including the Noise By-Law 96-2006, as amended.

Refer to Appendix B for Waste Container Dimension and Quantity Guidelines.

The City reserves the right to apply site-specific requirements during a detailed review of a development/redevelopment application, including but not limited to, rolled curbs, hard-surfaced aprons, the method and location of collection, and Access Route and Loading Area requirements. **The City also reserves the right to increase or decrease the number and size of waste containers, the size of the Loading Area and the type, number and size of internal Waste Storage Facilities.**

1.3.4 Other Collection/Disposal Methods and Other Developments/Redevelopments

The City recognizes that new collection/disposal systems may be developed that are not identified as an approved waste system in this document. Should such a system be developed, the City will review its applicability of the system for a proposed development/redevelopment on a case-by-case basis.

Redevelopments that do not fall within the categories noted and/or are unable to comply with one or more of the requirements of the Waste Collection Design Standards will be reviewed on a case-by-case basis

PART 2 ACCESS ROUTE AND LOADING AREA REQUIREMENTS

2.1 WASTE COLLECTION ACCESS ROUTE

2.1.1 Location of Access Route

The Access Route shall be situated in a location that minimizes the interface with pedestrian traffic and public vehicular ingress/egress to the building's main parking area, including underground garage, drive-through and visitor parking areas. The Access Route and Loading Area shall be maintained and free of all obstructions on the designated collection day(s). This shall include, but not be limited to, debris, sightline obstructions, overhanging structures, snow, ice and parked vehicles. Snow storage areas must not interfere or compromise the minimum specifications of the Access Route or turning operations.

The Waste Management Site Plan must include:

- the waste collection vehicle's footprint throughout Access Route and at the point of ingress/egress and turnaround;
- dimensions (i.e. width, turning radius, etc.) throughout access route;
- snow storage areas.

The City will, at its discretion, require the applicant to submit such information using auto-turn or similar type program. A typical waste collection vehicle is 11.0 metres in length, as shown in the standard waste drawings.

2.1.2 Pavement Design of Access Route

The pavement design of the Access Route shall be a minimum as per the City's Engineering Design Criteria and Standard Drawings for 'Industrial & Heavy Duty Driveways' or a City approved alternative.

The pavement design must meet these depth requirements:

- 50 mm compacted depth HL-3 asphalt for top course
- 75 mm compacted depth HL-8 asphalt base course
- 150 mm compacted depth of 20 mm diameter crusher run limestone
- 300 mm compacted depth of 50 mm diameter crusher run limestone

Heavy duty uniform pavers can be substituted for asphalt, however all other depth requirements stated above are required.

2.1.3 Driveway Width and Curb Radius at Point of Ingress/Egress

The driveway width shall be a minimum of 6.0 metres at the property line and the inside curb radius shall be no less than 9.0 metres.

The City may consider an inside curb radius less than 9.0 metres, but never less than 7.6 metres, provided that the reduced internal turning radius is proportional to the increased width of the access driveway at the property line, as approved by the City.

Refer to SW-101 for standard drawing.

2.1.4 Driveway Width, Radius and Vertical Clearance throughout Access Route

The driveway width throughout the entire Access Route shall be a minimum of 6.0 metres from face-of-curb to face-of-curb and the radius along the entire Access Route shall be no less than 12.0 metres (centre line). The minimum vertical clearance of 4.5 metres (i.e. any overhead structure including trees, balconies, wires) shall be observed throughout the entire Access Route.

Refer to SW-102 for standard drawing.

Notwithstanding the above, the City may consider a portion of the Access Route to have a width of less than 6.0 metres but never less than 4.5 metres provided that:

- the portion of the reduced width roadway is identified as a dedicated maintenance route for non-public vehicles (i.e. deliveries, waste collection access etc.);
- all requirements stipulated in 2.1.3 are met; and
- the waste collection Access Route does not form part of a fire access route.

2.1.5 Ingress/Egress and Turnaround

The Access Route and Loading Area shall be designed in such a way to **allow a waste collection vehicle to enter the site, collect the waste materials and exit the site solely in a forward motion**. Collection vehicles will not be permitted to backup (or turnaround) onto a public roadway and/or adjacent private or public property. Collection vehicles will **not be permitted to reverse more than 11.0 metres** or the average length of a collection vehicle.

To accomplish this requirement, the following three options are available:

a) Continuous Forward Motion

Continuous forward motion means that the waste collection vehicle enters and exits the site predominantly in a forward motion. Access Route requirements, including required turning radius, shall comply with Section 2.1.3 and 2.1.4.

b) Three Point Turn (Turning Stub)

- with the required 6.0 metres wide (or greater) Access Route, the depth of the turnaround (turning stub) shall be no less than 11.0 metres deep (**the standard length of one collection vehicle**). This excludes the width of the Access Route itself;
- the width of the turning stub shall not be less than 4.5 metres wide;
- the inside curb radius no less than 9.0 metres; and
- the turnaround shall be fully situated on private property.

The City reserves the right to require the turning stub be directly adjacent to the location where the vehicle must turn around. The City also reserves the right to require a rolled curb and/or hard surface apron.

Refer to SW-104 for standard drawing.

Notwithstanding the above, should the turning stub be located on a portion of the Access Route that does not meet the 6.0-metre-wide Access Route requirement, the City shall require a wider and/or deeper turning stub and/or an increased inside turning radius to ensure waste collection vehicles maneuver the turn appropriately. Turnaround be shown on the Waste Management Site Plan using 'Auto Turn' or similar type computer program.

- c) Cul-de-sac
 - a) outside curb radius no less than 13.0 metres; and
 - b) cul-de-sac shall be fully situated on private property.

Refer to SW-103 for standard drawing.

Should the cul-de-sac have an 'island', the outside curb radius must be adjusted proportionately to accommodate the minimum 6.0 metre wide access route as well as the minimum 9.0 metre inside curb radius. Using these minimum standards, the outside turning radius will be required to increase proportionately to accommodate the 6.0 metre wide access route.

As an example, with the minimal access route width (6.0 metres) and an island consisting of a 9.0 metre inside turning radius, then the outside turning radius will proportionately increase to 15.0 metres.

The City reserves the right to require the island to have a rolled curb and/or hard surface apron.

2.1.6 Grade

The slope of the access route shall not be greater than 5.0%.

2.1.7 Support Structures

It is the responsibility of the Owner to provide a letter certified by a qualified Engineer that the Property, and any structure thereon, can safely support a fully loaded collection vehicle weighing 35,000 kilograms should the collection vehicle be required to drive onto or over a supported structure (such as an underground parking garage) and that the structure conforms to all applicable legislation, including but not limited to Section 4 of the Ontario Building Code

The Waste Management Site Plan, must indicate that waste collection vehicles will be required to drive onto or over a supported structure(s), and that the structure can support a minimum of 35,000 kilograms. Multi-residential and Mixed Use developments require an additional letter certified by a qualified Engineer stating this same information.

2.1.8 Pavement Markings and Signage

Where appropriate, pavement markings, warning lights, mirrors and signage along Access Route and Loading Area shall be installed.

2.2 DESIGNATED LOADING AREA

2.2.1 Location of Loading Area

The Loading Area must be situated in a location that minimizes the interface with pedestrian traffic and public vehicular access to the building's main parking area, underground garage, drive-through and visitor

parking areas. The Loading Area must be located on ground-floor level. Visual and odour considerations should be evaluated by the Owner when determining the potential Loading Area location.

To ensure the collection vehicle has direct access to the Loading Pad a minimum of 18.0 metre straight ahead approach to the Loading Pad is required (i.e. no curves, bends or angles). Note: the Access Route can be straight or slightly angled.

Refer to SW-105 for standard drawing.

2.2.2 Design of Loading Pad

The Loading Pad must:

- have a minimum base of 300 mm of compacted 20 mm crusher run-limestone;
- shall be finished to a minimum of 200 mm depth of concrete).

Paving stones of any type will not be permitted for the Loading Pad.

Refer to SW-105 for standard drawing.

2.2.3 Dimension & Vertical Clearance of Loading Area

The width of the loading pad shall not be less than 6.0 metres wide. The City may consider a decrease in the width depending on site condition, size of development and the number of bins set out for collection.

The required quantity of waste containers set out for collection determines the necessary length and width of the Loading Pad. The dimension of the Loading Pad must allow sufficient space to place empty waste containers back on the Loading Pad as to not interfere with the collection of other waste containers.

For Multi-residential Developments, additional space for special pick-ups (i.e. bulky items and large appliances) will be required when determining the Loading Pad dimension.

The minimum unencumbered vertical clearance for the entire Loading Area shall be:

- Front End Collection - 7.5 metres
- Top Loader – 7.5 metres
- Roll Off (either self-contained compactor or open top) - 7.5 to 9.0 metres
- Deep Collection – 8.7 metres

The vertical clearance in the loading area must not be obstructed by trees, wires, balconies, overhead structures etc.

2.2.4 Staging of Waste Containers

The Waste Management Site Plan must show the footprint of all waste containers in the internal Waste Storage Facility and on the Loading Pad.

All waste containers shall be placed on the Loading Pad in a manner that does not require the manual jockeying of waste containers by the waste collection service provider, and allows sufficient space to place empty waste containers on the Loading Pad as to not interfere with the collection of other waste containers.

2.2.5 Grade of Loading Area

The grade of the Loading Pad and the grade of the straight-ahead approach must adhere to the following requirements:

- Loading Pad shall not exceed +/- 2% in any direction, and where the loading area is not flat, a mechanism to prevent the containers from rolling off the loading pad is required.
- 18.0 metre straight ahead approach shall not exceed a cross-fall grade of +/-2%. Refer to SW-105 for standard drawing. The grade of the approach shall be consistent with Section 2.1.6.

2.2.6 Bollards / Barriers

To prevent damage to the building, bollards or a City approved alternative, are to be installed on either side of the loading door(s). The Owner shall show the required bollards/barrier on the Waste Management Site Plan.

PART 3 SINGLE FAMILY DEVELOPMENTS/REDEVELOPMENTS: SERVICING AND WASTE STORAGE REQUIREMENTS

3.1 OVERVIEW OF REQUIREMENTS

3.1.1 Disclosure Requirements

It is the responsibility of the Owner to disclose in writing and as part of negotiations for purchase, sale or lease, to a prospective buyer, leasee or renter of a unit within the development, the type of waste collection system and requirements of the prospective owner/tenant regarding waste storage and collection. This shall include whether waste collection services are provided and maintained privately or municipally.

3.1.2 Number of Units

The number of units in the proposed development/redevelopment must be included on the Waste Management Site Plan.

3.2 COLLECTION METHOD AND CONTAINER REQUIREMENTS

3.2.1 Fronting onto a Public Road

A Single Family development/redevelopment where each unit fronts a Public Road or laneway shall be provided with Municipal Collection Service via Curbside Collection Service.

The Owner is responsible for providing waste collection until the City approves and initiates collection, dependent on occupancy and site inspection.

It is the responsibility of the Owner to purchase the following containers from the City, for each dwelling unit:

- a) Recycling
 - blue boxes (2)
- b) Organics
 - green bin (1)
 - kitchen container (1)

3.2.2 Fronting onto a Private Road

A Single Family development/redevelopment where each unit fronts a Private Road or laneway shall be provided Curbside Collection Service. Should a development form a Condominium Corporation, the Owner may apply to receive Municipal Collection Service as per section 1.2. The Owner is responsible for providing waste collection until the City approves and initiates collection, dependent on a completed Agreement, occupancy and site inspection. Should the Owner apply for municipal collection service, it is the responsibility of the Owner to purchase bins for each dwelling unit, as per section 3.2.1.

The Owner is required to ensure that the waste diversion program including recycling and other waste streams (i.e. Organics) be equitably accessible to each resident in the development as the garbage collection program.

3.3 WASTE STORAGE FACILITY REQUIREMENTS

Single family developments must have an internal area of approximately 1.0 m x 2.0 m for the storage of garbage, recycling and other waste streams within the garage in each dwelling unit. This area must be shown on the Waste Management Site Plan.

PART 4 MULTI- RESIDENTIAL AND MIXED USE DEVELOPMENTS/REDEVELOPMENTS: SERVICING AND WASTE STORAGE REQUIREMENTS

4.1 OVERVIEW OF REQUIREMENTS

4.1.1 Disclosure Requirements

It is the responsibility of the Owner to disclose in writing and as part of negotiations for purchase, sale or lease, to a prospective buyer, leasee or renter of a unit within the development, the type of waste collection system and requirements of the prospective owner/tenant regarding waste storage and collection. Where applicable, this shall include the fact that waste collection services are provided and maintained privately.

The Owner of Multi-residential Developments/redevelopments and Mixed Use Developments/redevelopments will be further required to ensure that all future owners/tenants are notified via a purchase and sale agreement of the need to provide and maintain private waste collection services, where applicable.

4.1.2 Number of Units

The number of units (both residential and non-residential if mixed use) for each building in the proposed development/redevelopment must be included on the Waste Management Site Plan.

4.1.3 Multiple (Three-Stream) Sort System

The Owner is required to ensure that the waste diversion program including recycling and other waste streams (i.e. Organics) be equitably accessible to each resident in the development as the garbage collection program. It is the responsibility of the Owner to provide a three-stream disposal system designed for the increase or decrease of waste streams, if so required in the future.

The three-stream waste system must be achieved using three separate chutes.

Access to three-stream disposal must be installed on each floor (i.e. a chute room) and each separate building of a Multi-residential or Mixed Use Development must have a Waste Storage Facility. This includes developments that have a shared walkway/podium.

The Waste Management Site Plan must include:

- a typical floor plan showing three-stream system on every floor (i.e. a chute room);
- where applicable, the position of intake door and control panel for chutes in a chute room; and
- a Waste Storage Facility 'plan' view that includes the three-stream sort system/compactor unit:
 - waste containers docked to the three-stream sort system/compactor unit
 - position of the power supply or control panel for the sort system/compactor unit
 - access doors

4.1.4 Ventilation

The Waste Storage Facility, pursuant to the Ontario Building Code, must meet no less than the minimum standards for ventilation and odour control.

4.2 COLLECTION METHOD AND CONTAINER REQUIREMENTS

4.2.1 Small Residential (2 to 6 units)

The storage of waste materials, collection location and method of collection will be to the satisfaction of the Deputy City Manager of Public Works, or designate.

4.2.2 Mid-size Residential (7 to 29 units)

Collection shall be provided using one or more of the following collection types:

- a) Recycling & Other Waste Streams
 - cart – 32 to 95 gallons
 - front-end (bulk lift) un-compacted – 1.5 yds³ to 8 yds³
- b) Garbage
 - front-end (bulk lift) mechanically compacted – 2 yds³ to 4 yds³
 - front-end (bulk lift) un-compacted – 1.5 yds³ to 8 yds³

4.2.3 Large Residential (30 or more units)

Collection shall be provided using one or more of the following collection types:

- a) Recycling & Other Waste Streams
 - cart – 32 to 95 gallons (up to 45 units)
 - front-end (bulk lift) un-compacted – 1.5 yds³ to 8 yds³
- b) Garbage
 - front-end (bulk lift) mechanically compacted – 2 yds³ to 4 yds³

In some circumstances, the City may allow un-compacted garbage provided the internal waste storage room is large enough to accommodate an increased number of un-compacted waste containers.

Refer to Appendix C for Waste Container Dimension and Quantity Guidelines

4.3 WASTE STORAGE FACILITY REQUIREMENTS

4.3.1 Internal Waste Storage Facility(ies) Attached to or Integral to Main Use of Building

An internal Waste Storage Facility built in accordance with all applicable regulations must be provided in each building within the development/redevelopment. A separate, self-contained room for bulky waste will be required for Large Multi-Residential Developments (30 or more units). Internal Waste Storage Facility(ies) must be attached to, or integral to, the main use of each building.

The internal Waste Storage Facility must be:

- fully situated on private property;
- rodent proof and vented;
- large enough to store and jockey all waste materials, including bulky items and other designated wastes generated by the proposed establishment (for both proposed and future uses) between designated collection days; and
- external to the living area.

For the safety of residents and the public, the building is required to be designed in a manner that prohibits access to any Waste Storage Facility(ies) equipped with a compactor(s). Where a compactor is used, the Owner is required to provide a separate but attached storage room for tenant/owner access to dispose of all waste streams, including bulky items and oversized cardboard.

In all cases, waste materials must be stored in a designated internal waste storage room attached to (or integral to) the main use of each building until the designated day of collection and all waste containers must be returned to the internal waste storage room immediately following collection. No waste shall be stored outside the internal waste storage room between designated collection days.

Refer to Appendix B for Waste Container Dimension and Quantity Guidelines.

4.3.2 Detached fully enclosed waste storage structure

On a case-by-case basis, the City may accept a detached, fully enclosed Waste Storage Facility for small and medium sized residential developments/redevelopments. Should the City approve this as an option for waste storage, then all requirements noted in 5.3.2 of this document apply.

4.4 MIXED USE DEVELOPMENTS

Both the residential and non-residential components of Mixed Use Developments/redevelopments must adhere to all requirements outlined in Part 4 of this document. The Owner is required to ensure that residential and non-residential have a separate Waste Storage Facility and that non-residential waste and residential waste are not combined. The City will accept a shared Loading Area.

PART 5 INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL DEVELOPMENTS/ REDEVELOPMENTS: SERVICING AND WASTE STORAGE REQUIREMENTS

It is the responsibility of the Owner to ensure that all developments/redevelopments adhere to all requirements in this section. This includes developments subject to future tenants. Where the Owner cannot determine the location and number of Waste Storage Facilities required within the

development (subject to future tenants), the Waste Collection Design Standards shall be implemented when tenants have been determined, and a clause shall be included in the Site Plan Agreement to this effect.

5.1 OVERVIEW OF REQUIREMENTS

5.1.1 Disclosure Requirements

It is the responsibility of the Owner to disclose in writing and as part of negotiations for purchase, sale or lease, to a prospective buyer, leasee or renter of a unit within the development, the type of waste collection system and requirements of the prospective owner/tenant regarding waste storage and collection. This shall include the fact that waste collection services are provided and maintained privately.

5.1.2 Ventilation

The Waste Storage Facility, pursuant to the Ontario Building Code, must meet no less than the minimum standards for ventilation and odour control.

5.2 COLLECTION METHOD AND CONTAINER REQUIREMENTS

Collection typically uses one or more of the following collection types:

a) Recycling and Other Waste Streams

- cart - 90 to 95 gallon
- front-end (bulk lift) un-compacted – 1.5 yds³ to 8 yds³
- enclosed compaction roll-off (i.e. specifically a cardboard compaction unit)
- deep /in-ground collection system* - typically 5,000 litres (*limited application only – see 5.3.4)

b) Garbage

- front-end (bulk lift) mechanically compacted - 3 yds³ to 4 yds³
- front-end (bulk lift) un-compacted – 3 yds³ to 8 yds³
- enclosed or open compaction roll-off – 20 yd³ to 40 yd³
- deep/in-ground collection system* - typically 5,000 litres (*limited application only – see 5.3.4)

5.3 WASTE STORAGE FACILITY REQUIREMENTS

It is the responsibility of the Owner to provide one or more of the following Waste Storage Facility options.

5.3.1 Internal Waste Storage Room(s) Attached to or Integral to Main Use of Building

An internal waste storage room(s) built in accordance with all applicable regulations must be attached to, or integral to, the main use of each building.

The internal waste storage room must be:

- fully situated on private property;
- rodent proof and vented; and
- large enough to store and jockey all waste materials, including bulky items and other designated wastes generated by the proposed establishment (for both proposed and future uses) between designated collection days.

Where it is intended that significant quantities of other wastes such as corrugated cardboard and cooking oil is produced, the Owner is to consider specialized collection (and containers) for these additional waste streams, which may include a cardboard compactor and/or separate collection of cooking oil.

For the safety of users of the facility and the public, the building is required to be designed in a manner that prohibits access to any waste storage room(s) equipped with a compactor(s). Where a compactor is used, the Owner is required to provide a separate but attached recycling room for tenant / owner access for oversized material (i.e. corrugated cardboard etc.) and other wastes.

In all cases, waste materials must be stored in a designated internal waste storage room attached to (or integral to) the main use of each building until the designated day of collection and all waste containers must be returned to the internal waste storage room immediately following collection. No waste shall be stored outside the internal waste storage room between designated collection days.

Refer to Appendix C for Waste Container Dimension and Quantity Guidelines.

5.3.2 Detached Fully Enclosed Waste Storage Facility

In Industrial, Commercial, Institutional as well as some Mixed Use redevelopments, the City may permit a detached, fully enclosed waste storage structure. The requirements of a detached, fully enclosed Waste Storage Facility are as follows:

- rodent proof and externally vented;
- large enough to store and permit the movement of all waste materials, including bulky items and other waste streams generated by the proposed establishment (for both proposed and future uses) between designated collection days;
- include full walls, roof, concrete floor, and either overhead door with side man-door or double man doors large enough to accommodate width of waste bins when fully opened;
- the exterior finish and design of the structure shall be an integrated part of the building design and to the satisfaction of the City;
- must comply with all zoning and other applicable regulations; and
- must be fully situated on private property.

Where it is intended that significant quantities of other wastes such as corrugated cardboard and cooking oil is produced, the Owner is to consider specialized collection (and containers) for these additional waste streams, which may include a cardboard compactor and / or separate collection of cooking oil.

In all cases, waste materials must be stored in a detached, fully enclosed Waste Storage Facility until the designated day of collection and all waste containers must be returned to the waste storage structure immediately following collection. No waste shall be stored outside the facility between designated collection days.

Refer to Appendix C for Waste Container Dimension and Quantity Guidelines.

5.3.3 Roll-off Containers

The roll-off system (compacted or un-compacted) shall be large enough to contain all waste materials generated from the proposed development (for both proposed and future uses) between collection days.

Should the City approve the use of a roll-off container(s) system (compacted or un-compacted) for a development/redevelopment, the City may still require a separate internal waste storage room or structure to store bulky material or additional waste streams.

Roll-off containers must be placed on a concrete pad, constructed as per section 2.2.2.

Roll-off container options include:

- a) Compacted: A compacted (closed) roll-off container shall be:
- Appropriately screened if the compaction unit is external to, but attached to, the main use of building. The Owner is responsible to ensure that such screening be an integrated part of the building design; or
 - Fully enclosed by being internal to the main use of building or by a detached fully enclosed waste storage structure (Refer to Section 5.3.2).

The City reserves the right to determine the most appropriate option (and appropriate screening) noted above.

- b) Un-compacted: Un-compacted (open-top) roll-off containers stored external to main use of building (i.e. outside) are generally not accepted, but may, at the discretion of the City, be considered in some industrial developments/redevelopments that permit outside storage (i.e. EM2 zone only).

Where the un-compacted roll-off containers are permitted by the City, the Owner is responsible to ensure that it is appropriately screened, and that such screening be an integrated part of the building design. The City reserves the right to determine the most appropriate screening.

5.3.4 Deep/In-Ground Collection Systems

In some small Commercial (i.e. stand-alone) or Institutional developments/redevelopments, the City may, at its sole discretion, permit a deep/in-ground collection system for the disposal of waste materials.

The deep/in-ground collection system will only be considered for (small) commercial and institutional type developments **not exceeding 1,600 square metres**. Deep/in-ground collection systems will not be permitted in Industrial, Commercial, Institutional exceeding the aforementioned limit nor will it be acceptable in Residential (including Mixed Use) developments and redevelopments.

If permitted, the deep/in-ground collection system shall be large enough to contain all waste materials generated from the proposed development (for both proposed and future uses) between collection days.

In all cases, waste materials must be stored inside the deep/in-ground collection system. No waste shall be stored outside the deep/in-ground collection structure between designated collection days. The deep/in-ground collection system shall be fully situated on private property.

Should the City approve a deep/in-ground collection system for a development/redevelopment, the City may still require a separate internal waste storage room or structure to store bulky material and/or additional waste streams.

PART 6 REVISIONS TO THE WASTE COLLECTION DESIGN STANDARDS

The City may from time to time review, revise and update its Waste Collection Design Standards. Any revisions to this document will require the approval of the Deputy City Manager, Public Works or their designate.

APPENDICES

ALL applicants MUST submit with their Waste Management Site Plan completed forms as provided in Appendix A (Part 1 and 2) of this document.

APPENDIX A: WASTE COLLECTION DESIGN STANDARDS SUBMISSION REQUIREMENTS

The Owner is required to complete both Part 1 and Part 2 of Appendix A. Completed forms, along with a Waste Management Site Plan (and other relevant drawings), shall be submitted to the Planning Department.

Part 1: WASTE SERVICING DETAILS FORM

- Applicants must complete the form by accessing www.vaughan.ca/waste and clicking on the Waste Collection Design Standards on the right side of the page.
- The Owner is required to provide a 'Waste Servicing Details Form' for each building within the development/redevelopment.

APPENDIX A (Part 1 of 2) WASTE SERVICING DETAILS FORM			
GENERAL INFORMATION			
Development Information			
Building Standards No. or Development Application No.			
Municipal address of development			
Brief summary of development proposal			
Does development proposal consist of more than one building?	No	Yes	⇒
	<i>If 'yes', please ensure to submit an Appendix 'A' - Part 1 form for each building of development.</i>		
If multiple buildings within development, identify building as shown on site plan (i.e. Building 'A')			
Agent Information			
Agent Name & Company Name			
Business Address			
Daytime phone number		Email Address	
Applicant Information			
Applicant Name & Company Name			
Address			
Daytime phone number		Email Address	

WASTE SERVICING DETAILS			
Waste Stream	Type & Size of Container	Compacted	Number of Containers
Garbage	Front-end	Y/N	
	Roll-off	Y/N	
	Other	Y/N	
Recycling	Carts	Y/N	
	Front-end	Y/N	
	Other (a)	Y/N	
Cardboard	Front-end	Y/N	
	Other	Y/N	
Organics	Carts		
	Other		
Cooking Oil	Specify:		
Other:	Specify:	Y/N	
ADMINISTRATION - FOR OFFICE USE ONLY			
Site Plan File No.			
City Planner & Extension			
Public Works (Approved by)			
Date of Approval			

APPENDIX A: WASTE COLLECTION DESIGN STANDARDS SUBMISSION REQUIREMENTS

PART 2: CHECKLIST - WASTE MANAGEMENT SITE PLAN REQUIREMENTS

- Applicants must complete the form by accessing www.vaughan.ca/waste and clicking on Waste Collection Design Standards on the right side of the page.
- Standard Drawings specific to the WCDS are provided in Standard Drawing Section (SW-101 to SW-105) of the City's Engineering Design Criteria and Standard Drawings (EDC&SD)
- The 'Description' noted below is a summary only. Please refer to appropriate section of these standards for details and other conditions.

APPENDIX A (Part 2 of 2)					
CHECKLIST					
WASTE MANAGEMENT SITE PLAN REQUIREMENTS					
SECTION REFERENCE	WCDS	EDC&SD	DESCRIPTION	Checklist	
				Yes	No
ACCESS ROUTE					
1. Show location of access route	2.1.1		Waste collection vehicles are to enter and exit site solely in a forward motion. The Access Route and required turnaround can be shown using 'Auto turn' or similar type program.		
2. Show pavement design of access route	2.1.2	1.2.4.1	Pavement design shall be a minimum as per City's Engineering Design Criteria and Standard Drawings for 'Industrial & Heavy Duty Driveways' or a City approved alternative.		
3. Show driveway width & curb radius at point of ingress / egress to site	2.1.3	SW-101	Driveway width shall be a minimum 6.0 metres from face of curb to face of curb		
			Inside curb radius shall be no less than 9.0 metres.		
4. Show driveway width, curb radius and vertical clearance throughout access route	2.1.4	SW-102	Driveway width shall be a minimum 6.0 metres from face-of-curb to face-of-curb.		
			Radius throughout entire access route shall be no less than 12.0 metres (centre line).		
			A minimum vertical clearance of 4.4 metres throughout entire access route.		
5. Show ingress / egress and turnaround (or continuous forward motion) throughout access route	2.1.5	SW-103	1. Cul-de-sac Outside curb radius no less than 13.0 metres. *Note additional conditions if cul-de-sac has an island.		
		SW-104	2. Three Point Turn (Turning Stub) Inside curb radius no less than 9.0 metres, and - If road width is 6.0 metres or greater, the depth of the turning stub shall be no less than 11.0 metres.		
			3. Continuous Forward Motion Access shall be a minimum of 6.0 metres throughout entire access route (from face-of-curb to face-of-curb) and observe required turning radius.		

6. Show grade of access route	2.1.6		The slope of the access route shall not exceed 5%.		
7. Show affected support structures (if any) throughout access route	2.1.7		If a waste collection vehicle must pass over a support structure(s), show support structure(s) and indicate whether support structure(s) can support a minimum of 35,000 kg.		
8. Show snow storage areas	2.1.1		Snow storage areas must not interfere or compromise the minimum specifications of the Access Route or turning operations.		
DESIGNATED LOADING AREA					
9. Show location of loading pad, as well as the 18.0 metre straight-ahead approach	2.2.1	SW-105	In addition to location of loading area, ensure a minimum of 18.0 metre 'straight ahead' approach is shown.		
10. Show design of loading pad	2.2.2	SW-105	Loading pad design shall have a minimum base 300 mm of compacted 20mm crusher run-limestone and shall be finished to a minimum of 200 mm depth of concrete or a City approved alternative (i.e. heavy duty pavers). See additional requirements should loading pad form part of the access route.		
11. Show dimension of loading pad & vertical clearance at loading pad	2.2.3		The required number of waste containers set out for collection determines the length and maximum width of the loading pad (pad shall not be less than 6.0 metres wide). Dimension to include sufficient space for the movement of containers on loading pad.		
12. Show staging of all waste containers on the loading pad	2.2.4		Show footprint of all waste containers on the loading pad. as well as required space for special collections (i.e. bulky items, oil, corrugated cardboard etc.) and sufficient space for the movement of containers within storage facility.		
13. Show grade of loading area	2.2.5	SW-105	Grade of loading pad shall be no greater than + / -2% (grade of cross fall).		
14. Show bollards or other type barrier(s) on either side of loading door	2.2.6		Bollards or other type barriers are to be installed on either side of the loading door(s).		
WASTE STORAGE FACILITY(S)					
15. Show ventilation requirements meet Ontario Building Code minimum standards	4.1.4 or 5.1.2		Responsibility of Owner to meet no less than minimum standards pursuant to Ontario Building Code and appropriate odour controls requirements for Waste Storage Facility.		
16. Show location & dimension of internal waste storage facility	4.3 or 5.3		Refer to appropriate section to determine options. If compactor is used, a separate waste storage room must be shown.		
OTHER					
17. Show Collection Method and Container Requirements	3.2 or 4.2 or 5.2		Include type, size and number of waste containers required for all waste streams. This information is to be consistent with the information on the Waste Servicing Details Form (Appendix A – Part 1).		
18. Show Waste Management Site Plan is stamped and signed	1.3.1		Waste Management Site Plan must be stamped and signed by Professional Engineer or an Architect licensed in Ontario.		

ADDITIONAL REQUIREMENTS FOR MULTI UNIT RESIDENTIAL OR MIXED USE DEVELOPMENTS				
<u>Note:</u> This section is to be completed <i>only</i> if the development is residential or mixed use. Please indicate whether the development is residential or mixed use.				
18. Show number of units	3.1.2 or 4.1.2		Indicate number of residential dwelling and commercial units (where applicable).	
19. Show three stream system	4.1.3		Provide a typical floor plan showing the chute system on every floor.	
			Provide a 'plan' view of multi-sort system and layout of containers in waste storage area. <i>(As additional supporting information, the City may require the manufacturer's brochure of the chute system be provided with the submission).</i>	
20. Provide letter certified by a qualified Engineer that affected support structures can support 35,000 kg	2.1.7		If a waste collection vehicle must pass over a support structure(s), show support structure(s) and indicate whether support structure(s) can support a minimum of 35,000 kg.	

APPENDIX B: WASTE CONTAINER DIMENSIONS & QUANTITY GUIDELINES

The guidelines noted below are estimates only. The Owner is responsible to determine the quantity (volume/weight) of waste generated from the proposed development/redevelopment, for both proposed and future uses. The following information is to provide guidance to the Owner in determining the size of waste storage facility(s) for their proposed development/redevelopment.

The waste storage facility shall be designed to accommodate all waste containers and other waste materials including but not limited to bulky items, large appliances, cooking oils, and hazardous waste generated by the proposed development/redevelopment between collection days (up to 8 days accumulation). The Owner is also responsible to ensure that the waste storage facility shall include adequate space to allow for the jockeying of containers within the waste storage facility and on loading pad.

WASTE CONTAINER DIMENSIONS					
Container Type	Unit of Measure	Volume	Width	Length	Height
CART	Metric	360 litres	0.70 m	0.95 m	1.20 m
	(Imperial)	(95 gallon US)	(27.5 in)	(37.5 in)	(47 in)
FRONT END <i>Width includes lifting supports</i>	Metric	2.29 m ³	2.03 m	1.10 m	1.22 m
	(Imperial)	(3 yd ³)	(80 in)	(43 in)	(48 in)
	Metric	3.06 m ³	2.03 m	1.40 m	1.22 m
	(Imperial)	(4 yd ³)	(80 in)	(54 in)	(48 in)
	Metric	4.60 m ³	2.03 m	1.83 m	1.37 m
	(Imperial)	(6 yd ³)	(80 in)	(72 in)	(54 in)
	Metric	6.13 m ³	2.03 m	1.83 m	1.83 m
	(Imperial)	(8 yd ³)	(80 in)	(72 in)	(72 in)
	Metric	15 m ³ to 30 m ³	2.4 m	6.7 m	<i>Depends on size of container - ranges from 4ft to 8ft</i>
	(Imperial)	(20 yd ³ to 40 yd ³)	(8 ft)	(22 ft)	
ROLL OFF					

*Dimensions noted are guidelines only and may vary slightly from manufacturer to manufacturer.

QUANTITY GUIDELINES – RESIDENTIAL RECYCLING*				
	360 l (95 gal US) Cart	2.29 m³ (3 yd³) Front end un-compacted	3.06 m³ (4 yd³) Front end un-compacted	4.50 m³ (6 yd³) Front end un-compacted
	7 units/container	45 units/container	60 units/container	90 units/container

*These numbers are based on Waste Diversion Ontario's 'Best Practices'.

QUANTITY GUIDELINES – RESIDENTIAL ORGANICS				
	360 l (95 gal US) Cart	2.29 m³ (3 yd³) Front end un-compacted	3.06 m³ (4 yd³) Front end un-compacted	
	8 units/container	51 units/container	68units/container	

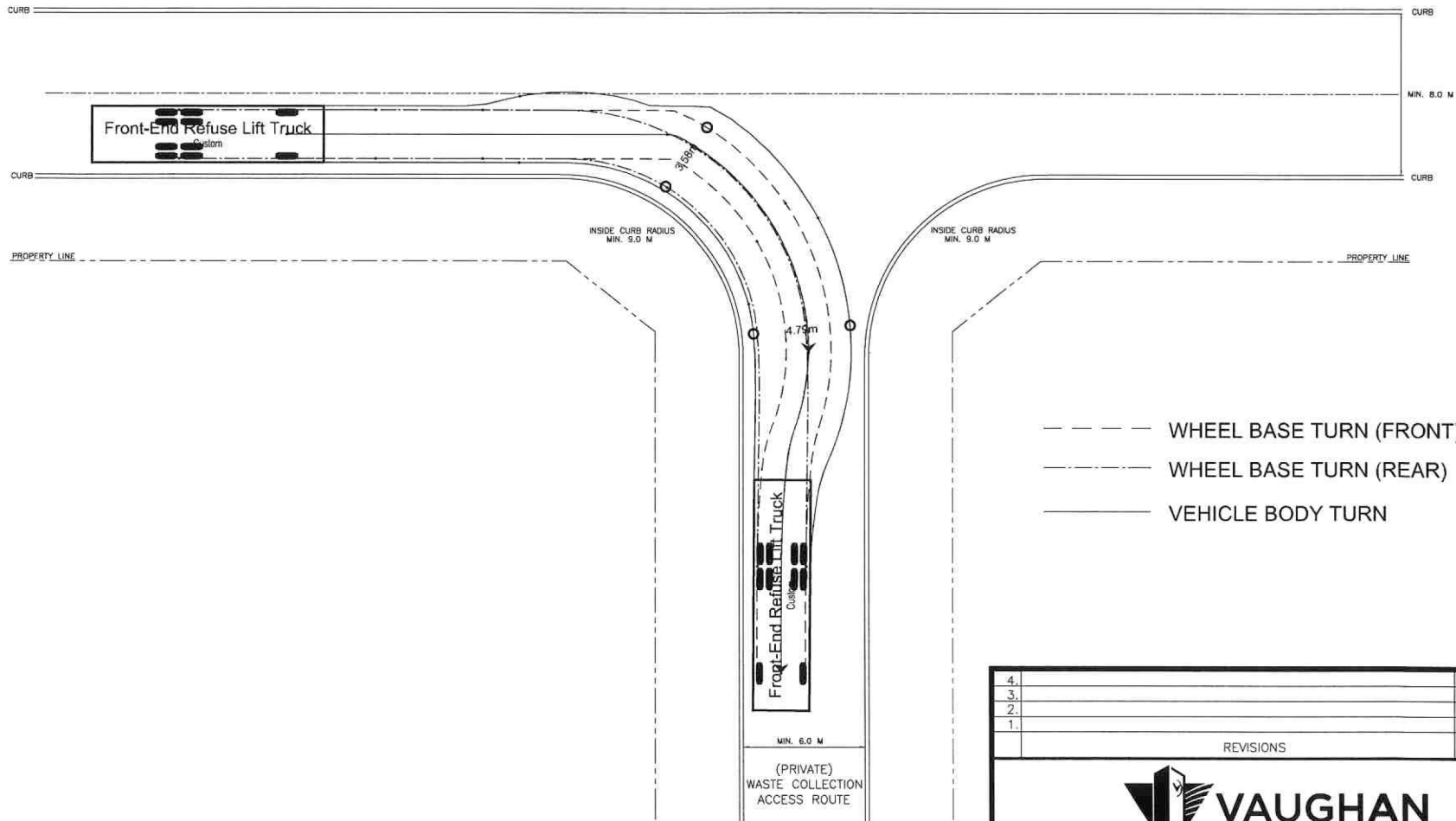
These numbers are based on 45 liters per week per household'

QUANTITY GUIDELINES – RESIDENTIAL GARBAGE				
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Container Type	2.29 m³ (3 yd³)	3.06 m³ (4 yd³)	4.50 m³ (6 yd³)
Compacted (front-end)	50 units/container	67 units/container	100 units/container
Un-compacted (front-end)	17 units/container	23 units/container	34 units/container

These numbers are based on the average surrounding municipalities' online data using a compaction ratio of 3:1 (Halton Region 2012, Ottawa 2012, Hamilton 2011, Peel Region 2007)

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- - - - WHEEL BASE TURN (FRONT)
 - - - - WHEEL BASE TURN (REAR)
 ——— VEHICLE BODY TURN

4.			
3.			
2.			
1.			
REVISIONS		APR'D	DATE



CITY OF VAUGHAN ENGINEERING STANDARD

**DRIVEWAY WIDTH & CURB RADIUS
AT PROPERTY LINE**

NOT TO SCALE DESIGNED: PUB WORKS
 REVISION: _____ DATE: MAY 2015

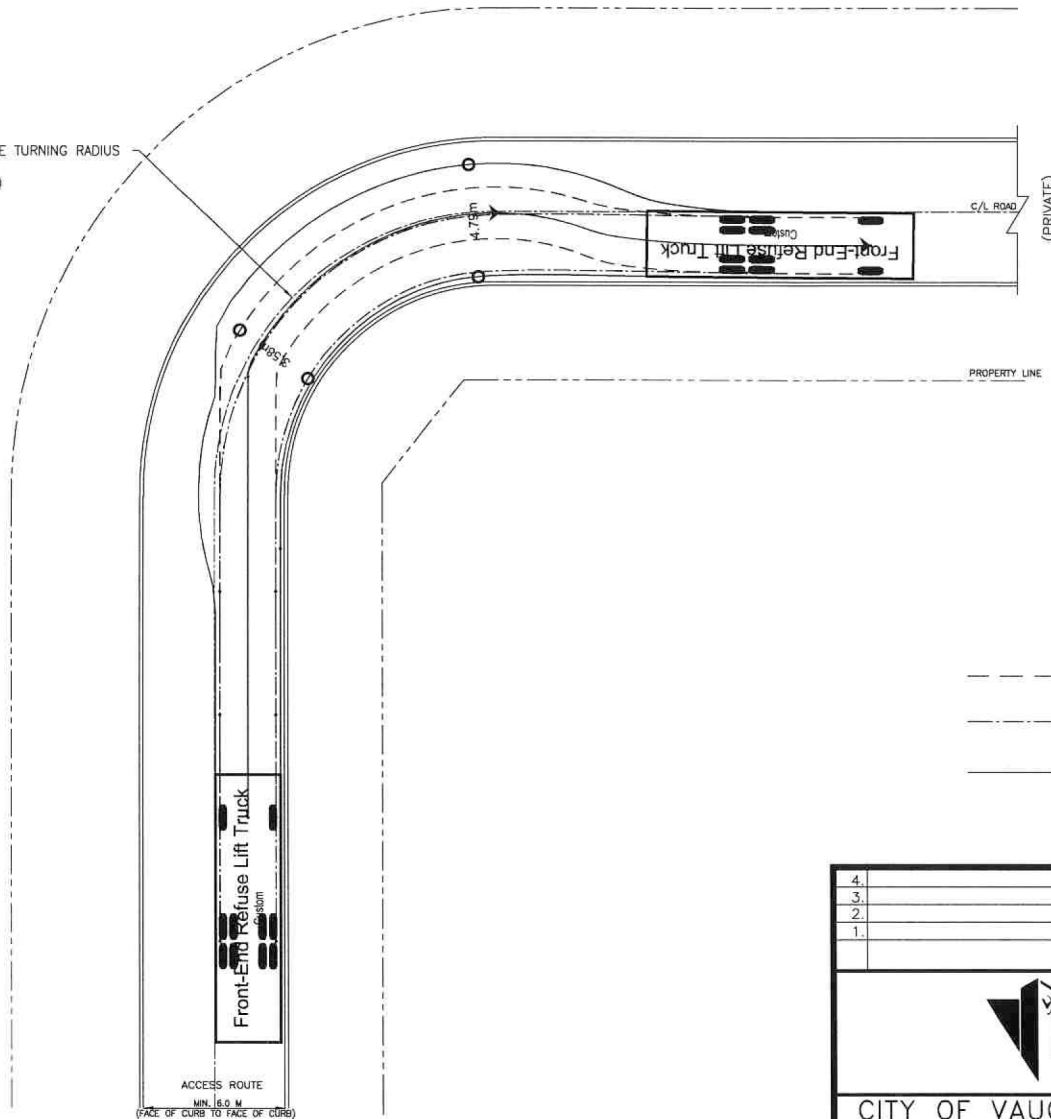
STD. DWG.
SW-101

NOTES:

1. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY

mm DIMENSIONS IN MILLIMETRES
 EXCEPT AS NOTED

ACCESS ROUTE TURNING RADIUS
MIN. 12.0 M
(CENTRE LINE)



--- WHEEL BASE TURN (FRONT)
 --- WHEEL BASE TURN (REAR)
 --- VEHICLE BODY TURN

NOTES:

1. VERTICAL CLEARANCE SHALL BE A MINIMUM OF 4.4M THROUGHOUT THE ACCESS ROUTE
2. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED

4.			
3.			
2.	REV 2		JAN29
1.	REV 1. NOTES ADDED		JAN23
	REVISIONS	APR'D	DATE

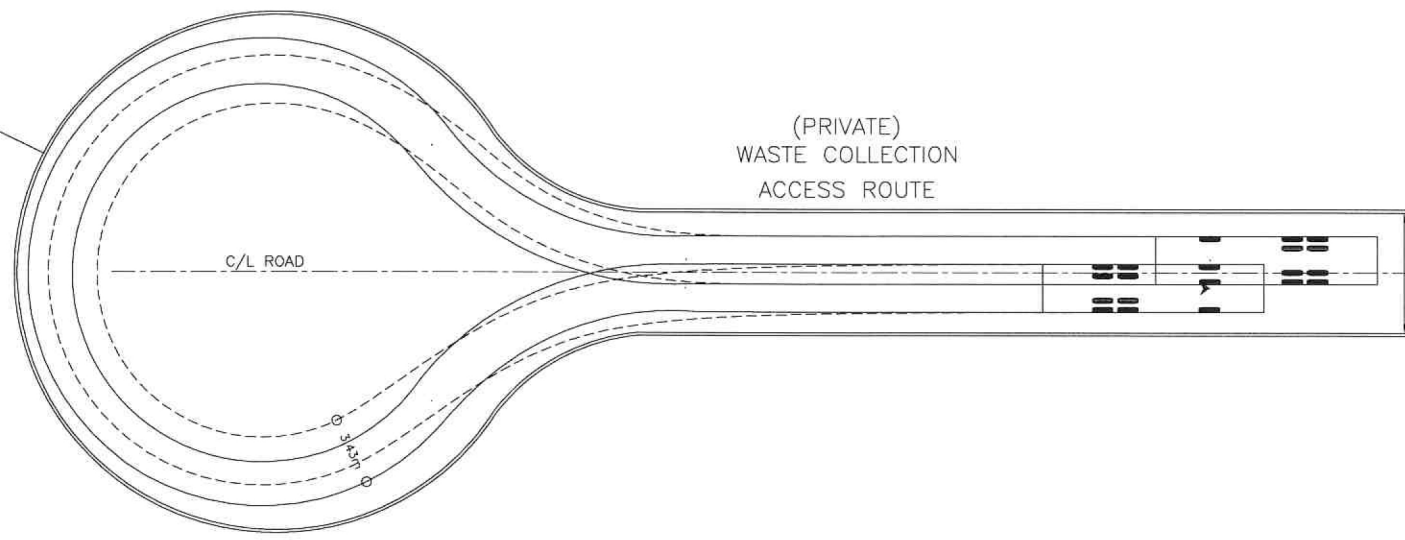


CITY OF VAUGHAN ENGINEERING STANDARD
**DRIVEWAY WIDTH, RADIUS
 THROUGHOUT ACCESS ROUTE**

NOT TO SCALE	DESIGNED: PUB WORKS	STD. DWG.
REVISION: _____	DATE: MAY 2015	SW-102

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OUTSIDE CURB RADIUS
MIN 13.0 M



MIN. 6.0 M
(FACE OF CURB TO
FACE OF CURB)

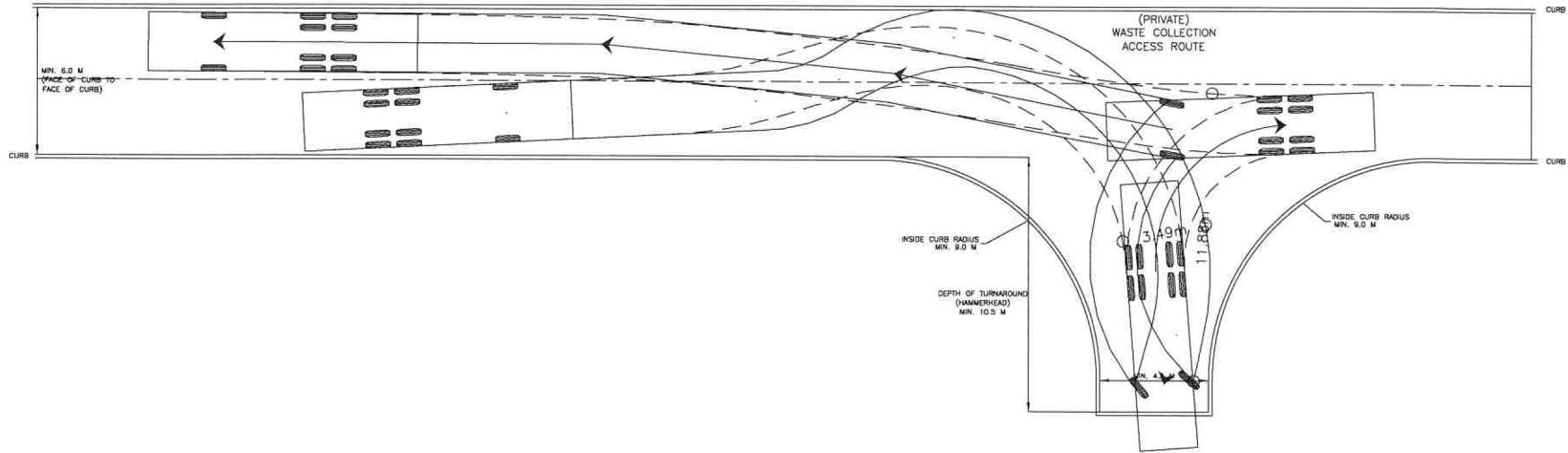
NOTES:

1. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY

4.			
3.			
2.			
1.			
REVISIONS		APR'D	DATE
VAUGHAN			
CITY OF VAUGHAN ENGINEERING STANDARD			
TURNAROUND - CUL-DE-SAC			
NOT TO SCALE	DESIGNED: <u>PUB WORKS</u>	STD. DWG.	
REVISION: _____	DATE: <u> MAY </u> 2015	SW-103	

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED

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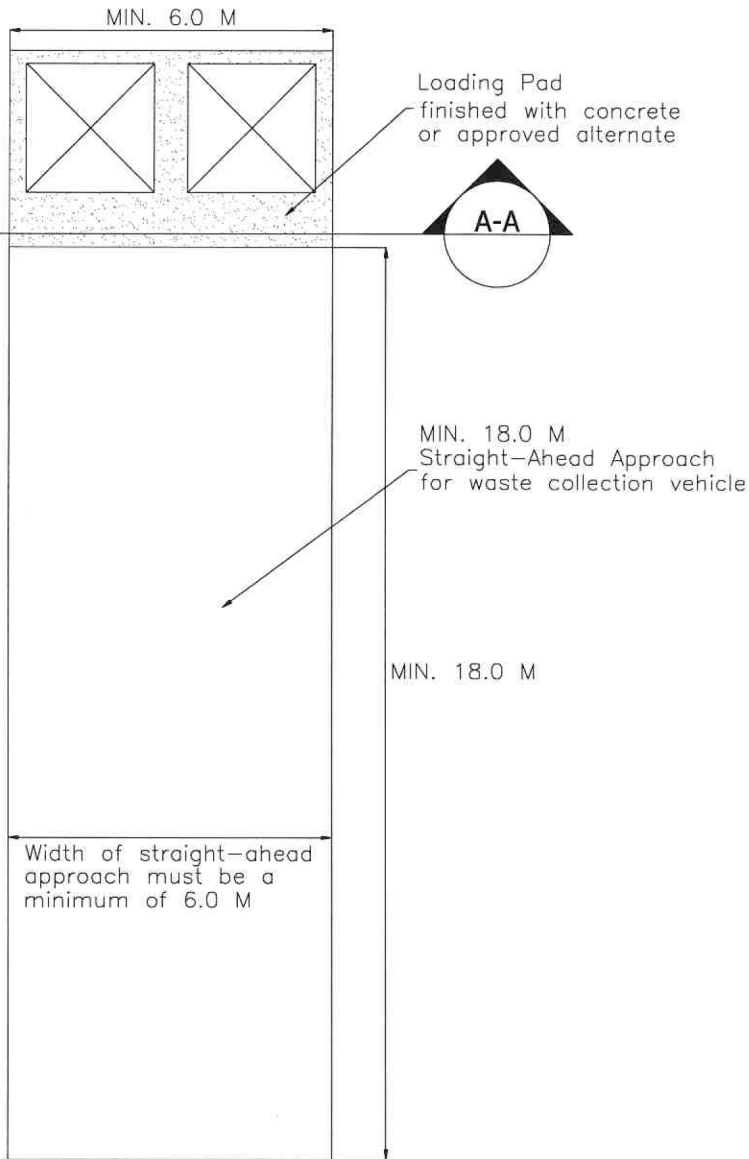


NOTES:

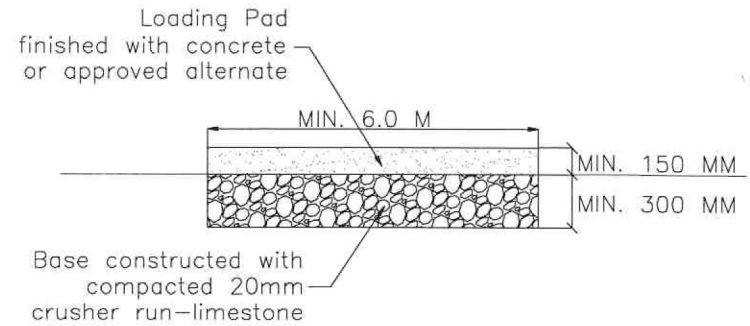
1. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED

4.			
3.			
2.			
1.			
REVISIONS		APR'D	DATE
CITY OF VAUGHAN ENGINEERING STANDARD			
<h2 style="margin: 0;">TURNAROUND - THREE POINT TURN</h2>			
NOT TO SCALE		DESIGNED: <u>PUB WORKS</u>	STD. DWG.
REVISION: _____		DATE: <u>MAY 2015</u>	SW-104



LOADING AREA



Section A-A

NOTES:

1. WIDTH OF LOADING PAD MAY VARY DEPENDING ON THE REQUIRED NUMBER OF WASTE CONTAINERS SET OUT FOR COLLECTION.
2. REFER TO WASTE COLLECTION DESIGN STANDARDS POLICY

4.			
3.			
2.	REV. 2		JAN29
1.	REV.1 NOTES ADDED		JAN24
	REVISIONS	APR'D	DATE



CITY OF VAUGHAN ENGINEERING STANDARD

DESIGNATED LOADING AREA
LOADING PAD & STRAIGHT AHEAD APPROACH

NOT TO SCALE DESIGNED: PUB WORKS STD. DWG.
REVISION: _____ DATE: JAN. 2013 SW-105

mm DIMENSIONS IN MILLIMETRES
EXCEPT AS NOTED