FACILITIES CIVIL ENGINEERING STANDARD – SWEPT PATH ANALYSIS

MX-FAE-STD-C008

Facilities Architecture & Engineering
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October 2025

METROLINX

Facilities Civil Engineering Standard – Swept Path Analysis

MX-FAE-STD-C008

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Preface

This is the first edition of the Facilities Civil Engineering Standard—Swept Path Analysis (MX-FAE-STD-C008). The purpose of this standard is to provide minimum civil engineering requirements and design guidance to designers for Metrolinx-owned assets.

This standard is to be followed by Engineering and Design Consultants working on Metrolinx projects and internal Metrolinx staff.

The technical content within the Facilities Civil Engineering Standard—Swept Path Analysis (MX-FAE-STD-C008) was developed by the Metrolinx Facilities, Architecture, and Engineering's Civil Engineering Team within the Asset Management and Maintenance Division, which includes specialized subject matter experts.

This Standard is available for external users to download via the Metrolinx public download site at https://www.metrolinx.com/en/metrolinx-technical-standards

Suggestions for revision or improvements can be sent to Metrolinx Facilities, Architecture, and Engineering (FAE) Civil Engineering Team, Attention: Senior Manager, FAE Civil Engineering, who will introduce the proposed changes to Metrolinx FAE Civil Engineering. The Senior Manager, FAE Civil Engineering, ultimately authorizes the changes. A description of the proposed change shall be included along with information on the background of the application and any other useful rationale or justification. Proposals for revisions or improvements shall include your name, company affiliation (if applicable), email address, and phone number.

October 2025

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1. General

1.1 Purpose

1.1.1 The purpose of a swept path analysis is to confirm that vehicles can safely and efficiently manoeuvre within a proposed site plan layout, particularly for turning, parking, and loading/unloading operations.

1.2 Scope

1.2.1 A swept path analysis shall be conducted to determine the dimensional requirements for key areas within Metrolinx-owned and/or operated stations and facilities, including:

a) GO Stations (Bus and/or Rail);

b) GO Bus Maintenance Facilities;

c) LRT Stations;

d) BRT Stations;

e) Subway Stations; and

f) Park and Ride stations where buses traverse.

These areas may include, but are not limited to, Pick-Up Drop-Off (PUDO) areas, internal roadways, maintenance access roads and pathways, passenger parking areas, bus loops, and bus facilities.

1.2.2 Swept path analyses shall be initiated during the project's preliminary design phase to inform design decisions and shall be updated throughout the iterative design process.

1.2.3 This document shall be read in conjunction with the Metrolinx Facilities Civil Engineering and Building Envelope Standard—General (MX-FAE-STD-C001).

2. Definitions & Abbreviations

2.1 Definitions

2.1.1 The capitalized terms used in this standard shall have the meaning prescribed in Table 1.

Table 1: List of Definitions

Term	Definition
Clearance Envelope	The space required around a moving vehicle to ensure safe operation, accounting for both horizontal and vertical clearances.
Design Speed	The recommended speed at which vehicles should operate in specific areas, such as bus loops and parking facilities.
Horizontal Buffer	A minimum clearance added to vehicle dimensions in swept path analysis to account for driver variability and operational safety.
Swept Path	The area that a vehicle occupies while making a turn, including the path of its wheels and body overhang.
Turning Radius	The minimum space required for a vehicle to complete a turn without crossing into adjacent lanes or obstructions.
Vertical Clearance	The minimum required height between the ground and overhead structures to ensure vehicle clearance.

2.2 Abbreviations

2.2.1 The abbreviations used in this standard shall have the meaning prescribed in Table 2.

Table 2: List of Abbreviations

Abbreviation	Definition
AHJ	Authority Having Jurisdiction
GO	GO Transit
MTO	Ministry of Transportation of Ontario
PUDO	Passenger Pick-Up & Drop-Off
TAC	Transportation Association of Canada

3. Swept Path Analysis

3.1 General Analysis Requirements

3.1.1 General Requirements

3.1.1.1 Swept path analysis shall be conducted using applicable software that integrates with CAD software used to prepare site designs. The chosen software shall be commonly used to complete swept path analyses in the Metrolinx service area.

3.1.1.2 A site vehicular access review shall be conducted to determine vehicle types and associated manoeuvres required for each project site. The review shall include:

a) Identification of various vehicle types requiring site access, their respective site access points, and the expected movements that each vehicle is required to perform, based on current and projected site use. The review shall be subdivided by specific site areas as required;

b) Vehicle dimensions and turning requirements shall adhere to the guidance provided in Section 3.2.4.2.7 of this standard. Where no dimensional preference is provided by Metrolinx or other applicable transit agencies, vehicle templates from the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads shall be used;

c) Consultation with Metrolinx and other agencies to identify vehicles using the site with restricted movements or special procedural requirements (e.g. Metrolinx requires a spotter or a driver to perform a circle check before reversing); and

d) Determination of the most restrictive vehicle type and movement concerning dimensional requirements for each part of the site. If this is unclear, multiple swept paths shall be performed to evaluate the most conservative manoeuvres.

3.1.1.3 Horizontal clearance envelopes, comprising the vehicle's dimension plus a buffer, shall not overlap with:

a) Any obstructions or the physical limit of other stationary vehicles;

b) Pedestrian walkways and curbs, except where:

1) Curb alignment is necessary for passenger loading/unloading or adjacent parking; and

2) Curb sweeps are expected for buses.

c) Opposing traffic lanes, except for emergency vehicles; and

d) Space required for passengers to safely open vehicle doors without interference from adjacent obstructions.

3.1.1.4 Vertical obstructions designed to be above the path of vehicular travel may be within the horizontal clearance envelope, but shall be assessed to confirm sufficient vertical clearance is provided. Vertical clearance assessments shall:

a) Identify potential elevated obstructions within the horizontal clearance envelope;

b) Account for worst-case scenarios, considering vehicle height variations and transitions in surface slope, such as ramps; and

c) Include all possible movements, including during distress conditions, minor driver errors, loss of traction, runaway bus scenarios, towing and rescue operations.

3.1.1.5 A site plan review shall identify potential vehicular obstructions within the horizontal or vertical clearance envelopes. Examples of obstructions include, but are not limited to:

a) Parked or stationary vehicles;

b) Poles and posts;

c) Fences;

d) Retaining walls;

e) Canopies and shelters;

f) Building elements, including structural columns, walls, and overhangs; and

g) Snow storage areas and garbage enclosures.

3.1.1.6 All station and facility layouts and associated designs shall be modified to ensure that all vehicular movements can be safely accommodated. Dimensional requirements identified in the swept path analysis shall take precedence over other standards if a larger area is needed.

3.1.1.7 Swept paths shall be continuous and smooth, avoiding abrupt steering movements.

3.2 Area Specific Analysis Requirements

3.2.1 Bus Loop and Bus Access Area Requirements

3.2.1.1 Vehicle Types

The following vehicles may require access to bus loops:

a) GO Buses;

b) Buses owned by other transit agencies;

c) Emergency vehicles;

d) Snow removal vehicles;

e) Waste collection vehicles; and

f) Maintenance vehicles.

3.2.1.2 Vehicular Movements

3.2.1.2.1 Bus movements to be reviewed shall include, but not limited to:

a) Entry and exit movements into and out of the bus loop from the municipal road right-of-way;

b) Independent entry and exit movements of dedicated bus bays with the assumption that adjacent bus bays are occupied;

c) Full circulation movements of the bus loop;

d) Independent entry and exit movements of layover bays; and

e) Bus circulation shall consider the need for customer comfort by avoiding unnecessary short turns where possible.

3.2.1.2.2 Other vehicle movements to be reviewed shall include, but not limited to:

a) Confirm with Metrolinx Stations Operations and Bus Operations when maintenance vehicle access is required within the bus loop;

b) If access is required during normal operation hours, maintenance vehicles shall be shown as obstructions for bus and other vehicle manoeuvres, and buses shall be assumed as obstructions in all bus and layover bays in assessing maintenance vehicle manoeuvres;

c) If access is required after hours, maintenance vehicle manoeuvres can be assessed, assuming the bus loop or access areas are empty;

d) Movements by emergency vehicles, if required, within the bus loop. Specifications for these movements shall be developed in consultation with the local municipal agency responsible for emergency access to the facility and shall have considerations for the traffic present within the bus loop;

e) If a garbage enclosure is present within a bus loop, a swept path analysis shall be performed to ensure that the waste collection vehicle can access the

garbage enclosure while buses are present and the facility is at maximum capacity, without interrupting bus operations; and

f) Movements associated with other vehicles requiring access shall be assessed on a site-by-site basis, if they may dictate dimensional requirements for the facility.

3.2.1.2.3 Clearances:

a) The following minimum GO Bus clearances shall be applied, unless more conservative clearances are required by other agencies for their vehicles:

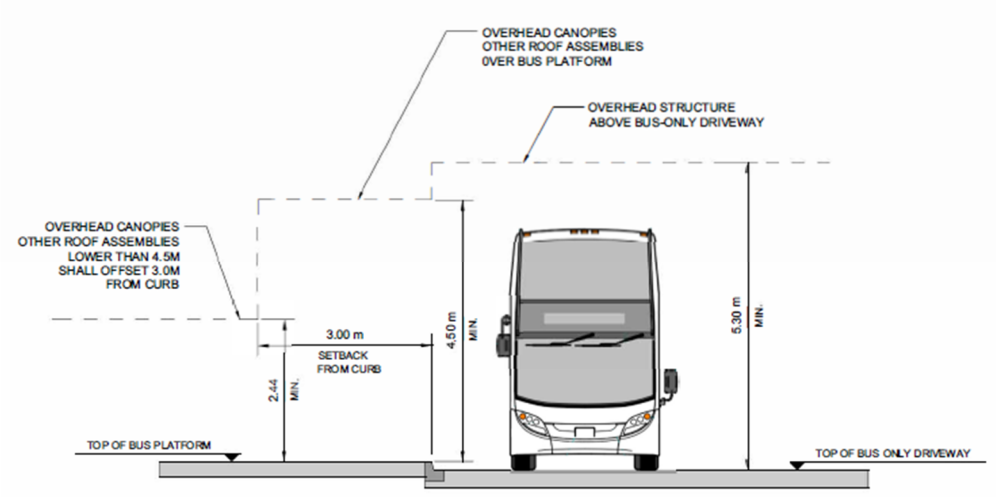
1) Where an overhead structure (bridge, screen, overhead sign, indoor bus terminal, etc) is above the bus-only driveway, the minimum vertical clearance shall be 5,300 mm, unless technical justification demonstrates a reduction will not impact operations or safety. This justification shall be submitted to and approved by the Owner of this Standard;

2) Where an overhead structure (bridge, screen, overhead sign, indoor bus terminal, etc) is offset from the bus-only driveway within 3,000 mm of the edge of the curb, the minimum vertical clearance shall be 4,500 mm;

3) Where an overhead structure (bridge, screen, overhead sign, indoor bus terminal, etc) is offset from the bus-only driveway more than 3,000 mm of the edge of the curb, the minimum vertical clearance shall be 2,440 mm; and

4) The vertical offsets are summarized in Figure 1 below.

Figure 1: Summary of Clearance Requirements for Bus Loops



b) The bus loop areas are designed not to require any bus overhang; and

c) A 3,000 mm continuous horizontal clearance is required from face of curb to the edge of the structure (e.g. building structure, bus shelters, etc) at all bus platforms. Small, fixed objects shall be outfitted with breakaway poles and avoid conflicts with the accessible area path. They shall also maintain a setback of 1,000 mm horizontal clearance from the face of curb.

3.2.1.3 Design Speeds

3.2.1.3.1 The following minimum design speeds shall be applied, unless more conservative speeds are required by other agencies for their vehicles.

a) 15 km/h for circulating bus movements within the bus facility; and

b) 5 km/h for bus movements entering and exiting bus bays and layover stalls.

3.2.2 GO Bus Maintenance Facilities Requirements

3.2.2.1 Vehicle Types

The following vehicles may require access to the bus maintenance facility, depending on specific site conditions:

a) Passenger Vehicles;

b) Buses;

c) Emergency Vehicles;

d) Waste Collection;

e) Snow Removal Vehicles and Associated Equipment;

f) Maintenance and Operations Vehicles (maintenance vehicles, delivery vehicles, etc); and

g) Other vehicles as determined through the site vehicular access review.

3.2.2.2 Vehicular Movements

3.2.2.2.1 Manoeuvres associated with emergency vehicles shall be developed in consultation with the local municipal agency responsible for emergency access to the facility.

3.2.2.2.2 The review of bus movements at maintenance facilities shall:

a) Include manoeuvres within internal and external paths of travel, including entry into the building from the vehicular access road, based on the specific requirements associated with the facility; and

b) Assume that facility parking areas are occupied during all bus manoeuvres, unless approved by the eventual operator of the facility and the owner of this standard.

3.2.2.2.3 A review of additional vertical clearances, specific to bus access areas, shall be completed:

a) Where an overhead structure (bridge, screen, overhead sign, indoor bus terminal, etc) is above the bus-only driveway, the minimum vertical clearance shall be 5,300 mm, unless technical justification demonstrates a reduction will not impact operations or safety. This justification shall be submitted to and approved by the Owner of this Standard.

b) Where an overhead structure (bridge, screen, overhead sign, indoor bus terminal, etc) is offset from the bus-only driveway within 3,000 mm of the edge of the curb, the minimum vertical clearance shall be 4,500 mm.

c) Where an overhead structure (bridge, screen, overhead sign, indoor bus terminal, etc) is offset from the bus-only driveway more than 3,000 mm of the edge of the curb, the minimum vertical clearance shall be 2,440 mm.

3.2.2.2.4 Maintenance vehicle manoeuvres shall be assessed to ensure that all regular maintenance operations can be performed during normal site operation, while the facility is at maximum capacity, without restricting parking spaces or areas designated for customer use. Any temporary facility restrictions to facilitate maintenance access shall be approved by the corresponding Metrolinx group responsible and identified in the swept path analysis.

3.2.2.2.5 Ensure waste collection vehicles can navigate through the site and access the garbage enclosure to perform necessary functions as required by Metrolinx Stations Operations, without interruptions to parking areas or normal site operations.

3.2.2.2.6 Movements associated with other vehicles requiring access shall be assessed on a site-by-site basis and shall be incorporated into swept path analysis if they may dictate dimensional requirements for the facility.

3.2.2.3 Design Speeds

3.2.2.3.1 The following minimum design speeds shall be applied, unless more conservative speeds are required by other agencies for their vehicles.

a) 15 km/h within access roads, parking aisles, etc; and

b) 5 km/h for movements associated with entry and exit from parking stalls, and within maintenance buildings.

3.2.3 Passenger Parking and Internal Roadway Requirements

3.2.3.1 Vehicle Types

The following vehicles may require access to passenger parking areas and internal roadways, depending on specific site conditions:

a) Passenger Vehicles;

b) Paratransit Vehicles;

c) Emergency Vehicles;

d) Waste Collection;

e) Snow Removal Vehicles and Associated Equipment;

f) Maintenance and Operations Vehicles; and

g) Other vehicles as determined through the site vehicular access review.

3.2.3.2 Vehicular Movements

3.2.3.2.1 Passenger vehicle movements shall include, but are not limited to:

a) Entry and exit movements into parking spaces placed at corners, constrained areas, dead ends, and so on, where conflicts may exist;

b) Manoeuvres through all access and egress points, intersections, internal lanes or paths of travel within the facility; and

c) All manoeuvres entering, exiting, and navigating through parking garages.

3.2.3.2.2 An emergency access route within the facility shall be defined in consultation with the local municipality. The following assumptions shall be applied:

a) Emergency vehicle movements shall be analyzed assuming that active traffic on internal roadways can be cleared, but that a single vehicle may stall at any given pinch points in the system that will need to be passed by the emergency vehicle;

b) All parking stalls shall be assumed to be occupied during an emergency; and

c) Additional movements required by the municipality shall be assessed and incorporated if required.

3.2.3.2.3 All areas identified for stockpiling of snow during winter operations shall be inputted into swept path analysis as obstructions.

3.2.3.2.4 Maintenance vehicle manoeuvres shall be assessed to ensure that all regular maintenance operations can be performed during normal site operation, while the facility is at maximum capacity, without restricting parking spaces or areas designated for customer use. Any temporary facility restrictions to facilitate maintenance access shall be approved by the corresponding Metrolinx group responsible and identified in the swept path analysis.

3.2.3.2.5 Where a garbage enclosure is present, a swept path analysis shall be performed to ensure that a waste collection vehicle can access the garbage enclosure without disruption to normal site operation.

3.2.3.2.6 Movements associated with other vehicles requiring access shall be assessed on a site-by-site basis and shall be incorporated into swept path analysis if they may dictate dimensional requirements for the facility.

3.2.3.3 Design Speeds

3.2.3.3.1 Design speed on internal roadways within the facility shall be determined by the designer, based on the specific characteristics of the roadway and expected vehicular traffic.

3.2.3.3.2 Minimum design speed of 15 km/h for movements circulating within the parking lot aisles.

3.2.3.3.3 Minimum design speed of 5 km/h for movements entering and exiting parking stalls.

3.2.4 Passenger Pick-Up & Drop-Off (PUDO) Facilities Requirements.

3.2.4.1 Vehicle Types

The following vehicles may require access to the PUDO depending on specific site conditions:

a) Passenger Vehicles;

b) Paratransit Vehicles;

c) Emergency Vehicles;

d) Waste Collection;

e) Snow Removal Vehicles and Associated Equipment; and

f) Maintenance and Operations (maintenance vehicles, delivery vehicles, etc).

3.2.4.2 Vehicular Movements

3.2.4.2.1 Passenger vehicle movements shall include, but not limited to:

a) Entry and exit movements into drop-off zones and/or PUDO aisles/stalls where conflicts may exist.

b) Manoeuvres through all access and egress points, assuming the facility is at maximum capacity and all PUDO aisles/stalls and drop off zones are occupied.

3.2.4.2.2 For paratransit vehicles requiring access to accessible drop-off zones, or other locations designated for pick-up and drop-off, consult with the agency providing these services. In addition to being able to navigate to the drop-off zone, the vehicle shall be able to perform pick-up and drop-off functions without blocking traffic within the PUDO area.

3.2.4.2.3 An emergency access route within the facility shall be defined in consultation with the local municipality. The following assumptions shall be applied:

a) Emergency vehicle movements shall be analyzed assuming that active traffic on PUDO can be cleared, but that a single vehicle may stall at any given pinch points in the system that will need to be passed by the emergency vehicle; and

b) Any other movements required by the municipality shall be assessed.

3.2.4.2.4 All areas identified for stockpiling of snow during winter operations shall be inputted into swept path analyses as obstructions.

3.2.4.2.5 Maintenance vehicle manoeuvres shall be assessed to ensure that all regular maintenance operations can be performed during normal site operation, while the facility is at maximum capacity, without restricting the PUDO usage. Any temporary facility restrictions to facilitate maintenance access shall be approved by the corresponding Metrolinx group responsible and identified in the swept path analysis.

3.2.4.2.6 Where a garbage enclosure is present, a swept path analysis shall be performed to ensure that a waste collection vehicle can access the garbage enclosure without disruption to normal site operation.

3.2.4.2.7 Movements associated with other vehicles requiring access shall be assessed on a site-by-site basis and shall be incorporated into swept path analysis if they may dictate dimensional requirements for the facility.

3.3 Vehicle Requirements

3.3.1 Passenger Vehicles

3.3.1.1 Vehicle Dimensions

The PTAC vehicle template, as provided in the latest version of the TAC design guide, shall be used for analysis of all passenger vehicle movements.

3.3.1.2 Safety Buffers

a) A minimum horizontal buffer of 250 mm shall be added to the vehicle's PTAC dimensions on either side of the vehicle for movements associated with entry and/or exit into a parking stall;

b) A minimum horizontal buffer of 500 mm shall be added to the vehicle's PTAC dimensions on either side of the vehicle for regular vehicular movements;

c) A minimum vertical buffer of 300 mm shall be added to the vehicle's PTAC dimensions; and

d) A barrier curb is acceptable in providing control of vehicles, and the safety buffer can be reduced to the maximum reach of the curb sweep.

3.3.2 GO Buses

3.3.2.1 Vehicle Dimensions

3.3.2.1.1 Vehicle dimensions for Metrolinx GO buses are provided in Table 3. Additional drawings and specifications associated with the buses are provided in Metrolinx Rolling Stock Standard Drawings.

Table 3: GO Transit Bus Dimensions

Vehicle	Type	Dimensions
ENVIRO 500 Super Low	GO Bus	1) Width: 2,520 – 2,580 mm; 2) Length: 13,037 – 13,817 mm accommodation; 3) Height: 3,910 – 4,149 mm. This bus has the ability to vary in height. Refer to bus specification data obtainable from Metrolinx; and 4) Lock-to-lock time is 6 seconds
MCI D4500	GO Bus	1) Width: 2,591 mm; 2) Length: 13,870 mm; 3) Height: 3,439 – 3,480 mm. This bus has the ability to vary in height. Refer to bus specification data obtainable from Metrolinx; and 4) Lock-to-lock time is 6 seconds

3.3.2.2 Safety Buffers

3.3.2.2.1 A distance of 1,000 mm shall be added to the bus dimension (e.g. length) at its front to account for a deployed bicycle rack.

3.3.2.2.2 A horizontal clearance of 1,750 mm shall be provided between the design vehicle turning radius and any fixed object or curb, with the following exclusions:

3.3.2.2.3 A horizontal clearance of 450 mm shall be added from rear corner of the bus parallel to the bus platform curb when the bus is exiting the bus bay.

3.3.3 Emergency Vehicles

3.3.3.1 Vehicle Dimensions

3.3.3.1.1 Consult with applicable local municipalities to confirm the required vehicle size for assessing emergency vehicle access, such as fire trucks and ambulances. Select the most restrictive vehicle sizes to assess vehicular movements.

3.3.3.2 Safety Buffers

3.3.3.2.1 Apply a minimum buffer of 500 mm to the horizontal and vertical clearance envelope of the vehicle dimensions, or more as dictated by the local municipality.

3.3.4 Waste Collection Vehicles

3.3.4.1 Vehicle Dimensions

a) Ensure a front-load waste collection truck with 44 cubic yard capacity to access the garbage enclosure, applicable to all GO Transit sites. Dimensions of this vehicle provided in

b) Table 4; and

c) A different waste collection truck may be required depending on the specific facility needs. The dimensions of this vehicle shall be determined by consulting with the group responsible for oversight of garbage collection at the facility and the Owner of this Standard.

Table 4: Parameters for Waste Collection Vehicles (GO Sites)

Vehicle	Type	Dimensions
Front-Load Garbage Truck (44 cu. Yd Capacity)	Waste Collection	1) Width: 2,578 mm; 2) Length: 10,922 mm (Forks up), 11,913 mm (Forks down), 13,325 mm (Forks down, tailgate up); 3) Height: 4,321 mm (forks/tailgate down), 5,969 mm (forks up), and 5,751 mm (tailgate fully opened).

3.3.4.2 Safety Buffers

a) Apply a minimum buffer of 500 mm to the horizontal and vertical clearance envelope of the vehicle dimensions, or more as dictated by the group responsible for oversight of garbage collection vehicles.

3.3.5 Paratransit Vehicles

3.3.5.1 Vehicle Dimensions

3.3.5.1.1 Dimensions for a paratransit vehicle shall be obtained from the local agency responsible for this service at each facility.

3.3.5.1.2 In some cases, the same or similar paratransit vehicles may have various loading and unloading configurations, which shall be considered as part of the swept path analysis.

3.3.5.2 Safety Buffers

3.3.5.2.1 Apply a minimum buffer of 500 mm to the horizontal and vertical clearance envelope of the vehicle dimensions, or more as dictated by the group responsible for oversight of paratransit vehicles.

3.3.6 Snow Removal, Service & Maintenance Vehicles

3.3.6.1 Vehicle Dimensions

3.3.6.1.1 Vehicle types shall be selected by the designer and Metrolinx team responsible for snow removal and services based on the specific service and/or maintenance needs of the facility.

3.3.6.1.2 Vehicles that are required to perform large-scale construction and/or infrastructure rehabilitation shall not be considered in swept path analysis, unless a specific need has been identified by the designer or Metrolinx team responsible for snow removal and services.

3.3.6.1.3 Vehicle dimensions shall be based on vehicle templates available in the TAC guidelines, where available.

3.3.6.1.4 Custom vehicle dimensions shall be supported by documentation of the vehicle type, size, and turning requirements and approved by the Metrolinx team responsible for snow removal and services.

3.3.6.2 Safety Buffers

3.3.6.2.1 Apply a minimum buffer of 500 mm to the horizontal and vertical clearance envelope of the vehicle dimensions, or more as dictated by the group responsible for oversight of snow removal, service, and maintenance vehicles.

3.4 Submission Requirements

3.4.1 General Submission Requirements

3.4.1.1 A brief report shall be submitted to document the swept path analysis conducted at each project milestone (e.g. conceptual, preliminary, 30%, 60%, 90%, 100%, and IFT). Proceeding to the subsequent design milestone shall occur upon Metrolinx's acceptance of the swept path analysis report. The report shall be prepared and sealed by a Professional Engineer licensed to practise in the Province of Ontario, and shall include the following:

a) Executive Summary: An executive summary that highlights key findings and recommendations for quick reference and decision-making, including all requirements stipulated in this Section;

b) Statement of Compliance: A statement indicating the analysis was carried out to comply with standards and requirements from applicable transit agencies and local municipalities;

c) Reference Vehicle Summary: A summary of reference vehicle selection with corresponding vehicle profiles and dimensions;

d) Identification of Problem Areas: The report shall identify any areas where vehicles cannot manoeuvre safely or efficiently; and

e) Recommendations for Design Changes: Based on the problem areas, provide practical recommendations for modifying the design to accommodate the necessary vehicle paths.

3.4.1.2 Swept Path Analysis drawings shall conform to the following:

a) Include a Metrolinx-approved border with a scale of 1:250;

b) Depict all site obstructions identified through the site review that may interfere with either the horizontal or vertical clearance envelope;

c) Show detailed diagrams for all key manoeuvres, including clear representation of vehicle body paths, overhang paths for both front and rear of vehicle, tire tracks for both inner and outer wheels, and horizontal buffers; and

d) Provide annotated plans to show site layout, critical points (e.g. turning radii and clearance areas), and areas of potential conflicts.

3.4.1.3 Vehicles swept paths shall be delineated in colours outlined in Table 5, to differentiate between vehicles.

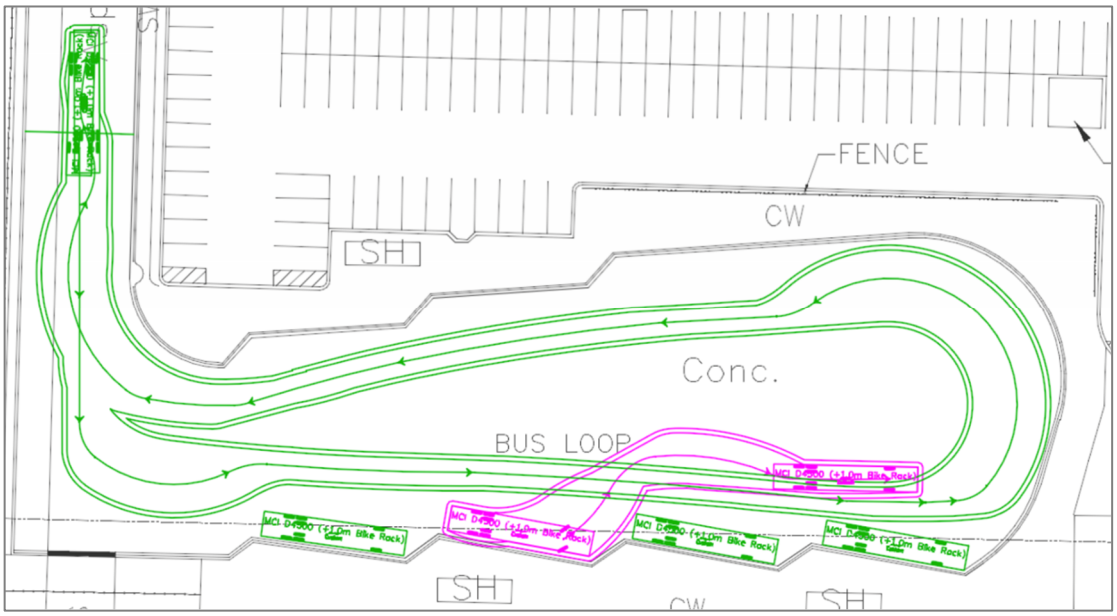
Table 5: Swept Path Linework Colours

Vehicle	RGB Colour System
Tractor Trailer	**Blue** Red:0 Green:0 Blue:255
Single Unit Trucks	**Purple** Red:112 Green:48 Blue:160
Emergency Vehicles	**Red** Red:255 Green:0 Blue:0
Garbage Truck	**Cyan** Red:0 Green:124 Blue:146
Paratransit Vehicles	**Dark Red** Red:192 Green:0 Blue:0
Buses	**Green** Red:0 Green:176 Blue:80
Passenger Vehicles	**Black** Red:0 Green:0 Blue:0
Maintenance Vehicles, Including Snow Removal	**Brown** Red:150 Green:75 Blue:0
Other Vehicles	**Pink** Red:255 Green:192 Blue:203

3.4.1.4 Overlapping swept paths and vehicle cells are to be minimized for legibility. Where swept path manoeuvres overlap, the manoeuvres shall be separated into different sheet files for clarity.

3.4.1.5 Swept paths analysis shall clearly show obstructions and adjacent vehicles via colour differentiation and contrast from the vehicular movement being analyzed, as illustrated in Figure 2 below. Where multiple vehicles of the same type are shown for this purpose, the colours can be different than those provided in Table 5 for clarity.

Figure 2: Example of Distinct Colours to Differentiate Vehicular Movements.



3.4.1.6 Annotations and hatching of turning radii measurements and swept path movements are to be at the discretion of the designer.