

FINAL | August 2015

CITY OF HAMILTON

CO-ORDINATED STREET FURNITURE

GUIDELINES



© MMM Group Limited 2015

Standard Limitations

This report was prepared by MMM Group Limited (MMM) for the client in accordance with the agreement between MMM and the client. This report is based on information provided to MMM which has not been independently verified.

The disclosure of any information contained in this report is the sole responsibility of the client. The material in this report, accompanying spreadsheets and all information relating to this activity reflect MMM's judgment in light of the information available to us at the time of preparation of this report. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. MMM accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or actions based on this report.

MMM warrants that it performed services hereunder with that degree of care, skill, and diligence normally provided in the performance of such services in respect of projects of similar nature at the time and place those services were rendered. MMM disclaims all other warranties, representations, or conditions, either express or implied, including, without limitation, warranties, representations, or conditions of merchantability or profitability, or fitness for a particular purpose.

Some photographs in this report have been obtained through the internet or otherwise from the public domain from a number of jurisdictions. They are for illustrative purposes only and do not reflect in any respect the preferred design or solution. MMM Group Limited neither owns nor makes any representations hereunder respecting copyright in these photographs.

This Standard Limitations statement is considered part of this report.

TABLE OF CONTENTS

1.	INTRODUCTION	
1.1	Purpose of the Guidelines	1
1.2	Key Street Furniture Elements	1
1.3	Context and Current Practices	2
1.4	Accessibility	3
2.	PEDESTRIAN ZONES	6
2.1	Introduction	7
2.2	Pedestrian Zones	8
2.3	Pedestrian Zone Configurations	10
2.4	Typical Configurations	12
2.5	Site Specific Solutions	16
2.6	Use of Advertising	20
3.	STREET FURNITURE SELECTION AND PLACEMENT CRITERIA	21
3.1	General Selection and Placement Principles	22
3.2	Individual Furniture Placement Guidelines	24
	GLOSSARY & REFERENCES	49

1. INTRODUCTION

1.1 Purpose of the Guidelines

MMM Group Limited (MMM) has worked closely with the City of Hamilton to develop site selection criteria and guidelines. The guidelines address the need for a unified street furniture program that contributes to a high quality public realm on the streets of Hamilton. A unified approach to street furniture will improve the streetscapes of Hamilton in terms of continuity and visual coherence, as well as streamline the design process. In addition, the guidelines will identify the street furniture elements that are suitable for limited and controlled advertising to maintain a visual quality of the streetscape, while providing an opportunity to offset the costs of providing and maintaining street furniture throughout the City. The intent of the guidelines is not to prescribe a series of “one fits all” solutions, but to be a flexible tool that is intended to be used at the discretion of the City or designers. The guidelines support context-specific approaches in responding to the variety of street types and uses that make up Hamilton’s urban fabric, and the creation of a diverse, yet coordinated urban landscape. These guidelines can be used when considering both new developments and retrofitting of existing streets, and should be used as guidance in applying discretion based on site-specific conditions and requirements.

1.1.1 Key Objectives

- Provide guidance to City staff for the establishment of a cohesive, accessible, safe, functional and expandable system of street furniture elements in the City of Hamilton;
- Encourage context-specific solutions, flexibility and innovation to respond to site-specific conditions and design requirements;
- Improve the image and identity of the City’s streetscape;
- Provide guidance for incorporating controlled advertising on Hamilton’s street furniture.

1.2 Key Street Furniture Elements

Street furniture consists of a wide variety of elements and amenities installed in the public right of way for the use and convenience of the public. Key street furniture elements included within the scope of this study are listed as follows:

- Transit Shelters
- Litter/Recycling Receptacles
- Benches
- Multi-Publication Structures
- Wayfinding Kiosks
- Poster Kiosks
- Bicycle Racks
- Cigarette Receptacles

1.3 Context and Current Practices

Over time, numerous street furniture amenities have been introduced to Hamilton's streetscapes and demand continues to grow. The resulting streetscapes, in the absence of consistent design and placement guidelines, may consist of disordered design elements. Some of the examples of existing challenges are highlighted on the right.

1.3.1 Related Regulations and Initiatives

Street furniture selection and placement guidelines will assist the City and designers in integrating street furniture into the public realm in a manner that would be cohesive, accessible, safe, efficient and aesthetically pleasing.

These guidelines were prepared and should be subsequently used in accordance with all applicable National, Provincial and City of Hamilton Policies and Procedures as well as all other related standards and initiatives including:

- Accessibility for Ontarians with Disabilities Act (2009)
- Hamilton Mobility Street Master Plan (2003)
- City of Hamilton Urban Braille System (2002)
- City of Hamilton Transportation Master Plan (2007)
- City of Hamilton Barrier Free Design Guidelines (2006)
- City of Hamilton Transit Bus Stop Accessibility Criteria and Guidelines (2014)
- City of Hamilton Bike Parking Strategy and Design Guidelines (in progress)
- City of Hamilton Pedestrian Mobility Plan (2012)

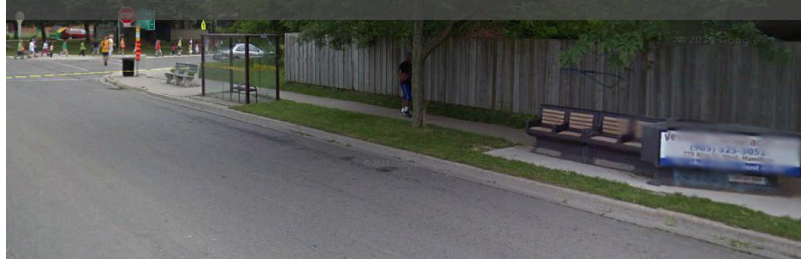
Space Constraints, Obstacles

NARROW WALKWAYS OBSTRUCTED BY LIGHT STANDARDS AND OTHER STREET FURNITURE CAN CREATE POTENTIALLY INACCESSIBLE AREAS.



Functionality, Coordination

THE BENCH IS TOO FAR FROM A BUS STOP. THERE IS INSUFFICIENT PAVED SPACE AROUND THE BENCH TO MANEUVER AROUND IT WITHOUT STEPPING ON GRASS. FURNITURE DESIGNS ARE NOT COORDINATED WITH ONE ANOTHER.



Accessibility

BUS STOP IN A RURAL AREA PRESENTS ACCESSIBILITY CHALLENGES.



Clutter, Accessibility

A LOT OF FURNITURE IS CLUSTERED TIGHTLY IN A CONSTRAINED SPACE, CREATING CLUTTER AND OBSTACLES FOR MOVEMENT.



FIGURE 1.3.1 | Existing Furniture Placement Challenges

Image Credit: Google Earth

1.4 Accessibility

During the process of selection and placement of street furniture in pedestrian environments, an approach should be taken to prioritize accessibility and freedom of movement of people with various levels of ability. In addition to enabling people who experience challenges in the built environment to participate more fully in everyday life, designing for the greatest range of abilities will benefit all users of the public spaces.

The City of Hamilton has been actively addressing the need for accessibility in the built environment, and developed several guidelines and documents for this purpose such as:

- City of Hamilton Barrier Free Design Guidelines (1994, updated in 2006)
- City of Hamilton Urban Braille System (2002)
- City of Hamilton Transit Bus Stop Accessibility Criteria and Guidelines (2014)

In addition, the Accessibility for Ontarians with Disabilities Act was passed in 2005, with a goal to make Ontario accessible for people with disabilities by 2025. The Accessibility Standards for the Design of Public Spaces are province-wide mandatory standards that apply to all new construction or major changes in existing features as of January 1, 2015.

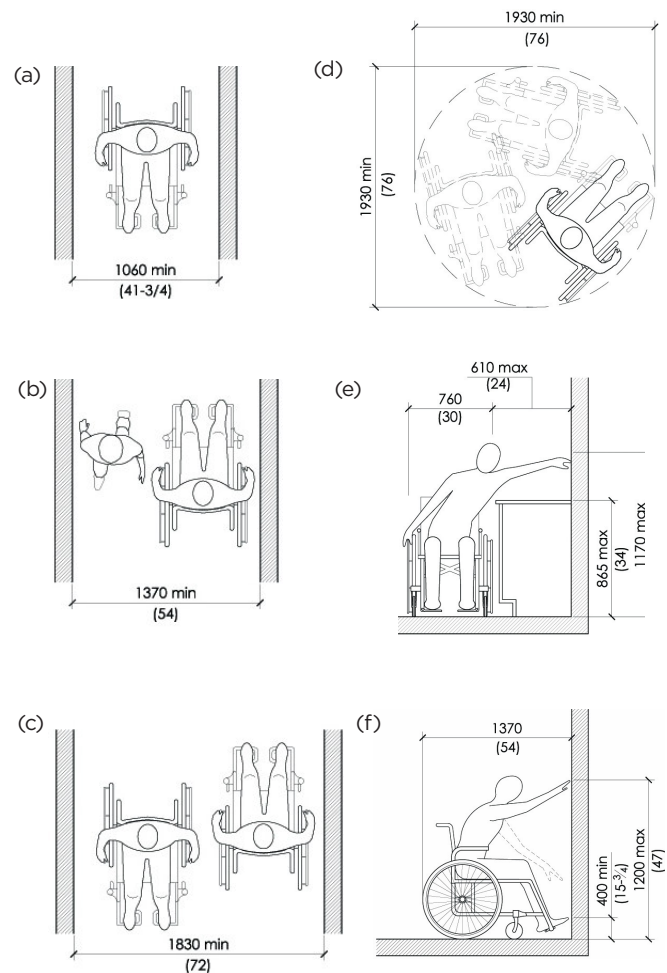
Please note that the guidelines in this document do not present an exhaustive review of all aspects of accessibility. In specific circumstances the designer should refer to other guidelines and requirements, consult with persons with disabilities, consider existing conditions, limitations, and exercise their best judgement in preparing a final design for a specific location. Additional reference documents are provided in the References Section.

1.4.1 Barrier-free Design

The furniture selection and placement guidelines in this document were developed with consideration to the best practices and barrier-free standards and guidelines. All guidelines and dimensional requirements presented in this document are consistent with the Accessibility for Ontarians with Disabilities Act (AODA), the City of Hamilton Barrier Free Design Guidelines and the City of Hamilton Transit Bus Stop Accessibility Criteria & Guidelines. Amendments and revisions to these legislation documents and standards will require corresponding revisions to this document.

Some critical accessibility considerations include:

- Paved surfaces should be hard, even, nonslip and glare-free. Ensure all paving surfaces are flush, have no gaps or tripping hazards and are slip-resistant.
- Ensure that walkways, access paths or approach areas have clear widths that are sufficient for the users of mobility devices. These vary depending on usage and context. For example, main walkways should accommodate at a minimum (min.) two wheelchair users going in opposite directions (Fig. 1.4.1, c), while an approach to a transit shelter, for example, is generally sufficiently wide when it accommodates for two directions of travel, such as one wheelchair and one walking person. (Fig. 1.4.1, b). A space sufficient for one wheelchair user in one direction is sufficient in between objects, such as furniture items, where pedestrian access needs to be provided (Fig. 1.4.1, a)
- Walkways should be continuous, and free of obstacles to maneuver around. The walkway layout and surface materials should not create difficulties during navigation by people with disabilities.
- Layout of the walkways and furniture should not create confusion, conflicts of movement between users or create safety risks.
- Ensure edge protection or fall restraint is provided where walkways or furniture is located close to areas of drop-off or steep slopes.
- Ensure all concrete pads used for the street furniture, such as transit shelters and benches, are flush with adjacent paving surfaces with no tripping hazards.
- Ensure that access pathways are provided to the furniture concrete pads that are facing away from or not directly adjacent to a paved walkway.



The dimensions on these diagrams are provided in both millimeters and inches.

FIGURE 1.4.1 | Access Width and Reach for Wheelchair Users
a: Clear space for a wheelchair; **b:** Clear space for a wheelchair and a walking person to pass one another; **c:** Clear space for two wheelchairs to pass one another **d:** 360-Degree Turning Space; **e:** Side reach; **f:** Forward reach

Image Credit: City of Hamilton Barrier Free Design Guidelines (2006)

1.4.2 Urban Braille

Urban Braille is a system of tactile markings in the pavement that conveys walkway and road boundaries; hierarchy of clearways; directional change; and entrances to significant buildings. It is best implemented as planned and coherent network that provides inclusive mobility for local populations.

HamiltonBarrierFreeDesignGuidelines recommend the use of Urban Braille in urban areas with high pedestrian traffic and semi-public spaces (with walkways and parking lots, or entrances to public buildings), to allow people with visual impairments to navigate through the urban environment with greater ease and convenience.

Urban Braille includes warning symbols and decision node symbols, amongst others, as a means for people with visual disabilities to navigate the street.

Canadian National Institute for the Blind (CNIB) provides additional resources and more detailed guidelines with respect to colour contrast, texture and size of pavement markings, visual information, street furniture, amongst others.

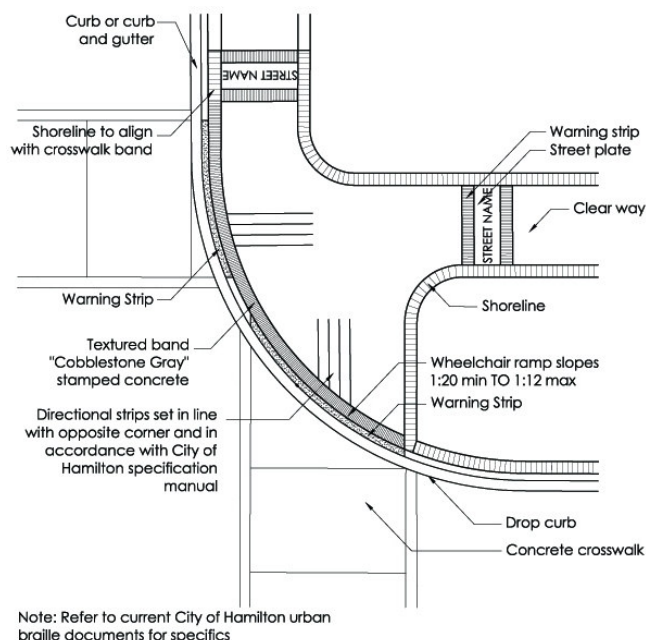


FIGURE 1.4.2. | Urban Braille: Curb Ramp and Direction Strips

Image Credit: City of Hamilton Barrier Free Design Guidelines (2006)

All layouts as well as a test pour indicating finish, colour, stamp patterns and technique must be approved by the City of Hamilton's staff prior to the commencement of any installations.

For more specific design criteria and guidelines, refer to the most recent City of Hamilton Urban Braille System documents.

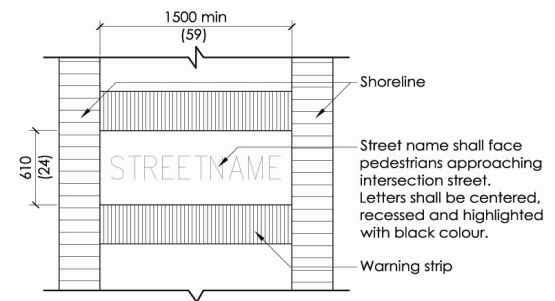


FIGURE 1.4.3 | Urban Braille: Sidewalk Plate

Image Credit: City of Hamilton Barrier Free Design Guidelines (2006)

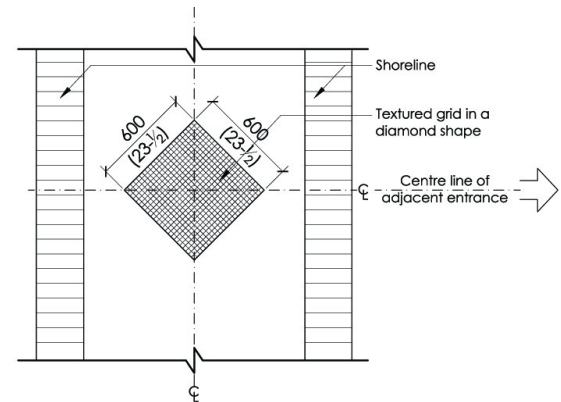


FIGURE 1.4.4 | Urban Braille: Decision Node Symbol

Image Credit: City of Hamilton Barrier Free Design Guidelines (2006)

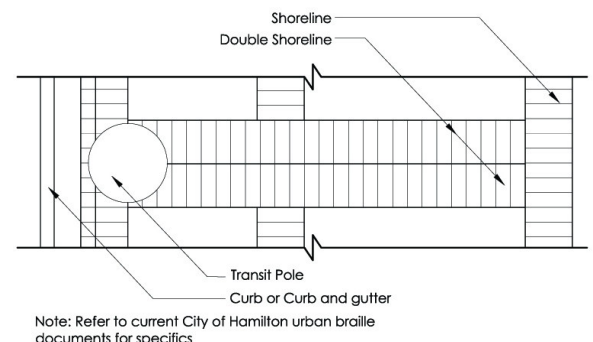


FIGURE 1.4.5 | Urban Braille: Bus Stop Treatment

Image Credit: City of Hamilton Barrier Free Design Guidelines (2006)

2. PEDESTRIAN ZONES

2.1 Introduction

Streets provide an important interface between the private and public realms. In addition to linking distant parts of the city together, streets play a role in the city's economy by connecting businesses with customers; they play a role in active living and recreation; they enable city residents to access facilities and services; and they are a setting of many social interactions.

Street environments are influenced by attributes including, but not limited to: pedestrian, vehicular, cycling and transit use patterns, spatial and physical properties, the surrounding neighbourhood and land uses, and so on.

Hamilton Pedestrian Mobility Plan (2012) has identified through policy review that street design standards and policies for the City of Hamilton have traditionally focused on efficient and safe movement of vehicular traffic, while the characteristics of pedestrian facilities and surrounding built environment within the street right-of-way were given less consideration during street design process.¹

With the introduction of the complete streets approach into Hamilton's urban design in the recent years, street design policies and standards are now in a state of transition to balance the needs of pedestrians, cyclists, transit and motor vehicle users, and to view streets as important parts of the City's public realm.

The changing, but not yet consistent policy framework for integration of pedestrian facilities on Hamilton's streets requires a forward-looking and flexible approach for the Street Furniture Guidelines. The intent of the approach proposed in the guidelines is to establish general principles and methods of furniture integration and placement within the streets that could be compatible with, and incorporated into other existing and evolving City policies and standards.

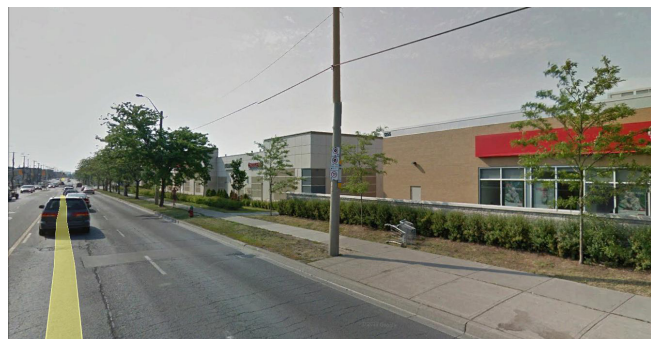
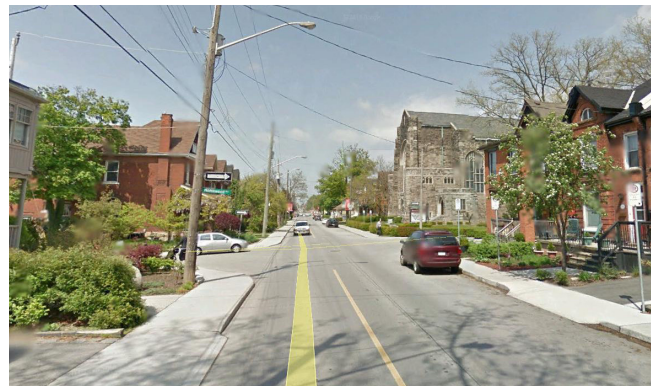
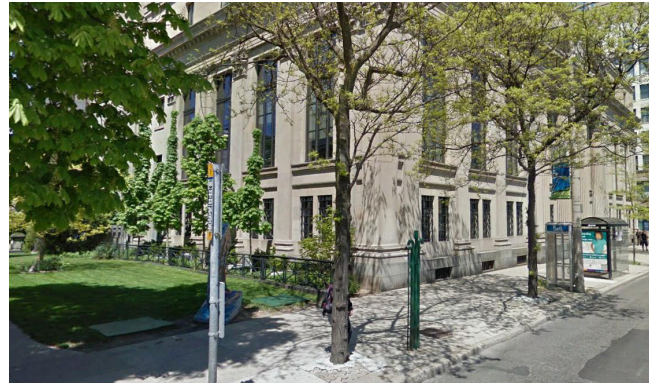


FIGURE 2.1.1 | Diverse Pedestrian Environments on the Streets of Hamilton

Image Credit: Google Earth

1 | Hamilton Pedestrian Mobility Plan, 2012

2.2 Pedestrian Zones

The Co-ordinated Street Furniture Guidelines framework is based on defining pedestrian zones that organize the street and street elements. Street furniture helps support, enhance and encourage pedestrian activity on Hamilton's streets. Well thought out furniture selection and placement will contribute to a more safe, aesthetically pleasing, and functional pedestrian environment; and ultimately, a more livable urban realm.

While many various and often competing interests and requirements are at play in a comprehensive street design process, the guidelines in this report adopt a user-centred perspective that can help inform street layout and organization through a coordinated approach for organizing street elements.

The following 4 **pedestrian zones** within the sidewalk corridor¹ on the street (Fig. 2.2.1) establish an organizing system for street furniture in this document, to support pedestrian activities that take place on city streets:

1. **Buffer zone**
2. **Street tree/furniture zone**
3. **Walkway zone**
4. **Frontage zone**

The use of pedestrian zones prioritizes accessibility for Hamilton's public realm. By allocating sufficient spaces for walking, use of public transit, and access to street furniture, mobility is improved and a more positive experience of the public realm is enjoyed by all.

2.2.1 Buffer Zone

Begins at the edge of curb and provides a safety buffer between moving traffic on the roadway and people and objects in the sidewalk corridor. If it is sufficiently wide, the buffer zone can be used for snow storage once snow is cleared from adjacent walkways and the road except where it overlaps with a bus drop off/pick up area. It may also contain street signs, utilities and parking meters. Any site

elements placed within the buffer zone should be placed with a sufficient setback from the curb. This zone can be either paved or planted.

LOCATION: Always located adjacent to the roadway

- **ZONE OVERLAP:** Cannot be overlapped with any zone, except other clear zones².
- **PRIORITY WITHIN THE PEDESTRIAN R.O.W:** Varied: high in areas of high vehicular traffic & speeds (i.e arterial streets), and lower in areas with low vehicular traffic (i.e local streets). This zone should be determined after the walkway zone is established.
- **STREET FURNITURE:** To ensure the buffer zone is clear for snow storage in the winter, only light poles and street signs are recommended.

2.2.2 Street Tree/ Furniture Zone

This is an amenity zone that may contain street trees and street furnishings, and also may contain light poles or utilities. There should be a minimum width provided for this zone, except where space is required for a minimum walkway and buffer zones, or a bus stop. Street tree zone can overlap with the frontage zone in constrained areas.

- **LOCATION:** Adjacent to walkway zone, can be located on either one side, or both sides of the walkway
- **ZONE OVERLAP:** Can be combined with frontage zone.
- **PRIORITY WITHIN THE PEDESTRIAN R.O.W:** After the walkway zone is established; and after the buffer zone is established (in situations where buffer zone is a high priority).
- **STREET FURNITURE:** All street furniture is permitted (see Sections 2.4.1, 2.4.2, and 3.2.2)
- **SPECIAL CONSIDERATION:** There can be a street tree/furniture zone on both sides of a pedestrian walkway if space permits.

2.2.3 Walkway Zone

A clear, unobstructed path for pedestrian movement with a sufficient width to accommodate two directions of pedestrian travel. Minimum dimensions should comply with accessibility

criteria. No street furniture should be obstructing the walkway zone.

- **LOCATION:** Between the curb and the building edge. Determined first, before any other zone.
- **ZONE OVERLAP:** Cannot be overlapped with any other zone, except for other clear zones (i.e bus pad clear zone)
- **PRIORITY WITHIN THE PEDESTRIAN R.O.W:** Highest priority - a walkway zone of sufficient width should always be provided.
- **STREET FURNITURE:** No street furniture is permitted in this zone.

2.2.4 Frontage Zone

A transitional exterior space between the street right of way and the adjacent buildings. Where the building directly fronts the street, this zone represents the minimum distance that people usually put between themselves and a building. This zone can accommodate features, like sidewalk cafe's, or form an extension of the public realm (building plazas, forecourts, etc.)

- **LOCATION:** Within building setbacks, can overlap onto street tree/street furniture zone,

where approved by the City

- **ZONE OVERLAP:** Can be combined with the street tree/street furniture zone. For example, street vendors can be allowed to use the street tree/furniture zone to increase their business presence on the street (i.e sidewalk cafes).
- **PRIORITY WITHIN THE PEDESTRIAN R.O.W:** Varied: depending on adjacencies, priority in commercial/civic areas is higher than all other street classifications, and after the pedestrian walkway zone is established.
- **STREET FURNITURE:** Some furniture is permitted (see Sections 2.4.1, 2.4.2, and 3.2.2).

1 | Sidewalk corridor is an area within the street that extends from the edge of roadway to edge of the street right-of-way.

2 | A "clear zone" is a defined area of a sidewalk corridor that is clear and unobstructed. There are several types of clear zones that are defined in this document, including walkway clear zones, bus pad clear zones, and individual furniture elements clear zones. See page 24 for further detail.



FIGURE 2.2.1 | Pedestrian Zones

2.3 Pedestrian Zone Configurations

Pedestrian zones can be combined in a number of ways with one another to make up a sidewalk corridor. The capability to adjust zone size, overlap and combine zones enables a wide diversity of possible sidewalk layouts that can be tailored to individual conditions and design requirements of a particular street, or even a specific location on a street.

The concept of pedestrian zones can also provide a framework for retrofitting existing streets in the City. For existing streets, zones can be conceptually assigned on the basis of existing conditions and availability of space (as illustrated in Fig. 2.3.2). Establishing an organizing system for street furniture placement based on the zones, and the opportunity to create a variety of possible street layouts through zone combinations, will help contribute to a diverse, yet coordinated streetscape in the City of Hamilton.

There are many potential pedestrian zone configurations. Common to all of them, the first priority for all **accessible** existing and new streets is to provide for a sufficient width walkway zone to accommodate pedestrian traffic in two directions of travel¹. This means, for example, that if on an existing street there is only a minimum (1.50m) clear width available, a recommendation to remove existing obstructions from the walkway can be made, where feasible².

The proposed approach of flexible pedestrian zone configurations can be applied to a variety of circumstances, from retrofits of existing conditions, design of new streets or street improvements, and can be integrated into other policy documents.

1| See Section 1.4.1 Barrier Free Design, as well as AODA requirements and Hamilton Barrier Free Guidelines. AODA standards recommend a minimum of 1.50m for public paths of travel, such as walkways.

2| I.e. Existing furnishings, such as benches can be relocated. This may prove more challenging when utilities and street trees act as obstacles on a walkway.



FIGURE 2.3.1 | Pedestrian Zones Can Be Combined in a Number of Ways



FIGURE 2.3.2 | Example of How Pedestrian Zones Could Be Conceptually Applied to an Existing Street

2.4 Typical Configurations

This Section illustrates 2 (two) typical zone configurations that will be suitable for a wide variety of streets. Section 2.5, Site Specific Solutions provides a toolkit for configuring pedestrian zones in non-typical situations, including areas with space constraints.

2.4.1 Configuration 1

Configuration 1 is suitable for a variety of streets, particularly in areas like downtown, civic, commercial and similar streets with higher pedestrian and vehicular traffic. In this configuration, the furniture zone adjacent to the buffer zone provides a wider separation of pedestrian and vehicular traffic. Additionally, the frontage zone directly adjacent to the walkway is favourable for active frontage where private businesses and owners may extend a public presence on the street.

BUFFER ZONE CRITERIA

- **WIDTH/PLACEMENT:** MIN. 0.50m width buffer zone is recommended as a safety buffer between pedestrians and moving traffic. Place adjacent to the roadway. If space permits, a wider buffer zone is recommended to accommodate snow clearance. Size the buffer zone according to the snow removal requirements and space availability.
- **ZONE OVERLAP:** Cannot be overlapped with any zone, except other clear zones (i.e bus pad clear zone).
- **PRIORITY:** A minimum width buffer zone between the walkway and the roadway should be provided for safety from vehicular traffic.
- **SURFACE:** Hard paved treatment (preferred).

WALKWAY ZONE CRITERIA

- **WIDTH/PLACEMENT:** MIN. 2.00m clear width walkway is recommended. A wider walkway may be required. Size walkway zone according to pedestrian traffic volume. A 1.50m width is a minimum to meet AODA requirements.
- **ZONE OVERLAP:** Cannot be overlapped with any other zone, except for other clear zones

(i.e bus pad clear zone).

- **PRIORITY:** Provision of a sufficient size clear width walkway is the highest priority to accommodate pedestrian movement.
- **SURFACE:** Hard paved treatment.

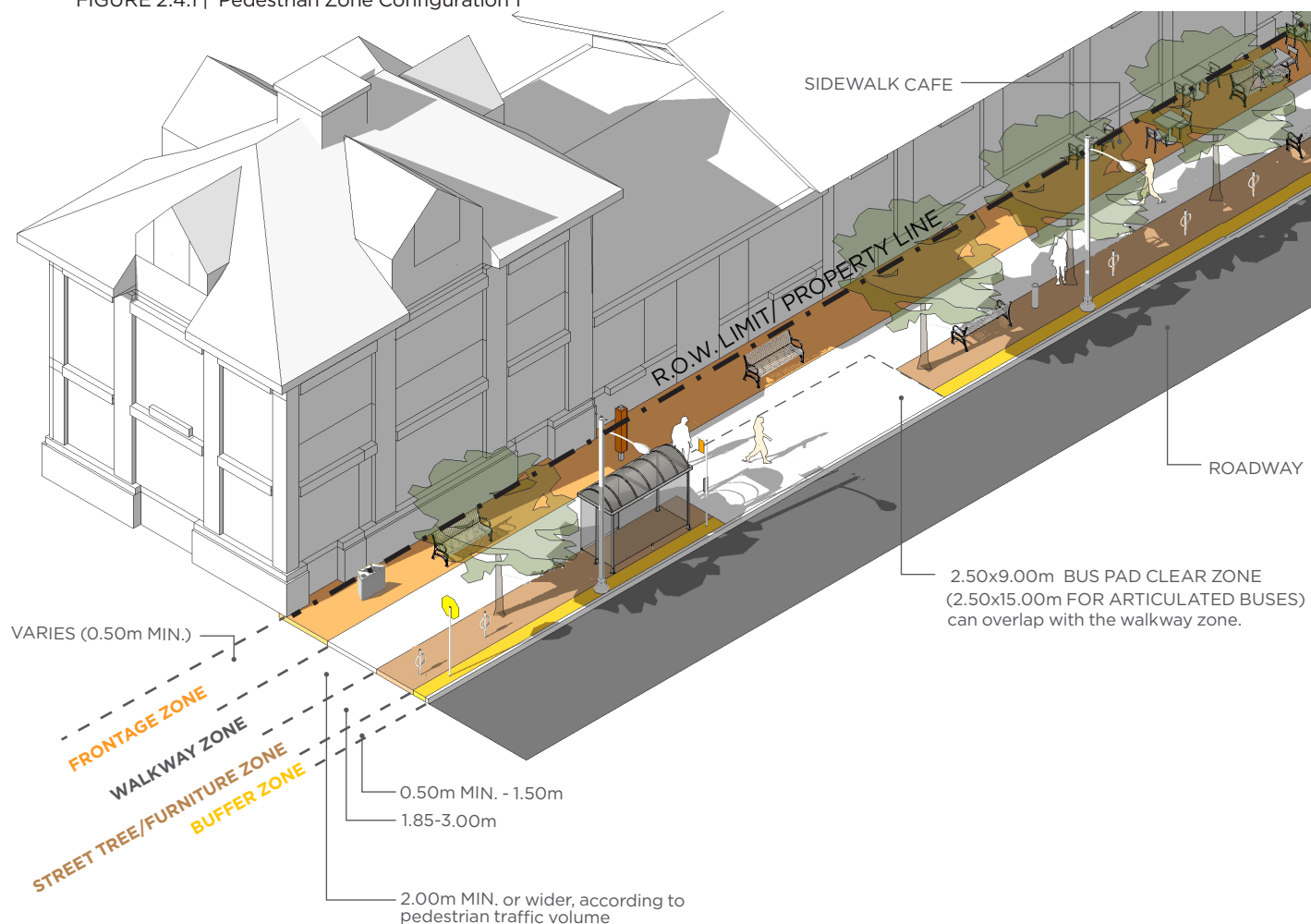
STREET TREE/FURNITURE ZONE CRITERIA

- **WIDTH/PLACEMENT:** MIN. 1.85m - 3.00m street tree/furniture zone is recommended. Consider dimensions of transit shelters when determining the width of this zone. Set this zone back from intersections and crossings by a MIN. 2.00m. This zone can also be placed within curb extensions.
- **ZONE OVERLAP:** Overlap with frontage zone, where space is limited, for a wider combined zone.
- **PRIORITY:** Provision of this zone is highly desirable, however, establishing all other zones is a priority. In limited space, explore possible combinations, or omit this zone.
- **SURFACE:** Varies, but should include hard paved areas to allow for furniture placement and movement by users. Zone may contain trees, furnishings, plantings, fixed objects, sidewalk cafes (where sufficient width frontage zone is not available).

FRONTAGE ZONE CRITERIA

- **WIDTH:** Varies. A MIN. 0.50m width is recommended to provide space between pedestrians on the walkway and the building edge. More (2.00m+) is recommended to provide opportunities for businesses to have a presence on the street (i.e sidewalk cafes) and some limited placement of street furniture by the City or property owners.
- **ZONE OVERLAP:** Overlap with the street tree/furniture zone where space is limited for a wider combined zone.
- **PRIORITY:** Provision of a sufficient width frontage zone is highly desirable, depending on adjacencies. In limited space, explore possible combinations with the street tree/furniture zone.
- **SURFACE:** Varies, generally hard pavement but may include site landscaping elements of adjacent properties.

FIGURE 2.4.1 | Pedestrian Zone Configuration 1



STREET FURNITURE

- Priority locations for furniture placement include transit stops, major destinations, areas of high pedestrian traffic (commercial, employment, civic areas, locations of higher urban density).
- Typical furniture elements include benches, bicycle racks, transit shelters, litter receptacles, multi-publication structures, information and wayfinding structures, poster kiosks, cigarette receptacles.
- Street furniture selection and placement should take into account and be proportional to dimensions of the zones.
- Ensure furniture placement is such that when people use it, they do not obstruct the walkway zone. This can be achieved through use of setbacks and clear zones, intended to provide space for access, use and maintenance of furniture elements. See Section 3.0 for more detail.
- Do not place any furniture in the walkway zone or the bus pad clear zone.
- Street tree/furniture zone is recommended as the preferred location for furniture placement, however, frontage zone may contain some furniture, such as benches and litter receptacles.
- Street signs (not included in scope), utilities (not included in scope) can be located in the buffer zone, otherwise, avoid placing furniture within the buffer zone if it may interfere with snow removal.
- In the frontage zone, coordinate placement with property owners. An encroachment agreement would be needed if private owner locate street furniture on the ROW and easement/legal agreement would be required if the City provides street furniture on private property.

2.4.2 Configuration 2

Configuration 2 is suitable for a variety of streets, in areas such as residential, suburban or local streets with lower pedestrian and vehicular traffic, and little to no active frontage. In this configuration, the furniture zone is located adjacent to the frontage zone and creates a greater separation between the public and private space on the street.

BUFFER ZONE CRITERIA

- **WIDTH/PLACEMENT:** MIN. 0.50m width buffer zone is recommended as a safety buffer between pedestrians and moving traffic, particularly in areas, such as schools. Place adjacent to the roadway. A wider buffer zone (1.00m - 1.50m) is recommended for snow clearance and garbage pickup.
- **ZONE OVERLAP:** Cannot be overlapped with any zone, except other clear zones (i.e bus pad clear zone).
- **PRIORITY:** An adequate width buffer zone between the walkway and the roadway should be provided for safety from vehicular traffic, and to provide space for snow storage and garbage pickup.
- **SURFACE:** Landscaped treatment (preferred); hard paved treatment, where space is limited.

WALKWAY ZONE CRITERIA

- **WIDTH/PLACEMENT:** MIN. 2.00m clear width walkway is recommended. A 1.50m width is a minimum to meet AODA requirements.
- **ZONE OVERLAP:** Cannot be overlapped with any other zone, except for other clear zones (i.e bus pad clear zone).
- **PRIORITY:** Provision of a sufficient size clear width walkway is a first priority to accommodate pedestrian movement.
- **SURFACE:** Hard paved treatment.

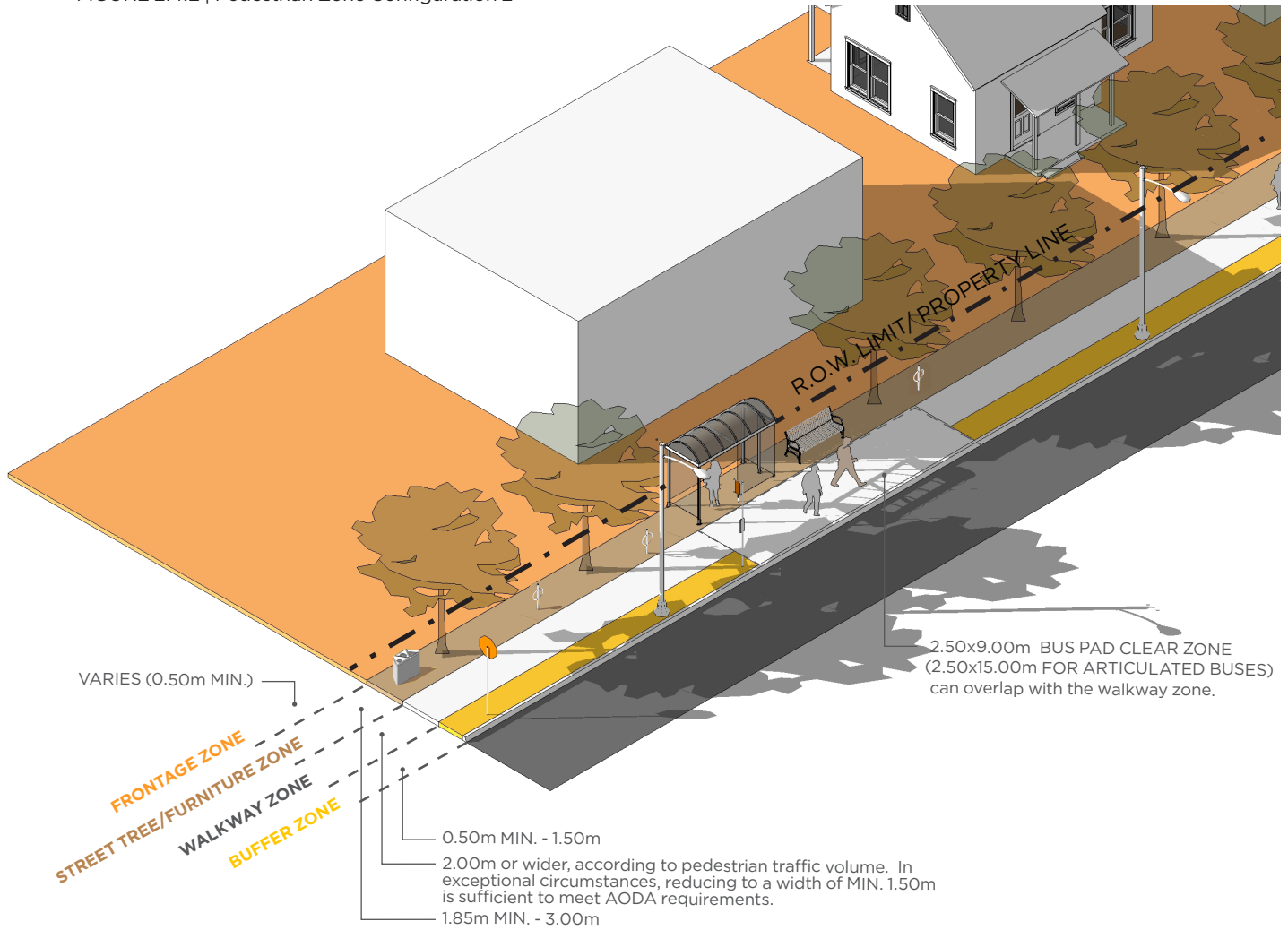
STREET TREE/FURNITURE ZONE CRITERIA

- **WIDTH/PLACEMENT:** MIN. 1.85m - 3.00m street tree/furniture zone is recommended. Consider dimensions of transit shelters when determining the width of this zone. Set back this zone from intersections and crossings (2.00m minimum). This zone can also be placed within curb extensions.
- **ZONE OVERLAP:** Overlap with the frontage zone, where space is limited, to meet width requirements.
- **PRIORITY:** Provision of this zone is highly desirable, however, establishing the buffer and walkway zones is a priority. In limited space, explore possible combinations, or omit this zone.
- **SURFACE:** Landscaped treatment (preferred), but may include hard paved areas to allow for furniture placement. Zone may contain trees, furnishings, plantings and fixed objects.

FRONTAGE ZONE CRITERIA

- **WIDTH:** Varies, depending on building setbacks. A MIN. 0.50m width is recommended to provide space between pedestrians on the walkway and the edge of buildings. A wider (1.50m+) frontage zone can accommodate some limited placement of street furniture, which is to be coordinated with property owners.
- **ZONE OVERLAP:** Overlap with street tree/furniture zone where space is limited to meet width requirements.
- **PRIORITY:** Providing a sufficient width walkway, buffer and street tree/furniture zone is of a higher priority than a wide frontage zone.
- **SURFACE:** Varies depending on adjacencies. May include site landscaping elements of adjacent properties, or front yards and gardens.

FIGURE 2.4.2 | Pedestrian Zone Configuration 2



STREET FURNITURE

- Priority locations for furniture placement include transit stops, in areas of high pedestrian traffic (adjacent to community facilities such as schools or places of worship, multi-story residential buildings, local commercial and employment areas,).
- Typical furniture elements include benches, bicycle racks, transit shelters, litter receptacles, multi-publication structures.
- Street furniture selection & placement should take into account and be proportional to the dimensions of the zones
- Ensure furniture placement is such that when people use it, they do not obstruct the walkway zone. This can be achieved through use of setbacks and clear zones, intended to provide space for access, use and maintenance of furniture elements. See Section 3.0 for more detail.
- Do not place any furniture in the walkway zone or the bus pad clear zone.
- Street tree/furniture zone is recommended as the preferred location for furniture placement, however, the frontage zone may contain some furniture, such as benches and litter receptacles.
- Street signs (not included in scope), utilities (not included in scope) can be located in the buffer zone. Otherwise, avoid placing furniture within the buffer zone since furniture may interfere with snow removal.
- In the frontage zone, coordinate placement with property owners. An encroachment agreement would be needed if private owner locate street furniture on the ROW and easement/legal agreement would be required if the City provides street furniture on private property.

2.5 Site Specific Solutions

2.5.1 Custom Configurations and Street Retrofitting

This Section is intended to provide considerations for custom zone configuration, including existing street retrofitting based on the use of **pedestrian zones**, discussed in the previous sections. This will allow the City to go to existing areas and make determinations as to where and how the furniture should be laid out or reorganized on a street. This includes placement of new furniture pieces or furniture replacement.

For existing streets, zones can be **conceptually assigned** on the basis of existing conditions and availability of space. Existing conditions include existing walkways, and features such as street trees and utilities, which all provide indication for the configuration of the zones (ex. street trees are located in street tree/furniture zone).

Every street retrofit begins with the establishment of a sufficient width clear **WALKWAY ZONE**. Then, **BUFFER**, **STREET TREE/FURNITURE** and **FRONTAGE** zones are defined, using the approach outlined in Section 2.4.

- See Section 3.2, Street Furniture Selection and Placement Criteria to obtain minimum zone dimensions for each furniture element, and for furniture placement guidelines within the zones.
- See Sections 2.4, Typical Configurations, for priority locations for furniture placement.

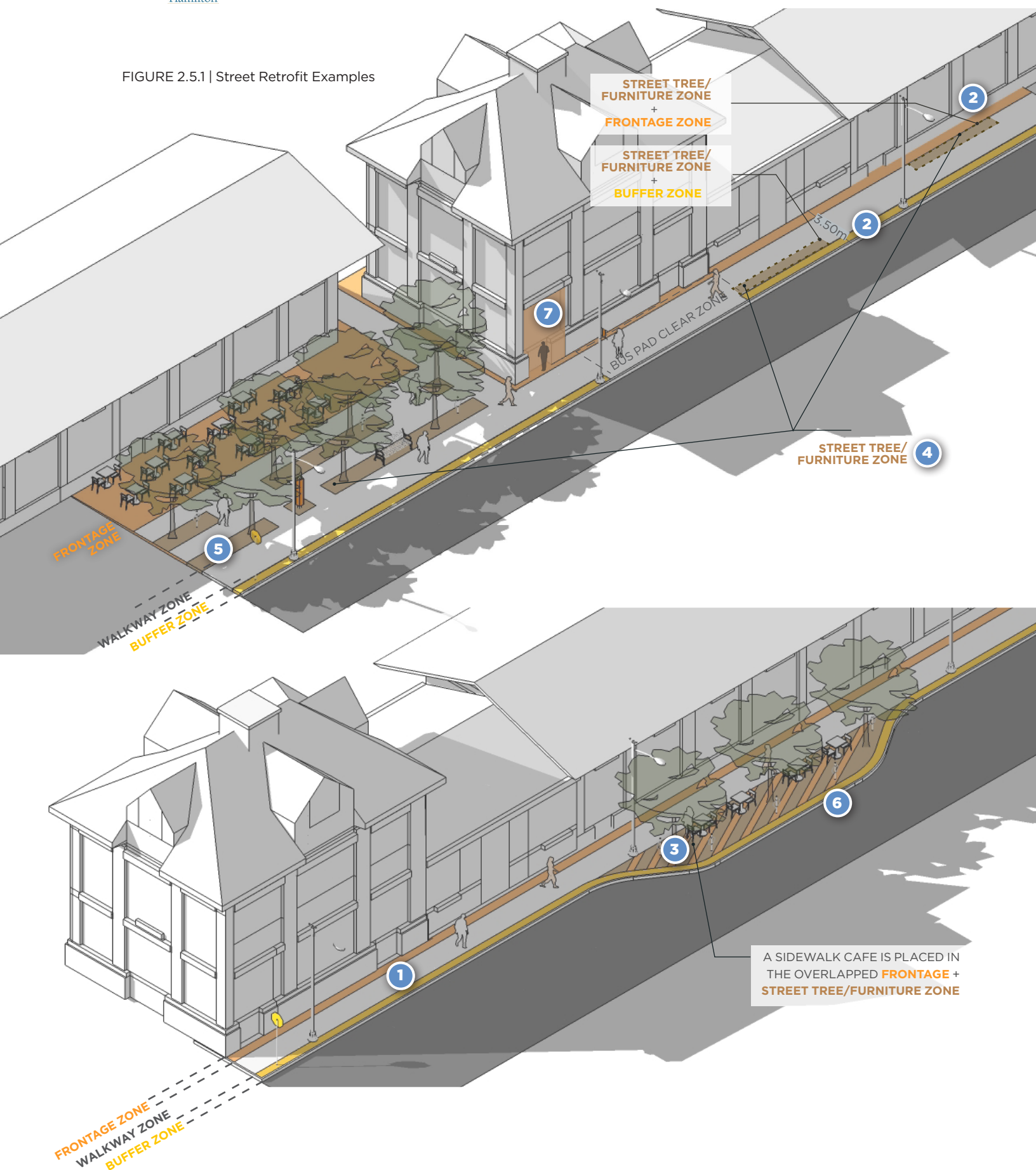
In non-typical street conditions, such as limited space, varied width, or other site specific conditions, several considerations are outlined as a potential approach for use of available space. These considerations are listed on the right and referenced in Fig. 2.5.1 on the following page using matching numbers (1).

Considerations

- Appropriate walkway widths can range from a minimum of 1.50m to 4.00m+ and more, depending on pedestrian traffic volumes in individual areas.
- It is recommended that a sufficient width walkway is prioritized over the street tree/furniture zone in constrained conditions. (1)
- For constrained conditions, (less than 3.50m width from curb to building edge), omit the street tree/furnishing zone. (1)
- If the width from curb to building edge is 3.50 - 4.00m, a 1.00m street tree/furniture zone, placed adjacent to a 0.50m buffer or frontage zone will allow some limited furniture placement¹. (2)
- Use of buffer zone is desirable, and necessary for protection of pedestrians from vehicular traffic, and for snow storage. Frequently, snow is piled onto the walkways, making them difficult to navigate and inaccessible in the winter. It is recommended that a sufficient width buffer zone be provided, however, the City may choose to omit this zone in low vehicular traffic areas and if a different method of snow removal is used.
- Consider overlapping zones (i.e frontage and tree furniture) for a wider total combined area. (3)
- Street tree/furniture zones do not have to be continuous, they can be located in distinct sections on a street. (4)
- There can be more than one walkway or street furniture zone (i.e street tree/furniture zone can be located on the both sides of the walkway; or a very wide (7.00m + walkway can be divided into narrower sections by a street tree/furniture zone. (5)
- Minimal zone sizes vary depending on size of the furniture used. Consider utilizing a street furniture set with reduced dimensions for constrained street conditions.
- Curb extensions can provide opportunities to extend the sidewalk corridor width at intervals on the street in constrained conditions. Consult with transportation/traffic engineers if curb extensions are considered. (6)
- Encourage opportunities to enter into agreements with property owners to incorporate passenger waiting areas and weather protection into private buildings. (7)

¹ | Minimum zone widths for individual furniture elements are located in Section 3.2.2.

FIGURE 2.5.1 | Street Retrofit Examples



2.5.2 Business Improvement Areas (BIA)

A Business Improvement Area is a defined area that is established through the municipal By-law. A BIA joins local businesses and property owners working closely with the municipalities to carry out street beautification, support special events, develop branding and marketing of their district to attract economic activity. The physical improvements and services intend to provide economic and social benefits for the City and the local community through increased business, shopping, community participation and networking, higher property values and creation of local destinations.

Creation and promotion of a strong identity for a neighborhood business and shopping area can also enable it to better compete with big box retail. Downtown Oakville BIA (Fig. 2.5.2) includes a retail mix, professional services and dining. It is also a historic business district, enhanced and marketed by the Downtown Oakville BIA. Downtown Kitchener BIA (Fig. 2.5.2) is a dynamic mix of business, arts, culture and innovation. The BIA provides street improvements such as patio planters, seasonal decorations, graffiti removal and funding to tenants for improvements such as patios and murals.

BIAs enhance and maintain public lands and buildings within the designated area supplemental to what is typically provided by the municipality. Such enhancements can include, but not limited to the following:

- Consider enhancing the pedestrian environment in BIA areas through generous walkway widths, shading of street trees, well-maintained street furniture or landscape features and attractive, inviting design.
- Consider a higher-order of wayfinding strategy for the BIA, including information & wayfinding kiosks and signage with more specific guidance (i.e. key buildings, districts, parks, etc) at key nodes.
- Consider incorporation of a brightly coloured plaque of BIA logo on street furniture, to give a visual cue to the BIA.
- Use of advertising elements on BIA street furniture should be controlled so as not to create visual clutter on the street.

- Consider placement of BIA-specific streetscape enhancements to highlight a memorable theme or brand identity.
- Consider placement of seasonal decorations such as lamp ornaments, lights and holiday banners, by co-operating with business owners.
- Consultation should occur with the BIA prior to installation.

2.5.3 Transit Corridors

Street furniture that is part of Hamilton's transit system can be uniquely differentiated with a recognizable brand identity to improve the image of transit and provide a better experience for the transit passengers, as the transit network evolves in the future. It is important that this brand differentiation be consistent along the line, particularly where higher order services, including express bus are provided. Street furniture set(s) may be designed specifically to brand the line or differentiated level of service.

2.5.4 Key City Destinations

In City's key destinations, such as waterfronts, public squares, areas of civic or cultural significance, consider more specific or targeted design solutions. It is recommended that a context-sensitive approach be undertaken to integrate street furniture with a high quality streetscape design and create a unique identity for special destinations in the City.

FIGURE 2.5.2 | BIA Streetscape examples



2.6 Use of Advertising

The primary objective of the Co-ordinated Street Furniture program is to create attractive, functional and usable streetscapes. Opportunities for limited and controlled advertising to offset the costs of providing street furniture throughout the City should be balanced with maintaining a visual quality of the streetscape. Frequently, private companies can provide for the design, fabrication, installation and maintenance of a co-ordinated family of furniture that minimize costs to the municipality in exchange for advertisement rights. Below are some of the considerations for incorporating advertising on City street furniture:

- Advertising should not contribute to visual clutter on the street.
- Select a maximum of 3 furniture items for placement of advertising. Transit shelters, advertising benches and poster kiosks are recommended for advertising purposes.
- Best efforts should be made not to group more than 2 furniture pieces with advertising together. Where 2 pieces are placed together, a minimum of 3.00m should separate them to ensure they do not compete.
- Advertising and visual information should be well integrated into the design of the furniture item, rather than appear added-on.
- Best efforts should be made to not use advertising adjacent to wayfinding kiosks, and other wayfinding structures. This will reduce the effectiveness of wayfinding systems through the creation of visual clutter.
- Technical requirements of the advertising panels should not dictate dimensions of the furniture.

Note: Any and all advertising is to be compliant with City of Hamilton by-laws.

3. STREET FURNITURE SELECTION AND PLACEMENT CRITERIA

3.1 General Selection and Placement Principles

Street furniture elements play a role in the visual identity of the streetscape. Furniture selection and placement should contribute to a legible and attractive streetscape. When selecting furnishing products it is important to balance function and aesthetics, and to consider all street elements as a unified urban design. **The following considerations are intended as guidance for the selection and placement of furnishing elements.**

3.1.1 Selection Principles

Identity and Unity

- The furniture elements materials, colours and finishes should compliment one another aesthetically and the surrounding streetscape.
- Consider developing or selecting a set or a family of furnishing elements. This is particularly important in special urban areas, such as BIAs.
- Consider developing or selecting a specially branded family of furniture for the transit system, particularly higher order transit.
- Encourage adjacent land owners within one area to use the preferred set of street furniture, except where special or unique features are desirable.

Size and Scale

- The furniture elements should be of a size that fit proportionately within the sidewalk corridor width.
- Street furniture selection and placement should take into account and be proportional to dimensions of the zones.
- Consider whether the same types of furniture can be provided in a range of sizes to accommodate varied usage and space requirements.

Flexibility

- Select products or product families that are modular or provide a range of elements that can be placed in a variety of different styles and configurations.



FIGURE 3.1.1 | Port Credit, Mississauga, ON

Accessibility and Comfort

- Select products that demonstrate inclusive design and have been designed for ease of use by people with a range of abilities.

Maintenance and Sustainability

- Select furniture elements that are easy to maintain and have modular parts that can be repaired or replaced individually.
- Select materials and technologies that are environmentally responsible, age well and do not require frequent replacement.
- Street furniture should be secure, weather-resistant and durable. The material and paint selection should be durable, graffiti and vandal resistant. Make sure the fittings and furniture cannot be stolen and transported off site.
- Consider the lessons and experience from previous uses of the products in other areas prior to selection.

Typical or Unique Elements

- Some special urban areas, such as BIAs, higher order transit corridors or areas of cultural significance may warrant a uniquely identifiable family of furniture elements that enhance its urban design character.

Advertising

- Where present, advertising should be well integrated into the design of the furniture elements and enhance, rather than compromise the furniture's aesthetics.
- Advertising requirements should not determine furniture design or dimensions.

Cost

- The cost effectiveness of the furniture products should be determined by balancing all of the above criteria.

3.1.2 Placement Principles

Grouping and Spacing of Elements

- The furniture elements should be laid out and grouped in such a way that avoids clutter on the street.
- Spacing, orientation and layout of street furniture items should balance function and aesthetics.
- Group furniture elements with complimentary designs, or from one family of furniture elements.
- Do not cluster all of the furniture in one area (i.e street intersections), because this can contribute to clutter and congestion. It is preferable to balance several smaller groupings of furniture at separate locations on a street.
- Consider small furniture groupings in key areas, such as bus stops and multimodal transportation connections. See Sections 2.4.1-2.4.2 for more information on key areas for furniture placement.

Accessibility, Use and Maintenance

- Ensure that furnishing elements are placed with sufficient setbacks and clearances that they can be accessed, used and maintained by people of various abilities.
- Ensure that furnishing elements can be accessed from pedestrian walkways and bus waiting areas via a continuous hard paved area. Provide pathways to furniture areas, if required.
- To be easily detectable by people using a long cane, street furniture should be placed max. 0.60m from edge of walkway. (CNIB, 2009)
- Layout of furnishing elements should not create interferences with pedestrian movement on the walkway clear zones, intersections or bus waiting areas.

Safety

- Street furniture should be placed in locations that are well used by pedestrians and have adequate lighting.
- Ensure important sightlines are maintained.

Relationship with the Surrounding Environment

- The furniture layout, orientation and placement respond to surrounding architecture and open space.
- Consider views and sightlines in furniture placement. Generally orient furniture toward the pedestrian walkway, or places of interest.
- Street tree/furniture zone is the preferred location for furniture placement, however, frontage zone may contain some furniture, so

long as it is coordinated with adjacent property owners. An encroachment agreement would be needed if private owner locates street furniture on the ROW and easement/legal agreement would be required if the City provides street furniture on private property.

- Limited street elements, such as street signs and some utilities that do not interfere with snow clearance may be located in the buffer zone. Placement of street furniture adjacent to intersections and private driveways must be reviewed by Staff in the Public Works Department, City of Hamilton, to ensure it is in accordance with required sightlines for drivers and pedestrians.

Use Patterns

- Locations, quantities and types of furnishings should reflect usage patterns and placement opportunities. Ensure that placement of furniture is complimentary to adjacent uses and do not create conflicts with other uses (i.e intersections).

Site Specific Conditions

- Consider situations where a site-specific approach for furniture selection and placement may be appropriate.
- Consider whether there is enough space available in the sidewalk corridor to allow placement of furniture without creating clutter or congestion on the walkway. Opt for more compact furniture styles or groupings or avoid placement of furniture in such areas.

Do Not Place Any Furniture

- Within the walkway zone or the bus pad clear zone;
- Within 1.00m from curb cut, driveway;
- Within 7.00m from street corner radius (intersection) at key intersections or 2.00m from street corner radius at non-key intersections;
- Within 0.50m from the edge of curb;
- Within 0.45m from the edge of walkway or edge of paving, utility pole, manhole, or other equipment;
- Within 0.30m from building edge;
- Within 1.50m from a fire hydrant;
- Within 1.50m from a transit shelter entrance;
- On an unstable surfaces and planted areas;
- Do not secure furniture to interlocking, instead secure to a concrete base;
- In an area adjacent to a steep slope or a drop-off, unless edge protection or safety railings are provided.

3.2 Individual Furniture Placement Guidelines

Detailed placement criteria were developed for several furniture types. The criteria are described through text and illustrations. Please refer to the next page for the legend for each of the furniture element symbols that are discussed on the following pages.

3.2.1 Clear Zones

A “clear zone” is a defined area of a sidewalk corridor that is clear and unobstructed. Pedestrian walkways, for example, are better understood as clear zones, to emphasize that a walkway needs a defined clear area for pedestrian through movement that is not obstructed by furniture, utilities or other street elements.

There are other several clear zones that are defined in this document. Bus pad clear zone, referred to in the previous sections, is a defined clear area for loading and unloading of passengers at transit bus stops. It is described in more detail further in the report.

Clear zones are also established for individual furniture elements (see Fig. 3.2.1) The purpose of clear zones for the furniture elements is to establish a defined minimum clear area around the installed furniture item for access, use and maintenance. Clear zones may vary depending on the type, size and orientation of the furniture elements. Clear zones of individual furniture elements can be overlapped, and they can also be overlapped with the bus pad and walkway clear zones.

Concrete Pads for Furniture

When a furniture element is located in a grassed area of the sidewalk corridor, it should be installed on a hard surface (usually concrete) pad. The purpose of such pads is to provide a stable hard surface area for installation, access, use and maintenance.

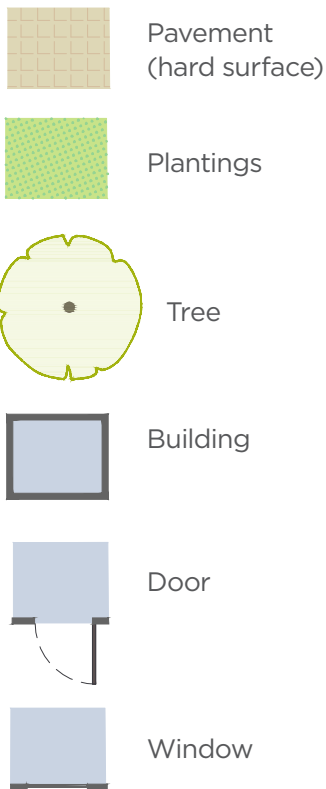
Generally, the minimum dimensions of the furniture pad should correspond to the dimensions of the clear zone area defined for the particular furniture element, and may vary depending on furniture dimensions, orientation and placement. Additional considerations include:

- In furniture groupings, furniture pads should accommodate the combined clear zones for all grouped pieces of furniture.
- In situations where a furniture clear zone overlaps with a walkway or bus pad clear zone, the overlapping area can be subtracted from the furniture pad, or one combined pad be created.

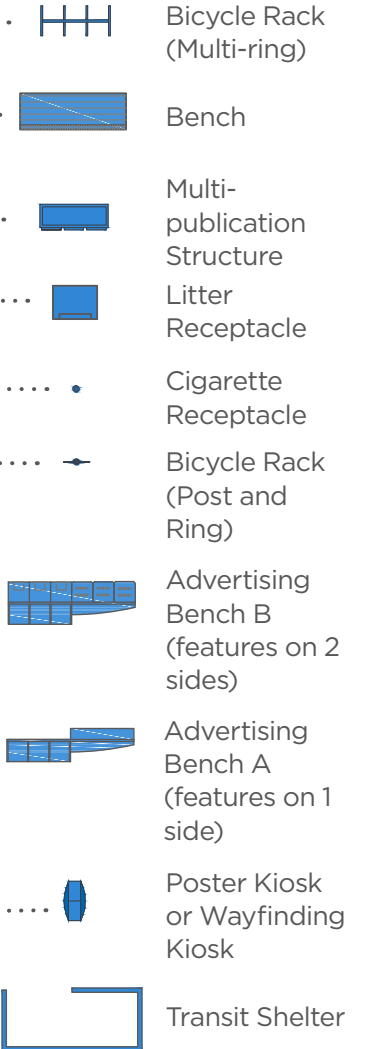
Legend

Please refer to this page for the legend components shown in the drawings of Section 3.2.2.

STREET ELEMENTS



STREET FURNITURE



STREET ZONES AND CLEAR ZONES

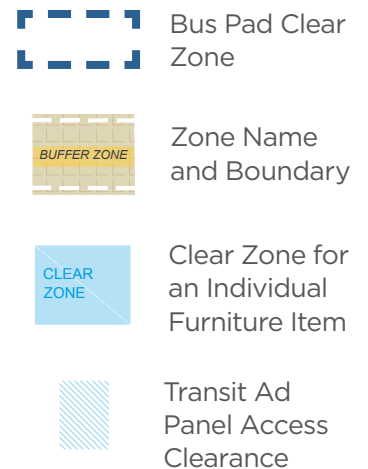
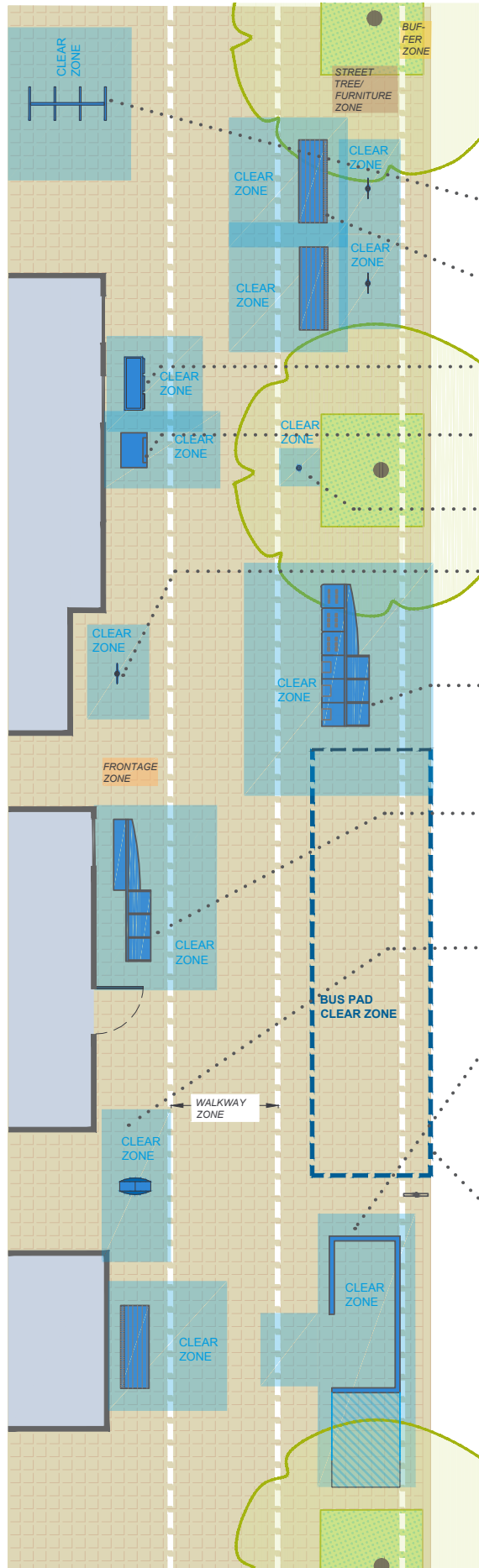


FIGURE 3.2.1 | Legend



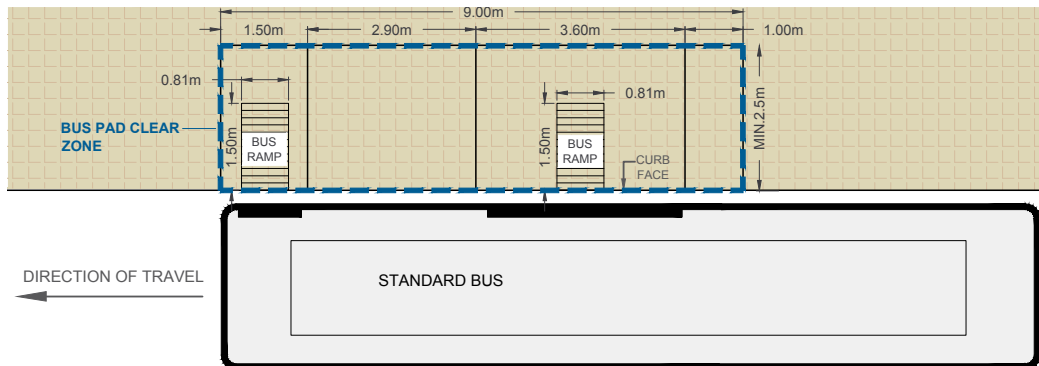
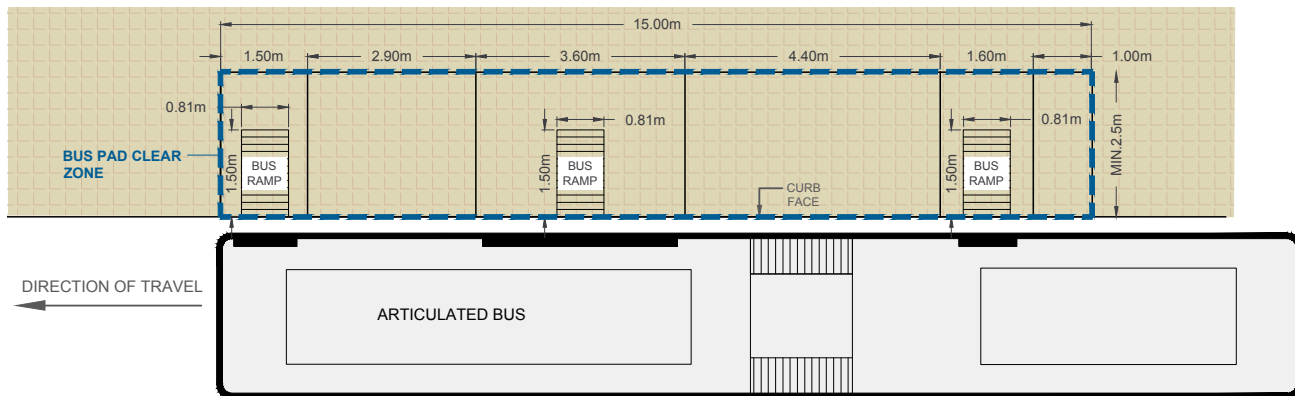
LAYOUT 1: CLEAR ZONE REQUIREMENTS FOR A TYPICAL BUS

FIGURE 3.2.2 | Bus Pad Clear Zone Requirements for Standard and Articulated Buses

LAYOUT 2: CLEAR ZONE REQUIREMENTS FOR AN ARTICULATED BUS**Bus Pad Clear Zone**

Hamilton Transit Bus Stop Accessibility Criteria and Guidelines have established criteria for accessible transit bus stops. This includes a hard surface bus pad that is connected to the sidewalk. The types of buses currently used in Hamilton were considered to determine the minimum length and width of the bus pad, which is used in conjunction with the bus ramp which deploys onto the pad (Fig. 3.2.2). To facilitate loading and unloading via the bus ramps, the minimum bus pad area should be kept clear of any obstructions and street furniture, with the minimum clear area defined as a “clear zone”.

The bus pad is typically located at the level of the sidewalk. In areas where there are no sidewalks, the added vertical difference between the bus and the ground level results in a bus ramp that is too high for wheelchair users, rendering the transit stop inaccessible. For streets without sidewalks where an accessible transit stop is required, a sidewalk height raised bus pad (i.e a raised platform) maintaining the required clear zone and outfitted with a ramp leading to it should be installed as an interim measure until such time that sidewalks can be provided.

Considerations

- An accessible bus stop must have a minimum bus pad clear zone: (MIN. 9.00m x 2.50m for standard buses and MIN. 15.00m x 2.50m for articulated buses).
- Bus stop layout may be modified to suit individual bus stop location, including location of shelter and street furniture.
- In all cases, the clear zone dimensions and its location within the landing pad shall be maintained.
- No street furniture or other obstructions should be located within the clear zone.
- Unobstructed hard even surface pathway (1.50m MIN. clear width between the bus pad, shelter, sidewalk and street furniture shall be provided and maintained at all times.
- Bus ramp size varies. The longest one was considered for the clear zone requirements.
- Street lighting is required for all accessible bus stops.
- Refer to City of Hamilton Transit Bus Stop Accessibility Criteria and Guidelines for further requirements.

3.2.2 Furniture Elements

The following pages will provide detailed guidelines specific to the following street furniture elements included within the scope of this study:

- Transit Shelters
- Litter Receptacles
- Benches
- Advertising Benches
- Multi-Publication Structures
- Poster Kiosks
- Wayfinding Kiosks
- Bicycle Racks
- Cigarette Receptacles



Transit Shelters

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Shelter width + 0.45m
Shelter width + 2.45m

Well-designed transit shelters provide public transit users with protection from rain, wind and snow while waiting at bus stops. While serving this fundamental function, their appearance also contribute directly to the visual character of the public realm.

Considerations

- Consider enhanced shelters and/or a larger shelter for higher order transit routes and high volume stops. Availability of space within the sidewalk corridor should also be considered.
- Enhanced shelters and amenities will be considered for stops along routes of higher order/express bus.
- Consider use of narrower, partially enclosed or cantilevered construction shelter design for use in areas with space constraints.
- Transit shelters are highly desirable at bus stops for protection in winter conditions, especially in open areas exposed to wind, rain and snow.
- Orient transit shelter entrances toward the walkway or toward the bus pad clear zone.
- Transit shelter entrance must have a MIN. 1.50m clearance in front of it, which should have a hard paved surface.
- Transit shelters should have barrier-free access and be located in a way that does not interfere with pedestrian movement. Where transit shelter is offset from, or located not directly adjacent to the walkway or bus pad clear zone, provide a MIN. clear width 1.50m paved pathway from the transit shelter entrance to the walkway or bus pad clear zone.
- Place the transit shelter on a flat, firm and stable surface (pavement or transit shelter pad). Pad surface should match or be complimentary to adjacent surfaces.
- Where possible, avoid placement of transit shelters directly in front of a building entrance or exit.
- Where possible, avoid placement of transit shelters directly in front of windows.
- Transit shelters should include basic amenities, including seating and accurate route information.
- Transit shelters should be located in well-lit areas. Refer to City standards for lighting levels.
- **Advertising may be incorporated into transit shelter design.**

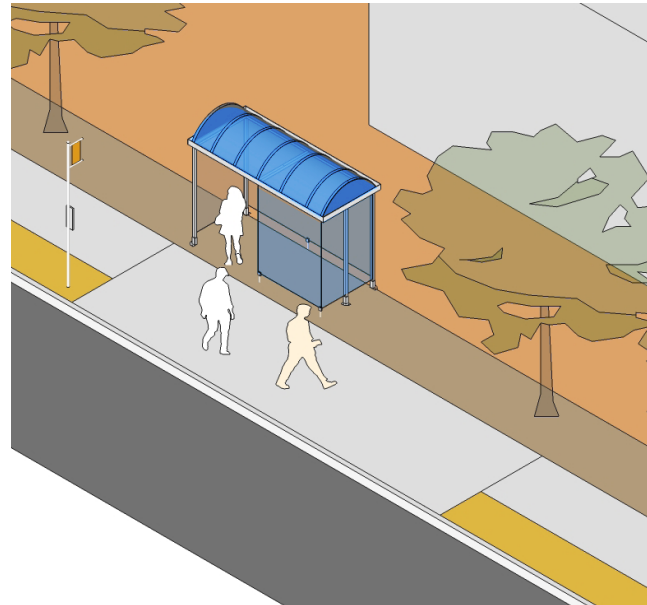
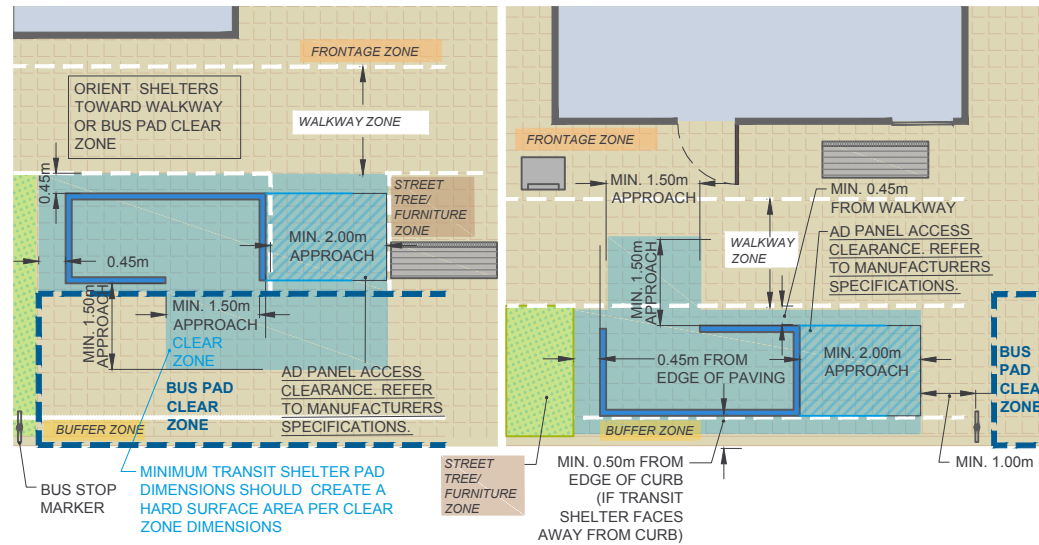


FIGURE 3.2.3 | Transit Shelter

LAYOUT 1: TRANSIT SHELTER - PREFERRED PLACEMENT



LAYOUT 2: TRANSIT SHELTER - ALTERNATE PLACEMENT

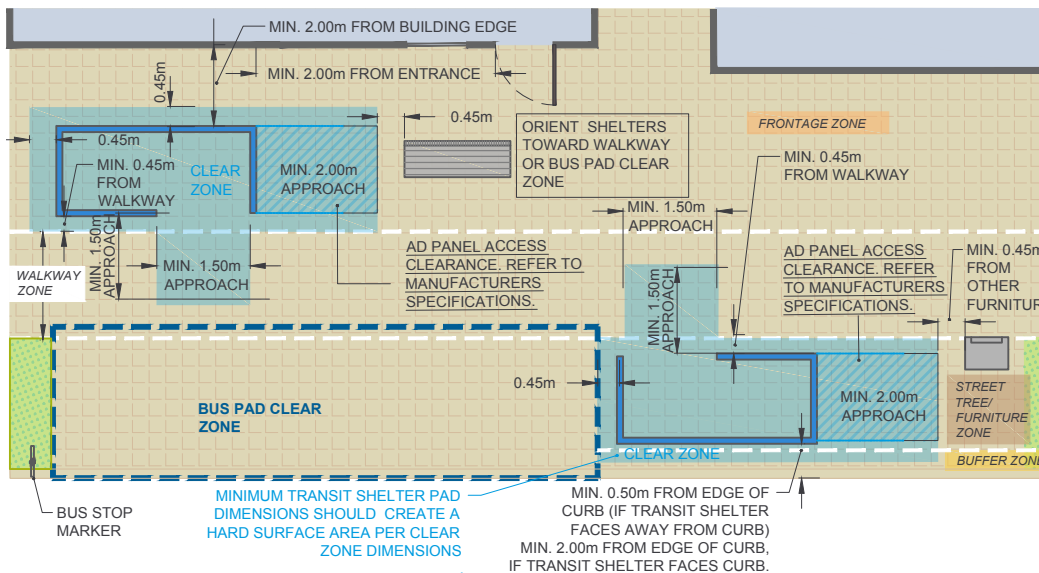


FIGURE 3.2.4 | Transit Shelter Sample Layouts

Setbacks

- Preferred 3.00m setback for advertisement panel access and visibility, MIN. 2.00m setback.
- MIN. 0.50m from edge of curb (if not facing curb)
- MIN. 2.00m from edge of curb (if facing curb)
- MIN. 1.00m from bus stop marker
- MIN. 0.45m from edge of walkway
- MIN. 2.00m from building edge
- MIN. 0.45m surrounding clearance (including ground obstructions such as manholes, tree grates)
- MIN. 1.50m x 1.50m paved clear space as an approach to the transit shelter entrance. Ensure transit shelter can be accessed from a walkway and bus pad clear zone, provide additional paved walkways if required.
- MIN. 1.50m from tree trunks
- MIN. 0.45m from other street furniture
- MIN. 1.50m from fire hydrants coordinate placement with the property owner and secure the necessary agreements.

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- When the proposed transit shelter placement may encroach on a private property, coordinate placement with the property owner and secure the necessary agreements.



Litter Receptacles

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Receptacle width + 0.45m
Receptacle width + 0.75m

Well located litter receptacles have a significant functional role supporting pedestrian and business activity on the streets and help prevent littering. They will also have an impact on the appearance of the street.

Considerations

- Openings should be no higher than 1.07m from the adjacent ground surface to allow for use by children and wheelchair users. (Hamilton Barrier Free Guidelines)
- Place litter receptacles near each accessible public entrance, adjacent to bus stops, within key areas for street, and near street intersections.
- Orient receptacle openings toward walkway or toward bus clear zone. Ensure containers and openings for types of litter or recycling are easily differentiated (for example through use of colour contrast)¹.
- Do not place litter receptacles directly in front of building entrances or exits.
- Do not place litter receptacles directly in front of windows (except where coordinated with a property owner).
- Secure the litter receptacle to a flat, firm and stable surface.
- Ease of access for emptying is a key consideration.
- Ensure the door of the litter receptacle is unobstructed for removal and maintenance purposes.
- Consider selecting products that will make it easier for people with disabilities to use them, e.g reach height for people with wheelchairs; whether an opening has a cover and how easy it is to open; or ease of use of open top versus receptacles with side openings for people with visual disabilities. Other guidelines, as well as people with disabilities can be consulted for more specific input on accessibility of products and other considerations.
- Do not place litter receptacles directly in front of transit shelters.

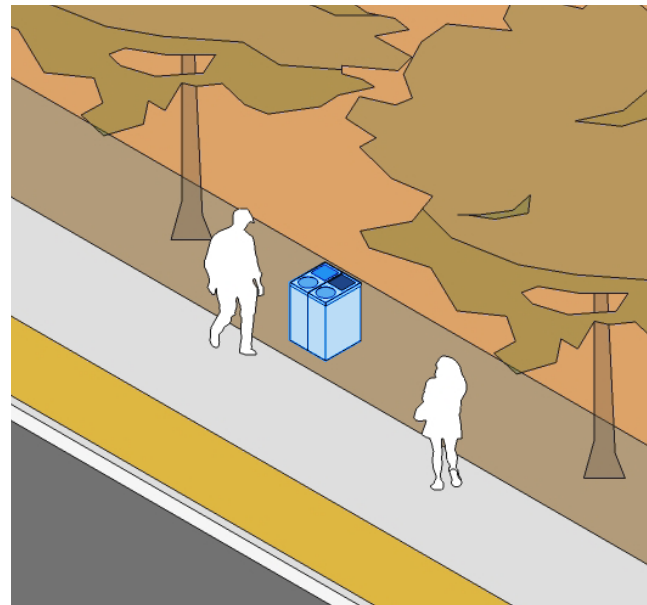
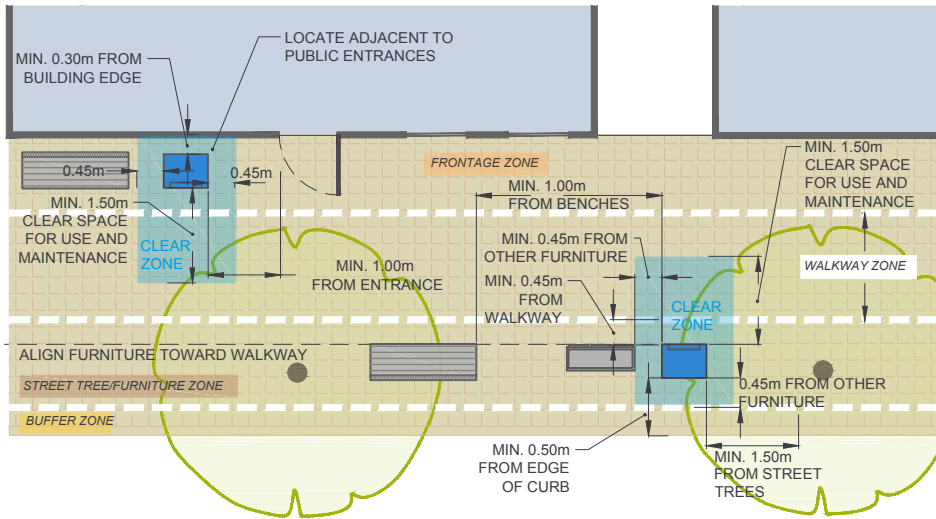


FIGURE 3.2.5| Litter Receptacle

¹ | CNIB provides resources for colour contrast and other requirements to serve people with vision disabilities. See references.

LAYOUT 1: LITTER RECEPTACLE IN STREET TREE/FURNITURE OR FRONTAGE ZONES



LAYOUT 2: LITTER RECEPTACLE ADJACENT TO BUS STOP

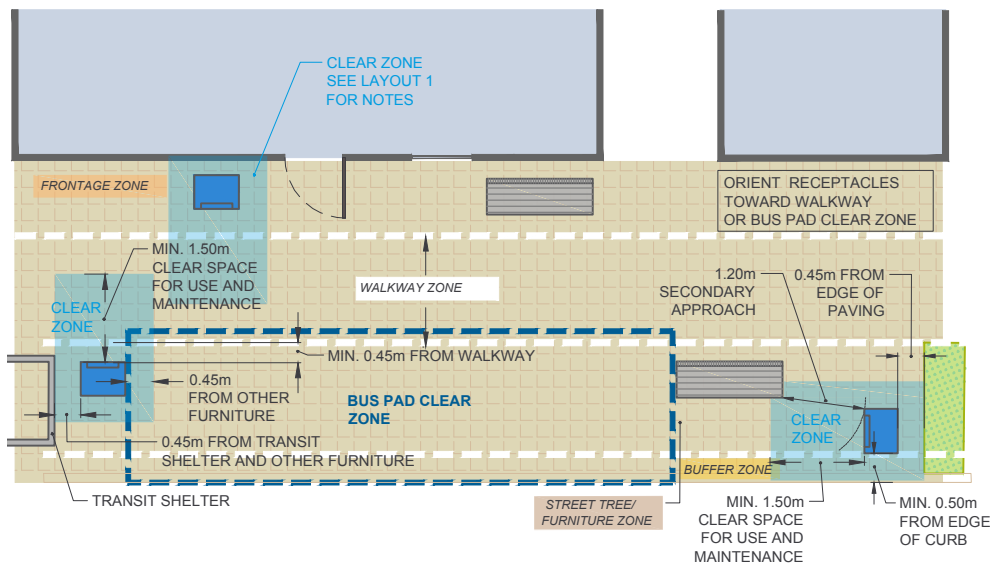


FIGURE 3.2.6 | Litter Receptacle Sample Layouts

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- When the litter receptacle placement may encroach on a private property, coordinate placement with the property owner.
- Litter receptacle should not be located in front of the bus shelter or on the side of the bus shelter with the advertising panel.

Setbacks

- MIN. 0.50m from edge of curb
- MIN. 0.45m from edge of walkway
- MIN. 0.30m from building edge to allow for maintenance access
- MIN. 0.45m surrounding clearance (including ground obstructions such as manholes, tree grates)
- MIN. 1.50m clear space in front of litter receptacle for use and maintenance
- MIN. 1.50m from tree trunks
- MIN. 0.45m from other street furniture
- MIN. 1.00m from benches
- MIN. 1.50m from fire hydrants



Benches

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Bench width + 0.45m
Bench width + 0.75m

Benches provide pedestrians a place to sit, rest and observe street life. Benches encourage people to linger in one place and thus enhance the walkway as a public space. People sitting on benches can contribute to a sense of safety through increased human presence and 'eyes on the street'. Benches and other seating areas are essential resting places for people who may have difficulty walking or standing.

Considerations

Seating can be provided in many forms, such as landscape boulders, seating walls, planter walls, benches, steps, and so on. Generally, seating should be provided in areas where it is desirable for people to linger (key destinations, commercial or civic areas, multi-story housing), or where a resting area is needed (bus stop, near community facilities, streets where pedestrian traffic is high). Benches should be avoided in areas where it is undesirable for people to gather, such as street intersections.

- Seating should provide for a minimum of 2 people.
- Consider several sizes of benches for options that fit proportionally within the available space. Consider bench types with and without armrests and back supports to accommodate needs of various users.
- Where benches are longer than 1.20m, dividers are recommended.
- It is more desirable to include multiple smaller benches, rather than one large bench for more flexibility and layout options.
- Providing seating options in multiple orientations and groupings increases opportunities for views and socializing.
- Seating elements should be aligned with the geometry of the space (facades, routes, trees, and other street furniture) and pedestrian movement patterns, and placed at the edges of spaces.
- Orient benches toward a walkway, except in bus stop areas where the bench should

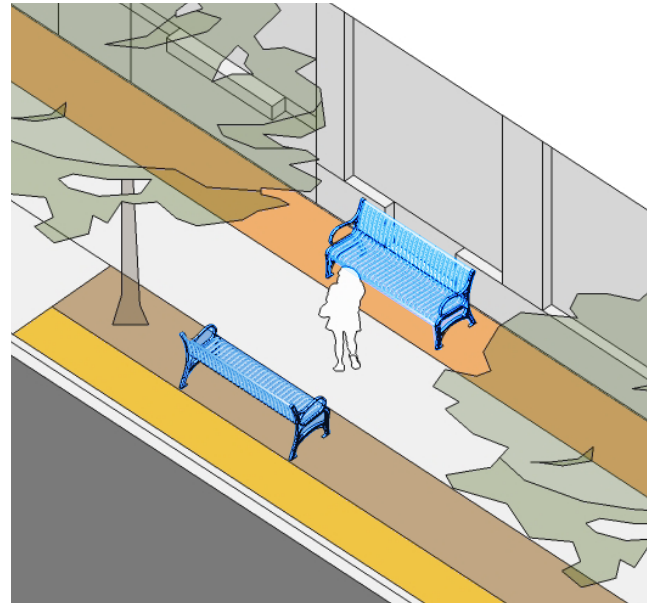
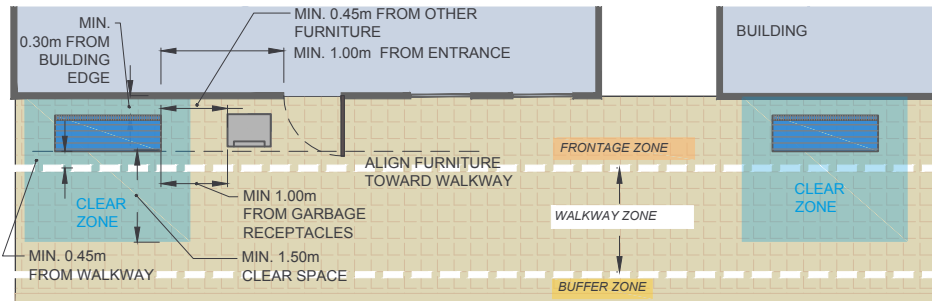


FIGURE 3.2.7| Benches

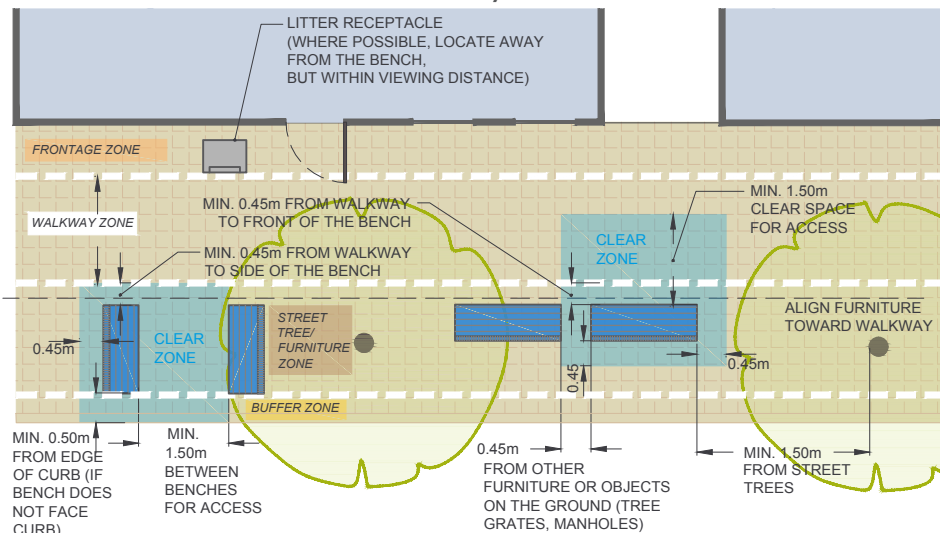
be oriented toward the road. If the bench is not located directly adjacent to a walkway, or faces away from it, provide a hard surface approach walkway for access to the bench.

- Place benches in relation to local microclimate of sun and shade, and shelter from wind.
- Place in highly visible locations to deter vandalism.
- Secure benches to a flat, firm and stable surface (pavement or bench pad). Bench pad surface should match or be complimentary to adjacent surfaces.
- Minimum bench pad dimensions should be per bench clear zone dimensions, which include: bench dimensions, setbacks and approach areas (see layout options on the following page). Where bench clear zones and bus pad or walkway clear zones overlap, the overlapping area can be excluded from the bench pad dimensions. Where other furniture or secondary access is provided, increase the bench pad dimensions to include those additional features.
- Permanently installed seating should not interfere with entrances to buildings, heavily used loading zones, and other potential conflicts.
- **Do not use advertising on benches (except advertising benches)**

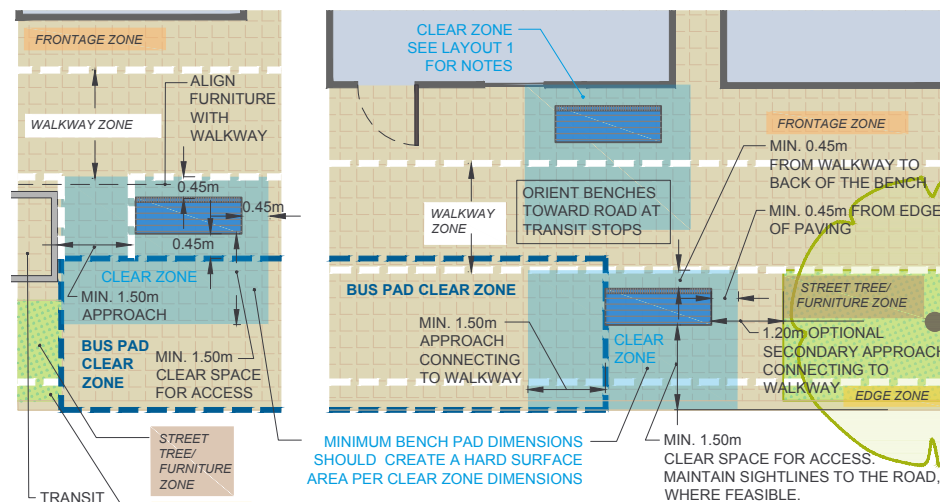
LAYOUT 1: BENCH IN THE FRONTAGE ZONE



LAYOUT 2: BENCH IN THE STREET TREE/FURNITURE ZONE



LAYOUT 3: BENCH ADJACENT TO BUS STOP



NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- When the proposed bench placement may encroach on a private property, coordinate placement with the property owner.
- Benches should not be located in front of the bus shelter or on the side of the bus shelter with the advertising panel, minimum 2.00m clearance.

FIGURE 3.2.8 | Benches Sample Layouts

Setbacks

- MIN. 0.50m from edge of curb (if not facing curb)
- MIN 1.50m paved clear space in front of bench for approach and use.
- If bench does not face the walkway, add a MIN. 1.50m approach area or walkway on at least one side; and a 1.20m approach on a second side (recommended where space allows). Ensure the approach area(s) can be accessed from the sidewalk via a pathway, if required.
- Where space allows, provide an adjacent space of 1.10m x 1.20m for at least one person using a scooter or wheelchair, or guide dog (can also function as a secondary approach, see above point).
- MIN. 1.50m from edge of curb (if facing curb)
- MIN. 0.45m from edge of walkway (if facing walkway)
- To be detectable by a long cane user, place benches within 0.60m from the walkway. A tactile change in the area surrounding the bench can be used to indicate the bench to pedestrians. (CNIB, 2009)
- MIN. 0.30m from building edge to allow for maintenance access
- MIN. 0.45m from other street furniture
- MIN. 0.45m surrounding clearance (including ground obstructions such as manholes, tree grates)
- MIN. 1.50m from tree trunks
- MIN. 1.50m from fire hydrants



Advertising Benches

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE

FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Advertising A bench width + 0.45m

Advertising B bench width + 1.45m

Advertising A bench width + 0.75m

Advertising benches are a street furniture system that not only provides pedestrians a place to sit, but also provides an advertising platform that offsets costs of installation and maintenance. They offer comfort, style, and versatility. Some products come in modular systems with an ability to assemble furniture elements in various configurations. Two examples of such configurations are shown: Advertising bench A includes a bench, a litter and an advertising module facing in the same direction. Advertising bench B includes 4 modules facing in two opposing directions.

Considerations

Advertising benches should generally be provided only in strategic locations to maximize the advertising impact and value. It is recommended that advertising benches be used at transit waiting areas along select streets or routes with high vehicular or transit usage. Advertising benches that have openings or functions on more than one side should be placed in wider boulevards where there is adequate space to access all of the features. Limit use of advertising benches within narrow boulevards. Limit use of advertising benches in areas where other advertising or information is present, to avoid visual clutter.

- Ensure there is sufficient space and a flush surface to allow people who use wheelchairs, scooters, and other mobility devices to maneuver around the advertising benches to use all of the features.
- All features of the bench should be oriented toward a pedestrian walkway and/or bus pad clear zone.
- For advertising bench B, orient so that the bench portion faces the road and the litter receptacle and multi-publication structure faces the walkway.
- Consider how the advertising bench design fits within the identity of other street

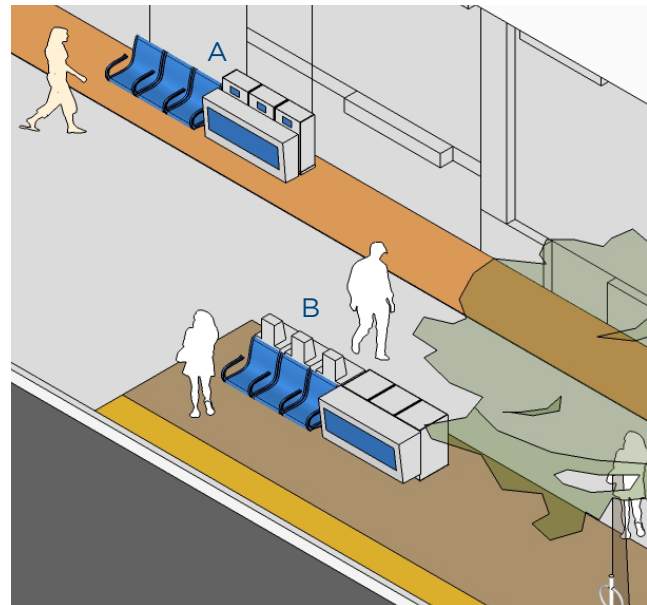
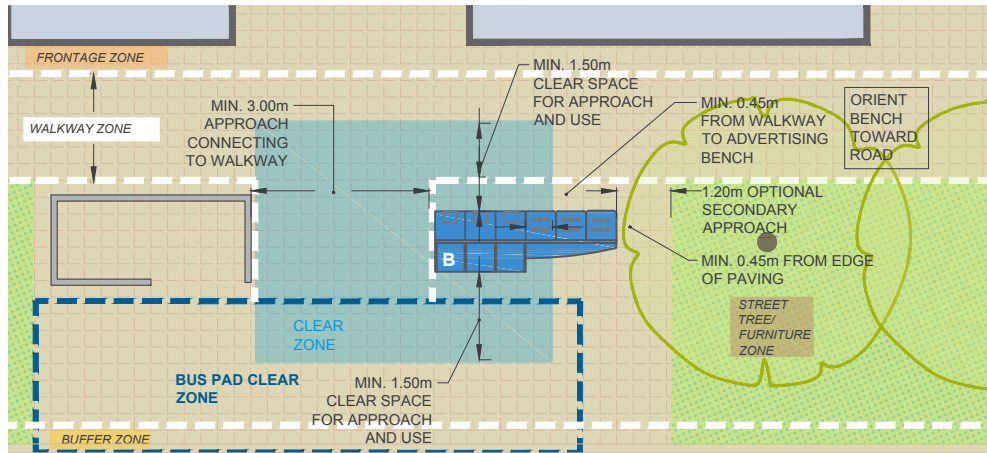


FIGURE 3.2.9 | Advertising Bench Type A and B

furniture found within a street. Avoid grouping furniture elements with incompatible aesthetics. Advertising benches should not compete with transit shelter advertising, and should have a MIN. 3.00m setback.

- Place advertising benches in relation to local microclimate of sun and shade, and shelter from wind.
- Place in highly visible locations to deter vandalism.
- Secure advertising benches to a flat, firm and stable surface, such as pavement or a bench pad.
- Minimum bench pad dimensions should be per bench clear zone dimensions, which include: bench dimensions, setbacks and approach areas (see layout options on the following page).
- Permanently installed seating should not interfere with entrances to buildings, heavily used loading zones, and other potential conflicts.
- **Incorporate advertising on advertising benches.**

LAYOUT 1: ADVERTISING BENCH B ADJACENT TO BUS STOP



LAYOUT 2: ADVERTISING BENCHES A & B IN THE STREET TREE OR FRONTAGE ZONE

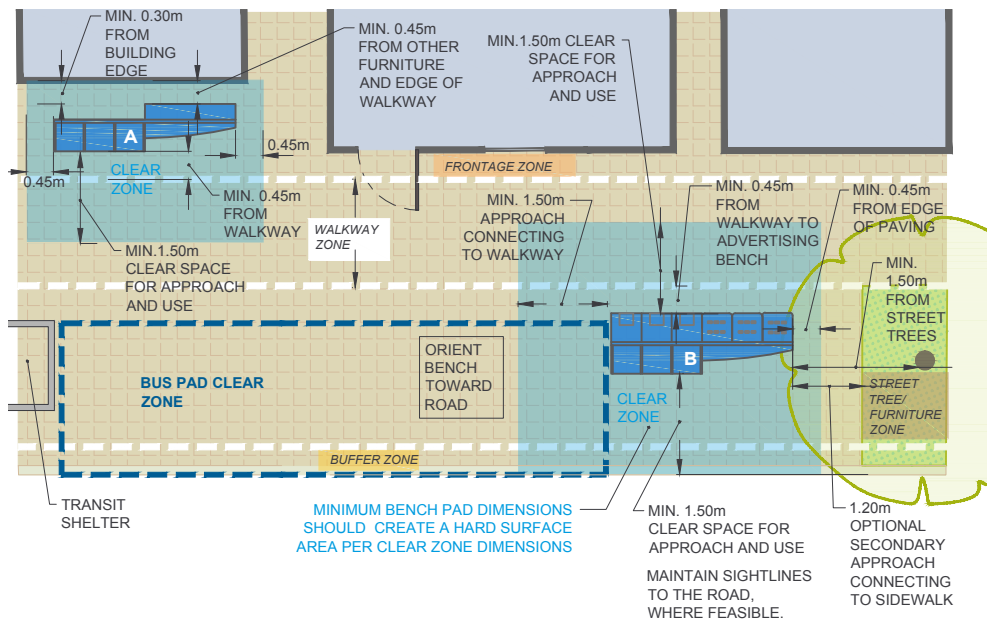


FIGURE 3.2.10 | Advertising Bench Sample Layouts

Setbacks

- MIN. 1.50m from edge of curb
- MIN. 1.50m clear space in front of bench features or modules.
- If bench does not face the walkway, add a MIN. 1.50m approach area or walkway on at least one side; and a 1.20m approach on a second side (recommended where space allows). Ensure the approach area(s) can be accessed from the sidewalk via a pathway, if required.
- Where space allows, provide an adjacent space of 1.10m x 1.20m for at least one person using a scooter or wheelchair, or guide dog (can also function as a secondary approach, see above point).
- MIN. 0.45m from edge of walkway
- MIN. 1.50m from tree trunks
- MIN. 1.00m from other street furniture
- MIN. 1.50m from fire hydrants
- MIN. 3.00m from advertising transit shelters

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- When the proposed advertising bench placement may encroach on a private property, coordinate placement with the property owner.



Multi-Publication Structures

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Multi-publication structure width + 0.45m
 Multi-publication structure width + 0.75m

Multi-publication structures provide transit users and pedestrians with multiple publications in an orderly way. They also offer a visual presence within the streetscape and therefore their design and placement should balance function with aesthetics.

Considerations

Multi-publication structures should be limited to areas highly used by pedestrians.

- City of Hamilton by-law does not permit more than three boxes within a multi-publication structure.
- Place more frequently in commercial/civic areas, adjacent to major intersections and bus stops.
- Orient so that the openings of a multi-publication structure face the walkway.
- Place in highly visible locations to deter vandalism.
- Permanently installed multi-publication structures should not interfere with entrances to buildings, heavily used loading zones, and other potential conflicts.
- Secure multi-publication structures to a flat, firm and stable surface.
- **Limit use of advertising on multi-publication structures.**

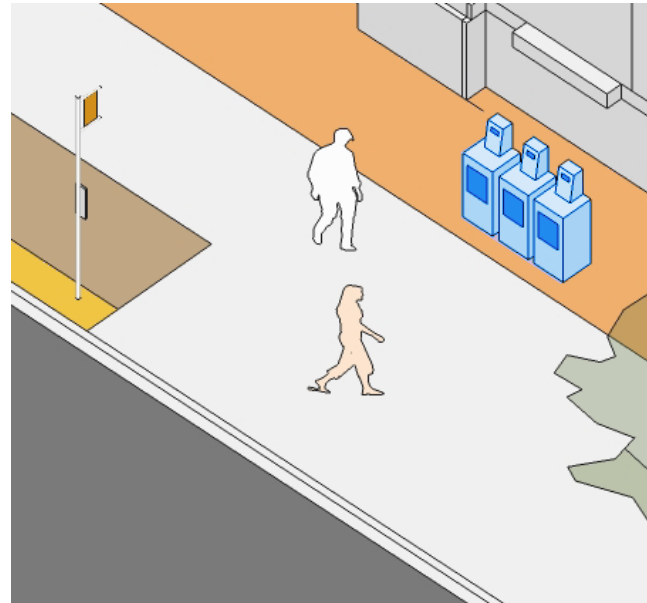
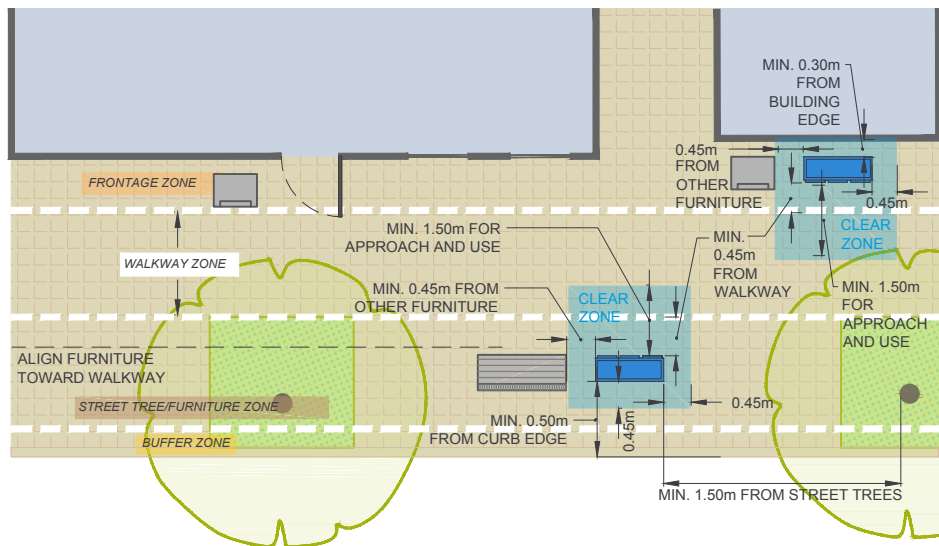


FIGURE 3.2.11 | Multi-publication Structure

LAYOUT 1: MULTI-PUBLICATION STRUCTURE IN THE STREET TREE/FURNITURE AND FRONTAGE ZONES



Setbacks

- MIN. 0.50m from edge of curb
- MIN. 0.45m from edge of walkway
- MIN. 1.50m clear space in front of the multi-publication structure openings.
- MIN. 0.30m from building edge to allow for maintenance access
- MIN. 1.50m from tree trunks
- MIN. 0.45m from other street furniture
- MIN. 1.50m from fire hydrants

LAYOUT 2: MULTI-PUBLICATION STRUCTURE ADJACENT TO A BUS STOP

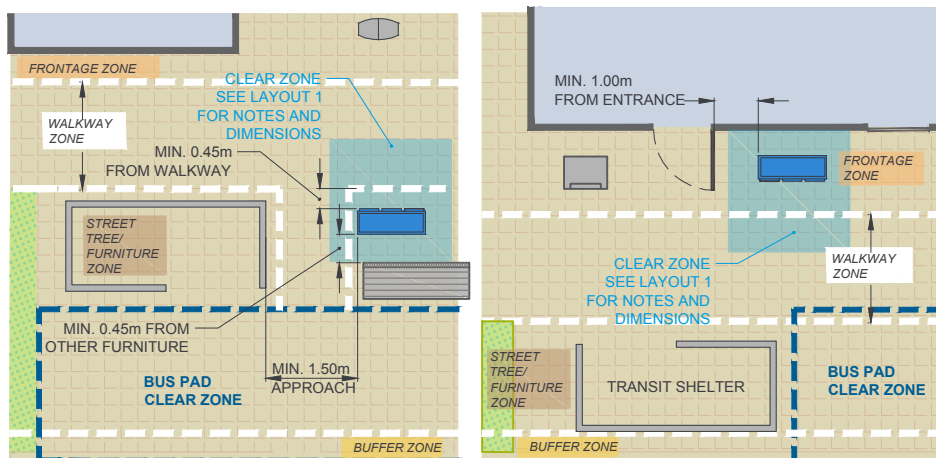


FIGURE 3.2.12 | Multi-publication Structure Sample Layouts

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- The preferred placement for the proposed multi-publication structure is within the City ROW. However, in case placement encroaches on a private property, coordinate placement with the property owner.



Poster Kiosks

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Poster kiosk width + 0.45m
Poster kiosk width + 0.75m

Poster kiosks provide the opportunity to display community information or advertising and have a visual presence within the streetscape.

Considerations

- Place more frequently in commercial/civic areas and major routes and destinations; adjacent to major intersections and bus stops.
- Information should be oriented so that it is visible (or detectable) from the path of travel on the walkway, or from a bus clear zone. See layouts on the opposite page for placement variations for the poster kiosk that contains information on either one side only, or both sides.
- Ensure that there is adequate clearance available for approach by people without blocking of the walkway, if an approach is required.
- Ensure that sightlines to poster kiosks are not blocked by other objects, such as transit shelters, trees, other signs.
- Poster kiosks should be at a height to be visible by people of different heights, including children and individuals who are in wheelchairs.
- Create a consistent identity for each family of poster or signage type to be easily identifiable.
- Ensure that there is clearance available for approach by people, if an approach is required. This additional clearance is intended so that the pedestrian traffic is not impeded on the walkway.
- Do not place poster kiosks directly in front of building entrances or exits.
- Do not place poster kiosks directly in front of windows (except where coordinated with a property owner).
- Secure poster kiosks to a flat, firm and stable surface.
- **Advertising can be incorporated within poster kiosks.**

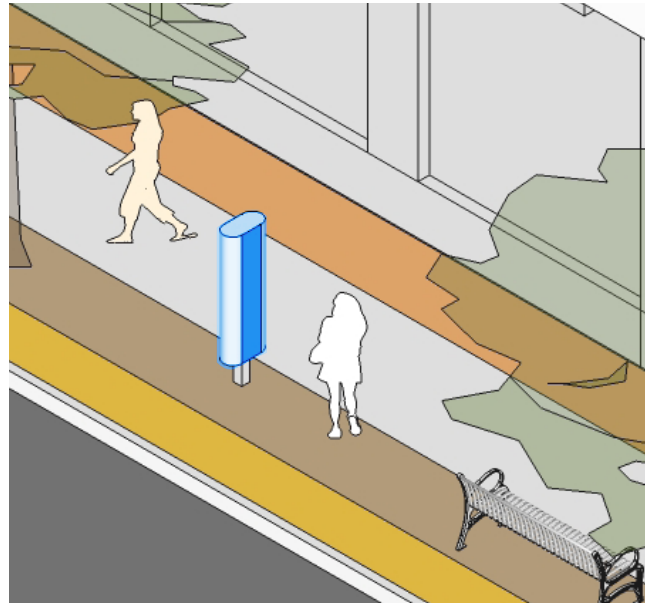
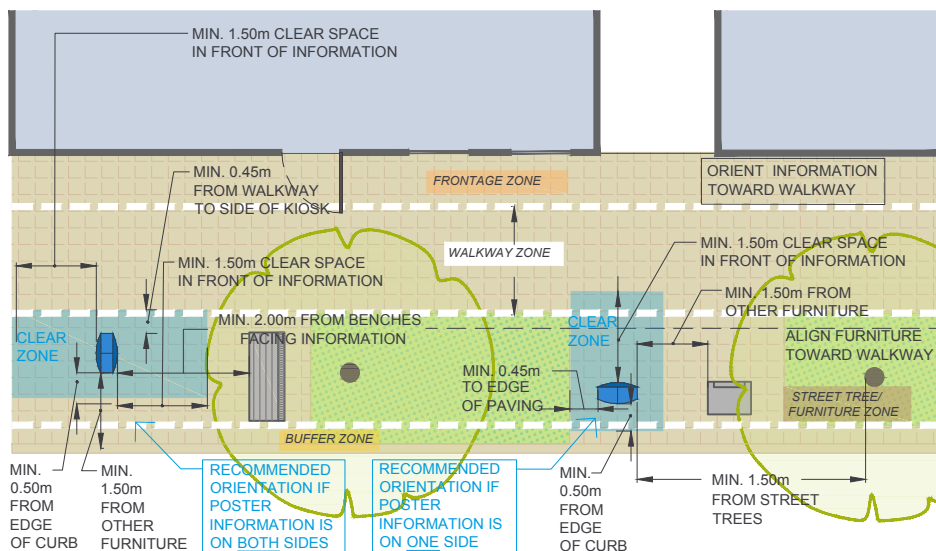
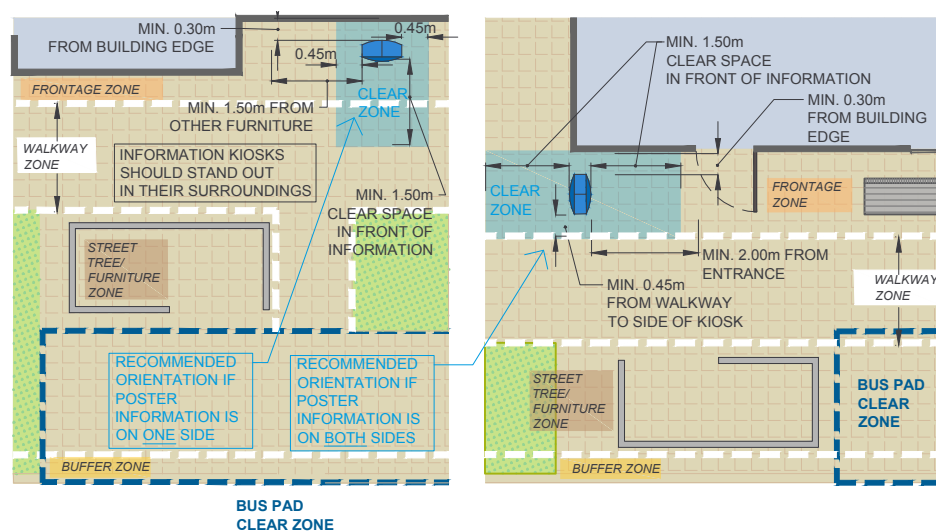


FIGURE 3.2.13 | Poster Kiosk

LAYOUT 1: POSTER KIOSK IN STREET TREE/FURNITURE ZONE



LAYOUT 2: POSTER KIOSK IN FRONTAGE ZONE / ADJACENT TO BUS STOP



Setbacks

- MIN. 0.50m from poster kiosk to edge of curb
- MIN. 0.45m from side of poster kiosk to edge of walkway
- MIN. 0.30m from building edge to allow for maintenance access
- MIN. 1.50m clear space in front of poster information for approach and maintenance
- MIN. 1.50m from tree trunks
- MIN. 1.50m from other street furniture
- MIN. 1.50m from fire hydrants

FIGURE 3.2.14 | Poster Kiosk Sample Layouts

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- All setbacks are from the largest dimension of the structure (i.e from the poster edge, rather than centre pole)
- When the proposed poster kiosk placement may encroach on a private property, coordinate placement with the property owner.



Wayfinding Kiosks

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Wayfinding kiosk width + 0.45m
Wayfinding kiosk width + 0.75m

Wayfinding kiosks are free standing permanent structures within streets. They generally contain a map clearly showing the current location and best routes to nearby destinations as well as directional signage. They may add visual interest and contribute to the vibrancy of the street.

Considerations

Generally wayfinding kiosks are placed in the city centre, BIAs, major intersections and other tourist-oriented areas. Overuse dilutes their effectiveness and clutters the streetscape.

- Place wayfinding kiosks at key decision-making points, such as near key street intersections, destinations and main transit routes.
- Place in the street furniture zone, adjacent to but not directly within intersections (outside of the corner clear zone).
- Wayfinding kiosks should stand out in their surroundings to be easily located by users. Ensure that sightlines to wayfinding kiosks are not blocked by other objects, such as transit shelters, trees, other signs. Avoid grouping closely with other furniture, particularly furniture that contains other information or advertising.
- Orient so that the wayfinding kiosk is visible (or detectable) from the path of travel on the walkway, or from a bus clear zone. See layouts on the opposite page for placement variations for the kiosk that contains information on either one side only, or both sides.
- Ensure the information is legible from a distance it is intended to be viewed.
- Wayfinding kiosks should be limited in size to minimize visual impacts while providing adequate space in which to post information.
- Wayfinding kiosks should be at a height to be visible by people of different heights, including children and individuals who are in wheelchairs.
- In crowded areas, signs and wayfinding information can be placed above head level

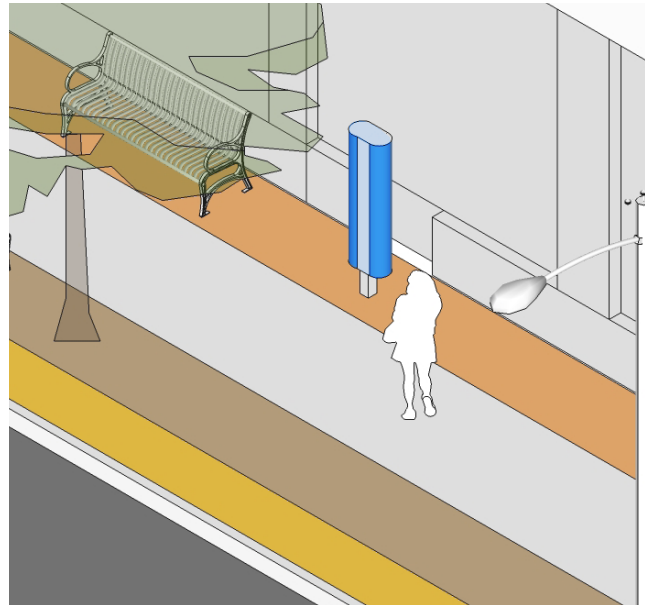
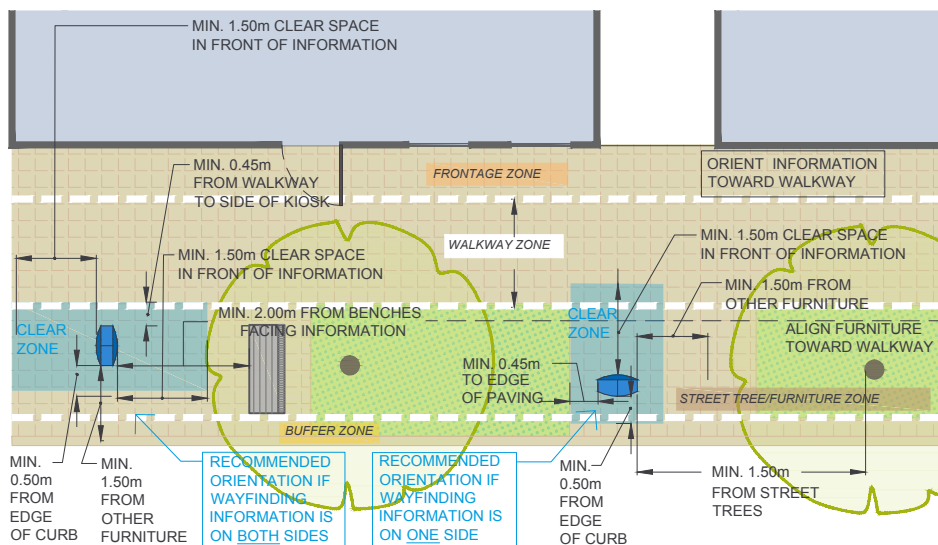


FIGURE 3.2.15 | Wayfinding Kiosk

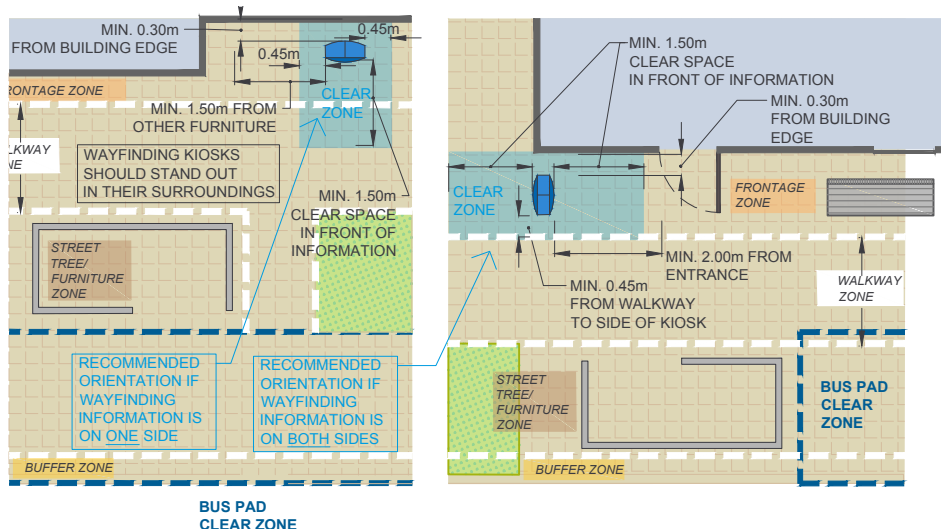
to increase visibility from a distance. An additional sign at lower level, with raised print and braille is also recommended (CNIB, 2009)

- Ensure wayfinding information is legible at night (through illumination, for example).
- Ensure wayfinding information is accessible for people with vision loss. CNIB provides resources and support in serving for people with vision loss, and can be consulted for criteria for accessibility of information.
- Create a consistent identity for each family of wayfinding type to be easily identifiable.
- Ensure that there is clearance available for approach by people, if an approach is required. This additional clearance is intended so that the pedestrian traffic is not impeded on the walkway.
- Do not place wayfinding kiosks directly in front of building entrances or exits.
- Do not place wayfinding kiosks directly in front of windows (except where coordinated with a property owner).
- Secure wayfinding kiosks to a flat, firm and stable surface.

LAYOUT 1: WAYFINDING KIOSK IN THE STREET TREE/FURNITURE ZONE



LAYOUT 2: WAYFINDING KIOSK ADJACENT TO A BUS STOP



Setbacks

- MIN. 0.50m from edge of curb
- MIN. 0.45m from edge of walkway
- MIN. 0.30m from building edge to allow for maintenance access
- MIN. 1.50m clear space in front of wayfinding information for approach and maintenance.
- MIN. 1.50m from tree trunks
- MIN. 1.50m from other street furniture
- MIN. 1.50m from fire hydrants

FIGURE 3.2.16 | Wayfinding Kiosk Sample Layouts

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- All setbacks are from the largest dimension of the structure (i.e from the kiosk edge, rather than centre pole)
- When the proposed wayfinding kiosk placement may encroach on a private property, coordinate placement with the property owner and obtain written consent from the owner.



Bicycle Racks

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Bicycle parking clear zone + 0.45m
Bicycle parking clear zone + 0.90m

In conjunction with the Sobi (Social Bicycles bikeshare program), well located, safe and secure bicycle racks are an important factor in encouraging people to choose to cycle in the City of Hamilton. People use bicycles to exercise, while sightseeing, while running errands, as affordable personal transportation to school or work, and other daily activities. The need for more bicycle parking on Hamilton's streets is evidenced by a number of bikes locked to street signs, street trees and fences.

For the purposes of the guidelines, two types of bicycle racks are considered, the post and ring and a multi-ring. Bicycle parking is addressed in further detail in City of Hamilton's Bike Parking Strategy. Please refer to this document for additional bicycle parking types, requirements and considerations.

Considerations

- Bicycle parking should be provided on as many Hamilton streets as possible, recognizing that streets should accommodate a variety of modes of transportation: vehicular, transit, bicycling, pedestrians, personal mobility devices users.
- Place more frequently in commercial/civic areas, multi-modal transportation connections (i.e bus and other transit stops), along cycling routes, adjacent to major intersections, adjacent to public building entrances, community facilities (shopping centres, libraries, etc), and where there is unmet demand (i.e. areas where bicycles are frequently parked to trees or signs).
- Orient so that the parked bicycles do not project onto the walkway or the road, and for access to the bicycles made from the walkway (rather than road).
- Typically, parked bicycles are oriented parallel to curb edge, but other orientations are acceptable, provided that the required setbacks are met.
- Do not place bicycle parking directly in front of building entrances or exits.
- Do not place bicycle parking directly in front of windows (except where coordinated with a property owner).
- The bicycle rack should support the weight of a bicycle at two points.
- The bicycle rack should support different bicycle frame sizes and types, and different locking mechanisms.
- Where there is on street parking, consider placing a cluster of bicycle racks into 1 vehicle parking spot. 1 parking spot can fit 8-10 bicycles.
- Bicycle racks may be provided by property owners (in public facilities, offices, destinations) subject to compliance with the guidelines.
- Secure the bicycle rack to a flat, firm and stable surface.
- Provide a cover or a shelter for bicycle parking, where possible.

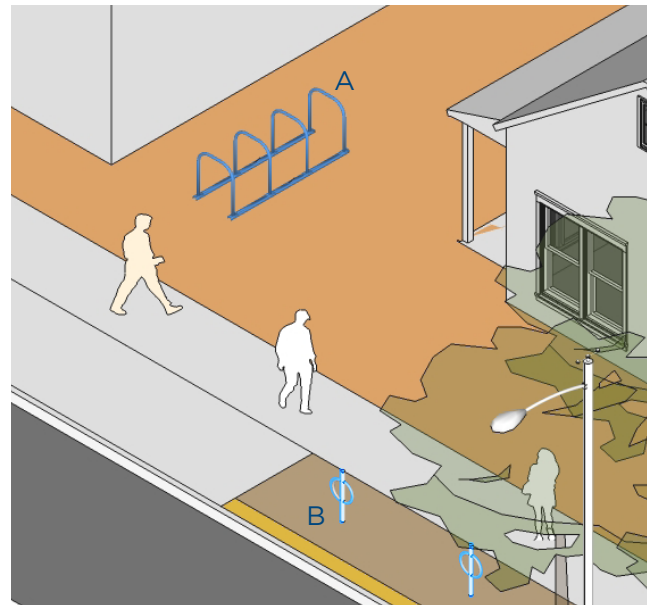
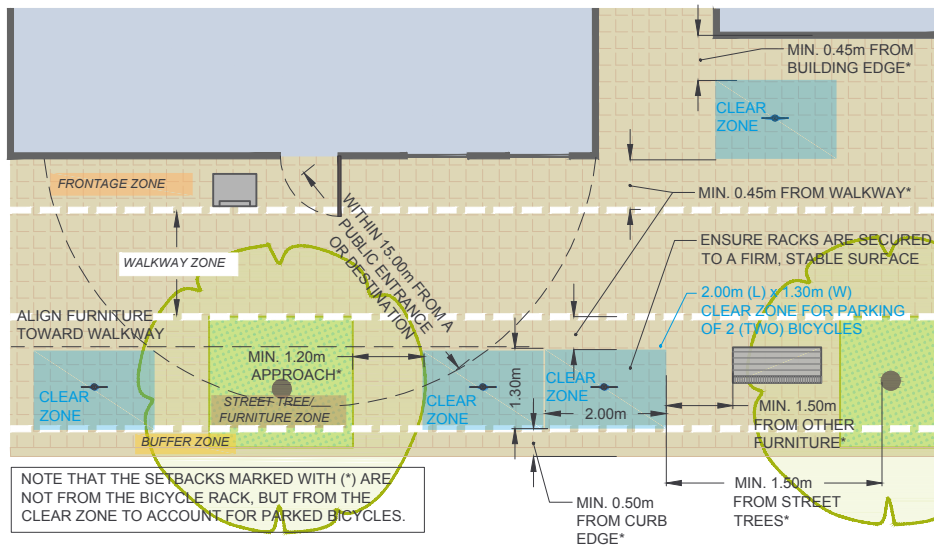
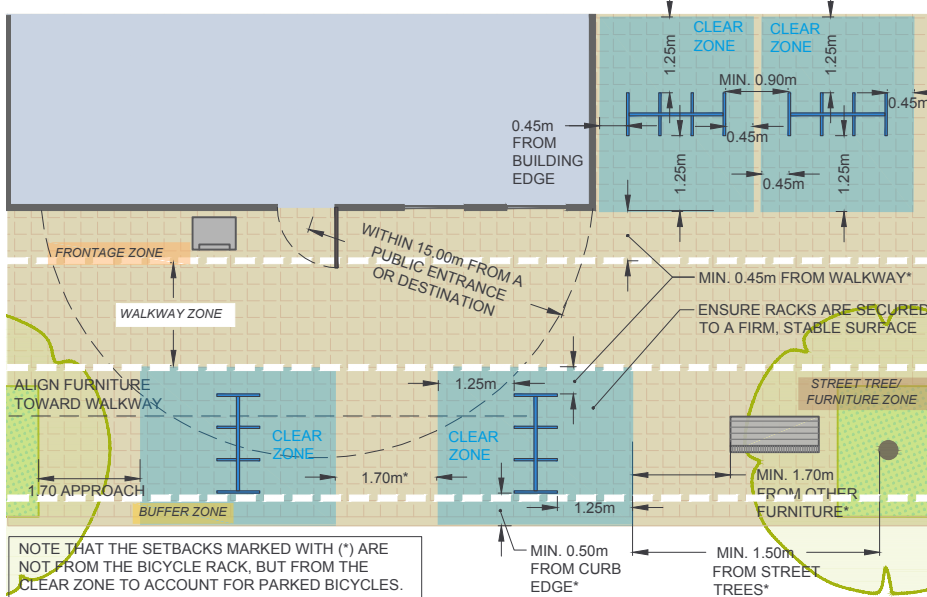


FIGURE 3.2.17 | Bicycle Racks: Multi-ring (A) and Post and Ring (B)

LAYOUT 1: POST AND RING BICYCLE PARKING



LAYOUT 2: MULTI-RING BICYCLE PARKING



Setbacks

- MIN. 0.50m from edge of curb to clear zone
- MIN. 0.45m from edge of walkway to clear zone
- MIN. 0.45m from building edge to clear zone.
- MIN. 1.50m from tree trunks to clear zone.
- MIN. 1.50m from other street furniture to clear zone for post and ring rack. (1.70m for multi-ring bicycle racks)
- MIN. 1.50m from fire hydrants to clear zone.
- Bicycle parking may be oriented in different ways, as long as all setbacks and clear zones are provided.

FIGURE 3.2.18 | Bicycle Rack Sample Layouts

NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- Setbacks marked with (*) indicate that the setback begins at the clear zone, rather than the bicycle rack, to account for parked bicycles.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- When the proposed bicycle rack placement may encroach on a private property, coordinate placement with the property owner and obtain written consent from the owner.

Cigarette Receptacles

• PERMITTED ZONES

STREET TREE/STREET FURNITURE ZONE
FRONTAGE ZONE

• MINIMUM ZONE WIDTH

Cigarette Receptacle width + 0.45m
Cigarette Receptacle + 9.45m

Cigarette receptacles provide pedestrians an opportunity to properly dispose of their cigarettes and avoid throwing them onto the street.

Considerations

- Place cigarette receptacle more frequently in commercial/civic areas, major routes, adjacent to major intersections and bus stops.
- Place cigarette receptacle openings adjacent to a walkway.
- Do not place cigarette receptacles directly in front of building entrances or exits.
- Do not place cigarette receptacles directly in front of windows (except where coordinated with a property owner).
- Secure the cigarette receptacle to a flat, firm and stable surface.
- Ensure the location of cigarette receptacles take into account vehicular and pedestrian safety and access.
- Preference should be given to bins that have smooth or rounded edges.
- Should be located at the periphery of no smoking zones to provide smokers an opportunity to dispose of cigarettes prior to entering the area.
- **Limit use of advertising on cigarette receptacles.**

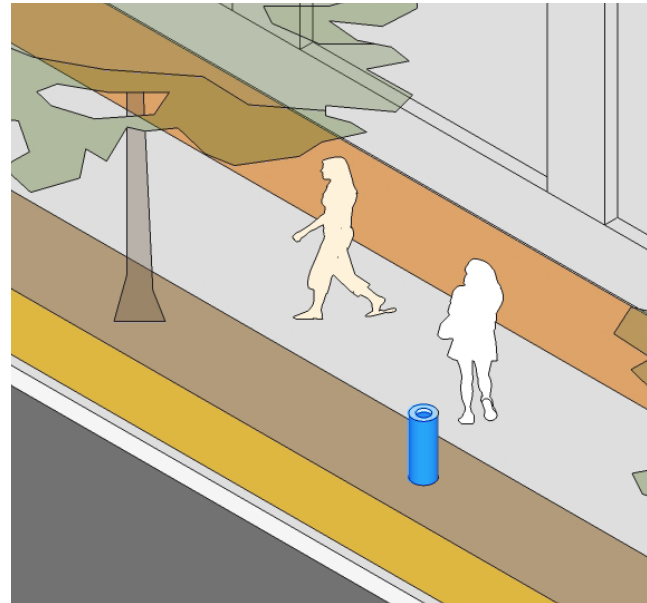


FIGURE 3.2.19 | Cigarette Receptacles

LAYOUT 1: CIGARETTE RECEPTACLES IN THE STREET TREE/FURNITURE ZONE

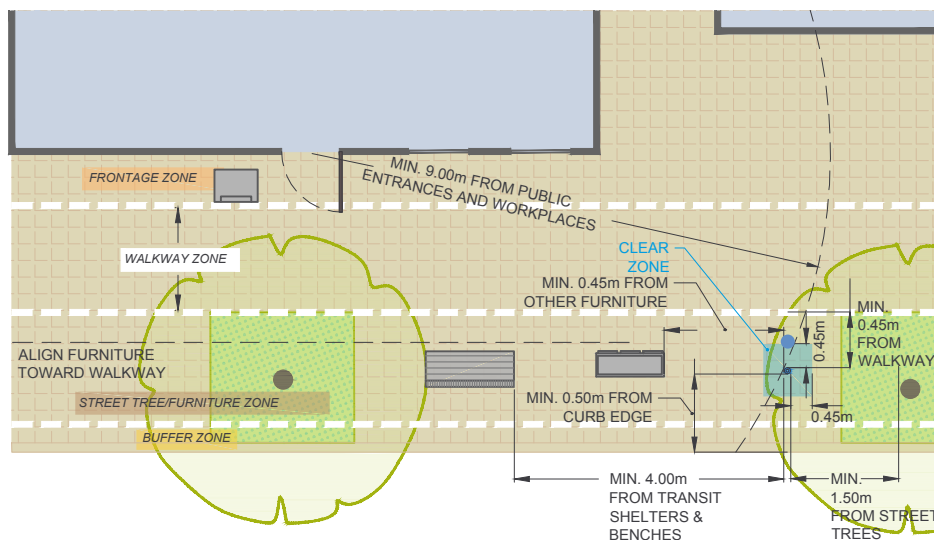


FIGURE 3.2.20 | Cigarette Receptacles Sample Layout

Setbacks

- MIN. 0.50m from edge of curb
- MIN. 0.45m from edge of walkway
- MIN. 4.00m from transit shelters/benches
- MIN. 9.00m from all public place and work place entrances/doorways
- MIN. 1.50m from tree trunks
- MIN. 0.45m from other street furniture
- MIN. 1.50m from fire hydrants

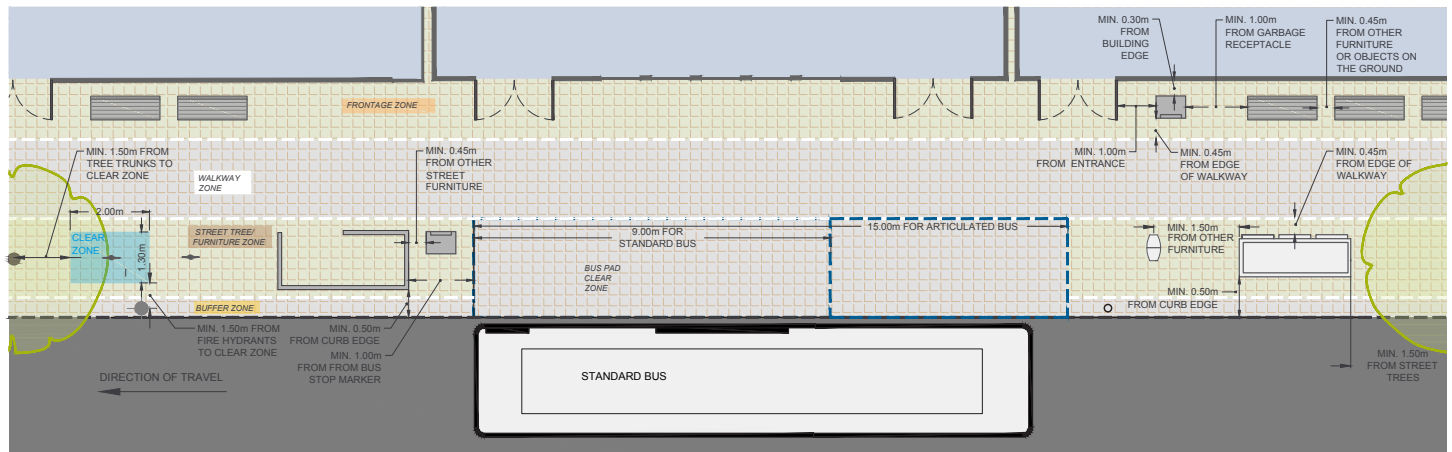
NOTES:

- The setbacks and placement guidelines described on this page apply regardless of zone configuration.
- The minimum zone dimensions, setbacks and placement guidelines assume that a 0.50m buffer zone and/or a 0.50m frontage zone is provided.
- When the proposed cigarette receptacle placement may encroach on a private property, coordinate placement with the property owner and obtain written consent from the owner.
- Ensure compliance with applicable laws and by-laws. Where the requirements are conflicting, the applicable laws and by-laws take precedence.

3.2.3 Sample Layouts: Street Furniture Groupings Adjacent to Bus Stops

This Section includes several sample layouts with street furniture combinations adjacent to bus stops. All bus stop furniture layout and placement is subject to selection and placement criteria discussed in the previous sections.

LAYOUT 1: MIDBLOCK LAYOUT IN DOWNTOWN COMMERCIAL AREA



LAYOUT 2: INTERSECTION LAYOUT IN DOWNTOWN COMMERCIAL AREA

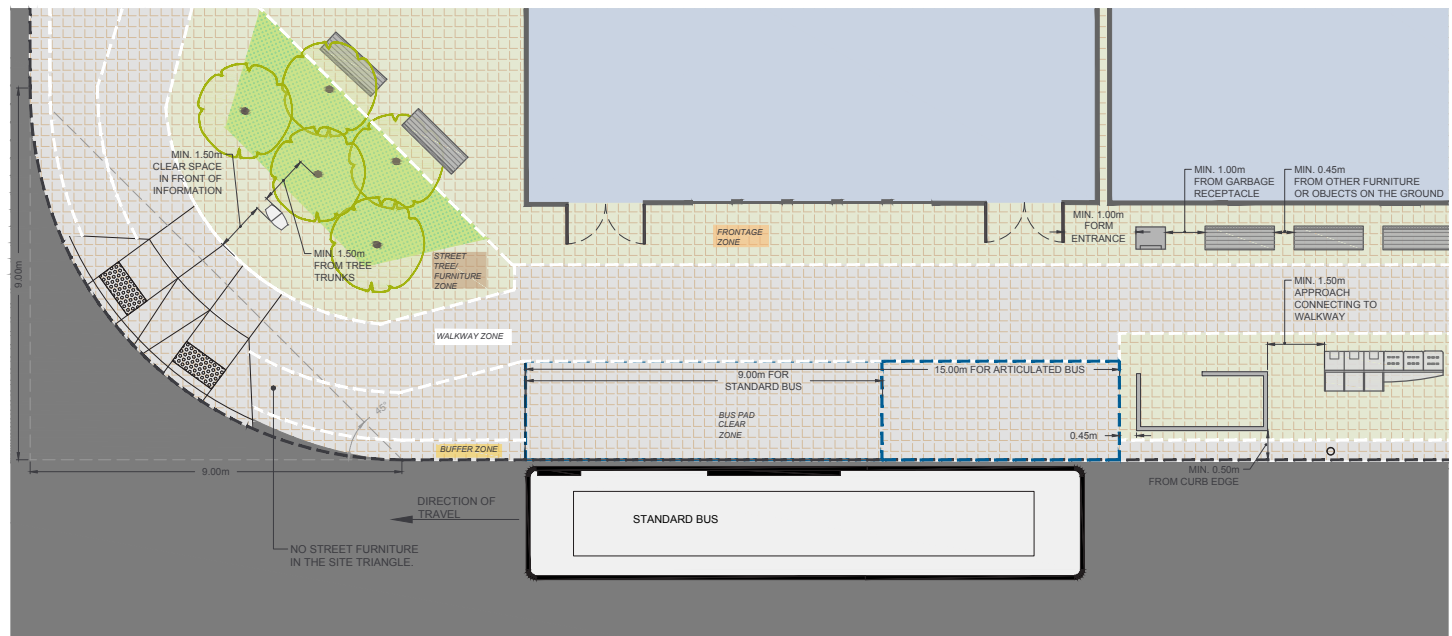









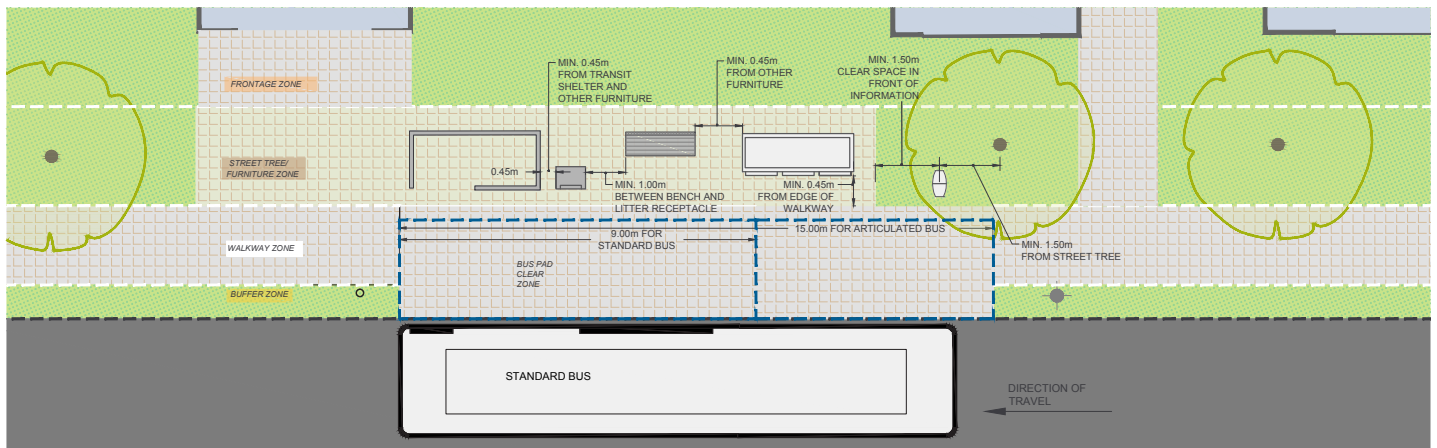


FIGURE 3.2.21 | Sample Layouts 1-2

LEGEND

	Bus Pad Clear Zone		Advertising Bench		Poster Kiosk or Wayfinding Kiosk
	Cigarette Receptacle		Litter Receptacle		Bicycle Rack
	Multi-publication Structure		Transit Shelter		Bench

LAYOUT 3: MIDBLOCK LAYOUT IN RESIDENTIAL AREA



LAYOUT 4: INTERSECTION LAYOUT IN RESIDENTIAL ZONE

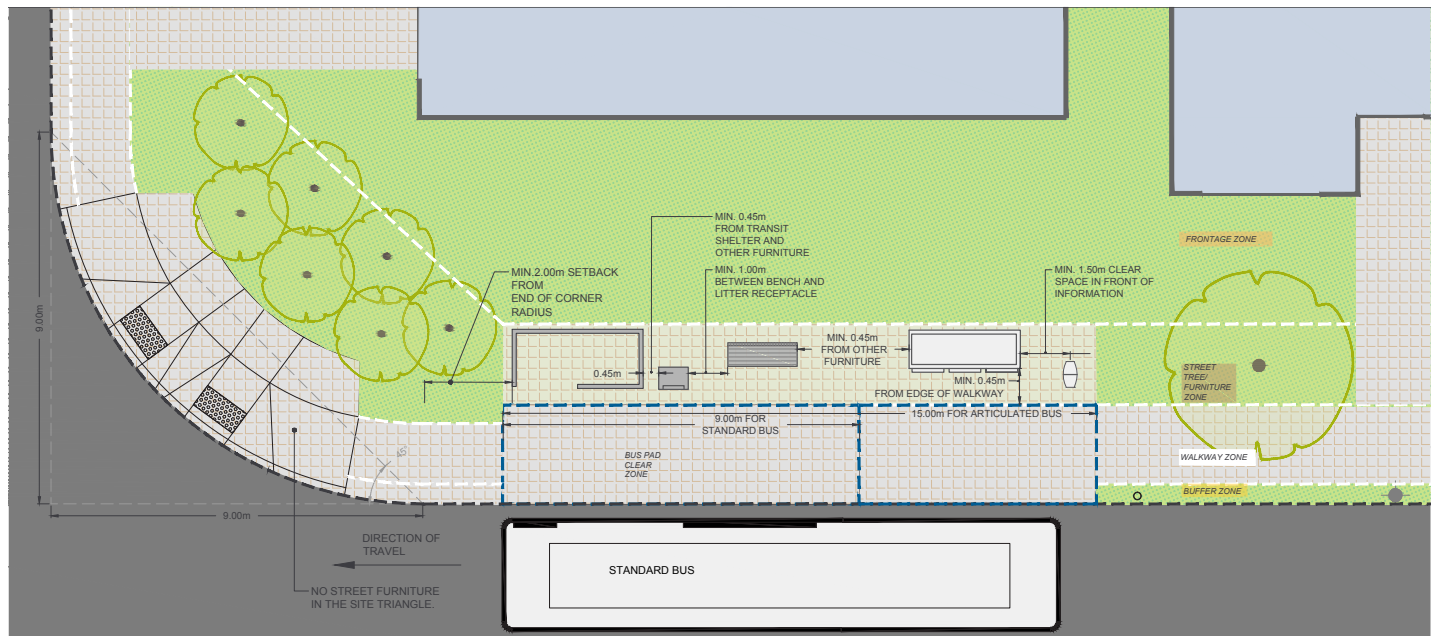


FIGURE 3.2.22 | Sample Layouts 3-4

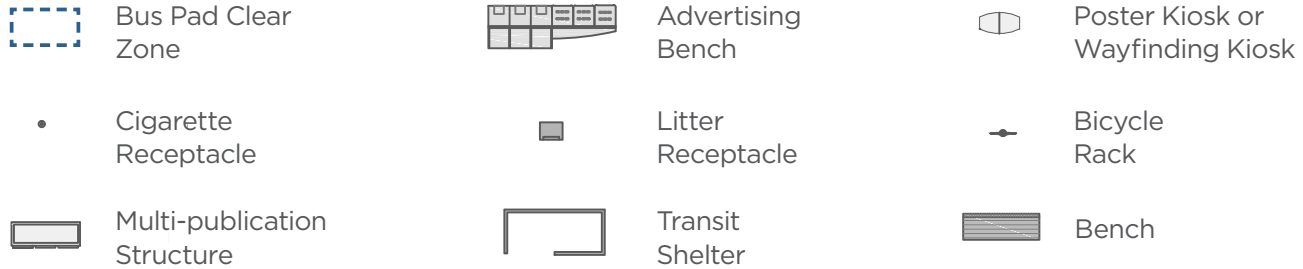
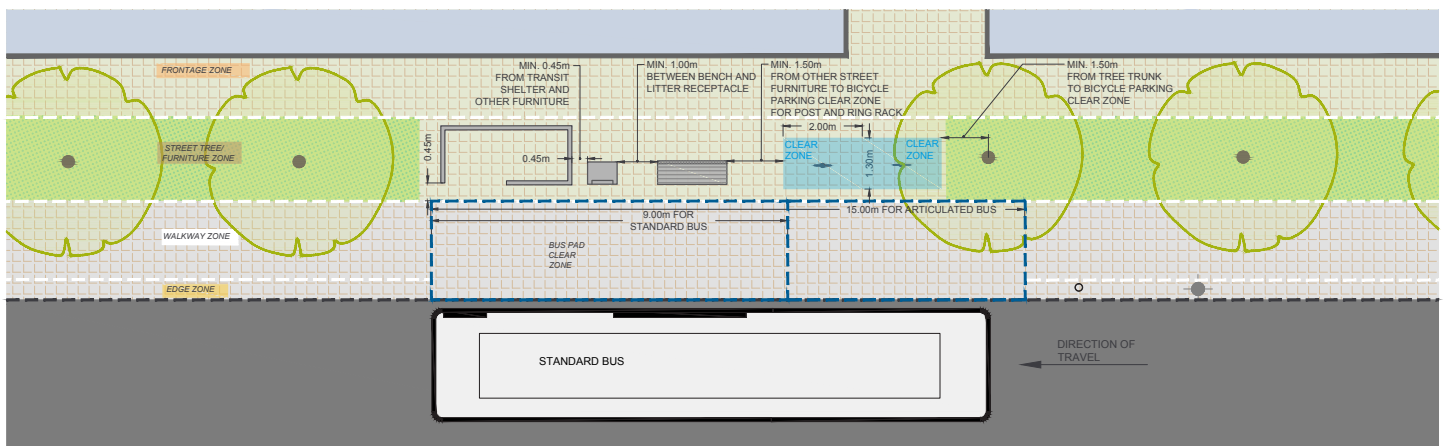
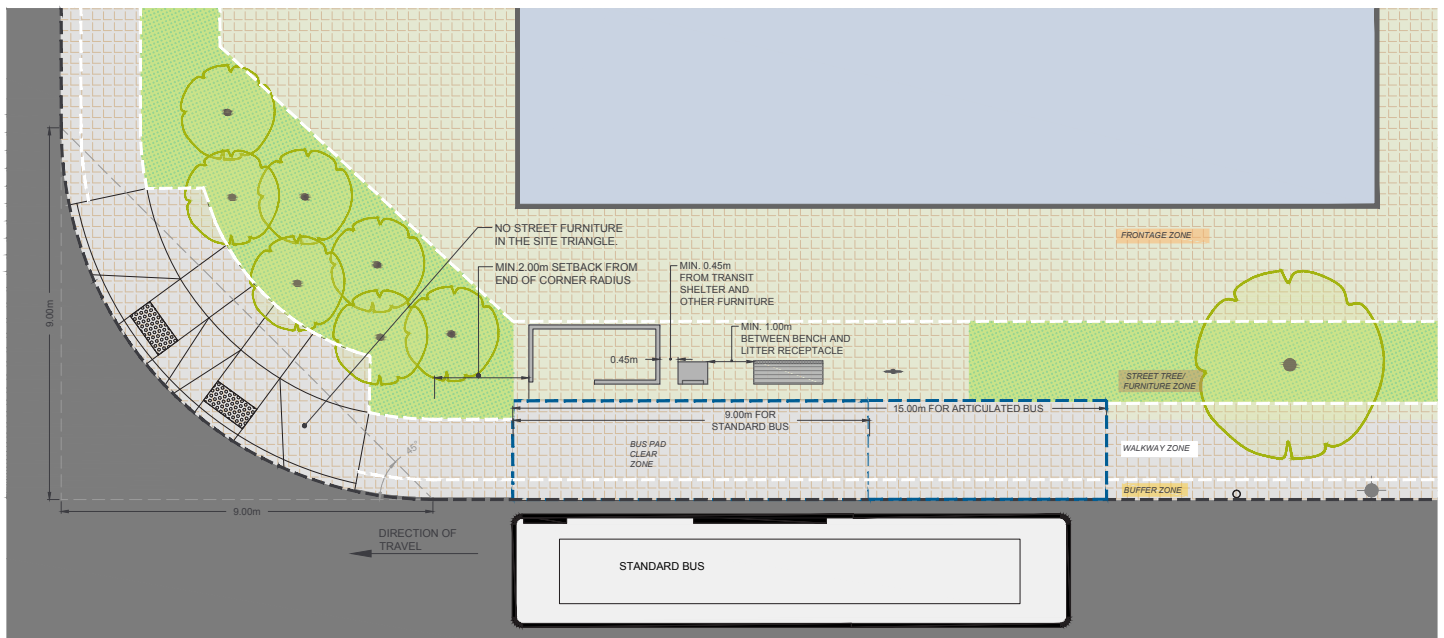
LEGEND**LAYOUT 5: MIDBLOCK LAYOUT IN COMMERCIAL AREA****LAYOUT 6: INTERSECTION LAYOUT IN COMMERCIAL AREA**

FIGURE 3.2.23 | Sample Layouts 5-6

GLOSSARY & REFERENCES

GLOSSARY

Accessibility: A degree to which a product, device, service or environment is available for use and benefit of as many people as possible.

AODA: Accessibility for Ontarians with Disabilities Act.

Articulated Bus: A bus usually 18.00m in length with two connected passenger compartments that bend at the connecting point when the bus turns a corner.

BIA: Business Improvement Area

Buffer Zone: A safety buffer between moving traffic on the roadway and people and objects in the sidewalk corridor.

Bus Pad Clear Zone: A clear and unobstructed area at a transit bus stop locations that is required for ramp deployment and loading/unloading of passengers.

Clear Zone: A defined area that is clear and unobstructed.

CNIB: Canadian National Institute for the Blind.

Frontage Zone: A transitional exterior space between the street right of way and the adjacent buildings.

Furniture Pad: A hard surface area required for installation, access to and maintenance of the furniture elements.

ROW: Right of way.

Sidewalk Corridor: Section of the street between the road curb and the edge of buildings.

Snow Storage: Area designated for storage of snow, which is cleared from roads and sidewalks in winter after storm events.

Standard Bus: A bus 12.00m in length.

Street Tree/ Furniture Zone: An amenity zone within the sidewalk corridor that may contain trees and street furnishings.

Walkway Clear Zone: A continuous clear and unobstructed portion of the street used for pedestrian movement.

Urban Braille: A system of tactile markings on the street that conveys information to the people who are visually impaired or blind.

REFERENCES

- Accessibility for Ontarians with Disabilities Act (2009)
- Hamilton Mobility Street Master Plan (2003)
- City of Hamilton Urban Braille System (2002)
- City of Hamilton Transportation Master Plan (2007)
- City of Hamilton Barrier Free Design Guidelines (2006)
- City of Hamilton Transit Bus Stop Accessibility Criteria and Guidelines (2014)
- City of Hamilton Bike Parking Strategy and Design Guidelines (in progress)
- City of Hamilton Pedestrian Mobility Plan (2012)
- CNIB. Clearing Our Path: Universal Design Recommendations for People with Vision Loss. 2009.
- Best Practices from the City of Toronto, Calgary, St Catharines, Waterloo, Boston, Minneapolis, Ballarat, and York Region were reviewed.

