

Mississippi Mills Urban Design Guidelines



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INTRODUCTION

1.1 Purpose and Background

The Town of Mississippi Mills Community Official Plan (COP) encourages the development of high quality urban and rural environments, a sense of pride and an improved image of the Town of Mississippi Mills today and into the future. Building upon the direction of the COP, the Town has developed urban and rural design guidelines that recognize and celebrate the Town's identity, its architecture, its heritage and its diverse urban and rural landscapes.

Urban and Rural Design is concerned with the following:

- Designing buildings and the spaces between them
- Managing the resources of the built environment, both new and existing
- Using an ecosystem approach to create a balance between development and the conservation of features of the natural environment
- Creating a sense of place where buildings, streets, and the people exist and function together as a whole by being beautiful, accessible, and practical.

In general, good urban and rural design seeks to create a safe, functional and attractive built environment. The intent of the following guidelines is to assist the Town of Mississippi Mills, the public, and the development industry in the design of the future urban and rural forms of the community by building on local examples. The guidelines are intended to be considered as a package since many design principles will affect a single development even though the urban and rural elements exist in separate sections. The guidelines are intended to be flexible as specific design solutions cannot be prescribed for all circumstances. For example, there may be instances where, due to site conditions or unique circumstances, different guidelines may be in conflict with each other or physically not achievable.

The guidelines will take into account natural areas and ensuring development is built in and around the landscape rather than simply on the landscape.

This document is organized to include general design principles, as well as more detailed guidelines and standards. The principle focus of the urban design guidelines is development on residential and commercial lands whereas the focus of the rural guidelines is for residential development in the rural area.

1.2 Policy Direction

The Guidelines have been prepared in the context of the overall principles and intent of the Provincial Policy Statement and the Community Official Plan. Specific guidelines relevant to environmental sustainability have been consolidated and put into each section as applicable, as well as in the final section.

1.3 Public Consultation Process

In February of 2007 three Public Consultation sessions were held to canvas the members of the Public. Members of the public were asked to define rural character and to distinguish what they liked and disliked about their community with respect to Planning and Design. Points of interest from these workshops are detailed in a separate document which is available from the Town.

URBAN DESIGN

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DEVELOPMENT STRUCTURE

i. Design Principles

COP Goal: Require new development and redevelopment to respect the scale and form of the area’s small town and rural character. This could be achieved by consideration of the following:

- 1. Neighbourhood Focus:** New developments will play a significant role in the identity and character of Almonte and Pakenham. To promote distinctive developments with a strong sense of place, new developments should respect the scale and character of existing neighbourhoods and attempt to fit within existing neighbourhoods. Each neighbourhood and development should also have an identifiable and celebrated focus, such as a natural feature, a pedestrian friendly commercial area, or simply a well laid out tree-lined collector street.
- 2. Interconnected:** New developments should be characterized by a series of local streets with short block lengths to allow for easy travel to local destinations. Consistent interconnected street patterns reduce congestion, promote walkability, and improve emergency vehicle access response times. Where desired traffic flow or physical barriers impede street connections, pedestrian links should be included to minimize the walking distances. Where new developments are proposed within existing neighbourhoods, streets should be of a similar character as the one it connects to.
- 3. Compact & Walkable:** The neighbourhood scale and layout of new development should enable an easy walking distance from the centre of the development to the edge of essential amenities (approximately 400m). Such amenities should include parks and recreation areas, commercial

facilities, and institutional buildings. Higher densities close to amenities encourages walking and supports those amenities. Walkable neighbourhoods promote community health.

- 4. Diverse:** New developments should provide a variety of lot sizes and frontages to encourage different building sizes and setbacks. Larger residential developments should also provide a variety of block sizes and a variety of interconnected street layouts that encourage the development of a mix of housing forms and densities.
- 5. Have Respect for Natural Heritage:** The design of neighbourhoods should have strong visual and physical links to natural environmental features, including, for example, urban forests and watercourses.
- 6. Amenities Within New & Old Neighbourhoods:** Mississippi Mills’ urban area consists of small neighbourhoods that share different services and amenities. Most new developments will unlikely be large enough to be considered as a neighbourhood on their own. As such, s, should compliment existing neighbourhoods by adding necessary or missing amenities where applicable which within the overall hierarchy, will support the other design principles.

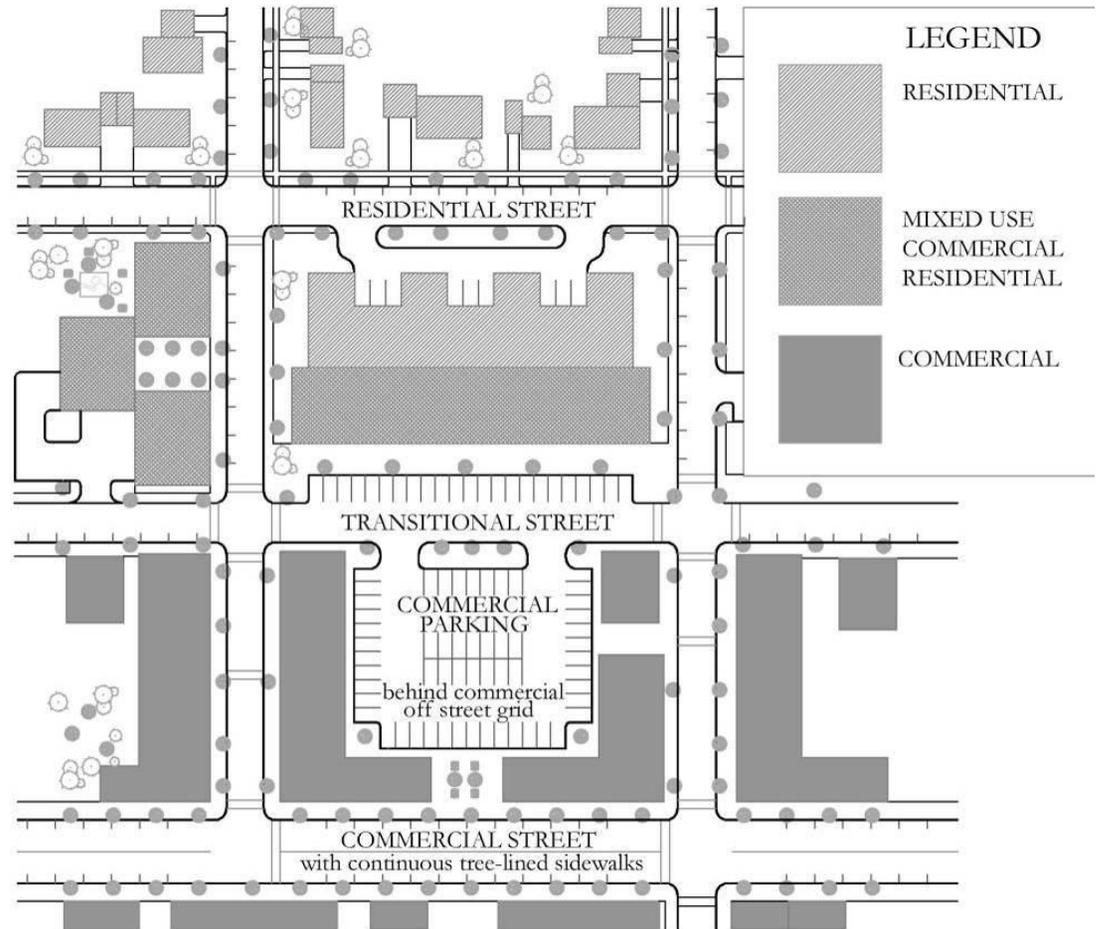
ii. Neighbourhood Structure

The following guidelines support the principles of compact, mixed-use neighbourhoods that foster a sense of place, prioritize pedestrian and vehicular movement, and respect natural environments as determined by the COP. Because neighbourhoods in Mississippi Mills tend to be small, services and amenities can be shared amongst neighbourhoods thereby creating a larger neighbourhood cluster.

- a. Developments should be designed to include the following elements, or indicate how they will be designed to support such elements nearby areas:

- *Neighbourhood Focus:* The neighbourhood gives an area identifiable character. It can contain a variety of uses, services and amenities such as community facilities, small-scale neighbourhood retail, parks, and natural features.
- *Neighbourhood Edge:* Neighbourhoods generally have an edge that defines their boundaries and may be typically defined by:
 - Urban infrastructure, such as arterial roads or railway lines;
 - Natural features, such as public parks and open spaces, agricultural lands, watercourses, etc.
 - Community facilities such as schools, large parks, large format retail, etc; and/or
 - Commercial Areas

- b. Areas that are close to commercial uses should be higher in density to ensure there is a sufficient population base to sustain the commercial and community activities while supporting a walkable community. Higher density is also encouraged adjacent to large open spaces such as community parks. Density should generally decrease as a neighbourhood moves away from such areas.
- c. A simple street and block layout should be provided for visual interest and to maximize views and vistas to parks and open spaces the rural periphery, heritage and landmark buildings.



Commercial districts should be well connected to residential areas by a common street grid. A transitional zone should be established between the residential and commercial areas made up of flexible mixed use and higher density residential buildings.

- d. Neighbourhood parks should be distributed evenly throughout the community and located within walking distance of most homes i.e. 400 m. Open spaces should cater to a variety of recreational activities. All new neighbourhood parks should be visible from public streets, to ensure that the park can be easily viewed by individuals living in or passing through the neighbourhood. This encourages use, provides an element of safety, and supports a broader based local stewardship.



Figure: Neighbourhood Parks with significant exposure to road will provide added safety, exposure, and local ownership as more lots will face the park.

- e. Street, block, and lot orientation should maximize opportunities for winter solar exposure to minimize winter heating requirements. Orientation should be predominantly north-south (see PerthWorks diagram – p. 5).
- f. New developments should incorporate existing environmental features - either within parklands and road right-of-ways, within the site of large institutional uses, or as common areas linked to large open spaces (Gemmill Park or areas along the Mississippi River).

- g. Sensitive environmental features (ANSIs, wetlands, PSWs, etc) as identified in the COP should be adequately buffered to ensure that ecological systems such as habitat corridors are not negatively affected by urban development.
- h. Natural drainage networks should be maintained wherever possible to prevent the disruption of natural environments and support stormwater management infrastructure.
- i. Local street pavement widths should be minimized wherever possible to reduce the amount of hard surfaces and stormwater runoff.
- j. Residential and commercial developments should occur within or adjacent to existing developed areas reduce need for urban area expansion and the associated loss of open space and agricultural lands.

iii. Block Design

Blocks define and structure neighbourhoods, and directly influence development opportunities, movement options, and neighbourhood character. Blocks should be designed to be flexible and accommodate both residential and commercial lot sizes.

- a. Block lengths should generally range between 100 and 180 metres.
- b. In special circumstances where blocks are longer than 200 metres, a through-block pedestrian walkway or a mid-block park should be provided. The walkway should be a minimum width of 3.5 metres, and parks a minimum width of 12 metres. Full cut-off pedestrian-scaled lighting should be provided for all walkways.

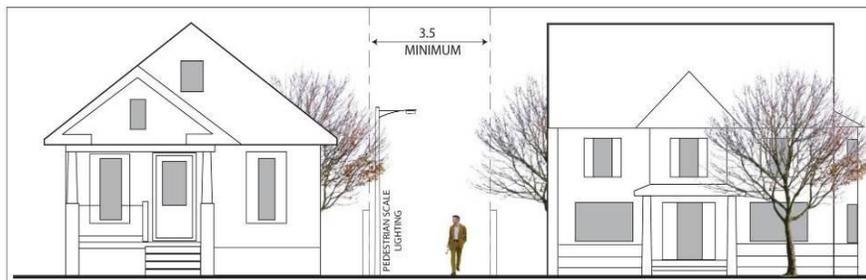
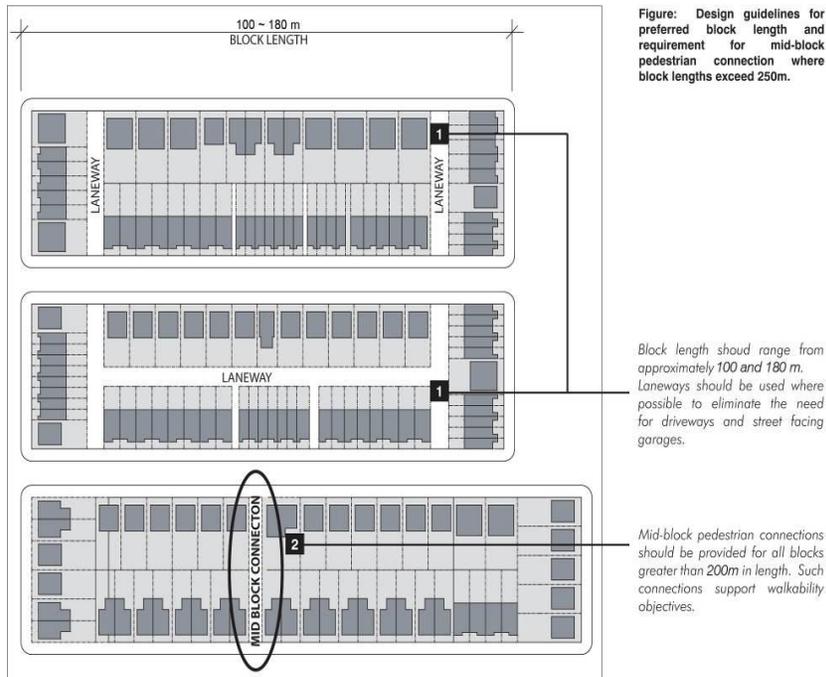
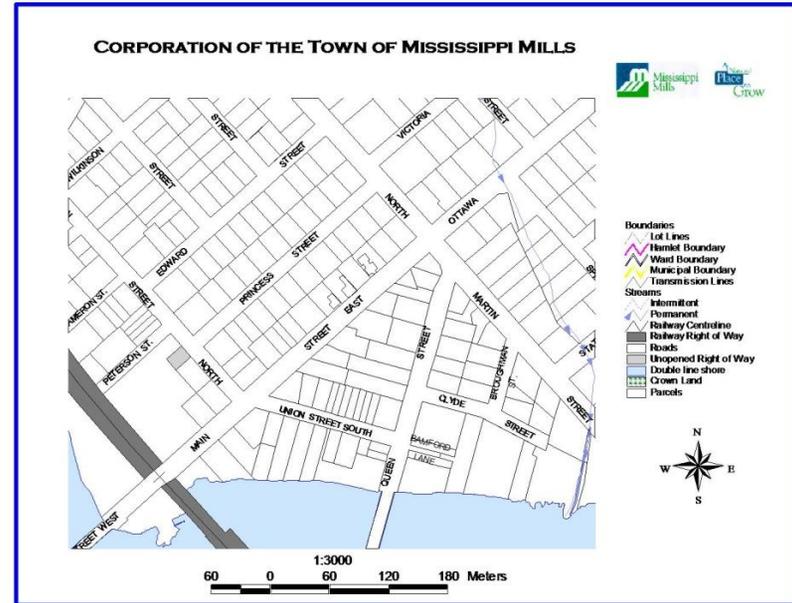


Figure: Design guideline for residential mid-block connection. The walkway should be at least 3.5m wide and include pedestrian-scaled lighting.

- c. The width of blocks should vary to promote lot size variety and development options.
- d. To maximize connections for vehicular and especially pedestrian traffic, streets should be based on a grid pattern that is modified in response to natural open space, built heritage or existing street conditions.

- e. The street grid should shift at key locations to create distinct neighbourhood enclaves, while allowing for significant view opportunities to natural features, parks, public buildings and landmarks, much like the existing Almonte street grid.



- f. Opportunities should be pursued to connect ending streets to adjacent or new development.
- g. Laneways are an option to eliminate the need for driveways and street facing garages. Consider single-direction laneways to minimize the amount of hard surfaces.

iv. Lot Size and Variety

Lot size and variety have a direct impact on development costs, density, and affordability. The following guidelines are established to achieve an appropriate balance of large and small lot sizes and to promote a variety of development types, sizes and designs.

- a. Generally, lot shapes should be simple and similar so as not to limit design and siting options. However, variations to the traditional lot may be considered to manage natural features, property boundary, or density issues. Corner lots should have adequate width to permit appropriate building setbacks from both streets. Corner lots and some mid-block lots may be developed as small neighbourhood parks, providing comfortable areas for passive recreation, attractive landscaping, or public art. Lots for parks should be of an adequate shape to create a street focus and not be a result of left over parcels which are awkward in shape.
- b. Lots adjacent to commercial developments and/or parks and environmental features should be designed to support higher density development.
- c. In any new residential development involving 10 or more single detached homes, a minimum of 20% of the lots should be the minimum width allowed by the zoning. No more than 60% of the lot widths should be the same and variety within individual blocks is encouraged.

v. Neighbourhood Edge Interface

A high quality interface should be achieved at the edge of neighbourhoods, to provide opportunities for overview and public access from streets and adjacent developments. Therefore, single loaded roads and developments that 'face' open space are 'positive' and are promoted.

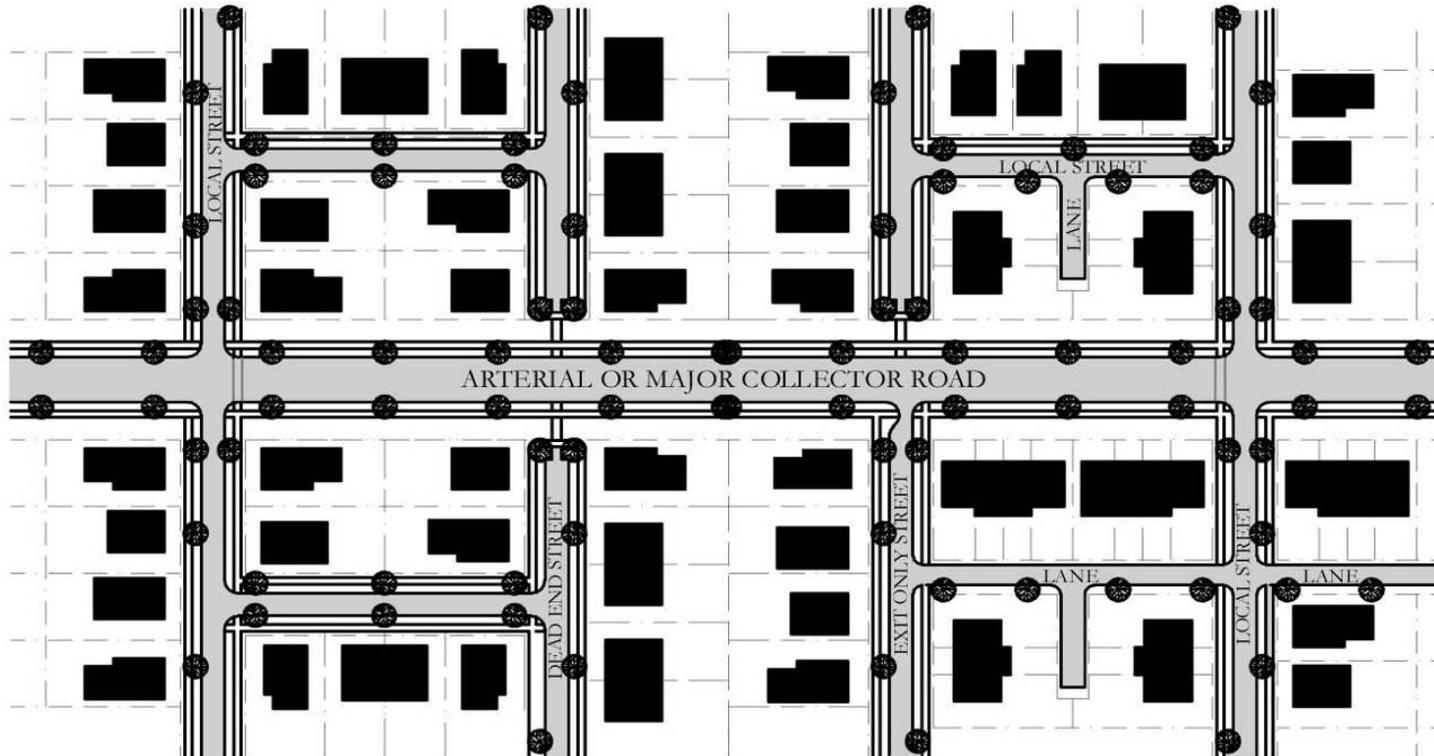
Wherever possible, the perimeter of parks and other public opens spaces and natural should be faced with single-loaded

streets. Generally, a minimum of 50% of the total open space/natural feature perimeter should be bordered by the public road right-of-way.



Figure: Guideline for block and open space interface options. A positive interface should be achieved with open space wherever possible. Rear lotting should be avoided wherever possible.

- a. Where the open space/natural feature perimeter is bordered by private properties, a balance between rear-exposed lots on open crescents and rear lotting is encouraged. Lots where the rear is exposed or backing onto park areas should be subject to Town approval to provide a high quality interface between these uses.
- b. Neighbourhoods should not turn their backs to arterial and collector roads as these represent the public face of the neighbourhood and should be developed as major pedestrian links to other parts of the community.
- c. Pedestrian connections from the public road right-of-way to adjacent public open spaces/natural features should be provided wherever possible.
- d. Where neighbourhood edges meet agricultural lands, landscaping buffers should be used in order to mitigate the off-site migration of dust and to minimize the levels of noise reaching the residential area. This can include a row of trees between the agricultural and residential lands. (See also subsection vi. – Agricultural and Rural Land Buffering)



In a walkable community, neighbourhoods cannot turn their backs on the major thoroughfares. These arterial roads should have sidewalks and trees on both sides and have a permeable relationship with abutting land uses. Vehicle access can be limited through the use of short dead-end blocks and exit only streets that allow and encourage pedestrian and bicycle traffic.

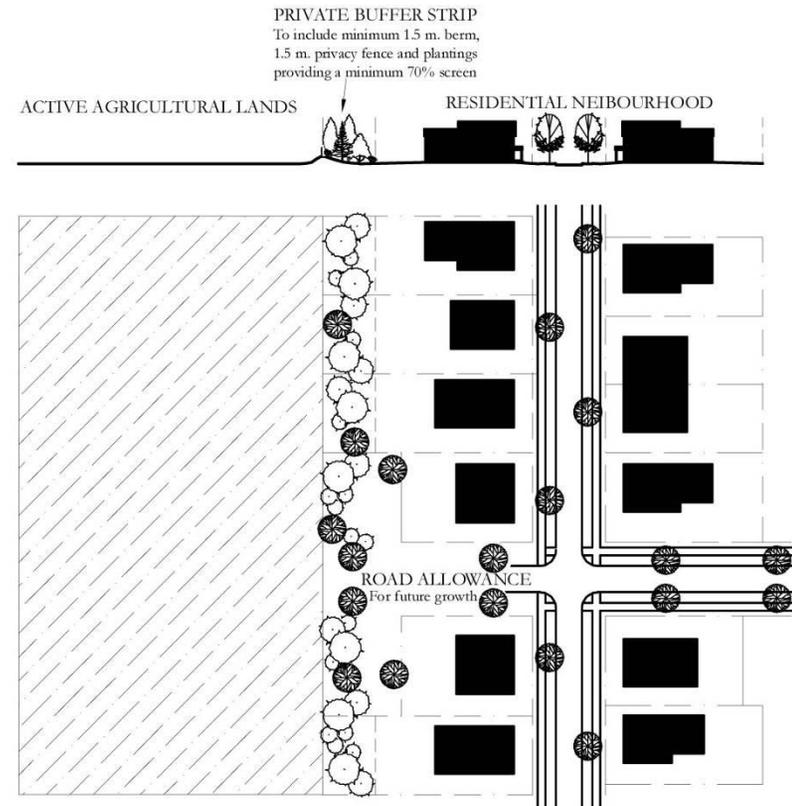
vi. **Agricultural and Rural Land Buffering**

- a. To the greatest extent possible, the perimeter of Agricultural Lands should be faced with a combination of single-loaded streets and open crescents, providing significant views and connection with these areas from streets and the fronts of adjacent houses.



Figure: The perimeter of Agricultural Lands should be faced by residential properties. Adequate setback and buffer distances should be provided for the safety of adjacent residential properties.

- b. It is appropriate for residential development to back onto agricultural and rural lands, to limit access and reduce public exposure to farming operations and machinery. A buffer strip, which could include a modest pathway, could be incorporated in the buffer.



A buffer strip must be included between active agricultural land and new residential development using distance, berming, fencing, and planting. When the buffer strip is incorporated into private residential lots, these lots should have a minimum depth of 40 m. and include a 10 m. "no-build" buffer strip adjacent to the agricultural land.

vii. Utilities and Services

Utilities should be buried below grade - typically in the boulevard section of the right-of-way-as part of new construction and reconstruction of a road right-of-way.



Figure: Above-ground utilities should be located and designed with regard to their visual impact on the streetscape.

- a. Community mailboxes should be considered as important amenities where people socialize, and their siting and treatment should reflect the level of use and exposure they receive on a daily basis.
 - Community mailboxes should be located at neighbourhood focal points as part of a building structure, as free standing structures at gateway features into neighbourhoods, or adjacent to parks.
 - The design and material treatment should showcase the architectural theme of the surrounding neighbourhood and include important features such as community boards and sheltering.
 - Community mailboxes should not be located at street corners or in front of an individual lot.

- Community Mailboxes are ultimately controlled by Canada Post. More information can be found at http://www.canadapost.ca/offering/address_management/pdf/standards_manual-e.pdf
 - Porous surfaces are encouraged to be considered for walkways especially through parks and open spaces.
- b. New or replacement street trees and street landscaping are encouraged to be native species that are hardy to local climate and conditions.

viii. Additional Reading

Increasing Density Through Lot Size and Design

<http://www.cmhc-chl.gc.ca/en/inpr/imhoaf/afhoid/cohode/indethloside/index.cfm>

National Association of Counties, "Local Tools for Smart Growth: Practical Strategies and Techniques To Improve Our Communities". The Joint Centre for Sustainable Communities, Smart Growth Network.

www.naco.org/.../ContentManagement/ContentDisplay.cfm&ContentID=15553

Smart Growth Communities and Smart Communities Agenda

<http://www.knowledgeplex.org/search.html?value=smart+communities+agenda&key=all&type=all>

National Governors Association: Community Design Best Practices

<http://www.nga.org/portal/site/nga/menuitem.50aeae5ff70b817ae8ebb856a11010a0/?vgnnextoid=e0dcaf4def7d0010VgnVCM1000001a01010aRCRD>

URBAN DESIGN

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A. Residential

i. Design Principles

COP GOAL: Promote a balanced supply of housing to meet the present and future social and economic needs of all segments of the community.

1. **Positive Image:** A key design consideration for enhancing the quality and character of the overall streetscape is by having positive residential images. Housing should incorporate architectural design elements to create a positive street image. The de-emphasis of the garage shall be encouraged and blank walls shall be avoided.
2. **Context Sensitive:** The mass, scale, and architectural elements of residential buildings should be sensitive to adjoining areas and historic local traditions. Design elements such as the height, building mass, and architectural features should complement the overall neighbourhood and town character. Context sensitive design will support the creation of a unique sense of place that respects local cultural and natural environmental features.
3. **Housing Variety & Choice:** A full range of housing types (i.e., detached, semi-detached, townhouse, apartments) and tenures (for sale, rent, affordable, and aged-care) should be provided so as to provide options for a wide

range of residents/family types (i.e. single parents, couples, families with children, seniors, people with special needs, and others). A range of housing types will address changes in market conditions and provide flexibility for people at a variety of income levels.

4. **Flexible & Adaptable:** Multiple unit and apartment housing can create opportunities for a wider range of uses, other than residential, such as home offices and ground floor commercial (beneath residential). Mixing land uses and densities gives a social and economic focus for new and existing residential neighbourhoods.
5. **Environmentally Sustainable:** Residential development should be designed to achieve a high degree of environmental sustainability and address opportunities for solar orientation and water runoff minimization.

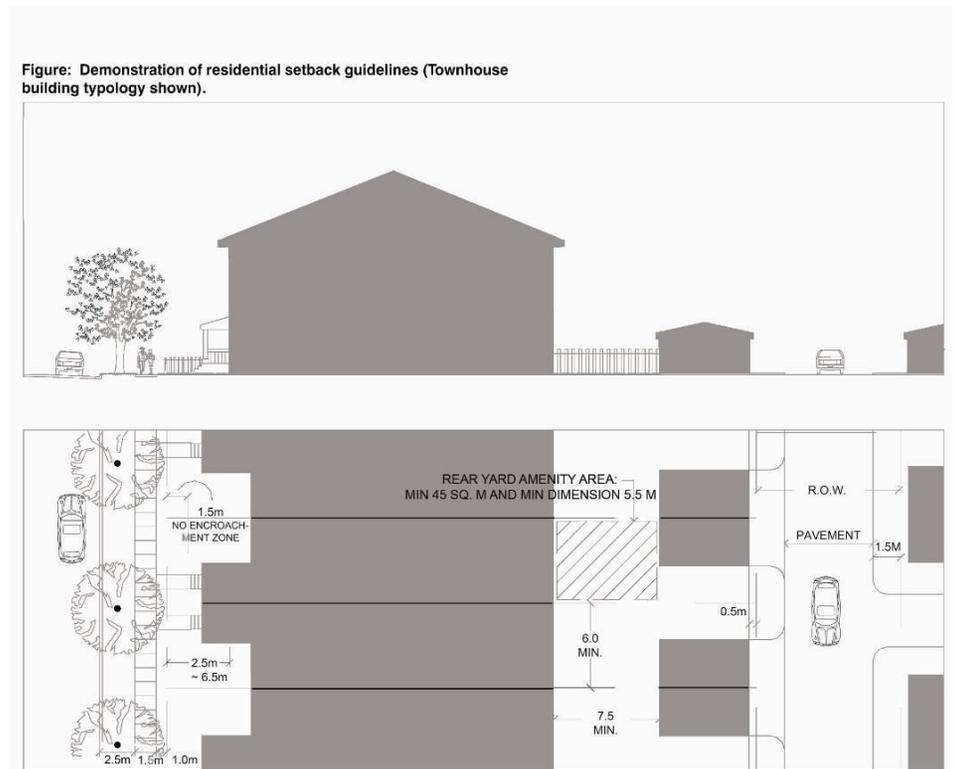
ii. Building Variety and Density

- a. Housing variety should be achieved on each street and block as a means of strengthening character and identity. Repetition of house type, size and design (style, elevation, materials, etc) should therefore be avoided.
- b. A full range of housing types (i.e., detached, semi-detached, townhouse, apartments) should be provided (low density 70% and medium density 30%) to promote variety and diversity, to address changes in market conditions, and to allow for an integrated range of housing which is affordable to everyone.
- c. A variety of house elevations shall be encouraged.

- d. Residential density should be increased at appropriate locations to promote alternative modes of transportation such as walking and cycling. Density is the ratio of residential units on a given area of land, and is typically measured in dwelling units per hectare. The following table outlines the target net densities (area exclusive of roads) for common housing types:

Type	Density
Low Density (single detached, semi-detached, duplex, converted dwellings, and triplex housing)	Up to 15 units per hectare (Gross Density)

- e. It is suggested that a density in the range of 15 to 35 units per gross hectare be used for overall density. Efforts should be made to strive towards 25 units per hectares as a sustainable small town density. Densities are also required to comply with the COP section 2.5.3.2.3 -5 and in accordance to Zoning By-Law 01-70 Schedule C and Schedule D.
- f. The highest density development should occur at appropriate locations. Appropriate locations include areas that benefit from increased population and have a variety of movement and travel options, including:
- downtown
 - larger public open spaces (e.g. neighbourhood parks);
 - along major travel corridors in proximity to essential amenities (e.g. commercial); and
 - larger institutional uses (e.g. high schools).
- g. High density development should transition to adjacent areas through appropriate setbacks and building form.



iii. Setbacks

The intention of the following residential setback guidelines is to promote appropriate front, site and rear yard setbacks to control lot coverage, provide adequate private open space, situate buildings in close proximity to the right-of-way, and to ensure adequate separation between adjoining buildings.

Front Yard

- a. All residential front yards should have a minimum 3.0 m “no encroachment” area. The balance of the setback may be encroached with non-interior building elements including porches, steps, roof elements, etc.
- b. The staggering of some front yard setbacks along any street is recommended in order to achieve a diversity of setbacks on the streetscape. However, front yard setbacks should generally be a minimum of 3.0 m and a maximum of 5.0 m and to ensure a strong, unified street edge the majority of houses along a street (or section of street) should have a similar set back



Many homes found in the older residential neighbourhoods, were built close to the street, often using plantings and fences to define private space.

Side Yard

- c. Side yard setbacks should be a minimum of 1.2 m, but 4.5 m for lots with a garage located in the rear yard accessed by a driveway. Consideration should be given to locating housing closer to one side (not the south) of the property to increase usable sun-filled, outdoor space
- d. On a lot abutting a non-residential use (including a walkway) the minimum interior side yard setback should be 3.5 m.

Rear Yard

- e. On lots accessed by a driveway, the minimum rear yard setback should remain as 7.5 m measured from the rear face of the dwelling.
- f. To promote the usage of garages in the rear of properties (rather than front facing), rear yard setbacks may be reduced to accommodate the garage provided that the side yard setbacks are not encroached upon.
- g. Rear yard decks/porches and garden sheds should be permitted as rear yard encroachments, provided the rear yard is a minimum 7.5 m in length excluding rear yard garages that are attached to the dwelling or at the rear of the property (lane or driveway access). It is recommended that, where feasible, a 50 square metre landscaped amenity space (excluding driveways) be maintained for single detached and semi-detached dwellings and 45 square metres for duplex, triplexes and townhouses.

v. Architectural Features

The intent of the Architectural Feature guidelines is to achieve a visually rich residential building fabric that promotes a distinct neighbourhood image through the use of materials, building form, and architectural styles.

General

- a. Architecture expressed throughout residential buildings should be varied and recognize the local context of Mississippi Mills' heritage and culture.
- b. Consistent rhythms of similar but not identical details and architectural elements should be used to reinforce the streetscape and a strong neighbourhood image.

Walls

- c. As with traditional Mississippi Mills' housing stock, the front façade is encouraged to include windows to a primary living space helping to maintain a strong link between life in the house and the street.
- d. Traditional Mississippi Mills' housing stock is dominated by two-storey buildings with a front eave line between 5.4 and 7.6 m above grade. It would be desirable, in any new residential development, to have a minimum of 50% of the buildings conform to this standard.
- e. Rear-exposed (to the street) walls should include at least 20% surface window area. This may be reduced in consideration of passive solar design or where one wall is built to a minimum side yard set-back.
- f. Rear-exposed façades (to street) should have a design and materials standard equal to the front façade treatment.

Windows

- g. Windows in Mississippi Mills housing were traditionally taller than they were wide and they had generous trim. Similar details are encouraged in new developments.
- h. Street facing façades of all dwelling units should include windows.
- i. New developments are encouraged to consider solar gain and shading when laying out windows.

Porches and Building Projections

- j. Building projections including porches, decks, canopies and stairs are encouraged as transitional building elements that provide weather protection, dwelling access and active amenity spaces. In any new development, porches that project towards the street from the dominant façade line are encouraged.
- k. Front porches large enough to accommodate furniture are encouraged.
- l. Finish materials should extend to all sides of the porch and stairs. The underside of the porch should not be exposed to the street.
- m. Duplex and multiplex dwellings should provide porches and decks as outdoor amenity spaces for upper units.
- n. On a street some continuity of front porch design is

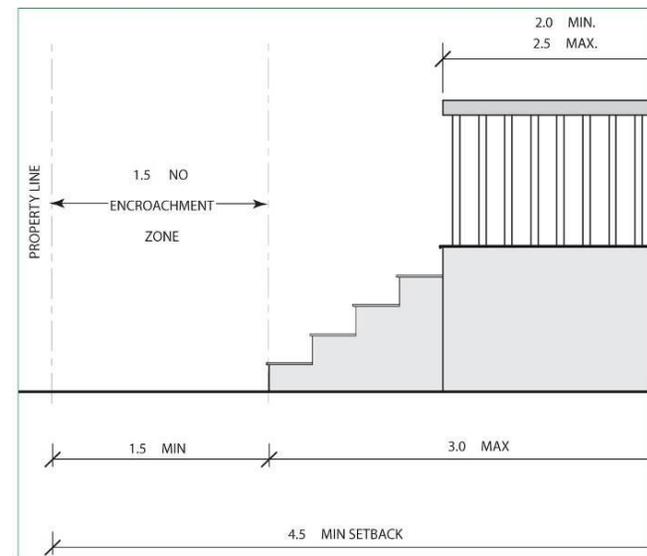


Figure: Design guideline for front porches.

recommended. Material and detail variations may occur between porches provided there is an accordance of scale and proportion. Townhouse and multiplex dwelling porches should not be identical but should establish a clear rhythm of variation between every second or third unit.

Roofs

- o. Traditional Mississippi Mills housing stock is dominated by a variety of gable-style roof forms. New developments are encouraged to respect this tradition.



Traditional houses in Mississippi Mills tended to be one and a half to two storeys in height, have relatively simple roof forms, and meet the street with either a full or half porch.

- p. Roof slopes of greater than 30% are encouraged.

v. Residential Infill

There are several key issues which should be addressed with proposed urban residential infilling.

- a. The character of existing neighbourhoods should be considered, as building something new that does not necessarily “fit in” may take away from this character.
- b. To achieve an appropriate relationship to existing developments, design considerations should be given to harmonizing with precedents of massing and scale, and to a lesser degree, architectural elements and details.
- c. Where no predominant existing ‘street wall’ can be established, infill development should be located close to the minimum setback from the street so that a traditional relationship between the building and the street is established.
- d. Infill building heights should match or complement established building heights of similar type buildings.
- e. Building additions should reference and celebrate the building to which they are being added, both volumetrically and materially. Where existing buildings are at odds with the character of a village, renovating or adding an addition can provide an opportunity to harmonize the character of the original building with neighbouring structures.
- f. When adding to an existing building, particularly a heritage structure, the new structure should either be detailed similarly to the existing building or should provide a contemporary design response. Poor quality imitations of heritage styles are not appropriate.
- g. Mixed-use development should be promoted for infill sites at ‘main streets’ and commercial areas.
- h. Corner lots should address the street building line on both streets through building location, planting or fencing. Where possible, corner sites on a through street should be designated for future redevelopment to be occupied by buildings with some public use

vi. Driveways and Garages

The primary issue regarding residential parking is the dominant proportion of the garage over the house façade. This limits opportunities for 'positive' design features such as front porches and windows, front facing rooms, and public safety through casual surveillance of the street from the house.

Garages

- a. To reduce the garage dominance on the streetscape, and to achieve a balanced of house-façade to garage, attached garages located at the front or side of the house should be no wider than one half the width of the house.
- b. The practice of setting the face of garages back from the front of the house is encouraged .
- c. For lots less than 12.0 m wide, interior one-car garage dimensions should be a minimum 3.0 m wide by 6.0 m deep. A maximum width of 5.0 m may be applied to permit a one-car garage with storage.
- d. On lots greater than 12.0 m wide, interior two-car garage dimensions should be a minimum 5.5 m wide by 6.0 m deep.
- e. Tandem garages are strongly encouraged for row housing as a method of reducing the garage frontage and number of curb cuts, and increasing the area frontage and landscaping opportunities.
- f. Within townhouse or multiplex dwelling lots, no more than six double car garages or the equivalent in single car garage length should generally occur in a row.
- g. In neighbourhoods with an established pattern of detached garages located in the rear yard, new garages should also be located at the rear of the house.



In the Towns of Mississippi Mills, garages have historically been located to the side or rear of the houses. This arrangement supports the pedestrian friendly character found in the older residential neighbourhoods.

Garage design should be complementary in character and quality of detail to the principal dwelling, and include high quality construction materials, adequate windows and appropriate architectural details

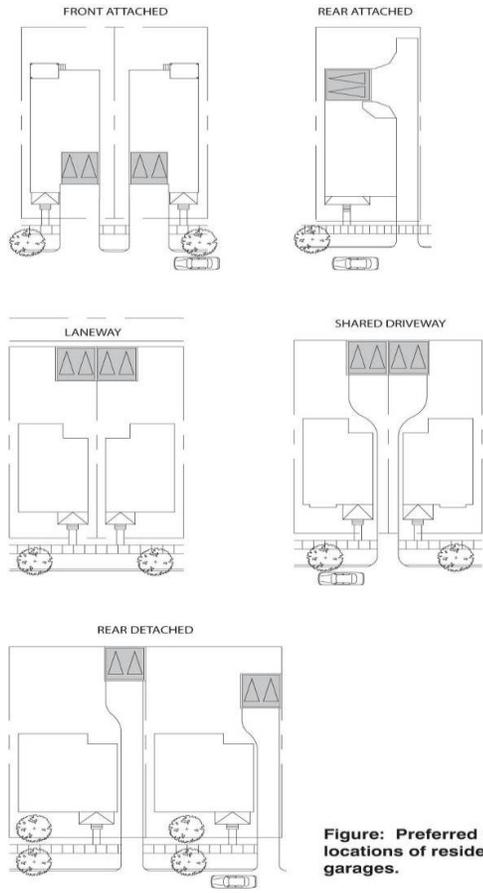


Figure: Preferred alternative locations of residential garages.

Driveways

- a. The width of paved driveways on private property as well as driveway cuts at the curb should be as narrow as possible, and in no case wider than the predominant pattern.
- b. Driveway space located between the house and adjacent road should be limited to the width required for access to a garage or other required parking spaces. Permeable surfaces are encouraged for driveway paving.
- c. Curb cuts should be spaced to preserve the maximum number of on-street parking spaces.
- d. Corner lots located at the intersection of major and minor roadways should normally have driveway access from the minor roadway.

vii. Apartment and Mixed-use Buildings

Apartment buildings should respect the human scale of residential and mixed-use areas. Human scale should be reinforced through appropriate building height, mass and architectural design.

- a. The impact of buildings over 3-storeys tall on open spaces and adjacent properties should be minimized through adequate height and mass transition, separation, and landscaping.
- b. Buildings should have a strong relationship to the street, both by use or form and layout. This will allow for an “eyes on the street” effect during all hours of the day to improve the safety and security of pedestrians at street-level.
- c. Mixed use buildings with retail located at grade with residential or office above are encouraged within the urban centre of Almonte or and the smaller communities.
- d. Higher density development should be considered within the downtown core and in areas where essential amenities are within walking distance.
- e. High quality pedestrian infrastructure should be provided on all public streets and public spaces adjacent to apartment development to support vibrant street environments, pedestrian access and comfort.
- f. Ground floor units should have individual at grade access where possible. Upper floor units should be identifiable through articulations of the exterior wall plane and roof, and the use of pronounced building elements including bay windows, balconies and domers
- g. Primary building entrances should clearly address the street with large entry awnings and provide visibility to interior lobbies to allow for safe and convenient arrival and departure from the building.
- h. Pedestrian entrances to parking and service areas within the principal building should be combined with exposed communal areas such as exercise areas or meeting rooms

to provide casual surveillance opportunities.



Figure: Shared private amenity/open space should be provided wherever possible as part of apartment building developments.

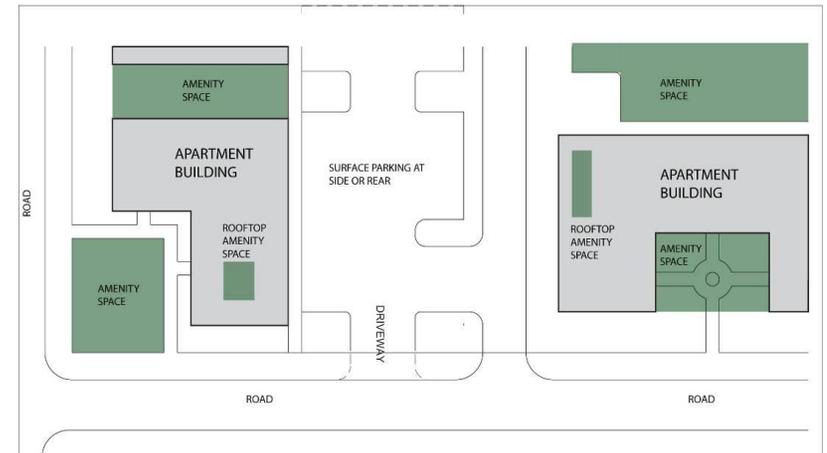


Figure: Outdoor amenity space may be located at the front side or rear of apartment developments. Outdoor amenity space should receive direct sunlight and be in view of residential units.

URBAN DESIGN

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B. Downtown, Highway, & Shopping Centre Commercial

i. Design Principles

1. **Ensure Balance Between and Old:** The preservation of heritage buildings/sites within areas of the Town supports the objectives for compact built form and enhancing community distinctiveness. Development sites situated adjacent to existing historic areas have market appeal and should be developed as a catalyst for broad based urban renewal.
2. **Character of the Area:** Respect the 'original' historic character and preserve original building fabric where appropriate. Contemporary additions should also be considered but the quality of the design and detailing should equal or surpass that of the original structure.
3. **Conservation:** The alteration of any historical architectural feature or building should be resisted.
4. **Promote Mixed Use & Reuse:** Mixed-use development provides live/work opportunities, and contributes to vital, attractive neighbourhood character. Adaptive reuse should be considered as part of the conservation and restoration of heritage buildings.

ii. Renovation and Conservation Guidelines

- a. Original building fabric should be preserved where it is feasible. Deteriorated historic buildings should be repaired rather than replaced. When replacement is necessary, match the original building materials as close as is possible. Replacement of missing features should be based on historical accuracy.
- b. On-site principal historic elements that are damaged while

the principle building is being renovated should be preserved and replicated where necessary.

- c. Renovated shop fronts should be sympathetic to the original building design, using those elements that are intact, and replacing missing features. Where contemporary features are added to a storefront, they should respect and celebrate the existing heritage character of the building and neighbouring buildings.
- d. The base panel of heritage storefronts provides a visual and functional building base. Original base panels should be maintained when they exist with materials of the same colour and texture as the display window frame, or the pilaster materials.
- e. As the largest element of the shop front, the display window establishes the character of the façade. The continuity of large display windows should be maintained.
- f. The display front is often divided near the top into transom windows. The transom should be maintained and any obstructions such as air conditioning units that have been inserted into this space should be removed.
- g. Doors are a very important functional design feature of heritage buildings. The location, size, shape, and style of doors establish our most immediate impression of a building. The style of heritage doors should be preserved where possible, respecting the shape of the opening, the divisions within it, and the surrounding trim.
- h. In addition to providing light, views, and ventilation, windows are an important design element of a heritage building façade. The location, size, shape and style of windows help to establish our impression of the building. Replacement windows should duplicate the originals in style, type and material. Custom wood sashes should be used to provide a near-perfect match for the original. If an exact duplicate is not possible, windows with similar operation and internal divisions should be installed.

- i. The size, location or number of openings on the main façades should not be changed, unless the property is being restored to its original appearance. In cases where the interior has been renovated and the ceiling lowered, a bulkhead or valance can finish the ceiling edge against the window. In some cases, an opaque upper pane may also be appropriate.
- j. Designated heritage buildings should be painted in colours matching the original selection. Historic photographs (supplied by the local heritage society), and paint samples/fragments (retrieved from the structure if possible) will provide useful information.
- k. Non-traditional colours should be discouraged on historic fabric, e.g. primary colours, pastels and excessively bright tones and hues. Traditional colours should be used for heritage buildings.

iii. Infill Development Guidelines

The following guidelines address infill downtown commercial development. To achieve an appropriate relationship to existing developments, design considerations of massing and scale, and to a lesser degree, architectural elements and details, are required. Comprehensive analysis of infill development opportunities should be undertaken for existing downtown commercial areas.

Setbacks

- a. Infill development should match the pre-established 'building line' setback of adjacent buildings in order to maintain a continuous street wall and maintain appropriate spatial definition.
- b. Where no visible 'building line' exists, infill development should be located with a minimum setback from the street so that a traditional relationship between the building and the sidewalk is established.

Height

- c. Infill building heights should match or complement pre-existing building heights of adjacent developments. The height of a development should generally be greater than 80% but less than 120% of the average established street building height, but have a minimum of two storeys. The predominant block condition should be respected.

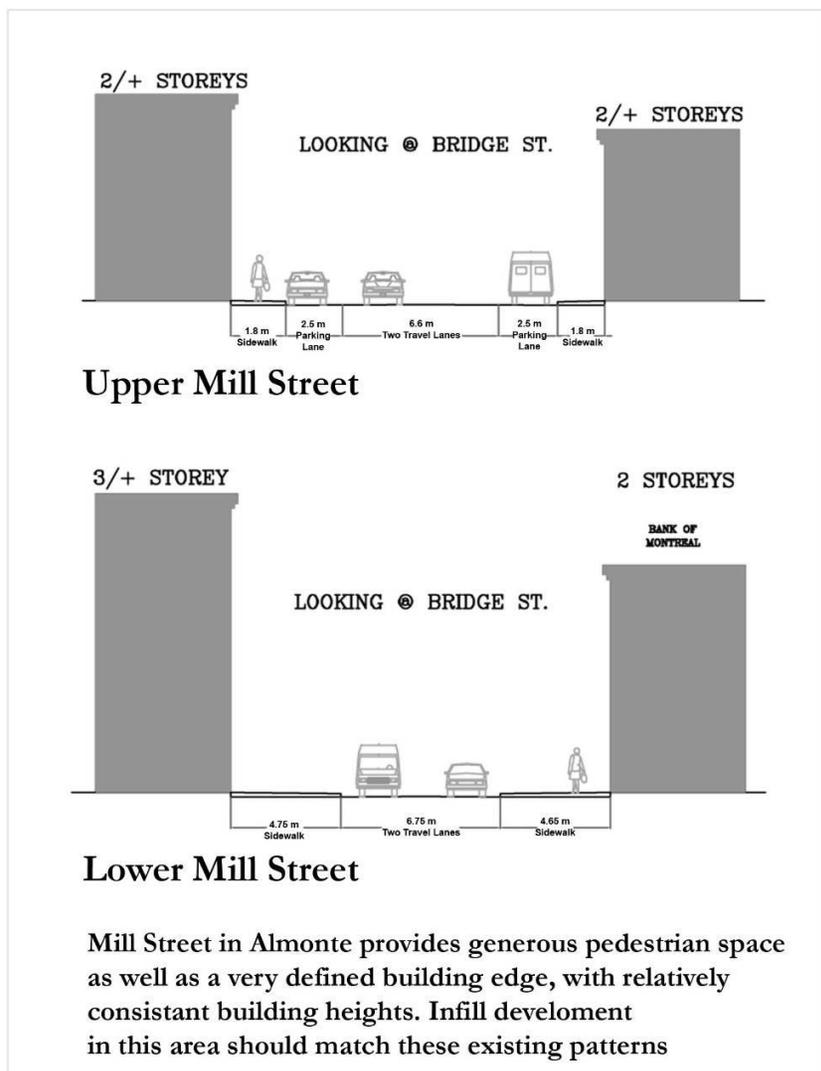
Corner Sites

- d. Architecturally undervalued corner sites should be identified for future redevelopment to be occupied by buildings designed to take full advantage of these locations.

Additions

- e. Building additions should reference and celebrate the building to which they are being added visually and in mass and material by requiring an excellence in design and detailing. Additions should reference adjacent buildings but only if they complement the primary building.
- f. When adding structure to an existing building, particularly a heritage structure, new structure should either be detailed identically to the existing building or should provide a contemporary design response. Poor quality imitations of heritage styles are not appropriate.
- g. Where a building is being added to, an extra storey may be allowed to an existing two-storey building if a high quality and extensive design is provided illustrating how the proposal will add to the overall character of the street.

Mixed-Use Infill



- h. Mixed-use development should be promoted for infill sites at 'main street' and street commercial areas. Residential apartments above street level shops should be encouraged

at locations adjacent to main street areas. Mixed-use development contributes to increased street animation, safety, and economic vitality.

- i. Rear façades should also be upgraded and maintained in much the same way as storefronts, particularly when an opportunity exists to create active retail space, e.g. back-of-lot café, or as part of a larger community improvement plan.

Parking

- j. Parking areas of new infill development should be situated at the rear of the building and designed in accordance with Section 3c.

iv. Large-scale Highway Commercial & Shopping Centre Developments

1. Master Plan

New commercial districts such as that developing along Ottawa Street would benefit from a master development plan. Such a plan would identify growth and potential activity centers, establish a preferred comprehensive access and circulation structure (inclusive of private lands) and identify improvement opportunities to be incorporated into Town works projects.

The master development plan would also provide an opportunity to review existing zoning to assure it supports incorporated proposals relating to incentives for mixed use and infill development, combined access / parking, additional pedestrian infrastructure, and minimizing stormwater runoff with landscaping.

2. Access and Pedestrian Infrastructure

Planning, Town works and incentives for private developers should be established to develop a continuous sidewalk system throughout the commercial district with a clear circulation

hierarchy and including the following:

- Continuous tree-lined (min 10 cm diameter at planting) sidewalk along both sides of the arterial road, connected to existing town sidewalk system
- Side-spar walkways that connect to all businesses
- Hierarchy of on-site pedestrian circulation (major distribution routes to also be tree-lined)
- Links to adjacent residential neighbourhoods that may not have direct road access
- Safe and well delineated pedestrian crossings
- Coordination of shared street access for vehicles to limit the number of curb-cuts across street-edge sidewalk
- Incorporated open spaces located in areas with the potential for high pedestrian traffic – to include shade trees, benches, garbage cans and other plantings
- Bicycle access and convenient parking should be incorporated throughout

3. Civic Presence

The master plan should identify suitable locations for the development of municipal or other government facilities, should the need or opportunity arise. Such buildings and properties should be designed in accordance to principles put forth in this manual and should include a public space in front of the building.

4. Arterial Road Streetscape and Density

Infill construction and new development should be encouraged along the arterial road property line to define the street edge and to frame the parking areas into courtyards also with identifiable edges. Buildings along this street edge must present a public face to the arterial road sidewalk, should establish a consistent building setback and should allow for convenient pedestrian access.

5. Parking and Circulation

Access points from the arterial road should be designed to create a strong sense of entry with appropriate gateway buildings, trees, signage and other landscape features. Vehicle and pedestrian circulation should follow a clear distribution hierarchy laid out and detailed to emulate traditional pedestrian friendly urban streetscapes. Parking should be laid out with the following considerations:

- Break parking areas up into smaller areas separated by treed islands that are 1.8 m – 3.7 m wide, with trees every 7.6 m – 12.2 m and pedestrian scaled down-lighting. Landscaping should comprise a minimum of 20% of the parking field.
- Wherever possible, incorporate pedestrian circulation into landscape boulevard/divides to ensure pedestrian traffic is not competing with vehicular traffic.
- Allow for common and shared parking for compatible land uses with different peak demands
- Build for average not peak parking volumes with planned allowance for additional parking to be added should the need be demonstrated
- Allow/encourage unpaved peripheral parking areas to the side or rear of buildings to accommodate short-term seasonal peak needs – Gridblock with grass or crushed stone are options
- Parking lots should not be developed in front of buildings unless incorporated into a parking courtyard that also services buildings on the sides of the parking area

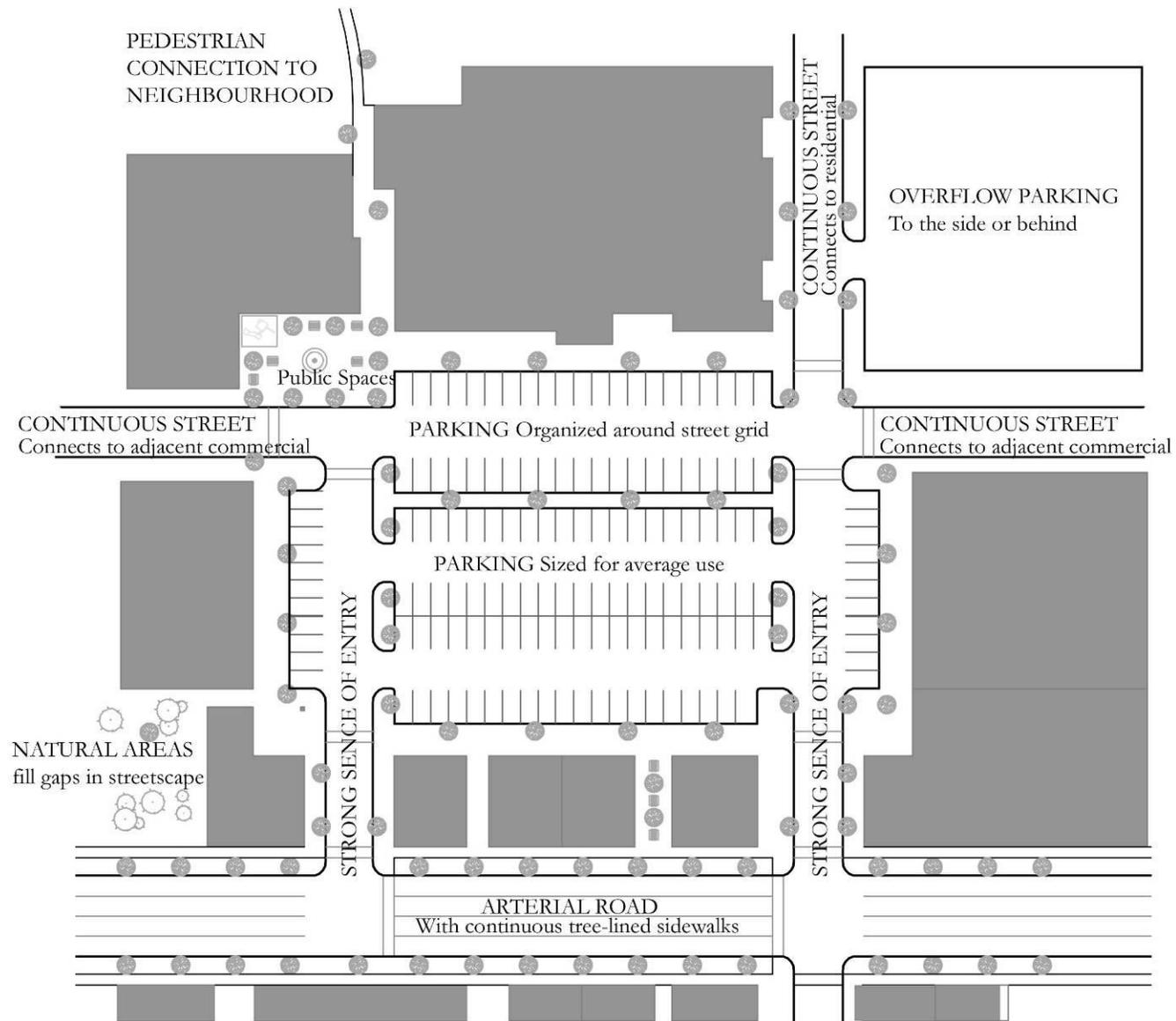
6. Building Form and Massing

Buildings along a traditional small town main street have a very distinctive rhythm and massing. They were built tight to the sidewalk and, except for the occasional lane, also to the side lot-lines; they were usually under 15 m in width and tended to be two to four stories in height; and each building was built by a different owner and often at a different time. This created a very densely populated urban environment, with short walking

distances between destinations, lots of visual interest, and a well-defined, pedestrian oriented public street. While our present reliance on vehicular travel greatly increases the amount of space we need to devote to streets and parking, new commercial buildings should be designed to mimic the rhythm, massing and relationship to pedestrian space established by traditional Mississippi Mills commercial streetscapes such as found on Mill Street.

Street edge development with commercial behind it should be comprised of smaller buildings, which allow for views through to the development behind but without vehicle access between buildings. The scale, massing, rooflines as well as main floor fenestration and signage should be reminiscent of traditional Mississippi Mills commercial development (quality contemporary detailing is acceptable). Upper floor development should be encouraged to increase density and to establish a more defined street edge. For single floor development street presence can also be strengthened by including a gabled roof.

The facades of large-footprint commercial buildings should be articulated and detailed with a massing reminiscent of traditional multi-building streetscapes, where the width of a single storefront would vary from around 4.6 m to 15.2 m. Canopies, simple gable roofs landscaping and articulated upper-storeys all support such pedestrian scaled massing.



Arterial roads with commercial development are becoming the new gateways to our communities. As such, great efforts must be taken to ensure these arteries are formed into true urban spaces that reflect the history and character of small town Ontario. Strong street edges and continuous tree lined sidewalks with zero lot-line commercial buildings fronting onto them are the essential components of the traditional pedestrian urban street and they need to be included. As well, vehicle access routes and parking areas should be laid out as smaller scale streets and squares with interconnecting pedestrian oriented sidewalks and plazas.

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C. Off-Street Surface Parking

i. Design Principles

1. **Scale:** Off-street surface parking should be configured and designed to reduce the overall mass and visual dominance of paved areas.
2. **Pedestrian Friendly Access:** Off-street surface parking should incorporate walkway infrastructure as an integral element of the design to safely separate pedestrian and vehicle movements.
3. **Positive Appearance:** Off-street surface parking should be designed to provide a strong visual quality through the use of high quality landscaping, lighting, and pavement materials.
4. **Environmental Sustainability:** Off-street surface parking be designed according to environmental sustainability principles, including the minimization of surface water runoff.

ii. Layout & Orientation

- a. No more than 50% of the total off-street parking area for 'large format' development (10% for all other non-residential), should be located between the front façade of the principal buildings and the adjacent public street. Parking should be located at the rear or behind buildings.
- b. The total amount of parking should be minimized through shared parking between adjacent properties, particularly in the evenings, weekends and other off-peak periods.
- c. Internal vehicular routes should be clearly defined by raised

and curbed landscape islands planted with trees and low level vegetation. Internal drive aisles should be a minimum 6.0 m wide where parking spaces are at a 90 degree angle. Parking aisles widths may be reduced where aisles are one direction and parking spaces are angled.

- d. Parking aisles should not exceed 30 contiguous spaces in length and should have a consistent design angle.
- e. Surface parking areas may be lowered by 0.5 m from the adjacent street grade to reduce visual prominence.
- f. Appropriate lighting levels and consistency of coverage should be provided in parking areas to assist both pedestrian and vehicular circulation. The height and intensity of light standards should be sensitive to adjacent land uses and meet the requirements of the Town's outdoor illumination by-law.
- g. Barrier-free access spaces should be located as close as possible to building entrances and be clearly identified by signs or markings.

iii. Landscape Buffering

- a. Quality landscaping treatments should be used to define site boundaries, provide buffers between adjoining developments, and screen storage, garbage, and utility areas.
- b. The property setback of all parking areas should provide a landscaped area a minimum of 3.0 m wide consisting of indigenous species of trees, shrubs, sod or other landscaping treatments.
- c. Trees at the perimeter of parking areas should be planted every 6 to 9.0 m and centred within the landscape strip.
- d. To ensure opportunities for surveillance from adjacent areas, perimeter hedge and shrub screening should not exceed 1.0 m in height.

- e. Selection of plant materials should consider the following:
- species which are indigenous to the area
 - year-round appearance;
 - seasonal variety;
 - durability & resistance to disease;
 - maintenance requirements;
 - tolerance of plant materials to salt and urban conditions; and
 - history and use in the area.

iv. Pedestrian Access

- a. To enable safe and direct pedestrian movements, pedestrian walkways should be adjacent to main drive aisles and opposite to primary building entrances. Walkways should also be separated from main drive aisles by either landscaping or a physical barrier or both.
- b. An internal pedestrian walkway network should define visually and functionally smaller parking 'courts'.
- c. Walkways should be a minimum of 3.5 m wide, including a pedestrian zone of 1.5 m wide and a landscaping zone of 2.0 m wide.
- d. Walkways should include pedestrian-scaled amenities wherever possible, such as benches, trash receptacles and lighting.
- e. Drive aisle crosswalks should be signed and constructed of materials that are different to the drive aisle, such as interlocking brick paving.

v. Internal Landscaping

- a. Internal landscaping elements should define visually and functionally smaller parking 'courts' and reduce the overall impact of surface parking areas.
- b. A landscaped island should be located at each end of every parking aisle. Landscaped islands should be a

minimum width of 2.5 m wide and include one tree per parking row.

- c. Planting beds and landscaped islands should include a 10 cm curb to prevent damage caused by vehicular movements and snow clearing.
- d. Permanently installed irrigation systems should be provided for all internal landscaping where feasible.
- e. Where possible, internal landscaping should incorporate existing vegetation and significant tree plantings.

URBAN DESIGN

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D. Roads

i. Design Principles

COP GOAL: Encourage a balanced transportation system which integrates pedestrian movement, vehicular travel and commercial transport and is designed to minimize congestion.

1. **Equitable:** In order to encourage alternative modes of transportation and provide options to driving, streets should be designed to accommodate multiple modes of movement, including pedestrians, bicycles, passenger cars, and trucks on an equal basis.
2. **Flexible:** Road design should reflect adjacent land use types and requirements. Road design standards should be flexible so that a variety of land use types can be adequately served by the same road. Road design should recognize and balance the needs of the travelling public and local residents.
3. **Positive Appearance:** All roads and streets should be designed to provide a strong visual quality that enhances the amenity of adjacent properties through the use of high quality landscaping, lighting, pavement materials, and on-street parking where appropriate. Streets are the focal point and are the public face of the neighbourhood. The appearance of a road whether it is lined with mature trees or heritage buildings provides a beautiful streetscape. Developments should celebrate design excellence and quality whether it is for a local road or an arterial road.
4. **Living Streets:** Street trees should be a major component of the design of all streets. Tree-lined streets provide an evolving and lasting impression of the street, and provide physical buffering between the pavement, the sidewalk and

private dwellings. The shading effects of mature street trees have a significant mediating effect on summer sunlight, and reducing glare.

5. **Minimize Pavement Width:** The width of the travel lanes should be kept as narrow as practically feasible to: encourage traffic to slow down, create more intimate streetscapes, and facilitate pedestrian crossings.
6. **Improve Parking Opportunities:** On-street parking should be maintained and promoted wherever possible at existing established locations (residential and commercial) and in downtowns - even on some arterial roads. On-street parking can reduce requirements for surface parking lots, generally reduces traffic speeds, and supports and provides added safety for pedestrian activity by providing a physical barrier between the sidewalk and moving traffic.

ii. Road Hierarchy and Road Functions

The road network in Mississippi Mills is characterized by the road function and the following hierarchy, guided by the Community Official Plan. The intent is to provide an integrated, diverse transportation system for all residents and businesses that is safe, convenient, affordable, efficient, and energy-conserving while minimizing environmental impacts (COP Section 4.6).

1. *Arterial Roads:* Arterial Roads which may be considered as County Roads (County Roads 9, 11, 16, 16A, 17, 20, 22, 24, 29, and 49) provide long-range and efficient access between the town's core and connecting highways. These roads are under the jurisdiction of the County but function within the urban areas of the Town. Arterial roads serve a high volume of traffic including passenger vehicles, and trucks but also need to take into account pedestrian movement as the majority of new commercial uses are located on such roads. There should be adequate provision for parking as well to facilitate vehicular traffic.
2. *Urban Collector Roads:* Urban Collector Roads (Patterson

St, Country St, Martin St) within the Town generally lead into County Roads but provide important connections for residential neighbourhoods with commercial, employment and tourism areas, and typically include an urban cross section with curbs and sidewalks.

3. *Local Streets*: All public streets, which are not provincial highways or county roads, are local municipal streets and are under the jurisdiction of the Town of Mississippi Mills. These streets are intended to provide direct access to abutting properties. Generally, they are designed to accommodate medium to low volumes of traffic at moderate speeds. Some local streets may be identified as “scenic” or “historic” roads with specific design standards.



Figure: Sidewalk design and size should respond to the nature of adjacent land uses, type of road, and level of pedestrian activity.

4. *Residential Laneways*: Laneways provide access to private garage facilities.

iii. **Arterial Road Guidelines (COP Section 4.6.3)**

While the majority of the Arterial Roads are under the jurisdiction of the County of Lanark, it should be noted that design standards are necessary because these roads lead into

the urban areas of Mississippi Mills.

- a. A key design objective for Arterial Roads is to balance safety, visual amenity and pedestrianism, with a wide variety of functions including:
 - Large volume transport corridor.
 - Gateways and entrances to town centres and neighbourhoods.
 - Facilitating traffic to and from larger commercial uses
- b. The Arterial Roads right-of-way generally should be from 20.0 to 25.0 m and design standards should be flexible to reflect changes in adjacent land uses and traffic conditions.
- c. The design of Arterial Roads should consider the following variables:
 - *Lanes*: The total number of lanes will range from 2 to 5 (2 lanes with centre turning lane = 5), depending on traffic conditions.
 - *Centre Median*: A central median may be provided for traffic calming, aesthetics, geometric design considerations, and access control in gateway locations.
 - *Sidewalks*: Sidewalks should always be provided on at least one side of the street and be at least 1.5 m wide. This width should be increased to accommodate snow storage and landscaping where required.

Note: The location of sidewalks and plantings may vary depending on the level of traffic and adjacent land use. Sidewalks on higher volume/speed Arterial/Collector Roads should be buffered by a landscaped boulevard. However, sidewalks on low volume/speed Arterial or Local Roads or in downtown Almonte or Pakenham may, for example, be situated adjacent to the curb.

- *Curbs*: Curb design will vary depending on the nature

of adjoining land uses. Typically, barrier curbs are required.

- *On-Street Parking:* In the context of anticipated traffic volume/speed, adjacent land uses and ability to maintain four travel lanes, on-street parking should be permitted on Arterial Roads in commercial centres where densities do not allow for parking lots. Time-based restrictions may be applied to reflect traffic volume and snow clearing requirements.
- *Boulevard:* Boulevards are required for Arterial Roads in urban areas and should be at least 2.0 m wide but preferably 3.75 m and planted with street trees situated every 6.0 to 9.0 m where adequate safety standards are met.
- *Bicycle infrastructure:* Due to the anticipated level of traffic, bicycle infrastructure should preferably be located adjacent to the sidewalk or the boulevard. Bicycle lanes should be clearly identified with signage and or pavements and be 0.75 m ~ 1.5 m wide.
- *Pedestrian Linkages:* where new

residential/commercial uses or redevelopment of current uses is sought, the development should take into account pedestrian linkages and how pedestrians will move to, from and between said uses on the same or adjacent roads.

- d. Travel lanes should not exceed 3.5 m* in width. Wide travel lanes are required to ensure the safe movement of larger vehicles such as trucks, and school buses. However, 'reduced standards' should be used wherever possible.
- e. Road scale lighting no greater than 9.0 m high should be provided to contribute to the safety and comfort of the streetscape. Lighting should be full cut-off to reduce light pollution and glare.
- f. Private driveway access should be avoided on arterial roads. Where private driveways currently exist, vehicular movements should be limited to 'right-in, right-out'. A centre median can be used to eliminate illegal turns.
- g. To encourage walkability and pedestrian safety, Arterial Road curb radii should be 5.0 m ~ 8.0 m. Decisions for curb radii design should consider traffic volumes, traffic speeds,



Figure: A centre median may be provided in gateway locations. The median may incorporate landscaping and lighting - as shown.

**Note: Travel lane width may be reduced where feasible to minimize overall pavement width. Reduced standards should be used wherever possible.*

emergency vehicle requirements, pedestrian crossing times, and intersection angles.

- h. Where on-street parking is provided on a single side of the street, the right-of-way may be reduced by the width of the parking lane. On a similar note, if a sidewalk is provided on one side of the street, the right-of-way may be reduced accordingly. This would also apply for eliminating travel lanes or, conversely, adding lands to a boulevard or landscaping strip along a roadway. Property buffers may be reduced if additional landscaping is provided within the boulevard/median.

iv. Collector Road Guidelines

- a. Collector Roads should be designed to serve a variety of functions including:
- Connections between neighbourhoods.
 - Connections to Local Roads.
- b. The Collector Road right-of-way may range from 15.0 m to 25.0 m and design standards should be flexible to reflect changes in adjacent land uses and traffic conditions.
- c. The design of Collector Roads should consider the following variables:
- *Lanes*: The total number of lanes will range from 2 to 4, depending on traffic conditions.
 - *Centre Median*: A centre median may be provided in gateway locations.
 - *Sidewalks*: Sidewalks should always be provided on at least one of the Road and be at least 1.5 m wide but it is largely dependent on the nature of development. This width should be increased to accommodate snow storage where required.

Note: The location of sidewalks and plantings may vary depending on the adjacent land use. Sidewalks should

be buffered by a landscaped boulevard.

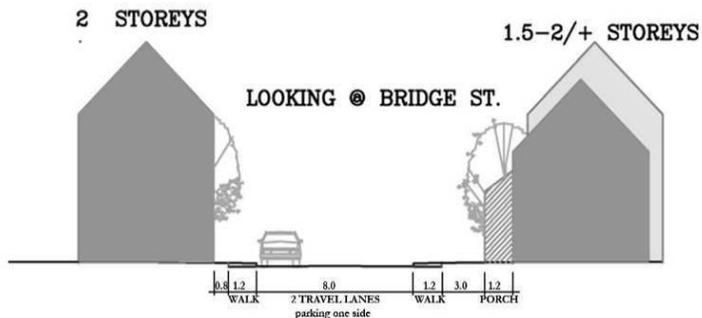
- *Curbs*: Curb design will vary depending on the nature of adjoining land uses. In some areas, 'soft shoulder' and swale drains may be provided. However, most urban conditions typically require barrier curbs.
 - *On-Street Parking*: On-street parking should be permitted on Collector Roads. Time-based restrictions may be applied to reflect traffic volume and snow clearing requirements.
 - *Boulevard*: Boulevards are suggested for Collector Roads in urban areas and should be at least 2.5 m wide and planted with Road trees situated every 6.0 to 9.0 m where adequate safety standards are met.
 - *Bicycle infrastructure*: Bicycle infrastructure of 0.75 m ~1.5 m wide may be located on the roadway.
 - *Property Buffer*: A 1.0 m wide property buffer should be provided on both sides of the Road.
- d. Travel lane widths should not exceed 3.25 m* and may be reduced to 3.0 m where off-peak on-street parking is provided.
- e. Pedestrian-scale lighting no greater than 4.5 m high should be provided to contribute to the safety and comfort of the Streetscape. Lighting should be full cut-off.
- f. Alternatives to single access driveways should be explored, (i.e., through joint access driveways). 'Right-in right-out' movements are preferred on Collector Roads.
- g. To encourage walkability and pedestrian safety, Collector Road curb radii should be 5.0 m ~ 8.0 m.
- h. Where on-street parking is provided on a single side of the street, the right-of-way may be reduced by the width of the parking lane. Similarly, if a sidewalk is provided on one side of the street, the right-of-way may be reduced accordingly.

This would also apply for eliminating travel lanes or, conversely, adding lands to a boulevard or landscaping strip along a roadway. Property buffers may be reduced if additional landscaping is provided within the boulevard.

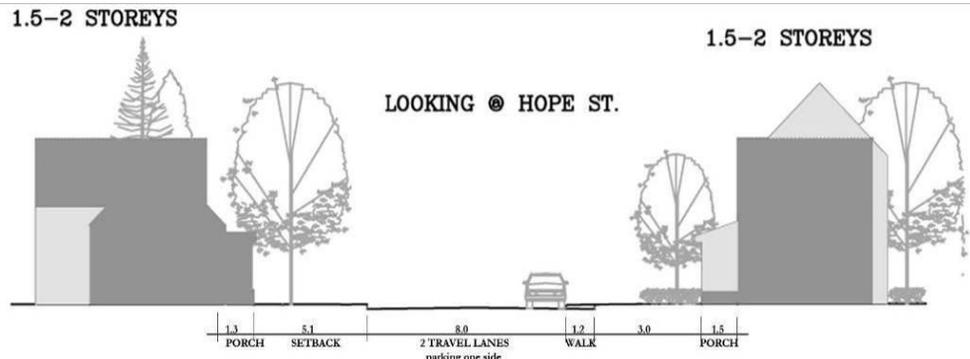
v. Local Street Guidelines

Local Streets have been separated into two categories: High Volume (HV) and Low Volume (LV). HV local streets may be defined as streets which are, in most cases, connected directly to a collector and are considered to be a “through street”. LV local streets may be defined as streets which, in most cases, are not connected to a collector street and are not considered to be a “through street”.

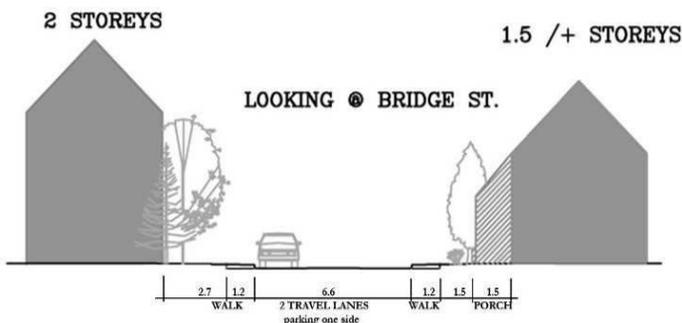
- a. Local Streets should be designed to create ‘intimate’ pedestrian-scaled streetscapes that promote walkability and residential activities but discourage speeding and through traffic. The right-of-way standards should be reduced to minimum requirements wherever possible.
- b. Local Streets should be designed with a narrow or reduced right-of-way standard of no greater than 17.0 m (HV) and 16.0 m (LV).
- c. A maximum total of two traffic lanes - each 2.5 -2.75 m wide and 1 or 2 shared traffic/on-street parking lane of 2.0 m wide is required. 1 (or 1.5) traffic lanes on LV local streets (yield configuration) with 1 shared traffic/on-street parking lane may be provided as an ‘alternative standard’ to reduce total pavement width.
- d. A landscaped boulevard 2.0 m in width on high volume local streets should be located on both sides of the road, planted with lawn and street trees located every 6.0 to 9.0 m on centre between the curb and the sidewalk or if there is no sidewalk, the property buffer.



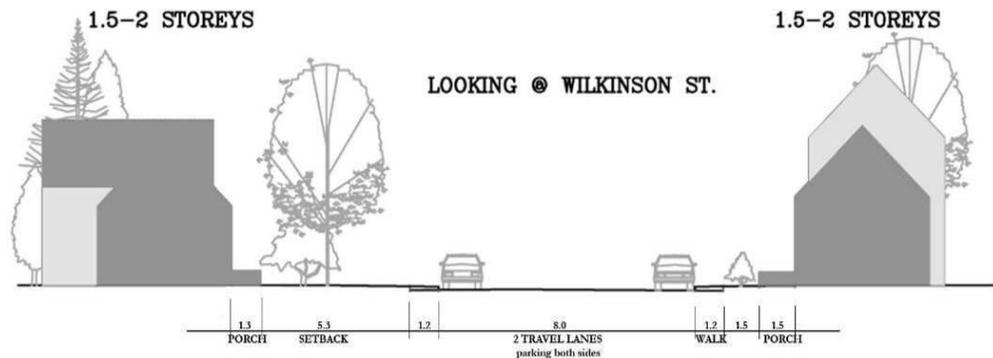
Upper Farm Street



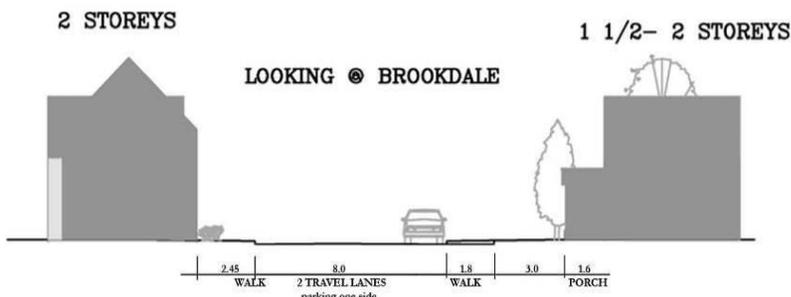
Malcolm Street



Lower Farm Street



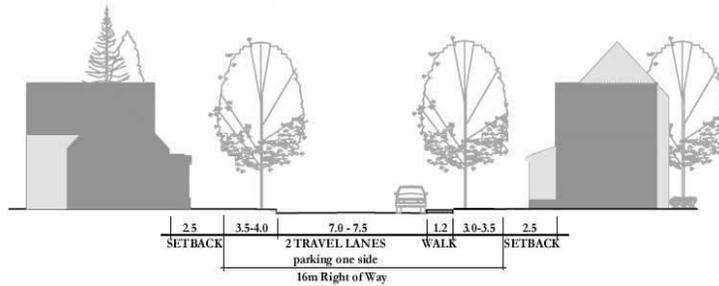
Mitcheson Street



Union Street

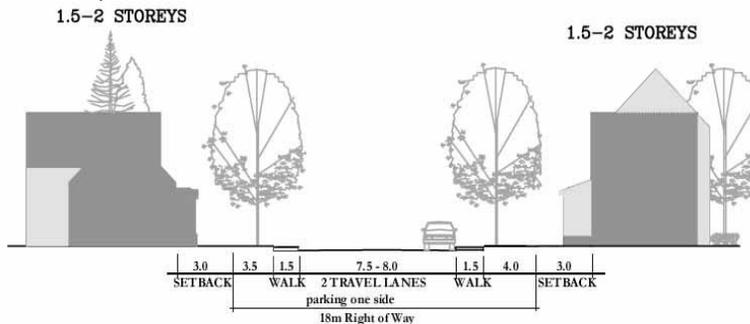
Local streets in the older parts of Almonte, while varied, have some very unifying characteristics. The pavement tends to be 6.6 - 8.0 metres in width, including parking on one side; the setback from hard surface (road or sidewalk) to the building face is usually under 3 metres; and the majority of the houses are split between 1 1/2 and 2 full storeys in height. As demonstrated by the Mitcheson Street section, there are exceptions.

- e. A sidewalk of 1.2 m (LV) 1.5 m (HV) wide should be provided on at least one side of the street and situated between the boulevard and the property buffer strip.
- f. A minimum 1.0 m wide 'property buffer' should be situated between the sidewalk and the private property boundary to provide options for locating underground services within the street right-of-way.



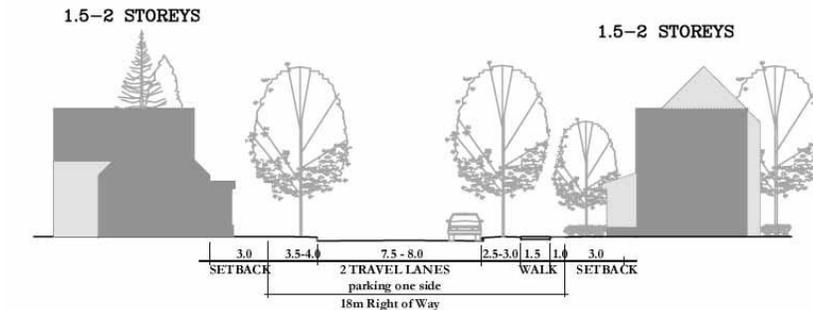
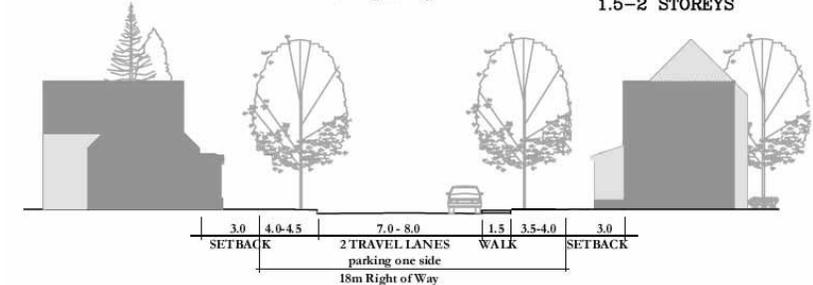
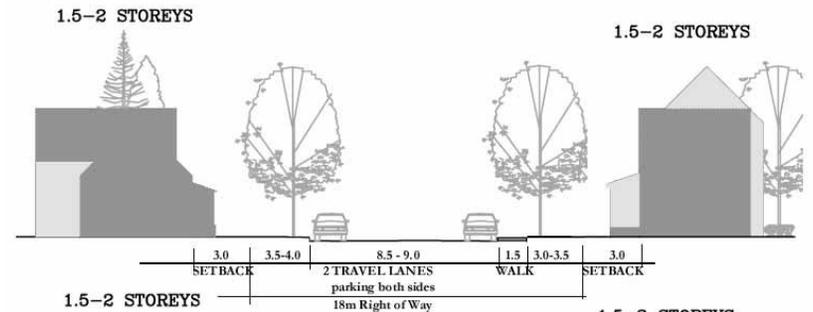
Local Street - Low Volume

- g. Pedestrian-scale lighting no greater than 4.5 m high should be provided to contribute to the safety and comfort of the streetscape. Lighting should be downcast.
- h. Barrier curbs are required for all Local Streets.
- i. Bicycle movement is considered to be a normal part of Local Street traffic movement - so no dedicated bicycle infrastructure is required.



Local Street - High Volume - Sidewalk Both Sides

- j. To encourage walkability and pedestrian safety, Local Street curb radii should be 5.0 m ~ 6.0 m.
- k. Utilities should be buried below grade - typically in the boulevard section of the right-of-way. The use of a joint utility trench is encouraged for access and maintenance benefits.



Local Street - High Volume

- I. Where on-street parking is provided on a single side of the street, the right-of-way may be reduced by the width of the parking lane. On a similar note, if a sidewalk is provided on one side of the street, the right-of-way may be reduced accordingly. This would also apply for eliminating travel lanes or, conversely, adding lands to a boulevard or landscaping strip along a roadway. Property buffers may be reduced if additional landscaping is provided within the boulevard/median.

vi. Laneways

- a. Where conditions in residential areas make it undesirable to allow direct driveway access from a roadway, other provisions for access to parking areas and garages are proposed through the use of a Rear Lane Access.
- b. Laneways should be prioritized where development fronts onto an Urban Collector Road or busy Local Road. Also, laneways should be considered to provide access to parking on small lots - particularly narrow lots, and in retail/commercial areas.
- c. Single-loaded laneways should provide a minimum right-of-way of 8.5 m with a minimum 0.5 m setback to the garage wall.
- d. Double-loaded laneways are discouraged for aesthetic, safety, and functional reasons. Where necessary, double-loaded laneways should be no greater than 10.0 m wide with a minimum 0.5 m setback to the garage wall.
- e. Areas at the end of laneways should be set aside for snow piling.
- f. The use of porous materials is encouraged where sufficient drainage exists, as low traffic levels permit the use of less durable surfaces.

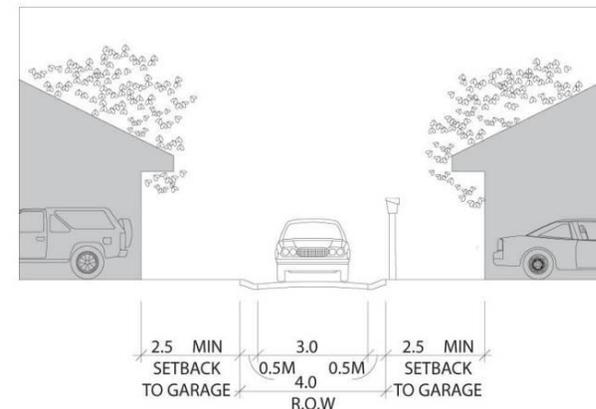
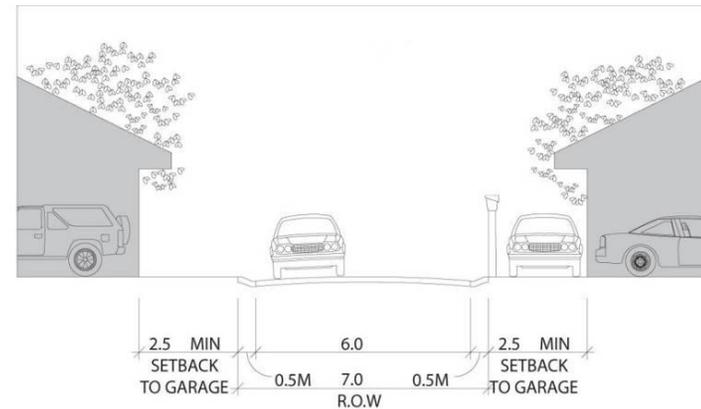
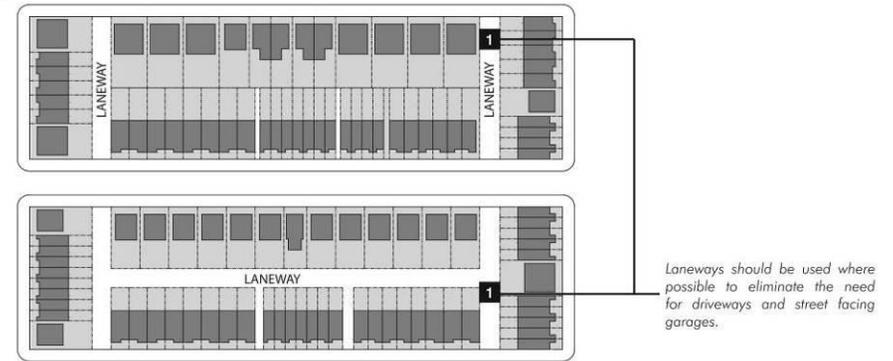


Figure: Option to design standard for a residential laneway.

vii. Local Roads – Arterial/Collector Interface

- a. The design of developments abutting arterial and collector streets should enhance the character of the community and the abutting properties. Noise sensitive properties should be buffered through mechanisms such as building design and landscaping.



Figure: Window road with trail system



Figure: Side Yard Interface onto road

- b. Residential development adjacent to arterial and major collector roads should not have driveway access. Housing adjacent to major collector roads should generally discourage driveway access except where the road design incorporates a central landscaped median accommodating right-in, right-out only driveway access.
- c. Open frontage on arterial and major collector roads could be achieved in the following ways: open-ended crescents; rear lane access; rear access from local roads; single-loaded service roads; short block dead ends(see diagram next page).

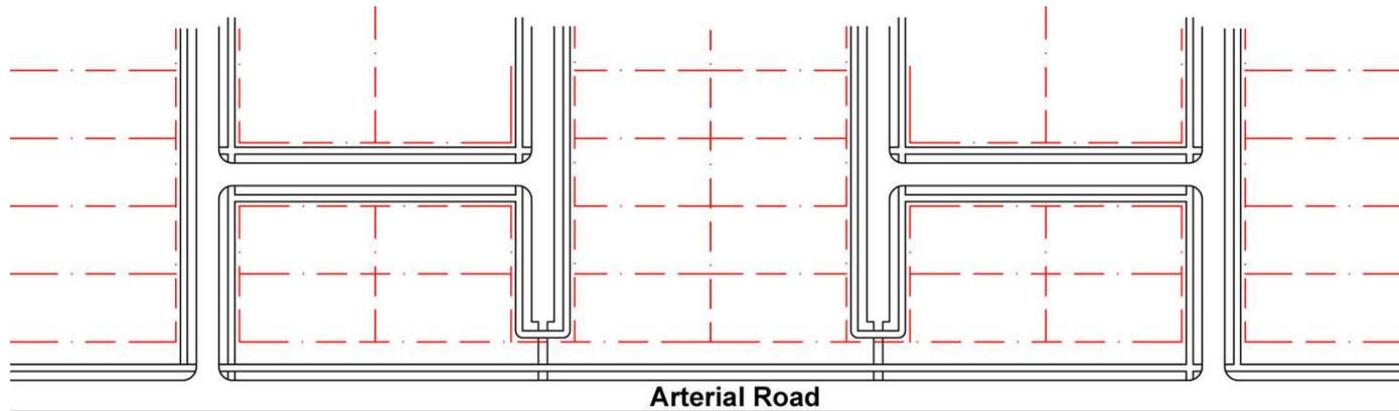


Figure: Design Guidelines for neighbourhood interface with Arterial Road (above). Where it is desirable to limit access, a short block with a dead-end (short block avoids the need for cul-de-sacs) may be used. Landscaped boulevard and landscape screen provides a suitable buffer between Arterial Road and residential uses.

viii. Intersection Design – Curb Radius

- a. Street corners should be designed to adequately serve multiple functions, including pedestrian crossings, pedestrian waiting areas, utility and traffic signal poles, etc. Curb radius design should consider these competing needs and priorities.
- b. Where additional pedestrian area at the corner is desirable, for example, because existing conditions are constrained or because a large corner radius is required, the intersection design should include a smaller radius.
- c. A smaller curb radius may be used for the design of a curb “Bump-out” - to provide a projection or “bump-out” of sidewalk pavement into the roadway. This ‘bump-out’ may include landscape elements, feature paving, seating, etc. at the intersection of two streets, separating on-street parking from the intersection and decreasing pedestrian crossing distance.
- d. Small curb radii improve pedestrian conditions as they

provide more pedestrian area at intersections, result in shorter crosswalks, and require vehicles to reduce speed as they turn the corner.

- e. The choice of curb radius should consider requirements for pedestrian areas, traffic turning movements, the turning radius of vehicles, the geometry of the intersection, the street classifications, and whether there is parking or a bike lane (or both) between the travel lane and the curb.



Figure: Curb ‘bump-out’ design provides separation of on-street parking from intersection and opportunity for landscaping and increased pavement area.

f. Generally, curb radii should range from 5.0 m to 8.0 m.

ix. Further Reading

Burden Dan and Lagerwey Peter: Road Diets - Fixing the Big Roads. Walkable Communities Inc.
<http://www.walkable.org/download/rdiets.pdf>

Environment Canada & Road Salt
http://www.ec.gc.ca/Press/2001/011130-2_b_e.htm

Maintaining and Repairing Roadways
<http://www.oracwa.org/Pages/Chap4.pdf>

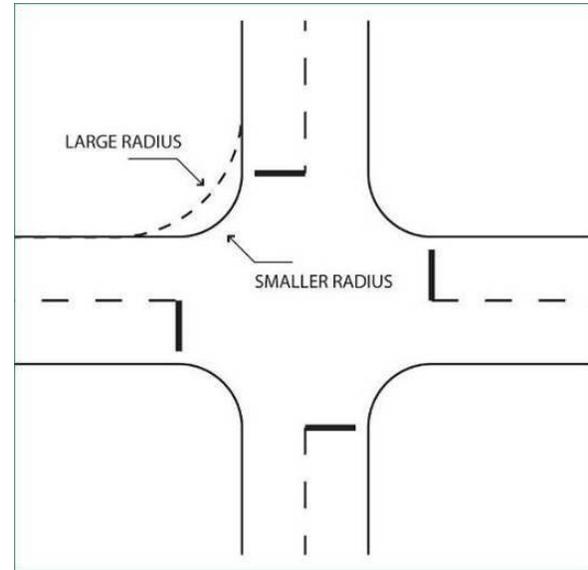


Figure: Demonstration of curb radius configuration at intersection.

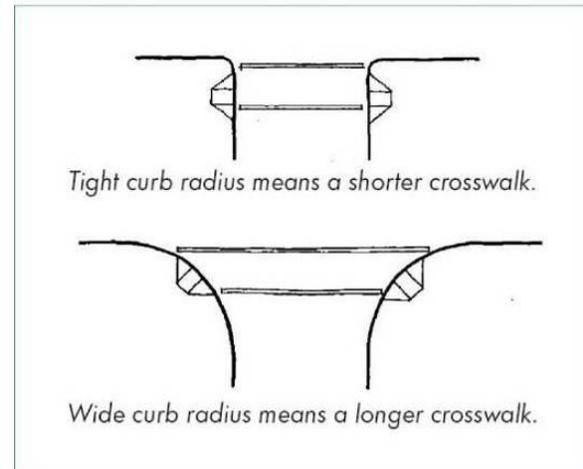


Figure: Curb radius and pedestrian safety.

x. Right-of-Way Design Standards Matrix

Design Standards		Arterial Road	Collector Street	Local Street	
				High Volume	Low Volume
Right-of-Way		20.0 ~ 25.0 m	20.0 m	18.0 m	16.0 m
Travel Lanes	Total Number	2 ~ 5 lanes	2 ~ 3 lanes	2 ~ 3 lanes	1 ~ 2 lanes
	Travel Lane Width	3.5 m/travel lane*	3.0 ~ 3.25 m/travel lane	2.75 m/travel lane	2.5 - 2.75 m
	Parking Lane Width	None	2.0 m	2.0 m	2.0 m
Landscape Median		Optional (min 3.0 m)	None	Optional (min 3.0 m)	
On-Street Parking Lane		At Commercial Centre Locations and subject to conditions	Yes. On-street parking is typically provided during off-peak periods	1 or 2 parking lanes shared with travel	1 parking lane shared with travel
Total Pavement Width		7.0 m ~ 17.5 m	7.0 ~ 13.0 m	7.0 ~ 9.0 m	7.0 ~ 8.0 m
Landscaped Boulevards		Both Sides (Ideal)	Both Sides (Ideal)	Optional	None
		Min 2.0 m	Min 2.0 m	Min 2.0	
Bicycle Facilities		Optional (min 3.0 m)	Optional	None	None
		0.75 ~ 1.5 m	0.75 ~ 1.5 m		
Sidewalks <i>(requirement for sidewalks largely dependent on the location e.g. if pedestrian access is required to get to commercial area, sidewalks are required)</i>		Both Sides optional, 1 side recommended	One Side Min – depending on area	1 side generally, Both Sides in heavy traffic areas	One side
		Min 1.5 m (Res), Min 2.5 m (Commercial)	Min 1.5 m (Res), Min 2.5 m (Commercial)	Min 1.5m	Min 1.2m
Property Buffer		Not required	Both Sides	Required with sidewalk	Required with sidewalk
			Max 1.0 m	Max 1.0 m	Max 1.0 m
Street Trees		Boulevard planting every 6 ~ 9.0 m subject to Safety Standards	Boulevard planting every 6 ~ 9.0 m subject to Safety Standards	Boulevard planting every 6 ~ 9.0 m	1 planting per lot or every 6 ~ 9 m, whichever is more applicable
Street Lighting <i>(pedestrian-scale implies shorter heights light poles which cater to pedestrians – approx 2.4 m – 3.0 m)</i>		Pedestrian scale (4.5 m) on both sides of street	Pedestrian scale (4.5 m) on both sides of street	Pedestrian scale (4.5 m) on both sides of street	Pedestrian scale (4.5 m) one sides of street

**Note: Travel lane width may be reduced where feasible to minimize overall pavement width. Reduced standards should be used wherever possible*

URBAN DESIGN

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E. Sidewalks and Streetscaping

i. Design Principles

1. **Public spaces:** Sidewalks should be designed as high quality public spaces, promoting active use by residents and visitors and enhancing pedestrian experiences. Amenities such as street furniture, banners, art, street trees and special paving, wayfinding signage, along with historical elements and cultural references, should promote a 'sense of place'.
2. **Scale:** Sidewalks should be designed according to the function and nature of adjoining land uses. For example, wide sidewalks are required for many commercial areas with high pedestrian volumes.
3. **Safety:** Sidewalks should provide safe environments, and provide unobstructed pedestrian movements along and across the street.
4. **Connections:** Sidewalks should be located so that the majority of residents are conveniently connected between destinations such as institutional, recreational and retail/employment areas. Marked and lighted crosswalks are a key issue for pedestrian safety and should be provided wherever required.

ii. Sidewalk Design: General Guidelines

Sidewalks are important pedestrian areas that should accommodate a wide range of potential uses, including the safe movement of pedestrians throughout residential, commercial, and employment areas.

- a. As a general rule, sidewalks should be provided at least

one side of the street, depending on the nature of development. Sidewalks may be required on both sides of the street as well, again, depending on the nature of development.

- b. Sidewalks should be constructed of a solid, stable, and textured material such as concrete or interlocking brick or paving. The pavement base should be significant to minimize heaving and damage by tree roots.
- c. Where pedestrian activity is concentrated, such as schools and street retail shops, the sidewalk should be expanded or augmented with decorative paving to create a larger surface area.
- d. Sidewalks should connect with adjoining recreational trail networks wherever possible.
- e. For sidewalks along busy streets, textured edges (rumble strips) and sound assisted crosswalks should be used to assist the visually impaired.

iii. Commercial Area Sidewalks

Sidewalks in commercial areas are typically wider than those in a residential area and often accommodate the highest number of pedestrians and a variety of commercial activities.

- a. Commercial area sidewalks should be a minimum width of 3.5 m, and be comprised of a 1.5 m wide walkway and 2.0 m wide boulevard that is constructed of a hard paved surface such as interlocking brick.
- b. Generally, the sidewalk surface should be constructed of poured concrete. Higher quality may be considered for improved maintenance in key areas such as historic downtown Almonte.

- c. Paving borders (constructed of materials other than asphalt, including pavers, stamped or concrete) should be used to define the sidewalk, and should continue across driveways and signalized intersections to indicate pedestrian priority.
- d. Street trees should be located within the paved boulevard and planted in an adequate pit under a metal grille.
- e. Sidewalk clutter, such as newspaper boxes and portable signs, should be minimized to enable safe and efficient movement of pedestrians.
- f. At corners, consideration should be given to the widening of boulevards to provide enhanced sidewalk

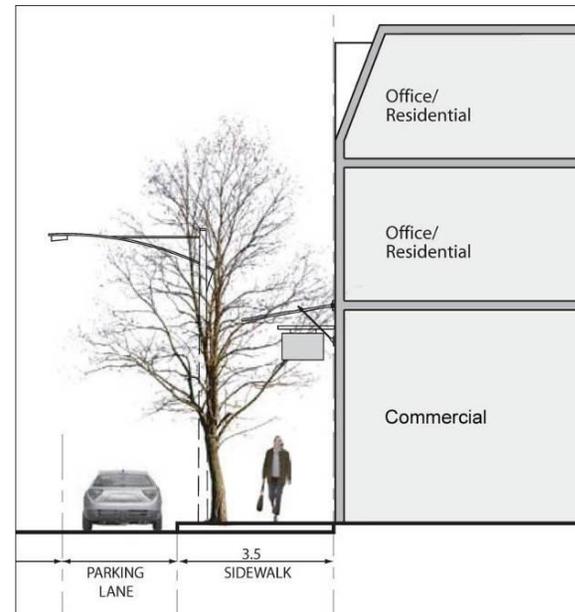


Figure: Commercial area sidewalks should be at least 3.5m wide and may be integrated with the boulevard (above). Tree grates should be used for commercial sidewalks.

conditions that include decorative planting areas, seating areas and other pedestrian spaces.

Curb ramps (depressed curbs) should be used to provide assistance to persons with mobility disabilities, as well as providing a proper transition between the road surface and top of curb at pedestrian sidewalk corners (see diagram).

iv. Residential Area Sidewalks

Even though residential area sidewalks carry fewer pedestrians, they are important public spaces for social activity such as meeting neighbours, children's games, and exercising.

- a. Sidewalks should be a minimum of 1.2 m wide.

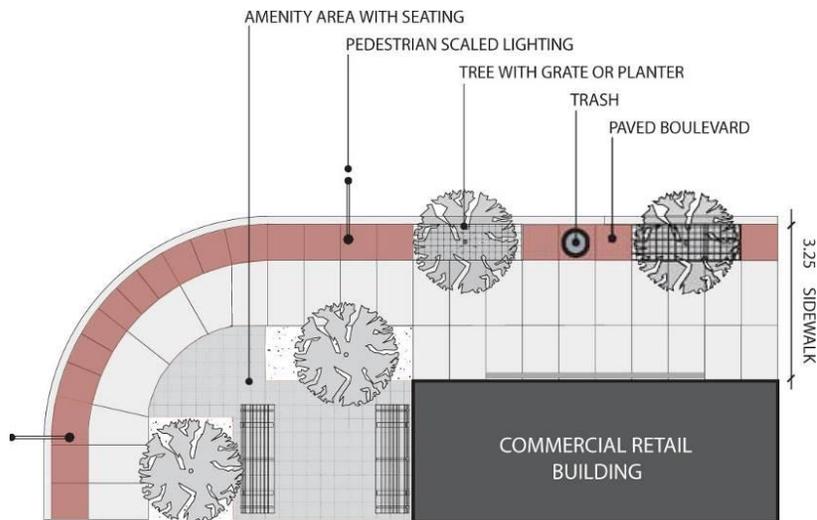


Figure: Commercial area sidewalks should include a paved boulevard, accommodating street trees, pedestrian-scaled amenities and lighting.



Figure: Sidewalks should be barrier free, and constructed of high quality and stable materials.

- b. Sidewalks should generally be located on both sides of all arterial roads and major collector roads (County Roads with access to commercial uses), at least one side of minor collector streets and high volume local streets, optional for low volume local streets, and should be on at least one side of single-loaded roads. The requirement of new sidewalks is largely dependent on the nature and type of the development in and surrounding the area.
- c. The design of sidewalks should be coordinated with intersecting driveways and pedestrian walkways.
- d. Generally, the sidewalk surface should be constructed of poured concrete, however unit paving may be used to provide opportunities for variation and visual interest.
- e. Sidewalks situated on steep slopes should be scoured to create a 'non slip' surface for pedestrian safety.

v. Crosswalks

Crosswalks ensure continuity of the sidewalk network. High quality crosswalks must be provided for safety and to generally promote walking.

- a. Crosswalks should be continuous and connected to adjacent sidewalks. Crosswalks should be clearly designated for safety, with appropriate surface markings or variation in construction material, and signage.
- b. Gateway and major commercial area intersections should use feature paving to signify the priority of pedestrian crossings at these locations.



- c. The curb edge at crosswalks should be constructed of a different material, such as brick, to identify the limits of the sidewalk and beginning of the road crossing.
- d. Additional mid-block crosswalks with 'on-demand' signals should be provided on long blocks.

- e. Signalization should be prioritized for the pedestrian over vehicle traffic, especially within commercial or 'node' areas with high levels of pedestrian activity

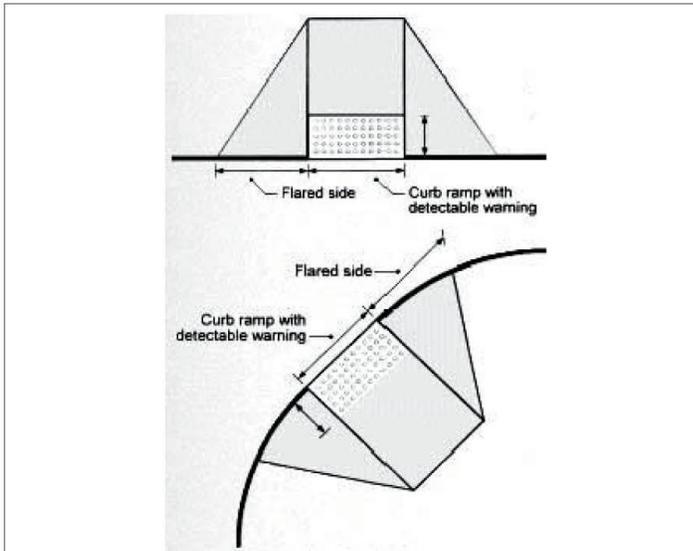


Figure: Textured curb and crosswalk edges should be used to assist the visually impaired (Image Source: US Department of Transportation).



Figure: Crosswalks should be designated for safety, with appropriate surface markings or variation in construction material.

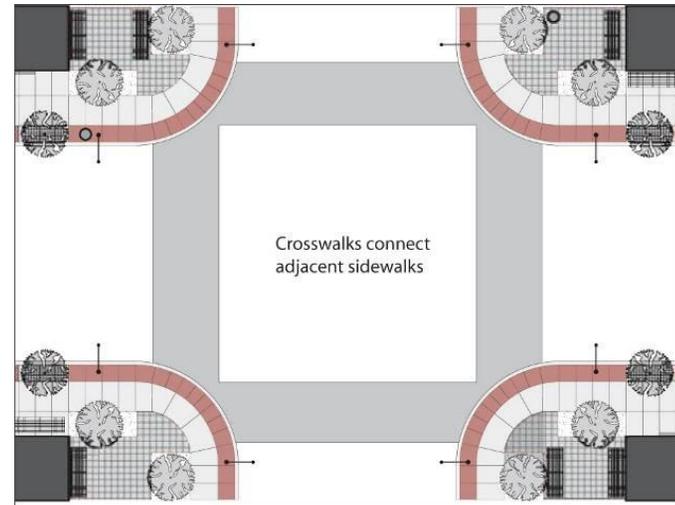


Figure: Crosswalks should be continuous, connecting sidewalks and supportive of safe pedestrian movement.

vi. Sidewalk – Parking Interface

Off-street surface parking areas adjacent to the sidewalk negatively impact on sidewalk quality, pedestrian comfort and safety and should be discouraged. The surface parking interface should be well designed with adequate buffers.

- a. Where parking areas are situated against the sidewalk (e.g. existing retail forecourt parking, or car sales yard), a significant physical barrier, such as landscaping or bollards, should be located between parked vehicles and the sidewalk.
- b. Barriers must be located on private property and therefore not reduce the total sidewalk width.

- c. Efforts should be made to lower parking areas below-grade in order to reduce the impact on the interface between the pedestrian traffic and the parking lot as shown below.



Sunken Parking Section



Figure: Landscaped islands provide appropriate physical separation between sidewalks and surface parking areas.

vii. Street Trees

Trees provide shade and enhance the visual and environmental qualities of the street. Trees should be incorporated into street design wherever possible. Native species for street trees should be used wherever possible, to promote long-term survival and to prevent disease.

- a. Trees which border a street should generally be located within the boulevard and should be a minimum of 1.5 m from the curb to accommodate snow storage, large vehicle movements and minimize salt damage.
- b. Trees should be spaced evenly at 6.0 to 9.0 m intervals. Appropriate clearances from utility boxes, street lights, and sight triangles should be considered.

- c. Consideration should be given to the type and location of trees to ensure that there is no interference with truck traffic. Higher branched species or trees with a smaller canopy may be used. Sight lines should also be considered in the location of trees planted at intersections.
- d. Existing street trees should be preserved wherever possible, as mature street trees create a greater sense of enclosure along roads.
- e. The infilling of trees along streets where spaces exist between existing trees should be implemented. Such trees should be of a similar or compatible species



Figure: Street trees in commercial areas should be planted under protective grilles. 'Sleeves' are also recommended to protect the tree from damage.



Figure: Example of a Local Street in Almonte showing treeline on both sides of street.

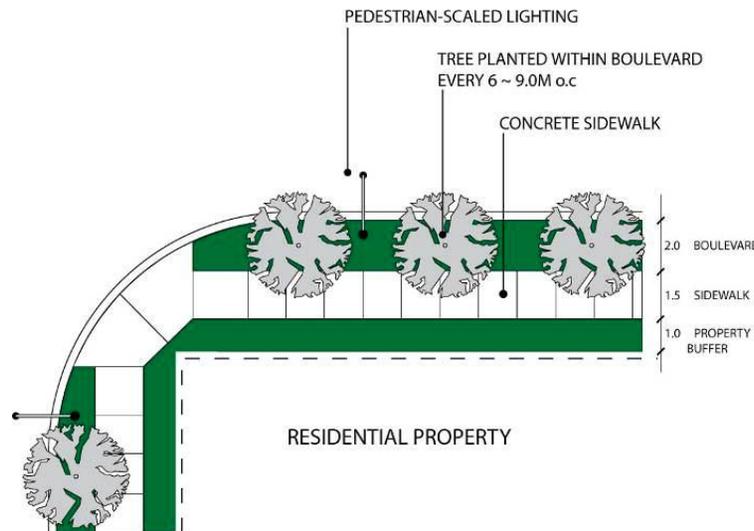


Figure: Street trees in residential areas should be planted within a 2.0m wide boulevard. Street trees enhance street character and improve local environmental conditions.



Figure: Street trees in urban areas provide shade to the sidewalk and high amenity value to the streetscape.

viii. Street Furniture

- a. An overall theme should be used when placing new street furnishings which will provide a consistent and unified streetscape appearance. Preference should be given to durable materials.
- b. The placement of street furnishings should be in a coordinated manner that does not obstruct pedestrian circulation on sidewalks, and vehicular circulation to driveways, parking, loading and service areas.
- c. Consideration should be given to providing additional pedestrian-scale lighting in areas where there is a high volume of pedestrian activity. Pedestrian lighting may be added to existing hydro or street lighting poles.
- d. Benches, waste and recycling receptacles should be provided at all major intersections where there is significant pedestrian activity.

ix. Street Illumination

All proposed lighting is required to meet the standards of the Town's Outdoor Illumination By-law.

x. Further Reading

Planting Native Species
www.evergreen.ca/en/resources/resources.html

Designing Community Spaces
www.evergreen.ca/en/cg/resources/facts/cg-fact7.pdf



Figure: Street furnishings should be placed in a location that do not interfere with pedestrian and vehicular circulation.

URBAN DESIGN

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F. Parks and Open Space

i. Design Principles

COP GOAL: Promote and develop public open spaces to service the recreation, leisure and quality of life needs of the community.

The Town of Mississippi Mills recognizes that urban public parkland, waterfront areas and open spaces are essential to the overall character, quality of life and health of the community. Parkland and open spaces are valued for a variety of reasons:

- active recreational areas for sport activities, festivals and community events;
- playgrounds for tots and youth;
- passive areas for leisure and nature appreciation;
- open space linkages for recreational trails, bicycle paths and pedestrian ways;
- natural areas; and,
- “green” open spaces

1. **Networked:** Parks and other open spaces should form part of a network, providing a major component in shaping existing and new areas of the Town, and providing a variety of options for accessibility for new trails (for example: riverside foot paths in both Almonte and Pakenham village which are linked to a broader trail system throughout the community).
2. **Functional:** Public parks and open spaces should be designed to serve the diverse open space needs of the community, including a range of active and passive recreational activities.

3. **Safe:** The design of public open spaces should provide safe recreational and movement opportunities. Open spaces should be bordered accessed by public roads wherever possible to improve the presence and safety through casual surveillance.
4. **Integrated with Natural Heritage Features and Areas:** Conservation objectives should be balanced with recreational needs. Natural features, such as woodlots and watercourses should be preserved and integrated into Parks and Open Spaces as a means of maintaining a sense of connection with the original landscape. Naturalized and indigenous plantings should be used wherever possible.

ii. General

The COP establishes a parkland hierarchy and classification system that shall guide the Town in the development and acquisition of parkland and open spaces. The classification system shall include neighbourhood parks and community parks.

Type of Park	ha/ 1000 Pop	Size of Site (ha)		Radius of Area Served (km)
		Ideal	Min	
Neighbourhood Parks	0.5	2	0.4	0.5
Community Park	0.5 - 1	4	2	2

iii. Community Parks

- a. Community parks should accommodate multigenerational social, cultural, education and physical activities of particular interest to the community, including multi-purpose, year round, day/night activities, and organized recreational sports with some spectator space.

- b. Wherever possible, community parks should be established adjacent to or in conjunction with elementary or secondary schools.
- c. Community parks may vary in size from 1.5 to 10 hectares.
- d. There should be approximately ½ to 1 hectare of Community Park for every 1000 persons, located within a 2 kilometre radius of the population being served.
- e. Such parks should be directly accessible by arterial or collector roads and pedestrian networks and may have facilities for off street parking. Wherever possible community parks should be located at the terminus of streets and open crescents to reinforce a strong public profile.
- f. Park entrance design should provide amenities including visitor drop-off, pedestrian scale lighting, and signage to assist in orientation and use of park amenities.
- g. Community Parks may include facilities for passive activity including walkways, formal gardens, seating areas, park pavilions and interpretive displays relating to local history or the natural context.
- h. Highly visible connections should link the major park amenities and facilities through walkways and bicycle paths.
- i. Vehicular connections through parkland should be limited to emergency vehicle routes and access to major park facilities (e.g. arenas, pools) and parking areas.
- j. Provisions to buffer residential areas from lighting, noise, traffic and parking areas should be provided through landscaping and appropriate setback treatments.
- k. Community Parks may be directly connected to school sites to encourage mutual use of outdoor

Figure: Development should directly face parks and open space, resulting in highly visible links and a positive interface. Parks should include passive and active recreation options to encourage frequent use.



facilities. At such locations, the park size, design and programming should conform to individual school board requirements. Sharing agreements can include parking facilities.

iv. Neighbourhood Parks

- a. Neighbourhood parks should generally be located in residential areas and accommodate multigenerational, neighbourhood interests. Neighbourhood parks should provide for unorganized play activities, quiet seating or rest areas, sports areas for minor leagues, such as mini soccer pitches, outdoor skating rinks, water play, playgrounds, neighbourhood events and informal activities. Wherever possible, neighbourhood parks should be established adjacent to or in conjunction with an elementary or secondary school. Neighbourhood parks are generally less than 4 hectares in size and located within ½ kilometre radius of the population being served.
- b. Neighbourhood parks should be easily accessible by pedestrians from local roads and pathways. They should be designed with extensive street frontage for visibility and safety.
- c. A network of smaller neighbourhood parks should contribute to the structure and identity of the neighbourhood.
- d. Wherever possible, parks should be open to a minimum of two sides of the public street, 50% of the park perimeter, or whichever is greater. It is accepted that this cannot be achieved where the park is located at a mid-block condition but other conditions must be in place to ensure visibility and accessibility to non-bordering local residents.

v. Park Amenity Criteria

When establishing new or revitalizing existing neighbourhood and community parks, consider the individuals who may be using them. If you have more of one age demographic within a given area, it may be worthwhile to cater to that particular cohort, better utilizing the park.

While the listings below are not exhaustive, it should be understood that any one park which is small cannot cater to everyone. If a particular age demographic has not been considered within the identified 500 m, the next neighbourhood park should consider the missing age demographic.

If the park is of a size which may accommodate all age demographics but at a smaller scale i.e. less of everything, then catering to all age demographics is recommended assuming there is not duplication of amenities within 1 kilometre of the park.

vi. Sustainable Park Design

- a. Parks and open space design should encourage interconnection with adjacent natural areas like the Mississippi River. Setbacks and edge interfaces should be planted with a diverse selection of indigenous plant species, and designed to provide habitat for local flora and fauna.
- b. Landscaping materials within parks and open spaces should, where possible, be salvaged from other sites where clearing of existing vegetation has occurred.
- c. Lighting levels should be reduced to minimum requirements to reduce impact on sensitive fauna.
- d. Playground surfaces may be developed with recovered rubber and PVC materials as an alternative to typical materials such as wood chips, sand, or asphalt.
- e. The use of park benches and picnic tables constructed from recycled materials should be considered as an alternative to timber or steel frame furniture.
- f. Bicycle storage facilities should be provided at all public parks and open spaces to encourage alternative modes

of transport.

- g. Composting facilities may be located within park and open space for the purpose of composting organic waste obtained either on or offsite.
- h. Community gardens may be located within parks and public open spaces as a valuable recreational activity that can contribute to community development, environmental awareness, positive social interaction and community education.

vii. Further Reading

Real Estate Impact Review of Parks and Recreation. ERA, March 2005.
www.econres.com

Manitoba Child Health Atlas 2004
http://www.umanitoba.ca/centres/mchp/reports/child_inequalities

Type of Park	Type of Demographic Park Will Cater	Essential Park Amenities
Neighbourhood Park	Children and Young Families	Swings, slides, playground structures, treed area, sand area, grassed area, accessible play structures and access for disabled persons
	Teens	Open grass, basketball court, small skateboard park, access for disabled persons
	Adults/Seniors	Treed area, benches, walking trails through and around, community gardens/raised beds, access for disabled persons
Community Park	Children and Young Families	Swings, slides, playground structures, treed area, sand area, grassed area, water park, barbeques, accessible play structures and access for disabled persons
	Teens	Skateboarding park, treed areas, basketball courts, open field, soccer/football fields, access for disabled persons
	Adults/Seniors	Treed areas, walking trails, benches, community gardens, access for disabled persons

URBAN DESIGN

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G. Natural Heritage Lands

i. Design Principles

COP GOAL: Protect and enhance the quality of the environment and the long-term health of the ecosystem. All other goals of this Plan shall attempt to satisfy the environmental goal.

1. **Preserved & Enhanced:** The protection of the environmental features, water resources and ecosystems within Mississippi Mills are of central importance to the long term health and prosperity of the area. Adjoining development should be compatible with the natural environment and appropriately set back or buffered, as determined by the COP or an Environmental Impact Statement.
2. **Integrated:** Development should provide physical and visual connections to natural features, parks and the surrounding landscapes wherever possible. Natural heritage features can define the edges or in some cases, the centres of neighbourhoods and should be easily visible to create a strong sense of local identity. Where appropriate, public access should be permitted while natural features and sensitive habitats are preserved.
3. **Make Nature Visible:** The alignment of streets and blocks should be configured to create a high degree of visibility and accessibility to natural elements and their ecosystems, thereby encouraging ecological awareness. Direct visibility and access to woodlots, stream corridors, and other natural features should provide opportunities for outdoor education for area residents and local schools. Conversely, access should be restricted where necessary.



Figure: 'Window Road' adjacent to natural feature provides views and connection with significant natural features.

ii. Significant Tree Preservation

- a. Existing trees and significant vegetation should be preserved incorporated into site landscaping allow for more urban green space and mature tree cover. Existing trees and vegetation can act as buffers between adjoining developments and add to site amenities.
- b. For purposes of this section, "significant" trees include the following:
 - Trees with 30 cm minimum diameter or trees of 3.5 m or more in height; and
 - Groups or stands of ten (10) or more trees with a minimum diameter of 15 cm measured 1.4 m from the diameter breast height.

Note: Diameter Breast Height (dbh) is measured at 1.4 m from the base of the trunk of the tree.

- c. Existing vegetation that is in appropriate locations, in sufficient quantities, and of acceptable quality to be used to fulfill landscaping or buffering requirements should be preserved to the maximum extent possible.
- d. All preserved trees and vegetation should be healthy and free of mechanical injury.
- e. Significant trees should be protected during construction with the erection of snow fences/other protection devices, which are maintained throughout construction at the drip line of the trees (edge of the canopy/branch cover). Grading should be avoided within the root area or drip line of any existing preserved trees.
- f. Maintenance of tree cover, plantings, or other soil stabilizing vegetation should be used to minimize erosion of sloped areas.
- g. If any significant trees designated for preservation are removed or substantially damaged during clearing, grading, or construction, they should be replaced. Replacement trees should be the same diameter and size to the trees removed or damaged and be, of a species which is native to the area.

iii. Watercourse Corridors

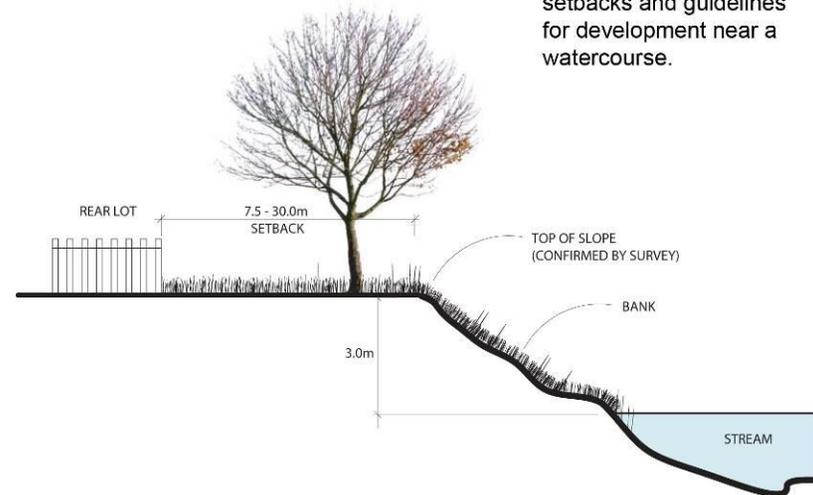
Setbacks

- a. Setback requirements should be relative to bank height, angle and stability of slope conditions.
- b. Existing vegetation should be maintained in all the setback areas. Enhancements by natural landscaping and additional native planting are recommended to create a vegetative buffer area to protect sensitive environments.
- c. For stability and land conservation purposes, the setback from slopes where bank height is less than 3 metres should

be a minimum of 7.5 metres from the top of slope. The 7.5 m – 30 m setback should be maintained in a natural state and there shall be no disturbance of grades or vegetation below the top of bank.

- d. Where top of slope height is less than 3 metres, the setback should be represented by the greater of the following:
 - the limit of the Floodplain; or
 - a 15 metre vegetative buffer area measured from the channel bank for a Type 2 or Type 3 fish habitat, or a 30 metre vegetative buffer area measured from the channel bank for a Type 1 fish habitat.

Figure: Components of setbacks and guidelines for development near a watercourse.



iv. Further Reading

Ontario Conserves
<http://www.ontarioconserves.gov.on.ca/english/index.asp>

Ministry of the Environment
<http://www.ene.gov.on.ca/>

Conservation Ontario
<http://www.conservation-ontario.on.ca/>

URBAN DESIGN

3

H. Pedestrian and Cycling Trails

i. Design Principles

1. **Integrated:** A pedestrian and cycling trail system should be established as a component of the public open space network. By utilizing the open space network of natural features, public parks, and stormwater management facilities, as well as primary street corridors and the rail corridors, a trail system can provide pedestrians and cyclists with connections and recreation opportunities throughout the municipality.
2. **Heritage Preservation:** Pedestrian and cycling trails should be established as a means of linking the natural and built heritage of the municipality. Existing hedgerows, farm roads, lands along the Mississippi River and street networks provide the primary framework for establishing trail connections between neighbourhoods, parks, schools, commercial and employment areas.
3. **Connected:** Pedestrian and cycling trails should link to core activity areas such as employment and commercial land uses, and create strong links between residential neighbourhoods, open space, and the unique natural amenities like Gemmill Park and the Mississippi River available in the municipality. Connected trail networks also provide recreation and tourism opportunities whether they connect to municipal beaches or open spaces along the river.
4. **Alternative Movement Options:** Pedestrian and cycling trails should be promoted and may result in a significant decrease of short automobile trips as walking becomes

an attractive and viable alternative to driving. They will also serve as a means of linking new residential areas with natural environments without requiring access for vehicular traffic.

5. **Accessibility:** Pedestrian and cycling trails should be accessible for disabled persons where traffic and location merits it so everyone may experience the environment.

ii. Design Guidelines

- a. New pedestrian and cycling trails should be designed in accordance with other existing and proposed recreational networks as identified in any current or future study.
- b. The design of the pedestrian and cycling trail should reflect the function and nature of the type of open space it occupies. For example, trails through a natural area may only be constructed of dirt (natural) and be able to allow for one-way passage of cyclists or pedestrians where trails through a field or next to the river may be wider and constructed of gravel or asphalt. However, trail widths should range from 3.0 ~ 4.0 m in width to allow for two-way passage of cyclists or pedestrians in areas that can support that width.
- c. Nature trails should include multiple access points. The design of access points should consider people arriving by a variety of means, including car, foot or bicycle. Entrances should be designed to accommodate the physically disabled and include stable yet permeable surfaces such as stone dust. Entrances should also indicate the mode of access that is permitted i.e. pedestrian only, or pedestrian and cycling only.
- d. Wherever possible trails should include adequate amenities, such as seating, trash receptacles, lighting, signage, route information, and educational/historic information.



Figure: Section of single-loaded street fronting onto natural heritage area with nature trail.

- e. Trails located within sensitive natural environments should be constructed of low impact materials that are porous and stable, such as crushed rock, wood chip paths, or board walks. All trails should be designed according to site-specific conditions. Where topography and environmental conditions allow, trails should provide a surface that enables use by pedestrians, bicycles, and wheelchairs.
- f. Allowance in the design of trails for emergency vehicle access and cross-county skiing should be considered.
- g. Lighting levels on trails should be individually determined, particularly where lighting may disturb adjacent residences, natural habitats or have high maintenance costs. The use of solar-powered lighting should be considered where applicable.
- h. Nature trails should incorporate viewing stations, orientation displays and other information to enhance education and the appreciation of nature.
- i. Trails that align hedgerows, woodlots or other sensitive natural areas should employ separation distances from such features. Such separation distances should be individually determined possibly by an Environmental Impact Statement.
- j. Bicycle facilities along streets should provide direct connections to other trails within the open space system.
- k. Trails at the rear of properties should have adequate sight lines from neighbouring properties to increase opportunities for casual surveillance and safety.
- l. Trail entrances should be accessible and visible from the public street or other public areas. Adequate mapping and route information should be provided, along with public telephones or emergency beacons at regular intervals.

- m. Trails adjacent to rail corridors should be set back a minimum distance of 10.0 m. This may be reduced if a safety fence is provided for physical separation. However, it is recommended that setback distances and physical separation requirements are assessed on a case-by-case basis to ensure safety of trail users from potential hazards such as wind, debris, and collisions. The setback distance should reflect to the type, speed, and frequency of train operations, as well as the topographic conditions.

iii. Further Reading

Bicycle and Pedestrian Plans

<http://www.walkinginfo.org/pp/types/local/>

Economic Benefits of Bicycle and Pedestrian-based Tourism

http://www.bikewalk.org/assets/Reports/economic_impact.htm

Planning and Designing Rail-Trails on Abandoned Rail Lines

<http://www.usroads.com/journals/rei/9707/re970702.htm>



Figure: Minimum trail setback to Rail Corridor is 10.0m. This may be reduced if a safety fence is provided.

URBAN DESIGN

3

I. Environmental Sustainability

i. Design Principles

1. **Build Green Buildings:** Green buildings are resource efficient, use less energy, utilize construction materials efficiently, are designed to reduce internal and external impacts on the environment, and can reduce operating costs. Green building methods should be considered for both large and small projects.
2. **Recycle & Reuse:** Heritage structures were often built for long-term value. As these buildings outlive their intended purpose, opportunities for adaptive reuse should be explored to find new uses while retaining their historic features. Similarly, old materials can be given new life through recycling.
3. **Environmentally Sustainable Site Plan:** The site plan should also address environmental sustainability principles. Water quality, consumption, and runoff are key site sustainability issues. A range of appropriate design measures should be considered such as the preservation of natural features, reduction of hard surfaces and addition of extensive landscaping.
4. **Conserve Land:** Consolidating urban development in existing and new areas will improve utilization of land and the efficient provision of infrastructure and services. Development and intensification should occur within existing urban areas to reduce pressure on natural features, open spaces, rural and agricultural lands.
5. **Conserve Energy:** The overall design of blocks and streets, the strategic placement of uses/buildings, and recycling can help to reduce energy consumption at the

neighbourhood level. The strategic placement of complementary uses reduces the need to travel long distances, thereby conserving energy and reducing dependence on the automobile.

6. **Reduce Water Runoff:** Through the preservation of naturally vegetated environments, extensive landscaping, and the appropriate use of porous surfaces, urban design strategies can reduce water runoff and improve water quality. Reducing water runoff helps control erosion, river and stream pollution, and can recharge depleted groundwater resources.
7. **Promote Alternative Modes of Travel:** Walking and bicycling are examples of alternative modes of travel and can be promoted through the design of high quality streets with adequate sidewalks and bicycle lanes. Alternative modes of travel can help reduce automobile congestion, pollution and improve public health.

ii. Site Landscaping

- a. Landscaping, as a percentage of the total site area, should be maximized to increase the total amount of water consumed by plants and minimize the total amount of water runoff.
- b. Native plant materials should be used wherever possible. Naturalistic plantings should be provided at the interface of parking areas with adjacent watercourses and natural heritage areas.
- c. Existing significant trees, tree stands, and vegetation should be protected and incorporated into site design and landscaping.
- d. Landscape design should incorporate a wide range of strategies to minimize water consumption, e.g. native species, use of mulches and compost, alternatives to grass, rainwater collection systems.

- e. The width of all planting beds should be at least 2.5 m wide to enable plant material to be massed to create a healthy and sustainable landscape.
- f. Impervious areas directly connected to the storm drain system are the greatest contributor to storm water pollution. Breaks in such areas, by means of landscaping or other permeable surfaces should be provided to allow absorption into the soil and avoidance or minimization of discharge into the storm drain system.
- g. The distribution of outdoor lighting should be controlled according to outdoor lighting design recommendations of the Royal Astronomical Society of Canada and COP to minimize light pollution and maintain a dark, night sky.

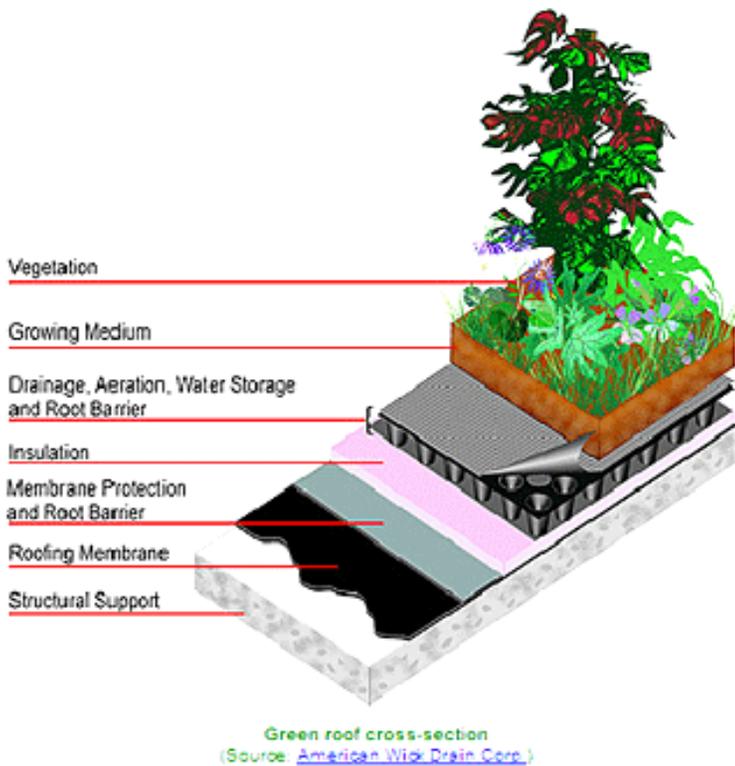
iii. **New Building Design**

- a. New buildings are encouraged to be designed to meet Energy Star standards.
- b. In the alternative to meeting Energy Star, new housing is encouraged to meet the following standards:
 1. Mechanicals and included appliances
 - All mechanical systems and included appliances should be Energy Star qualified
 2. Water Heating
 - High efficiency boiler or tankless water heater
 - HW runs below 20' in one storey units and 30' in two storey units.
 3. Windows and Doors
 - All windows, patio doors and skylights should be Energy Star qualified and/or at a minimum, be thermal paned units with low-e, argon filled
 - All exterior doors should be urethane core insulated or equivalent

4. Insulation Recommended Minimums
 - Heated ceilings with attic:
 - Roof s with an R-value greater than R-50 are encouraged
 - All truss roofs with blown insulation should have a raised heel height sufficient to allow specified R-value
 - Exterior walls with an R-value greater than 25 are encouraged
 - Basement walls, R-20 full height interior or R-12.5 full height exterior are encouraged
 - Slab without in-floor heating: R-10 perimeter insulation if less than 2' below grade are encouraged
 - Slab with in-floor heating: R-10 full slab are encouraged
 - Exposed floors: R-32 are encouraged
5. Air Leakage
 - Less than 2 square inches per 100 square feet as tested by CGSB blower door method is recommended
6. Ducts
 - Basement ductwork should be sealed/taped
7. Roofing
 - Material with a minimum warranty of 30 years encouraged
8. VOCs
 - All interior paint, finishes and flooring are encouraged to be low VOC or no VOC
9. Water Use
 - Toilets, shower heads and faucets are encouraged to be low-flow
 - The capture and use of roof run-off is encouraged
10. Passive solar design as laid out in *section vi* [p.58] is encouraged

- c. New developments are encouraged to seek LEED or Green Globes certification. LEED and Green Globes certification distinguishes building projects that have demonstrated a commitment to sustainability by meeting higher performance standards in environmental responsibility and energy efficiency.
- d. Building construction and operation methods should aim at reducing dependence on non-renewable resources by using appropriate recycled materials and by promoting adaptive reuse of existing structures. Embodied energy should be reduced by promoting selection of locally manufactured or fabricated products and materials.
- e. Building flexibility should be maximized to satisfy the varied demands of current and future users.
- f. Renewable energy systems should be considered to power on-site light standards and to supplement building power requirements.
- g. Innovative wastewater treatment, strategies are encouraged.
- h. Natural ventilation systems should be considered as an alternative means to air conditioning through the promotion of passive convection cooling and ventilation.
- i. Efficient lighting equipment should be used and unnecessary lighting of occupied space should be eliminated by using room and task light switches, occupancy sensors and photocells as energy efficient occupant controls.
- j. Green roofs should be developed to minimize water runoff and improve building insulation. Roof design should also incorporate daylighting to reduce dependence on internal artificial lighting.





iv. Adaptive Re-Use & Recycling

An effective means of achieving objectives for environmental sustainability in the 'private realm' is to reduce the dependence on new materials. This may be carried out by the re-use of existing materials or by updating existing buildings. When feasible, this is often a better environmental option than demolition and recycling, and helps preserve the history of the neighbourhood. However, the energy consumption of existing buildings should be carefully considered when

assessing the environmental merits of a project.

Methods to re-use and recycle:

- a. Materials salvaged from demolition should be used in new building design, avoiding the waste and pollution of new production.
- b. If there are no salvageable materials available from an existing development site, they should be purchased directly from building demolition sales, from salvage contractors and used materials dealers.
- c. Many new and established construction products made with reprocessed waste materials are available for specification on new projects. Construction materials containing post-consumer waste or recovered materials have the greatest recycling merit and should be used where feasible.
- d. The annual energy consumption of existing buildings should be measured. Upgrading should be undertaken to existing buildings so that energy and thermal performance is comparable to new buildings. Note that buildings with heritage value were often well designed for natural ventilation, cooling and solar control.
- e. Retaining high value historic architectural features should be considered – unique facades, fixtures, etc. – to preserve historic context and reduce environmental and resource impacts of new construction.

v. Water Runoff

Buildings

- a. Multi-storey development is preferred over single storey buildings with the same total floor area, to reduce the building footprint and maximize permeable surfaces.

- b. Roof drainage should flow, in part or fully, into landscaped areas on site where lot size and soil conditions are adequate to absorb such runoff. Several downspouts should be provided to better distribute rain run off into various areas of the adjacent landscape. Downspouts should be directed to the front or rear yards to avoid impacts on abutting properties.

Surface Areas

- c. Paved areas, such as surface parking, should be minimized wherever possible in order to maximize permeable surfaces that absorb and biodegrade certain toxins. This will also reduce the volume of runoff into the storm drainage system.
- d. Streets, driveways and parking areas should be as small as possible within allowable standards.
- e. Parking areas should drain into vegetative or grassy swales that are incorporated into large common landscaped areas within a project or perimeter landscaping.
- f. Driveways, where possible, should drain into adjacent on-site landscaped areas.
- g. Bioswales should be created next to parking lots and walkways to collect stormwater runoff to minimize the dependency on stormwater sewers. Bioswales should be planted with salt-tolerant shrubs and grasses to filter water before it percolates into the ground. They should be graded to direct water away from paved areas.
- h. Drainage basins should be located throughout parking lots to collect stormwater. These basins should be planted with native plant materials that thrive in wet conditions.
- i. A well-drained snow storage area should be provided in

a location that enables melting snow to leach into drainage courses and storm drain inlets to prevent toxic materials from being washed into streams.

vi. Orientation and Passive Solar Orientation

- a. All housing should face adjacent streets and open spaces. Rear lotting should not be permitted unless it is required to achieve a reasonable design objective (such as to limit access to environmentally sensitive open space).
- b. Dwellings on corner and rear exposed lots should be designed so both exposed façades are oriented towards the street. At these locations, building elements and design should emphasize their visibility and potential role as landmark or orienting structures within the community.

c. Passive Solar Orientation

Passive solar design offers free energy with next to no maintenance. Dwellings should be oriented and designed to take advantage of passive solar heating and shading whenever possible, but for no less than 70% of new units in a development.

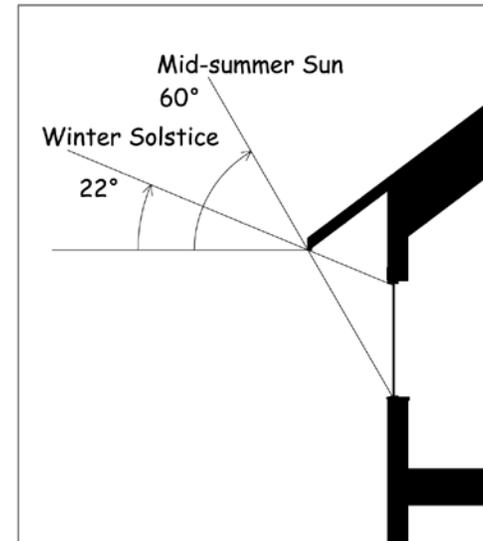
- Rule of thumb for achieving a passive solar home include:
 - The building should be elongated on an east-west axis.
 - The building's south face (within 15 degrees of south) should receive sunlight between the hours of 9:00 A.M. and 3:00 P.M. (sun time) during the heating season.
 - Interior spaces requiring the most light and heating and cooling should be along the south face of the building. Less used spaces should be located on the north.

- An open floor plan optimizes passive system operation.
- Window sizes and locations should add up to the totals in the following chart, calculated as a percentage of total floor area per floor level. The area of south-glazing depends crucially on the amount of thermal mass (which moderates the internal temperature by absorbing heat during the day and releasing it at night inside the thermal envelope.). To avoid overheating in a conventional house, i.e. a house without additional thermal mass, direct gain (south-facing windows) should not exceed 7% of floor area.

Recommended Net Glazing (Window) Areas:

Wall Orientation	Percent of total floor area
East	4
North	4
West	2
South	7-12 (depending on whether additional thermal mass is present. See later sections)

- A minimum of 75% of south facing windows should be shaded on the exterior to prevent summer sun entering the interior.
- All west facing windows beyond the recommended 2% should be shaded externally in the summer (deciduous trees work well for low sun angles)
- Thermal mass must be placed inside the thermal envelope to function as heat storage. The simplest rule of thumb is that thermal mass area should have an area of 6-8 times the



(uncovered) surface area of the direct gain glass area. Thermal mass effectiveness increases proportionally to thickness up to about 4 inches. After that, effectiveness doesn't increase as significantly.

Wall and ceiling thermal mass surfaces should be light-coloured, while floors should be dark.

- d. To achieve optimal solar orientation, streets should be oriented within 30 degrees of true east-west axis.
- e. New buildings should not be located so as to result in substantial shading of existing adjacent private or public open spaces that presently have substantial sun exposure.

Landscape plans should use deciduous street trees and on-site trees where these trees will grow to shade windows of residential structures. Such trees provide shade and help reduce temperatures inside adjacent units during the warmer

months and shed their leaves to allow sunlight and better heat penetration during cooler months.

v. Further Reading

Municipal Response Guide for Landscaping
<http://www.ene.gov.on.ca/envision/gp/3760e.pdf>

Composting
<http://www.rco.on.ca/composting.htm>
Build.Recycle.Net
<http://build.recycle.net/trade/rs196726.html>

Environmental Impacts of Road Salt and Alternatives
http://www.forester.net/sw_0107_environmental.html

Alternative Winter Maintenance
http://www.plantops.umich.edu/grounds/winter_alternatives.html

Canada Green Building Council
<http://www.caqbc.org>