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Introduction

Background
This User Guide has been produced as part of the Heart and Stroke Foundation’s, Region of Peel’s and City of Toronto’s commitment to healthy, active communities and design quality in the Region of Peel. This document is complementary to the Health Background Study (HBS) Terms of Reference, and is part of the toolkit to assess the health impacts of development proposals.

This User Guide is intended to be used by anyone who has a role in the planning, design and approval of development, including built environment professionals, key stakeholders (including financiers), the municipality and community.

What is a Health Background Study (HBS)?
The HBS is intended to serve as a ‘checklist’ to evaluate the success of new developments in achieving minimum standards of community health and a forum to encourage applicants to justify their development decisions.

The HBS should not be applied alone as a means for approving or rejecting private development proposals, but rather as an informative tool in the application evaluation process. Further, the HBS is intended to work with existing provincial, regional and local planning policies, regulations and standards, with which all developments should comply.

The Core Elements
There are many factors that influence the health of a community. The HBS reflects six of the seven inter-related Core Elements as identified through the research and design of the Peel Healthy Development Index, which include:

- Density
- Service Proximity
- Land Use Mix
- Street Connectivity
- Streetscape Characteristics
- Parking

* The seventh Core Element, Aesthetics and Human Scale, has been excluded due to its overlap with existing urban design policies and guidelines.

What is healthy development?
The concept of healthy communities is intrinsically tied to the Provincial planning policy’s promotion of complete communities. Complete communities meet people’s needs for daily living by providing convenient access to an appropriate mix of jobs, local services, a full range of housing, opportunities for aging in place, and accessible community infrastructure including schools, recreation and open space for their residents. Convenient access to public transportation and options for safe, non-motorized travel is also a key part of complete communities.
The standards outlined in this User Guide for each core element have further been shaped by the expert opinions of planners and urban designers.

All six elements are interdependent and work together to promote healthy, walkable communities. Achieving one or two elements within a development is not sufficient and will not satisfy the goal of creating complete, active communities. For example, a development that achieves higher densities without service proximity or land use mix will lack opportunities for walking and cycling, and will promote the same type of automobile dependence as traditional development. Conversely, service proximity and land use mix are difficult to achieve without appropriate development densities. On the streets, a development that provides a good level of street connectivity but lacks an inviting and safe streetscape for walking and cycling will also fail to achieve the Region of Peel’s goal of creating healthy communities.

Scope and Applicability
The HBS and this User Guide are relevant to all aspects of the built environment, including the design of buildings and spaces, landscapes and transport systems. These documents have implications for planning and development of every land use, scale and location, including greenfield and infill developments. In the process of completing the HBS the Core Elements are evaluated separately, however it is recognized that overlap occurs between elements and that all Core Elements should be considered holistically when evaluating a development proposal. Consider the overarching question “How is this contributing to healthy communities” when completing a HBS.

Scale and Location of Development
The applicability of the Standards will vary depending on the scale and location of development, and as such the applicability of each Standard to either greenfield or infill development, or both, is indicated throughout the User Guide with the following icons:

- Greenfield Development
- Infill Development
- Greenfield and Infill Development

Most Standards can be applied to both greenfield and infill development, and that is because the applicability of each Standard is ultimately determined by the scale of development - not the location. While infill development is usually of a smaller scale than greenfield development, the User Guide recognizes that some infill developments can be large enough to warrant the provision of a broader range of densities, infrastructure, services, land uses, and amenities. Proximity to existing services beyond the development site is also important to evaluate when assessing the merits of infill development.

The Planning & Development Approvals Process
The HBS and its Standards are applicable throughout the various stages of the planning and development approvals process, including the Secondary Plan, Draft Plan, Block Plan and/or Site Plan.

The achievement of some Standards can be assessed at a higher level of planning, such as in the Secondary Plan. For example, Standards for Density and Street Connectivity can be applied and evaluated at this level. The Secondary Plan also establishes the policies for more detailed Standards for Core Elements such as Service Proximity, Land Use Mix, Streetscape Characteristics and Parking that are further outlined and evaluated at subsequent levels of approval, including the Draft Plan, Block Plan and/or Site Plan.

A table indicating where in the planning and development approval process each HBS Standard applies is provided in the Appendix of this User Guide. This table has been developed to assist developers, municipal staff, and others involved in the planning and development process in completing the HBS.

Local Implementation & Supporting Policies
It is at the discretion of the local municipality to determine the applicability of each HBS Standard and the precise evaluation parameters for a specific development proposal. Evaluation parameters will recognize challenges and opportunities posed by the natural environment, economics, and logistics. This assessment will occur during the development pre-application phase.

Participating municipalities will also continue to update their Official Plan policies and other land use/development policies to reflect the important linkage between community design and community health to ensure that new development contributes to the achievement of key health objectives as the understanding of this linkage evolves over time.

The evaluation of a development proposal based on specific Standards may vary depending on the overriding planning policies in place at the time the development application is made. The Terms of Reference and User Guide may be updated periodically to reflect changes in the policies and standards.

The User Guide
The aim of the User Guide is to support the HBS Terms of Reference by giving additional information corresponding to each of the key healthy community design elements that promote higher development standards for practical application in new development and re-development within existing communities.
The User Guide also aims to equip individuals involved in the development process with the knowledge and tools to meaningfully review development proposals based on healthy development criteria, and allow both development applicants and reviewers to respond to the unique issues and opportunities of the site.

How to use this User Guide
This User Guide is divided into six main sections that correspond with the six Core Elements of Density, Service Proximity, Land Use Mix, Street Connectivity, Streetscape Characteristics, and Parking.

Each section addresses the following, with regard to the specific Core Element:

- **What is it?**
  - Description of the Core Element.

- **Why does it matter?**
  - Why it is important from a community health perspective.

- **What does it look like?**
  - How the desired form of the Element can be achieved.

- **Standards**
  - Minimum standards for development, as identified in the Health Background Study Terms of Reference.

- **Resources**
  - Additional resources on design or policy guidance and standards.

The text is supported by precedent images to help the end user visualize what each Core Element is referring to, and what it looks like in practice. The images are examples only, and each development should respond to its local context.

To assist developers in achieving the minimum standards in their proposed developments, the Core Element sections are followed by two checklists:

- **Key Questions**
  - Questions that the applicant should consider in planning their proposed development. These questions are intended to initiate dialogue within the development team and with the municipality on strategies/approaches to meet desired outcomes.

- **Reporting Requirements**
  - Description of the minimum reporting requirements to demonstrate achievement of the Standards.

Finally, proponents who are completing a HBS, (and the staff responsible for evaluating the development proposal and HBS), should refer to the table in the Appendix of the User Guide, which indicates where in the planning and development approvals process each Standard applies.

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**Why does healthy development matter?**
Healthy development in the form of complete communities is associated with desirable health outcomes, such as increased rates of physical activity and reduced rates obesity and asthma. Complete communities contribute to the achievement of these health outcomes by making walking, cycling and public transit feasible and attractive modes of transportation, which makes it easier for people to reduce their automobile dependence and associated emissions that contribute to poor air quality and smog. Active and complete communities also provide opportunities for social interaction, which can reduce rates of mental illness, particularly among seniors and other groups who are susceptible to social isolation.

Complete communities also produce a more compact urban form that makes more efficient use of natural resources and supports sustainable initiatives related to health promotion, such as reduced greenhouse gas emissions, preservation of local agricultural land, and protection of source water. Undoubtedly, a healthy environment can better support a healthy population.

Compact, complete communities are good for public health and the environment, and they make economic sense, too. Building complete communities that support a range of transportation options and are inherently more compact leads to cost savings in at least three areas:

- infrastructure (sewers, roads)
- health care (obesity, diabetes), and
- traffic congestion.

The financial burden of all three are carried by government and tax payers - which means everyone can benefit from cost reductions. And the potential savings are substantial. The Organization for Economic Cooperation and Development (OECD) estimated in 2010 that traffic congestion costs the Toronto region $3.3 billion annually in lost productivity. Meanwhile, the Ontario Medical Association estimated in 2003 that short-term exposure to smog-related air pollution cost the province $465.2 million in direct hospital costs for that year alone. The health care costs only rise when diabetes and other illness related to obesity are factored into the equation. Given the economic and non-economic costs of un-healthy development, the need for healthy development is clear and urgent.
The Core Elements

1. Density
2. Service Proximity
3. Land Use Mix
4. Street Connectivity
5. Streetscape Characteristics
6. Parking
What is density?

Development density refers to the number of people, dwelling units, and/or jobs that will be accommodated in a specific area (e.g., 50 people and jobs combined per hectare).

Density can be calculated on either a gross or net basis. Gross density includes infrastructure, such as streets and parks, in the overall density measurement, whereas net density only includes the land area within a development parcel (e.g., the land directly occupied by the structure and its private outdoor amenities). Gross density provides a more complete measure of how efficiently land is used across an entire community or urban area.

In some instances, the density of mixed-use and non-residential uses is measured by the Floor Area Ratio (FAR) or Floor Space Index (FSI), where the gross area of a building is divided by the area of its development lot.

Why does density matter?

Higher development densities create demand and support for a broader variety of services, employment opportunities, transit and other community destinations/facilities within a closer distance. Increasing the number of destinations in a community creates opportunities for active transportation (walking, bicycling, etc.), which is a key component of creating healthier places to live. Higher densities also allow for a more efficient use of resources, which supports sustainable initiatives related to health promotion, such as reduced emissions from buildings and cars.

What does density look like?

Higher density development can take on a variety of forms depending on the context, and is achieved using a number of approaches that all result in a more compact use of land, including:

- Reduced lot sizes, frontages and setbacks
- Efficient lot configuration
- Increased site coverage of buildings
- A mix of higher-density structure types (stacked row houses, multi-plexes, apartment buildings, etc.)
- Reduced parking supply and the introduction of structured and/or on-street parking
- A compact street network, achieved through layout and reduced right-of-way dimensions (in terms of the number of traffic lanes, the width of traffic lanes and/or the boulevard).
Greenfield development provides ample opportunity to achieve higher densities because the developer is starting with a clean slate. In this context, there is more flexibility for determining the location and form of hierarchical density distribution. Development in greenfield areas should always recognize and promote patterns that encourage complete communities, and support for transit.

The density of existing neighbourhoods can be increased through infill developments on vacant or underutilized sites, and through the adaptive reuse of, and/or additions to existing buildings. Infill development is generally greater in scale and density than existing development, while maintaining compatibility with existing adjacent conditions, and ideally enhancing the streetscape and other public realm elements.

Density Standards
The density standards articulated in the Terms of Reference are derived from the density targets established by Places to Grow: The Growth Plan for the Greater Golden Horseshoe, 2006 (The Growth Plan). The Growth Plan establishes overall density targets for Designated Greenfield Areas and Urban Growth Centres (intended as high density, mixed use, transit supportive nodes).

1. All development on Designated Greenfield Areas shall achieve a minimum overall density target of 50 people and jobs per hectare.

2. All development in designated Urban Growth Centres in the Region of Peel (including Downtown Brampton and Mississauga City Centre) shall achieve a minimum overall density target of 200 people and jobs per hectare.

3. Notwithstanding the above standards, where the local municipality has established higher density targets than those established by The Growth Plan, the higher density target should apply.

Resources


Ontario Ministry of Infrastructure. Intensification Visualizations. Available online at: https://www.placetogrow.ca

What is service proximity?
Service proximity refers to the distance between where people live and where they can access three types of services: public transit, neighbourhood community and retail services, and employment.

Public transit includes low-order transit (which operates in mixed traffic), and high-order transit (that is separated from other traffic). Neighbourhood community and retail uses include facilities for childcare, long-term care, social services, community gardens, hospitals or health clinics, public libraries, places of worship, cultural spaces, post offices, and park or recreation centres. Employment refers to employment areas, characterized by a concentration of jobs.

Service proximity is calculated as a percentage of the population located within a specified distance of a service item.

Why does service proximity matter?
Service and employment proximity affect the travel distance between daily destinations (such as home and work) – and travel distance has a strong influence on whether people choose to walk or bicycle, rather than drive a car. Like other elements that encourage people to replace car trips with walking and bicycling, service proximity provides the benefits of increased physical activity, improved mental health through greater community interaction, and reduced greenhouse gas emissions. Service proximity also makes the community more equitable and inclusive for those who cannot drive (especially children and seniors).

Service Proximity Standards
The goal of the standards for service proximity is to achieve a reasonable cluster of key services and employment opportunities to residences and transport nodes, based on walking distance. While some people are willing to walk long distances, setting maximum distances ensures that a high incentive to walk is maintained through all seasons and weather conditions, and across a reasonable range of physical abilities. Distances are to be calculated based on the shortest potential walking path of a pedestrian (network distance), as opposed to a straight line (Euclidean distance or ‘as the crow flies’).

The applicability of the following standards varies for greenfield versus infill development. All greenfield development should meet these standards, while infill development should strive to contribute to the achievement of these standards in existing communities (e.g. by incorporating services into the redevelopment), or by locating in proximity to existing services/residences, as applicable, to enhance service proximity.

Mississauga’s Downtown21 plan includes residential, employment, institutional, commercial, and community uses in proximity to each other.

The planned Mayfield West community in Caledon features housing, a school, community parks, a seniors centre site, and greenway corridor and open space features within a 5-minute walking distance from each other.

A low-order transit route with stops in a residential neighbourhood provides an alternative mode of travel, and improves mobility for those who cannot or do not drive.
Transit

4. The distance between at least 50% of the projected population of the development and a low-order transit stop shall be no more than 200 m. The transit service proposed should provide a direct route to a Regional Urban Node, Intensification Corridor, or smaller higher-density, mixed-use transit supportive activity centre with a maximum transit trip of 30 minutes.

5. Where a high-order transit route bisects the development area, 75% of the projected population should be within 400 m of it.

6. Ensure design quality of both transit stops and the journey to the stop. Transit stops should, where appropriate, provide shelter from the sun and inclement weather and seating. High-order transit stops/stations should also include secure bicycle parking facilities.

Neighbourhood Community and Retail Services

7. The distance between at least 75% of the projected population and three or more of the following amenities and services must be no more than 800 m:

Childcare facility, community garden, park, hospital or health clinic, public library, places of worship, adult/senior care facility, social service facility, performance or cultural space, post office or recreation centre. (Multiple services of the same type may be counted.)

8. The distance between at least 25% of the projected population and a minimum of 5,000 m2 of mixed service commercial and retail space shall be no more than 800 m.

9. The distance between at least 75% of the projected population and a minimum of 150 m2 of mixed service commercial retail space shall be no more than 800 m.

10. The distance between at least 90% of the projected population and a playing field, park, square or natural open space should be no more than 400 m.

11. The distance between 100% of the projected population and a planned elementary school shall be no more than 1.2 km.

12. The distance between 100% of the projected population and a planned secondary school shall be no more than 2.4 km.

13. Where appropriate, a new community should provide service, commercial and retail facilities that can be used by adjacent communities.

14. Access to drug and grocery stores should be encouraged.

15. In key locations convenience commercial uses are permitted throughout residential designations.

Employment

16. The development should be within reasonable proximity to an existing or planned employment centre or urban centre. Specifically, the distance should be no more than 10 km.

Resources


**Land Use Mix**

*Complete communities provide housing options and a mix of services for a diversity of people as their needs change throughout the life cycle.*

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**What is land use mix?**

Land use mix refers to the composition of housing types, services, and employment in an area. Housing types include single-detached, semi-detached and duplex homes; town houses and multiplexes; and higher-density structures such as apartment buildings and condominiums. Common non-residential land uses provide services and employment in a community, and include commercial, institutional, parks/open space, and “mixed use” (where both non-residential and residential uses are included in an area or on a site).

**Why does land use mix matter?**

Providing a range of housing options creates more equitable communities and allows residents to remain within their community regardless of their changing needs, whether they live alone, as a couple, a family, with or without children, or as seniors. Proximity of housing options allows extended families of all kinds to remain close, which can improve mental health outcomes and prevent social isolation, especially for seniors.

Providing a range and mix of land uses (such as employment, institutional, residential, etc.) within a community, as well as within buildings themselves, also facilitates walking and cycling as viable modes of transportation, supports a more compact and efficient urban form, and creates the necessary demand to support public transit. In contrast, vast tracts of segregated land uses (such as single-family homes) create obstacles to walking, cycling and public transit, and can negatively affect the affordability and inclusiveness of a community.

**Land Use Mix Standards**

There is no “ideal” proportion for each type of land use for health. Recognizing that land use mix is closely associated with service proximity and density, the standards here are meant to compliment the standards assigned to the former elements. In general, the objective of the land use mix element and standards is to promote a broad mix of land uses that are conveniently sited and connected by safe and comfortable routes to residential areas that provide a variety of housing options. These standards apply uniformly to greenfield and infill development.
17. Where the scale of the residential community is large enough, a range of uses should be provided, as follows:

- for communities of 5,000 people or more, provide neighbourhood-scale retail and services (such as corner stores, elementary school, library, etc.)
- for communities of 10,000 people or more, provide a full-range of uses, including larger-scale retail, services, and employment opportunities.

18. Where the scale of employment lands is large enough, small scale commercial retail and services should be encouraged, where appropriate.

19. Where the scale of the community permits, it should include dwelling structures from all three of the following housing type groups, with no group making up more than 50% or fewer than 10% of total units:

i. Single detached, semi-detached, and duplex

ii. Townhouses and multiplex

iii. Apartment building

20. Special housing types, such as group homes or seniors’ residences, should be encouraged.

21. Secondary suites should be encouraged where appropriate.

22. Live-work units should be encouraged where appropriate.

23. Site design of auto-oriented developments, such as uses which include drive through facilities, gas bars and related uses shall make pedestrian access a priority and contribute to high quality public realm and streetscapes.

24. The location of retail uses on the ground floor of multi-unit and mixed use buildings should be encouraged.

Resources


City of Surrey. (2009). Housing Types and Land Use: Handout.
Street Connectivity

What is street connectivity?
Street connectivity refers to the directness of travel and the number of route options between any two destinations.

Different street patterns (such as grid, loop, cul-de-sac, and innovative patterns such as the fused grid concept1) provide varying levels of street connectivity, depending on the size of blocks and the connection of the street network to green spaces and multi-use paths. Street connectivity is particularly relevant for active modes of transportation, which are more sensitive to route distance and directness.

Why does street connectivity matter?
Creating communities with high street connectivity reduces route distances, promotes active transportation by increasing route options and convenience, and dissipates vehicular traffic throughout the network. When a dense grid/connector network is achieved, pedestrians in particular have access to the greatest freedom of movement and the most direct routes to their destinations. Conversely, a lack of street connectivity can significantly increase walking and cycling distance, which decreases the likelihood of residents choosing these active modes of travel over the car.

What does street connectivity look like?
Because every site is different there is no standard formula for achieving high street connectivity, although it is characterized by smaller block sizes and the avoidance of certain street types (i.e. cul-de-sacs). In general, the street network should, wherever practicable, make it as easy and attractive to walk, cycle or take the bus, as it is to travel by car.

Both greenfield and infill development can provide good access and connections through higher levels of street connectivity. Intensification projects can considerably improve street connectivity by eliminating superblocks and enhancing permeability with new roads, small laneways, pedestrian cut-throughs, or indoor arcades. Where the ability of an infill development to influence street connectivity is limited, the development should still strive to improve the street environment for pedestrians through design details.

Greenfield development has the benefit of working without the constraints of an existing street network to achieve a high-level of street connectivity. This type of development provides the opportunity to implement street patterns that are recognized for their high level of street connectivity, or experiment with emerging street patterns that achieve the same goals.

**Street Connectivity Standards**

The objective of the following minimum standards is to promote a highly connected network of streets and active transit nodes to support opportunities for walking and cycling.

25. Infill development should identify opportunities to increase street connectivity.

26. Street networks and off-road paths in greenfields should always:
   - provide the maximum choice for how people will make trips;
   - take full account of the kinds of movement a development will generate; and
   - make clear connections to existing routes and facilities.

27. Cul-de-sacs are not permitted unless required for technical reasons.

28. Crescent streets, reverse frontage lots, and loop roads must not constitute more than 20% of total street frontage and should be discouraged.

29. Blocks in the proposed development must not exceed 80 m x 150 m in size. Exceptions are made for blocks consisting solely of Parkland or of Employment uses.

30. Intersections should be frequent, with street blocks decreasing in size as density increases.

31. Sidewalks, bike lanes and multi-use paths should connect to street networks, major destinations and transport nodes.

**Resources**


Streetscape Characteristics

What are streetscape characteristics?

Streetscape characteristics include facilities for pedestrians, cyclists, and transit users along the public right of way. These characteristics include the sidewalk, bikeways, street furniture, intersection treatments, shading, lighting, wayfinding, and traffic calming measures. While walking and cycling may be possible without these specific amenities, a certain level of comfort and prioritization through design will create inviting public spaces and prevent injuries.

Why does streetscape matter?

A well-designed streetscape improves the safety, comfort and convenience of traveling by foot or bike and makes public spaces more inviting. Like other elements that promote walking and cycling, the streetscape can promote increased physical activity, community interaction and accessibility, while reducing the incidence of crime and traffic-related pedestrian and cycling injuries and fatalities.

Streetscape Standards

The following streetscape standards apply to street, intersection and sidewalk design and are intended to promote active transportation, prevent traffic-related injuries, and make communities more attractive and accessible to people of all ages and abilities. These standards apply uniformly to greenfield and infill development where the scale of the development permits.

Sidewalk Amenities

32. All streets must have sidewalks on each side that are at least 1.5 m wide in low-density residential areas, and at least 2 m wide in medium-density residential neighbourhoods, high-density residential neighbourhoods, mixed use areas, and commercial areas.

33. A variety of street trees that are hardy, resilient, and low maintenance should be planted at regular intervals (as specified by the municipality) adjacent to all streets.

34. Transit shelters and other street furniture should be provided, especially on major pedestrian routes. Other street furniture may include benches, waste receptacles, newspaper outlets, community information boards, water fountains, public washrooms, bicycle parking, and bicycle sharing system components.
Cycling Amenities

35. A connected and destination-oriented bikeway network should be provided throughout the community, including a variety of on- and off-street bikeway facilities that provide an appropriate degree of separation from motorized traffic, given the speed and volume of traffic on the street. These on-street bikeway facilities may include (but are not limited to) bicycle lanes, cycle tracks, sharrows, signed routes, bicycle boulevards, and multi-use paths on the boulevard.

Where there is a local Bicycle Plan, the bikeway network proposed in the Plan should be implemented in the development area, and opportunities to enhance or connect to the proposed bikeway network should be identified.

36. At a minimum, 100% of the population shall be within 150 m of a continuous and connected bikeway facility.

Traffic Calming

38. In greenfield development, or where new streets are introduced through infill development, traffic calming will be achieved on neighbourhood streets by using:

- Minimum traffic lane widths
- Minimum number of traffic lanes in the roadway
- Pedestrian-priority streets, woonerfs or home-zones (speed limit under 15 km/hr, vehicles must yield to pedestrians and cyclists)

39. Through infill development, traffic calming should be achieved on existing neighbourhood streets by using any of, but not limited to, the following elements:

- Reduced/minimum traffic lane width
- Reduced/minimum number of traffic lanes in the roadway
- Pedestrian-priority streets, woonerfs or home-zones (speed limit under 15 km/hr, vehicles must yield to pedestrians and cyclists)
- Speed humps
- Bollards (short vertical posts)
- Channelization islands (raised islands that force traffic to turn in a particular direction)
- Chicane (curb bulges or planters or alternating sides, forcing motorists to slow down)
- Choker (raised islands in parking zones that narrow a roadway)
- Curb extension, planter, or centerline traffic island that narrows traffic lanes
- Horizontal shift (a lane centerline that curves or shifts)
- Rumble or warning strip
- Semi-diverter or partial closure (restricts entry and limits traffic flow at intersections)
- Signal timing to reduce traffic speeds
- Radar trailer that shows drivers their current speed and the posted speed limit
- Traffic circles or roundabouts
- Speed table

40. While increasing comfort and safety for pedestrians, the design of traffic calming elements should not create undue hazards or obstacles for cyclists.
Lighting

41. All mixed-use streets must have an average luminance of 10 lux, with a minimum of 5 lux.

42. Pedestrian-level street lamps of 4.6 m in height or less, spaced apart no more than 30 m, must be provided on all streets.

Wayfinding

43. A wayfinding system should be implemented on a community-wide basis to allow residents and visitors to determine their location; identify key destinations (parks, transit stations, community and cultural facilities, shopping centres, off road trails); and develop a plan to take them from their location to desired destination by walking or cycling. The wayfinding system may include maps, directional signs or other elements, and should be useful and easy to understand.

Resources


City of Brampton. (2002). Brampton’s Pathways Master Plan.
What is parking?
Parking includes on and off-street storage for automobiles and bicycles. *Automobile parking* may be provided in the right of way (full-time or part-time), in surface lots or structures. *Bicycle parking* includes two categories of facilities: a) short-term facilities for visitors (such as outdoor bicycle racks), and b) secure long-term facilities for occupants (such as bicycle lockers or indoor bicycle rooms).

Parking requirements are generally expressed as the number of parking spaces per dwelling unit, number of employees, or GFA.

Why does parking matter?
*Automobile parking* is an important amenity to residents and businesses, but it can have a negative effect on proximity, density, and the aesthetic of the public realm. Abundant low-cost parking also provides little incentive for residents, employees and shoppers to use other means of transportation. Additionally, impermeable surface parking lots negatively impact water and air quality by contributing to stormwater run-off and the urban heat island effect.

*Bicycle parking* is also an important amenity to residents and businesses – but one that supports healthy communities. Unlike with *car parking* where there can be a problem with over-supply, *bicycle parking* is often in short supply, which creates a barrier to cycling for transportation. Logically, if there is nowhere to park your bicycle at work, school or the store, you are much less likely to travel there by bike. Providing *bicycle parking* with an appropriate level of weather-protection and security is a key part of promoting cycling for transportation.

Parking Standards
The objective of the parking standards is to discourage private automobile use and promote active modes of transportation, including walking, cycling and public transit. The standards seek to reduce the supply of *car parking* while increasing the supply of *bicycle parking*, to make more efficient use of *car parking*, and reduce its environmental and aesthetic impacts. These standards apply uniformly to *greenfield* and *infill development*. 

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Above, from top to bottom: In-street visitor bicycle parking (Image credit: APBP); covered visitor bicycle parking.
Below, from left to right: Reserved car share parking space; structured car parking and bicycle racks on sidewalk. (Image credit: Google Streetview).
Automobile Parking

44. Reductions in parking requirements should be given to:
   • buildings and other facilities within 400 m of a transit stop; and
   • apartments/condominiums offering car share parking spaces (with each car share space equivalent to 10 regular spaces).

45. On-street parking should be included on all streets except where inappropriate for technical or safety reasons.

46. Efficient use of parking should be promoted by identifying systems for sharing parking spaces by two or more user groups at different times of the day or week (for example, office staff during weekdays and restaurant clientele in the evenings and on weekends), and by providing preferential parking for carpool vehicles.

47. Where available, economic incentives should be identified and utilized to provide structured parking, rather than surface parking.

48. Where surface parking is provided, it should be designed to minimize negative aesthetic and environmental impacts. This can be achieved by locating the parking lot away from the street frontage and by incorporating the following into the parking lot design:
   • Tree planting
   • Landscaping
   • Stormwater management
   • Porous/permeable surfaces
   • Light-coloured materials (rather than black asphalt)
   • Pedestrian access and circulation

Bicycle Parking

49. All new developments should meet or exceed the higher of:
   a) Local bicycle parking requirements (provided in local zoning by-laws, Bicycle Master Plans); or
   b) The minimum bicycle parking standards outlined in Table 1.

<table>
<thead>
<tr>
<th>Use</th>
<th>Minimum Spaces by Bicycle Parking Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Occupant/Employee*</td>
</tr>
<tr>
<td>Multi-unit Residential</td>
<td>0.7/unit</td>
</tr>
<tr>
<td>Retail, Services, &amp; Community Facilities</td>
<td>0.1/100 m²</td>
</tr>
<tr>
<td>General Office</td>
<td>0.15/100 m²</td>
</tr>
<tr>
<td>Medical Office</td>
<td>0.15/100 m²</td>
</tr>
<tr>
<td>Hospital</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>Elementary/Secondary School</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>Post-Secondary School</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>Other non-residential (e.g. Industrial)</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>High-order Transit Station</td>
<td>Complete a bicycle parking demand estimate for the station, for example using boardings, alightings and local bicycle mode share data.</td>
</tr>
</tbody>
</table>

*Occupant/Employee (a.k.a “long-term”) parking refers to secure, enclosed bicycle storage that is locked, weather protected and easily accessible to residents and/or workers. Signage indicating the location and information on use of these parking facilities should be provided.
**Visitor (a.k.a “short-term”) parking refers to outdoor, covered/uncovered bicycle racks.

Resources


All applicants should consider the following Key Questions in the planning and preparation of their proposed development. These questions are intended to initiate dialogue within the development team and within the municipality on strategies/approaches to meet desired built form and health outcomes.

The key questions are grouped according the Key Element they address. In addition, applicants and all members of the development team should ask one other question that applies to all Elements, that is, “Have the specific additional needs of vulnerable groups (i.e. the elderly, disabled and children) been considered”. The needs of vulnerable groups require special consideration to ensure communities are accessible and safe for everyone, regardless of their ability, income, or age. Special considerations will vary by Element, and may be related to improving accessibility, visibility, or the inclusiveness of local housing stock and services.

**Density**

1. What are the current density permissions for the subject lands?

2. Does the surrounding context reflect high quality and context-appropriate density? Should this context be emulated?

3. Is the density of the proposed development compatible with the surrounding context?

4. What areas of the site have the opportunity to increase density?

5. What are the current and projected number of residents and jobs, and how will this influence future transit and service provision?

6. Based on the proximity of employment opportunities, transit, schools and community services and facilities, will the density of the proposed development support walkable communities and complete streets?

**Land Use Mix**

1. What are the current zoning permissions and land use designations (Official Plan and Secondary Plan) for the subject lands?

2. Is there sufficient diversity of housing and unit types in the community to accommodate households of varying income, size and needs? Can the community accommodate a full life-cycle of housing needs for persons with varying physical abilities?

3. How can infill development contribute to ensuring a diversity of housing types?

4. How can a mix of uses be integrated into the development/redevelopment?

**Service Proximity**

1. What are the current zoning permissions, and land use designations (Secondary Plan and Official Plan) for the subject lands and their surroundings?

2. What is the existing service context of the subject lands? Are sufficient transit, employment and public and retail servicing available or planned?

3. Based on the proximity of employment opportunities, transit and community services and facilities, will the development support walkability and cycling access?

**Street Connectivity**

1. Does the proposed development have a sufficient density of intersections and sufficiently small block size to encourage active transportation?
2. How can infill development contribute to a higher level of street connectivity on the site and beyond?

3. How is the layout of parks and open spaces used to improve the directness and freedom of pedestrian and bicycle travel?

4. Has the proposed plan set out direct routes through a permeable and linked road and pedestrian network including trails, to ensure that short walking distances can be achieved?

**Streetscape Characteristics**

1. What are the municipally-designated standards for sidewalk and bicycle lane dimensions and design? What are the standards for other amenities?

2. Is there a local Bicycle/Walking/Active Transportation Plan? If yes, what bicycle or pedestrian facilities are designated or recommended within the development site?

3. Does the proposed community provide sufficient pedestrian and bicycle amenities to encourage active transportation?

4. How can intersections been designed to increase safety and comfort for pedestrians and cyclists?

5. Which neighbourhood streets should be targeted for traffic calming? How will traffic calming be achieved on these streets?

**Parking**

1. Is infrastructure for transit in place, and what is the level of transit service currently provided?

2. Is the automobile parking for the proposed development sufficient, or excessive, given the planned level of transit service, and pedestrian and cycling facilities?

3. Can automobile parking be provided more efficiently through an unbundled or shared system?

4. Has paid parking been considered to reflect the cost of providing parking?

5. How are the environmental and aesthetic impacts of surface parking being minimized or mitigated?

6. Is there sufficient visitor and occupant bicycle parking provided in the proposed development?
The following Reporting Requirements are to be fulfilled by the applicant in a way that demonstrates how the proposed development complies with the minimum standards established for each of the six elements.

**Density**

- **Greenfield Development** – Density calculations that demonstrate unit counts, the type of units and unit size (residential), gross floor area (non-residential), land area and achieved density in relation to Provincial policy.

- Redevelopment – Density calculations that demonstrate unit counts, the type of units and unit size (residential), gross floor area (non-residential), land area and achieved density in relation to existing development on the subject site or lands.

- A short written description of achieved density and how it complies with objectives and minimum standards.

**Service Proximity**

- Site plans demonstrating the location of residential units within the surrounding context, including: transit stops (indicating higher or lower order), community and retail services (indicating types and Gross Floor Area, respectively), parks, schools (indicating elementary or secondary), and employment or urban centres.

- A short written description of the achieved proximity, and how the development complies with the objectives and minimum standards.

**Land Use Mix**

- A count of proposed units and their types. A short written description of achieved mix and how the development complies with objectives and minimum standards.

**Street Connectivity**

- Site plans demonstrating the number of intersections and block sizes within the proposed development, and a brief summary showing how it complies with the requirements.

**Streetscape Characteristics**

- A detailed and integrated plan of the entire proposed community, demonstrating widths of sidewalks, bikeways, street tree planting, intersection treatments, traffic calming measures, pedestrian priority streets, bicycle amenities and pedestrian lighting fixtures (including illuminance level).

- A short written description of road and sidewalk characteristics and how the development complies with objectives and minimum standards.

**Parking**

- A plan showing the number and distribution of bicycle (visitor and occupant) and automobile parking (private and on-street), along with the proposed uses and Gross Floor Area (for industrial and commercial buildings) or number of residential units.

- The location of transit stops, to give context to numbers of bicycle and automobile parking spaces.

- A short written description explaining how the automobile parking supply is being minimized and used more efficiently.
Glossary

Affordable Housing
A) In the case of ownership housing, the least expensive of:

1. housing for which the purchase price results in annual accommodation costs which do not exceed 30 percent of gross annual household income for low and moderate income households; or
2. housing for which the purchase price is at least 10 percent below the average purchase price of a resale unit in the regional market area;

B) In the case of rental housing, the least expensive of:

1. a unit for which the rent does not exceed 30 percent of gross annual household income for low and moderate income households; or
2. a unit for which the rent is at or below the average market rent of a unit in the regional market area.
(Provincial Policy Statement, 2005)

Automobile Parking
Storage for cars on and off the street, including parking that is provided in the right of way (full-time or part-time), in surface lots or structures (above- or below-grade).

Bicycle Boulevards
Designated cycling routes on streets with low volumes and speeds that have been optimized for bicycle travel through treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. These treatments allow through movements for cyclists while discouraging similar through trips by non-local motorized traffic. Motor vehicle access to properties along the route is maintained.¹

Bicycle Box
An intersection safety device that uses pavement markings to designate a space for cyclists to wait in front of cars at a red light, and to proceed first when the light turns green. The purpose of a bike box is to increase the visibility of cyclists at signalized intersections, help cyclists complete left turns, and reduce conflicts between right-turning motorists and cyclists traveling straight through an intersection.

Bicycle Lane
A designated space in the roadway that is marked with a solid white line and a bicycle stencil. Bicycle lanes are a minimum of 1.5 metres wide and motorized vehicles are not permitted to stand, park or drive in bicycle lanes.

Bicycle Parking
Storage facilities for bicycles, which fall into two categories: visitor (a.k.a short-term) and occupant (a.k.a long-term) bicycle parking.

Visitor bicycle parking includes bicycle racks in an easily accessible location that are available for public use and may either be sheltered or unsheltered. Visitor parking is meant for bicycles that will be parked for about two to three hours at a time, and can be provided on public or private land, along building frontages, on the sidewalk and in the street.

Occupant bicycle parking is meant for occupants (residents, employees) and provides a higher level of security and weather protection for bicycles that are left for longer than two or three hours at a time. Occupant bicycle parking is secure and enclosed, with controlled access. Examples include bicycle lockers, bicycle cages, and indoor bicycle rooms.

Bicycle Sharing
Bicycle sharing is an extension of the public transit system, and refers to an organized system of providing a network of bicycles throughout an urban area to the public for rental for short periods of time (e.g. half an hour). Although bicycle sharing systems vary in size, there are minimum thresholds for success in terms of network density and coverage. Bicycle sharing may also be referred to as “public bikes”.

Smaller “employee bike share” programs also exist, but these differ in that they are not network-based, and are provided for free to a specified group of users.

**Bikeway Facility**

_Bikeway facility_ refers to designated _bicycle lanes_, _cycle tracks_, _bicycle boulevards_, _sharrows_, _signed routes_, _off-road trails/multi-use paths_, or other types of infrastructure designed for the movement of cyclists. (A local road may be considered a _bikeway facility_ if it is continuous, with protected crossings at higher-order roadway intersections, and if it connects to other _bikeway facilities_ or destinations.)

**Bikeway Network**

A _Bikeway Network_ consists of on and off-street bicycle facilities (_bicycle lanes_, _signed routes_, _off-road trails_, etc.) that are connected, continuous, direct, comfortable and destination-oriented. The on-street component of the bicycle network provides hierarchical separation from motorized vehicles, based on the volume and speed of traffic on the street. _Bikeway Networks_ are typically designated in a _Bicycle Plan_.

**Car Sharing**

A car rental system where the automobiles are available for rent to members for short periods of time (often by the hour). _Car sharing_ is intended to offset the need for private automobile ownership by people who do not require a car on a daily basis. _Car sharing_ can also off-set the need for families to purchase a second or third private automobile.

**Complete Communities**

_Complete communities_ meet people’s needs for daily living throughout an entire lifetime by providing convenient access to an appropriate mix of jobs, local services, a full range of housing, and community infrastructure including _affordable housing_, _schools_, _recreation_ and _open space_ for their residents. Convenient access to public transportation and options for safe, non-motorized travel is also provided (Places to Grow, 2006).

**Cycle Track**

A designated space for cyclists in the roadway that is delineated from motorized traffic by a barrier, such as curb, median, planting strip, hatched buffer, or bollards. _Cycle tracks_ are sometimes referred to as physically separated or protected _bicycle lanes_, and may be one or two-way. Some _cycle tracks_ are multi-use (i.e. shared by cyclists, pedestrians, rollerbladers, etc.).

**Employment Area**

Areas designated in an official plan for clusters of business and economic activities including, but not limited to, manufacturing, warehousing, offices, and associated retail and ancillary facilities (Provincial Policy Statement, 2005).

**Floor Area Ratio/Floor Space Index**

The gross area of all buildings on a lot divided by the lot area.

**Greenfield Development**

The creation of new development on previously undeveloped land located outside or on the edge of an urban area. Places to Grow established the term “Designated Greenfield Area” which it defines as the area within a settlement area that is not a built-up area.

**Gross Density**

The ratio of dwelling units/floor space/people/jobs to the overall area of a development. Depending on the jurisdiction, some land area exclusions may be factored into the calculation of _gross density_.

**High-Order Transit**

Transit modes (including bus, streetcar, light rail or subway) that operate in their own dedicated _right-of-way_ or given priority at intersections or on roadways.

**Infill Development**

The development of vacant or underutilized parcels in urban areas.

**Live-work Units**

Purpose-built units that can serve as both residential dwellings and commercial space.

**Low-Order Transit**

Transit modes (including bus or streetcar) that operate within existing _right-of-ways_ without dedicated priority over other transportation modes.

**Mixed-use Development**

A form of development that contains a mix of residential and non-residential uses within an individual building or development area.

**Multi-use Path**

Off-road, paved facilities that are shared by cyclists, pedestrians, rollerbladers and other non-motorized users. _Multi-use paths_ are generally a minimum of 3 metres wide and provide lighting.

**Net Density**

The ratio of dwelling units/floor space/people/jobs to the overall area of a development, excluding certain features such as infrastructure and environmental features. The determination of applicable exclusions varies between jurisdictions.

**Pedestrian Scramble (a.k.a. Barnes Dance)**

A signal phase at intersections that gives the walk signal to pedestrians in all directions at the same time, while drivers are stopped on a red light in all directions. _Pedestrian scrambles_ are intended for use at intersections with heavy pedestrian volumes, and their purpose is to allow...
pedestrians to cross in any direction (including diagonally) without any interference from motorized traffic.

**Permeable**
Referring to the street network, the degree to which an area has a variety of pleasant, convenient and safe routes through it.

**Public Realm**
The parts of an urban place whether publicly or privately owned that are available for everyone to see, use and enjoy, including streets, squares and parks; all land to which everyone has ready, free and legal access at all times. It includes the features and amenity within those lands, such as benches, lights, sidewalks, etc. Also commonly referred to as “public domain” and “public space”.

**Right-of-Way (ROW)**
A strip of land, including the space above and below the surface, that is platted, dedicated, condemned, established by prescription or otherwise legally established for the use of pedestrians, vehicles, or utilities. It usually includes the road surface for vehicles, sidewalks, and may include boulevards with trees.

**Secondary Suites**
A self-contained separate dwelling unit as part of an existing dwelling unit with full kitchen and bath facilities as well as a separate entrance.

**Shared Parking**
Parking spaces that are shared by multiple users who require parking at different times of the day, week or year (for example, office workers and theatre patrons). The purpose of shared parking is to use parking more efficiently by optimizing the use of each spot.

**Sharrows**
Shared-lane pavement markings that are intended to indicate the ideal cyclist position in the lane (away from the curb and parked cars) and to remind drivers to share the road.

**Signed routes**
Signed routes are found on streets that have been identified as preferred routes for bicycle travel because of their lower traffic volumes and speeds, and connectedness to other bikeway facilities or destinations. The route is designated on the street with signage only (no pavement markings or other physical changes are made to the roadway).

**Street Connectivity**
Referring to the directness of travel and the number of route options available between any two destinations, using the street network and/or off-street paths. Street connectivity can be measured by the frequency of links between streets, paths and/or other types of on- and off-street routes on which people can travel. Street connectivity affects permeability of a neighbourhood.

**Street furniture**
Objects in the street, such as bus shelters, litter bins, seating, lighting, benches, signs, and bollards, among others. Well designed, integrated and carefully sited, they contribute to the amenity and attractiveness of a street.

**Streetscape**
The elements within and along the street that define its appearance and street scenery (overall appearance of the street), identity, and functionality, including adjacent buildings and land uses, street furniture, landscaping, trees, sidewalks, and pavement treatments, among others.

**Traffic calming**
Physical design strategies implemented on neighbourhood streets in an effort to reduce the speed and/or volume of motorized traffic. Traffic calming strategies make use of a variety of design treatments that narrow the roadway, discourage excessive through traffic and force motorists to slow down, including, speed humps, bollards, chicanes, curb extensions, reductions in the number and width of traffic lanes, etc.

**Walkable**
Refers to a single route, or a system of routes, between points that is relatively short, barrier free, interesting, safe, well-lighted, comfortable and inviting to pedestrian travel.

**Wayfinding**
A planned system for helping people identify their location in an area and navigate towards destinations by means such as signs, landmarks and a clear urban structure.
Appendix
### Health Background Study Standard

#### Density

1. All development on Designated Greenfield Areas shall achieve a minimum overall density target of 50 people and jobs per hectare.

2. All development in Designated Urban Growth Centres in the Region of Peel (including Downtown Brampton and Mississauga City Centre) shall achieve a minimum overall density target of 200 people and jobs per hectare.

3. Notwithstanding the above standards, where the local municipality has established higher density targets than those established by The Growth Plan, the higher density target should apply.

#### Service Proximity

**Transit**

4. The distance between at least 50% of the projected population of the development and a *low-order transit* stop shall be no more than 200 m. The transit service proposed should provide a direct route to a Regional Urban Node, Intensification Corridor, or smaller higher-density, mixed-use transit supportive activity centre with a maximum transit trip of 30 minutes.

5. Where a *high-order transit* route bisects the development area, 75% of the projected population should be within 400 m of it.

6. Ensure design quality of both transit stops and the journey to the stop. Transit stops should, where appropriate, provide shelter from the sun and inclement weather and seating. *High-order transit* stops/stations should also include secure bicycle parking facilities.

**Neighbourhood Community and Retail Services**

7. The distance between at least 75% of the projected population and three or more of the following services and amenities must be no more than 800 m:
   - Childcare facility, community garden, park, hospital or health clinic, public library, places of worship, adult/senior care facility, social service facility, performance or cultural space, post office or recreation centre. (Multiple services of the same type may be counted.)

8. The distance between at least 25% of the projected population and a minimum of 5,000 m² of mixed service commercial retail space shall be no more than 800 m.

9. The distance between at least 75% of the projected population and a minimum of 150 m² of mixed service commercial retail space shall be no more than 800 m.

10. The distance between at least 90% of the projected population and a playing field, park, square or natural open space should be no more than 400 m.

11. The distance between 100% of the projected population and a planned elementary school shall be no more than 1.2 km.

12. The distance between 100% of the projected population and a planned secondary school shall be no more than 2.4 km.

13. Where appropriate, a new community should provide mixed service commercial retail facilities that can be used by adjacent communities.
## Service Proximity continued

14. Access to drug and grocery stores should be encouraged.

15. In key locations convenience commercial uses are permitted throughout residential designations.

## Employment

16. The development should be within reasonable proximity to an existing or planned employment centre or urban centre. Specifically, the distance should be no more than 10 km.

## Land Use Mix

17. Where the scale of the residential community is large enough, a range of uses should be provided, as follows:

   - for communities of 5,000 people or more, provide neighbourhood-scale retail and services (such as corner stores, elementary school, library, etc.)
   - for communities of 10,000 people or more, provide a full-range of uses, including larger-scale retail, services, and employment opportunities.

18. Where the scale of employment lands is large enough, small scale commercial retail and services should be encouraged, where appropriate.

19. Where the scale of the community permits, it should include dwelling structures from all three of the following housing type groups, with no group making up more than 50% or fewer than 10% of total units:

   - i. Single detached, semi-detached, and duplex
   - ii. Townhouses and multiplex
   - iii. Apartment building

20. Special housing types, such as group homes or seniors’ residences, should be encouraged.

21. Secondary suites should be encouraged where appropriate.

22. Live-work units should be encouraged where appropriate.

23. Site design of auto-oriented developments, such as uses which include drive through facilities, gas bars and related uses shall make pedestrian access a priority and contribute to high quality public realm and streetscapes.

24. The location of retail uses on the ground floor of multi-unit and mixed use buildings should be encouraged.

## Street Connectivity

25. Infill development should identify opportunities to increase street connectivity.

26. Street networks and off-road paths in greenfields should always:

   - provide the maximum choice for how people will make trips;
   - take full account of the kinds of movement a development will generate; and
   - make clear connections to existing routes and facilities.
### Health Background Study Standard

#### Street Connectivity continued

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<tr>
<td>27.</td>
<td>Cul-de-sacs are not permitted unless required for technical reasons.</td>
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<td>28.</td>
<td>Crescent streets, reverse frontage lots and loop roads must not constitute more than 20% of total street frontage and should be discouraged.</td>
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<tr>
<td>29.</td>
<td>Blocks in the proposed development must not exceed 80 m x 150 m in size. Exceptions are made for blocks consisting solely of Parkland or of Employment uses.</td>
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<tr>
<td>30.</td>
<td>Intersections should be frequent, with street blocks decreasing in size as density increases.</td>
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<tr>
<td>31.</td>
<td>Sidewalks, bike lanes and <em>multi-use paths</em> should connect to street networks, major destinations and transport nodes.</td>
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#### Streetscape Characteristics

##### Sidewalk Amenities

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<tr>
<td>32.</td>
<td>All streets must have sidewalks on each side that are at least 1.5 m wide in low-density residential areas, and at least 2 m wide in medium-density residential neighbourhoods, high-density residential neighbourhoods, mixed use areas, and commercial areas.</td>
<td>G-I</td>
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<td>33.</td>
<td>A variety of street trees that are hardy, resilient, and low maintenance should be planted at regular intervals (as specified by the municipality) adjacent to all streets.</td>
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<tr>
<td>34.</td>
<td>Transit shelters and other <em>street furniture</em> should be provided, especially on major pedestrian routes. Other <em>street furniture</em> may include benches, waste receptacles, newspaper outlets, community information boards, water fountains, public washrooms, <em>bicycle parking</em>, and <em>bicycle sharing</em> system components.</td>
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##### Cycling Amenities

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<td>35.</td>
<td>A connected and destination-oriented <em>bikeway network</em> should be provided throughout the community, including a variety of on- and off-street <em>bikeway facilities</em> that provide an appropriate degree of separation from motorized traffic, given the speed and volume of traffic on the street. These on-street <em>bikeway facilities</em> may include (but are not limited to) <em>bicycle lanes</em>, <em>cycle tracks</em>, <em>sharrows</em>, <em>signed routes</em>, <em>bicycle boulevards</em>, and <em>multi-use paths</em> on the boulevard.</td>
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Where there is a local Bicycle Plan, the *bikeway network* proposed in the Plan should be implemented in the development area, and opportunities to enhance or connect to the proposed *bikeway network* should be identified.

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<tr>
<td>36.</td>
<td>At a minimum, 100% of the population shall be within 150 m of a continuous and connected <em>bikeway facility</em>.</td>
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### Streetscape Characteristics continued

#### Intersections

37. All intersections should be designed to increase the visibility of cyclists and pedestrians, give them priority, reduce crossing distance, and provide adequate crossing time. Intersection design elements may include, but are not limited to:

- Pavement treatments and markings for pedestrian crossings (e.g. brick paving, zebra/ladder markings)
- Curb cuts/ramps
- Raised crosswalk
- Curb extension/bulb out
- Centre Median or refuge island
- *Pedestrian scramble* (a.k.a. Barnes dance)
- *Bicycle box*
- Conflict zone markings for bicycles (e.g. coloured lane, skip lines, chevrons, *sharrows*)
- Audible pedestrian crossing signals
- Countdown signals
- Leading pedestrian and/or bicycle signals (advance walk/bike signal)
- Pedestrian and/or bicycle actuated signals
- Right-turn on red light prohibitions
- Mid-block signalized crossings

#### Lighting

38. All *mixed-use* streets must have an average luminance of 10 lux, with a minimum of 5 lux.

39. Pedestrian-level street lamps of 4.6 m in height or less, spaced apart no more than 30 m, must be provided on all streets.

#### Wayfinding

40. A *wayfinding* system should be implemented on a community-wide basis to allow residents and visitors to determine their location; identify key destinations (parks, transit stations, community and cultural facilities, shopping centres, off road trails); and develop a plan to take them from their location to desired destination by walking or cycling. The *wayfinding* system may include maps, directional signs or other elements, and should be useful and easy to understand.

#### Traffic Calming

41. In *greenfield development*, or where new streets are introduced through *infill development*, *traffic calming* will be achieved on neighbourhood streets by using:

- Minimum traffic lane widths
- Minimum number of traffic lanes in the roadway
- Pedestrian-priority streets, woonersfs or home-zones (speed limit under 15 km/hr, vehicles must yield to pedestrians and cyclists)
### Streetscape Characteristics continued

42. Fo infill development, traffic calming should be achieved on existing
neighbourhood streets by using any of, but not limited to, the following elements:

- Reduced/minimum traffic lane width
- Reduced/minimum number of traffic lanes in the roadway
- Pedestrian-priority streets, woonerfs or home-zones (speed limit under 15
  km/hr, vehicles must yield to pedestrians and cyclists)
- Speed humps
- Bollards (short vertical posts)
- Channelization islands (raised islands that force traffic to turn in a particular
direction)
- Chicane (curb bulges or planters or alternating sides, forcing motorists to slow
down)
- Choker (raised islands in parking zones that narrow a roadway)
- Curb extension, planter, or centerline traffic island that narrows traffic lanes
- Horizontal shift (a lane centerline that curves or shifts)
- Rumble or warning strip
- Semi-diverter or partial closure (restricts entry and limits traffic flow at
intersections)
- Signal timing to reduce traffic speeds
- Radar trailer that shows drivers their current speed and the posted speed limit
- Traffic circles or roundabouts
- Speed table

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<th>Draft Plan</th>
<th>Site Plan</th>
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| 42. Fo infill development, traffic calming should be achieved on existing
eighbourhood streets by using any of, but not limited to, the following elements: | 1 | | | |  |

43. While increasing comfort and safety for pedestrians, the design of traffic calming
elements should not create undue hazards or obstacles for cyclists.

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elements should not create undue hazards or obstacles for cyclists. | 0 | | | |  |

### Parking

#### Automobile Parking

44. Reductions in parking requirements should be given to:

- buildings and other facilities within 400 m of a transit stop; and
- apartments/condominiums offering car share parking spaces (with each car share space equivalent to 10 regular spaces).

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<tr>
<td>44. Reductions in parking requirements should be given to:</td>
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45. On-street parking should be included on all streets except where inappropriate for
technical or safety reasons.

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| 45. On-street parking should be included on all streets except where inappropriate for
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46. Efficient use of parking should be promoted by identifying systems for sharing
parking spaces by two or more user groups at different times of the day or week
(for example, office staff during weekdays and restaurant clientele in the evenings
and on weekends), and by providing preferential parking for carpool vehicles.

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(for example, office staff during weekdays and restaurant clientele in the evenings
and on weekends), and by providing preferential parking for carpool vehicles. | 0 | | | |  |

47. Where available, economic incentives should be identified and utilized to provide
structured parking, rather than surface parking.

<table>
<thead>
<tr>
<th>Planning Approval</th>
<th>Greenfield/Infill</th>
<th>Secondary Plan</th>
<th>Block Plan</th>
<th>Draft Plan</th>
<th>Site Plan</th>
</tr>
</thead>
</table>
| 47. Where available, economic incentives should be identified and utilized to provide
structured parking, rather than surface parking. | 0 | | | |  |
Parking continued

48. Where surface parking is provided, it should be designed to minimize negative aesthetic and environmental impacts. This can be achieved by locating the parking lot away from the street frontage and by incorporating the following into the parking lot design:

- Tree planting
- Landscaping
- Stormwater management
- Porous/permeable surfaces
- Light-coloured materials (rather than black asphalt)
- Pedestrian access and circulation

Bicycle Parking

49. All new developments should meet or exceed the higher of:

a) Local bicycle parking requirements (provided in local zoning by-laws, Bicycle Master Plans); or
b) The minimum bicycle parking standards outlined in Table 1.

Table 1. Minimum Bicycle Parking Standards, by Use and Type

<table>
<thead>
<tr>
<th>Use</th>
<th>Minimum Spaces by Bicycle Parking Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Occupant/Employee</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Multi-unit Residential</td>
<td>0.7/unit</td>
</tr>
<tr>
<td>Retail, Services, &amp; Community Facilities</td>
<td>0.1/100 m²</td>
</tr>
<tr>
<td>General Office</td>
<td>0.15/100 m²</td>
</tr>
<tr>
<td>Medical Office</td>
<td>0.15/100 m²</td>
</tr>
<tr>
<td>Hospital</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>Elementary/Secondary School</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>Post-Secondary School</td>
<td>0.06/100 m²</td>
</tr>
<tr>
<td>Other non-residential (e.g. Industrial)</td>
<td>0.06/100 m²</td>
</tr>
</tbody>
</table>
| High-order Transit Station         | Complete a bicycle parking demand estimate for the station, for example using boardings, alightings and local bicycle mode share data.