PART B: SUSTAINABLE COMMUNITY DESIGN

Guidelines marked with this leaf symbol align with and support the City's Sustainable New Communities Program (SNCP)

B1 INTRODUCTION

Brampton Plan establishes the City Structure, made up of the City-Wide Growth Management Framework and the Mobility Framework. The City Structure is made up of:

CENTRES

Centres comprise Urban Centres, Town Centres and Neighbourhood Centres. These areas are expected to accommodate the highest concentration of growth and mix of uses. They connect residential and non-residential opportunities and enhance the ability for more residents to live, work and play locally.

BOULEVARDS

Boulevards comprise Primary Urban Boulevards and Secondary Urban Boulevards. They are vibrant and prominent streets that provide for a mix of uses and intensity of built form served by higher order transit, while also providing critical connections to the rest of the city and region.

CORRIDORS

Corridors comprise key Priority Bus linkages within and across Brampton and the broader region and provide for a mix of uses and transit-supportive forms and densities.

COMMUNITY AREAS

Community Areas include a mix of new and existing residential, commercial and residential-serving institutional areas of Brampton, with the amenities, including parks and open spaces needed for day-to-day living within a 15-minute walk or bicycle ride from their homes.

EMPLOYMENT AREAS

Employment Areas include those areas where large numbers of people work. The goal of these areas is to create productive and desirable places to attract and retain investment.

THE NATURAL HERITAGE SYSTEM

Environmental Sustainability is one of the Four Pillars of Sustainability in which the City Structure is grounded, and relates to both the natural and built environments.

The Natural Heritage System (NHS) includes natural spaces and water resources systems such as woodlands, rivers, valleylands, wetlands and ecological linkages, which require protection and enhancement. These systems, which provide vital functions and play an important role in shaping the community, must be considered comprehensively with the built environment to ensure that they are working together.

B1.1 SUSTAINABLE NEW COMMUNITIES PROGRAM (SNCP)

The Guidelines work alongside the SNCP which contains a set of Sustainability Metrics (Metrics) that are intended to encourage and be used to evaluate the sustainability performance of new developments.

There are over 120 metrics listed in the Guidebook, with each metric assigned a point value. The combination of metrics and the total points achieved results in a Sustainability Score for the development proposal.

The four categories around which the Metrics are organized are used to structure these Sustainable Community Design Guidelines, namely:

- Built Environment (chapter B2);
- Mobility (chapter B3);
- Natural Environment and Parks (chapter B4 - Natural Heritage, Parks and Open Space); and,
- Sustainable Infrastructure and Buildings (chapter B5).

The four main building blocks that are described in this section apply to all aspects of Precinct Plans and Area Plans.

Brampton Soccer Centre

B2
BUILT ENVIRONMENT

Brampton Plan recognizes the importance of built environment factors in influencing and shaping travel mode choices, impacting physical activity and improving the overall health of its residents.

A mix of housing types and amenities, employment, and live work opportunities, located within walking distance, provides the opportunity for residents to meet their day-to-day needs without reliance on the private automobile and provides for life-cycle housing allowing residents to remain in their communities.

The built environment should be planned and designed to ensure that developments contain the components essential to creating a compact, walkable, and transit supportive community. This includes a mix and diversity of land uses, a mix and diversity of housing types and amenities, employment opportunities, and live work opportunities, all located within a 15-minute walk.

B2.1
COMPACT DEVELOPMENT

Compact development and intensification create greater densities that take advantage of existing infrastructure, and the concentration of people and jobs that create the necessary critical mass to support the City's Centres, Boulevards, Corridors and Major Transit Station Areas.

1 Ensure projects in Major Transit Station Areas, Centres, and Corridors support existing and planned transit services.

2 Place new housing close to transit facilities and within mixed-use centres to support transit and pedestrian mobility choices, reducing car use, and significantly reducing air pollution.

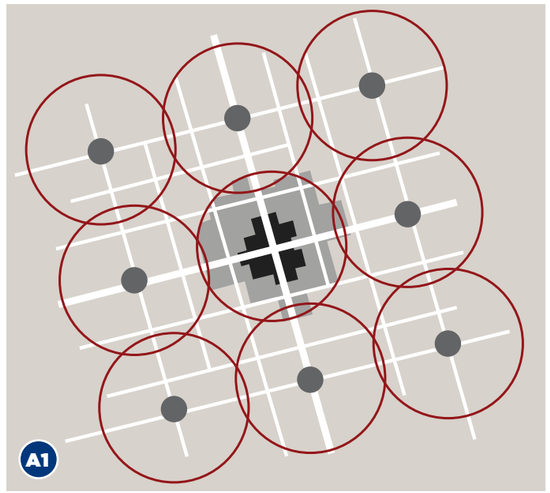
3 Strategically allocate density to contribute to a compact urban form, increase transportation efficiency and walkability within the community, and conserve natural resources.

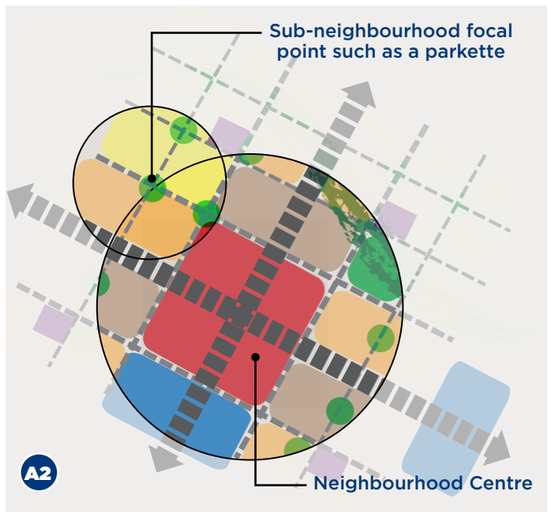
4 Minimize the land area required for school sites in urban areas and encourage School Boards to build multi-storey elementary and secondary schools located close to the street.

5 Build multi-storey public/institutional buildings for site and servicing efficiency. Consider co-locating complementary community uses (school, library, community centre, park) and shared facilities.

B2.2
COMMUNITY FORM

Brampton Plan envisions that most Neighbourhoods will be developed or transition into 15-minute neighbourhoods through the design and retrofit of new and existing communities (Built-Up Areas and Designated Greenfield Areas) and appropriate infill in Neighbourhoods, with the intent to support community health, well-being and quality of life.





A. 15-MINUTE NEIGHBOURHOODS (A)

1 Develop neighbourhoods within a 15-minute walk of a Neighbourhood Centre in which higher density residential forms, supportive commercial and community services and facilities are concentrated.

2 Include a broad range of residential uses as well as neighbourhood-supportive commercial and community services and facilities, such as libraries, recreation centres, schools and child care centres, that serve and support the residents of these neighbourhoods.

3 Locate public/community uses to form landmarks within the community and/or within Neighbourhood Centres.

4 Provide a highly permeable network of collector and local roads to ensure strong connections, accessibility, and route choices within the community and between neighbourhoods and Neighbourhood Centres.

5 Plan new developments to ensure connections to adjacent developments, existing neighbourhoods, and future developments are provided and appropriately phased.

6 Weave the Natural Heritage System into the fabric of the neighbourhood / community.

7 Design the street network to avoid, wherever possible, encroachments on and fragmentation of the Natural Heritage System.

8 Plan the Street Network and Active Transportation Network to create linkages to the Parks and Open Space System, and to ensure continuous and varied pedestrian routes throughout the community.

B. NEIGHBOURHOOD CENTRES (B)

Neighbourhood Centres act as focal points and provide for a range of neighbourhood supportive uses such as local scale retail, service and office uses, cultural and recreation facilities, all within a 15-minute walk of most residents.

1 Distribute Neighbourhood Centres to ensure daily activities and amenities within a 15-minute walk of residences and to support walking, cycling, and local transit within the community.

2 Locate and cluster higher residential densities, mixed uses, retail and employment opportunities, and access to higher order transit to form Neighbourhood Centres.

3 Include a community facility such as a school, a park or urban square in the Neighbourhood Centre.

4 Integrate cultural heritage resources as part of the fabric of the Neighbourhood Centre, potentially within a park or with other community facilities.

C. BLOCKS (C)

1 Plan and design blocks with a preferred maximum size of 80m by 150m to support excellent pedestrian walkability and permeability, as outlined in the SNCP. Longer block lengths, generally up to 250m, may be considered where they continue to support a connected and walkable public realm, such as through the inclusion of a mid-block park or other pedestrian-oriented amenities.

2 Encourage high-quality mid-block pedestrian connections, with or without vehicular access, where block lengths exceed 150m, to support walkability and connectivity (as per the excellent design practice outlined in the SNCP). These connections should be sufficiently wide to accommodate all types of users (cyclists and pedestrians), lined with active uses for natural surveillance, and incorporate proper lighting and AODA access.

3 Organize blocks to set up views and vistas to natural heritage features, parks and open space.

4 Design blocks with a consistent orientation, either front-to-front or back-to-back configuration along streets/lanes or around open spaces. Avoid front-to-back configurations.

5 Minimize the visual impact of long blocks, by turning lots at the ends of the block by 90-degrees, where appropriate.

6 Minimize the use of cul-de-sacs, except where necessary due to grade conditions, or at view terminus sites. Where they are necessary, sidewalks/trails should be provided to facilitate pedestrian/cyclists connections and active transportation.

7 To maximize passive solar orientation the street and block alignment should be designed within 15-degrees of geographic east-west, where feasible.

D. LOTTING (D)

1 For low-rise residential development, provide a mix of lot sizes on each block.

2 Locate larger lots to encourage greater massing and density in key community locations, such as:

   a. Community edges and gateways.
   b. Along neighbourhood collectors.
   c. Facing parks and open spaces.
   d. At the ends of blocks.
   e. At view vistas / termini.

3 Discourage rear lotting onto the NHS , and parks and open space.

E. REAR LANES (E)

1 Promote the use of rear lanes to create a more pedestrian-friendly public realm, particularly in the Urban Centres, Town Centres, Neighbourhood Centres and Major Transit Station Areas.

2 Encourage the use of rear lanes in mixed-use developments that contain grade related non-residential uses to allow for servicing and loading at the rear of the mixed-use building and to avoid potential conflict between pedestrians and vehicles.

3 Encourage lane-based housing forms/lots that front parks and schools.

4 Focus rear lane-based forms in contiguous areas of a development / plan to allow for efficient maintenance.

5 All rear lanes shall adhere to City Standards and are subject to approval from Public Works and Engineering.

B2.3 MIX AND DIVERSITY OF LAND USES (L)

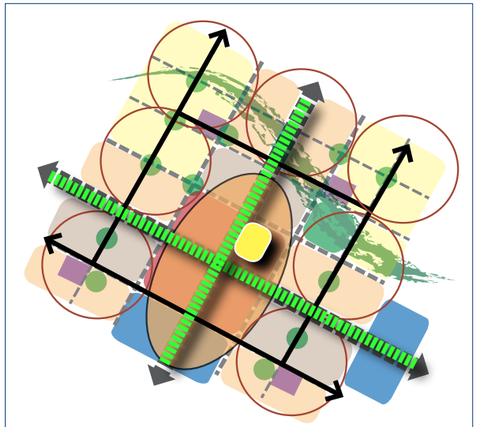
A mix and diversity of uses contributes to creating healthy and vibrant communities by strengthening the live-work-play relationship through a proper balance of residential, employment, commercial, retail, and public amenity land uses.

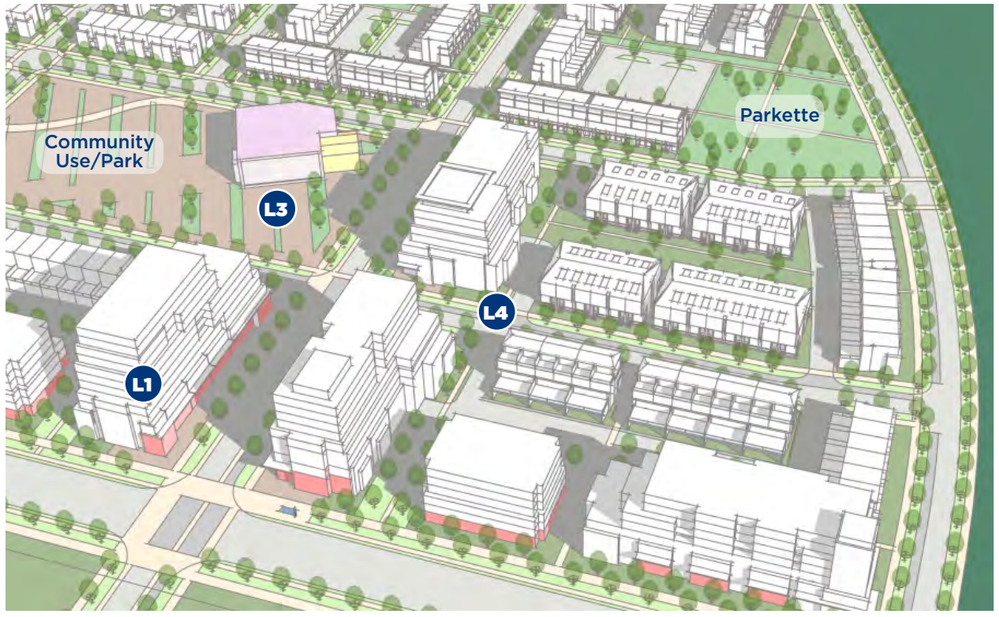
1 Provide a diverse mix of land uses and the greatest densities in the City's Centres, Boulevards, Corridors and Major Transit Station Areas.

2 Provide commercial, employment, and institutional uses, as well as transit, and parks and open space within a 15-minute walk of most residents. The City's service level is 400m for Local Parks and 800m for Community Parks.

3 Locate institutional uses at the centres of communities, as civic focal points and adjacent to parks and/or community facilities.

4 Provide appropriate transitions in use, intensity, and scale from Centres, Boulevards, Corridors and Major Transit Station Areas to Neighbourhoods areas.





5 Cluster office, retail, and service commercial uses where they have access to collector or arterial roads.

6 In addition to a mix of uses within communities /neighbourhoods, encourage a mix of uses within buildings to create an urban streetscape that includes retail at street level and residential above.

7 Promote opportunities for the redevelopment and intensification of underutilized and vacant sites in the City's Centres, Boulevards, and Corridors.

B2.4
MIX AND DIVERSITY OF HOUSING

A mix and diversity of housing, including suitable and affordable housing, is important in creating complete communities and makes it possible for households to move / remain within one community as housing needs and lifestyle preferences change (lifecycle housing).

1 Provide for a range of housing types and tenures to address different needs such as age, income, physical ability, household structure, lifestyle, etc.

2 Provide housing that includes a range of unit types and sizes, including universally accessible units, with a range of number of bedrooms.

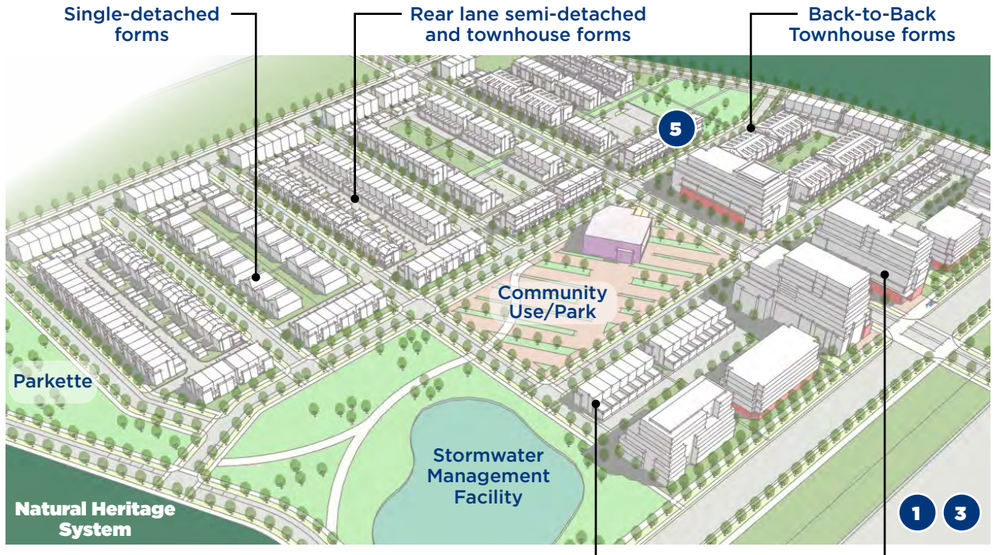
3 Encourage provision for a minimum of three of the following housing types within a 15-Minute Neighbourhood:
   a. Single- and semi-detached units
   b. Townhouse units
   c. Apartment units
   d. Mixed use residential units
   e. Live-work units

4 Locate seniors housing, retirement homes and long-term care facilities closer to the Neighbourhood Centre or Mixed-Use nodes, and incorporate multi-storey components to achieve sufficient yield on small sites.

5 Provide built form transitions between higher- and lower-density developments. Refer to C3 Low-Rise Development, C4 Mid-Rise Development, and/or C5 High-Rise Development for relevant guidelines.

6 Provide for live-work units to facilitate home-based employment.

7 Ensure the application of the Brampton Accessibility Technical Standards to promote universal design principles that will enhance accessibility in residential areas.



B2.5
WALKABILITY (W)

A modified grid pattern of streets and connected system of neighbourhoods, parks and open space, promotes walkability, and supports 15-minute neighbourhoods. A high degree of connectivity supports the accessibility and convenience of transit, schools, retail, and community services and ultimately, reduces car-dependence.

1 Provide for an interconnected network of sidewalks, bicycle routes, transit, and multi-use trails ensuring proper integration with surrounding neighbourhoods and a variety of destinations, allowing for continuous movement throughout the community.

2 Design the street layout to ensure efficient walking routes to schools, centres, transit, and other key destinations.

3 Consider traffic calming strategies to create safer walking and cycling environments. This may include such measures as on-street parking, reduced lane widths, curb bump-outs, raised intersections, and traffic circles.

4 Plan and design blocks with a preferred maximum length of 150m to reflect excellent design practice (as outlined in the SNCP), promote active transportation, and help disperse traffic movement.

5 Locate schools such that pedestrians and cyclists can easily reach building entrances without crossing bus zones, vehicle routes, parking entrances, and student drop-off areas.

6 Locate mailboxes adjacent to activity areas, preferably adjacent to parks, to foster social interaction and sense of community.

7 Design public pedestrian walkways while adhering to CPTED principles in order to provide a safe and comfortable environment for pedestrians.

8 Promote safety and accessibility by designing communities with walkable, permeable street systems that include walking and cycling facilities on both sides of the road.

9 Identify and fill in existing gaps in the sidewalk network and/or existing desire paths to formalize routes and increase accessibility.

10 Direct pedestrian pathways to intersections rather than to mid-block locations.

11 Encourage opportunities for vibrant, diverse and pedestrian-oriented urban environments that provide for public safety, changing experiences, social engagement, and meaningful destinations.

B2.6
CULTURAL HERITAGE (H)

Brampton's built heritage is an integral component of the city's fabric. As the city evolves, it is necessary to protect significant heritage buildings, places and landscapes and create a balance between conservation and development. Brampton Plan establishes policies for the preservation and enhancement of the buildings and landscapes that make up the city's-built heritage.

1 Recognize the heritage status of properties on the Municipal Register (designated or listed), and identify and consider their heritage attributes or character-defining elements when proposing new additions or design developments.

2 For materials and architectural components concealed during previous renovations, use available physical and archival evidence to uncover and restore them to their near-original state and characteristics.

3 Retain original, historic, building materials whenever possible during restorative renovations. Repair of the original material is always preferred over replacement. If replacement is necessary, the material should match the original in form, style, dimensions, profile, texture and method of installation. Historic material should never be covered with modern materials, and unpainted brick should not be painted.

4 Where applicable, provide for the adaptive reuse of heritage structures. Relocation, including disassembly and reassembly, should only be considered if all other conservation options have been found non-viable.

5 Where retention, relocation, or disassembly and reassembly are not viable options, consider incorporating the character-defining elements of the heritage building into the new development to ensure the unique features of the former structure remain legible.

6 Where feasible and not precluded by grading or other servicing constraints, site alterations, including road widenings, road realignments, and slope or bank stabilization, should incorporate cultural heritage landscapes, such as hedgerows and rural road swales, into the development fabric.

7 Locate open spaces where there is an opportunity to preserve cultural landscapes.

8 Consider the rehabilitation and utilization of City-owned heritage resources as creative public spaces.

9 Promote, commemorate and celebrate cultural and built heritage via landscaping design, urban amenities, signage, plaques, public installations, etc.

10 Ensure that significant views and vistas to and from built or natural heritage resources are protected, enhanced and publicly accessible.

11 Development or infill in mature and established residential neighbourhoods should be especially context-sensitive to the prevailing local characteristics and architectural styles.

12 The design of high-rise buildings in heritage districts or adjacent to heritage buildings should consider views of the developed lot from adjacent streets. The high-rise portion should be integrated with and transitioned to the heritage buildings to avoid dominating the pedestrian perspective. This may involve greater building setbacks, stepbacks above the podium, and other design strategies. Refer to C2.7 Built Heritage Context and C5 High-Rise Developments.

13 Where development is proposed adjacent to, or on a site that includes built heritage resources, new buildings should maintain and enhance the defining characteristics of the heritage buildings and ensure their heritage attributes are not adversely affected.

14 Promote public art as a means to integrate and repurpose cultural heritage elements, enrich community character, enhance the city's identity, and foster a strong sense of place. For guidelines on public art in the private realm, refer to C2.6 – Public Art.

15 Provide opportunities for public art in Urban Centres, Town Centres and Neighbourhood Centres.

16 Consider incorporating public art in parks, public spaces, private open spaces, and developments at the city, community and neighbourhood scales.

B3 MOBILITY

Brampton Plan promotes improved access and mobility through safe, equitable and efficient transportation systems, including access to transit and active transportation options.

The most vulnerable population groups including children, elderly, people with health conditions, and lower income individuals are the most affected by choices available to them for mobility and access to services and amenities.

To ensure that a variety of transportation options are available to residents, a community should be designed such that land uses and transportation planning are integrated and proximity to amenities is enabled. Designing a safe, convenient, and accessible environment for walking and cycling encourages alternative modes of transportation.

B3.1
TRANSIT SUPPORTIVE DESIGN

Brampton Plan promotes higher densities and patterns of development that connect people to homes, jobs and other places linked to their lifestyles and that support higher order transit.

A transit supportive and complete community needs to also ensure that compact, mixed use developments, with a variety of residential forms, are oriented to transit to encourage transit use.

1 Transit facility amenities shall be designed in accordance with Transit Authority standards.

2 For most residents within a Neighbourhood, ensure a walking distance of 400m (5-minute walk) to Neighbourhood Centres and 800m to higher order transit.

3 Provide direct connections from residential areas to collector/arterial roads where higher order transit is located.

4 Consider means to reduce the overall footprint of commuter parking areas at higher order transit through structured parking to promote compact development and conserve land.

5 Ensure the coordination of the transit network with the multi-use trail system to enhance accessibility to transit.

6 Provide direct pedestrian/ cycling connections to bus stops from adjacent sidewalks, multi-use / recreational trails and buildings such as schools and commercial plazas.

7 Avoid connections to higher order transit through parking lots and when necessary, ensure safe and comfortable pedestrian and cycling access.

8 Provide coordinated streetscape elements to support transit amenities, such as:

a. Street trees.

b. Seating and bicycle lock-ups.

c. Garbage and recycling receptacles.

d. Accessible paving and well-marked crossings.

e. Pedestrian-level lighting (maximum 4.6m in height).

9 Provide a range of transit facility amenities including but not limited to:

a. Route information (electronic schedules), wayfinding and automated fare machines.

b. Transit shelter or other structures for weather protection; where 4-sided transit shelters are not possible, provide overhead canopies.

c. Public Wifi access / connection.

10 Encourage adjacent developments to leave adequate space for a bus pad/shelter and connecting pathway as per Transit's standards, and to provide lighting for CPTED purposes.

11 Locate bus stops close to intersections and designated crossings to discourage potential jaywalking.

12 Ensure communities promote transit supportive land uses at existing and future higher order transit such as higher density residential and employment development forms.

13 Promote bike use by providing bike racks, storage, and lockers at transit stops and stations. Ensure public facilities are weather-protected and encourage private facilities to be as well.

14 Locate transit stops close to major institutions such as secondary schools, community centres, libraries, etc.

Where development is proposed adjacent to or in proximity to railway corridors, applicants will be required to demonstrate how applicable requirements and guidelines established by the Canadian National Railway (CN) and/or Metrolinx have been addressed to the satisfaction of CN, Metrolinx, and, where applicable, the City and other relevant authorities. This may include the identification and implementation of appropriate mitigation measures to ensure compatibility with railway operations.

B3.2
STREET NETWORK AND BLOCK DESIGN

Street network and block design in Brampton shall adhere to Brampton Plan, the Active Transportation Master Plan (ATMP) and the Brampton Complete Streets Guide (BCSG).

The Complete Streets Guide outlines the vision and guiding principles for a comprehensive, integrated transportation network with streets that provide safe, equitable and convenient travel for people of all ages and abilities. These include:

- Create Safe and Accessible Streets.
- Improve Sustainability and Resiliency.
- Promote Healthy and Active Living.
- Improve Transportation Choice and Balance Priorities.
- Develop Connected Networks.
- Respect Existing and Planned Contexts.
- Create Vibrant and Beautiful Places.
- Enhance Economic Vitality.

These guidelines build upon the Complete Streets Guide by providing further design direction for street network and block design for all forms of development.

A. STREET PATTERN / NETWORK (A)

1 Design a fine-grained grid of streets and a well-connected street network to support ease of movement and facilitate orientation.

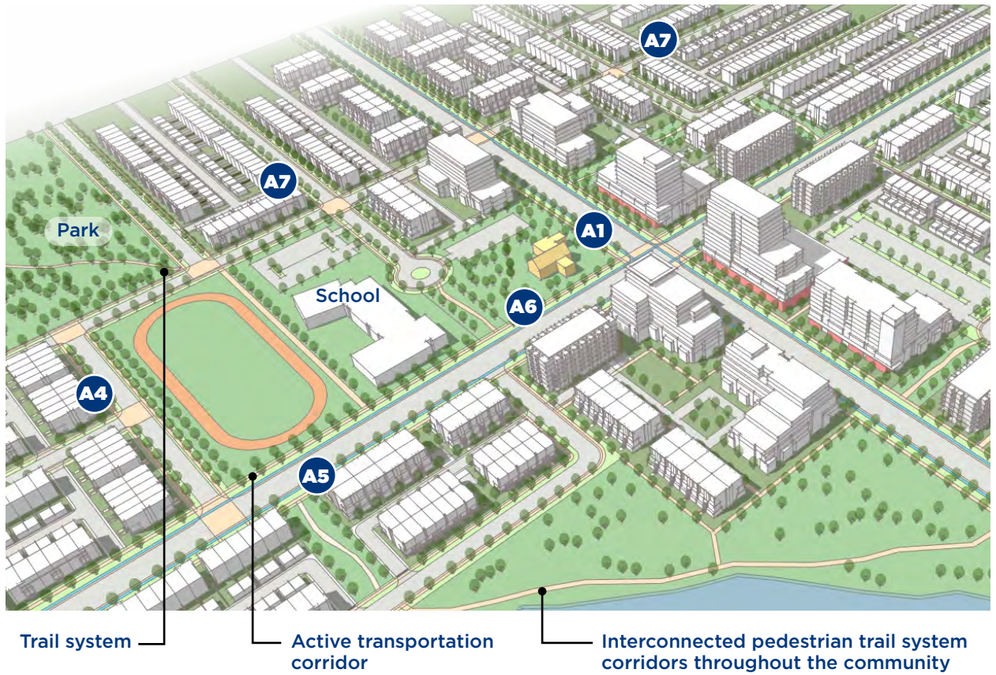
2 Create a clear hierarchy of street types and functions.

3 Create street patterns that incorporate natural heritage features.

a. Provide single-loaded streets along edges of natural heritage features and incorporate traffic calming in these locations.

b. Align streets to provide views/vistas to natural heritage features.

4 Connect any new street network to existing and planned roads in adjacent developments. If a road connection is not possible, sidewalks /trails connections are encouraged.



5 Maximize connectivity for all travel modes by ensuring the street network incorporates multiple options for moving between destinations.

6 Design street patterns to reinforce focal points, Neighbourhood Centres, Mixed-Use nodes and public spaces by providing street frontage and direct connection to these areas.

7 Provide frequent local road connections to collector roads to enhance connectivity and permeability.

8 On local roads, encourage block lengths of 150m or less to promote walkability, and avoid uninterrupted sections longer than 250m to discourage excessive vehicle speeds.

9 Design local roads with appropriate streetscape elements to enhance the pedestrian and cyclist scale.

B. TRAFFIC CALMING (B)

Peel Region's Vision Zero is an approach to road safety adopted from Sweden which states that 'no loss of life is acceptable due to a motor vehicle collision'.

In today's Vision Zero jurisdictions, decisions are based on considerations that include designing transportation systems to be forgiving and prioritizing safety. As such, traffic calming should be incorporated into the planning and design of communities.

1 Provide Traffic Calming to enhance pedestrian safety, particularly in areas of high activity such as Mixed-Use nodes and Neighbourhood Centres; this may include:
   a. Enhanced pedestrian crosswalks, raised crossings and intersections.
   b. Pedestrian-level lighting (maximum 4.6m in height).
   c. Raised and potentially landscaped medians.
   d. Curb bump-outs / on-street parking.
   e. Speed bumps.
   f. Narrowed pavements to reduce driver speeds.
   g. Signage.

2 In greenfield development, or where new streets are introduced through infill development, achieve traffic calming by using any of, but not limited to, the following:
   a. Minimum traffic lane widths.
   b. Minimum number of traffic lanes in the roadway.
   c. Pedestrian-priority streets, woonerfs or homezones (i.e., the speed limit is under 15km/hr and vehicles must yield to pedestrians and cyclists).

3 Integrate a multi-use trail system and create linkages that ensure continuous and varied pedestrian routes throughout the community.

B3.3
ACTIVE TRANSPORTATION

A balanced and inclusive transportation network facilitates all modes of movement including walking and cycling by way of appropriate infrastructure.

1 Support community health and improve air quality by providing infrastructure that promotes walking, cycling, and use of transit as the primary means of transportation, thereby reducing dependency on the private automobile for daily activities.

2 Implement a network of active transportation facilities, interconnected pedestrian and cycling routes, trails, walkways, sidewalks and bicycle facilities that link the community with surrounding neighbourhoods, are integrated with existing and future public transit infrastructure and connected to regional and local trail systems.

3 Design communities with a typical walking distance of 400m (5 minutes) to daily activities, or 800m to higher order transit or community centres.

4 Design the street and block pattern to facilitate connections and walkability both internally and with surrounding neighbourhoods, through a grid or modified grid pattern. Discourage cul-de-sacs, P-loops and crescents, except where necessary due to grading and topography. Where these are necessary, sidewalks/trails should be provided to facilitate pedestrian/cyclists connections.

5 Provide for a continuous, linked, legible, and clearly marked system of multi-use pathways throughout the community as part of the Parks and Open Space System.

6 Encourage sidewalks or MUPs on both sides of the street.

7 Provide facilities in retail, commercial and employment developments to support active transportation, including secure short and long term bicycle parking, shower facilities and change rooms.

8 Provide paths to connect commercial plazas to residential areas.

9 Consider lands adjacent to the NHS as opportunities to implement active transportation trails to support healthy active living.

A. CYCLING (A)

1 Accommodate a cycling network that is safe, convenient and legible, including on-road cycling facilities, off-road cycling paths, and multi-use paths that are interconnected. Ensure the active transit system complies with the standards of the ATMP and BCSG.

2 Encourage cycling by providing:
   a. Dedicated, separated and signed cycling facilities on collector roads. Collector roads with direct frontage should also provide on-street parking along with cycling facilities.
   b. Clearly marked and signed cycling routes on shared streets.
   c. Reduced vehicle speeds on local streets.
   d. Appropriate street widths to accommodate dedicated and/or shared cycling facilities/routes.
   e. Bicycle parking facilities.

3 Consider providing measures to separate cycling facilities from traffic and to enhance safety including for example, planters, planted strips, bollards and barrier curbs.

4 Ensure pedestrian and cycling routes connect to the Transit Network.

5 Provide safe routes to schools and other community services and amenities by developing a network of connected local streets with traffic calming measures encouraging walking and cycling (see 3.1.B Traffic Calming).

6 Provide accessible and secure bicycle parking in Mixed-Use developments, as well as in retail, commercial, and employment developments; requirements for bicycle parking are outlined in the CZBL.

B. TRAILS AND MULTI-USE PATHS (MUP) - (B)

1 Design trails and MUPs to accommodate a range of users and abilities and be barrier-free, where appropriate, including street/intersection crossings and curb cuts.

2 Pedestrian Cross Overs (PXOs) should be considered at all mid-block trail crossings.

3 Provide wayfinding signage and/or trail markers throughout the trail network.

4 Avoid siting of trails and MUPs close to significant and sensitive natural areas or features. Where they are permitted to be located, MUPs shall be designed to minimize and mitigate impacts on natural heritage features.

5 Enhance safety by providing pedestrian-level lighting (maximum 4.6m in height) at trail entrances and connections, while minimizing disturbance to adjacent natural habitats.

6 Incorporate interpretive signage at key locations along trails and MUPs, where appropriate, such as near significant natural features or open space elements.

7 Provide benches and waste / recycling receptacles at trail heads and at regular intervals along the trail/MUP. Consider incorporating pedestrian amenities such as water fountains and cooling/misting stations, where appropriate.

8 Consider special landscape treatments at trail/MUP entrances including plantings, enhanced paving, seating, wayfinding and bicycle parking.

B3.4
STREETSCAPE DESIGN

The Complete Streets Guide is the City's comprehensive reference for the planning and design of streets in Brampton. Building on the existing roadway functional classification system, it identifies 11 Street Types, along with their intended roles, character, and composition, to support the wide range of uses and users found on Brampton's streets. Streetscape design within the various components of the City Structure (Centres, Boulevards, Corridors, Neighbourhoods, and Employment Areas)should reflect the Character-Based Network Plan outlined in the Complete Streets Guide.

The Complete Streets Guide also provides direction on the organization and design of the boulevard, cycling infrastructure, roadway, intersections, and green infrastructure. The following provides additional guidance specific to elements within the Boulevard Zone and the Roadway Zone.

BOULEVARD DESIGN

Boulevards are a key component of public streets and play an important role in facilitating walking as a safe, accessible and attractive choice for people of all ages and abilities. The boulevard includes the area between the curb edge and the face of a building or a property line. It is made up of the Pedestrian Clearway Zone, Furnishings and Planting Zone, Frontage and Marketing Zone and Edge/Curb Zone.

In addition to guidance provided in the Complete Streets Guide, the following shall be considered:

A. SIDEWALKS (A)

Sidewalks should be continuous throughout the community, and designed as an integral part of the pedestrian system to promote active transportation.

1 Design sidewalks to applicable municipal accessibility standards to accommodate the needs of persons with disabilities, visual impairments, and the elderly.

2 Where sidewalks are required, sidewalks will be encouraged on both sides of all streets. In instances such as the following (Brampton Plan 3.4.2.8), a sidewalk may only be required on one side of the street:

   a. Portions of streets flanking the Natural Heritage System;

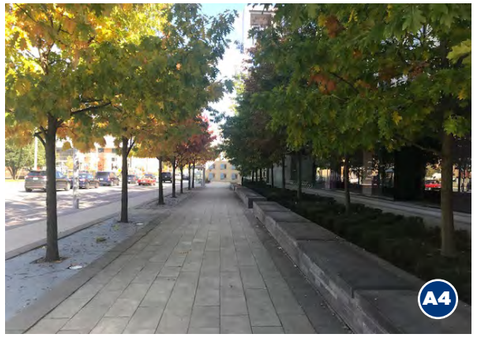
   b. Existing window streets where sidewalk extensions join a sidewalk on an arterial or collector street;

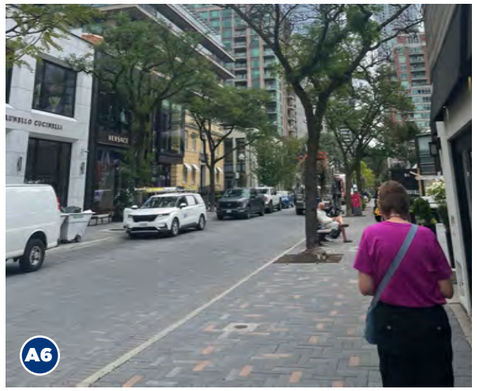
   c. Portions of streets that have a designated multi-use pathway within the boulevard on one side; and,

   d. Street reconstruction or retrofit projects where existing conditions such as mature trees, right-of-way widths, or Civic Infrastructure would present a barrier to sidewalks on both sides of the street.

3 Ensure sidewalks are clear of obstructions (pedestrian clearway) and there is sufficient space in the boulevard to provide for street furnishings, public utilities, tree plantings, and transit shelters (furnishings zone).

4 In existing Mixed-Use areas consider flexible spaces, opportunities to reclaim underutilized roadway, or repurpose parking spaces to create additional public space for benches, planters, landscaping, bike parking, and café tables and chairs, where feasible.





5 In new Mixed-Use areas:
   a. Design sidewalks with sufficient width to accommodate and support pedestrian activity, spill out areas (spill out zone) and a robust furnishings zone.
   b. Consolidate driveway access to public roads to minimize sidewalk crossings of private driveways and improve pedestrian safety.

6 Use alternative pavement markings or materials to highlight pedestrian areas and minimize conflict between vehicular and pedestrian users.

B. STREET FURNITURE (B)

1 Provide street furniture in areas with high pedestrian traffic, such as Mixed-Use areas, Neighbourhood Centres, key intersections, and open spaces.

2 Incorporate comprehensive and coordinated streetscape furnishings that reinforce the function of the streets as public space, including pedestrian-level lighting (maximum 4.6m in height), seating, bicycle parking, waste and recycling receptacles.

3 Provide street furnishings that accommodate a wide range of users with diverse abilities and needs.

4 Design street furniture/furnishings as a coordinated family of elements that fit and complement the overall streetscape design.

5 Select street furniture/furnishings that are high quality, durable, vandal resistant, and easy to maintain/replace. Consider streetscape elements manufactured from recycled material.

6 Incorporate enhanced designs/elements into street and site furnishings to distinguish key areas of the community (MTSAs, Mixed-Use areas, community nodes, heritage areas). In consultation with the City, developers shall work to develop such enhancements based on the City's standard, where appropriate.

C. SIGNAGE (C)

1 Develop a comprehensive wayfinding strategy, including directional signage and mapping at key locations, such as Urban Centres, Town Centres, Neighbourhood Centres, trails and key intersections.

2 Provide wayfinding signage that has a high level of clarity, visibility, and visual interest; is made of high-quality materials; and aids pedestrians and drivers in navigating the area, especially at night, while also directing active transit users to nearby services and amenities.

3 Provide signage with a unified design vocabulary.

ROADWAY DESIGN

A roadway designed using complete streets principles will provide an environment that maximizes safety for all road users, optimizes and balances the key street functions of mobility, access and place, and promotes sustainability.

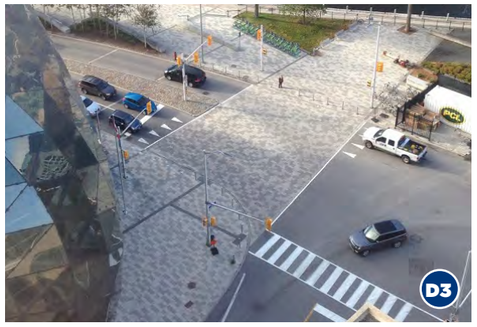
The roadway includes the area between the curb edge and the curb edge. In addition to guidance provided in the Complete Streets Guide, the following shall be considered:

D. PEDESTRIAN CROSSINGS (D)

1 In addition to designated pedestrian crossovers (PXO), provide additional PXOs at intersection in areas of high pedestrian activity (e.g., mixed-use areas, schools, libraries) to promote safety and a pedestrian-friendly environment.

2 Provide signalized pedestrian crosswalks at locations where important civic destinations and/or significant walking traffic is anticipated. Crosswalks are ideal near retail shops, community amenities, schools and recreation centres, provided traffic warrants and minimum spacing requirements are met.

3 Design pedestrian crossings to minimize conflict, and enhance safety and visibility, including:
   a. A marked travel path of a minimum width of 3m connected from sidewalk to sidewalk.
   b. Distinctive pavement markings using painted lines, enhanced paving materials, raised paving, textured pavement.
   c. Signage.



4 Provide curb ramps (or curb cuts) at crossings to ensure accessibility and accommodate wheelchair and stroller use. Curb ramps should include tactile surfaces and other design elements to assist pedestrians with physical, visual and/or audible impairments, as per AODA standards.

5 At pedestrian crossings, consider incorporating bump outs, bollards, or refuge medians to further enhance safety, particularly where curb-to-curb distances are greater.

6 At pedestrian crossings, consider expanding the implementation of Crossrides to allow cyclists to ride safely through intersections alongside pedestrians.

E. ON-STREET PARKING (E)

On-street parking serves a number of important functions. In addition to supporting Mixed-Use and Commercial areas, on-street parking also provides traffic calming to streets and acts as a buffer to separate pedestrians from traffic.

1 Consider on-street parking on both sides of the street in Mixed-Use areas, Neighbourhood Centres and along urban main streets.

2 Design on-street parking to enhance traffic calming and the streetscape environment, including:
   a. Bump outs (with opportunities for planting).
   b. Enhanced paving (coloured, textured, etc.).
   c. Rolled curbs (if rolled curbs are provided bollards are also required to separate the boulevard from the parking lane).

3 Where on-street parking is provided, it should be designed to minimize negative aesthetic and environmental impacts. This may be achieved by incorporating the following:
   a. Tree planting;
   b. Landscaping;
   c. Stormwater management;
   d. Porous/permeable surfaces; and,
   e. Light-coloured materials instead of black asphalt.

4 Account for and provide a curbside zone to allow for unobstructed car door swing.

F. LANDSCAPING (F)

The City of Brampton Landscape Development Guidelines (2019) provides detailed direction with respect to Architectural Components, Planting, Street Furnishings and Special Elements in the following areas:

- Street boulevards owned by the City of Brampton.
- Buffers owned by the Region of Peel.
- Privately-owned open space regulated by the City's Site Plan control process.
- Within close proximity to bus stops.

The overarching directions for landscaping, as it relates to the Streetscape are to:

1 Coordinate the public and private landscape elements that make up the street environment, including coordination of fencing, walls, planting, paving and site furnishings in order to present a cohesive and beautiful public realm.

2 Encourage enhanced landscaping:
   a. Within the public boulevards and pathways.
   b. In the front yards of adjacent residential, commercial, institutional and employment developments.

3 Provide appropriate buffers, including landscaping, to transition between private and public areas.

4 Develop connected tree canopies, enhance the urban tree canopy and provide shade over sidewalks.

5 Encourage the use of green infrastructure paving materials such as permeable/porous pavement, light-coloured materials, etc.

B4
NATURAL HERITAGE, PARKS AND OPEN SPACE

Brampton Plan acknowledges the importance of Natural Heritage, Parks and Open Space as fundamental building blocks of a complete and Green Community. It speaks of monitoring, maintaining and improving Natural Assets as valuable resources and accessing well designed, quality Parks and Open Space as essential to a healthy community.

Together, Natural Heritage, Parks and Open Space provide opportunities for social interaction, a range of active and passive recreation and active transportation.

Brampton Eco Park is a strategy aimed at creating and connecting a network of sustainable urban / green spaces, referred to as 'Eco Spaces'.

The majority of Brampton's 2500 hectares of Natural Heritage System (NHS) forms the backbone of Brampton Eco Park. From this foundation, Brampton Eco Park is envisioned to expand and evolve to include parks, urban parks, streetscapes, grey and green infrastructure, utility corridors, school grounds, and open space on private lands to eventually form a comprehensive green framework overlaying the city.

Brampton Eco Park is intended to foster local stewardship and pride, encourage active and connected communities, and help build attractive neighbourhoods, while strengthening connections between people and nature. Brampton's Eco Park strategy will help protect and support City infrastructure while conserving, enhancing, and celebrating its natural landscapes.

CRITERIA FOR ECO SPACES

- Enhance and maintain healthy natural systems and processes.
- Integrate opportunities for meaningful social and environmental interactions and experiences.
- Actively strive to incorporate the seven guiding Eco Park principles.

ECO PARK PRINCIPLES

1. Maximize ecological value.
2. Provide opportunities for social services.
3. Make nature visible.
4. Design with nature.
5. Integrate with the surrounding community.
6. Support innovation.
7. Reflect local identity.

B4.1
NATURAL HERITAGE SYSTEM (N)

The Natural Heritage System (NHS) is a key element of the City's structure (see Brampton Plan Natural Heritage System Schedules) and important to helping mitigate and adapt to climate change.

Brampton's NHS is part of the regional and provincial natural heritage system, with connections to Lake Ontario, the Niagara Escarpment, and the Oak Ridges Moraine.

The NHS includes wetlands, woodlands, valleylands, watercourses, areas of natural and scientific interest, environmentally sensitive and significant areas, habitats of threatened or endangered species, fish habitats, and significant wildlife habitat, along with the water resources system.

Through Brampton Plan, the City aims to protect, enhance and restore the NHS to ensure it is preserved for future generations. Parks and Open Space complement and may provide connections and linkages to support the NHS.

Where NHS features are present, they should form one of the ordering elements of the community structure.

1. Integrate the NHS as a key structural element of all neighbourhoods by providing for a range of development interfaces that create opportunities for public vistas and connections to the NHS (e.g. terminal views at the end of prominent streets).
2. Connect and integrate components of the NHS with the Parks and Open Space Network and the local and regional trail systems.
3. Any development should avoid encroaching on the NHS, including dumping, unauthorized access, and light spillage. Outdoor lighting should be designed to minimize light spillage and maintain dark sky conditions to protect ecosystems.
4. Where appropriate, provide opportunities for passive recreation adjacent to the NHS.
5. Where appropriate, provide frequent access points and significant street frontage adjacent to the NHS to promote views and accessibility.
6. Provide native and regenerative plantings in areas adjacent to the NHS.

B4.2
STORMWATER MANAGEMENT FACILITIES / NATURALIZED CHANNELS (S)

Stormwater Management (SWM) Facilities and Naturalized Channels are elements of the open space system that help to manage rainfall, snow melt, and stormwater runoff.

They provide potential habitat for fish and wildlife, enhance the resilience and bio-diversity of the community and contribute to the naturalization of open spaces. They should be designed to provide opportunities for passive recreational and nature interpretive.

1. Locate stormwater management ponds adjacent to and integrated within the Open Space Network.
2. Provide significant public visibility and access to SWM facilities by way of the street/block pattern (minimum 2 public frontages - street, park and/or open space frontages).
3. Implement a comprehensive rainwater and groundwater recharge strategy as part of the stormwater management treatment train;
4. Implement a Low Impact Design (LID) strategy to emphasize the use of bioswales, innovative stormwater practices, constructed wetlands, and alternative filtration systems, such as treatment trains and water conservation measures.
5. Consider on-site treatment of stormwater through the use of green infrastructure such as bioswales, at source infiltration, and permeable pavement.
6. Design ponds to blend with the natural landscape. Where feasible, conceal inlet and outlet structures using a combination of planting, grading, and natural stone.
7. Discourage the fencing of ponds except where warranted by safety considerations, such as along the rear or flankage of adjacent residential properties or school sites.
8. Provide opportunities for passive recreation with particular attention paid to safety and access.
9. Co-ordinate the design of landscape components, including look-outs, seating areas, shade structures, site furnishings as part of the overall character of the community.
10. Provide a planting strategy (including canopy trees) that enhances the City's urban forest and promotes the objectives of the Urban Forest Management Plan and Brampton Plan policies 3.2.5.10 to 3.2.5.15.
11. Ensure engineered channels are naturalized and support subwatershed / stormwater management functions.

B4.3
RECREATIONAL TRAILS (R)

Recreational trails are identified in Brampton Plan Schedule 3A - Active Transportation Network. Their design shall be guided by the standards defined in the City's ATMP and the Recreational Trails Guidelines (that are currently being drafted). In addition, the following shall also apply:

1 Incorporate the trail network, including within Parks and Open Space, and adjacent to or within the Natural Heritage System, where appropriate and supported by an impact study.

2 Connect trails to the sidewalk, to residential, commercial, employment and institutional areas as well as to other open space trails.

3 Design trail entrances to incorporate pedestrian/cyclist amenities such as lighting, seating, waste/recycling bins and bicycle parking, where appropriate. Lighting is discouraged along trails adjacent to or within the Natural Heritage System due to impact on wildlife and vegetation.

4 Design trails to support year-round and all-weather use, where appropriate.

5 Ensure pedestrian trails in environmentally sensitive areas use low-impact materials, such as woodchips or limestone screenings, and incorporate mitigation measures recommended by environmental impact studies.

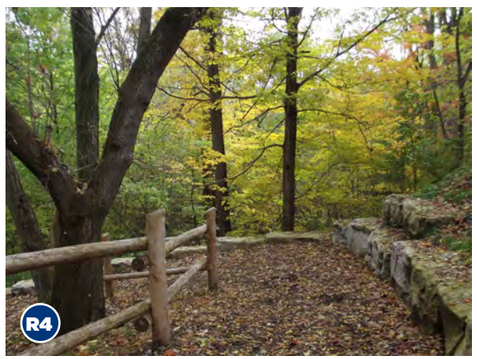
6 Avoid locating trails in hazardous lands (e.g., floodplains, slopes, areas prone to erosion) and wetlands.

7 Ensure trails are minimum 2.4m to 3m wide.

8 For trails adjacent to or within the Natural Heritage System, widths may vary based on available space and environmental considerations; a recommended width of 2m may be appropriate in these contexts.

9 Incorporate signage and interpretive/ educational features along trails to effectively direct users, highlight destinations within walking or biking distance,and serve as branding for the trail itself.

10 Provide pedestrian amenities such as water dispensers and cooling/misting stations, where appropriate.



B4.4
PARKS AND OPEN SPACE

Brampton Plan recognizes the development of Parks and Open Space as a key city-wide priority within the Health and Wellness City-Wide Building Block. The new Official Plan supports “rethinking” of the existing parks hierarchy including consideration of Urban Parks, Linear Connectors and Privately Owned Public Space (POPS).

Parks and open spaces are valuable community assets that provide opportunities for social interaction, recreation, programmed activities, as well as areas for quiet contemplation and relaxation. There is a well-documented association between mental health and natural environments; immersive exposure to nature through parks and open spaces can positively impact the overall mental well-being of the community. These spaces provide mental health and social connection benefits, while also supporting ecological functions such as enhancing biodiversity and helping to both mitigate and adapt to the impacts of climate change. Ensuring access to high-quality parks and open spaces that are well designed, offer a range of opportunities for individual or community activities, and are broadly accessible to residents of all ages, incomes, and abilities is a key foundation for a healthy city.

Parks and Open Space provide opportunities for the integration of arts and culture (Brampton Culture Master Plan 2018), including public art (Public Art Strategy 2024), which has proven to have a positive and meaningful impact on communities and audiences.

The Parks and Open Space Network consists of:

- City Parks
- Community Parks
- Neighbourhood Parks
- Urban Parks
- Linear Connectors

Brampton Plan (3.5.1 Parks and Open Space), the Parks and Recreation Master Plan (PRMP) and the Parks Plan (2041), promote parks that are diverse, well distributed and well designed to support and serve the needs of the community. This includes:

City Destination Park - Chinguacousy Park Children's Play Area

City Destination Park - Chinguacousy Park Building

City Destination Park - Chinguacousy Park Skating

Cassie Campbell Community Centre, Brampton

Springdale Community Park, Brampton

Neighbourhood Park, Brampton

A. CITY PARKS

City Parks are destination parks that are intended to provide green space and recreation opportunities at the city scale, and in some cases support regional park needs.

They are typically larger than Community Parks and may vary in size as well as in shape, depending on the constraints of surrounding properties and specific programs for the park. Variation in shape may also be the result of historical land assembly practices, a process of land assembly, which involves combining adjacent parcels of land to form a single property.

B. COMMUNITY PARKS

Community Parks are located throughout the city and are intended to provide a range of opportunities for outdoor active and passive recreation on a smaller scale than City parks.

Community Parks vary in size from 10 to 12 hectares and serve between 15,000 to 20,000 residents within a 3-kilometre radius. These parks may include:

- Playgrounds and splash pads.
- Multi-purpose courts and open play areas.
- Sports facilities and flood lighting
- Shade structures and seating areas.
- Walkways and landscaping.
- Parking.

C. NEIGHBOURHOOD PARKS

Neighbourhood Parks are smaller than community parks and are intended to provide opportunities and experiences for outdoor active and passive recreation within suburban residential neighbourhoods.

Neighbourhood Parks vary in size from 0.8 to 1.2 hectares and serve between 4,000 to 5,000 residents within a 5-minute walk (400m radius).

These parks may include:

- Playgrounds and splash pads.
- Multi-purpose courts and open play areas.
- Sports facilities and flood lighting.
- Shade structures and seating areas.
- Walkways and landscaping.

D. URBAN PARKS

Urban Parks are specialized parks located within the City's Urban Centres, Boulevards, Corridors, and higher-density neighbourhoods. These parks are expected to be acquired, owned, developed, and maintained by the City. However, in some cases, private ownership may be suitable for Urban Squares, Promenades, and Pocket Parks. This could include privately owned parks with arrangements in place to allow public access and use (see Section 3.5 – Ownership Models).

The Urban Park Hierarchy consists of the following:

- Urban Squares
- Public Commons
- Promenades
- Pocket Parks

URBAN SQUARES / PLAZAS

Urban Squares or Plazas are intended to serve community users who are generally within a 5-minute walking distance (approximately 400m), and support neighbourhood-oriented social opportunities, as well as city-wide entertainment and cultural events depending on their size and location.

Urban Squares are a moderately scaled urban park typology, approximately 0.25 to 1 hectare in size. Urban Squares are commonly associated with commercial and residential land uses.

Urban Squares may include public art, small outdoor game areas, seating areas and places to eat, as well as street- related activities such as vendor and exhibit space.

For guidelines on Urban Parks design refer to the Parks Plan 2041 - Appendix I Parkland Design Guidelines.

Urban Square - Berczy Park, Toronto

PUBLIC COMMONS

Public Commons are intended to serve community members who are generally within a 10-minute walking distance (approximately 800m) and to provide social and recreational focal points in urban neighbourhoods.

Public Commons are the largest urban park typology, approximately 0.75 to 2.0 hectares in size. Public Common spaces are the social and recreational focal points of a neighbourhood. They typically meet the needs of the local community, and in some instances, accommodate city-wide facilities. Public Common spaces support a balance of active and passive uses.

Public Common spaces should accommodate special features that add visual interest and contribute to placemaking, including space for public art.

For guidelines on Urban Parks design refer to the Parks Plan 2041 - Appendix I Parkland Design Guidelines.

Promenade - 39 - 41 Roehampton Avenue, Toronto

Pocket Park - Lee Lifeson Art Park, Toronto

PROMENADES

Promenades are intended to enhance the pedestrian experience along with highly activated at-grade retail spaces.

Promenades are substantial linear spaces that are located between adjacent building facades and the adjacent road right-of-way.

For guidelines on Urban Parks design refer to the Parks Plan 2041 - Appendix I Parkland Design Guidelines.

POCKET PARKS

Pocket Parks are intended to serve a local community that is generally within a 2.5 to 5-minute walk of residents, visitors and businesses.

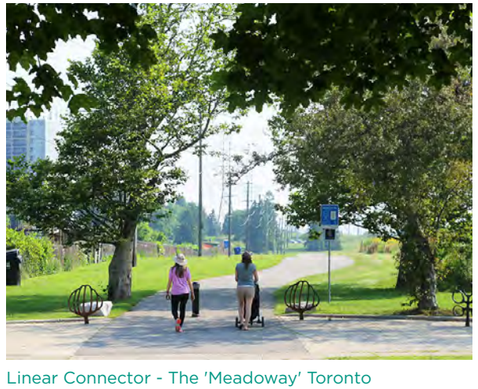
Pocket Parks are small public spaces designed to a very high standard to support intensified use and to accommodate socializing in dense urban areas. Pocket Parks are destinations unto themselves, animated by outdoor seating and active restaurant or retail frontages.

For guidelines on Urban Parks design refer to the Parks Plan 2041 - Appendix I Parkland Design Guidelines.

E. LINEAR CONNECTOR

Linear Connectors reflect lands that are oriented to off-road recreational trails and other connecting links between parkland or major community destinations and form part of the broader Active Transportation Network.

They are intended to advance active transportation as a key component of the overall mobility.



Linear Connector - The 'Meadoway' Toronto

B4.5
OWNERSHIP MODELS

POPS and Strata Parks, as per the City Parkland Dedication By-Law, are to be located within MTSA/Urban Growth Centers/Intensification Areas.

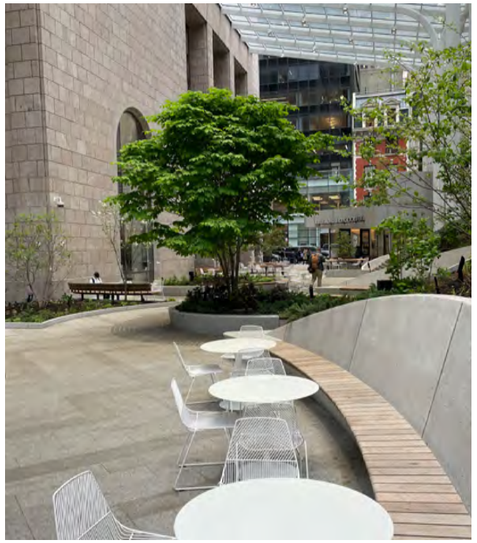
A. PRIVATELY OWNED PUBLIC SPACE (POPS)

Privately Owned Public Space (POPS) are open spaces located within private property which are made publicly accessible via legal agreements between the property owner and the municipality. They are privately operated and maintained.

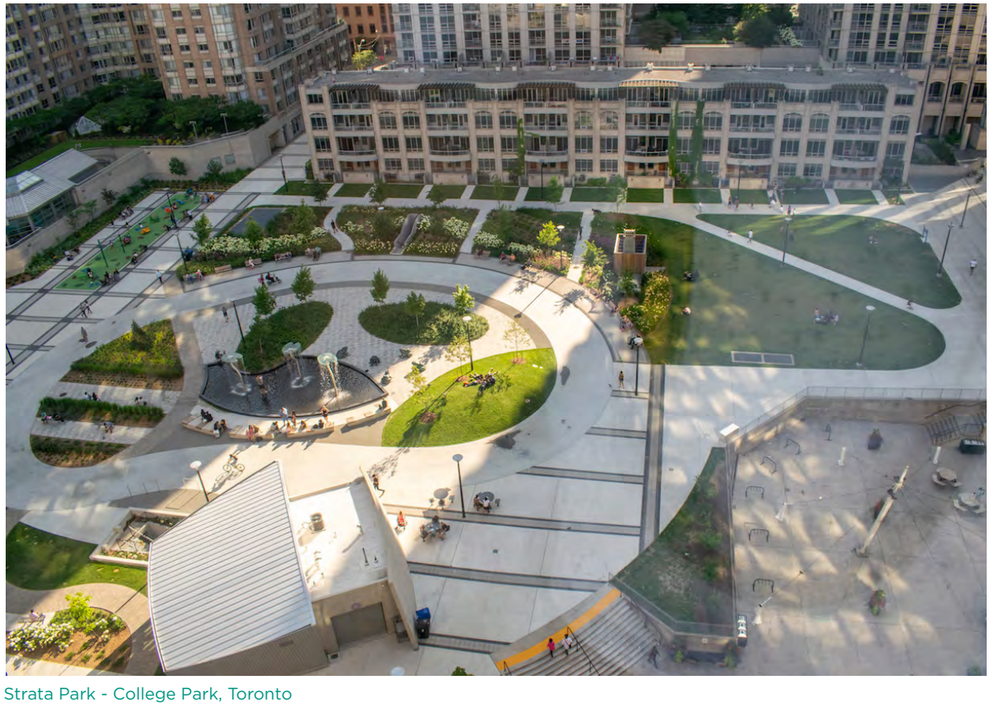
POPS serve an important public function in enhancing pedestrian connectivity in urban communities and on occasion, providing passive recreation opportunities.

B. STRATA PARKS

Strata (stratified title agreement) parkland is a public park developed above private infrastructure, typically parking garages. It is publicly owned and typically publicly operated, whereas the underlying infrastructure is maintained within private ownership.



POPS - 550 Madison Ave, New York City



Strata Park - College Park, Toronto

B4.6
URBAN FOREST

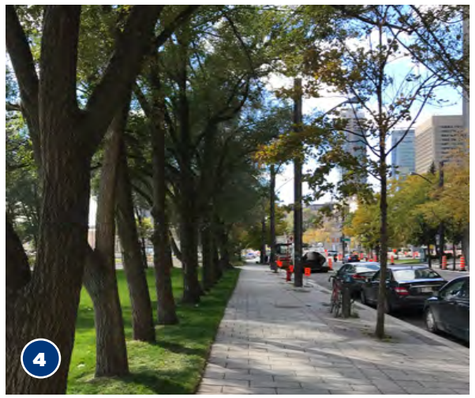
Urban trees support natural area functions and, at maturity, create a generous canopy which can provide pedestrian shade, shelter, streetscape amenities, and traffic management, promoting safety and creating a pleasant environment.

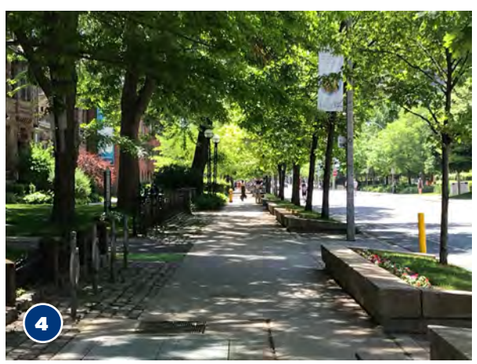
The intent of the urban forest is to increase the urban tree canopy and support Natural Systems functions while enhancing streetscapes to provide shade, shelter and aesthetically appealing streets and open space amenities.

In addition to Brampton Plan policies and the Urban Forest Management Plan, the following shall apply:

1 Provide a diverse and resilient species selection that anticipates climate change conditions and operational constraints.

2 Encourage a diversity of tree species along each road, native to the City, non-invasive, drought and salt tolerant, and low maintenance.





3 Select and plant street tree species with large canopies to provide shade over sidewalks, reducing the heat island effect and enhancing pedestrian comfort and safety. Trees should achieve at least 50% shade coverage of the sidewalk or road within a general time-frame of 8 to 15 years.

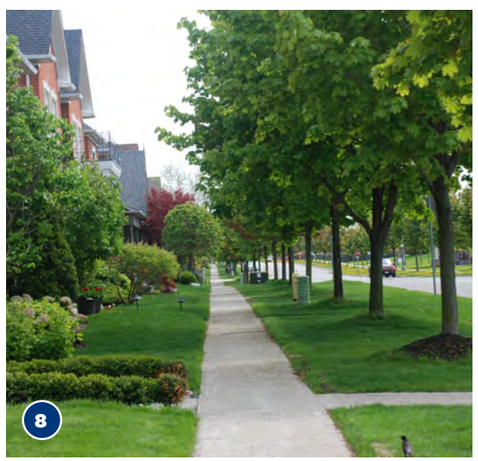
4 Provide appropriate planting conditions (soil volumes / soil mix) to address summer and winter conditions, and to support the growth of healthy, mature trees with connected canopies on local roads.

5 Consider incorporating a double row (allee) of trees in key areas, such as adjacent to parks and where a wider boulevard exists.

6 Design parking lots to incorporate planting of trees to increase tree cover and shading, and to reduce heat island impact.

7 Encourage alternative planting strategies (e.g. Silva-cells, sufficient soil medium, continuous planting trenches, etc.) to increase tree soil quantity and quality in high-pedestrian areas.

8 Ensure at least one street tree is planted per residential dwelling unit (excluding multiple dwellings that are subject to Site Plan approval) or spaced at intervals of 8m to 12m on centre. A minimum of two street trees should be provided on each flankage lot, where feasible, subject to considerations such as utility requirements, driveways, street furniture placement, and appropriate tree species.



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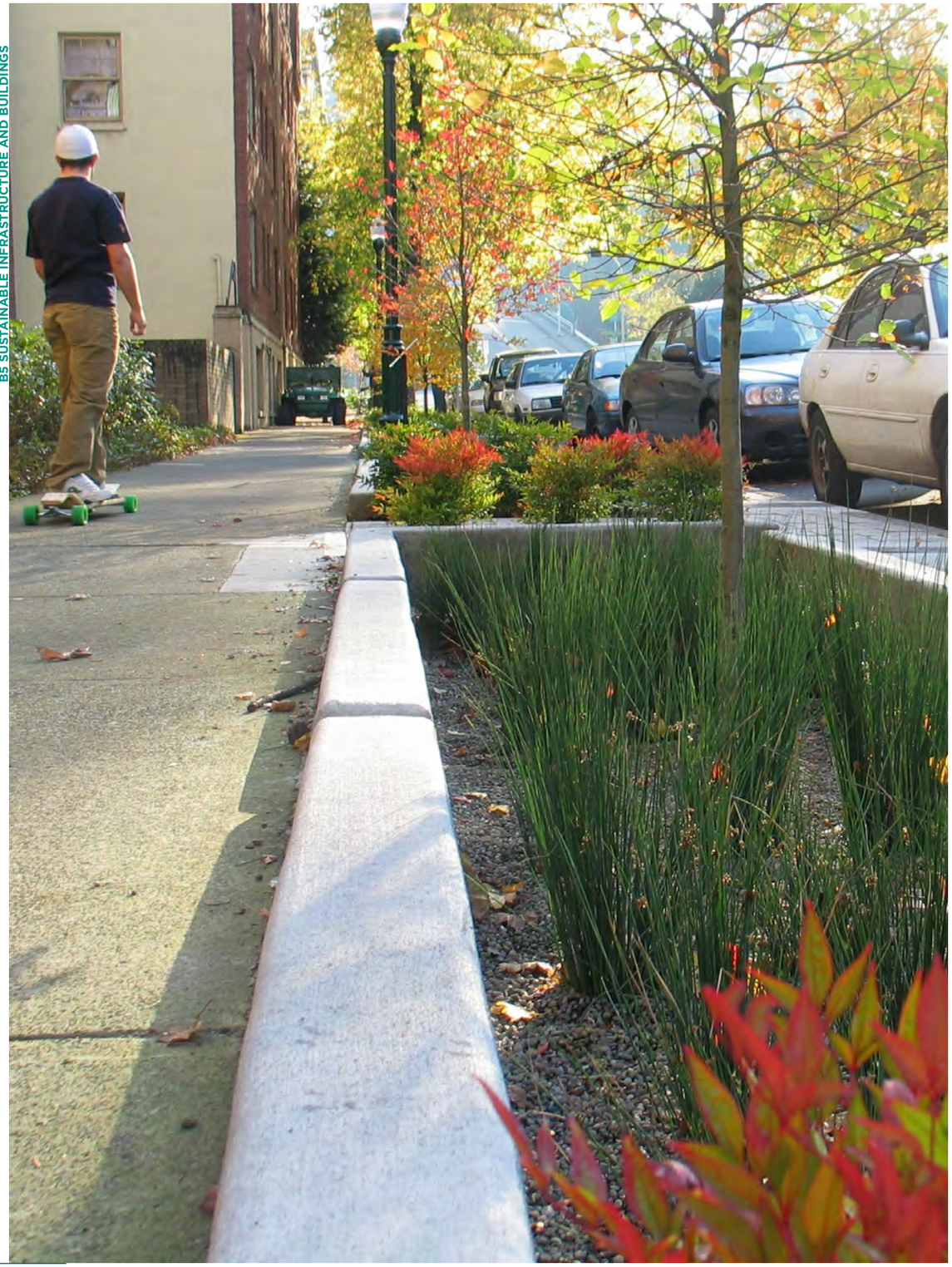


B5 SUSTAINABLE INFRASTRUCTURE AND BUILDINGS

Brampton Plan promotes sustainability in all its facets. Green infrastructure is important to ensuring that energy conservation is maximized and the strain on non-renewable resources is minimized. New buildings and communities should be designed with a focus on reducing water, waste, and energy use. Since human activity is the principal cause of elevated levels of greenhouse gases and demands on energy, water, and waste systems, the guidelines focus on means of remediating this impact on both the built and natural environments.

The SNCP and the Guidelines provide guidance towards these goals.

While sustainability programs use different performance measures to satisfy their goals, the end goals of reduced greenhouse gases, carbon fuel reliance, energy conservation, and climate resilience should be common. Other associated benefits relating to urban design that help to implement the above can include improved public health, social/cultural initiatives, and fiscal management.

The following guidelines should be applied alongside the City's SNCP and Community Energy and Emissions Reduction Plan (CEERP).

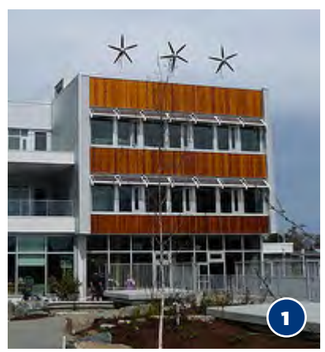
B5.1 ENERGY EFFICIENCY AND CLIMATE RESILIENCE

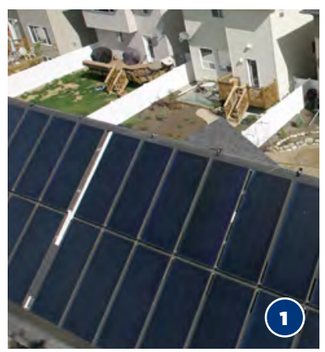
Energy efficiency refers to minimizing energy consumption by generating or using less energy. It can also play a significant role of lessening the impacts of climate change by replacing non-renewable resources with renewable energy.

Climate resilience is the ability of communities, ecosystems, and infrastructure to anticipate, prepare for, and recover from the adverse effects of climate change. It is important to ensure that our communities are protected against future climate impacts, such as extreme heat, flooding, and severe weather events like windstorms.

Through the lens of 'Green City', climate resilience is an important aspect of the built environment and should be considered when planning communities.

1 Reduce demand for energy from the grid and encourage renewable energy production. Renewable energy sources that could be employed may include but are not limited to the use of solar thermal and photovoltaic equipment, geo-exchange technologies, and/or wind power.





2 Encourage passive solar design to improve energy efficiency by supporting optimal conditions for both passive and active solar strategies. Orient buildings to maximize sunlight exposure and natural ventilation, enhancing the integration of passive building systems.

3 Where feasible, align streets and blocks within 15 degrees of true east-west to optimize passive solar gain through front and rear windows.

4 Where feasible, provide alternative community energy systems such as district energy, geo-exchange, sewer heat recovery, and/or inter-seasonal thermal energy.

5 Consider constructing all low and medium density residential buildings to be Solar Ready (i.e. built with all the necessary piping and equipment that would be needed to install a solar power system).

6 Reduce heat absorption through the use of cool roofs that are designed to reflect more sunlight and absorb less heat than a standard roof. Cool roofs can be made of a highly reflective type of paint, a sheet covering, or highly reflective tiles or shingles.

7 Consider cool roofing material with a minimum initial solar reflectance of 0.65 and minimum thermal emittance of 0.90.

8 For a low sloped roof, typical of commercial and institutional buildings, the cool roof Solar Reflectance Index (SRI) value should be 64 and for steep sloped roofs, typical of residential, the SRI value should be 15.

9 Green roofs are encouraged for high-rise residential, office buildings, as well as, public institutional buildings to minimize surface runoff, reduce urban heat island effects, provide noise insulation, and improve local air quality.

10 Mitigate urban heat island effects through the installation of light-coloured paving materials including white concrete, grey concrete, open pavers, and any material with a solar reflectance index of at least 28. Consider light-coloured materials for development with hardscape or paved surfaces in the Urban Centres, Town Centres, Urban Boulevards and Corridors.

11 Encourage electric vehicle (EV) charging stations.

a. Provide EV charging stations in parking areas of mixed-use, office, institutional, employment uses, and residential developments, where feasible.

b. Locate EV parking in highly visible and accessible areas, preferably near building entrances or in premium parking zones.

c. Provide clear signage to direct EV users to EV designated parking spots.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12 In surface parking lots, consider using photovoltaic (PV) canopies. PV canopies in parking lots optimally utilize unused space to generate sustainable electricity, allow for the ideal tilt angle of the PV array, provide weather-protected parking and pedestrian walkways, offer a recharging system for electric vehicles underneath, and feature bi-facial/transparent PV modules that allow ambient light below the canopy

13 Consider PV canopies in parks and open spaces and in institutional settings to provide covered/shaded sitting areas and gathering spaces.

14 Preserve and expand existing tree cover to connect and buffer protected woodlands and other natural areas and to mitigate urban heat island impacts.

15 Implement the strategic use of deciduous trees or preserve existing trees to help with evapotranspiration and the shading of sidewalks and hard surface areas in the summer and solar access in the winter.


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B5.2
WATER USE (W)

The City's potable water comes from Lake Ontario as part of the Region's Lake-Based System. This system is sustained by the rivers and creeks that flow through Brampton and Mississauga.

Stormwater management, when appropriately treated, can benefit the community including contributing to potable water, aquifer recharge, and urban park development.

1 In order to promote water conservation, all new developments are encouraged to:

a. Achieve greater water efficiency than the Ontario Building Code;

b. Restrict the use of potable water for outdoor watering;

c. Consider the use of water efficient and drought resistant plant materials in parks, along streetscapes, and in public and private landscaping;

d. Avoid use of turf grass areas, and when required, install drought resistant sod;

e. Increase topsoil depths and provide soil scarification;

f. Consider xeriscape landscaping using native, drought-tolerant plants, a cost-effective landscape method to conserve water and other resources on a residential and community-wide level; and,


W1f

g. Reduce the impact caused by new development on the natural hydrological cycle by installing permeable or porous driveway and parking lot surfaces.

2 Encourage the implementation of Low Impact Development Standards that emphasize the use of bio-swales, innovative stormwater practices, constructed wetlands, at-source infiltration, greywater re-use system and alternative filtration systems such as treatment trains and water conservation measures.

3 Consider a rainwater harvesting program to provide the passive irrigation of public and private green space, including absorbent landscaping, cisterns, rain barrels, underground storage tanks, infiltration trenches, etc.

B5.3
STORMWATER MANAGEMENT (S)

1 Consider strategies for stormwater retention and runoff, such as:

a. Retain stormwater on-site through rainwater harvesting, on-site infiltration, and evapotranspiration.

b. Direct flow to landscaped areas and minimize the use of hard surfaces to reduce the volume of runoff into the storm drainage system.

c. Store snow piles away from drainage courses, storm drain inlets, and planted areas.

d. Use infiltration trenches, dry swales, dry ponds, and naturalized bioswales adjacent to parking areas and other large paved areas to improve on-site infiltration.

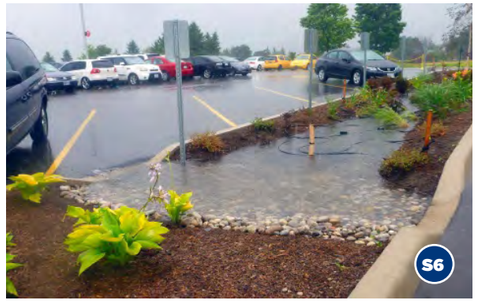
2 Consider the inclusion of third pipe greywater systems and rain water harvesting for watering lawns, gardening, to reduce demand on potable water use.

3 Introduce green infrastructure, such as bioswales, within the public right-of-way to enhance ground water infiltration and improve water quality as part of a comprehensive water management plan.

4 Consider using porous or permeable pavement instead of standard asphalt or concrete for walkways, driveways, parking areas, and other suitable roads to manage stormwater runoff. Where appropriate, use grass pavers that support vehicle weight while allowing grass to grow, further reducing surface runoff.

5 Consider the installation of subsurface basins below parking lots to enable stormwater to be stored and absorbed slowly into surrounding soils.

6 Where feasible, implement curb cuts along sidewalks and driveways to allow water to flow onto planted zones or infiltration basins.



B5.4
LOW IMPACT DEVELOPMENT (L)

A number of low impact development (LID) and green infrastructure options can be implemented to increase stormwater infiltration into the soil, and support evapotranspiration, and filtration. LIDs deal with stormwater runoff to prevent issues such as floods, erosion, sedimentation, and pollution.

1 Encourage the implementation of Low Impact Development standards that emphasize the use of bioswales, innovative stormwater practices, constructed wetlands, at-source infiltration, greywater re-use systems, and alternative filtration systems such as treatment trains.

A. PERMEABLE PAVEMENT/POROUS CONCRETE OR ASPHALT (A)

2 Utilize permeable or porous paving materials, such as open-joint pavers, porous concrete or asphalt, and precast turf-grid products, for low-traffic roads, driveways, parking areas, trails, and walkways. Preference shall be given to these materials when selecting paving options.

3 Encourage paved areas used for snow storage to integrate permeable paving to absorb snow melt on site.

B. BIORETENTION (B)

Bioretention is a versatile stormwater management approach that involves creating vegetated areas to temporarily store runoff from roofs and pavements.

4 Consider bioretention areas along roads and in large parking lots to treat runoff from roofs, roads, parking lots, or other paved areas. Runoff from these impervious surfaces is directed into the bioretention area, where it ponds and slowly infiltrates. There can be multiple cells throughout a neighbourhood or in a parking lot.

C. BIOSWALES (C)

Bioswales are vegetated, open trapezoidal channels designed to manage stormwater by conveying, treating, infiltrating, and attenuating runoff.

5 Consider bioswales within the ROW located within the boulevard and connected to the catch basins within the paved portion of the ROW allowing the system to discharge to the storm sewer if the volume of runoff directed to the bioswales exceed the design volume.

6 Use enhanced grass swales as an alternative to curb and gutter systems if site conditions permit.

D. GREEN ROOFS (D)

Green roofs have multiple environmental benefits, as they improve energy efficiency, reduce urban heat island effects, create green space, and have water quality, water balance, and peak flow control benefits.

7 Encourage green roofs for mid-rise and high-rise residential, office buildings, as well as, public institutional buildings to minimize surface runoff, reduce urban heat island effects, provide noise insulation, and improve local air quality.

8 Encourage community and public buildings to install green roofs with 50% coverage with the remainder of the roof covered with light coloured material.

B5.5 MATERIAL RESOURCES AND SOLID WASTE

Sustainable communities shall incorporate strategies to reduce natural resources consumption, and minimize waste, by salvaging on-site materials, and reusing, recycling, and recovering materials from residential waste.

In addition to Brampton Plan policies, the following should apply:

1 Consider the use of recycled/reclaimed materials for new infrastructure including roadways, parking lots, sidewalks, unit pavings, curbs, water retention tanks and vaults, stormwater management facilities, sanitary sewers, and/or water pipes.

2 Provide on-site recycling facilities for the handling, storage, and separation of recyclables, with a focus on resource recovery, in large developments such as multi-unit residential buildings, office and employment buildings, and institutional or public buildings.

3 Prepare a construction waste management plan that includes:

a. A summary of the main types of waste that are expected to be generated on-site.

b. A description of the waste sorting plans, including rough quantities (if available).

c. A list of the recycling facilities that waste will be taken to for diversion.

d. Reuse strategies (if applicable).

4 Encourage recycling and/or salvaging at least 50% of nonhazardous construction and demolition debris and locate a designated area on site during construction for recyclable materials.

B5.6 URBAN AGRICULTURE (U)

Urban Agriculture, such as community gardens and traditional farm areas at community peripheries, provides the opportunity for an alternative use of green space and can act as a transition between land uses.

The alternative use of green spaces as transitions in land uses while facilitating access to locally grown food should be encouraged.

In addition to Brampton Plan policies, the following should be considered:

1 Inclusion of a reasonable cluster of key services to residences based on walking distances; for instance, encourage community gardens that are located within 800m of the proposed dwelling units.

2 Initiatives such as sustainable food production practices as a component of a new development. Development plans and building design shall incorporate opportunities for local food production through:

a. Community gardens;

b. Edible landscapes;

c. Small-scale food processing, such as community kitchens, food co-ops and community food centres;

d. Food-related home occupations / industries;

e. Small- and medium-scaled food retailers; and,

f. Local market space (i.e. farmers' markets).

3 Opportunities for urban agriculture in neighbourhoods, and Parks and Open Space which also act as a transitional use between natural and built environments.

4 More intense forms of urban agriculture within existing industrial/ Employment Areas which can impact food security, employment issues and the larger social, economic, and ecological sustainability of growing food locally.

5 Providing space for community gardens and/ or allotment gardens in open space areas.

6 Opportunities to create edible landscapes through conservation of existing orchard trees, or by providing orchard trees as part of proposed landscaping strategies in public parks, other municipal lands or POPS.

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