Sustainable Community Development Guidelines

Part 8 of the Development Design Guidelines




September 2013

Flower City

brampton.ca

Prepared for the City of Brampton by:

The Planning Partnership

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A message from:

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How we live and where we live determines our chances of enjoying a long and healthy life. But today so many of us are challenged to achieve an adequate level of physical activity because we live in environments designed for cars, which limit the opportunities for walking and cycling. This is an increasing concern for public health departments because of the growing body of research linking the physical form of our communities to physical activity, and the prevalence of being overweight, obese, and developing diabetes and cardiovascular disease.

Ensuring that the built form promotes positive health outcomes is of particular importance in the City of Brampton. In 2007, 11.5% of adults in the City of Brampton had been diagnosed with diabetes. These rates are higher than the provincial average and the highest in the Region of Peel. Our population is also aging and, as the prevalence of diabetes increases steeply with age, this will increase the numbers of people affected.

Building communities that support healthy, active lifestyles, at all ages, has a direct impact on the overall physical and mental health of the people who live there including, but not limited to, air pollution and greenhouse gases, water quality, levels of physical activity, social connectedness, and rates of injuries. Understanding and dealing with chronic disease through collaboration with our partners in planning and engineering is the new frontier for Public Health.

We are pleased to have worked with the City of Brampton on the development of the Sustainable Community Development Guidelines, particularly because they reflect Peel Public Health's Healthy Development Index. Giving priority to health criteria demonstrates Brampton's commitment to progressive development that optimizes the health of current and future generations.


MOUNT PLEASANT

1.0 INTRODUCTION

1.1 ROLE OF THE GUIDELINES

The City of Brampton Official Plan *'Our Brampton, Our Future'*, establishes the Sustainable City Concept, wherein the principle of sustainable development will guide Brampton's growth. In June 2010, Brampton City Council adopted The City's Growth Plan Official Plan Amendment (GPOPA) to the 2006 Official Plan to conform to the Provincial Growth Plan for the Greater Golden Horseshoe. The amendment enhances the Official Plan's Section 3.1 Sustainable Planning Framework, by better defining elements of sustainable communities, and recognizing the preparation and management of strategic documents to guide both development and municipal decisions to ensure that the City's land use planning is sustainable. The Sustainable Community Development Guidelines form a chapter of the Development Design Guidelines approved in 2003.

The Sustainable Community Development Guidelines (SCDG) document will provide a basis for the City to review development applications, with a focus on new development. The Guidelines will assist the City to evaluate documents and technical reports provided in support of development applications, such as Community Design Guidelines and Urban Design Briefs, that describe the sustainable aspects of proposed developments, and how sustainable initiatives will be achieved.

The SCDG is a comprehensive document that encourages and guides development at a level of planning and design that focuses on the community as a whole. The guidelines may be general in nature but will provide direction in shaping and structuring community design.

The goal of the SCDG is to provide criteria for assessing development applications from a sustainability perspective.

1.2 SUSTAINABILITY PRINCIPLES AND GOALS

Principles

The following guiding principles present a comprehensive approach to sustainable community design. They are all interconnected and must be collectively addressed to reduce the impact of development and improve quality of life.

1. Support the mix and diversity of land uses in a compact, transit supportive development form to ensure a proper balance of residential, employment, and services to shorten distances between homes, workplaces, schools, and amenities.

2. Preserve the natural heritage system and open spaces by directing development to existing communities ensuring the protection of environmental areas, access to local food, and improving the quality of our living environment through the distribution and access to parks and recreational facilities.

3. Create walkable and connected communities with sufficient destinations within walking distance of residents and through complete streets and pedestrian supportive streetscapes that create opportunities for residents to be physically active and socially engaged.

4. Provide for a range and mix of housing opportunities, choices, and accessibility for all income levels and needs.

5. Provide a variety of economical, safe, and accessible mobility options through the provision of a connected network of streets, sidewalks, bicycle lanes, trails, and a public transit system to ensure all members of society have transportation options while reducing automobile dependence.

6. Encourage the responsible use of resources to ensure long-term sustainability, reduce greenhouse gas emissions, and reduce demands on energy, water, and waste systems.

7. Create jobs concurrent with residential growth to ensure a long-term balanced economy while encouraging closer live work proximity.

8. Ensure that growth and development is fiscally sustainable.

9. Optimize opportunities for infill, intensification, and revitalization.

10. Promote place-making that instills a sense of civic pride.

11. Preserve the City's rich heritage through adaptive reuse and restoration.

Goals

An environmentally sustainable and healthy community with distinctive, liveable neighbourhoods, integrated and connected green spaces, efficient transportation and transit system, and employment opportunities, is the primary focus of the SCDG. To achieve this community vision, clear goals of the SCDG include, but are not limited to:

1. Compact development
2. Walkable streets
3. Mixed-use neighbourhood centres
4. Housing and job proximity
5. Reduced automobile dependence
6. Mixed income/diverse communities
7. Public health
8. Energy reduction and conservation
9. Water management and conservation
10. Stormwater management
11. Certified Green Building program
12. Heritage resource preservation

In order to achieve the sustainability goals set out for the SCDG, it is essential to understand that good urban design plays a key role in creating sustainable communities. Essentially, the built environment and the way it is designed can influence a person's lifestyle choices which, when considered on a much broader scale, can contribute to either the success or failure of achieving sustainability goals within a community. For example, the proximity between housing and jobs, the walking distance to amenities, the availability of frequent bus service, and a connected pedestrian system, influence and shape travel mode choices which directly impacts the physical activity and health of residents.

One of the goals that has an over arching impact throughout the guidelines is that of public health. The implementation of the guidelines will work to improve public health overall with the intent to promote healthy communities, active residents, and physical activity as part of daily life. By improving walkability, and by making active transportation an accessible and preferred mode of transport, physical activity can easily be integrated into daily life.

The specifics of achieving the SCDG goals should be set out through performance measures that can be logically and clearly followed by those who design and build communities, as well as those who administer the review process. It should also be noted that the onus of achieving these goals falls equally on the public and private sectors.

Different sustainability programs use different performance measures to satisfy their goals. The end goals of reduced greenhouse gases, carbon fuel reliance, and energy conservation 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.

1.3 SUSTAINABLE DEVELOPMENT FRAMEWORK

Theme Areas

The sustainable development framework for the guidelines is broken down into four themes or layers for sustainable community design. The four theme areas represent the main structuring elements of a community which are required to work in unison to achieve a sustainable and healthy living environment.

The following provides a description of each theme area and why each is an important component of a sustainable community for Brampton. Each theme area has a number of corresponding indicators or measures that are listed on the following page.

1. Built Environment

The built environment should be designed in a manner to ensure that development contains the components of a community that directly impact physical activity and improve the overall health of its residents. Recognizing the importance of built environment factors in influencing and shaping travel mode choices is essential to creating a complete, walkable, and transit supportive community.

The intensity and diversity of land uses significantly influences decisions on where to live, to drive to work, or the choice to take transit. 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 throughout the various cycles of their lives.

2. Mobility

The indicators of mobility ensure that a variety of transportation options are available to residents. A community should be designed to encourage physical activity, facilitate active transportation, and support public transit in place of automobile dependence. The most vulnerable population groups including children,

elderly, disabled, and low income individuals are the most affected by choices available to them for mobility and access to services and amenities. Designing a safe, convenient, and accessible environment for walking and cycling encourages these alternative modes of transportation.

3. Natural Environment and Open Space

The natural environment, urban forest, and the open space system are essential components of a healthy, sustainable community. Firstly, the preservation and enhancement of the natural heritage system ensures the health of the environment and supports the recreational and cultural opportunities in the City. Secondly, ensuring residents have convenient access to a connected and diverse range of open spaces, parks, and recreation facilities offers opportunities for improved public health.

4. Green Infrastructure and Building

The indicators of green infrastructure and building are designed to ensure 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 measures focus on means of remediating this impact on both the built and natural environments.

Theme Areas and Indicators

The following are the indicators of the four theme areas. The indicators are certain qualities or characteristics of a sustainable community. They are designed to outline the required measures or standards for each theme to ensure that the overall principles and goals are achieved.

Built Environment

1. Compact Development
2. Community Form
3. Mix and Diversity of Land Uses
4. Housing Mix and Diversity
5. Walkability
6. Cultural Heritage
7. Economy

Natural Environment and Open Space

1. Natural Heritage System
2. Parks
3. Urban Agriculture
4. Urban Forest

Mobility

1. Street Network and Block Design
2. Transit Supportive
3. Active Transportation
4. Streetscape Elements/Pedestrian Supportive Design

Green Infrastructure and Building

1. Energy Conservation
2. Water Use and Management
3. Stormwater Management
4. Material Resources and Solid Waste
5. Air Quality
6. Lighting
7. Green Buildings/Green Sites
8. Stewardship and Education

1.4 HOW TO USE THE GUIDELINES

The Sustainable Community Development Guidelines are divided into three sections:

2.0 Secondary Plan Areas;

3.0 Block Plan Areas; and,

4.0 Draft Plan of Subdivision & Site Plan.

The guidelines illustrate a structure for guiding future development in the City of Brampton. Each section sets out key guidelines that are specific to a particular plan area. Depending on the application, the appropriate section shall be selected and used to assist in shaping the policies and implementing the design of the community or neighbourhood area.

Specific guidelines may not be applicable to all plan areas, depending on the nature of the application or site conditions. The intention is to ensure that sustainable measures are followed and that any new development, ranging from infill to new greenfield, reinforces a coherent, integrated, and compact built environment.

1.5 INTERPRETATION & IMPLEMENTATION OF THE GUIDELINES

The Sustainable Community Development Guidelines are intended to implement the Growth Plan Official Plan Amendment (GPOPA) direction for new development, within the City and provide greater clarity on urban design, streetscapes, built form, and sustainability initiatives for new development, infill, and/or redevelopment. The Guidelines are to be read in conjunction with the policies of the GPOPA and in particular Section 3.2 Sustainable City Structure, Section 4.10 Urban Design, and the guidelines of the Development Design Guidelines (DDG), Parts IV, V and VI.

The SCDG, in concert with the GPOPA policies and the guidelines of the DDG, will be used to evaluate secondary plans, block plans, and draft plans of subdivision and site plan applications in order to ensure that a high level of urban design and the intended level of sustainability is achieved.

Notwithstanding the foregoing, the provisions of the GPOPA shall prevail over the provisions of these Guidelines in the event of any conflict.

2.0
Secondary Plan Areas

2.0 SECONDARY PLAN AREAS

The preparation of a comprehensive Secondary Plan guides and shapes the formation of Block Plan areas and is the foundation from which the Plan Area communities grow. DDG Part II The Design Process, establishes the components for a Secondary Plan Stage One for the City of Brampton. The following guidelines build upon these land use structure requirements and provide sustainable measurements for plan development.

2.1. BUILT ENVIRONMENT

2.1.1. Compact Development

Density and intensification take advantage of existing infrastructure, enable better transit systems, improve enhanced economies of scale in the delivery of soft and hard services, and makes district energy more viable. Compact development is one of the key objectives of Communities, under Section 3.2.7 of the GPOPA. To promote compact development, the following measures are encouraged:

SG1. The strategic allocation of density can contribute to compact form, increase transportation efficiency and walkability within the community. Within the Secondary Plan, require that higher densities, major office, retail, and major institutional uses are placed in appropriate locations in mixed use nodes, along transit corridors, and in close proximity to public open spaces.

SG2. As per GPOPA Policy 3.2.1.1, the Secondary Plan Area shall contribute to the Regional overall density requirement for *Designated Greenfield Areas* of 50 residents and jobs per hectare. Policy 4.4.4.23 states *"that the City will work with the Region to plan new Greenfield communities at a minimum density of 50 persons and jobs per hectare."*

SG3. The Secondary Plan shall adhere to Policy 3.2.7.5 of the GPOPA which allocates higher densities and massing to the *Urban Growth Centre, Central Area, Intensification Corridors, Mobility Hubs* and *Major Transit Station Areas.*

SG4. Minimum and maximum residential densities are set out in the Official Plan, Policy 4.1.1.2. In order to promote compact development and conserve land, implement the top end of the permitted residential densities within each density category. For new Secondary Plan Areas, under Policy 4.1.1.4 of the Official Plan, the City shall specify the overall residential density and housing mix targets based on a City-wide target of 35 units per net residential hectare.

SG5. Incorporate development densities that support existing and planned transit services. Projects at *Major Transit Stations* should be striving for densities of 100 units per net hectare where access to the highest order transit is maximized.

FIGURE 1 - The Mount Pleasant Secondary Plan is an example of a sustainable community development.

FIGURE 2 - Compact, higher density residential development.

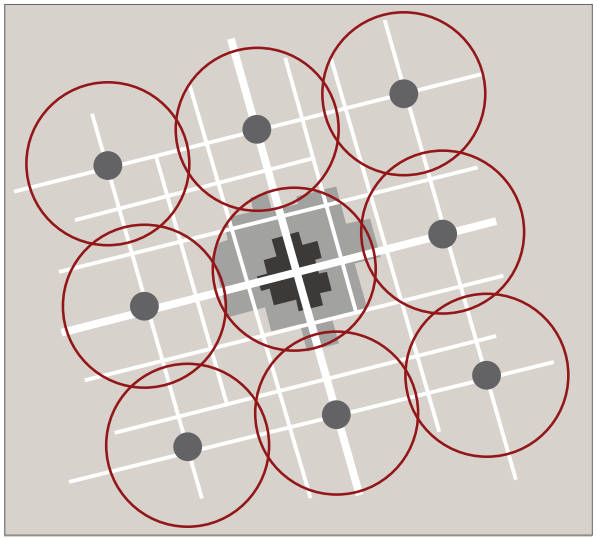

FIGURE 3 - Illustration of a cluster of 6 to 9 neighbourhoods (depending on topography and natural features) with a central mixed use node.

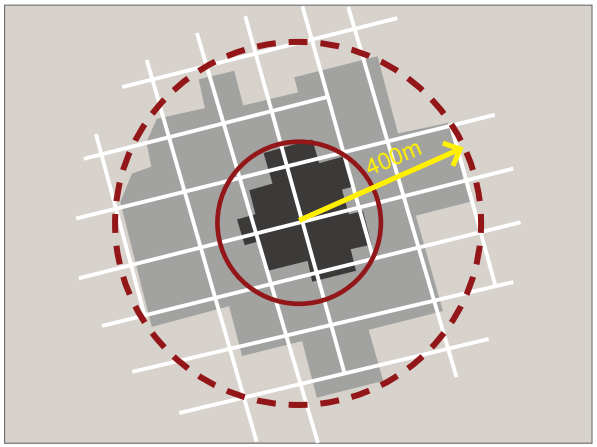

FIGURE 4 - Neighbourhood centre with typical 400m, 5 minute walk, measured from centre to edge

2.1.2. Community Form

The purpose of community form is to develop identifiable, inter-connected, and complete communities with vibrant mixed use centres providing a range of social and employment opportunities.

To encourage the development of healthy community form in Secondary Plan areas, the following apply:

SG6. Community form is characterized, and developed, based on a clustering of typically 6 to 9 neighbourhoods, (depending on topography and natural features), to sustain a viable mixed use node and public transit.

SG7. Neighbourhood shape and size is generally defined by 400 metres (5 minute walk) measured from centre to perimeter with a distinct centre or focus that may include medium density, retail, community facilities, and/or a parkette.

SG8. Locate higher residential densities, retail, employment opportunities, and access to higher order transit central to the cluster of neighbourhoods in a mixed use node.

SG9. Depending on the scale of the Secondary Plan Area, provide for a range of smaller neigbourhood centres, in conjunction with a mixed use node, central to the larger community.

SG10. Provide a permeable network of arterial and collector roads to ensure strong links, accessibility, and route choices between mixed use nodes and neighbourhood centres.

2.1.3. Mix and Diversity of Land Uses

Mixed use communities contribute to a jobs/housing balance as lengthy commutes are one of the largest stressors associated with urban living. A mix of uses contributes to creating healthy communities by strengthening the live-work-play relationship through a proper balance of residential, employment, commercial, retail, and public amenity.

SG11. The Secondary Plan shall comply with Official Plan Policy 3.2.7, stating that new communities shall be planned to be 'Complete Communities' ensuring that resident's daily needs are provided for throughout their lifetime.

SG12. Provide a diverse mix of land uses in the Secondary Plan Area to ensure variety and balance in new communities.

SG13. Provide a number of higher order diverse uses, such as major transit, arterial roads, open space, commercial, employment, and institutional facilities in the Secondary Plan Area to ensure a mix of land uses are within 800 metres (10 minute walk) of residents.

SG14. Institutional uses are integral components of communities and are to be centrally placed as a civic focus and/or focal point adjacent to a park or community facility.

2.1.4. Housing Mix and Diversity

By providing a range of housing types residents of differing economic situations have the opportunity to live in the same neighbourhood and have access to the same services. It also promotes integration between age groups and family types creating a more socially cohesive community.

SG15. Provide for a range of housing types in the Secondary Plan to create choices for all sectors of society, regardless of their age or income bracket, preferred lifestyle, physical ability, or tenure. This mix and diversity makes it possible for households to move within one community as housing needs and lifestyle preferences change.

SG16. Provide a gradation of residential densities, with the highest densities placed at identified intensification areas or mixed use nodes, and transition to lower density at an approximate radius of 800 metres from centre to edge.

SG17. Ensure at least three of the following housing types exist within a neighbourhood, defined by an approximate 400 metre radius: single detached; semi-detached; townhouse; apartments; mixed use buildings; and live-work units.

SG18. Within the Secondary Plan Area consider housing options specifically designed for seniors. Place retirement and long-term care facilities closer to mixed use nodes or neighbourhood centres.

2.1.5. Walkability

To encourage walking and reduce vehicle dependence, a mix of uses and density in a community or neighbourhood with a high degree of connectivity, supports the accessibility and convenience of transit, schools, amenities, and retail.

SG19. Ensure a typical walking distance of 400 metres (5 minutes) to daily activities, such as transit, elementary schools, active parks, and modest services, or 800 metres (10 minutes) to higher order transit or community centre.

SG20. Internal connectivity and multiple connections to the community at large are required to decrease trip distance between points, taking into account the existing and proposed urban structure of adjacent and adjoining areas.

SG21. The built environment impacts human development and neighbourhood design affects opportunities for social interactions. Within the Secondary Plan Area, provide for mixed-use neighbourhoods that are walkable with connected public gathering places, where opportunities for social interaction are increased and services can be provided within easy walking or cycling distance or by use of public transit.

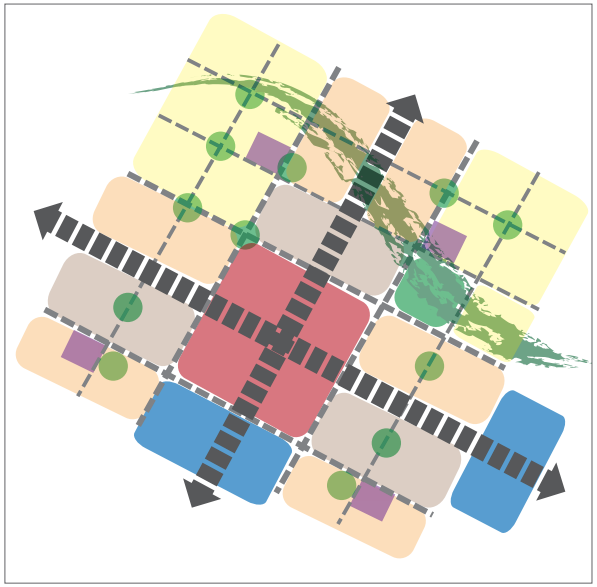

FIGURE 5 - A mix and diversity of land uses.

FIGURE 6 - A range of housing types in one development.

2.1.6. Cultural Heritage

The cultural heritage of Brampton is an important component of the City's history. The policies of Section 4.9 Cultural Heritage of the Official Plan, set out the preservation and enhancement of the buildings and landscapes that make up the cultural heritage of the City.

SG22. The Secondary Plan shall refer to the City's Cultural Heritage Register.

SG23. Incorporate cultural heritage landscapes, such as hedgerows and rural road swales, into the community and neighbourhood pattern, to the extent practical, through a range of approaches.

SG24. The City has a proud heritage and image as the Flower City. The Secondary Plan shall promote this cultural heritage and incorporate where appropriate.

SG25. Locate parks where there is an opportunity to preserve cultural landscapes.

SG26. Ensure that significant views are protected and enhanced and made available to the public.

2.1.7. Economy

A diverse range and mix of employment opportunities will provide for the long term needs of the City's residents and accommodate forecasted growth. The GPOPA protects designated *Employment Lands* to ensure a sufficient supply of land is available for employment uses.

SG27. Under Section 4.3.8 Green Business/Eco-Business, of the GPOPA, the City promotes the objectives of the Pearson Eco-Business Zone Model of green business practices that are financially and environmentally sustainable. Within the Secondary Plan Area, promote green business practices and synergies between users by encouraging eco-business park development.

SG28. The *Employment Lands* shall permit a full range of employment uses including industrial, office, and retail and ancillary services, as per Section 4.3, objective d) of the GPOPA.

SG29. Locate employment forms that are suitable as transitional uses on the edge of industrial areas to serve as a buffer between uses.

SG30. Cluster major concentrations of commercial facilities, serving the broader community at intersections with collector roads and at key locations along arterial roads with proximity to highway access. Ensure commercial blocks have sufficient collector/arterial road frontage to provide for consolidated full moves access.

SG31. Encourage and direct retail, commercial, and service uses to locate within mixed use nodes to further promote active transportation as uses are accessible by walking, cycling, and public transit.

2.2. MOBILITY

2.2.1. Street Network and Block Design

The layout of arterial and collector roads provides connections to Regional and municipal systems, and adjacent communities. The road network is one of the major structural elements of a Secondary Plan and should be designed to support multi-modal transportation networks.

SG32. Arterial Roads provide important connections within Brampton. Design arterials to accommodate higher volumes of traffic and higher order transit.

SG33. Ensure that Collector Roads are provided approximately mid-block between Arterial Roads to maximize the accessibility of transit service to local residents.

SG34. Provide frequent local road connections along collectors to enhance connectivity and permeability within the Secondary Plan Area.

2.2.2. Transit Supportive

The Official Plan promotes transit-oriented development as a priority tool to achieve sustainable development. Development that supports the use of transit provides the opportunity to reduce greenhouse gases and improve public health.

SG35. The Secondary Plan shall comply with the Transit-Oriented Development policies of the Official Plan.

SG36. Promote higher densities and compact development to support existing and planned transit services, reducing the need for automobile use and greenhouse gas emissions.

SG37. As per Policy 4.4.4.31 of the Official Plan, Secondary Plans shall promote transit supportive land uses at existing and future GO Stations such as higher density residential and employment development forms.

SG38. If located in the Secondary Plan Area, *Major Transit Station Areas* will accommodate higher density residential and/or commercial, institutional, or employment development.

SG39. Ensure that the walking distance for residents is 200 to 400 metres (3 to 5 minute walk) to an existing or proposed local bus route, or alternatively, 800 metres (10 minute walk) to higher order transit.

2.2.3. Active Transportation

The transportation network facilitates not only efficient automobile traffic but also provides for a balanced transportation system that supports transit and active transportation facilities.

Section 4.4.6 of the Official Plan requires the pedestrian and cycling network to reflect the 'Pathways Master Plan' and Schedule C1. Also, refer to the approved Region of Peel Active Transportation Plan (February 2012) and DDG Part V Multi-use Trail System.

SG40. Support community health and improve air quality by promoting walking, cycling, and transit as the primary means of transportation thereby reducing dependency on the private automobile for daily activities.

SG41. Design communities with a typical walking distance of 400 metres (5 minutes) to daily activities, or 800 metres (10 minutes) to higher order transit or community centre.

SG42. Include a connected pedestrian and cycling network linking the community with surrounding neighbourhoods and existing or planned transit routes. Provide connections to the Regional and local trail system.

2.2.4. Streetscape Elements/Pedestrian Supportive Design

SG43. Promote pedestrian primacy over the car in mixed use nodes and neighbourhood centres as these areas typically have a higher concentration of density and uses.

SG44. Promote traffic calming on collector roads that pass through mixed use nodes. Scale the collector road for pedestrian activity.

FIGURE 7 - Transit oriented development - Mount Pleasant Village.

2.3. NATURAL ENVIRONMENT AND OPEN SPACE

2.3.1. Natural Heritage System

The goal of the City is to ensure that the Natural Heritage System (NHS) will be preserved and enhanced for future generations. To ensure the lasting character of the Natural Heritage System the following measures apply:

SG45. Brampton's NHS is part of the regional and provincial natural heritage system. It will be a continuous natural open space system and corridor with connections to Lake Ontario, Niagara Escarpment, and Oak Ridges Moraine.

SG46. Designate natural heritage feature areas, corridors, and linkages for protection, restoration, and enhancement in the Secondary Plan Area.

SG47. Consider local east-west connections, provided through such elements as parks and/or trails, to provide linkages between the primarily north-south NHS.

SG48. Integrate the NHS as a key structural element of each community by providing for a range of development interfaces to provide opportunities for pubic visual and appropriate physical access.

SG49. Connect and integrate the NHS with the open space network and the local and regional trail systems to buffer and expand ecological features and functions, as opportunities arise.

FIGURE 8 - Natural heritage system - Credit River Valley.

FIGURE 9 - Active and passive recreational opportunities.

2.3.2. Parks

The open space system consists of natural heritage and recreational open space features. The open space system should be linked to protect and maintain ecological features, functions, and linkages and to connect communities.

Key to ensuring a healthy community is the provision of a diverse range of parks that are accessible and visible to all residents and provide the opportunity for a variety of activities. Standards for park sizes should be confirmed through DDG Part V, Open Space System and 4.6.3 Parks Hierarchy of the Official Plan.

GENERAL

SG50. Parks will support, complement, and buffer the NHS, where appropriate.

COMMUNITY PARKS

SG51. Locate community parks in a central location for easy access and to serve all the surrounding neighbourhoods.

SG52. Where possible, link community parks and recreation centres to the NHS and any pedestrian/bicycle paths.

SG53. Where appropriate, locate community parks adjacent to Secondary schools to allow for shared use of facilities, such as parking.

NEIGHBOURHOOD PARKS

SG54. Centrally locate neighbourhood parks within a 400 to 800 metre distance (5 to 10 minute walk) of residents.

SG55. Where appropriate, locate neighbourhood parks adjacent to school sites to allow for shared amenities such as recreational play fields and parking lots.

PARKETTES

SG56. Locate parkettes as a central sub-neighbourhood feature for residents within a 200 to 400 metre distance (3 to 5 minute walk).

2.3.3. Urban Agriculture

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

SG57. Promote initiatives such as sustainable food production practices as a component of a new development.

SG58. Support urban agriculture as part of a community's character and open space system, while also providing a transitional use between the natural and built environments.

SG59. Consider more intense forms of urban agriculture within existing industrial/ employment areas. Impacts food security, employment issues and the larger social, economic, and ecological sustainability impacts of growing food locally.

2.3.4. Urban Forest

The urban forest, which includes trees and shrubs on public and private lands, provides ecological services that support natural area functions and assists in mitigating the urban heat island effect.

SG60. Implement street tree and naturalization programs to increase urban canopy cover.

SG61. Preserve and expand existing tree cover to connect and buffer protected woodlands and other natural areas and to mitigate heat island impacts.

SG62. Protect the water table and drainage patterns to ensure the long term sustainability of existing woodlots within development areas.

FIGURE 10 - Gage Park.

FIGURE 11 - Parkette located as a focal point in a neighbourhood.

FIGURE 12 - Urban canopy cover over a residential street.

2.4. GREEN INFRASTRUCTURE AND BUILDING

2.4.1. Energy Conservation

Addressing energy conservation issues will impact and/or address issues in other areas of conservation and management as the indicators of green infrastructure and building are all interconnected.

SG63. Consider reducing demand for energy from the grid and encourage renewable energy production. Renewable energy sources that could be employed may include the use of solar thermal and photo voltaic equipment, geo-exchange technologies, and/or wind power. Proposed alternative energy source(s) could be used in combination with energy from the grid.

SG64. Outline opportunities for the provision of centralized, integrated energy systems, such as district energy for heating and cooling.

2.4.2. Water Use and Management

The City's potable water is drawn from Lake Ontario which is sustained by Brampton's rivers and creeks that flow through Mississauga. It is imperative for the City to maintain and restore the water quality and quantity of our streams and groundwater system to protect Lake Ontario to ensure a sustainable and safe supply of water for residents.

SG65. Support Green Infrastructure at a municipal scale to utilize the absorbing and filtering abilities of plants, trees, and soil to protect water quality, reduce runoff volumes, and recharge groundwater supplies. Provide an interconnected network of open spaces, natural areas, greenways, wetlands, parks, and forest areas.

SG66. Implement Low Impact Design 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.

FIGURE 13 - Roof mounted photovoltaic system.

FIGURE 14 - Bio-rentention water feature.

2.4.3. Stormwater Management

Rainfall, snow melt, and stormwater runoff are natural resources that must be managed to protect and maintain surface and groundwater quantity and quality, and the ecological health and diversity of natural areas and fish and wildlife habitat.

Stormwater management will be based on a hierarchy of best management practices, including sources, conveyance, and end of pipe treatment that strives to achieve optimal outflow water quality, and water quantity control.

Stormwater management will be provided in accordance with Section 4.5.3 of the Official Plan and DDG Part V, Stormwater Management Facilities.

SG67. Implement a comprehensive rainwater and groundwater recharge strategy as part of the stormwater management treatment train.

SG68. Implement a Low Impact Design strategy to emphasize the use of bioswales, innovative stormwater practices, constructed wetlands, and alternative filtration systems, such as treatment trains and water conservation measures.

SG69. Support Innovative Stormwater Management Design by locating stormwater management ponds adjacent to the open space system, integrated as a community amenity and gateway feature, and as a component of the pedestrian and bicycle trail system.

2.4.4. Material Resources and Solid Waste

The purpose of these guidelines is to encourage private on-site reduction and diversion of solid waste, in addition to stewardship of material resources in all primary and secondary development plans.

SG70. Ensure regional and municipal efforts to promote waste diversion from landfills and higher diversion rates in recycling are reflected in Secondary Plan policies.

SG71. Investigate the potential of clean energy from waste facilities, with cogeneration of heat and electric power, which may form part of a zero garbage target. Ensure careful monitoring of emissions in accordance with provincial requirements and international best practice standards.

2.4.5. Air Quality

In order to minimize the air quality and climate change impacts associated with new growth, the following measures apply:

SG72. Reduce the impact of air pollution by encouraging the development of 'complete' communities that are characterized by greater densities placed at neighbourhood centres, mixed use nodes, or near transit facilities; mix and diversity of housing types; and connected and walkable road patterns that are designed to encourage active transportation.

SG73. The reduction of vehicle kilometres travelled across Secondary Plan Areas is encouraged and the desired outcome of the plan design. Promote active transportation to reduce automobile dependence and provide local transit within a 200 to 400 metre (3 to 5 minute) walking distance of residential development.

SG74. As per Section 4.4.3.8, of the Official Plan, develop a reduced parking strategy through Secondary Plans for office and retail areas to encourage the use of transit and carpooling.

SG75. Ensure the separation of sensitive land uses from air pollutant sources through land use planning and zoning. Refer to the Ministry of the Environment guidelines.

FIGURE 15 - Transit as an alternative mode of transportation to reduce automobile dependence.

2.4.6. Lighting

SG76. Promote Dark Sky/Nighttime Friendly compliant practices.

SG77. Consider the use of LED street lighting.

2.4.7. Green Buildings/Green Sites

To assist in ensuring that development will be sustainable, the area of plan development should be compact, impart a responsible use of resources, and buildings should be energy efficient.

SG78. Consider third-party certification and rating programs, such as LEED© for New Development (ND).

SG79. Encourage green sites by providing a number of the following: eco-business park initiatives, campus setting for office and industrial, synergies between buildings, green infrastructure, reduced parking, construction waste and site management measures, permeable road surfaces, native and drought resistant plantings, and the procurement of locally sourced materials for construction.

2.4.8. Stewardship and Education

SG80. Identify opportunities for stewardship and education promotion related to such items as:

- energy and water conservation;
- waste reduction and reuse;
- natural area enhancement and stewardship; and,
- local food production.

FIGURE 16 - LED street lighting, Welland, Ontario.

3.0
Block Plan Areas


MOUNT PLEASANT SQUARE

3.0 BLOCK PLAN AREAS

The preparation of a Block Plan(s) follows two steps as outlined in DDG Part II, Secondary Plan Stage 2. The following guidelines build upon DDG Part V Block Plan Design Guidelines requirements and provide sustainable measurements for plan development.

3.1. BUILT ENVIRONMENT

3.1.1. Compact Development

Compact development and density create the opportunity for a form of growth that is sustainable. The compactness of urban form and the concentration of housing and jobs creates the necessary critical mass to support transit and retail, ultimately reducing car dependence and traffic congestion.

SG81. As per GPOPA Policy 3.2.1.1, the Block Plan shall contribute to the Regional overall density requirement for *Designated Greenfield Areas* of 50 residents and jobs per hectare.

SG82. Minimum and maximum densities are set out in the Official Plan, Section 4.1.1.2. In order to promote compact development and conserve land, implement the top end of the permitted residential densities within each Density Area category.

SG83. The Block Plan shall adhere to Policy 3.2.7.5 of the GPOPA which allocates higher densities and massing to the *Urban Growth Centre, Central Area, Intensification Corridors, Mobility Hubs* and *Major Transit Station Areas.* As per GPOPA 3.2.7.3, lands outside of the designated intensification areas shall not exceed 50 units per net hectare or 4 storeys in height.

SG84. Promote greater land use efficiency and convenience by placing 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.

SG85. Facilitate and promote intensification and increased densities for redevelopment/ regeneration areas to further support compact development and transit.

SG86. Minimize the land area required for school sites, within an urban setting, in order to promote compact development and conserve land. School Boards are encouraged to build multi-storey elementary schools located close to the street and co-located with either a public library or community facility to promote less land consumptive practices.

FIGURE 17 - Mount Pleasant Village School is an example of an urban scale building in a greenfield community.

3.1.2. Community Form

To encourage the development of healthy community form, with a coherent system of walkable neighbourhoods that cluster to form communities, the following guidelines apply:

SG87. Community form is characterized and based on a hierarchy of the following:

community - formed by a clustering of neighbourhoods, typically 6 to 9 (depending on topography and natural features), to sustain a viable mixed use node and public transit.

neighbourhood - shape and size is defined by 400 metres (5 minute walk) from centre to perimeter with a distinct edge or boundary defined by other neighbourhoods or larger open spaces.

neighbourhood centre - acts as a distinct centre or focus with a compatible mix of uses that may include medium density, retail or community facilities, and a parkette/urban square.

mixed use node - central to the cluster of neighbourhoods, the node includes higher residential densities, retail, employment opportunities, is accessible, and served by public transit.

SG88. Ensure the development of a new community is appropriately phased to provide connections to adjacent development, existing neighbourhoods, and future phases.

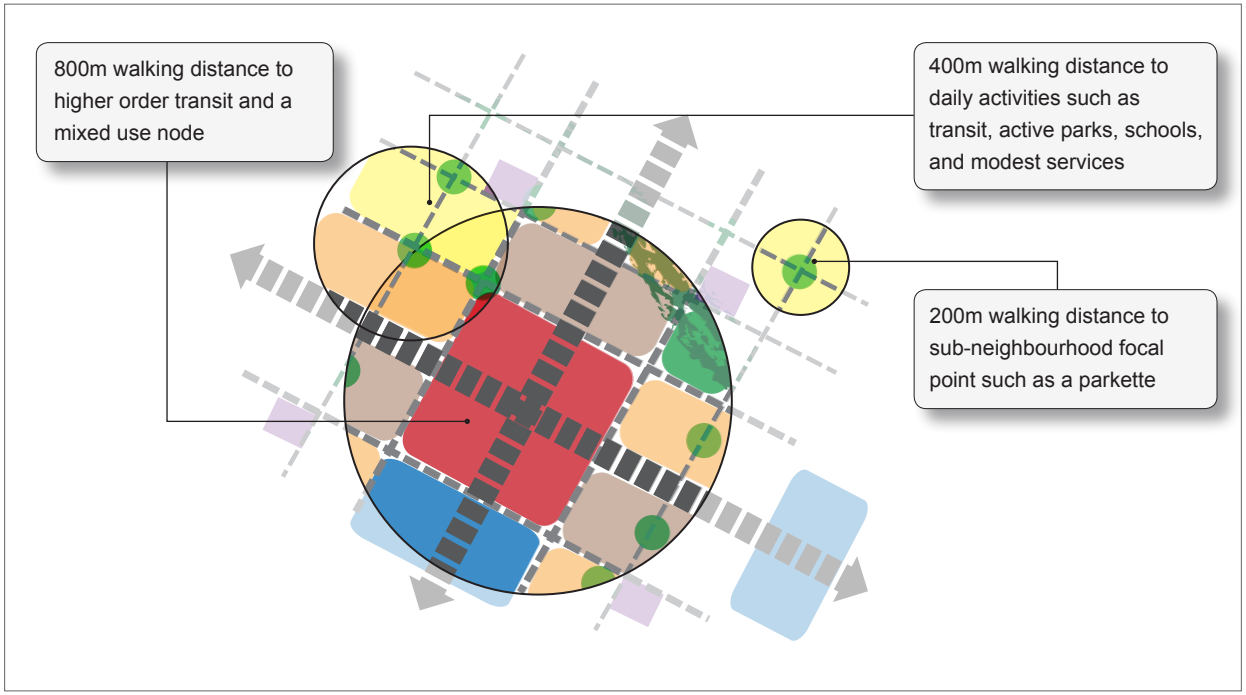

FIGURE 18.

SG89. Centrally locate mixed use nodes in the community and provide major services and higher order transit within approximately 800 metres (10 minute walk) of residences.

SG90. Provide well distributed neighbourhood centres to ensure daily activities and amenities within 400 metres (5 minute walk) of residences to support walking, cycling, and local transit within the community.

SG91. Provide a permeable network of streets to create strong links, accessibility, convenient transit access, and route choices between neighbourhood centres.

SG92. Plan for a community form that can accommodate a range of uses and, in central areas, be flexible to change over time.

3.1.3. Mix and Diversity of Land Uses

The combination of homes, business, institutions, community and cultural facilities, and industry will assist in creating a more dynamic environment by ensuring that most people are within a 5 to 10 minute walk of schools, local shops, services, and transit.

SG93. Provide a compatible mix and distribution of land uses to create a 'complete' community that provides for residents daily needs.

SG94. Density without mixed uses or walkable services can adversely impact neighbourhoods. Cluster diverse land uses in neighbourhood centres, mixed use nodes, and corridors to ensure that destinations with a variety of uses and essential community facilities are available, accessible, and convenient for residents within approximately 800 metres (10 minute walk).

SG95. Provide an appropriate transition of use, intensity, and scale from community or mixed use node to the surrounding residential area.

SG96. Cluster office, retail, and service commercial uses at collector roads and other key locations along arterial roads.

SG97. Ensure that a variety of compatible medium to high density building types and uses are introduced including: street townhouses, live-work townhouses, mid-rise apartments, and mixed-use buildings.

SG98. Place health care services in locations that are accessible by active transportation and public transit. Locate on a transit corridor or near a transit node to ensure that resident's have access to an adequate level of care.

SG99. Ensure that residential land uses are no more than a 30 minute transit trip from employment opportunities.

3.1.4. Housing Mix and Diversity

A Block Plan should provide a range of housing forms to create choices for all sectors of society, regardless of their age or income bracket, preferred lifestyle, physical ability, or tenure. This mix and diversity makes it possible for households to move within one community as housing needs and lifestyle preferences change.

SG100. Design the Block Plan to ensure at least three of the following housing types exist within a neighbourhood, defined by an approximate 400 metre radius: single detached; semi-detached; townhouse; apartments; mixed use buildings; and live-work units.

SG101. Transition medium and low density buildings from the higher density nodes with the lowest density building form (executive housing) located at the edge of neighbourhoods or within designated enclaves.

SG102. Recognize current and future demographic trends - aging society, empty nesters and non-traditional households - in the mix of unit types and housing forms.

SG103. Identify options to provide for special needs housing.

SG104. Provide for affordable housing. As per Official Plan Section 4.1.6 Affordable Housing, a portion of new residential units is to be in housing forms considered affordable to low and moderate income households.

SG105. Provide for live-work units which are suitable forms of development to facilitate home-based employment, which ensures proximity between housing and jobs and provides a mix of uses.

SG106. Within the Block Plan, provide housing options specifically designed for seniors. Place retirement and long-term care facilities closer to the neighbourhood centre and incorporate multi-storey components to achieve sufficient yield on small sites.

FIGURE 19 - Two-storey mixed use building with retail in the first floor and office in the second floor.

FIGURE 20 - Live-work units offer home-based employment opportunities.

FIGURE 21 - Lane based townhouses.

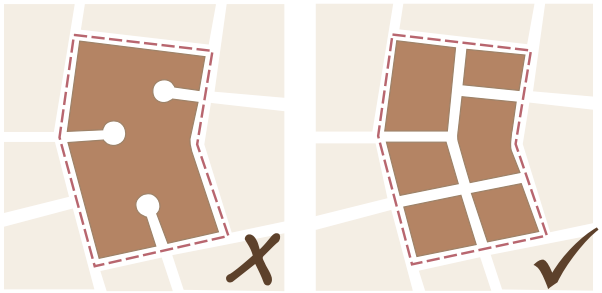

FIGURE 22 - A connected street pattern allows multiple options for walking routes.

FIGURE 23 - Walkable and active street.

FIGURE 24 - Centrally located park provides opportunities for social interaction.

3.1.5. Walkability

A modified grid pattern of streets and a connected system of neighbourhoods and open spaces, creates walkable neighbourhoods that support the 400 metre (5 minute) walking community. A high degree of connectivity supports the accessibility and convenience of transit, schools, and retail, ultimately reducing car dependence.

SG107. Locate residential buildings within a 200 metre walking distance (3 minute) for each sub-neighbourhood focal point, such as a parkette. Promote a typical walking distance of 400 metres (5 minutes) to daily activities, such as transit, active parks and modest services, or 800 metres (10 minutes) to higher order transit or community centre.

SG108. Promote internal connectivity and connections to the community at large, taking into account existing and proposed urban structure of adjacent and adjoining areas. The street and block pattern should 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.

SG109. Design the street layout to ensure efficient walking routes to schools, centres, transit, and other key destinations. Provide continuous sidewalks, or equivalent provisions for walking, on both sides of the road. One sidewalk may be allowed on a lower order local road, unless it is a major pedestrian link to a school, neighbourhood centre, or retail.

SG110. Implement traffic calming measures such as on-street parking, reduced lane widths, public laneways, raised intersections, and/or traffic circles to reduce vehicular traffic speeds and to ensure safe walking and cycling environments.

SG111. Locate 75% of dwelling units within a 5 minute walk of an Elementary school to reduce the need for busing.

3.1.6. Cultural Heritage

Cultural heritage landscapes are important resources that need to be protected as Brampton develops. The cultural heritage of Brampton will be protected through heritage conservation and enhanced through development which respects and complements existing heritage buildings and landscapes.

SG112. Incorporate cultural heritage landscapes, such as hedgerows and rural road swales, into the neighbourhood pattern to the extent practical through a range of approaches. Where not precluded by grading or other servicing constraints, site alteration including road widenings, road re-alignments and slope or bank stabilization, should not adversely affect cultural heritage landscape features.

SG113. Significant views and vistas are to be protected through the location and configuration of open space opportunities.

SG114. New development on lots adjacent to built heritage resources will provide a transition in lot sizes, setbacks, and grading that complements the built heritage resource.

SG115. New buildings located adjacent to built cultural heritage resources will generally be compatible with existing historical building types, colours, and material palettes having regard for modern building designs, techniques, and materials.

SG116. Consider incorporating existing heritage buildings in situ through retention, restoration, and adaptive reuse to provide a tangible example of the cultural heritage of the area.

SG117. Incorporate a planting strategy that is representative of, and consistent with, the City's Flower City heritage

SG118. Promote arts and culture by encouraging public art installation throughout a community in highly visible locations. Public art enhances the character of a community and contributes to the culture and history of a location.

FIGURE 25 - Integration of cultural heritage buildings as part of the community design.

3.1.7. Economy

A strong economic environment attracts new businesses, encourages the growth of existing businesses, provides a diverse mix of employment opportunities for residents, and a diversified economic base.

SG119. Develop *Employment Lands* with increased densities in both new and existing areas by facilitating compact, transit-supportive built form with minimized surface parking.

SG120. Locate buildings in the *Employment Lands* within 800 metres (10 minute walking distance) of at least 2 of the following existing or planned amenities:

- retail
- entertainment
- daycare
- government or civic buildings
- office
- medical facilities
- health club or public recreational facility
- parks and open space

SG121. Consider opportunities to integrate alternative energy sources on-site, such as district energy, wind turbines, solar and photovoltaic panels, and geothermal.

SG122. Where appropriate, consider dividing groups of large employment buildings into a setting of buildings, clustered into a campus development.

FIGURE 26 - Commercial and office located near high density residential.

FIGURE 27 - Solar panels installed on the roof of industrial and/or office buildings is a way to incorporate alternative energy.

FIGURE 28 - Corporate head office.

SG123. Encourage eco-industrial synergies between buildings/businesses such as shared parking, coordination of energy and water exchange between users, shared utilities (waste management, water supply, energy supply), and combined logistics or truck delivery facilities.

SG124. Ensure that transit is within 400 metres (5 minute walk) of employment and commercial buildings.

SG125. Cluster major concentrations of commercial facilities, that serve the broader regional community, at intersections with collector roads and key locations along arterial roads with proximity to highway access.

SG126. Direct a variety of retail, commercial, and service uses to locate within mixed use nodes to further promote active transportation as uses are accessible by walking, cycling, and public transit.

SG127. Locate main street retail within medium to high density nodes as a destination and service amenity location within walking distance of residences.

3.2 MOBILITY

3.2.1. Street Network and Block Design

Block Plans should provide for a connected and permeable street system that facilitates the efficient movement of pedestrians, cyclists, transit, and vehicles through the community. The following guidelines apply:

SG128. The Block Plan shall adhere to Official Plan Section 4.4 Transportation, and plan for streets to be complete streets that are attractive, safe, and functional supporting multi-modal transportation networks for active transportation, public transit, and vehicles.

SG129. Maximize connectivity for all travel modes by ensuring the street network creates multiple options for moving between destinations.

SG130. Connect Local Roads to Collector Roads. Local Roads will connect directly with the neighbourhood centre or mixed use node, and link with public spaces.

SG131. Connect new roads to existing roads in adjacent developments.

SG132. On local roads, avoid long, uninterrupted sections over 400 metres in length, to discourage excessive driver speed.

SG133. Design local roads at a pedestrian and cycling scale, supported by appropriate urban design and streetscape principles, to provide the opportunity for pedestrians and cyclists to reach nearby destinations in a safe and supportive environment.

SG134. Wherever possible, street and block alignments for grade-related residential units are encouraged to be designed within 25-degrees of geographic east-west in order to maximize passive solar orientation of buildings.

SG135. Wherever feasible, design blocks between 150 to 180 metres in length. To ensure permeability and discourage excessive driver speed block lengths should not exceed 250 metres in length. Longer block lengths are acceptable when coinciding with a local parkette located mid block to offer relief from massing.

SG136. Minimize the use of cul-de-sacs, except where necessary due to grading and topography, or at view terminus sites.

SG137. The use of rear lanes is encouraged for grade related residential development to provide for a more pedestrian friendly streetscape. Concentrate lane-based development in a contiguous area of the plan, and not distributed in isolation, to allow for efficient maintenance. Where rear lanes are used, the desirable lane length is between 130 to 160 metres or follows emergency services standards.

SG138. Rear lanes or private drives are encouraged in mixed-use or commercial areas at the rear of street-related buildings for service and loading in order to minimize conflict between pedestrian and vehicular use and to improve amenity along selected streets.

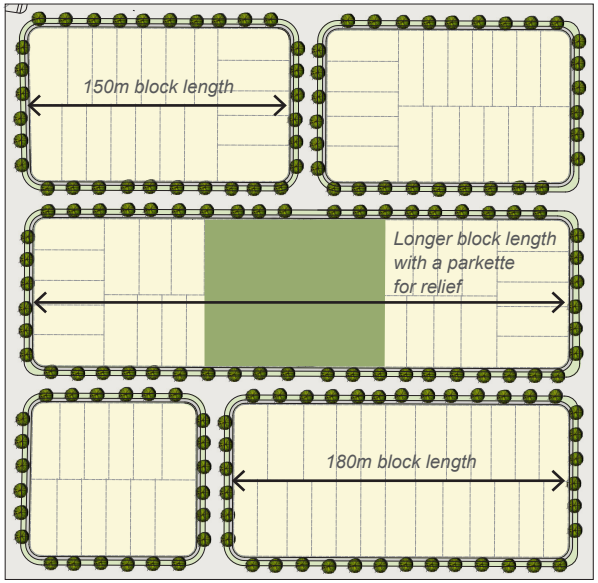

FIGURE 29 - Longer block lengths acceptable with the inclusion of a parkette for relief.

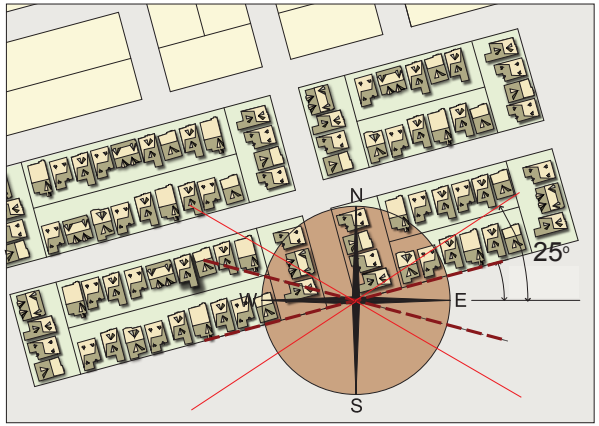

FIGURE 30 - To maximize passive solar orientation the street and block alignment should be designed within 25-degrees of geographic east-west .

3.2.2. Transit Supportive

Transit is a necessary component of a sustainable community. Ensure that development patterns are supportive of transit to make it feasible, efficient, and accessible to all sectors of the public.

SG139. The Block Plan shall comply with the Transit-Oriented Development policies of the Official Plan.

SG140. The development pattern must be of a sufficient density to make transit feasible and efficient. Promote higher densities and compact development to support existing and planned transit services, reducing the need for automobile use and greenhouse gas emissions.

SG141. Provide for a transit system that has convenient links to, between, and through major destinations. Locate stops within a 5 minute walk of a destination.

SG142. The walking distance for residents is generally 200 to 400 metres (3 to 5 minute walk) to a proposed local bus route, or, alternatively 800 metres (10 minute walk) to higher order transit.

SG143. Consider means to reduce the overall footprint of commuter parking areas at GO Transit and 407/ETR transit way stations through structured parking in order to promote compact development and conserve land.

SG144. Ensure the coordination of the transit network with the multi-use trails and paths system to further the accessibility of transit.

FIGURE 31 - Transit and GO Transit station amenities.

FIGURE 32 - Unique weather protection provided at a transit stop.

FIGURE 33 - GO transit bicycle parking.

SG145. Provide a range of transit facility amenities including but not limited to: weather protection, seating, waste baskets, lighting, route information, and automated fare machines at all *Major Transit Stations*.

3.2.3. Active Transportation

The City encourages transit, walking, and cycling as alternative modes of transportation. Encourage physical activity through the provision of a linked system of walking and cycling trails ensuring residents have increased access to local destinations for work, play, and mobility options.

Section 4.4.6 of the Official Plan requires the pedestrian and cycling network to reflect the 'Pathways Master Plan' and Schedule C1. Also, refer to the approved Region of Peel Active Transportation Plan (February 2012) and DDG Part V Multi-use Trail System.

The following guidelines support the provision of a connected network of pedestrian and cycling routes.

SG146. Implement a network of active transportation facilities - connected pedestrian and cycling routes and trails, walkways, sidewalks, bicycle lanes - that are integrated with public transit services.

SG147. Provide adequate and accessible road, transit, pedestrian, and bicycle links throughout the plan. Integrate bicycle lanes into the road and open space network.

SG148. The primary pedestrian network is the street system which supports pedestrian movement. Design the street and block pattern to emphasize connections and walkability both internally and with surrounding neighbourhoods, through a grid or modified grid pattern discouraging cul-de-sacs, p-loops and crescents, except where necessary due to grading and topography.

SG149. Encourage safe routes to schools by providing a network of connected local streets with inherent traffic calming measures (such as reduced lane widths, raised intersections, slower vehicle speeds, on-street parking, crosswalks) to ensure safe use by young pedestrians and cyclists. Secondary schools benefit from public transportation access and safe pedestrian routes between transit stops and school.

SG150. Accommodate a cycling network that includes bike lanes and off-road cycling or multi-use trails. Connect the cycling network to existing bike lanes and trails and follow the standards of the Pathways Master Plan and Bicycle Facility Implementation Plan (BFIP).

SG151. Design shared off-street pedestrian and bicycle paths for the requirements of the route. Provide for a continuous, linked, legible, and clearly marked system of trails throughout the community, as part of the open space network with the separation of cyclists and pedestrians.

FIGURE 34 - Trail heads should include information boards and seating.

FIGURE 35 - Cycle lanes further separated from vehicular traffic by a painted buffer.

SG152. Provide, where feasible, clearly marked bike lanes on collectors, and consider further separation by including a painted buffer.

SG153. Wherever possible, pedestrian and cycling routes should travel to or from transit stops and GO Transit.

SG154. Design trails to accommodate a range of users and abilities and be barrier-free, where appropriate.

SG155. Trails must be clearly signed regarding permitted uses and speed. Provide wayfinding signage and/or trail markers throughout the trail network.

SG156. Design trails to minimize and mitigate impacts on natural heritage features where they are permitted. Consider the use of permeable materials for trail construction in areas where sufficient drainage exists.

SG157. Trails and trails network planning must take into account that locations close to significant and sensitive natural areas and features are unsuitable for trails.

SG158. Specifically focus lighting on primary trails at neighbourhood connections. Lighting is not acceptable in natural heritage features.

3.2.4. Streetscape Elements / Pedestrian Supportive Design

The provision of a comfortable, attractive, and safe environment for pedestrians encourages daily physical activity. Block Plans shall adhere to DDG Part V, Streetscapes, and encourage the following:

SIDEWALKS

Sidewalks should be continuous throughout the community, and constitute an integral part of the pedestrian system to promote active transportation. The following guidelines apply:

SG159. Design sidewalks as follows:

a. 1.5 metres on local roads;
b. 1.8 metres on collector and arterial roads; and,
c. 1.8 to 3.0 metres in high pedestrian areas and particularly where retail is provided along the street in order to accommodate sidewalk cafes, kiosks, and street vendors.

In all cases, sidewalks will be clear of obstructions with sufficient space provided for street furnishings, public utilities, tree plantings, and transit shelters.

SG160. In order to accommodate the needs of persons with disabilities, visual impairments, and the elderly, design sidewalks to applicable municipal accessibility standards.

FIGURE 36 - Landscaping and street furniture visually enhance the streetscape.

FIGURE 37 - Benches, pedestrian scaled lighting, and tree canopy ensure a comfortable and attractive environment.

STREET FURNITURE

SG161. Concentrate street furniture in areas with the highest pedestrian traffic, such as mixed use nodes, neighbourhood centres, key intersections, and parks.

SIGNAGE

SG162. Develop a comprehensive wayfinding strategy, including directional signage and mapping at key locations, such as mixed use nodes, neighbourhood centres, and key intersections.

SG163. 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.

PEDESTRIAN CROSSINGS

SG164. In order to promote walkability and a pedestrian-focused environment, provide a formal pedestrian crossing at every four-way intersection in high pedestrian areas.

SG165. Provide signalized pedestrian crosswalks at locations where important civic destinations and/or significant walking traffic is anticipated, such as near retail shops, community parks and recreation centres, and at libraries, provided traffic warrants and minimum spacing requirements are met.

SG166. Pedestrian crossings will have a minimum width of 3.0 metres, be continuous, and connected to adjacent sidewalks.

ON-STREET PARKING

SG167. On-street parking functions as a traffic calming device to slow traffic and acts as a safety buffer separating the pedestrian realm from vehicles. Provide parking on both sides of a local road, one side of a minor collector road, and on both sides of the road in a mixed use node or neighbourhood centre.

PLANTING

SG168. Where appropriate, plant drought resistant and salt tolerant landscaping within medians to visually soften the pedestrian environment.

SG169. Plant street trees to contribute to the urban tree canopy, to incorporate a buffer to separate the pedestrian from moving vehicles, and to create a canopy and shade over sidewalks.

3.3 NATURAL ENVIRONMENT AND OPEN SPACE

3.3.1. Natural Heritage System

The Natural Heritage System (NHS), that is the City's ecological system, contributes to Brampton's character. Development and servicing will protect, restore, and enhance natural features, functions and linkages, while also integrating the NHS as a key structural element of each neighbourhood.

Refer to DDG Part V for guidelines on valleylands and woodlots.

SG170. Designate natural heritage features and functions, linkages between NHS features, and tableland vegetation for protection, restoration and enhancement, where appropriate.

SG171. Integrate the NHS as a key structural element of each neighbourhood by providing appropriate views, vistas and connections to the NHS by utilizing terminal views at the ends of prominent streets and by providing for a range of development interfaces to ensure opportunities for pubic visual and physical access, while also limiting access where necessary.

SG172. Incorporate the NHS with recreational services to encourage passive physical activity through trails and pathways.

SG173. Connect and integrate the NHS with the open space network and the local and regional trail systems to ensure ecological systems are not interrupted.

SG174. Ensure trails to the NHS are connected to the public sidewalk.

SG175. Minimize development that may encroach on the NHS and negatively affect the health and diversity of the NHS, through noise and light pollution, debris, and unauthorized access.

3.3.2. Parks

An open space network that is connected to the natural environment, and throughout the community, encourages residents to walk and cycle, in addition to providing meeting and gathering places within a community.

Standards for park sizes should be confirmed through DDG Part V, Open Space System and Section 4.6.3 Parks Hierarchy, of the Official Plan.

GENERAL

SG176. Include in the park system a variety of elements ranging from community and neighbourhood parks, and parkettes to semi public open space areas. Provide an accessible, connected, and diverse range of parks to allow for active and passive recreational opportunities for all residents regardless of age or ability.

FIGURE 38 - Mature trees are preserved in situ.

FIGURE 39 - Natural heritage system connected and integrated with the open space network.

FIGURE 40 - Cassie Campbell Community Centre.

FIGURE 41 - Skateboard park as a component of a community park.

FIGURE 42 - Park includes many features such as a stormwater management pond, pavillion, and trails.

SG177. Where feasible, consider the co-location and/or sharing of facilities, such as parking.

SG178. Co-locating physical activity spaces in parks for children and adults promotes physical activity in different age groups.

SG179. Design and locate parks to utilize Crime Prevention through Environmental Design (CPTED) principles to ensure clear views into and out of surrounding areas.

SG180. New trees and landscaping within parks contributes to the urban tree canopy and buffers natural areas. New plantings will be of native plant materials, and where possible, salvaged from the site or the local area.

SG181. Design accessible, safe, and visible bicycle and pedestrian routes to parks.

SG182. Lighting of parks is Dark Sky/Nighttime Friendly compliant. Where feasible, incorporate LED or solar powered lighting.

COMMUNITY PARKS

SG183. Centrally locate community parks for easy access and to serve all the surrounding neighbourhoods.

SG184. Where feasible, link community parks,and recreation centres to the NHS and any pedestrian/bicycle paths.

SG185. Co-locate community parks, recreation centres, and libraries to allow for shared parking facilities in order to reduce the land required for surface parking lots.

SG186. Locate a recreation centre such that the building addresses the principal street edge and provides sidewalk connections to adjacent transit stops to ensure a pedestrian-oriented public edge. Encourage multi-storey buildings in order to reduce land area and contribute to the compact nature of the Block Plan.

SG187. Consider community gardens in a community park to further encourage social interaction and provide access to locally grown produce.

SG188. Direct lighting for sports fields away from the NHS and design lighting to minimize disturbance to adjacent properties.

SG189. Where feasible, front community parks with houses on single loaded roads to emphasize passive security or “eyes on the park” and to frame the park through the creation of a built form edge.

NEIGHBOURHOOD PARKS

SG190. Locate neighbourhood parks to provide opportunities for active and passive recreation for surrounding residents within a 400 to 800 metre distance (5 to 10 minute walk).

SG191. Neighbourhood parks are to be centrally located and at the terminus of major streets.

SG192. Where appropriate, locate neighbourhood parks adjacent to school sites to allow for shared amenities, such as parking lots and recreational play fields. Construct playfields using innovative and appropriate durable turf treatments to minimize maintenance and extend the life of the playfield.

SG193. Although the Official Plan requires road frontage on a minimum of two sides where possible, 100% public frontage is encouraged. Public frontage can be a public road, a school, or the NHS. Where part of a park's public frontage is an NHS, access to or from the NHS may be undesirable and restricted.

PARKETTES

SG194. Parkettes must be easily accessible for residents within a 200 to 400 metre radius (3 to 5 minute walk) and have road frontage on three sides. Four is encouraged, but may be less where other design alternatives achieve public views and access.

SG195. Design parkettes to have significant public exposure and access. Urban design options include surrounding the square with streets or fronting dwellings directly onto the parkette.

SG196. Parkettes should reflect the needs of surrounding residents. Include in a parkette places to sit and socialize, dedicated play areas for children of all ages, and a significant tree canopy for shade.

SG197. Parkettes provide passive open space areas and are intended to serve as focal points within sub-areas of each neighbourhood.

URBAN SQUARES

An urban square is generally a paved open space often associated with a civic or commercial function. They vary in shape and size depending on their purpose, but are generally smaller and more intimate in scale than parkettes.

SG198. Design urban squares to be open to the public and accessible at all times, without physical barriers or gates.

SG199. Delineate in the urban square area an extended space that may occasionally be utilized for large-scale events such as a farmers market or festival.

SG200. Design urban squares as a focal point for social interaction with places for sitting, gathering, and socializing.

FIGURE 43 - Housing overlooks the parkette.

FIGURE 44 - Farmers market in an urban square.

3.3.3. Urban Agriculture

Urban Agriculture promotes social equity and food security in communities by providing opportunities for increased accessibility to fresh, healthy and local food, recreational and culturally enriching activities, and increased environmental stewardship and knowledge of local food systems.

SG201. Consider the integration of urban agriculture as part of the neighbourhood's character and open space system. Urban agriculture can act as a transitional use between the built environment and natural features.

SG202. Promote initiatives such as sustainable food production practices as a component of a new development, supporting urban agriculture.

SG203. Promote and locate community gardens, farmers markets, and roof gardens within the community context to further community food security.

SG204. Encourage opportunities to create edible landscapes through the conservation of existing orchards within the Block Plan area.

SG205. In Block Plans that have a commercial component encourage a grocery store. It not only provides fresh food options it can also encourage physical activity by creating a walking or cycling destination.

3.3.4. Urban Forest

Trees provide ecological services that benefit human and environmental health, such as reducing the heat island effect, sequester greenhouse gases, provide shade in the summer, separate pedestrians from vehicular traffic, and contribute to more appealing sidewalks and streets.

SG206. Implement street tree and open space naturalization programs to increase urban canopy cover. Encourage private land plantings both through the Block Plan approval process and in collaboration with community groups, in recognition of the importance of tree canopy and strategic planting needs in new development.

SG207. Provide robust species selection to anticipate climate change conditions and operational constraints.

FIGURE 45 - Small farm incorporated as a component of the community.

FIGURE 46 - Plantings incorporated into parking lots assist with reducing heat island effect.

SG208. Provide street trees on both sides of the road in the public right-of-way.

SG209. In order to reduce heat island effect and enhance pedestrian comfort and safety, plant species of street trees that provide a large canopy and shade over sidewalks.

SG210. Encourage a diversity of tree species along each road, native to the City and Region, non-invasive, drought and salt tolerant, and low maintenance.

SG211. Design parking lots to incorporate planting to increase tree cover and shading and to reduce heat island impact.

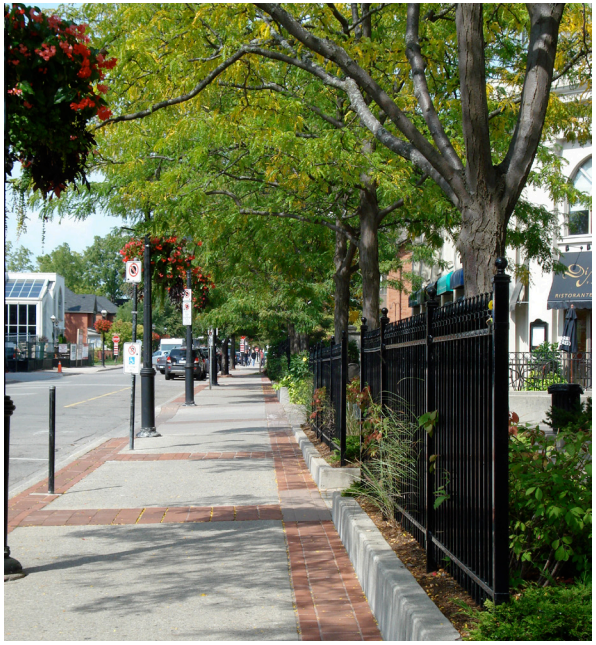

FIGURE 47 - Street tree canopy provides shade in the summer.

3.4 GREEN INFRASTRUCTURE AND BUILDING

3.4.1. Energy Conservation

Provide for the reduction of energy use and consider the inclusion of alternative energy sources.

SG212. Where feasible, alternative community energy systems such as renewables-based district energy, geo-exchange, sewer heat recovery, and/or inter seasonal thermal energy should be provided.

SG213. Encourage new commercial, industrial and institutional development to connect to district energy facilities.

SG214. Consider reducing demand for energy from the grid and encourage renewable energy production. Renewable energy sources that could be employed may include the use of solar thermal and photo voltaic equipment, and/or wind power. Proposed alternative energy source(s) could be used in combination with energy from the grid.

SG215. Encourage passive solar orientation to permit enhanced energy efficiencies by creating optimum conditions for the use of passive and active solar strategies. The integration of passive building systems is enhanced with buildings oriented to maximize the potential for sunlight and natural ventilation.

SG216. Where feasible, implement street and block alignment within 25 degrees of geographic east-west to maximize passive solar orientation of buildings front and rear windows.

FIGURE 48 - A building that utilizes alternative energy sources.

FIGURE 49 - Low density residential built solar ready.

SG217. Encourage reflective or light-colored roofs for multi-unit residential units above 5-storeys, employment, office, and public or institutional buildings, in order to reduce solar heat absorption and energy demand.

SG218. Employ a free cooling strategy by maximizing the urban tree canopy and the strategic placement of deciduous trees to assist with summer evapotranspiration and shading. The placement of coniferous trees can help to mitigate cold winter winds.

3.4.2. Water Use and Management

Ensure the provision of a sustainable and safe supply of water for residents.

SG219. Aim to achieve a water balance for the Block Plan area ensuring that the flow of water in and out of the site is managed through water retention or storage.

SG220. Encourage the implementation of Low Impact Design 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.

SG221. Irrigation of all public open spaces/structures implements a rainwater harvesting program, and includes the use of cisterns, rain barrels, underground storage tanks, and/or infiltration trenches provided water balance objectives are met.

FIGURE 50 - Pervious surfaces that allow water to soak into the ground.

FIGURE 51 - Bioswale as part of the public right-of-way. .

SG222. Introduce green infrastructure, such as bio-swales, within the public right-of-way to enhance ground water infiltration and improve water quality as part of a comprehensive water management plan.

SG223. Encourage the use of porous or permeable pavement instead of standard asphalt and concrete for surfacing sidewalks, driveways, parking areas, and many types of road surfaces, as a stormwater run-off management strategy.

3.4.3. Stormwater Management

Stormwater management facilities should be developed in a manner that will yield the greatest environmental and amenity benefit to the neighbourhood, which can be achieved through first reducing stormwater run-off and flow to the ponds, and secondly, through the design and landscaping of the pond.

Stormwater management facilities will be provided in accordance with Section 4.5.3 of the Official Plan and City of Brampton's 'Stormwater Management Planting Guidelines', and DDG Part V Stormwater Management Facilities.

SG224. Encourage Innovative Stormwater Management Design by incorporating stormwater management ponds as part of the open space system, integrated as a community amenity.

SG225. Consider on-site treatment of stormwater through the use of green infrastructure such as bioswales, at source infiltration, and permeable pavement.

SG226. Enhance views and access to ponds by designing a portion of the pond to be bounded by either streets and/or open space.

SG227. Design ponds to blend with the natural landscape. Where feasible, conceal inlet and outlet structures using a combination of planting, grading, and natural stone.

SG228. Fencing of ponds is discouraged, except where necessary along rear or flankage residential property lines.

SG229. Pond Design and Landscaping:

a. Ponds are located offline and may contribute to buffering environmental features;

b. Ponds are landscaped to contribute to the urban tree canopy, add to the natural features of the community, and support wildlife habitat.

c. Ponds are designed as key focal/visual features within the community in addition to functional objectives related to flow moderation and water quality; and,

d. Ponds are designed as part of the overall pedestrian and trail system with view points and interpretive signage. Public walking/cycling trails encircle ponds and extend along stormwater channels where possible.

FIGURE 52 - Naturalized stormwater management pond and trail system.

FIGURE 53 - Urban stormwater management and bio-filtration system.

3.4.4. Material Resources and Solid Waste

Assist in the reduction and diversion of waste from landfills and increase measures for recycling and reuse.

SG230. Consider the use of recycled/reclaimed materials or new infrastructure including roadways, parking lots, sidewalks, unit pavings, curbs, water retention tanks and vaults, stormwater management facilities, sanitary sewers, and/or water pipes.

SG231. Incorporate strategies that emphasize targets for a higher diversion rate in recycling for the plan area.

SG232. Reduce waste volumes through the provision of recycling/reuse stations, drop-off points for potentially hazardous waste, and centralized composting stations.

SG233. Consider incorporating existing heritage buildings in situ through retention, restoration, and adaptive reuse to avoid further construction waste.

3.4.5. Air Quality

In order to minimize the air quality and climate change impacts associated with new growth, the following measures are encouraged:

SG234. Reduce the impact of air pollution by encouraging the development of ‘complete’ communities that are characterized by greater densities placed at neighbourhood centres,

mixed use nodes, or near transit facilities; mixed land uses; mix and diversity of housing types; connected and walkable road patterns, and are designed to encourage active transportation.

SG235. Encourage and promote alternative modes of transportation such as public transit, walking, and cycling. Provide transit within a 200 to 400 metre (3 to 5 minute) walking distance of residential development.

SG236. Ensure the separation of sensitive land uses from air pollutant sources through land use planning and zoning. Refer to the Ministry of the Environment guidelines.

3.4.6. Lighting

SG237. Promote Dark Sky/Nighttime Friendly compliant practices to minimize light pollution and the intrusion of unwanted lighting on natural areas.

SG238. Consider high efficiency street lighting to reduce energy use

SG239. Consider opportunities for renewable energy use to reduce electric energy supply in the public realm, such as solar powered lighting for natural trails and park pathways.

3.4.7. Green Buildings/Green Sites

Promote innovative programs to encourage the design and construction of energy efficient green buildings and sites.

SG240. Consider third-party certification and rating programs, such as LEED© for New Development (ND).

SG241. Consider innovative residential development designs which contribute to affordability and energy and natural resource conservation.

SG242. Consider building(s) that are LEED® Certified or recognized or accredited by a third-party certification program i.e. Energy Star, LEED H, LEED NC, LEED for Schools, BREAM, etc,.

SG243. Green roofs are encouraged for high-density residential, office buildings, as well as, public, institutional or large employment buildings to minimize surface runoff, reduce urban heat island effect, provide noise insulation, and improve local air quality.

SG244. Encourage synergies between buildings and site management practices that conserve water, reduce waste, and are energy efficient.

SG245. Promote building design policies and guidelines that support waste reduction and diversion.

3.4.8. Stewardship and Education

SG246. Identify opportunities for stewardship and education promotion related to such items as:

- energy and water conservation;
- waste reduction and reuse;
- eco-friendly gardens and lawns;
- natural area enhancement and stewardship; and,
- local food production.

SG247. Create a well-documented master plan including illustrations that promote sustainable aspects of the development.

FIGURE 54 - Vegetated roofs minimize surface run-off .

4.0

Draft Plan of Subdivision & Site Plan


16
LOT
16-B
STOP

4.0 DRAFT PLAN OF SUBDIVISION & SITE PLAN APPLICATIONS

The preparation of a Draft Plan of Subdivision and/or Site Plan shall adhere to DDG Part VI Site Planning and Built Form and the City Architectural Control Guidelines, in addition to the following sustainable measures:

4.1. BUILT ENVIRONMENT

4.1.1. Compact Development

Density plays a key role in determining housing form. The strategic allocation of density can contribute to compact form, increase transportation efficiency and walkability within the community, and conserve natural resources.

SG248. In order to promote compact development and conserve land in the Draft Plan/Site Plan implement the top end of the permitted residential densities within each Density Area as set out in the Official Plan, under Section 4.1.1.2.

SG249. An overall density of at least 50 units per net hectare is required for the Draft Plan/Site Plan, within 400 metres (5 minute walk) of a *Major Transit Station*. Projects at *Major Transit Stations* should be striving for densities of 100 units per net hectare where access to the highest order transit is maximized.

SG250. Contribute to the creation of compact neighbourhoods by building multi-storey Public/Institutional buildings in order to maximize the site and services, and minimize floor area. Create an urban street condition through a building façade proportion that contributes to a sense of enclosure at the street. Multi-level buildings can accommodate accessory and, if applicable, complementary uses.

SG251. The floor space index (FSI) for Draft Plans and Site Plans, located within *Intensification Areas*, shall adhere to the policies of the Official Plan, unless otherwise provided for in the Secondary Plan.

4.1.2. Community Form

Through the development of a coherent system of connected neighbourhoods and centres a more organized and unified community can be established. Follow the community form hierarchy outlined in Block Plan Areas, Built Environment, 3.1.2 Community Form.

SG252. Design the Draft Plan with neighbourhoods that are 400 metres from centre to edge with a central destination, such as a park or modest services.

SG253. Provide well distributed neighbourhood centres to support walking, cycling, and transit within the community.

SG254. Establish a central focus which is safe, lively, and attractive and acts as a community or neighbourhood focus with a compatible mix of uses, including retail and a community facility such as an urban square or park.

SG255. Create accessible, pedestrian-oriented residential areas that are distinct in character and harmonious within the larger neighbourhood.

FIGURE 55 - Higher density apartment building with architectural character.

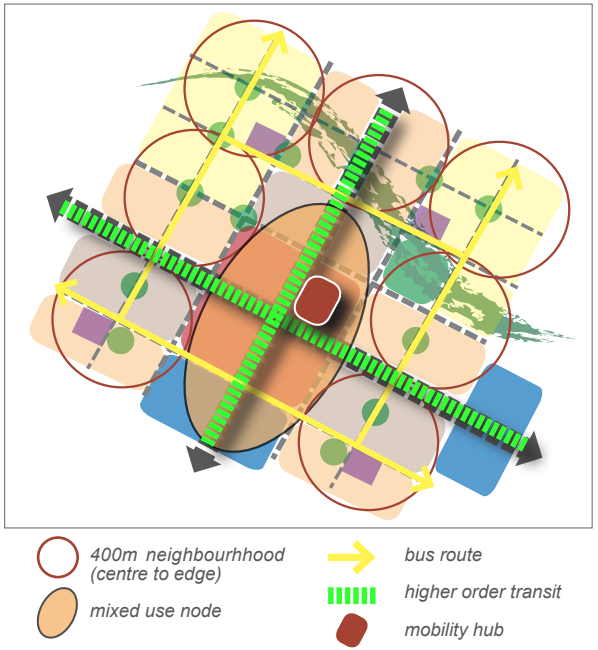

FIGURE 56 - A mix and diversity of land uses, connected by a permeable street pattern and transit routes with services and amenities within 400 to 800 metres.

4.1.3. Mix and Diversity of Land Uses

By providing a diverse mix of land uses, including residential, institutional, retail, open space, and employment uses, more vibrant neighbourhoods can be developed.

SG256. Design the Draft Plan to ensure that residential units are generally located within an 800 metre walking distance (10 minute walk), measured from centre to edge, to retail uses or commercial services, such as drug stores and food markets, and higher order transit.

SG257. Provide in the Draft Plan/Site Plan 3 of the following daily activities within 400 metres (5 minute walk) of new residential units:

- provision for/proximity to daycare
- recreational facilities
- retail/convenience commercial
- medical facility
- schools
- transit

SG258. Mixed-use buildings are strongly encouraged to create an urban streetscape providing retail at street level and residential above.

SG259. Strategically intensify, where appropriate, underutilized areas such as strip malls, large format retail sites, and underdeveloped sites in and around existing neighbourhoods to serve as mixed use neighbourhood centres with increased residential densities.

SG260. Encourage live-work units in mixed use nodes, at a gateway entrance to the community, and along transit routes.

SG261. Ensure accessibility by requiring through land use patterns that 75% of residential dwellings are within 400 metres of an existing or planned Elementary school to reduce the need for busing. Locate Secondary schools on a transit route and linked to pedestrian and cycling routes.

SG262. Site Public/Institutional buildings prominently and where possible, at terminal views. Buildings should be sited to specifically differ from the surrounding urban fabric in order to emphasize their importance as landmarks.

FIGURE 57 - Mixed use building that address the corner.

4.1.4. Housing Mix and Diversity

A range of housing types shall be provided to create choices for all sectors of society, regardless of their age or income bracket, physical ability, preferred lifestyle, or tenure. This mix and diversity makes it possible for households to move within one community as housing needs and lifestyle preferences change.

SG263. Provide a range of lot sizes and building forms within a residential block to ensure a diversity of housing types and to avoid a homogenous streetscape.

SG264. Design neighbourhoods to ensure at a minimum 3 of the following housing types exist within an area defined by a radius of 400 metres: single detached; semi-detached; townhouse; apartments; and/or live-work units.

SG265. Offer 15% of units as rental units priced for households up to 50% of the area median income (as per Census Canada data).

SG266. Buildings in the Draft Plan/Site Plan shall provide a variety of architectural styles, elements, and material detailing to create a distinctive and complementary character, as well as provide visual interest.

SG267. Provide for housing options specifically designed for seniors. Place retirement and long-term care facilities closer to the neighbourhood centre and incorporate multi-storey dense components to achieve sufficient yield on small sites.

SG268. Consider the integration of assisted and special needs housing with market housing.

SG269. Provide universally accessible housing options to enable the widest spectrum of people, regardless of age or ability, to live within the community. Lifecycle housing options should be provided within the draft plan to support a variety of age groups within the development. Establish zoning standards which facilitate the creation of these housing options.

SG270. Ensure that the Brampton Accessibility Technical Standards have been utilized to promote universal design principles that will enhance accessibility in residential areas.

FIGURE 58 - Chapelview affordable senior's housing.

SG271. Secondary suites located above detached garages are encouraged for lot sizes greater than 6.0 metres, and shall be located on end units.

SG272. The Draft Plan/Site Plan shall conform to the DDG's and City Architectural Control Guidelines.

4.1.5. Walkability

A modified grid pattern of streets, and a connected system of open spaces, create walkable neighbourhoods that support the 400 metre (5 minute) walking community.

SG273. Locate each sub-neighbourhood focal point, such as a park or parkette at a 200 metre (3 minute) walk.

SG274. Locate daily activities, such as transit, schools, daycares, active parks, and modest services at a 400 metre (5 minute) walk.

SG275. Locate higher order transit, major services or a community facility at a 800 metre (10 minutes) walk.

SG276. Provide internal connectivity and connections to the community at large, taking into account existing and proposed urban structure of adjacent and adjoining areas. The street and block pattern will allow 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.

SG277. Ensure neighbourhood permeability by designing block lengths of 150 to 180 metres in length (no more than 250 metres) to promote active transportation and dispersed traffic movements. Street block length is generally shorter closer to neighbourhood centres.

SG278. In locations where rear lanes are used, the desirable lane length is 130 to 160 metres, or follows emergency services standards.

SG279. Implement active traffic calming measures such as rumble strips, raised intersection, crosswalks, on-street parking, public laneways, and traffic circles; and passive traffic calming such as street width, on-street parking, and street tree planting to reduce vehicular traffic speeds and to ensure safe walking and cycling environments.

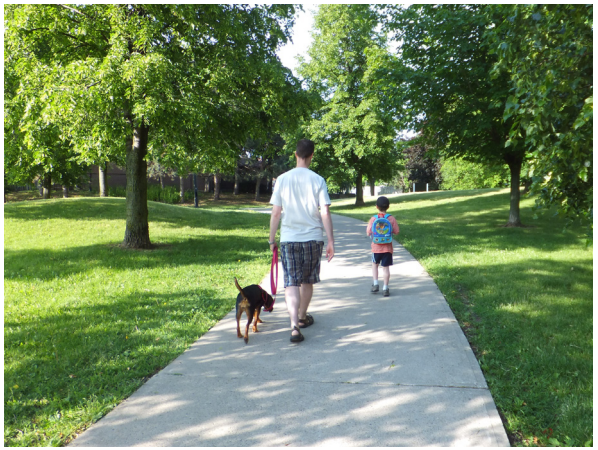

FIGURE 59 - Accessible, connected, and walkable trail system.

SG280. Provide sidewalks on both sides of the road. One sidewalk may be allowed if a lower order local road, unless it is a major pedestrian link to a school, centre, or retail.

SG281. 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.

SG282. Provide high quality streetscapes in the Draft Plan/Site that offer appropriate planting materials to address summer/winter conditions, and provide canopy closure on local roads.

SG283. Centrally locate mailboxes adjacent to activity areas to foster interaction and sense of community.

SG284. In order to provide a safe and comfortable environment for pedestrians, design public pedestrian walkways to include Crime Prevention Through Environmental Design (CPTED) principles.

SG285. Promote safety in the design of communities through creating a walkable, permeable street system with sidewalks on both sides of the road and short residential blocks to avoid a long unbroken wall of buildings that does not allow for movement through a community. Long blocks create a thoroughfare for traffic with no interruptions to slow traffic.

SG286. Encourage opportunities for vibrant, diverse and pedestrian-oriented urban environments that provide for public safety, changing experiences, social engagement, and meaningful destinations.

FIGURE 60 - Parking is located to the rear of the building off the main road. The front entrance to the building is directly connected to the public sidewalk.

4.1.6. Cultural Heritage

SG287. New buildings located adjacent to built cultural heritage resources will be compatible with existing historical building types, colours, and material palettes having regard for modern building designs, techniques and materials.

SG288. New development on lots adjacent to built heritage resources will provide a transition in lot sizes, setbacks and grading that complements the built heritage resource.

SG289. Where applicable, provide for the relocation or adaptive reuse of heritage structures or cultural landscapes such as hedgerows and rural road swales.

SG290. Maintain existing hedgerows and rural road cross sections, where feasible, and incorporate into the design of the Draft Plan as dedicated open space blocks.

SG291. Significant views are to be protected through the location and configuration of open space opportunities and made available to the public.

SG292. The orientation of buildings and yards can also assist in protecting significant views and such orientation is encouraged.

SG293. Consider public art at mixed use nodes and as focal points in open spaces to reflect the cultural heritage of the location. Public art can include memorials, sculpture, water features, murals or individual installations at visually prominent sites.

FIGURE 61 - Existing hedgerow preserved as part of the local street right-of-way.

FIGURE 62 - Public art that reflects the cultural heritage of the area.

SG294. Incorporate in the Draft Plan/Site Plan specific design elements to implement the City's Flower City heritage and are representative of the City's image as the Flower City, such as plantings at gateway features, floral landmarks, park landscaping and planting strategy, and/or neighbourhood character themes.

4.1.7. Economy

Draft Plans/Site Plans shall contribute to the City-wide average live-work ratio of 2:1 by 2031.

GENERAL

SG295. Access to, and circulation within, individual properties must provide safe and well-defined routes for vehicles, pedestrians, transit and where appropriate, bicycles. The use of landscaping, paving materials, lighting, signs and other distinct treatments to define these areas will contribute to the overall safety, quality and sense of orientation within each site.

FIGURE 63 - Landscaped pedestrian walkways provide safe crossing across the parking lot and help to minimize heat island effect.

SG296. Consider opportunities to create 'green' parking courts that apply a high degree of landscape treatment and/or biofiltration for storm-water run-off.

SG297. Incorporate pedestrian walkways and landscaping along primary vehicular routes within large surface parking lots to enable safe, clear and direct movement to principal building entrances and to the sidewalk.

SG298. Ensure that transit is within 400 metres (5 minute walk) of employment and commercial buildings.

EMPLOYMENT LANDS

SG299. Locate buildings in the *Employment Lands* within 800 metres (10 minute walking distance) of at least 2 of the following existing or planned amenities:

- retail
- entertainment
- daycare
- government or civic buildings
- office
- medical facilities
- health club or public recreational facility
- parks and open space

SG300. Consider opportunities for an Eco-industrial park where a "green" approach is taken towards the infrastructure and development of the site.

FIGURE 64 - Repurposed industrial building.

FIGURE 65 - Buildings sited close to the street edge.

FIGURE 66 - Bioswale and landscaping.

SG301. Where district energy is available, provide the necessary infrastructure and connection to the district energy plant and system.

SG302. Where appropriate, consider campus design as a balanced approach which integrates landscape, topography and special features with site access requirements including roads, driveways, parking, transit pick-up points, and service and loading areas, to create an integrated building and site setting.

SG303. Where opportunities exist, consider the adaptive reuse and/or retrofit of existing industrial buildings.

SG304. Where feasible, address improved energy efficiency and air quality through building and site design such as passive solar design, green roofs, and natural ventilation.

SG305. Carefully determine building placement to maximize specific site characteristics such as views and vistas, landmarks, place making, and/or gateway potential.

SG306. Alternative energy sources may also be integrated on-site, such as wind turbines, solar and photovoltaic panels and geothermal.

SG307. At higher intensity nodes, minimize the building footprint to provide a multi-storey building in order to deliver compact form and conserve land. At a minimum, design the building with a 2-storey massing and 1 functional storey.

SG308. In order to encourage social sustainability and improve mental and physical health, the provision of social support services and facilities (such as day care and/or nursery school space), recreational facilities (such as a gym), or cultural and religious facilities (such as prayer room), should be integrated within the building.

COMMERCIAL

SG309. Commercial buildings will address the street with well landscaped open spaces and parking areas. Consider opportunities to provide more compact building forms including multi-storey stores and reduced building setbacks.

SG310. In a retail/commercial district one type of land use may dominate. Provide for a mix of uses and unit sizes to the extent possible to increase diversity and flexibility. Consider a main street format.

SG311. Locate stand-alone commercial buildings to define the street edge. Provide continuous pedestrian sidewalks on all sides of the building where public entrances and parking areas are located.

SG312. Promote live-work development adjacent to and within neighbourhoods. Live-work units should address the street frontage with front doors and windows, and vehicles should be accommodated either on-street or at the rear.

4.2 MOBILITY

4.2.1. Street Network and Block Design

Draft Plans/Site Plans shall provide for a permeable and connected system of streets and walkways.

SG313. Wherever possible, street and block alignments for grade-related residential units are designed within 25-degrees of geographic east-west in order to maximize passive solar orientation of buildings. This is especially important in compact developments with narrow lots that limit building alignment choices (*see Figure 30*).

SG314. On local roads, avoid long, uninterrupted sections over 400 metres in length to discourage excessive driver speed.

SG315. Ensure local roads are designed at a pedestrian and cycling scale and are supported by appropriate urban design and streetscape principles to provide the opportunity for pedestrians and cyclists to reach nearby destinations in a safe and supportive environment.

SG316. Wherever feasible, design block lengths, between 150 to 180 metres. Avoid block lengths that exceed 250 metres in length to ensure permeability and discourage excessive driver speed. Longer block lengths are acceptable when coinciding with a local parkette located mid block to offer relief from massing *(see Figure 29*).

SG317. Minimize the use of cul-de-sacs, except where necessary due to grading and topography or at view terminus sites.

SG318. Where rear lanes are used, the desirable lane length is between 130 to 160 metres in order to provide for a maximum 80 metre hose length from fire hydrants located on road connections.

SG319. In order to minimize the visual impact of long blocks, turn lots located on the end of blocks 90-degrees to face the other road, where appropriate. However, consider a variety of lot facing conditions, in addition to flankage lots, along long stretches of collector and arterial roads.

SG320. To calm traffic and create pedestrian-friendly, safe streets consider the following when designing local street areas of high activity, such as mixed use nodes and neighbourhood centres:

- sidewalks on both sides
- crosswalks
- street furniture
- street trees and landscaping
- medians
- curb bulb-outs
- woonerfs
- narrow streets to reduce driver speeds
- impervious surfaces

4.2.2. Transit Supportive

Compact, mixed use development with a variety of residential forms supports the use of transit and allows for an efficient and accessible transit system to be provided in the community.

SG321. The walking distance for residents is generally be 200 to 400 metres (3 to 5 minute walk) to a proposed local bus route, or alternatively, 800 metres (10 minute walk) to higher order transit.

SG322. Consider means to reduce the overall footprint of commuter parking areas at GO Transit and 407/ETR transit way stations through structured parking to promote compact development and conserve land.

SG323. Support bike use through the provision of bike racks, bike storage, and lockers at transit stops and stations.

SG324. Provide a full range of transit facility amenities at *Major Transit Stations* including but not limited to: weather protection, seating, waste baskets, lighting, route information, and automated fare machines.

SG325. Where four-sided transit shelters are not possible, provide overhead open-air canopies to protect transit users from sun, rain, and snow.

SG326. At the Site Plan scale, if a transit stop is located within 400 metres of a building, orient the functional entrance to provide convenient access.

FIGURE 67 - Transit facilities should be designed for pedestrian comfort with seating, weather protection, route information, and fare purchase booths.

4.2.3. Active Transportation

The Draft Plan/Site Plan shall provide for a balanced transportation system that promotes transit and active transportation facilities to encourage walking and cycling.

Section 4.4.6 of the Official Plan requires the pedestrian and cycling network to reflect the 'Pathways Master Plan' and Schedule C1. Also, refer to the approved Region of Peel Active Transportation Plan (February 2012) and DDG Part V Multi-use Trail System.

SG327. Provide sidewalks on both sides of the road. One sidewalk may be permitted on lower order local streets, unless it is a major pedestrian link to a school, neighbourhood centre, or retail.

SG328. Require through development approvals, that each school is connected with adjacent neighbourhoods by a network of sidewalks, bicycle, and pedestrian paths to promote safe and convenient access for school children. Locate bicycle racks close to the building entrance.

SG329. Encourage safe routes to schools that promote walking and cycling by providing a network of connected local streets with inherent traffic calming measures (such as speed humps, slower vehicle speeds, on-street parking, crosswalks) to ensure safe use by young pedestrians and cyclists. Secondary schools should benefit from public transportation access and safe routes between transit stops and schools.

SG330. Encourage cyclist movement through a safe, convenient, and legible system that provides bicycle parking facilities, slower vehicle speeds, lower traffic volumes on local streets, appropriate lane widths to accommodate shared travel lanes, and designated bicycle lanes on collectors.

SG331. Implement in the Draft Plan/Site Plan a network of active transportation facilities - connected pedestrian and cycling routes trails, walkways, sidewalks, bicycle lanes - that are integrated with public transit services.

SG332. In the Draft Plan, accommodate a cycling network that includes bike lanes and off-road cycling or multi-use trails. Connect the network to existing bike lanes and trails.

SG333. Locate loading and servicing facilities and driveways associated with commercial/retail sites so they do not interfere with pedestrian or bicycle circulation.

SG334. Provide bicycle parking at retail, commercial, and employment areas, as well as at key nodal locations to promote purposeful cycling.

SG335. Provide bike storage sheltered from weather for 15% of total building occupants for a residential development in a Site Plan.

SG336. For non-residential development in a Site Plan, place accessible and secure bike racks sat the front of buildings.

SG337. Provide facilities in employment and office buildings that support active transportation such as showers and changerooms.

SG338. Landscape trails abutting natural features using native, non-invasive species that can contribute to the urban tree canopy and shade the trail.

SG339. Design trails to accommodate a range of users and abilities, and be barrier-free where appropriate. Consider the use of permeable materials for trail construction in areas where sufficient drainage exists.

SG340. Provide clear signage on trails regarding permitted uses and speed. Provide wayfinding signage and/or trail markers throughout the trail network.

SG341. Provide benches and waste and recycling receptacles at trail heads and at regular intervals along the route.

SG342. Incorporate interpretive signage at various locations on trails located in proximity to significant sensitive natural features or adjacent to stormwater management facilities to promote stewardship initiatives that will protect and enhance the features and functions of the natural environment.

SG343. Provide lighting for pedestrian safety along primary connecting trails, but minimize the disturbance on natural habitats.

SG344. Consider special treatments at trail head entrances including high quality features such as landscaping, benches, decorative paving pattern, interpretive or directional signage, or wider pathway widths.

FIGURE 68 - Bicycle parking close to the school entrance.

FIGURE 69 - Wayfinding signage.

FIGURE 70 - Cycling network that includes off-road cycling trials.

FIGURE 71 - Landscaping, street trees, and on-street parking should buffer seating areas and the pedestrian realm from vehicular traffic.

FIGURE 72 - Street furniture elements that provide a unique design can identify areas or neighbourhoods.

4.2.4. Streetscape Elements / Pedestrian Supportive Design

To assist with encouraging daily physical activity the pedestrian environment should be attractive and engaging. Provide lighting, street furniture, signage, and planting to encourage pedestrian activity and provide for an enhanced, safe, and comfortable pedestrian environment

The Draft Plan/Site Plan shall adhere to DDG Part V Streetscapes, in addition to the following:

SIDEWALKS

SG345. For sidewalk widths, refer to Block Plan Areas Section 3.2 Mobility, 3.2.4.

SG346. Where feasible, in areas of mixed use consider flexible space or the opportunity to reclaim underutilized roadway, or repurpose parking spaces to create additional public space for benches, planters, landscaping, bike parking, and café tables and chairs.

SG347. Use alternative pavement markings or materials to minimize conflict between vehicular and pedestrian users.

STREET FURNITURE

SG348. Include in the pedestrian environment various comprehensive streetscape furniture elements that reinforce the function of the street as a public place. Such elements include lighting, benches, bicycle parking, newspaper boxes, waste and recycling receptacles. Provide signage with a unified design vocabulary within high-pedestrian areas. Where possible, consider streetscape elements manufactured from recycled material.

SG349. Unique street furniture can be used to identify significant areas or neighbourhoods within the community. Landowners, in consultation with the City, should develop a unified standard and design vocabulary for street furniture which shall apply to public streets in all and abutting mixed-use areas and community nodes.

SIGNAGE

SG350. Develop a comprehensive wayfinding strategy including directional signage and mapping at key locations, such as nodes, neighbourhood centres, and key intersections.

PEDESTRIAN CROSSINGS

SG351. In order to promote walkability and a pedestrian-focused environment, provide a formal pedestrian crossing at every four-way intersection in high pedestrian areas.

SG352. Provide signalized pedestrian crosswalks at locations where important civic destinations and/or significant walking traffic is anticipated, such as near retail shops, community parks and recreation centres, and at libraries, provided traffic warrants and minimum spacing requirements are met.

SG353. Pedestrian crossings will have a minimum width of 3.0 metres.

SG354. To enhance pedestrian crossings visibility and quality, utilize distinctive feature paving through the use of alternative pavement markings or materials to minimize the conflict between vehicles and pedestrians. At minimum, crossings are identified with distinctive painted lines.

SG355. Pedestrian crossings are highly visible to motorists and include appropriate signage.

SG356. Minimize the height of curb cuts to facilitate wheel-chair and stroller usage in high pedestrian areas.

SG357. Curb ramp designs at intersections have raised tactile surfaces or materials with contrasting sound properties to help pedestrians with visual impairments.

ON-STREET PARKING

SG358. Provide parking on both sides of local roads and one side for collector roads.

SG359. Neighbourhood centres and mixed use nodes shall provide lay-by parking on both sides of the road.

SG360. Where mid-block collector roads form urban main streets, provide parking on both sides of the road.

PLANTING

SG361. Where appropriate, plant drought resistant and salt tolerant landscaping within medians to visually soften the pedestrian environment.

SG362. Street trees shall be provided to contribute to the urban tree canopy and to create a canopy and shade over sidewalks.

4.3 NATURAL ENVIRONMENT AND OPEN SPACE

4.3.1. Natural Heritage System

Draft Plans/Site Plans shall protect, restore, and enhance the Natural Heritage System (NHS).

SG363. Maintain existing, healthy trees and other vegetation on site.

SG364. Connections to the NHS are provided through the open space system or trail network.

SG365. Views and vistas to the NHS are preserved and maximized where feasible.

SG366. Tableland woodlands are included as part of the open space system. A trail may be incorporated within the woodland as an amenity when impacts can be mitigated. Woodlands may be located along one road frontage when impacts are deemed minimal.

FIGURE 73 - Pedestrian crossings should be highly visible and clearly marked.

FIGURE 74 - On-street parking or lay-by parking provided on both sides of the street.

FIGURE 75 - Woodlots are connected to the open space system through trails, where appropriate.

4.3.2. Parks

An open space network that is connected to the natural environment, and throughout the community, encourages residents to walk and cycle, in addition to providing meeting and gathering places within a community.

Standards for park sizes should be confirmed through DDG Part V Open Space System and 4.6.3 Parks Hierarchy of the Official Plan.

GENERAL

SG367. Provide an accessible and connected park system with a diverse range of parks to allow for active and passive recreational opportunities for all residents regardless of age or ability.

SG368. Design and locate parks to utilize Crime Prevention through Environmental Design (CPTED) principles by ensuring clear views into and out of surrounding areas, which include:
- adequate lighting;
- front buildings to overlook public spaces, especially playgrounds which should be highly visible to public streets and/or houses to enhance safety;
- use signs and design for ease of access and egress; and,
- mix of activity for constant use of the space.

SG369. Use native species for new trees and landscaping within parks, and where possible, salvage plants from the site or the local area.

SG370. Ensure bicycle and pedestrian routes to parks are accessible, safe, and visible.

SG371. Require through development approvals, that each school is connected with adjacent neighbourhoods by a network of sidewalks, bicycle and pedestrian paths to promote safe and convenient access for school children. Locate bicycle racks close to the building entrance.

SG372. Consider shared parking lots for Elementary School sites with neighbourhood parks, and Secondary School sites with community parks, in order to reduce the number of parking spaces required. Locate and site the shared parking lot to facilitate easy and safe access, and to minimize the need for crossing required by students.

SG373. The lighting of parks are Dark Sky/Nighttime Friendly compliant. Consider incorporating LED or solar powered lighting.

COMMUNITY PARKS

SG374. For Community Parks refer to Block Plan Areas, 3.3.2 Community Parks.

NEIGHBOURHOOD PARKS

SG375. Design the Draft Plan to ensure that residences are generally located within a 400 to 800 metre radius (5 to 10 minute walk) to a neighbourhood park. Also consider other active recreational elements such as community parks or schools which serve similar functions where there is no neighbourhood park, to create a shorter walking distance to recreational features.

SG376. The neighbourhood park is centrally located and at the terminus of a major street.

SG377. Although the Official Plan requires road frontage on a minimum of two sides where possible, 100% public frontage is encouraged. Public frontage can be a public road, a school, or the NHS.

SG378. Where appropriate, locate neighbourhood parks adjacent to school sites with shared amenities. Where they are adjacent, recreational play fields are shared and constructed of innovative and appropriate durable turf treatments to minimize maintenance and extend the life of the playfield.

SG379. Provide on-street parking adjacent to the park as it creates a barrier edge. Parking can be either lay-by parking or on-street, depending on the scale of the park, local versus collector road or lane-based versus front drive units.

FIGURE 76 - Park amenities such as a play structure, seating, and tree planting.

SG380. Avoid a Draft Plan layout with units/lots backing on the open space..

SG381. Locate character structures, such as gazebos, with other neighbourhood uses, such as transit stops and community mail boxes.

PARKETTES

SG382. Design the Draft Plan to ensure that residences are generally located within a 200 to 400 metre radius (3 to 5 minute walk) to a parkette and consider other passive recreational elements, which are designed to provide similar functions where there is no parkette, including a trail head, neighbourhood park, community park, school or stormwater management pond to create a shorter walking distances to passive recreational features.

SG383. Provide road frontage on three sides of a parkette. Four is encouraged, but may be less where other design alternatives achieve public view and access.

SG384. Locate parkettes to achieve significant public exposure and access. Urban design options include surrounding the square with streets or fronting dwellings directly onto the parkette.

SG385. Parkettes should reflect the needs of surrounding residents. Include places to sit and socialize, dedicated play areas for children of all ages, and provide a significant tree canopy for shade, as appropriate to active recreational facilities.

URBAN SQUARES

An urban square is generally a paved open space often associated with a civic or commercial function.

SG386. The urban square forms a distinct edge and is defined as a focal point at key intersections or corner locations.

SG387. The urban square relates to the architectural styles, material, colours, and scale of the surrounding buildings.

SG388. Use distinctive, high quality paving treatments for the urban square, and consider extending the paving treatment onto the street to give the space further prominence.

SG389. Locate features, such as public art, outdoor seating areas, and landscaping elements to visually enhance and connect the square to the neighbourhood or community.

FIGURE 77 - Park features such as gazebos, seating, pedestrian walkways, and units fronting create a focal area for the neighbourhood.

FIGURE 78 - Park designed with play structures and durable play surfaces.

FIGURE 79 - High quality paving treatments should be used for the urban square.

4.3.3. Urban Agriculture

Encourage healthier diets by providing access to fresh food options within the neighbourhood context.

SG390. Consider the integration of urban agriculture as part of the neighbourhood's character and open space system.

SG391. Dedicate permanent open space for community gardens and/or allotment gardens in open space areas.

SG392. Promote initiatives such as sustainable food production practices as a component of a new development, supporting urban agriculture.

SG393. Promote and locate community gardens, farmers markets, and roof gardens within the Draft Plan/Site Plan context to further community food security.

SG394. Identify opportunities to create edible landscapes through conservation of existing orchard trees, or by providing orchard trees as part of proposed landscaping plans.

4.3.4. Urban Forest

Street trees that create a generous canopy at maturity provide pedestrian shade, shelter, streetscape amenity, and traffic management. The design of urban streets should be safe and create a pleasant environment. The traffic calming benefits of streets trees close to the pavement surface is integral.

SG395. Implement street tree and naturalization programs to increase urban green cover, recognizing the importance of tree canopy and strategic planting in new developments.

SG396. Provide appropriate planting materials to address summer and winter conditions, and canopy closure on local roads to encourage heat island reduction.

SG397. Street trees must be of a species that would provide a large canopy and shade over sidewalks. Street trees should provide shade over at least 40% of the length of the sidewalk or road to reduce heat island effect and enhance pedestrian comfort and safety.

SG398. Provide street trees on both sides of the road in the public right-of-way. Plant at least 1 street tree for each residential dwelling unit (excluding multiple dwellings that are subject to site plan approval), or at an interval of 12.0 to 18.0 metres, and at least 2 street trees for each flankage lot where practical based on factors such as utility requirements, driveway and street furniture locations and the type of species. Where it is not possible to provide the target number of trees as set out above, an equivalent number of trees must be provided in other locations within the Draft Plan/Site Plan.

SG399. Encourage a diversity of tree species along each road, native to the City and Region, non-invasive, drought and salt tolerant, and low maintenance.

FIGURE 80 - Community gardens are encouraged to promote local food production.

FIGURE 81 - Street trees provide canopy cover and an enhanced pedestrian environment.

SG400. A double rows of trees may be used in key areas, such as adjacent to parks and where a wider boulevard exists.

SG401. Encourage the delivery of alternative planting strategies along high-pedestrian areas such as Silva-cells, sufficient soil medium, continuous planting trenches, etc. to sustain long-term growth and healthier tree life.

4.4 GREEN INFRASTRUCTURE AND BUILDING

4.4.1. Energy Conservation

Provide for the reduction of energy use and consider the inclusion of alternative energy sources.

SG402. Encourage new commercial, industrial, institutional, and high density residential development to connect to district energy facilities.

SG403. Encourage passive solar orientation to permit enhanced energy efficiencies by creating optimum conditions for the use of passive and active solar strategies. The integration of passive building systems is enhanced with buildings oriented to maximize the potential for sunlight and natural ventilation.

SG404. Consider constructing all low and medium density residential buildings to be Solar Ready. *(built with all the necessary piping and equipment that would be needed to install a rooftop solar power system)*

SG405. Where feasible, provide alternative community energy systems such as geo-exchange, sewer heat recovery, and/or inter seasonal thermal energy.

SG406. Consider the purchase of energy from renewable resources available from local utility/energy providers.

SG407. Reflective or light-colored roofs are encouraged for multi-unit residential units above 5-storey, employment, office, and public or institutional buildings, in order to reduce solar heat absorption and energy demand.

SG408. Mitigate heat island impacts through the use of paving material with high solar reflectance, strategic use of deciduous trees or preserve existing trees as part of a free cooling strategy to help with evapotranspiration and shading of sidewalks and hard surface areas in summer and solar access in winter.

SG409. Charging stations that would supply electricity for electric vehicles are encouraged in Draft Plans/Site Plans. Charging stations could be provided in parking areas of mixed-uses, office, employment, institutional or employment uses, or within underground garages for multi-storey residential buildings or other residential buildings.

SG410. Grade related residential unit driveways are encouraged to be paved with light-coloured material to reduce the heat island effect.

FIGURE 82 - Light coloured paving materials.

FIGURE 83 - Solar parking lot canopies.

FIGURE 84 - Charging stations in parking areas.

4.4.2. Water Use and Management

The benefits of high performance, compact, mixed use projects include reduction in household water consumption and water utility costs, as well as the protection of the natural water supply. Compact development reduces impervious surfaces and makes it easier to protect natural areas which are the most important steps a community can take to maintain water quality.

SG411. Encourage the implementation of Low Impact Design 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.

SG412. Implement a comprehensive rainwater and water recharge strategy in conjunction with required stormwater management facilities.

SG413. Implement policies for stormwater retention and run-off such as:

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

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

c. Direct flow to landscaped areas and minimize the use of hard surfaces in order to reduce the volume of run-off into the storm drainage system;

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

e. Use infiltration trenches, dry swales and naturalized bioswales adjacent to parking areas to improve on-site infiltration.

SG414. 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.

SG415. Encourage the use of porous or permeable pavement instead of standard asphalt and concrete for surfacing sidewalks, driveways, parking areas, and many types of road surfaces as a stormwater run-off management strategy.

SG416. Implement a rainwater harvesting program to provide the passive irrigation of public and/or private greenspace, including absorbent landscaping, cisterns, rain barrels, underground storage tanks, infiltration trenches, etc.

SG417. Implement xeriscaping using native, drought-tolerant plants, a cost-effective landscape method to conserve water and other resources on a residential and community-wide level.

SG418. Where feasible, implement curb cuts along sidewalks and driveways to allow water to flow onto planted zones or infiltration basins.

FIGURE 85 - Bioswales slow water run-off, clean and filter water, and can be integrated into street right-of-way and parking lot designs.

FIGURE 86 - Rainwater can be stored in cisterns.

SG419. Consider the use of porous pavements on driveways and parking pads, and the use of grass pavers that take auto weight, but allow grass to grow.

SG420. Consider the installation of subsurface basins below parking lots to enable stormwater to be stored and absorbed slowly into surrounding soils.

4.4.3. Stormwater Management

Stormwater management ponds are an amenity feature of a community and are typically located adjacent to the neighbourhood's open space system and are designed to achieve optimal water quantity and water quality treatment.

Stormwater management facilities will be provided in accordance with Section 4.5.3 of the Official Plan and City of Brampton's 'Stormwater Management Planting Guidelines' and DDG Part V Stormwater Management Facilities.

This section provides guidelines on pond design and landscaping, and should be read in conjunction with Section 4.4.2 Water Use and Management for storm water retention and run-off guidelines.

SG421. Encourage Innovative Stormwater Management Design by incorporating stormwater management ponds as part of the open space system, integrated as a community amenity.

SG422. Enhance views and access to ponds by providing a portion of the pond to be bounded by either streets and/or open space.

SG423. Design ponds to blend with the natural landscape. Where feasible, conceal inlet and outlet structures using a combination of planting, grading, and natural stone.

SG424. Where public access is discouraged, consider living fences and barrier planting around the perimeter of the ponds in place of fencing.

SG425. Pond Design and Landscaping

a. Ponds are located offline and may contribute to buffering environmental features;

b. Ponds are designed as key focal/visual features within the community in addition to functional objectives related to water quantity and water quality control;

c. Ponds are designed as part of the overall pedestrian and trail system with view points and interpretive signage. Public walking/cycling trails encircle ponds and extend along stormwater channels where possible; and,

d. Native species and flood tolerant edge plants (such as herbaceous and woody vegetation) are used to stabilize banks of ponds. Plant the perimeter of the permanent pool with emergent and submergent species to improve the aesthetics and enhance the performance of the facility.

FIGURE 87 - Stormwater used as an amenity and site focus.

FIGURE 88 - Natural landforms are encouraged.

4.4.4. Material Resources and Solid Waste

Assist in the reduction and diversion of waste from landfills and increase measures for recycling and reuse.

SG426. Consider 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.

SG427. In large buildings, such as multi-unit residential buildings, employment and office buildings, and institutional or public buildings, provide on-site recycling facilities for handling, storing, and separation of recyclables.

SG428. Recycle and/or salvage at least 50% of nonhazardous construction and demolition debris and locate a designated area on site during construction for recyclable materials.

4.4.5. Air Quality

In order to minimize the air quality and climate change impacts associated with new growth, the following measures are encouraged:

SG429. Encourage and promote alternative modes of transportation such as public transit and cycling by providing bicycle paths and parking. Promote active transportation to reduce automobile dependence and provide transit within walking distance of residential development.

SG430. To promote transit ridership, programs such as developer-sponsored transit passes at reduced-costs for each residential unit or employee are encouraged.

SG431. Provide the minimum number of parking spaces to minimize the impact of car parking.

a. Mixed use developments should include shared use of parking among uses that have different peaking characteristics;

b. Design parking areas so they are not the primary visual component of a neighbourhood;

c. Reduce the parking ratio required in areas that are served by transit; and,

d. Dedicate priority parking spaces for carpool, ride sharing, and ultra low emission vehicles - 5% of total parking spaces.

FIGURE 89 - Car share and low emission vehicles to assist with reducing air pollution

FIGURE 90 - Alternative parking lot design.

4.4.6. Lighting

SG432. Promote Dark Sky/Nighttime Friendly compliant practices to minimize light pollution and the intrusion of unwanted lighting on natural areas.

SG433. To minimize bird/building collision instances, the guidelines of Fatal Light Awareness Program (FLAP) are encouraged in the development of tall buildings, and influence design decisions on material selection, glass type selection for windows, and night lighting strategies.

SG434. Lighting and light standards in public outdoor areas such as pedestrian walkways, plazas, parks, play lots, and parking areas relate to the pedestrian and are limited to a height of 4.6 metres.

SG435. Light fixtures are compatible with the architectural style, materials, color, and scale of the building.

SG436. Incorporate high efficiency street lighting (LED).

SG437. Consider lighting that is powered by alternate energy sources (solar power).

4.4.7. Green Buildings/Green Sites

Promote innovative programs to encourage the design and construction of energy efficient green buildings and sites.

SG438. Promote Energy Efficiency:

a. Residential buildings energy demand achieves an EnerGuide 85 energy efficiency rating for residential buildings; and,

b. Mid to high-rise residential and non-residential energy demands improve by 40% over the Model National Energy Code for Buildings (MNECB) as demonstrated by third party certification.

SG439. Promote Water Efficiency:

a. All buildings comply with Ontario's Building Code required water fixtures efficiency;

b. Building uses Low Impact Development strategies to deal with on-site run-off and heat island effects;

c. Building's landscaping is water efficient and drought resistant by using native planting materials; and,

d. Pre-design for grey-water pipe infrastructure.

SG440. Promote Green Materials:

a. Incorporate waste reduction work plans and construction best practices that reduce construction waste;

FIGURE 91 - Solar powered lighting.

FIGURE 92 - A green rood minimizes surface run-off and reduces urban heat island effect.

b. Incorporate green building material standards to reduce impact on the environment and ensure materials are purchased/obtained from a responsible ethical sources; and,

c. Materials sourced from certified local businesses.

SG441. Construct building(s) to be LEED® Certified or recognized or accredited by a third-party certification program i.e. Energy Star, LEED H, LEED NC, LEED for Schools, BREAM, etc,

SG442. Use ecologically innovative and responsibly environmental remediation and abatement measures for the redevelopment of brownfield sites.

SG443. Multi-unit residential buildings above 5-storeys are encouraged to achieve an EnerGuide rating level of 83 or greater.

SG444. Green roofs are encouraged or high-density residential, office buildings, public and institutional buildings, or large employment buildings. A green roof can help minimize surface runoff, reduce urban heat island effect, provide noise insulation, and improve local air quality.

SG445. Provide green roofs for 80% of all high density development. In high-density residential buildings, design roofs as amenity areas.

SG446. Develop a heat island reduction strategy for community and public buildings to install green roofs with 50% coverage, remainder covered with light coloured material.

4.4.8. Stewardship and Education

SG447. Create a well-documented master plan including illustrations that promote sustainable aspects of the development.

SG448. Include environmental builder specifications in all subcontracts.

SG449. Produce detailed sales and promotion materials that feature conservation aspects of the development.

SG450. Develop subdivision covenants that establish ground rules for the maintenance of shared open lands and individual lots.

SG451. Create a Homebuyer's Environmental Instruction Guide that explains the unique environmental aspects of the subdivision/site and special maintenance considerations.

SG452. Include an owner/tenant education package at the time of purchase or rental regarding household activities to improve energy and water efficiency, access to transit, location of recycling station, etc. Coordinate with existing municipal and regional information.

FIGURE 93 - Light coloured roofs have a high solar reflectance, which reduces energy costs and reduces urban heat island effect.


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