

**CONFIDENTIAL**



# Appendix K: Sustainability & Green Principles

**Southeast Courtice Secondary Plan  
and Environmental Assessment**

Municipality of Clarington, Ontario

May 1, 2020

# Table of Contents

page

<b>K.</b>	<b>Sustainability Analysis.....</b>	<b>K-1</b>
K.1	Key Take-Aways .....	K-1
K.2	Purpose .....	K-1
K.3	Policy Direction.....	K-4
K.4	Measuring Core Sustainability Targets .....	K-7
K.5	Opportunities & Constraints and Related KPIs.....	K-9
	K.5.1 Built Environment – KPIs .....	K-10
	K.5.2 Natural Environment and Open Space – KPIs .....	K-12
	K.5.3 Mobility.....	K-13
	K.5.4 Infrastructure and Buildings.....	K-14
K.6	Recommendations / Next Steps .....	K-16
K.7	Green Development Checklist (Excerpt from PGGDF) .....	K-17

## List of Figures

Figure K-1:	Southeast Courtice Secondary Plan Area .....	K-3
Figure K-2:	Policy Direction.....	K-4
Figure K-3:	What is SSIM™? .....	K-8
Figure K-4:	How will SIM™ be used in the context of Southeast Courtice .....	K-9
Figure K-5:	Thematic categorisation of Sustainability Potential .....	K-10
Figure K-6:	Guidelines for a Sustainable Built Environment .....	K-11
Figure K-7:	Principles for Ecologically Sensitive Community Development.....	K-12
Figure K-8:	Active Transportation Principles .....	K-14
Figure K-9:	Green Communities’ Principles .....	K-15

## List of Tables

Table K-1:	Potential KPIs for a Sustainable Built Environment.....	K-11
Table K-2:	Potential KPIs for Sustainable Natural Environment and Open Space .....	K-13
Table K-3:	Potential KPIs for Sustainability through Mobility and Transportation .....	K-14
Table K-4:	Potential KPIs for Sustainable Infrastructure.....	K-15

## K. Sustainability Analysis

### K.1 Key Take-Aways

The future development of Clarington will be pursued in a manner that ensures current needs can be met without compromising the ability of future generations to meet their own needs. (2.2.1 Clarington Official Plan 2018)

To achieve this vision, analyze competing priorities inherent in sustainable development and optimise the layout of land uses, Key Performance Indicators (KPIs) will be utilised to establish minimum development requirements.

Based on a prioritisation of applicable policy objectives and the development potential recognised through the supporting SECSPP background studies and concurrent related studies, the following performance areas and KPIs are identified and will be used to assess the success of the preferred plan. KPIs that will be utilised to assess the concept and final land use alternatives to optimise:

- the built environment including residential density, built form and mix, land use distribution, access to amenities and shared facilities;
- mobility including average block length, intersection density, pedestrian / bike score and transit coverage;
- the natural environment and open space including post development tree cover percentage, % of ecologically sensitive areas protected, Parkland dedication, provisions for Urban agriculture (food production); and
- infrastructure and buildings including the number of water crossings,

Wastewater produced, energy use and water use per 1000 sq. m per GFA and CO<sub>2</sub> reduction through solar panels are possible KPIs that may be carried through by secondary plan policy to the relevant stage of assessment / implementation.

### K.2 Purpose

The overarching purpose of this chapter is to confirm relevant policy for Sustainability as it applies to the SECSPP area and identify how this policy will be used to develop the Sustainability and Green Development Principles for SECSPP in Phase 2 of the secondary planning process. Specifically, this chapter will:

- Review and summarize existing policies, strategies and key drivers for sustainability
- Establish sustainability goals as applicable to the SECSPP study area
- Identify relevant Opportunities & Constraints & potential Key Performance Indicators (KPIs)

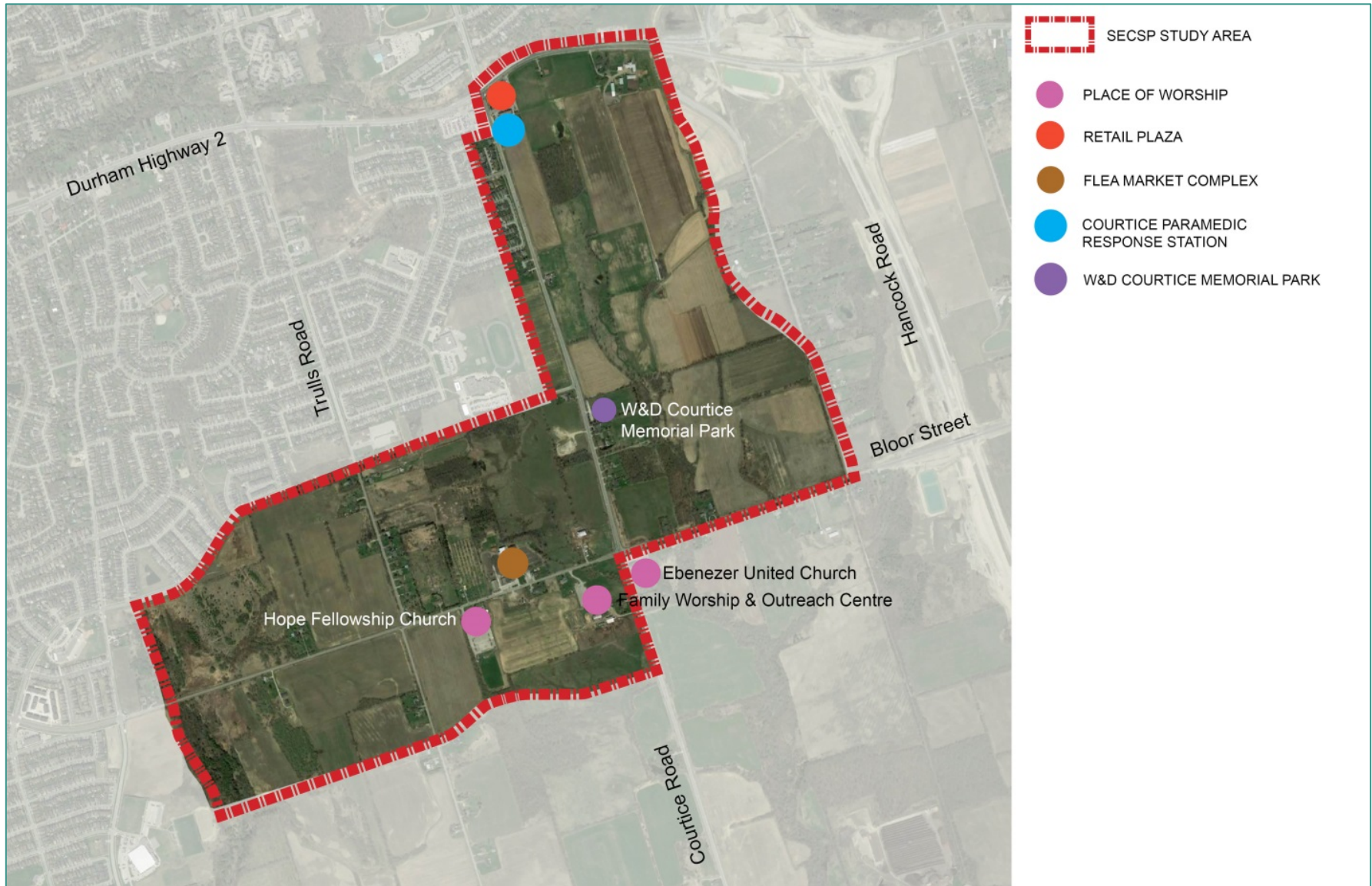
## Appendix K: Sustainability & Green Principles

Municipality of Clarington, Ontario  
Southeast Courtice Secondary Plan and Environmental Assessment

- Establish evaluation criteria for KPIs & their relationships to the existing sustainable policies
- Summarize next steps for sustainability actions leading to a measurable sustainable SP



Figure K-1: Southeast Courtice Secondary Plan Area



### K.3 Policy Direction

Existing Provincial, Regional and Municipal policy frameworks form the key drivers for sustainable land use development of the SECSP and include:

**Figure K-2: Policy Direction**

Preparation of a Secondary Plan including

**measurable targets**



to move towards a more sustainable community.



#### 2020 Provincial Policy Statement (PPS)

Ontario’s Provincial Policy Statement (PPS) was most recently updated in 2020 to reflect awareness of the need for more sustainable development. As outlined in further detail in Appendix A: Planning Background Report, the key policy directions of this document focus on: managing growth; providing an appropriate range and mix of housing types and densities; supporting active transportation and walkability; community building; natural heritage protection and restoration and energy conservation, air quality and climate change.

#### 2019 Growth Plan for the Greater Golden Horseshoe (Growth Plan)

The Growth Plan for the Greater Golden Horseshoe (GGH) was most recently updated in 2019 and provides a framework for growth management and environmental protection in the GGH through to 2041. Further detailed in Appendix A: Planning Background Report the updated Growth Plan focuses on two inter-related policy directions: Efficient and Compact Urban Form and Complete Communities (i.e., provision of a diverse mix of land uses and housing options

and convenient access to public facilities and services). Other policy directions outlined in the Growth Plan include: adopting a complete streets approach (streets that accommodate the needs of all users – pedestrians, cyclists, transit and vehicles); stormwater management and water resource system planning; protection of natural heritage features and addressing climate change adaption goals.

### **Ontario's Planning Act (OPA)**

Ontario's Planning Act is the legislative authority framework for municipal land use planning and establishes municipal responsibilities under the Planning Act including: protection of ecological systems; supply, efficient use and conservation of energy and water; promotion of development that is sustainable, supports public transit and is pedestrian-oriented.

### **Ontario's Climate Change (OCC) Discussion Paper**

Published in 2015, Ontario's Climate Change Discussion Paper addresses initiatives for reducing greenhouse gas emissions and climate change strategies. Several initiatives outlined in this paper are directly relevant to establishing the Sustainability and Green Development principles for SECSP: curbing urban sprawl and creating complete communities that are healthy, walkable and transit supportive; protection of agricultural lands, natural resources and the environment; changes to the building sector to improve the energy efficiency of buildings and harness renewable energy.

The Municipality of Clarington's commitment to integrating sustainability in the planning and development process is evident in the review of the following local policies, guidelines and strategy documents:

### **Clarington's Green Community Strategy – 2010 (CGCS)**

Developed by the Living Green Community Advisory Committee of Council in 2010, this document is a local action plan to address climate change and related environmental issues. It includes local actions, policies, programs and projects for climate change, energy conservation, clean energy alternatives and promoting more sustainable development practices in each of the residential, commercial and industrial sectors.

The strategy describes six priority areas for sustainable action, sustainable policy and sustainable future investment and includes Transportation, Energy Efficiency in Existing Buildings, Energy efficiency in New Developments, Zero Waste, Thriving Green Economy and a Healthy Natural Environment. Each priority area includes a series of goals and recommendations for how each goal could be achieved. Many of the recommendations focus on encouraging new neighbourhood design and incentives for development to incorporate leading green development technologies and practices.

### **It's All Connected: Actions to Foster a Community-Wide Culture of Sustainability in Clarington (2014)**

This report was prepared by the Sustainable Clarington Community Advisory Committee with the purpose of advising Council and community organizations on actions that will foster a community-wide culture of sustainability in Clarington. The report emphasized the importance of context, and the need to be mindful of the culture within which suggestions will be considered.



The Committee attempted to define what a community-wide culture of sustainability in Clarington would look like, and concluded that it would be one that displays these outcomes: An Engaged Community; Self-Sufficient Neighbourhoods; Green Efficient People Friendly Transportation; Accessible and Integrated Trails; Natural Green Space; Healthy, Accessible Waterfronts; Unique, Vibrant Downtowns; An Attractive Business Environment and a Strong, Sustainable Agricultural Base. The report emphasized the inter-connected nature of the 9 outcomes, and that this inter-connection would provide opportunities for efficiency, innovation and excitement. This report is important to the SECSP process as it establishes the context and priorities for sustainable development at the community level.

### **Strategic Plan of Council (2015-2018)**

Clarington's Council developed a Strategic Plan to guide the Municipality and set out its vision for the 2015 - 2018 term. The purpose of this plan was to provide strategic priorities for Council and staff to determine the best way to provide services and help the community thrive.

The Plan identified 6 Strategic Priorities including Facilitate the creation of jobs, attraction of new businesses and expansion of existing businesses; Ensure and demonstrate good governance and value for the tax dollar; Manage growth to maintain our "small town" feel; Enable safe, efficient traffic flow and active transportation; Promote resident's engagement in our community and Enhance access to our unique natural environment.

### **Clarington Official Plan- 2018 (COP)**

The Municipality of Clarington's Official Plan (OP) was updated in June 2018 with the goal of guiding and managing development in Clarington to the year 2031. As outlined in further detail in Appendix A, the OP was prepared in recognition of three key principles: sustainable development; healthy communities and growth management. The OP provides overarching community goals for growth and development which will be reflected in the final Secondary Plan for Southeast Courtice.

### **Priority Green - Green Development Framework & Implementation Plan -2015 (PGGDF)**

The Municipality of Clarington created Priority Green Clarington in 2013, an initiative to promote a healthy, livable and sustainable community. In its Green Development Framework and Implementation Plan (PG-GDF), Priority Green identifies policies, criteria, a process, and incentives to encourage green development practices from neighbourhood planning through to home construction.

Chapter 5 of the PG-GDF emphasizes the importance of collaboration with stakeholders and broader community in order to achieve sustainability goals. The creation of green development strategies for Clarington must be done consultation with those who will implement strategies, follow and be impacted by them. Key Stakeholder perspectives and priorities outlined in this chapter included the broader community perspectives, Clarington Council priorities, and the building industry perspectives and requirements.

- **Broader Community Perspectives:**
  - Supporting the management of urban sprawl (protecting the environment and agricultural lands rather than continuing to create low density neighbourhoods)
  - Support for the creation of "green homes" and "green neighbourhoods"



- Concerns regarding the costs associated with transitioning to “green homes”
- The impacts of a higher density form of development in Clarington.
- **Clarington Council Priorities:**
  - Creating a minimum, mandatory level of compliance for all new development;
  - Examining the Municipality’s existing incentives to support green development practices, done in consultation with the development industry in order to determine what kind of incentives would be most successful in leading to green development;
  - Co-ordinating the efforts of developers and the Municipality to promote increased understanding of “higher density” development; and
  - Integrating Priority Green Clarington (or the concepts thereof) into the Municipality’s Strategic Plan as a demonstration of municipal leadership in sustainable development.
- **Building Industry and land developer perspectives:**
  - Provide for flexibility in how green development is achieved;
  - Make the process voluntary so that developers can choose to embrace green development at their own pace;
  - Be complementary to green development programs existing in other municipalities, but reflect local circumstances;
  - Be clear and consistent in how the process and incentives are applied and avoid loopholes that will reward projects that do not deliver an equivalent standard of green development;
  - Ensure existing Municipal policies, specifications and guidelines do not conflict with elements of a green development program; and
  - Provide a combination of incentives to support industry adoption of green development practices, including consideration of fast-tracked approvals.

Another section of the PG-GDF document with particular relevance to the SECSP process is the Green Development Criteria Checklist for Secondary Plans located in Appendix A. The checklist is organized into four themes representing core elements of a sustainable community: Built Environment; Mobility; Natural Environment and Open Space; and Infrastructure and Buildings.

These checklists will be used as a guide in developing the Sustainability Principles and Guidelines relevant to the development of the SECSP and target evaluation criteria to measure performance and success.

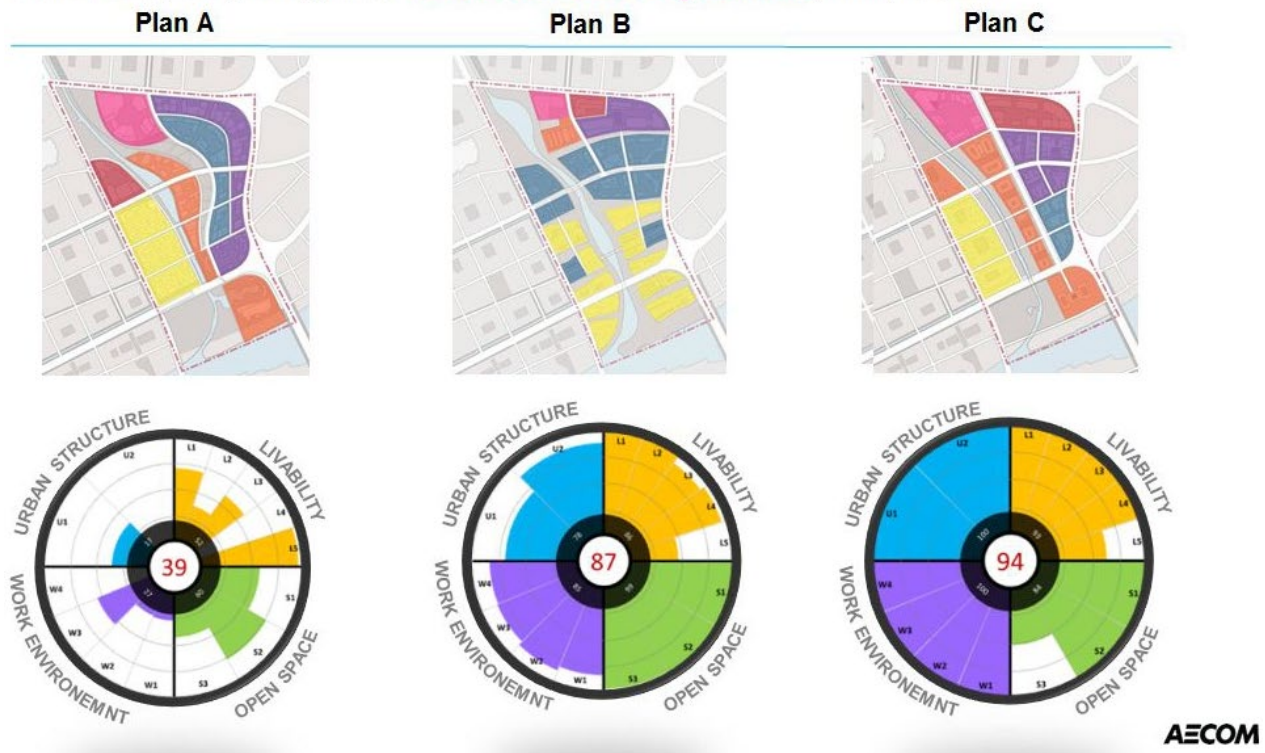
## K.4 Measuring Core Sustainability Targets

Competing priorities inherent in sustainable development present the need for analysis and trade-offs for balanced, long term sustainability. Based on this, the identification of Key Performance Indicators are important, as it is a tool to measure and display the impact of future plans and policies in pre-determined performance areas and in turn measure the success of the implemented planning and design strategies in fulfilling higher level policy objectives as described in K.3 and further summarised in K.1. Based on Clarington’s sustainability goals, a

set of KPIs are identified and will be used in a GIS-based measurement tool (SSIM™), illustrated in **Figure K-3** to assess conceptual development options and the final plan outcomes.

**Figure K-3: What is SSIM™?**

SSIM is an integrated planning process **to measure & optimize** planning outcomes.



The following sections outline the need and role of a *KPI*, its related *Benchmark* and the overall process of *Weighting*.

What is a **KPI**?

- **Key Performance Metric** is a quantifiable measure that is used to gauge or compare performance in terms of meeting the outlined strategic goal. KPIs are identified based on the priorities and criteria that need to be measured in a planning process.
- KPIs are used to evaluate the success of a particular course of action in reaching the set targets or achieving the **benchmarks**.
- To measure the overall success of a plan or course of action, KPIs are **weighted** according to the priorities set forth in the plan

What is a **BENCHMARK**?

- **Benchmark** is a standard against which the performance of a KPI can be measured. The benchmarks are often derived from:

- Regulatory document (for e.g., Clarington Official Plan, Clarington Green Framework)
- Existing Body of Research (for e.g., NACTO Guidelines)
- Aspirational Communities

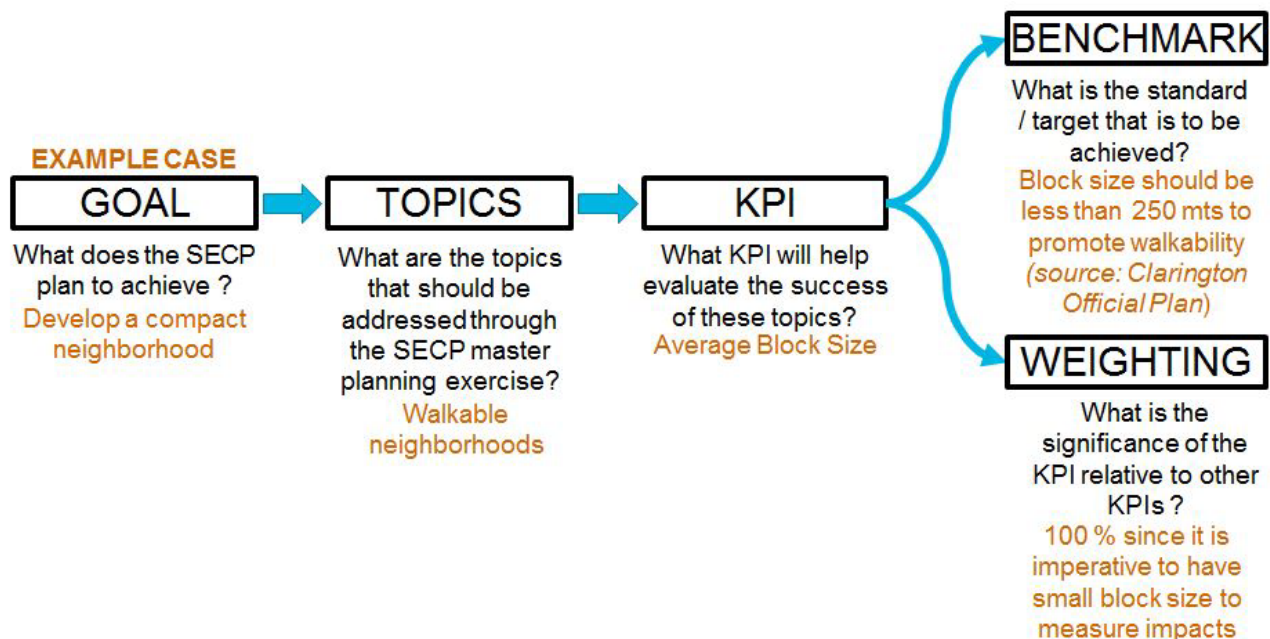
What is a **WEIGHTING**?

- **Weighting** of a KPI represents the importance or significance of that KPI in relation to the outlined objectives that are to be achieved. For e.g., a KPI that measures **carbon reduction** will weigh higher than a KPI that measures **access to jobs**.

Using the KPIs as a checklist for design quality, the SSIM™ model will be used to generate a more detailed Sustainability Report Card for each land use concept. The results will act as a guide for optimisation (i.e., maximizing sustainability scores across all the KPIs), leading to a preferred option that will best achieve existing policy goals and objectives.

The sustainability principles used to develop the benchmarks will then be translated in the subsequent phases into appropriate planning provisions in the Secondary Plan, Zoning By-Law and Urban Design and Sustainability Guidelines.

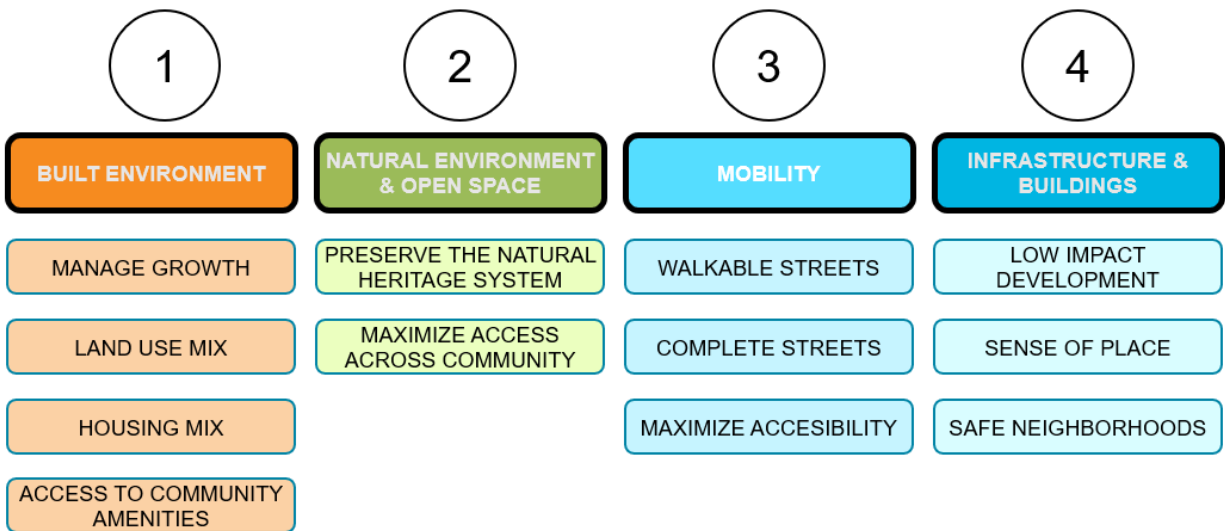
**Figure K-4: How will SIM™ be used in the context of Southeast Courtice**



## K.5 Opportunities & Constraints and Related KPIs

Maintaining the broad thematic buckets as categorised in the PGGDF - Built Environment, Mobility, Natural Environment & Open Space and Infrastructure & Buildings, a list of preliminary KPIs based on K.3 were discussed at the Ideation Workshop, held on December 13, 2018.

**Figure K-5: Thematic categorisation of Sustainability Potential**



The KPIs have been further refined through an in-depth understanding of the existing conditions and site-specific opportunities and constraints recognised through the supporting Background Studies, completed as part of SECSP Phase 1 as well as concurrent related studies, in particular the Robinson Tooley Subwatershed Study 2018 (R/T SWS).

The KPIs aim to capture the essence of the site and nudge the future developments to be more sustainable - to capitalize on what currently works and innovate where objectives may fall short.

These predetermined KPIs as outlined below, will be used by the SSIM™ model to measure the performance of the alternate land use concepts in each of the four thematic categories leading to the determination of a preferred land use plan that successfully fulfils or even goes beyond the minimum policy criteria as summarised in K.1, at the beginning of this Chapter.

KPIs will be further refined in Phase 2, through a discussion with stakeholders on Best Practices and Urban Design/ Sustainability Principles and Evaluation Criteria (rationale & method of calculation).

### K.5.1 Built Environment – KPIs

The built environment is the constructed physical environment in which communities thrive. This category encompasses attributes of the neighbourhood and their Performances on the community, such as density, land use mix, jobs created, and so forth.

The study area is uniquely juxtaposed to absorb Clarington’s projected growth. Its proximity to residential development and regional transit corridor passing through the heart of the site provides an opportunity to truly create a vibrant community with a range of densities and uses.

**Table K-1** summarises KPIs identified in the Planning and School Boards sections of the Background Summary Report and inferences through previous studies on sustainable development principles and identification of issues, that promote sustainable growth in



communities of a similar size. In addition to the recommended KPIs in the table below - Resident Population (Total Residents), Jobs Created (total Employees), Total Built Floor Area (GFA in Dwellings/ ha) and Jobs to Housing Ratio (Ratio (Jobs / Total Housing Units) can also be used to differentiate between land use alternatives and be criteria leading to a preferred plan.

**Figure K-6: Guidelines for a Sustainable Built Environment**



**Table K-1: Potential KPIs for a Sustainable Built Environment**

KPI	Low Performance (undesirable)	Moderate Performance (MANDATORY/ DESIRED)	Maximum Performance (aspirational)
<b>Gross Density</b>	<50 residents + jobs / ha	50 residents + jobs / ha	>50 residents + jobs / ha
<b>Residential Density in units/net ha (uph)</b>	<85 uph – Regional Corridor (RC) <19 uph – Adjacent to arterials & edge of neighbourhood (NE) <13 uph - Internal to neighbourhood(NI)	<b>85 uph</b> – Regional Corridor <b>19 uph</b> – Adjacent to arterials & edge of neighbourhood <b>13 uph</b> - Internal to neighbourhood	>85 uph – Regional Corridor >19 uph – Adjacent to arterials & edge of neighbourhood >13 uph - Internal to neighbourhood
<b>Built Form &amp; Mix % (Low:Mid:High)</b>	RC* - 50:50:0 NE/NI**< 100% ground related	<b>RC - 40:40:20</b> NE/NI - 100% ground related	RC - 30:40:30
<b>Access to Schools</b>	>10 min walk shed (800 m)	10 min walk shed (800 m)	<10 min walk shed (800 m)
<b>Access to Active Recreation</b>	>10 min walk shed (400 m)	10 min walk shed (400 m)	<10 min walk shed (400 m)
<b>Access to Community Facilities</b>	>10 min walk shed (800 m)	10 min walk shed (800 m)	<10 min walk shed (800 m)

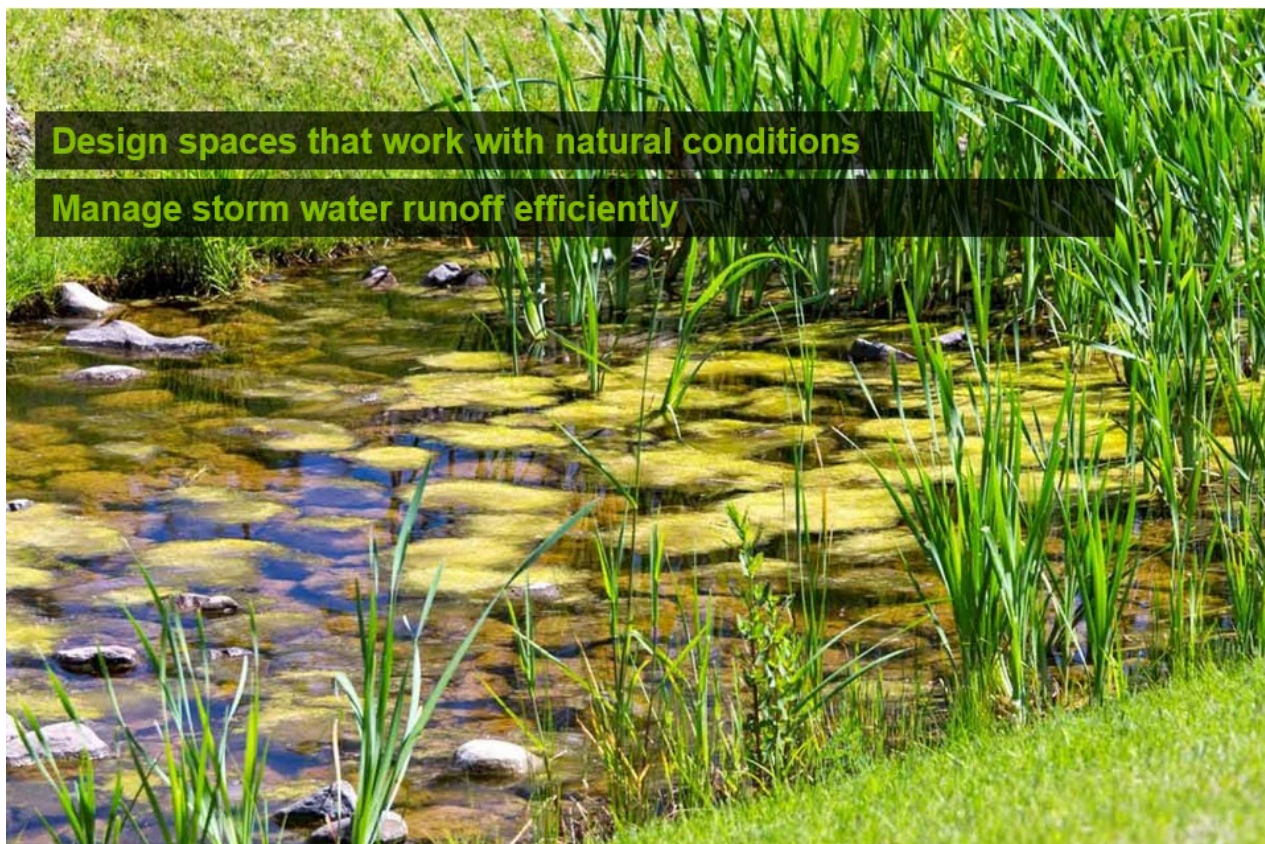
## K.5.2 Natural Environment and Open Space – KPIs

Preserving ecological and natural heritage systems are significant components for future Clarington. Proximity to natural heritage systems provides Southeast Courtice a unique opportunity to ensure that the habitat is connected to maximize the sustainable footprint.

**Table K-2** summarises KPIs identified in the Landscape Analysis and Natural Resources, Hydrology and Surface Water sections of the Background Summary Report. KPIs were selected to encourage design and spatial programming that work with natural conditions and enable the community to gain benefit from environmental, economic and social aspects of the natural landscape & promote linkages to a diverse range of open spaces, parks & recreation facilities.

In addition to the recommended KPIs in the table below – % of Shared Amenities (such as school & park located adjacent), Habitat Connectivity (Index), CO2 Reduction Through Trees (reduction in emissions created by new built fabric, does not take into account CO2 production from transportation) and significant view and vistas of visible landmarks, including Natural Heritage System features, can also be used to differentiate between land use alternatives and be criteria leading to a preferred plan.

### Figure K-7: Principles for Ecologically Sensitive Community Development





**Table K-2: Potential KPIs for Sustainable Natural Environment and Open Space**

<b>KPI</b>	<b>Low Performance (undesirable)</b>	<b>Moderate Performance (MANDATORY/min. DESIRED)</b>	<b>Maximum Performance (aspirational)</b>
<b>Post Development Tree Cover Target</b>	<30% of total site area	30% of total site area (a range of +/- 1% is acceptable)	>30% of total site area
<b>% Ecologically Sensitive Areas Protected, Conserved, Enhanced</b>	<100% high constraints protected	100% high constraint area protected	100% high constraint area protected  Mitigation and/or compensation to offset impact of development in Moderate constraints areas  Incorporation of low constraint features into site-level plans  Enhancement of the existing NHS as recommended in the SWS
<b>Parkland Dedication</b>	< 1ha / 300 dwelling units	1ha / 300 dwelling units	>1ha / 300 dwelling units
<b>Urban Agriculture (local food production)</b>	Lot level only - Garden space in Semi-detached Detached dwellings	Lot level + Dedicated Lots (programmed space within parkland dedication)	Lot level + Dedicated lots (Orchards / Fruit / Vegetable gardens integrated into public parks, buffers to major roadways, vegetation protection zone or enhancement /restoration areas

### K.5.3 Mobility

Proximity to transit and the Municipality’s focus on active transportation provide SECSP a unique opportunity to reduce private vehicular dependency. Dedicated lanes and space management for active modes will promote a more sustainable model. The long term aspiration for sustainable Clarington is to reduce car dependency and simultaneously offer alternative travel choices for residents as they move in and through neighbourhoods each day. Research has shown that the impacts of active transportation not only enhances public transit infrastructure delivery but also has health benefits for residents that choose active modes. The

Table K-3 summarises KPIs identified in the Planning and Transportation sections of the Background Summary Report, the selection based on existing and proposed transportation projects within the area.

Figure K-8: Active Transportation Principles

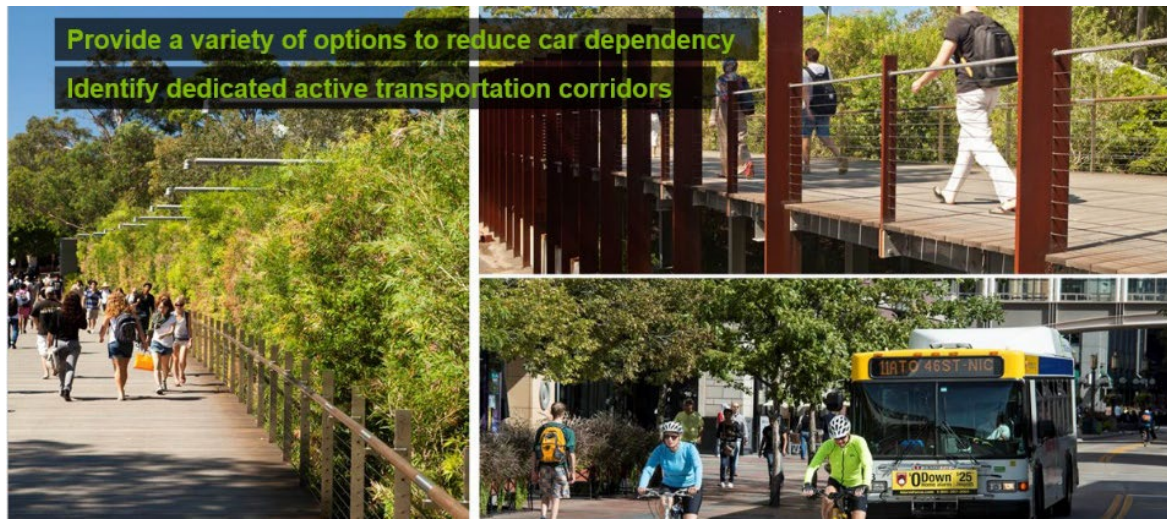


Table K-3: Potential KPIs for Sustainability through Mobility and Transportation

KPI	Low Impact (undesirable)	Moderate Impact (MANDATORY/ DESIRED)	Maximum Impact (desired)
Av. Block Length	▪ 75% > 400 m	▪ 75% within 250 – 400 m	▪ 75% <250 m
Intersection Density	▪ <45 intersections / sq.km	▪ 45 intersections / sq.km	▪ >45 intersections / sq.km
Pedestrian/Bike Score	▪ <0.75 (0 = poor; 1=desired)	▪ 0.75 (0 = poor; 1=desired)	▪ >0.75 (0 = poor; 1=desired)
Access to Existing / Planned Amenities	▪ % residential area with <3 facilities within 800 m walking distance	▪ % residential area with 3 facilities within 800 m walking distance	▪ % residential area with >3 facilities within 800 m walking distance
Access to School (m)	▪ >800 m (> 10 minutes walking)	▪ 400-800 m (5-10 minute walking)	▪ ≤400 m (≤5 minute walking distance)
Transit Coverage Residences + Jobs (R+J)	▪ 50% (R+J) or higher > 400 m from transit stop/station	▪ 75% (R+J) within 250 m – 400m from transit stop/station	▪ 75% (R+J) < 250 m from transit stop/ station

### K.5.4 Infrastructure and Buildings.

For a neighbourhood to be sustainable, efficient use of resources is important. Provision of innovative solutions to conserve resources such as energy and water that further helps reduce CO2 emissions is the first step towards net zero communities.

A variety of strategies can enable a cleaner and greener neighbourhood that maximizes conservation and minimizes consumption. **Table K-4** summarises KPIs for sustainable initiatives. Although the intention of this category is not to measure the impacts of building level infrastructure systems, key concepts such as CO2 reduction through carbon sequestration, impacts of use of solar panels on CO2 reduction, will be measured when assessing land use alternatives. The cost associated with such a green transitioning has not been covered since that falls outside the purview of this study.



In addition to the recommended KPIs in the table below – Wastewater Produced per 1,000 sqm GFA (CCM/1000 sq.m /Year), Energy Use per 1000 sq.m per GFA (Kwh /1,000 sq.m/Use/Year), Water Use per 1,000 sq.m per GFA (Liters/1,000 sq.m/Use/Year), CO2 Reduction Through Solar Panels (MTCO2e / Capita / Year) can also be implemented through appropriate targets outlined in the secondary plan, assisting in the move towards the goal of a low carbon community.

Figure K-9: Green Communities' Principles



Table K-4: Potential KPIs for Sustainable Infrastructure

KPI	Low Performance (undesirable)	Moderate Performance (MANDATORY / min. DESIRED)	Maximum Performance (aspirational)
Imperviousness (%)	▪ <50% of all LID features in public lands (ROW-Park-Institutional)	▪ 50% of all LID features in public lands (ROW-Park-Institutional) (a range of +/- 1% is acceptable)	▪ >50% of all LID features in public lands (ROW-Park-Institutional)
Watercourse Crossings (no.)	▪ <500 m apart	▪ Min. 500 m – 700 m apart	▪ >700 m apart
Recharge Areas	▪ Post <75% pre-development permeability	▪ Post= 75% pre-development permeability (a range of +/- 1% is acceptable)	▪ Post=pre-development permeability
Protection of HDF	▪ <100% of High Constraint HDF ▪ <50% of moderate / low constraint HDF with function preserved/ modified	▪ 100% of High Constraint HDF ▪ 50-75% of moderate / low constraint HDF with function preserved/ modified	▪ <100% of High Constraint HDF ▪ >75% of moderate / low constraint HDF with function preserved/ modified

## K.6 Recommendations / Next Steps

The existing background sustainability documents discussed in this report complete a background understanding through Phase 1 and provide a framework to guide the process of developing a measurable sustainable development for Southeast Courtice.

### **Phase 2 – Urban Design and Sustainability Principles and Alternative Land Use Plans**

Project activities in Phase 2 included identifying best practices in Sustainable Design. Research into sustainable neighbourhood design approaches and outcomes provided valuable information to develop a sustainable neighbourhood strategy.

AECOM's SSIM model was used to test the Land Use Alternatives against the predetermined Evaluation Criteria. Key Performance Indicators (KPIs) and benchmarks provided a measurable target to assess the success of each land use layout for high quality urban design and sustainable design. Urban Design and Sustainability Principles and Evaluation Criteria were identified. Through application of the SSIM model, the alternative concepts were further refined through stakeholder discussions and input.

### **Phase 3 – Preferred Land Use Plan for Southeast Courtice**

The focus of this phase included the preparation of the Draft Urban Design and Sustainability Guidelines, with benchmarks translated into planning policy, creating a clear set of provisions to create a sustainable community, but allowing flexibility for design innovation.

The Preferred Land Use Plan provides for a mix of residential densities in different housing types across the study area. There is a focus of densities along Regional corridors and at major intersections. The plan provides for access to potential transit, local retail, elementary schools and parkland for active recreation within a 5 minute walking distance (400m) of the majority of residents. Social and recreational opportunities are well-connected through a robust active transportation network. The plan encourages Low Impact Development and Green Infrastructure. It meets the requirements for parkland dedication, integrates parks with stormwater ponds, protects environmentally sensitive areas and minimises conflict between new development and existing natural heritage features and agricultural lands. Overall the mix and distribution of uses and housing typologies create a sense of place and identity for the community while moving towards the development of a low carbon community, resilient to the potential impacts of climate change.

### **Phase 4 – Final Draft Secondary Plan and Adoption by Council**

The final scheme will be prepared based on stakeholder and public input from Phase 3 and built into policy through the Secondary plan, supported by the Urban Design & Sustainability Guidelines and implemented through the Zoning By-law.

## K.7 Green Development Checklist (Excerpt from PGGDF)

PGGDF provides a Secondary Plan checklist, addressing each of the four themes that represent the core elements of a sustainable community. These checklists will be used as a guide in developing the Sustainability Plan and Guidelines for the SECSP.

### **Built Environment**

- ✦ Within Greenfield Areas, achieve a minimum overall housing density of 50 residents and jobs combined per gross developable hectare, as measured on a Region-wide basis.
- ✦ Within the Built Boundary, achieve an overall housing target of 6,200 (minimum) new units within the Built-Up Areas, 2,100 of these units are within the Courtice area.
- ✦ Strategically locate higher density housing along Regional and Local Corridors and within Centres to create a transit supportive development pattern.
- ✦ Residential areas are designed to provide diversity in housing types to achieve target densities and that accommodate a range of accommodation types (e.g., Live-work, apartment-in-house/second dwelling unit, mixed use) tenures and affordability.
- ✦ Residential areas are designed to be within an approximate 800 m walking distance of at least 3 of the following existing or planned amenities:
  - ✦ School, community/cultural facility; recreation facilities including parks; library; retail/convenience commercial use; pharmacy/medical facility; institutional use (daycare).
  - ✦ School site are located adjacent to public parks and/or community facilities, where possible.
- ✦ Design an interconnected street network that respects the Municipality's established hierarchy of roads and that directly connects with existing arterials, collectors and main entrances of adjacent residential developments.
- ✦ Street and block patterns emphasize interconnection and walkability through a grid or modified grid design.

### **Mobility**

- ✦ Design a network of mixed-use, walkable nodes connected together by transit, and easily accessible from surrounding residential neighbourhoods by bicycle and by foot.
- ✦ Promote local streets with medium (400 m) to short (less than 250 m) block lengths to support active transportation. Where this is not feasible, provide pedestrian pathways.
- ✦ Provide safe and direct routes for pedestrians to transit, commercial areas, community facilities and parks that encourage use of active transportation modes.
- ✦ All arterial and collector roads shall have sidewalks and street trees on both sides of the right-of-way.
- ✦ All local roads are encouraged to have sidewalks and street trees on both sides of streets, particularly for connections to schools, recreational facilities, transit stops and trails.

- ✦ Roads are designed for pedestrians, cyclists, and transit, as well as cars, integrating complete streets principles.
- ✦ Provide for a connected pedestrian and cycling network that is integrated with the Municipality's trail system in, out and through the Plan Area, and connecting the area with existing or planned public transit routes.
- ✦ The network includes trails within natural features, stormwater management facilities, open spaces and parks and the road system – sidewalks and bicycle paths, and is designed to minimize environmental impacts and to accommodate a range of users and abilities.
- ✦ Provide direct and continuous collector streets for transit access and efficiency of service.

### **Natural Environment and Open Space**

- ✦ Protect the Natural Heritage System and provide for enhancement, where possible.
- ✦ Ensure connectivity between natural heritage features, maintaining and where possible improving or restoring corridor function.
- ✦ Maintain views and vistas of visible landmarks, including Natural Heritage System features, where possible.
- ✦ Integrate natural heritage features into the public green space and parks systems (i.e., by locating public spaces adjacent to natural features) and the Municipality's trail system, where appropriate.
- ✦ Distribute parks throughout the Plan Area for accessibility to residents within a 400 m walking radius.
- ✦ Provide a connected system of parks and open spaces through trail systems, sidewalks, and pedestrian links.
- ✦ Determine and establish an optimal tree cover target to be achieved post-development on private and public property for the Plan Area, having regard to the recommendations of established watershed management plans applicable to the Plan Area.

### **Infrastructure and Buildings**

- ✦ Stormwater planning and design for the Plan Area should: Make use of the natural drainage pattern to minimize the risk of flooding; Maximize retention and infiltration of stormwater with minimum negative impact on natural wetlands, waterbodies, groundwater and natural hydrological systems; Give priority to the use of on lot source controls for stormwater capture, retention and infiltration (i.e., Low Impact Development techniques) as part of a treatment train approach.
- ✦ Provisions to minimize hard surface infrastructure requirements are encouraged, such as provisions for reduced parking standards where alternative parking is available and/or standards for permeable paving or stormwater infiltration compensation where development proposals exceed minimum parking requirements.
- ✦ Stormwater management facilities shall be designed as landscape amenities, as well as perform their functional requirements. This should include integrating recreational amenities



with stormwater management facilities (e.g., loop trail, around ponds, establish viewpoints, interpretive signage), where safe to do so.

- ✦ Provide for the integration of spaces that would allow for community gardens and community orchards within public spaces adjacent to, or directly within multifamily developments.
- ✦ Techniques to maximize energy efficiency and water conservation should be integrated into the design of streetscapes, parks and other outdoor public spaces (e.g., native / drought tolerant landscaping; LED street lighting; shade plantings and structures; rain gardens).
- ✦ Road design / orientation should support subdivision and site plan design that maximizes passive solar energy opportunities. Identified passive solar gain opportunities for street/lot orientation to be described in the Plan.
- ✦ Assess the feasibility of developing the neighbourhood to accommodate the incorporation of district energy or renewable/alternative energy systems and outline identified opportunities in the Plan.