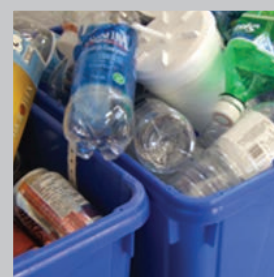
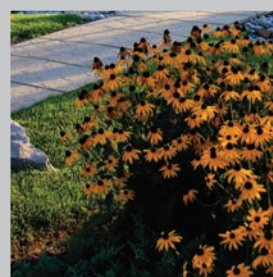


# New Communities

# GUIDELINES



2013



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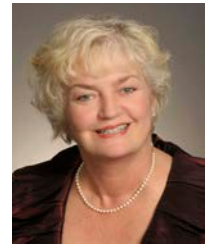
Regional Councillor  
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Town of Richmond Hill



Regional Councillor  
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Maurizio Bevilacqua  
City of Vaughan



Chairman & CEO  
Bill Fisch



Mayor  
Tony Van Bynen  
Town of Newmarket

### A Message from York Regional Council

In the next 18 years, The Regional Municipality of York will experience significant growth, reaching a population of 1.5 million people by 2031.



Regional Councillor  
Gino Rosati  
City of Vaughan

When York Region updated the Regional Official Plan, it was determined additional lands would be needed to accommodate growth. Recognizing the need to develop new community areas in a different way, Regional staff held consultations with residents, stakeholders and local municipalities to determine how our new communities should be developed. We heard from people that new communities need to be designed with a priority on people and liveability and such communities must feature sustainable neighbourhoods.

The New Communities Guidelines provides clarity on how to implement the policies of the Regional Official Plan as they pertain to the new community areas.

York Regional Council thanks all the contributors to this document. We hope you find this document a useful resource in building the York Region of tomorrow in a sustainable way.



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Regional Councillor  
Michael Di Biase  
City of Vaughan



Regional Councillor  
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# Introduction



## Purpose of the New Communities Guidelines

York Region is expected to grow to 1.5 million residents (in 510,000 households) and 780,000 jobs by 2031. Given the significance of this growth, it is the opportune time to make sustainable choices on how new communities are built including innovation in energy use, transportation, housing choice, water management and green buildings. This is consistent with the intent of the Province's Growth Plan for the Greater Golden Horseshoe which is to ensure economically, socially and environmentally sustainable growth to 2031.

Complete communities are the fundamental building blocks for creating a sustainable Region. Communities are much more than the architecture of buildings and the spatial layout of neighbourhoods. Based on input from our residents and stakeholders, complete communities were defined as places where people interact, learn, work, shop, play and call home at every stage of life. York Region's priorities for creating healthy and complete communities include people, sustainability and liveability. To achieve these priorities communities must be planned to offer a variety of housing types, employment opportunities and mobility options. These complete communities will also provide a full range of community infrastructure including human services, affordable housing, and high quality urban design to create an attractive and engaging public realm.

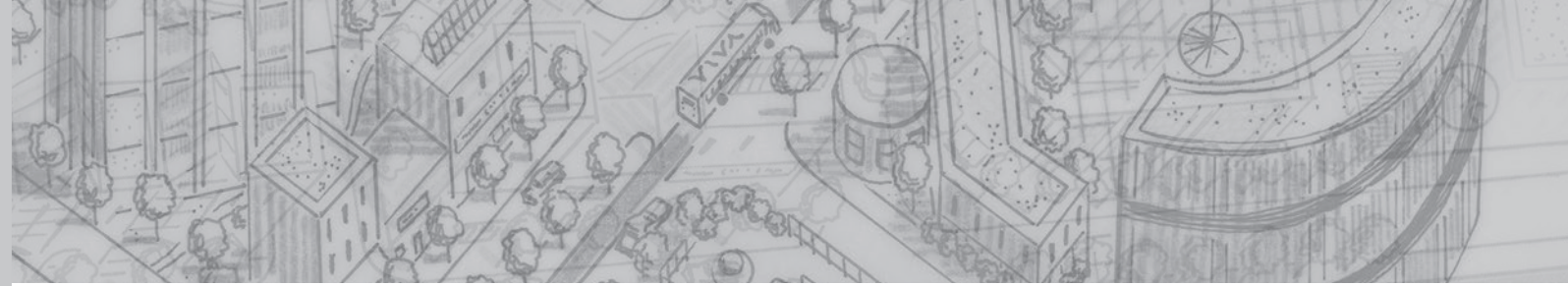
The policies in the Regional Official Plan, 2010 have been updated to reflect current sustainability thinking to further emphasize community health, walkability and transit integration. Key to the implementation of these new state-of-the-art communities, is an innovative and collaborative secondary plan process led by the local municipalities.

The New Communities Guidelines have been created to assist local municipalities and the development industry in successfully implementing the sustainable building and new community areas policies in the York Region Official Plan (2010).

The guidelines serve several purposes:

- as an educational tool to further explain Regional Official Plan policy intent (such as density targets and housing mix)
- informing local secondary planning processes applicable in new community areas
- informing local planning approvals as they relate sustainable buildings across York Region
- informing development within employment areas throughout the Region
- providing detailed requirements necessary to achieve mandatory targets (such as 10% water conservation)
- providing information on best practices to implement encourage policies (such as urban heat island reduction)
- where appropriate, providing guidance to development on other lands within the designated greenfield areas





### **Target Audience**

This document is intended for use by landowners, developers, consultants, designers, builders, planners and regional and local municipal staff.

### **Scope of the Guideline**

The guidelines include both mandatory and encourage policies that address the development of complete communities. These policies can be found in the sustainable buildings (Section 5.2) and new community areas (Section 5.6) sections in the York Region Official Plan, 2010.

The new community areas policies apply at a community scale in the urban expansion areas of East Gwillimbury, Vaughan, and Markham. Secondary plans will be developed to define land uses, density, road patterns and establish the planning principles for how development will proceed.

The sustainable building policies are applicable region-wide and will be implemented at the plan of subdivision or site plan stage of the planning process. These plans identify more detailed and specific policies for the development of small blocks of land, individual sites and buildings.

### **Mandatory versus Encourage Policies in the Regional Official Plan and New Communities Guidelines**

Mandatory policies in the Regional Official Plan require that a particular action be undertaken. Mandatory policies are identified by phrases such as “to require”, “shall be”, and “be subject to”.

Encourage policies in the Regional Official Plan provide policy direction on issues in a more flexible and less obligatory manner. Encourage policies are often used to identify Council priorities and preferred best practices for consideration in the planning process. Encourage policies can be identified by the use of phrases such as “to consider”, “to encourage” and “to promote”.

The New Communities Guidelines are meant to be informative and to address implementation of Regional Official Plan policies. Policies that have been identified as mandatory or encouraged in the ROP will be identified likewise in the New Community Guidelines.

### **Description of the Guidelines**

Each guideline provides detail relative to the scope of the Regional Official Plan policy. Guidelines, such as those that address specific performance targets will provide detailed information and direction. Other guidelines will provide more general guidance that is meant to inform local planning processes and directions.

Checklists have been provided at the end of this document. The first checklist has been prepared for use in new community areas for planning applications at a variety of scales. The second checklist focuses on the sustainable building policies and can be used Region-wide. The third checklist focuses on development in employment land areas.

The information found in this guide has been derived from a wide range of references. These references (and web links in the online version of the document) are provided in the additional resources section.

## How does this document relate to local Sustainable Development Guidelines/Green Building Programs?

Many of the local municipalities have, or are in the process of producing local sustainable development guidelines. It is intended that the guidelines prepared by the Region represent a baseline. Local municipal guideline documents will build on the Regional guidelines and be more tailored to address local municipal sustainable development priorities. Regional staff are ensuring that these processes are co-ordinated to maintain consistency.

## How to use this document

The following graphics provide examples of what the guidelines and checklists look like. They also identify the types of information the user can expect when using the guidelines and checklists.

Guideline  
reference  
number

Regional Official Plan  
policy reference

## Checklist for Community Areas

Category	Guideline	ROP Policy	Required	Optional
Directing Growth	501 That local municipalities prepare comprehensive secondary plans for new community areas. That each new community area shall be planned in a comprehensive and coordinated manner.	5.6.1 5.6.2	<input type="checkbox"/>	<input type="checkbox"/>
	502 To require that cultural heritage resources be identified and conserved.	5.6.3	<input type="checkbox"/>	<input type="checkbox"/>
	503 That new community areas shall meet or exceed a minimum density of 20 residential units per hectare and a minimum density of 70 residents and jobs per hectare in the developable area.	4.3.14 4.3.15 4.3.16	<input type="checkbox"/>	<input type="checkbox"/>
	504 That new community areas shall contain a wider range and mix of housing types, sizes and affordability. To encourage the construction of new rental units with a full mix and range of unit sizes.	4.3.17	<input type="checkbox"/>	<input type="checkbox"/>
	505 That local municipalities prepare comprehensive secondary plans for new employment lands. To allow a limited amount of ancillary uses on employment lands. That employment land development be designed to be walkable and transit accessible. That development of fully serviced employment lands be compact and achieve an average maximum density of 40 jobs per hectare in the developable area. To work with local municipalities to provide a diverse mix of lot sizes on employment lands.	4.3.18 4.3.19 4.3.20 4.3.21 4.3.22	<input type="checkbox"/>	<input type="checkbox"/>
	506 That new community areas shall contain community care uses within a reasonable walking distance from the majority of the population. To require underground installation of utilities in new community areas and Regional Centres and Corridors. To require that new retail be walkable, transit supportive, and integrated into communities and pedestrian and cycling networks.	5.6.5 7.36 4.4.1	<input type="checkbox"/>	<input type="checkbox"/>

Guideline  
description

Identification  
of mandatory  
and encourage  
policies

Guideline Reference Number and Title

Objective of Regional Official Plan Policy

Regional Official Plan policy reference

Guidance on how to fulfill the Regional Official Plan policy

**DG1 – Comprehensive Secondary Plans**

**Objective:**  
To create complete communities through a comprehensive and integrated secondary plan process.

**R.O.P. POLICY**  
5.6.1 That local municipalities, in consultation with the Region, prepare comprehensive secondary plans for new community areas that meet or exceed the content of this section of the Plan. The secondary plan preparation should include an innovative approach that enables a walkable primary street accessible by the local municipalities in order to ensure an integrated and sustainable approach to the planning, design and approval of the secondary plan.  
5.6.2 That each new community area shall be planned in a comprehensive and coordinated manner.

**Does the ROP provide direction on the preparation of Secondary Plans for new community areas?**  
The Regional Official Plan requires the preparation of secondary plans for new community areas. It also identifies a number of studies that need to be prepared in support of the required secondary plan including: community energy plan, master environmental servicing plan, walkability plan, and greenways, system plans.

**What is a complete community?**  
A complete community provides residents with opportunities to interact, learn, work, play, and live. A complete community offers excellent housing, mobility, and employment options, access to food and further services, and active and passive recreation. A complete community meets most residents' daily needs on a daily basis within walking distance. The complete communities in new community areas shall be designed to be walkable and transit accessible.

**Where are the new community areas?**  
New community areas are newly designated urban areas in the Region which will accommodate growth to 2031. The new community areas, located in the City of Vaughan, the City of Markham, and the City of Richmond Hill, are shown on the map below.

Figure 3: Section of ROP Map 3: Regional Growth Planning in the Region of York Region, L.S. 3  
Source: Long Range Planning Branch, York Region





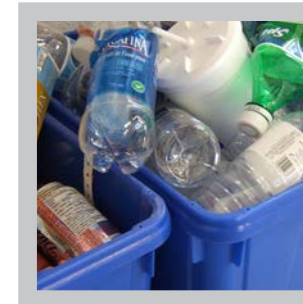
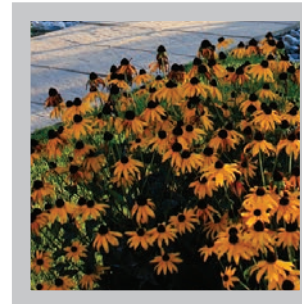
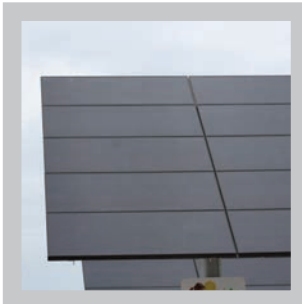
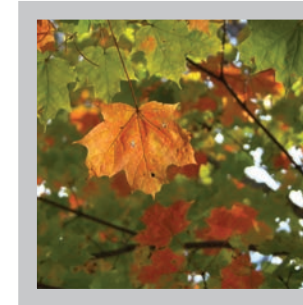
## Chapter 1.0

# Directing Growth

Over the next 18 years, York Region faces significant growth. It is anticipated that the Region will reach a population of 1.5 million people and 780,000 jobs by 2031.

The Region is committed to planning for this growth in a sustainable way while providing a high-quality of life for its residents.

The guidelines in this chapter focus on enhancing the Regional structure by creating new community areas that achieve a more sustainable urban form.



# DG1 – Comprehensive Secondary Plans

## Objective:

To create complete communities through a comprehensive and integrated secondary plan process.

## ROP POLICY

### 5.6.1

That local municipalities, in consultation with York Region, prepare comprehensive secondary plans for *new community areas* that meet or exceed the policies of this section of this Plan. The secondary plan preparation should include an innovative approach that involves a multidisciplinary team assembled by the local municipality in order to ensure an integrated and sustainable approach to the planning, design and approval of the secondary plan.

### 5.6.2

That each *new community area* shall be planned in a comprehensive and co-ordinated manner.

## Does the Regional Official Plan provide direction on the preparation of secondary plans in new community areas?

The Regional Official Plan requires the preparation of secondary plans for new community areas. It also identifies a number of studies that need to be prepared in support of the required secondary plan including: community energy plan, master environmental servicing plan, mobility plan and greenlands system plan.

## What is a complete community?

A complete community provides residents with opportunities to interact, learn, work, play and live. A complete community offers residents housing, mobility, and employment options, access to food, human services and active and passive

recreation. A complete community meets most residents' basic needs on a daily basis within walking distance. The goal is to create complete communities in new community areas through a comprehensive and integrated secondary plan process.

## Where are the new community areas?

New community areas are newly designated urban areas in the Region which will accommodate growth to the year 2031. The new community areas, located in the Town of East Gwillimbury, City of Vaughan and in the City of Markham have been established through Regional Official Plan Amendments 1, 2 and 3.

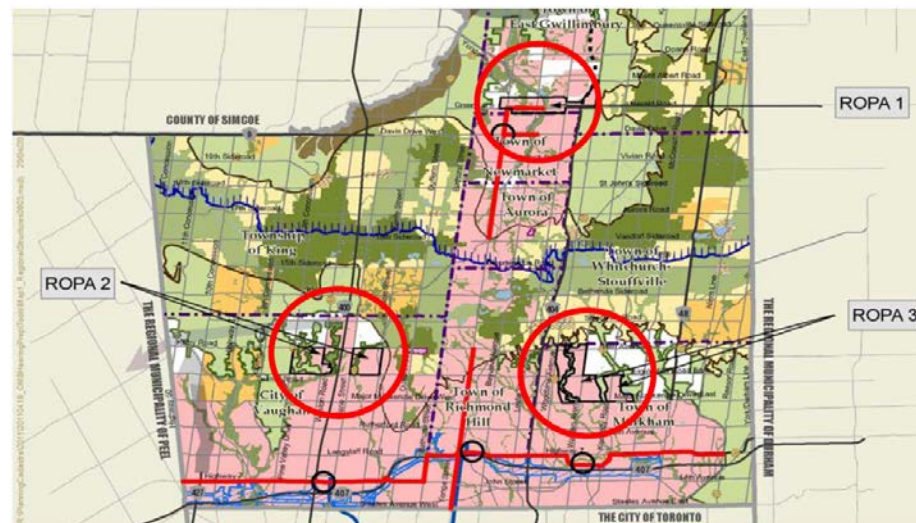


Figure 1: Excerpt of ROP Map 1-Regional Structure showing the locations of ROPA's 1, 2, 3  
Source: Long Range Planning Branch, York Region



### What is a secondary plan?

The secondary plan implements the objectives, policies and land use designations of local official plans at the community and neighbourhood scale. Secondary plans provide a detailed policy framework and direction for a specific geographic area on topics such as land use, infrastructure, transportation, environment and urban design. Traditionally, the secondary planning process has been a linear process.

### Who leads the secondary plan process?

These new community areas will be planned in a comprehensive and collaborative manner through an innovative and integrated design approach. In new community areas, this approach will be led by the local municipality.

### What is the integrated design process?

The integrated design process is an iterative, collaborative and comprehensive approach to the planning and design of communities that encourages early establishment of common visions, goals and objectives. The advantage of collaboration between a range of disciplines on a project is the early identification of synergies and trade-offs resulting from a shared vision. The result is a final design with improved function, efficiency and economy.

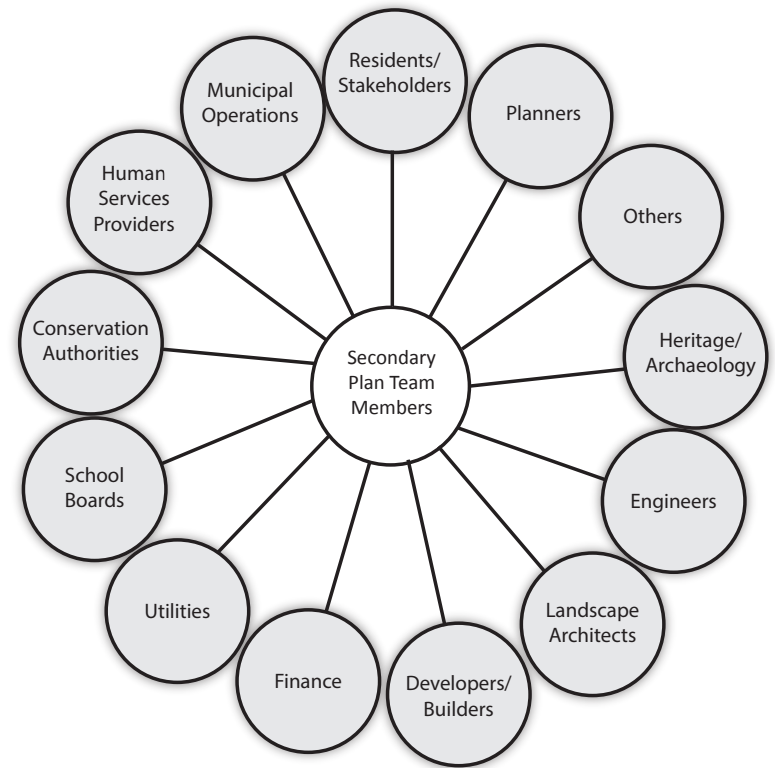


Figure 2: The Integrated Secondary Plan Design Team  
Source: Long Range Planning Branch, York Region



# DG2 – Cultural Heritage and Archaeological Resources

## Objective:

To recognize, conserve and promote cultural heritage resources.

## ROP POLICY

### 3.4.6

To require that *cultural heritage resources* within secondary plan study areas be identified, and any significant resources be conserved.

## RELATED ROP POLICIES

### 3.4.10

To prepare, in partnership with First Nations, the Métis Nation, and other stakeholders a York Region Archaeological Resource Management Plan which considers:

- the locations of significant or potentially significant archaeological resources, cultural heritage sites, ceremonial sites and sacred sites; and,
- protocols for the protection and management of significant or potentially significant archaeological resources, cultural heritage sites, ceremonial sites and sacred sites.

## What are cultural heritage resources?

The Regional Official Plan defines *cultural heritage resources* as resources that contribute to the understanding of our past, including:

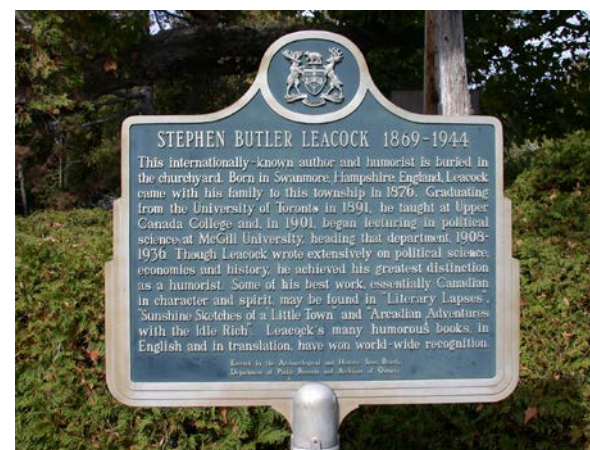
- archeological resources such as artifacts, archeological sites and marine archeological sites
- built heritage resources such as significant buildings, monuments or other remains associated with architectural, cultural, social, political, economic or military history important to a community
- cultural heritage landscapes, which are defined as geographical areas of heritage significance that have been modified by human activities and are valued by a community

## How are built heritage and cultural landscape resources protected?

Local municipalities identify built heritage and cultural landscape resources by conducting historical research, site surveys, analysis and evaluation. The results of these investigations are used to create a Heritage Property Listing (or registry). These registries are used by municipal decision makers and planners as a screening tool in the development review process to ensure the conservation of these cultural heritage resources.

Once properties have been identified as having cultural heritage value or interest, municipalities are enabled with a number of land use planning tools to aid in conservation, such as:

- architectural design guidelines
- heritage policies in secondary plans
- zoning by-law requirements (including height and set-back requirements)
- building permit requirements
- heritage conservation easements
- complete application requirements that require the preparation of heritage impact assessments and conservation plans for development related to/adjacent to cultural heritage resources
- community improvement plans/heritage conservation district plans



Signage explaining the cultural significance of a site

## What is York Region doing to support the conservation of cultural heritage resources?

In the Regional Official Plan, York Region has committed to the preparation of an Archeological Management Plan (AMP) which will assist in identifying, protecting and conserving the Region's archaeological resources. When completed, the York Region AMP will provide the following information:

- defines archaeology and cultural heritage value
- describes 11,000 years of human habitation in York Region
- describes threats to archaeological resources
- explains applicable legislation and roles and responsibilities of various stakeholders

The AMP identifies a number of products to assist the local municipalities in protecting archaeological resources including:

- regional and local official plan policy direction
- an inventory of known archaeological sites
- an archaeological potential map
- recommendations on how the archaeological assessment process can be integrated with the development review process
- First Nations and Métis Engagement Tool

The York Region AMP is also a valuable communication and education tool that can help residents and stakeholders recognize the importance of archaeological resources and better understand the cultural heritage of their community.



Historical church along Lake Simcoe in Georgina



# DG3 – Minimum Density Requirements

## Objective:

To ensure that new community areas develop at densities that support a more sustainable built form.

## ROP POLICY

### 5.6.3

That *new community areas* shall be designed to meet or exceed a minimum density of 20 residential units per hectare and a minimum density of 70 residents and jobs per hectare in the *developable area*.

## Why a density of 70 residents and jobs per hectare?

The forecast prepared in support of the York Region Official Plan includes the Provincial Growth Plan's key policy direction requiring York Region's designated greenfield areas to achieve an average minimum density of 50 residents and jobs per hectare. Designated greenfield areas are lands designated as "Urban Area" in the Regional Official Plan that were not built up at the time the Growth Plan was approved. Through the forecasting and land budget exercises, it was concluded that new community areas would have to develop at higher densities to offset the density of existing and already approved residential and employment areas in the designated greenfield area. From a health perspective, communities built at these densities support active transportation, transit use and reduced emissions.

## How is density calculated?

Density is calculated by dividing the sum of residents and jobs by the developable land area. The density target of 70 residents and jobs per hectare will be calculated across the entire new community area. It is anticipated that new community areas will contain a variety of land-uses and densities but overall will achieve 70 residents and jobs per hectare.

## What land uses are excluded in calculating developable land area?

Table 1 identifies the land uses that are excluded when calculating density targets specified in the York Region Official Plan:

**Land Use Exclusions  
Table 1**

Environmental	Infrastructure	Existing Uses
<ul style="list-style-type: none"><li>• Provincially significant wetlands (and associated 30m buffers)</li><li>• Watercourses and water bodies (and 15m associated buffers)</li><li>• Significant woodlands and locally sensitive wetlands (and associated 10m buffers)</li><li>• Floodplain lands</li><li>• Areas of Natural and Scientific Interest and Environmentally Sensitive Areas</li><li>• Regional Greenlands Systems (and associated buffers)</li></ul>	<ul style="list-style-type: none"><li>• Transmission corridors</li><li>• Rail lines</li><li>• Trans Canada Pipelines and compressor stations</li><li>• Existing/proposed 400 series highways</li></ul>	<p>Land uses that will be retained, such as:</p> <ul style="list-style-type: none"><li>• estate residential subdivisions</li><li>• cemeteries</li><li>• landfills</li></ul>

Source: Long Range Planning Branch, York Region



### Are there any built communities in York Region that already achieve this density target?

There are examples of York Region communities that come close to/or are achieving the target density of 70 persons and jobs per hectare. These communities include Cornell in Markham and OPA 6+28 in Aurora (Figures 3 & 4). These two communities were designed before the Growth Plan was approved.

### How do we communicate density to residents?

Local municipalities and the development industry can help communicate density to residents. A component of the secondary plan process could include community plans and renderings of what the new community area will look like. These community plans and renderings could be made available to the public on local municipal websites and displayed in sales trailers as a tool to educate residents and home buyers on the ultimate vision for each new community area.

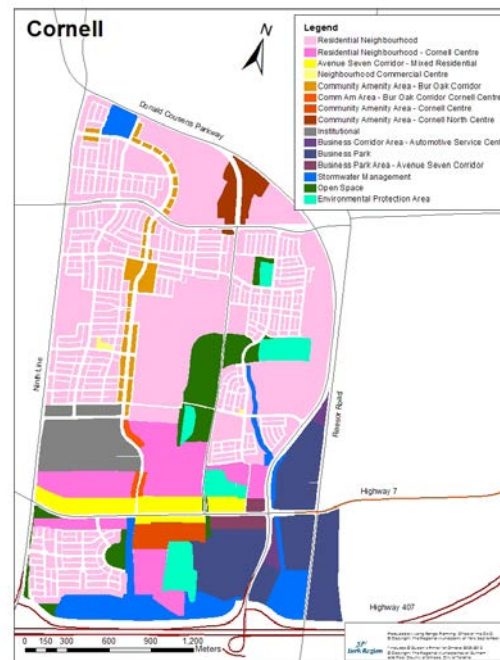


Figure 3: The Cornell Secondary Plan in Markham achieves 86 persons and jobs per hectare at full build out  
Source: Long Range Planning Branch, York Region

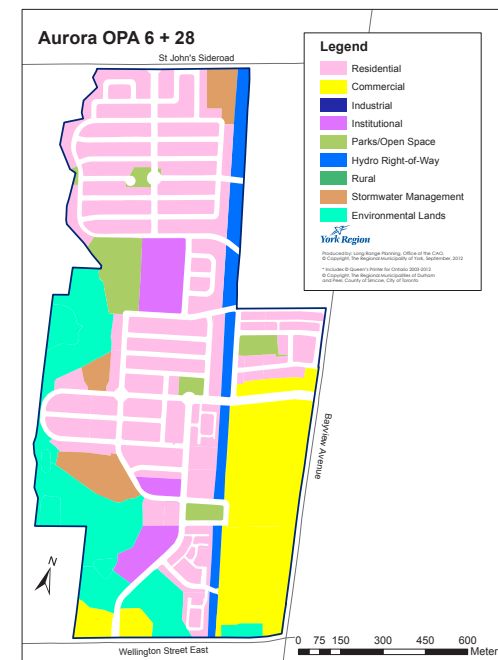


Figure 4: OPA 6 and 28 in the Town of Aurora achieves 68 persons and jobs per hectare  
Source: Long Range Planning Branch, York Region

# DG4 – Range of Housing Types, Sizes and Affordability

## Objective:

To ensure new community areas provide housing choice for all residents and workers.

## ROP POLICY

### 5.6.4

That *new community areas* shall contain a wide range and mix of housing types, sizes and affordability.

## RELATED ROP POLICIES

### 3.5.20

To encourage the construction of new rental units with a full mix and range of unit sizes, including family-sized and smaller units.

## Who determines the range of housing options provided?

Through the secondary plan process, local municipalities determine the appropriate housing mix and densities that will contribute toward the transit supportive compact built form anticipated in the Region's new communities.

## What are some of the advantages of providing a range of housing options?

Providing a diverse range of housing choice (a mix and range of types, lots sizes, unit sizes, functions, tenures, and levels of affordability) allows opportunity for all household types, including larger families, seniors, new immigrants and single person households to live in these areas. Providing a wide range of housing choice can have multiple health benefits for a community, including addressing the social determinants of health, promoting aging in place options and improving social cohesion.

## What is the Region's role in forecasting housing types?

The Region's forecast of households is divided into four dwelling types: single detached, semi-detached, rows (townhouses), and apartments. Apartments include both low-rise and high-rise apartment units, as well as duplex units. The following chart identifies an example of the unit types that will be required to achieve the 70 residents and jobs per hectare density target.

**York Region 2031 New Community Areas Unit Forecast  
by Structure Type and Local Municipality**  
Table 2

	Single Detached	Semi-Detached	Townhouses	Apartments	Total
East Gwillimbury	3,500	700	2,100	700	7,000
Markham	5,940	1,190	3,560	1,190	11,880
Vaughan	4,190	840	2,520	840	8,390
York Region	13,630	2,730	8,180	2,730	27,270

Note: Figures may not add due to rounding  
Source: Long Range Planning Branch, York Region



### **How will this be implemented and monitored?**

York Region will partner with local municipalities to ensure that densities and unit mixes identified in the secondary plan process are implemented at the development stage. This monitoring and review will occur as part of the growth management work currently undertaken by the Region.



Apartments



Townhomes



Semi-detached homes



# DG5 – Planning for Employment Land

## Objective:

To support the Region's economic vitality by providing well planned and designed employment lands.

## ROP POLICY

### 4.3.11

To allow a limited amount of *ancillary uses* on employment lands, provided that the proposed uses are intended to primarily service businesses in the employment lands and that *ancillary uses* collectively do not exceed 15% of an employment area as defined in the local official plan.

### 4.3.14

That local municipalities, in consultation with York Region, prepare comprehensive secondary plans for new employment lands that are consistent with the applicable policies in Sections 5.2 and 5.6 of this Plan.

## RELATED ROP POLICIES

### 4.3.15

That employment land development be designed to be both walkable and transit accessible where possible.

## What role do employment lands play in York Region's economy and in new community areas?

Employment growth and wealth creation are fundamental to the economic vitality, quality of life and well-being of the Region. The Region is forecast to have 780,000 jobs by 2031. Employment lands are major drivers of economic activity and are forecasted to continue to play a significant role in the Region's economy. Over 50% of the forecasted job growth is anticipated in these areas. The Region's employment lands provide opportunities for a diversified economic base with a range and choice of sites. Employment lands that are transit supportive, make efficient use of land, contain a vibrant environment and offer appropriate support services can help attract high quality employers. Employment lands with 400-series highway frontage provide opportunities to attract significant employers to the Region in key sectors that require highway exposure. Development of employment lands in close proximity to new community areas supports a number of ROP goals including:

- supporting the goal of providing one job for every two York Region residents

- increasing the percentage of people who live and work in York Region
- developing and retaining a highly skilled workforce by providing attractive and high quality communities

## How will employment areas be planned?

Employment areas will be subject to a secondary planning process either as part of the larger new community secondary plan or through a planning exercise specific to the employment areas.

## Does the Regional Official Plan provide direction on the preparation of secondary plans for employment lands?

The Regional Official Plan requires the preparation of comprehensive secondary plans for new employment lands that consider applicable sustainable building and new community area policies. These secondary plans will address issues including density requirements, protection of employment lands, water management, mobility, urban design, energy efficiency and sustainable building practices.

A checklist has been provided to identify the employment land policies addressed in these guidelines.

**Total Employment Forecast for New Community Areas**  
Table 3

New Community Area	Employment Land Employment	Major Office Employment	Population-related Employment	Total
Town of East Gwillimbury	6,200	575	5,000	11,775
City of Vaughan	0	0	6,300	6,300
City of Markham	13,200	0	7,500	20,700

Note: Numbers may not add due to rounding; Vaughan does not include the Highway 400 north employment lands (ROPA 52)  
Source: Long Range Planning Branch, York Region

#### 4.3.16

That development on fully serviced employment lands be compact and achieve a region-wide average minimum density of 40 jobs per hectare in the *developable area*. This target is expected to be higher for lands adjacent to centres and corridors.

#### 4.3.17

To work with local municipalities to provide a diverse mix of lot sizes on employment lands.

### What role do ancillary uses play in employment areas?

Ancillary uses are small scale retail and commercial uses that primarily serve businesses in employment areas. The Regional Official Plan sets limits on the amount of ancillary uses permitted in employment areas. Local municipalities will determine the location, amount and size of ancillary uses permitted in employment areas through the secondary planning process.

### What is York Region doing to support employment?

In 2013, York Region released the Economic Development Action Plan. This plan evaluates where the Region's economic development efforts have been and will continue to be successful. The Economic Development Strategy recommends programs, actions and partnerships that support the economic vitality of the region.

In addition, York Region will be updating the Employment Lands Inventory. This study will provide detailed information on the Region's employment lands, including current characteristics and growth potential.



Honda campus which includes a head office, a technical centre for research and development, engineering and training and a one-story parts distribution centre





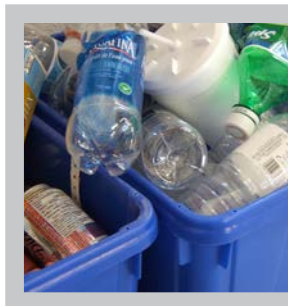
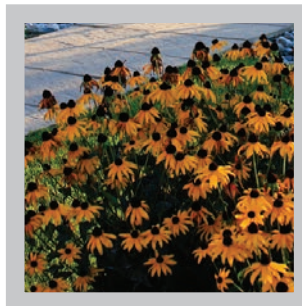
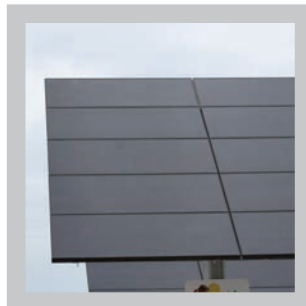
## Chapter 2.0

# Community Design

Complete Communities are places where people interact, learn, work, shop, play and call home through every stage of life.

To achieve complete communities, communities must be planned to offer a variety of housing types, employment opportunities and mobility choice.

These complete communities must also provide a full range of community infrastructure including human services, affordable housing and high quality urban design to create an attractive and engaging public realm.



# CD1 – Community Core Areas

## Objective:

To ensure that people can meet their daily needs within their own communities.

## ROP POLICY

### 5.6.5

That *new community areas* shall be designed to contain community core areas, which will be the focus of retail, personal services, human services, community services and provide connections to rapid transit. The community cores shall be within a reasonable walking distance from the majority of the population.

## RELATED ROP POLICIES

### 7.5.6

To require underground installation of utilities, where feasible, in *new community areas* and Regional Centres and Corridors, and to encourage buried utilities in the balance of the Region.

### 4.4.1

To require that retail be designed to be walkable, transit-supportive, and integrated into communities and pedestrian and cycling networks, with high-quality urban design.

## What are community core areas?

Community cores are pedestrian-friendly, mixed-use areas that are organized around an active public realm in a central location that serves the majority of the community. They help establish a community's identity, create a sense of place, and provide a platform for public gatherings, human interaction and improved social cohesion.

## What role will community core areas play?

Community core areas will serve as the focal point or activity hub of new community areas. These areas may provide a variety of amenities including local retail and personal services, human and community services, public facilities, offices and public spaces. Each community core will be unique based on the needs of residents and reflective of the history and context of the area and surrounding landscape to create a sense of place.

## Are these areas established immediately?

Community core areas will develop over time. As a community matures, community core areas will evolve into a dense, compact, and diverse part of a healthy new community with strong linkages to surrounding neighbourhoods. The population base to support various retail and employment uses often occurs at the end of build-out of a community/secondary plan area. Creating successful community core areas requires flexibility to respond to market shifts and consumer preference changes.

Public agencies can lead the earlier development of these areas by locating institutional and civic facilities within community core areas. These facilities would serve to anchor and establish the community core as a central service location.



Core area providing mix of uses  
Copyright: Queen's Printer for Ontario  
Source: Ontario Growth Secretariat, Ministry of Infrastructure

Local municipalities will need to adopt a strong vision for community core areas. Development concepts will be evaluated against the following criteria for the successful implementation of community core areas:

**Well Designed Public Realm:** creates a memorable space that serves as a central space for the community (such as piazzas and squares).

**Collaboration/Partnership:** implements new approaches to collaboration and partnership to ensure that public, private, and community interests are addressed through development.

**Plan for Complexity:** planned for evolution and diversification over time.

**Mixed-Use/Multi-Use:** utilizes approaches such as mixed-use, shared facilities, and performance-based zoning to ensure a wide variety of uses.



**Connect to the Community:** provide strong connections to surrounding neighbourhoods, park systems and commercial areas that reinforce the community core area as a public centre. In addition, commercial core areas should provide residents with connections to local agricultural products and healthy affordable foods.

**Mobility Systems:** interconnections in the form of multi-modal hubs should be provided in the community core areas.

**Sustainability:** utilizes a holistic approach that considers the economic, social and environmental elements for creating community core areas.

**Activity:** public spaces should reflect the community and programming activity in these spaces should be addressed.

**Social Cohesion:** contributes to improved social cohesion by providing opportunities for social interaction and expressions of culture.



Public shared-use facility in community core area  
Source: City of Brampton



Mount Pleasant community core area featuring public open space, community facilities and rapid transit connections  
Source: City of Brampton

# CD2 – High Quality Urban Design

## Objective:

To continue pursuing excellence in high quality urban design.

## ROP POLICY

### 5.6.7

That *new community areas* shall be designed to have high-quality urban design, attractive buildings, landscaping and public streetscapes, consistent with policy 5.2.8 of this Plan.

### 5.2.8

To employ the highest standard of urban design, which:

- a. provides pedestrian scale, safety, comfort, accessibility, and connectivity;
- b. complements the character of existing areas and fosters each community's unique sense of place;
- c. promotes sustainable and attractive buildings that minimize energy use;
- d. promotes landscaping, public spaces and streetscapes;
- e. ensures compatibility with and transition to surrounding land uses;
- f. emphasizes walkability and accessibility through strategic building placement and orientation;

## What is high quality urban design?

High quality urban design considers how buildings and the spaces between them are integrated and shaped together to create a functional, attractive, and memorable place.

## What are the elements of good urban design?

The elements of urban design include:

### Buildings

Well-designed buildings, at an appropriate mass and scale, are critical to creating a comfortable public realm by ensuring an enhanced streetscape and creating an animated pedestrian environment.

### Public Realm

The public realm is the location for human activity and interaction occurring at a variety of scales, ranging from grand central plazas and squares to small informal meeting places.

Streets and sidewalks connect and facilitate mobility through neighbourhoods and communities. The appearance and character of these streets contribute to the quality of the public realm and should be designed to accommodate a range of users, create visual interest, provide amenity and encourage social interaction.

## What is public space?

Public space is typically thought of as the publicly owned or publicly accessible area between private property lines, including roadways, streetscaping areas, parks, open space and sidewalks.

## What is the role of private spaces in urban design?

The space or interface between the municipal right-of-way and the front of the building provides a transition from the public to the private realm. Good urban design requires conscious and co-ordinated efforts and collaboration between public and private sectors to create a cohesive sense of place.

## What is the local municipal role in urban design?

Local municipalities are already leading and implementing high quality urban design in York Region communities. Typically, local municipalities develop urban design guidelines to give visualization to urban design policy expressed in their municipal official plan policy or zoning by-laws. These guidelines are applied during the development approval process. The local municipalities will continue their lead role in pursuing excellence in high quality urban design.



- g. follows the York Region Transit-Oriented Development Guidelines; and,
- h. creates well-defined, centrally-located urban public spaces.

### 5.2.9

That retail, commercial, office, and institutional structures be carefully designed in compact form and be pedestrian-oriented, transit-supportive, and multi-storey where appropriate.

### Is there a regional role in urban design?

York Region has an interest in urban design, in the following areas:

- as a transit service provider, York Region has an interest in ensuring that developments incorporate good urban design principles that facilitate and promote transit usage
- as a road authority, York Region must work in partnership with adjacent property owners to create attractive streetscapes and public realms that encourage and promote active transportation and transit use
- in the area of public health and healthy communities, promoting the fact that quality urban design will positively impact the health of York Region residents



Pedestrian-scale urban design and streetscape

Copyright: Queen's Printer for Ontario

Source: Ontario Growth Secretariat, Ministry of Infrastructure

# CD3 – Live-work Opportunities

## Objective:

To encourage a closer relationship between where we work and live.

## ROP POLICY

### 5.6.6

That within *new community areas*, live-work opportunities be provided through a combination of flexible zoning permissions and accommodations for combined residential and business or personal services, office use, and home occupations.

## What is a live-work unit?

A live-work unit is a type of property, unit, or structure that is designed and/or used for two purposes – living and working.



Live-work units in Cornell, Markham

## What are flexible/performance-based zoning permissions?

Flexible/performance-based zoning originally arose as a way of regulating the adverse environmental impacts of industry and addressed the measurement of impacts such as noise, dust, and traffic generation on adjacent land uses. Newer flexible/performance-based zoning by-laws use other quantifiable measures of land use intensity including open-space ratios, impervious surface ratios, floor space index density, landscaping and urban design criteria to facilitate the development of mixed-use areas.

Flexible zoning permissions focus on community goals and associated performance measures to ensure a greater variety of uses is permitted, which facilitates creative community development and site design. The combination of live-work units and flexible zoning permissions supports the creation of community core areas.



# CD4 – Human Service Needs

## Objective:

To ensure human services are provided as an integral component of a complete community.

## ROP POLICY

### 5.6.8

That *new community areas* shall be planned to consider human services needs, including educational, social, health, arts, culture, and recreational facilities.

## RELATED ROP POLICIES

### 3.1.5

That public health and other human services be incorporated into the design and evaluation of *new community areas* and Regional Centres and Corridors.

### 5.1.9

To require local municipalities to prepare detailed sequencing plans within each secondary plan that provide for an orderly and efficient progression of development to the next sequence, and are supported by water, wastewater and transportation infrastructure, and the provision of human services.

## What are human services?

Human services are programs and services that support safe, caring, and healthy communities that promote a high quality of life. Human services can include health care, education, housing, social services and transit.

## Does York Region provide any guidance on human services planning?

*The Economic Analysis of Human Services Costs to 2031 Report* provides a set of recommendations and strategies for enhancing human services planning within York Region. These broad recommendations focus on planning human services in York Region over the next 20 to 25 years. Some of the strategies identified include:

**Collaborative Planning:** include the involvement of York Region organizations, various levels of government, the human service sector, citizens and communities.

**Alternative Service Models:** consider increased reliance on service delivery through arrangements with the volunteer, community and/or private sectors.

**Service Integration:** provide convenient and simple access to services such as single window service mechanisms and “common roof” approaches to service delivery.

**Prevention:** prevention, early intervention, and addressing root causes are very effective ways of managing service delivery.

**Urban Intensification:** consider how intensification might affect change to service delivery.

## What is a human services needs assessment?

A human services needs assessment is a study that identifies the human services needs of a community. It involves:

- gathering information about the proposed demographics of the new community area
- identifying existing and proposed social infrastructure amenities and services in the community (assets)
- identifying which human services are required and creating a timeline for implementation (priorities)
- identifying opportunities for the provision of services through partnerships

## How will this be implemented in new community areas?

The identification of the necessary human services within a community will occur as part of the secondary plan process. The secondary plan should address the following:

- linking human services implementation strategies to other planning mechanisms and resourcing arrangements
- developing phasing and staging policies that establish population thresholds for when human services should be provided as a new community area develops and will be implemented

# CD5 – 25% Affordable Housing

## Objective:

To ensure that a minimum of 25 per cent of new housing units are affordable.

## ROP POLICY

### 3.5.6

That a minimum 25% of new housing units across the Region be *affordable*, be distributed within each local municipality and should be coordinated across applicable local planning areas including secondary plan and block plan areas. A portion of these units should be accessible for people with disabilities. *Affordable* housing units should include a mix and range of types, lot sizes, unit sizes, functions and tenures to provide opportunity for all household types, including larger families, seniors, and residents with special needs.

## RELATED ROP POLICIES

### 3.5.8

To encourage the development of intrinsically *affordable* housing which includes modest amenities, standard materials, minimal details and flexibility within units.

## What is housing affordability?

Housing affordability is the relationship between the ability to pay for housing and the cost of housing. There are a number of factors that affect housing affordability including the range of housing and rental options available, size of housing, household incomes and mortgage rates.

## How does York Region define affordable housing?

In the case of ownership, affordable housing is defined as the least expensive of:

- housing where purchase price does not exceed 30% of gross annual household income for low- and moderate-income households
- housing where purchase price is at least 10% below the average purchase price of a resale unit in York Region

In the case of rental, affordable housing is defined as the least expensive of:

- a unit where rent does not exceed 30% of gross annual household income for low- and moderate-income rental households

- a unit where rent is at or below the average market rent of a unit in York Region

For the purposes of this guideline, “low- and moderate-income households” means, in the case of ownership housing, households with incomes in the lowest 60th percentile of the income spectrum for York Region or, in the case of rental housing, households with incomes in the lowest 60th percentile of the income spectrum for renter households in York Region.

## What tools already exist or are contemplated in the Regional Official Plan that promote housing affordability?

Regional Official Plan tools to promote affordable housing include:

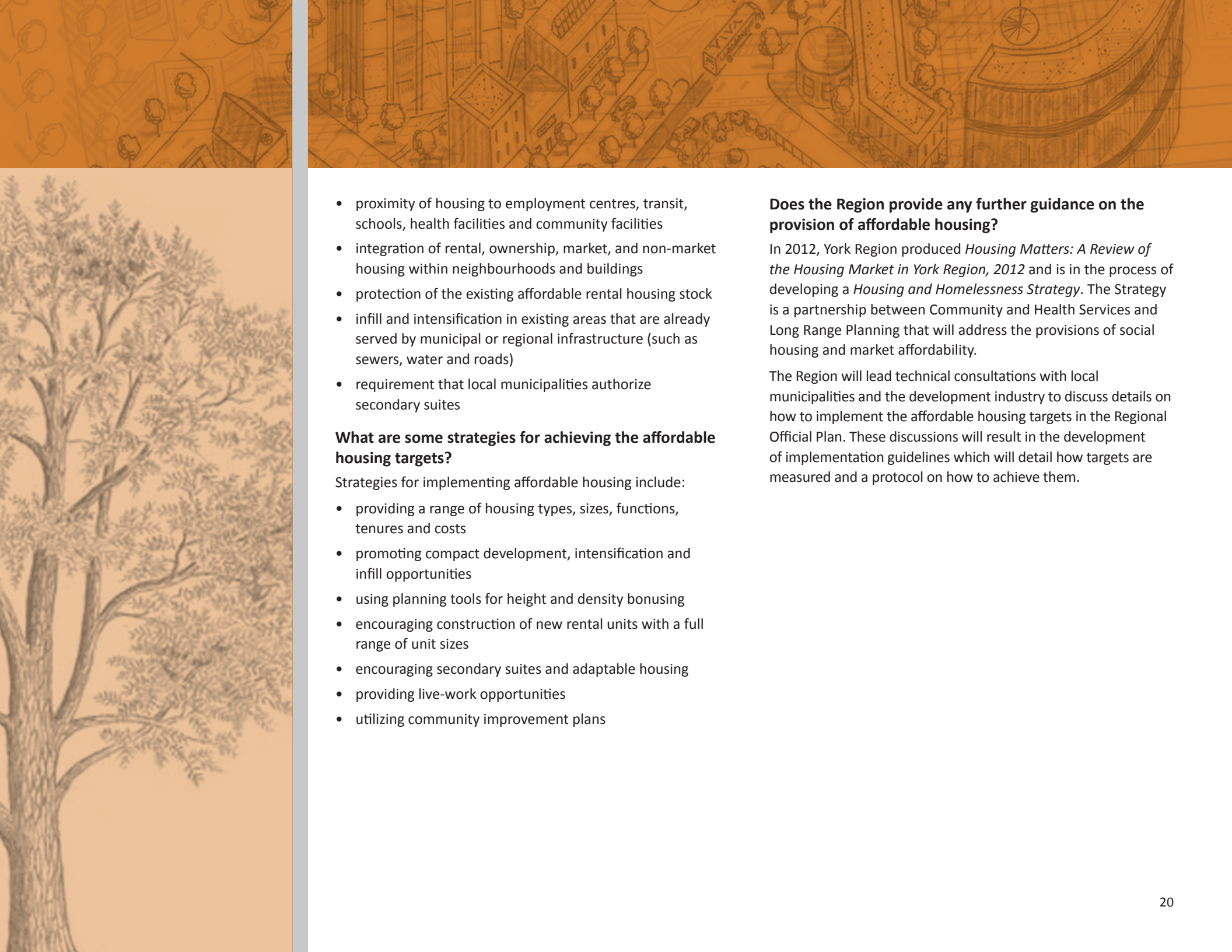
- a wide range of housing choices (including a variety of dwelling types, tenures and sizes) throughout all neighbourhoods
- a match between the type, tenure, and price of housing and the income levels and demographics of the community
- development at sufficient levels of density to promote a range of transportation choices

**Making Dollars and Sense of the Definitions: 2012 Calculation**  
**Table 4**

Home Ownership	Rental
<ul style="list-style-type: none"><li>• maximum household income: \$110,045</li><li>• purchase price (not exceeding 30% of income): \$417,293</li><li>• purchase price (10% below resale average): \$531,886</li><li>• affordable ownership unit: \$417,293</li></ul>	<ul style="list-style-type: none"><li>• maximum household income: \$52,764</li><li>• rent (not exceeding 30% of income): \$1,319</li><li>• average market rent: \$1,067</li><li>• affordable rental unit: \$1,067/mo.</li></ul>

Note: Data is for the year 2012; 60th percentile income levels are based on 2006 Census data, adjusted for inflation.  
Source: Long Range Planning Branch, York Region, 2012 based on information from Statistics Canada  
Toronto Real Estate Board, Canadian Housing and Mortgage Corporation



- 
- proximity of housing to employment centres, transit, schools, health facilities and community facilities
  - integration of rental, ownership, market, and non-market housing within neighbourhoods and buildings
  - protection of the existing affordable rental housing stock
  - infill and intensification in existing areas that are already served by municipal or regional infrastructure (such as sewers, water and roads)
  - requirement that local municipalities authorize secondary suites

**What are some strategies for achieving the affordable housing targets?**

Strategies for implementing affordable housing include:

- providing a range of housing types, sizes, functions, tenures and costs
- promoting compact development, intensification and infill opportunities
- using planning tools for height and density bonusing
- encouraging construction of new rental units with a full range of unit sizes
- encouraging secondary suites and adaptable housing
- providing live-work opportunities
- utilizing community improvement plans

**Does the Region provide any further guidance on the provision of affordable housing?**

In 2012, York Region produced *Housing Matters: A Review of the Housing Market in York Region, 2012* and is in the process of developing a *Housing and Homelessness Strategy*. The Strategy is a partnership between Community and Health Services and Long Range Planning that will address the provisions of social housing and market affordability.

The Region will lead technical consultations with local municipalities and the development industry to discuss details on how to implement the affordable housing targets in the Regional Official Plan. These discussions will result in the development of implementation guidelines which will detail how targets are measured and a protocol on how to achieve them.

# CD6 – Accessibility

## Objective:

To ensure that new community areas are designed to be accessible to all people of all ages and abilities.

## ROP POLICY

### 5.2.7

That communities be designed to ensure accessibility to people of all ages, culture and abilities.

## RELATED ROP POLICIES

### 3.3.5

To ensure that public buildings and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling and transit systems.

### 3.3.11

That communities be designed in a manner that facilitates inclusivity and accessibility for residents, workers and visitors.

### 3.5.19

To encourage accessibility features in all new housing.

## What is community design?

Community design is the creation of the built environment including the interactions between elements such as buildings, streets, mobility systems, parks and open spaces to create the shape and pattern of a community. Design is vital to creating communities that are attractive, accessible to all, healthy and vibrant with a unique sense of place.

## What does accessibility mean?

Accessibility means removing barriers that might prevent people of all ages, cultures and abilities from accessing opportunities. These barriers may be found in technology, information, communication, attitudes, policies, physical and architectural environments.

## Is there any Provincial Legislation that addresses accessibility?

The goals of *The Accessibility for Ontarians with Disabilities Act (AODA), 2005* and *The Ontarians with Disabilities Act, 2001* are to make Ontario accessible for people with disabilities by 2025. Through province-wide accessibility standards, accessibility will be improved by identifying, breaking down and preventing barriers to accessibility. In order to achieve its objective, the AODA established accessibility standards in the areas of:

- customer service
- transportation
- information and communications
- employment
- built environment

## What are the universal access and design principles?

Universal access and design principles can be used in new community areas as a methodology for creating an accessible built environment. The principles of universal design strive to make the built environment as usable as possible by everyone regardless of age, culture and ability. It is an inclusive design strategy that ensures accessibility through implementation of the following design principles:

**Equitable Use:** the design is useful and marketable to any group of users.

**Flexibility in Use:** the design accommodates a wide range of individual preferences and abilities.

**Simple and Intuitive Use:** use of the design is easy to understand.

**Perceptible Information:** The design communicates necessary information effectively to the user.

**Tolerance for Error:** the design minimizes hazards and the adverse consequences of accidental or unintentional actions.

**Low Physical Effort:** the design can be used efficiently and comfortably.

**Size and Space for Approach and Use:** appropriate size and space is provided for approach and use.



## What do our communities need to make them more accessible?

Accessibility in our communities can be promoted by:

- providing public spaces that enhance safety and inclusiveness for persons of all ages, cultures, and abilities
- encouraging buildings that are designed to be accessible for persons of all ages, cultures, and abilities
- providing way-finding to public facilities and services such as libraries, transit stations, health care facilities
- providing opportunities for community engagement and social involvement; actively solicit the contributions of persons of all ages and abilities in the community design process
- encouraging an adequate supply of diverse and affordable housing
- providing compact mixed-use development around public transit centres to facilitate access to transit and services
- providing enhanced mobility options, including public transportation, walking and bicycling, and specialized transportation for individuals with varied functional capabilities and preferences



Resident using accessible trail in York Region

# CD7 – Urban Heat Island

## Objective:

To prevent/reduce the urban heat island effect in new community areas.

## ROP POLICY

### 5.2.34

To encourage local heat island effects mitigation in all *development* including:

- a. green and/or white roofs;
- b. locating trees or other plantings to provide shading for at least 50% of sidewalks, patios, and driveways, and within 15 metres of buildings; and
- c. installing light-coloured paving materials including white concrete, grey concrete, open pavers and any material with a solar reflectance index of at least 29.

### 5.6.16

That *new community areas* be designed so as to reduce urban heat island effects and consider integrating green and white roofs, greening to provide shade, and light-coloured surface materials consistent with policy 5.2.34 of this Plan.

## What is the Urban Heat Island Effect?

Urban heat islands are becoming an increasingly common phenomenon as cities continue to expand and grow. On hot summer days, urban centres can be up to 6 degrees (C°) warmer than the surrounding countryside. This effect occurs because of the increasing amount of dark heat-absorbing surfaces in urban areas that attract and retain the sun's heat.

## What are some of the impacts associated with Urban Heat Island?

Elevated temperatures can impact communities by increasing peak energy demand, air conditioning costs, heat-related illness and mortality and by decreasing air quality. Higher urban temperatures also speed up the chemical reactions that produce smog.

## What is solar reflectivity and solar reflectance index?

Solar reflectivity, also called albedo, is a measure of the ability of a surface material to reflect sunlight on a scale of 0 to 100.

Solar reflectance index is a measure of how well a material rejects solar heat. The index ranges from 0 (least reflective) to 100 (most reflective).

## What strategies can be used to reduce the urban heat island effect?

There are a range of strategies that can be used to reduce the urban heat island effect. The appropriateness of each strategy will be determined by a variety of criteria including scale, cost and green building objectives. Some of these strategies include:

### Green/Cool Roofs

Green roofs are vegetated roofing systems and are discussed in further detail in the water management section of these guidelines (see WM6). Cool roofs are light-coloured roofing materials that contribute less to the urban heat island effect.



### Provision of Shade

Trees and vegetation lower surface and air temperatures through evapo-transpiration and by creating shade. Trees and vegetation are most useful as a mitigation strategy when planted in strategic locations around buildings or to shade pavement in parking lots and streets. In areas where the provision of trees is not feasible, consideration should be given to alternatives such as shade structures. This is important in public spaces like parks, playgrounds and sports fields.



Shade structure provided in an urban park

### Light-coloured paving materials

Light-coloured paving materials such as white concrete, grey concrete, open pavers, or suitable paving material that rejects solar heat.



Shaded parking lot  
Source: City of Vaughan Planning Department

# CD8 – Cumulative Air Quality Impact

## Objective:

To understand the impact of air quality on sensitive populations.

## ROP POLICY

### 3.2.5

To require health, environmental and cumulative air quality impact studies that assess the impact on human health for development with significant known or potential air emission levels near *sensitive uses* such as schools, daycares and seniors' facilities.

### 3.2.6

That *sensitive uses* such as schools, daycares, and seniors' facilities not be located near significant known air emissions sources such as controlled access provincial 400-series highways.

## RELATED ROP POLICIES

### 3.2.3

To reduce vehicle emissions by ensuring that communities are designed to prioritize pedestrians and cyclists, reduce single occupancy automobile use and support public transit and Transportation Demand Management initiatives.

## What is the impact of air quality on human health?

Research has shown that exposure to air pollution represents a significant human health risk. There is a growing body of scientific evidence demonstrating the link between proximity to sources of air pollution and poor health outcomes.<sup>1,2,3</sup> The health effects of poor air quality primarily affect the body's respiratory and cardiovascular systems. People with chronic diseases, children, the elderly, and those of lower socio-economic status are most at risk from poor air quality.

Common air pollutants include ozone (O<sub>3</sub>), fine particulate matter (PM<sup>2.5</sup>), nitrogen dioxide (NO<sub>2</sub>), and volatile organic compounds (VOCs). Sources of these pollutants include vehicle emissions, industrial emissions, and road and construction dust<sup>4</sup>.

There are numerous health benefits associated with compact, complete communities including less driving, reduced emissions, increased walking, cycling, and use of public transit.<sup>5,6,7</sup> York Region is working to improve air quality by ensuring that communities are well planned and sensitive uses are not impacted by emission sources. Many jurisdictions have incorporated set-back requirements to ensure that sensitive land uses are not too close to sources of air emissions.

Understanding cumulative air quality is a key component to developing programs and policies to reduce potential adverse impacts. In the context of air quality, cumulative impact studies forecast human health impacts by including existing pollutant levels and anticipated pollutant levels arising from industrial or transportation sources in proximity to development proposals. This is most often done by conducting a cumulative air quality impact study which models emissions, meteorology, atmospheric chemistry, exposures and health impacts.

## What is the process for developing an air Quality Impact Study?

In order to ensure that future development does not adversely affect, or is not adversely affected by air pollution, it is recommended that a detailed analysis be conducted of developments with significant known or potential air emission, or developments that are sensitive uses. This analysis is typically called an air quality impact assessment and should include the following:

**Problem Formulation:** includes identification of site characteristics, background and cumulative air pollutant levels, sensitive populations, and exposure scenarios and pathways

**Exposure Assessment:** evaluates data related to air pollutants, sensitive populations and exposure pathways

**Hazard Assessment Step:** identification of and understanding of potential health outcomes resulting from exposure to air pollutants

**Risk Characterization Step:** estimation, description, and evaluation of risk for short term and long term exposure duration

**Risk Management Step:** opportunities for decreasing exposure through tree planting vegetative buffers, noise walls, siting and set-backs are identified



### 7.2.71

To discourage the location of land uses sensitive to noise and vibration and safety issues, in proximity to rail facilities, rail corridors and intermodal yards, to avoid issues of compatibility.

### What is the Ministry of Environment Certificate of Approval process?

The Ministry of Environment has guidelines that address compatibility between industrial facilities and sensitive land uses (Guideline D-6). The objective of these guidelines is to prevent or minimize the encroachment between sensitive land uses and industrial land uses. Through this process, development proponents of industrial or sensitive land uses inside specified minimum separation distance may be acceptable subject to a justifying impact assessment. The feasibility of the proposal, from a land use compatibility perspective, should be based on the anticipated adverse effects from each specific industry and the effectiveness of proposed mitigative measures to lessen impacts on sensitive land uses within the context of planning for the area.



Four smokestacks from industrial site

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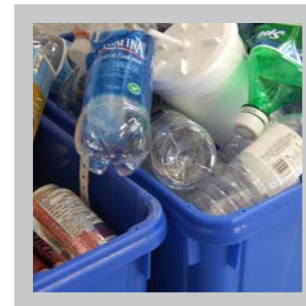
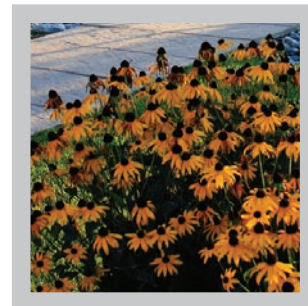
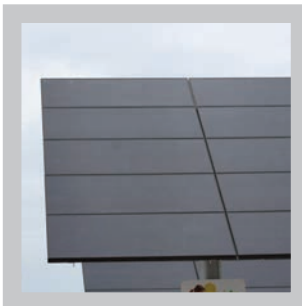
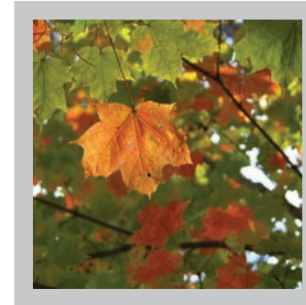


## Chapter 3.0

# Sustainable Transportation

The Region's approach to transportation planning is focused on providing transportation choices and a shift to more sustainable modes of transportation such as walking, cycling, and transit.

Improving opportunities for active transportation, increasing transit use and decreasing automobile traffic can make communities more liveable by creating a healthy environment with reduced air pollution, greenhouse gases and noise pollution.



# ST1 – Preparation of a Mobility Plan

## Objective:

To create an interconnected mobility system in new community areas that emphasizes pedestrian, cycling and transit as preferred modes of transportation.

## ROP POLICY

### 5.6.12

That mobility plans shall be completed to ensure that:

- a. communities are designed to have interconnected and accessible mobility systems, with a priority on pedestrian movement, and on transit use and access;
- b. communities are designed to include a system of pedestrian and bicycle paths linking the community internally and externally to other areas, and providing access to the transit system;
- c. a transit plan is completed in consultation with York Region Transit, which identifies transit routes and corridors, co-ordinates transit with land use patterns and ensures the early integration of transit into the community;

## What is an interconnected mobility system?

New community areas will be supported by an interconnected mobility system that emphasizes sustainable travel modes including walking, cycling and transit. An interconnected mobility system provides infrastructure to support the following modes of transportation:

### Street Network

Street layout and design can affect how convenient and appealing public transportation, cycling and walking are for residents. In new community areas, the emphasis is upon creating seamless connectivity, integrating and providing amenities to achieve safe, efficient and attractive street networks by:

- establishing a fine-grained grid pattern of streets with predominantly short block lengths
- including continuous north-south and east-west collector streets in communities
- ensuring connections between local street networks and the Regional street network
- designing street environments that aim to integrate the activities of pedestrians, cyclists and motorists

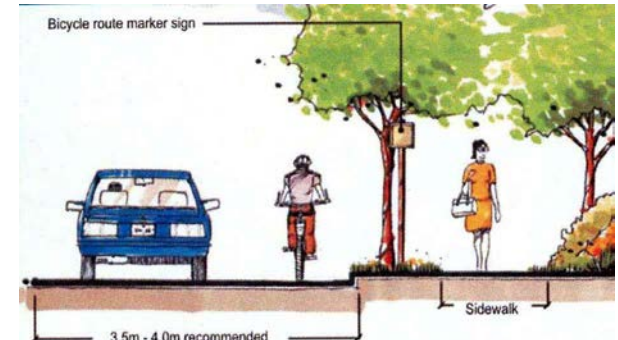


Figure 5: Regional streetscape showing how pedestrian and cycling networks can be accommodated within a Regional right-of-way  
Source: Infrastructure Planning Branch, York Region

## Pedestrian and Cycling Networks

In designing new community areas, it is essential to create a network that engages pedestrians and cyclists by:

- providing walking/cycling facilities that make pedestrian/cyclists feel comfortable and safe (through design, road safety improvements, benches, footbridges, lighting, etc.)
- connecting the pedestrian and cycling networks to other modes of transportation including transit, and to key destinations such as employment centres, schools, recreational/leisure and commercial destinations within the community

- d. the distance to a transit stop in the Urban Area is within 500 metres of 90% of residents, and within 200 metres of 50% of residents;
- e. all schools and community centres shall be integrated into the community mobility system and provide the ability to walk, cycle, transit, and carpool to these locations;
- f. the street network includes continuous collector streets that run both north-south and east-west and/or a grid system of streets linked to the Regional Street network;
- g. *new community areas* are designed to meet the York Region Transit Oriented Development Guidelines
- h. planned rapid transit corridors and/or transit terminals that connect to a rapid transit corridor, are included in the community;
- i. parking standards, consistent with policy 5.2.10, encourage and support transit use and include reduced minimum and maximum parking standards; and,
- j. trip-reduction strategies consistent with policies of Section 7.1 are promoted.

## RELATED ROP POLICIES

### 5.2.4

That *development* requiring Regional approval shall be supported by a transportation study that assesses impacts on the Region's transportation system and surrounding land uses. Significant *development* shall prioritize walking, cycling, and transit.

- facilitating year round operation of pedestrian and cycling routes through appropriate design, signage and maintenance
- encouraging and supporting pedestrian-friendly urban design
- encouraging mixed-use development to foster pedestrian activity at all times of the day
- improving, expanding, or linking to existing pedestrian/cycling networks

### Transit

There are also a number of community design issues that should be considered in the creation of mobility systems that support transit, including:

- providing clearly signed cycle routes/walkways to and from transit stations
- providing reliable bus services to facilitate access to local employment
- ensuring connections to leisure facilities, nearby town centres and key inter-urban transit routes
- providing street furniture (stands, shelters, etc.) that is safe, secure and well lit
- providing high quality information and education, including real-time information that can be accessed from transit stops, homes, shops and schools



Figure 6: Regional streetscape showing a range of mobility options  
Source: York Region Rapid Transit Corporation

### What is a mobility plan?

A key element of the Regional Official Plan is an enhanced mobility system using a “people and transit first” approach to connect land use and transportation planning. York Region has found that the traditional transportation impact study needs to be more comprehensive and emphasize transit, active transportation (pedestrian and cycling) and Transportation Demand Management (TDM) programs. At the community level, a mobility plan provides the framework necessary to ensure that design supports the successful implementation of a seamless multi-modal transportation system.



### When are mobility plans required?

A mobility plan is required for all secondary plans and all major development applications within new community areas. This will result in a hierarchy of mobility plans prepared at various stages in the planning process. The scope and scale of the required mobility plan will vary based on the scope and scale of the development area. Any mobility plan prepared within a new community area must support the overall objectives of the community scale mobility plan prepared at the secondary plan stage.

### Is there work being done by York Region to support implementation of this guideline?

York Region is developing Transportation Study Guidelines for Development Applications which will provide further guidance on the technical requirements of developing mobility plans in support of new community areas.

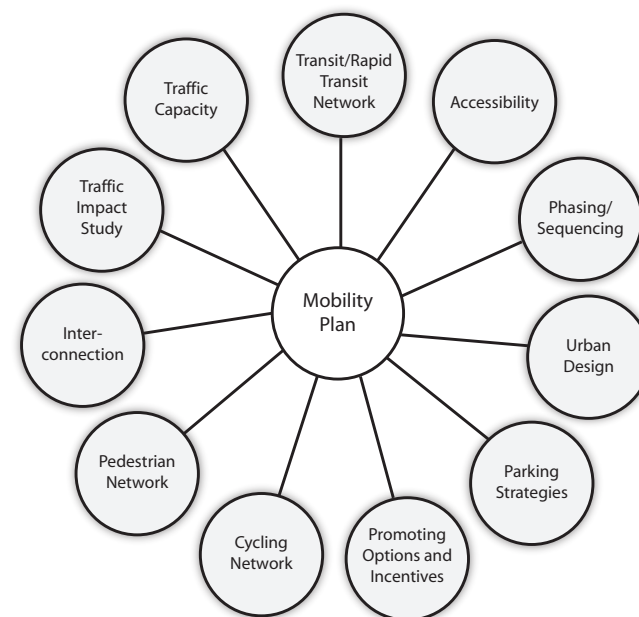


Figure 7: Components of a mobility system  
Source: Long Range Planning Branch, York Region

# ST2 – Walkable Community Design

## Objective:

To promote walking through design of the built environment.

## ROP POLICY

### 5.2.3

That communities be designed to ensure walkability through interconnected and accessible mobility systems. These systems will give priority to pedestrian movement and transit use, provide pedestrian and cycling facilities, and implement the York Region Pedestrian and Cycling Master Plan.

## RELATED ROP POLICIES

### 5.2.8

To employ the highest standard of urban design, which:

- f. emphasizes walkability and accessibility through strategic building placement and orientation;

### 3.3.5

To ensure that public buildings and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling, and transit systems.

## What elements are essential to creating a walkable community?

In the secondary plan process, areas of high pedestrian use should be identified as pedestrian priority areas. Typically these areas will include parks and open spaces networks, educational institutions, civic destinations, community core areas and transit facilities. There are 7 key elements that are essential to ensuring a walkable community (Source: Canada Walks). These should be considered during the secondary plan process, and more specifically, during the preparation of a mobility plan.

### Accessibility

- human scale design and built form
- universal design
- safely accommodate people of all ages and abilities
- design for all seasons

### Safety

- providing pedestrian scale lighting at regular intervals in areas of high activity
- providing street crossings that are easy and safe for people of all ages and abilities
- providing an unobstructed, continuous and safe circulation system that serves the same destinations as served by the local road system
- incorporating Crime Prevention Through Environmental Design (CPTED) techniques in the design of public spaces and mobility networks

## Connectivity

- providing a pedestrian network (including sidewalks) that connects to other mobility networks including cycling, natural heritage trails and transit
- implementing a fine-grain street pattern
- creating short walkable blocks or providing mid-block pedestrian crossings on longer blocks
- supporting environmental goals through the integration of green infrastructure



Streetscaping and pedestrian furniture can contribute to providing attractive pedestrian environment

Copyright: Queen's Printer for Ontario

Source: Ontario Growth Secretariat, Ministry of Infrastructure



### **Density/Land Use**

- locating mixed-use developments near services and transit
- creating distinct community core areas
- providing convenient access to local land uses and transit

### **Access to amenities**

- locating pedestrian furniture along sidewalks and trails
- providing lighting in appropriate locations

### **Aesthetics**

- creating unique and identifiable public spaces
- providing visual interest and support community interaction through open space and other public activity space

- maintaining sidewalks in good repair and in all seasons
- providing signage, crosswalks, and improved aesthetics (such as trees and landscaping)

### **Destinations**

- providing a wide range of desired destinations within walking distance of residents such as community, recreational, cultural and institutional facilities
- ensuring that all residents are within walking distance of a public space (either a community facility or an open area), a convenience store and public transit facilities
- providing for a range of services/destinations relevant to all ages



Home with access to pedestrian network



# ST3 – Implementation of the York Region Pedestrian and Cycling Master Plan

## Objective:

To ensure new community areas are built with a more balanced transportation system.

## ROP POLICY

### 5.6.13

That *new community areas* shall be designed to implement the York Region Pedestrian and Cycling Master Plan.

### 7.2.3

To apply the York Region Pedestrian and Cycling Master Plan's Planning and Design Guidelines in the implementation of the Regional pedestrian and cycling network.

## RELATED ROP POLICIES

### 5.6.12

That mobility plans shall be completed to ensure that:

- b. communities are designed to include a system of pedestrian and bicycle paths linking the community internally and externally to other areas, and providing access to the transit system;

## What is the Pedestrian and Cycling Master Plan?

The Pedestrian and Cycling Master Plan was endorsed by York Region Council in April 2008. The plan provides guidance on how to work in partnership with local municipalities to create a comprehensive and interconnected pedestrian and cycling network over a 25-year time frame. In the first 10 years of the plan, the Pedestrian and Cycling Master Plan, in coordination with the Region's 10-year Roads Capital Plan and in cooperation with the local municipalities, proposes to implement:

- 450 km of bike lanes/paved shoulders
- 61 km of multi-use trails
- 124 km of signed routes
- 62 km of sidewalk

## What's been constructed so far?

Since its launch in 2007, York Region has partnered with the local municipalities to construct new cycling facilities worth more than \$2.3 million through the Pedestrian and Cycling Municipal Partnership Program. In 2010, the Regional network included:

- 36 kilometres of bike lanes
- 19 kilometres of boulevard trails
- 91 kilometres of multi-use trails
- 193 kilometres of paved shoulders
- 2 kilometres of sharrows
- 400 kilometres of signed cycling routes
- 36 kilometres of trails



Multi-use trail for pedestrians and cyclists

## Are there other initiatives being undertaken in support of Pedestrian and Cycling Master Plan?

Other initiatives undertaken to support walking and cycling include:

- creating and distributing a Regional cycling map for residents
- offering a CAN-BIKE training program in partnership with local municipalities and school boards
- continuing advocacy and awareness of pedestrian and cycling in partnership with other agencies and stakeholders
- installing bike racks on buses to provide greater options for active transportation
- initiating Lake-to-Lake route design study in consultation with stakeholders including local municipalities and the City of Toronto

### How does implementation of the Pedestrian and Cycling Master Plan impact new community areas?

Implementation of the Pedestrian and Cycling Master Plan will require partnerships between the Region, the local municipalities, and the development community in a variety of areas, including:

- coordinating with the Regional Transportation Master Plan, Rapid Transit Environmental Assessments and implementing the Regional Transportation Priority Network, and reconfiguring existing lanes and lane widths through annual maintenance programs
- expanding, implementing and maintaining the Regional and local pedestrian and cycling networks
- adopting and implementing pedestrian friendly urban design and streetscaping practices
- facilitating built form and subdivision design that supports walking and cycling for utilitarian and recreational purposes
- providing education and outreach about pedestrian and cycling safety

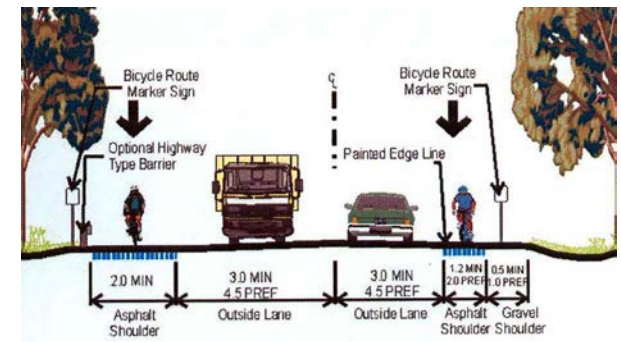


Figure 8: Regional rural right-of-way cross-section incorporating signed cycling route.

Infrastructure Planning Branch, York Region



# ST4 – Transit Services

## Objective:

To ensure residents can easily access transit systems.

## ROP POLICY

### 5.6.12

That mobility plans shall be completed to ensure that:

- c. a transit plan is completed in consultation with York Region Transit, which identifies transit routes and corridors, co-ordinates transit with land use patterns and ensures the early integration of transit into the community;
- d. the distance to a transit stop in the Urban Area is within 500 metres of 90% of residents, and within 200 metres of 50% of residents;
- h. planned rapid transit corridors and/or transit terminals that connect to a rapid transit corridor, are included in the community;

## RELATED ROP POLICY

### 7.2.25

To achieve higher transit usage by supporting improvements in service, convenient access, and good urban design, including the following:

- e. creating a system of parking and drop-off facilities for commuters;

## How far will people walk to take transit?

People are willing to use transit on a regular basis if access to transit is within a reasonable walking distance from where they live and work. A reasonable walking distance is defined as a 400 to 800 metre or a 5 to 10 minute walk, depending on the level of transit service and the pedestrian environment. Through the Regional Official Plan, York Region Transit has committed to ensuring that transit stops are provided within 500 metres of 90% of residents and within 200 metres within 50% of residents.

## What community design practices/strategies facilitate transit use?

In new community areas, community design will be critical to ensuring transit service targets are met. It will require the implementation of the following strategies:

- designing communities to have an interconnected street pattern
- designing the street network to have short, walkable blocks to allow for more frequent and convenient transit stops
- planning and careful design of the pedestrian network to ensure integration with transit
- providing off-street paths to improve connectivity and permeability of neighbourhoods
- providing pedestrian paths to transit that are safe and comfortable
- providing connections to the larger Regional transit system including rapid transit
- parking and drop-off areas in support of transit are safe, sufficient in number and conveniently located

- York Region Transit should be involved in the secondary plan process to coordinate existing and future planned routes
- providing early introduction of transit into the community; displaying transit route information in sales offices

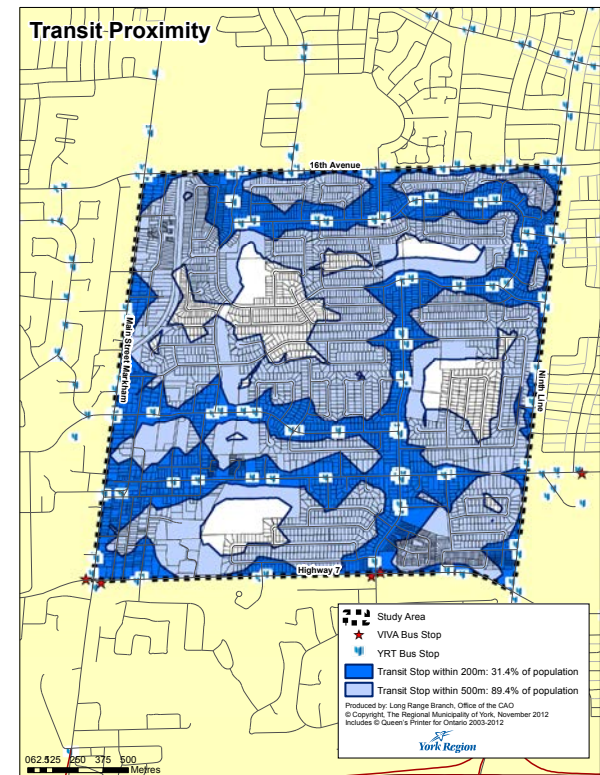


Figure 9: shows percentage of people within walking distance of a transit stop

Source: Long Range Planning Branch, York Region



**How do I demonstrate that a proposed secondary plan design provides easy access to transit for the majority of the community?**

Measuring walkability can be estimated based on a variety of methods. The method demonstrated in this guideline is the mapping of transit sheds (walk catchments). This method involves preparing a map that identifies the area within 200 and 500 metres distance from a transit stop or node. The resulting maps provide a visual estimate of the areas walkability. There are also methods that employ the mapping of actual pedestrian travel routes. It is recommended that the appropriate measure to support your development be discussed with Regional Staff.



Transit serving a mixed-use medium density area

# ST5 – Transit-Oriented Design Guidelines

## Objective:

To ensure implementation of transit-supportive design.

## ROP POLICY

### 5.2.8

To employ the highest standard of urban design, which:

- g. follows the York Region Transit-Oriented Development Guidelines;

### 5.6.12

That mobility plans shall be completed to ensure that:

- g. *new community areas* are designed to meet the York Region Transit-Oriented Development Guidelines;

## RELATED ROP POLICIES

### 7.1.7

To require new *development* applications to demonstrate how the proposed development is transit-oriented. The York Region Transit-Oriented Development Guidelines provide guidance on how to address this policy.

## What are the York Region transit-oriented development guidelines?

York Region's Transit-Oriented Development (TOD) Guidelines were adopted by Regional Council in 2006. The guidelines outline design approaches that support transit-supportive, pedestrian-friendly communities. The following is a summary of the transit-oriented design approaches that can be applied at various stages in the planning, design, and development process to advance transit-supportive, pedestrian-friendly communities.

### Pedestrians

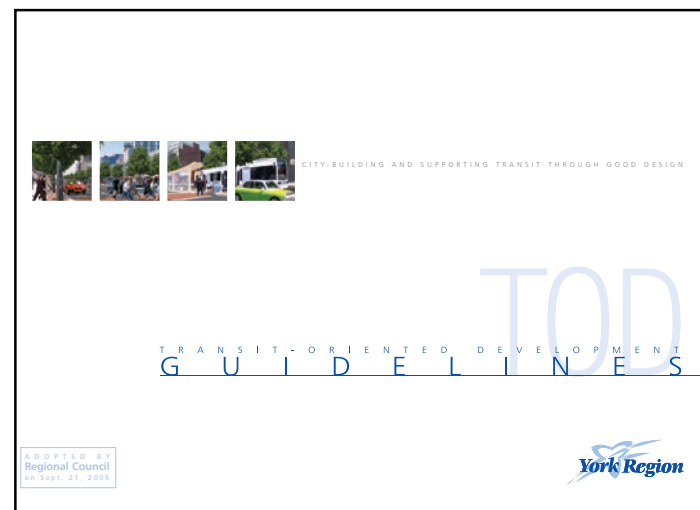
- accommodating people with disabilities
- promoting safety and comfort through building and site design
- locating activity-generating land uses at street level

### Parking

- designing surface and structure parking to include safe, accessible, and convenient connections between parking and building entrances
- viewing existing surface parking lots as placeholders for future development
- reducing the prominence of surface parking
- including less parking for sites in areas of high transit services
- linking parking supply to transportation demand management programs
- including on-street parking where possible

### Land Use

- providing mixed-use development to generate activity and convenience
- concentrating people-servicing uses along transit corridors
- locating employment-generating uses along transit-routes, or clustered around stations
- supporting the introduction of transit at early stages of development
- preventing low density, auto-oriented land uses along transit corridors and stations
- redeveloping existing surface parking, vacant lots and underdeveloped sites





### **Built Form**

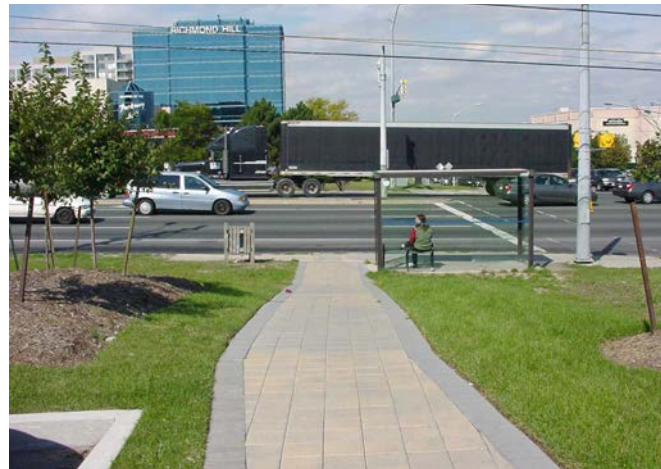
- designing compact buildings with coverage that maximizes use of the site area
- using appropriate scale and design to integrate buildings into the surrounding areas
- enhancing the pedestrian-scaled environment at street-level
- orienting buildings and entrances to the street

### **Connections**

- connecting transit stops directly to sidewalks and buildings
- exploring opportunities to harmonize lighting, sidewalk and street improvements within Regional rights-of-way
- minimizing walking distances between buildings and transit stops

### **Implementation**

- using the TOD Implementation checklist to evaluate development proposals
- integrating transportation demand management initiatives into development



A pedestrian walkway from building to transit stop

# ST6 – Implementation of Trip Reduction Strategies

## Objective:

To implement trip reduction strategies that reduce automobile dependency and potentially traffic congestion.

## ROP POLICY

### 5.6.12

That mobility plans shall be completed to ensure that:

- j. trip-reduction strategies consistent with policies of Section 7.1 are promoted.

## RELATED ROP POLICIES

### 5.2.38

To work with local municipalities and the building and land development industry to provide each resident, worker, and employer with information on the sustainability features of their communities including water and energy conservation, and mobility options.

The Region's *Transportation Master Plan* (2009) recommends four approaches in meeting the Region's modal split targets by 2031 including: reducing the need to travel, providing alternative modes of travel, increasing public transit use and optimizing our existing road network. A first step to achieving this efficiency is through trip reduction strategies. In new community areas, trip reduction strategies must be incorporated as a component of any mobility plan.

### What are trip reduction strategies?

The objective of trip reduction strategies is to change commuter behavior and reduce single-occupant vehicle trips. This is achieved by promoting a variety of transportation options that encourage more efficient use of existing transportation infrastructure and services.

### What are the benefits of implementing trip reduction strategies?

Trip reduction strategies provide travel choice and incentives for commuters while:

- reducing single occupant vehicle trips
- reducing greenhouse gas emissions and improving local air quality
- reducing congestion and delay for people and goods
- improving public safety
- enhancing accessibility and mobility options
- supporting efficient land use through reduced infrastructure costs and space requirements
- reducing parking facility costs for participating business, and improving employee recruitment, retention and productivity

### What do trip reduction programs include?

Trip reduction programs generally include some combination of the following:

- transit service improvements and discount transit pass programs
- rideshare matching (carpool) and vanpool programs
- support and information regarding alternative modes and services (through a variety of means including social media)
- emergency-ride-home programs
- pedestrian and cycling network and facility planning
- shuttle services
- shared parking arrangements
- work from home/telework

At the development stage, transportation demand management strategies can be focused on either the workplace or homes. Workplace programs are typically delivered by a transportation management association. The programs provided by each transportation demand management association are unique but involve some combination of the full range of travel demand management measures identified above. A transportation management association will identify which services are best suited to an employer, given their location and the commuting patterns of their staff. There are several transportation management associations located in York Region: Smart Commute Markham-Richmond Hill, Smart Commute Central York and Smart Commute North Toronto-Vaughan.



### 5.2.10

That secondary plans and zoning by-laws shall, in consultation with the Region and related agencies, incorporate parking management policies and standards that include:

- f. preferential locations for carpooling and car-sharing spaces and bicycle storage requirements.

### What are home-based travel demand management programs?

Home-based travel demand management programs provide resources and incentives for residents to use sustainable modes of travel for a variety of trips. In a new residential community, it is expected that developers will work with the Region and local municipalities to provide an appropriate range of travel demand management measures to achieve agreed-upon mobility goals. Sufficient resources should be available to properly implement and monitor the agreed-upon travel demand management measures.



Preferred parking spot for employees participating in car pool programs

# ST7 – Parking Standards

## Objective:

To implement parking standards that encourage transit use as a preferred method of travel over the automobile.

## ROP POLICY

### 5.6.12

That mobility plans shall be completed to ensure that:

- i. parking standards, consistent with policy 5.2.10, encourage and support transit use and include reduced minimum and maximum parking standards;

### 5.2.10

That secondary plans and zoning by-laws shall, in consultation with the Region and related agencies, incorporate parking management policies and standards that include:

- a. reduced minimum and maximum parking requirements that reflect the walking distance to transit and complementary uses;
- b. shared parking requirements, where possible, reflecting variances in parking demand between complementary uses on a time-of-day, weekday/weekend, and monthly basis;
- c. on-street parking;

In new community areas, parking standards and parking management strategies will be developed to support transit-use. In York Region, parking standards are addressed through local municipal zoning by-laws. There are a variety of parking standards and management strategies that can be considered through the secondary plan process including:

**Flexible Parking Standards:** flexible parking standards allow for adjustments in parking supply requirements for developments by considering:

- proximity to transit routes – allow a reduction in parking supply for developments on transit routes or within a short walking distance of the nearest transit stop
- availability of on-street parking – allow reduction in off-street parking requirements if on-street parking is available in close proximity to development or in return for the provision of on-street parking
- provision of carpool/vanpool programs – allow a reduction when a carpool program is provided in a development and dedicated spaces for multiple-occupant vehicles are provided
- provision of car share spaces – allow a reduction when dedicated space is provided for a car share program, particularly in residential developments
- provision of transit pass program – allows for providing transit passes to development users in return for reduced parking requirements

**Parking Minimums:** parking minimums are lower limits placed on parking supply. Parking minimums related to accessible parking should not be reduced.

**Parking Maximums:** parking maximums are upper limits placed on parking supply, either at individual sites or in an area.

**Shared Parking:** shared parking spaces serve multiple users or destinations and include sharing rather than assigning reserved spaces to users, and sharing facilities among multiple destinations.

**On-street Parking:** on-street parking provides space for parking cars within the street right-of-way; on-street parking can improve access to nearby land uses, create a buffer between pedestrians and vehicles and help reduce traffic speeds by narrowing the perceived right-of-way.

**Surface Parking (Transitional):** while communities are building out and maturing transitional parking uses, portions of a vacant/underutilized sites surface parking until those lands are required to complete development. Employing a parcel approach is an effective method to manage transitional surface parking.

**Preferential Locations:** preferential parking locations for carpooling and car sharing can act as an incentive to promote behaviours that reduce parking demand.

**Cycling Facilities:** to promote alternative modes of transportation, cycling facilities should be provided including weather protected storage for commuting cyclists, as well as change rooms and showers.



- d. site design that orients the main building entrance(s) to face the public street(s), provides a pedestrian friendly urban form, and where appropriate, as determined by the local municipality, does not permit the placement of surface parking spaces between the main building entrance and the major street;
- e. the design of surface parking to support redevelopment and retrofitting; and
- f. preferential locations for carpooling and car-sharing spaces and bicycle storage requirements.



Bicycle parking  
Source: City of Vaughan Planning Department

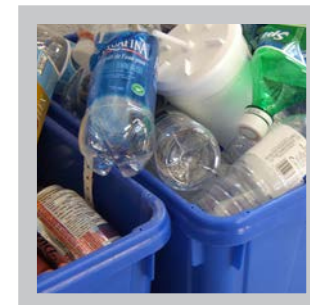
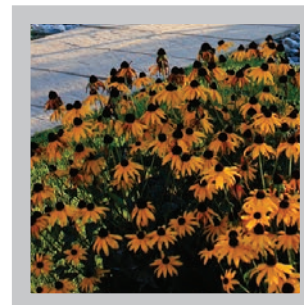
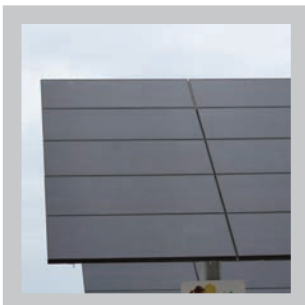
## Chapter 4.0

# Open Space Natural Heritage

York Region has placed significant emphasis on the identification protection, restoration and enhancement of the Region's natural heritage system.

York Region also recognizes that natural heritage contributes to community identity and sense of place, improving liveability, health, quality of life and providing education and recreation opportunities

In new community areas, open space and natural heritage will be valued for its contribution to liveable neighbourhoods.





# NH1 – Regional Greenlands System

## Objective:

To ensure Greenlands System Plans are prepared in support of Secondary Plans for new community areas.

## ROP POLICY

### 5.6.14

That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment including:

- ensuring the protection and enhancement of all key *natural heritage features* and key hydrologic features of the system;
- identifying areas and opportunities for enhancement and restoration within the system and management needs to maximize the quality of the entire system;
- identifying opportunities for locating necessary infrastructure that minimizes impacts to the system;
- identifying how infrastructure projects within the System, including: stormwater management systems/facilities, streets, water and wastewater systems; can contribute to an overall ecological gain by measures such as increasing natural cover, enhancing ecological function, providing recreational access or contributing to off-site enhancements;

## What is the Regional Greenlands System?

The Regional Greenlands System is comprised of core areas, corridors, and linkages. Core areas contain the most significant natural features on the landscape and include significant woodlands and wetlands, Areas of Natural and Scientific Interest (ANSIs), and Environmentally Sensitive Areas. Corridors include existing valleylands and watercourses. Linkages are smaller features that connect core areas and are either existing or need to be established through restoration which will ensure that the system is linked north to south and east to west.

## Does the Province provide any guidance on the protection of natural heritage systems?

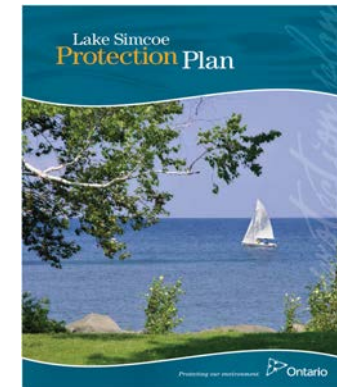
The province has established policies for the protection of key natural heritage features and key hydrologic features in the Oak Ridges Moraine Conservation Plan, the Greenbelt Plan and the Lake Simcoe Protection Plan. Development within new community areas will have to comply with the policies

of the Regional Greenlands System, the Oak Ridges Moraine Conservation Plan, the Greenbelt Plan and the Lake Simcoe Protection Plan, if applicable.

## What is York Region's approach to the protection of natural heritage systems?

The forecasted growth for York Region has the potential to place considerable pressure on the Region's natural systems. The policies and mapping of the York Region Official Plan have been updated to reflect an updated approach to Greenlands System planning with a focus on connecting and strengthening the system.

Vision 2051 encourages the integration of natural heritage systems into our communities and recognizes natural heritage as an important component to quality of life, community resiliency and economic prosperity in York Region.



- e. developing a trail system, which is integrated as appropriate into the mobility system of the community;
- f. examining the feasibility of providing local community gardening plots where appropriate, outside of *key natural heritage features* and *key hydrological features*; and
- g. identifying *hazardous lands* and *hazardous sites*, incorporating them into the Greenlands System, directing *development* away from these areas and including an appropriate buffer or access allowance if required.

## RELATED ROP POLICY

### 2.1.11

To require a Greenlands System Plan as a component of secondary plans that is consistent with policy 5.6.14 of this Plan.



Map is subject to  
area/site specific appeal.  
See Appendices 2A & 2B.

## MAP 2

### REGIONAL GREENLANDS SYSTEM

- Regional Greenlands System
- Greenlands System Vision
- Urban Area
- Towns and Villages
- Hamlet
- Oak Ridges Moraine Conservation Plan
- Oak Ridges Moraine Boundary
- Oak Ridges Moraine Plan Area
- Greenbelt Plan
- Greenbelt Plan Area Boundary
- Greenbelt Protected Countryside / Hamlet
- Area Subject to the Lake Simcoe Protection Plan
- Provincial Highways
- Existing
- Controlled Access Highway
- Under Construction
- Municipal Boundary
- Regional Boundary

\*The Greenlands System Vision identified on Map 2 of this Plan is intended to conceptually identify, with broad arrows, the general location of corridors within and beyond the Region that will perform major linkage functions on a Regional scale and will be further assessed as part of ongoing planning initiatives

**York Region** **yorkmaps**

Produced by: Geographic Information Services Branch  
Office of the Chief Administrative Officer  
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© Copyright, The Regional Municipalities of Durham and Peel, County of Simcoe, City of Toronto  
© Queen's Printer for Ontario 2003-2010. Includes Greenbelt and Oak Ridges Moraine Boundaries and Water Features

Figure 10: Regional Official Plan Figure 3 - Regional Greenlands System  
Source: Long Range Planning Branch, York Region



# NH2 – Protection of key natural heritage and hydrologic features

## Objective:

To ensure the protection of key natural heritage and hydrologic features in an urban environment.

## ROP POLICY

### 5.6.14

That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment including:

- a. ensuring the protection and enhancement of all *key natural heritage features* and *key hydrologic features* of the System;

## How do you ensure protection and enhancement of key natural heritage and hydrologic features within an urban environment?

Protection and enhancement of natural heritage systems within urban areas requires analysis to:

- Determine the presence of key natural heritage and key hydrologic features and establish the context and the role that these features play within the Greenlands System
- Understand the current and future ecological functions of the natural feature or area as they relate to the Greenlands System, including identification of:
  - features that contribute to genetic, species and ecosystem diversity in York Region
  - areas likely to function as pathways or support a functional relationship between features and areas
  - physical, chemical, or biological processes
- Identify potential impacts as a result of changes in land use and the interaction of these changes with the features and functions of the area and to the larger Greenlands system including the impact to the Regional target of 25% woodland cover
- Undertake an evaluation of mitigation approaches that protect against potential impacts to the natural heritage system including the identification of buffers, restoration and enhancement areas
- Identify approaches that ensure the integration of the Regional Greenlands system into new community areas



Fiddlehead

### How does this differ from an environmental impact statement?

An environmental impact statement will be a significant component of a Greenlands System Plan. However, the Greenlands System Plan will move beyond this traditional study

to address the areas of concern that have been identified above. It is recommended that pre-consultation with the Region and the relevant conservation authority occurs prior to the creation of the Greenlands System Plan to ensure an appropriate scope.

**Sustainability Benefits of the Regional Greenlands System**  
**Table 5**

Sustainable Natural Environment	Healthy Communities	Economic Vitality
Habitat for plant and animal species Maintains biodiversity Species richness & ecosystem complexity Improves air quality Contributes to water management Mitigates the impacts of climate change	Contributes to liveable neighbourhoods, our feeling of well-being, our health, and quality of life, community identity and sense of place Provides educational and research opportunities Provides active and passive recreation for healthier lifestyles	Eco- and agri-tourism Enhanced property values; creating desirable communities for investment. Renewable energy opportunities Disease prevention and treatment resulting in reduced health care costs Reduced infrastructure costs; reducing peak flows and flooding, natural alternatives to infrastructure, Helps make York Region an attractive place for businesses

Source: Long Range Planning Branch, York Region



# NH3 – Identification of Enhancement and Restoration Areas

## Objective:

To improve the ecological function, connectivity and diversity of the Greenlands System through enhancement and restoration efforts in the Greenlands System.

## ROP POLICY

### 5.6.14

That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment including:

- b. identifying areas and opportunities for enhancement and restoration within the system and management needs to maximize the quality of the entire system;

## What is ecological restoration?

Ecological restoration is an activity that initiates or accelerates recovery of an ecosystem with respect to its function (processes), integrity (species composition and community structure) and sustainability (resistance to disturbance and resilience). Ecological restoration activities range from active restoration projects that attempt to rebuild lost complex ecological processes or functions to passive enhancement projects that prevent an ecological disturbance or effect, thereby allowing natural processes to become re-established.

## How does York Region define restoration?

Ecological restoration refers to activities that re-establish ecological function to the landscape that have been lost and/or destroyed or removed. An example of a restoration activity would be replanting a forest in an area that had been previously deforested.

## How does York Region define enhancement?

Ecological enhancement refers to those activities that increase the ecological function of an existing habitat. An example of an enhancement activity would be to improve the ecological function and biodiversity of a stormwater management pond through the addition of aquatic plants, edge shrubs, and trees.

## How do you identify strategic areas for enhancement and restoration?

The Greenlands System Plan will examine the following sources of information to determine strategic areas for enhancement, including:

- existing and proposed regional and local Greenlands Systems Plans
- conservation authority natural heritage and subwatershed evaluations to determine target ecological features and functions for restoration
- eco-region and eco-district information to determine representative and rare vegetation communities as well as rare species of flora and fauna that should be targeted for restoration and enhancement
- an ecological science based approach to identify strategic areas for restoration and enhancement that contribute to improved ecological function, connectivity and diversity





Before

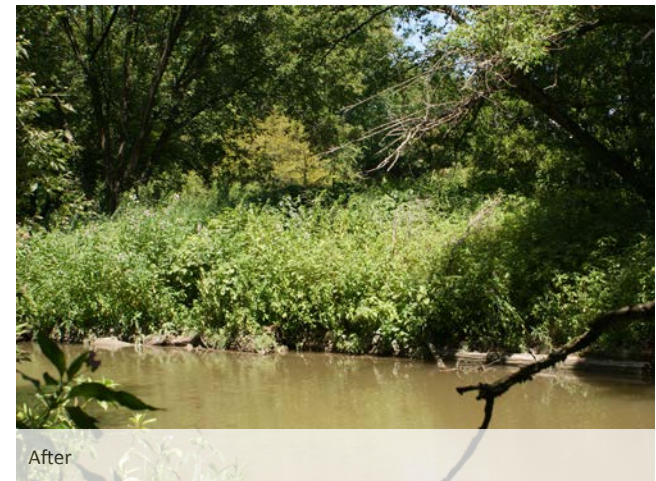


After

An example of how Greenlands System can be improved to promote increased connectivity  
 Source: Long Range Planning Branch, York Region



Before



After

Stream rehabilitation to address a degraded environment and mitigate against erosion  
 Source: Ontario Streams



# NH4 – Infrastructure within Greenlands System

## Objective:

To ensure infrastructure projects within the Greenlands System will result in an overall ecological gain.

## ROP POLICY

### 5.6.14

That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment including:

- c. identifying opportunities for locating necessary infrastructure that minimizes impacts to the system;
- d. identifying how infrastructure projects within the System, including stormwater management systems/facilities, streets, water and wastewater systems; can contribute to an overall ecological gain by measures such as increasing natural cover, enhancing ecological function, providing recreational access or contributing to off-site enhancements;

## What is context sensitive solutions and design?

Context sensitive solutions is a collaborative, interdisciplinary design approach that ensures infrastructure projects are responsive to its location and fits its setting. It is an approach that leads to preserving and enhancing scenic, aesthetic, historic, community and environmental resources, while improving or maintaining safety, mobility and infrastructure conditions.

## What are they key principles of context sensitive solutions?

- striving towards a shared stakeholder vision to provide a basis for decisions
- demonstrating a comprehensive understanding of context
- fostering continuing communication and collaboration to achieve consensus
- exercising flexibility and creativity to shape effective infrastructure solutions, while preserving and enhancing community and natural environments

## What are the outcomes of implementing context sensitive solutions and design?

Context sensitive solutions leads to outcomes that:

- harmonize with the community and preserve the environmental, scenic, aesthetic, historic, and natural resource values of the area
- are safe for all users
- solve problems that are agreed upon by a full range of stakeholders

- meet or exceed the expectations of designers and stakeholders, thereby adding lasting value to the community, the environment, and municipal infrastructure systems
- demonstrate effective and efficient use of resources (people, time and budget) among all parties

## Does York Region use context sensitive solutions and design in infrastructure?

York Region has demonstrated leadership in implementing context sensitive solutions and design in infrastructure

St. John's Sideroad and the South East Collector are just two projects where the Region has demonstrated a commitment to context-sensitive design. The South East Collector wastewater project includes environmental enhancements to the Rouge Park and Bob Hunter Memorial Park and Trail.



St. John's Reconstruction, Town of Aurora

# NH5 – Securement Opportunities and Management Requirements

## Objective:

To build upon and grow the existing Greenlands System through identification of strategic securement opportunities.

## ROP POLICY

### 2.1.14

To undertake land securement, with partners, focused primarily within the Regional Greenlands System. Land securement can include conservation easements, donations, or land purchases, and education and stewardship promotion.

## RELATED ROP POLICY

### 2.1.17

That land securement initiatives assist in implementing the Regional Greenlands System trails network.

## What is a securement strategy and what should be included?

York Region has a land securement strategy in place. In this strategy, the term “securement” refers to the protection of key natural heritage and Greenlands properties throughout the Region using a range or suite of tools. The key natural heritage and Greenlands properties referred to in York Region’s securement strategy include:

- the broadest definition of forest cover including complex ecosystems of different tree species, vegetation and other wildlife together with other non-living components, such as air, soil and water and related ecological processes
- environmentally significant areas, areas of natural and scientific importance, wetlands, valley and stream corridors, significant wildlife habitats and woodlands throughout the Region’s rural and urban areas
- Greenlands and natural heritage properties such as, but not limited to, wetlands, old fields, marginal farmlands, linkages and buffers

## What methods are used to achieve protection of the natural environment?

There are many methods available to achieve the protection of our natural environment. Techniques include a continuum of tools from stewardship to policy planning to monitoring to purchasing of land. While outright land purchase is one method, in view of the relatively high costs involved, this method would only be recommended in specific cases where all other means of protection have been exhausted.

The full continuum of tools including stewardship, policy planning, monitoring and acquisition.

## Management Requirements

The Regional Greenlands System Plan will also prescribe management actions for the natural heritage system within new secondary plan areas. The intent is to provide overall direction and guidance for managing the natural heritage system to ensure that natural heritage values are protected in the long term and that areas reflecting past human disturbance are restored to natural habitats. In addition, the management requirements should provide guidance on the areas of interactions between the natural heritage system, infrastructure crossings and neighbourhoods.

## What is York Region doing in support of securement and enhancement?

After more than 10 years of success, the Region’s Greening Strategy is adapting to meet the changing needs of the Region’s diverse communities and environmental challenges.



### The Greening Strategy:

Provides a context for Regional decision-making that supports a sustainable, natural environment based on strategic priority areas including:

- environmental land securement
- stewardship and education
- enhancement and rehabilitation
- leadership, innovation and knowledge
- forms partnerships to drive policies related to greenlands and natural heritage features into action
- provides a framework for initiatives to restore habitat, increase forest cover, secure Greenlands and their linkages, and promote and protect the natural environment
- demonstrates strong environmental leadership



Trailhead at Brownhill Tract

# NH6 – Identification of a Trail system

## Objective:

To create liveable neighbourhoods by providing opportunities to experience nature through development of a trail system.

## ROP POLICY

### 5.6.14

That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment including:

- e. developing a trail system, which is integrated as appropriate into the mobility systems of the community;

## RELATED ROP POLICY

### 2.1.18

To work with local municipalities, conservation authorities and trail organizations on initiatives that contribute to, or complement, the creation of a Regional Greenlands System trails network.

The Greenlands System Plan will identify a trail system that links neighbourhoods to each other as well as to the larger regional and local trail and open space networks.

## What are the Greenlands System Plan trail objectives?

The trail objectives are:

- building upon and connecting existing local and Regional trail systems in strategic locations to further the implementation of a linked Regional Greenlands System
- improving linkages and providing transition between the natural heritage system, urban and agricultural land uses
- locating trails and associated facilities in an environmentally responsible manner that avoids sensitive habitats
- creating a safe trail system that provides opportunities for natural heritage education, diverse user experience, and access to vistas and viewing areas

## What are the Greenlands System Plan trail design principles?

The trail design principles include:

- protecting important natural heritage features
- making connections between neighbourhoods and destinations within new community areas
- avoiding significant archaeological resources
- integrating cultural and built heritage resources
- providing linkages to the regional trail, open space and natural heritage systems

## What trail information should be included in the Greenlands System plan?

A Greenlands Trail System plan should indicate:

- a conceptual trail system and hierarchy
- the delineation of potential trailhead locations
- the identification of potential locations for crossings of built or natural barriers
- how the proposed trail system supports implementation of the Greening Strategy, Pedestrian and Cycling Master Plan and the Lake to Lake Cycling Route and Walking Trail
- how the proposed trail system supports implementation of other natural heritage trails plans



Trail signage in the Brownhill Tract, York Region Forest



# NH7 – Promoting the integration of agriculture in new community areas

## Objective:

To increase residents connection to the natural environment and sense of community by providing access to local food and community gardening.

## ROP POLICY

### 5.6.14

That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment including:

- f. examining the feasibility of providing local community gardening plots where appropriate, outside of *key natural heritage features* and *key hydrological features*; and

## RELATED ROP POLICIES

### 3.1.8

To support locally grown and produced agricultural products.

## What is local food?

Local food is a movement that promotes a closer relationship between where food is produced and consumed. A strong local food system supports the local agricultural economy as well as residents' access to safe, healthy and affordable food. There are a variety of strategies that can be used to facilitate access to local food including growing your own, farmer's markets and community gardens.

## What are community gardens?

They are individual plots of publicly owned land that are available for use by community members to grow food.

## What are the benefits of community gardens?

Community Gardens provide a wide range of community benefits including:

- promoting sustainability and education
- improving food security and neighbourhood liveability
- increasing access to fresh locally produced food
- improving social cohesion by providing a community gathering place, promoting social interaction and intergenerational activity
- providing opportunities for exercise, recreation and leisure

## What are the criteria for determining an appropriate community garden site?

Appropriate community garden locations should meet the following criteria:

- it receives at least six hours of sun per day
- it is close to watering facilities, but does not interfere with any underground pipes or lines
- it is located centrally and is convenient for community members to access
- the terrain of the site should be relatively flat

### 6.3.16

To support local food production and procurement through means such as a Local Food Charter, buying and production co-operatives, farm-to-table programs and farmers' markets at key locations in York Region communities.

### 6.3.17

To support York Region's agricultural industry and assist the industry in responding to changing conditions and markets, by considering:

- d. encouraging the provision of community gardens and other urban agriculture practices, but not including animal agriculture in new and existing communities;

### What are some potential locations?

Potential locations for community gardens in urban areas could include:

- under-utilized parks and open space
- publicly managed lands including storm water management facilities, fire stations, libraries, community centres, parking facilities and wastewater facilities
- public school properties
- publicly-owned rights-of-way along established multi-use paths, along pipelines and under power lines
- privately held lands including nursing homes and daycares



Examples of York Region farmer's markets offering a variety of local food





# NH8 – Integrated Open Space Network

## Objective:

To create an network of open space resources for residents as way to connect neighborhoods in new community areas.

## ROP POLICY

### 5.6.15

That *new community areas* be designed to include an integrated open space network that includes both active recreational facilities and meeting places, urban squares, parks, outdoor seating and informal gathering spaces generally within 500 metres of all residents.

## What is an open space network?

The Greenlands System Plan prepared in support of a new community area secondary plan will identify an integrated open space network. An open space network is a system and hierarchy of parks and public spaces that provide a range of services from access to natural areas, opportunities for active and passive recreation, and meeting and informal gathering places. The creation of an open space network benefits communities by providing structure and amenity to the urban area, strengthening communities, incorporating natural features, providing opportunities to improve environmental quality and increasing accessibility to open air recreation. In new community areas, the open space networks will be integrated with:

- the structure of the urban area
- natural heritage system and trails
- community infrastructure
- mobility systems

## What components should be included in an open space network?

The open space network should include the following components:

**Active recreational spaces:** are designed to serve the municipality's needs for organized sports, picnic areas, and playgrounds. Active recreational spaces can also include public facilities such as a community centre, arena or swimming pool. Recreational open spaces are typically larger in size than other open spaces and serve the larger community.



Active recreational space

**Passive recreational spaces:** include creatively landscaped areas designed for aesthetic appeal or natural areas sensitive to more active uses. They are primarily used for walking, viewing, sitting, bird watching, hiking, wildlife habitat or any combination of the above. These open spaces are typically smaller in size and provide open space amenity at the neighbourhood scale.

**Urban squares, meeting places/informal gathering spaces:** are typically established at key focal points or intersections within communities and/or neighbourhoods. They are usually integrated with commercial, mixed-use or institutional land uses. Urban Squares are spaces designed to accommodate passive recreational and social activities. Low walls, steps, benches and a variety of shade trees can provide formal or informal seating arrangements.

**Public art:** should be considered within the open space network especially within those areas designed for passive recreation opportunities. Ideal locations for public art include smaller parks, urban squares and outside of major institutional buildings.



Urban square - Uptown Waterloo Square  
Source: City of Waterloo and GSP Group

## What is the role of Infrastructure in creating an Open Space Network?

Stormwater management (SWM) facilities should have public access and be integrated as open spaces throughout new community areas. SWM facilities can be designed to combine their function with amenities for residents and the local community. Opportunities for integration of utility and infrastructure corridors into the open space network should be considered. These corridors are typically linear in nature and can serve as important linkages in the network of open spaces.



Passive recreational space



# NH9 – Public Art

## Objective:

To create a sense of place within new community areas through public art.

## ROP POLICY

### 5.6.8

That *new community areas* shall be planned to consider human services needs, including educational, social, health, arts, culture and recreational facilities.

## What is public art?

Public art is generally described as being:

- created by artists in collaboration with municipalities through a public process
- located on publicly owned lands in publicly accessible locations
- located on privately owned common spaces
- formal selection method involving community members, artists and regional/local government

## What are the benefits of public art?

Public art provides a wide range of benefits including:

- creates a clear sense of community pride and identity
- often reflects cultural heritage, fosters an understanding of history and presents the cultural identity of a community
- improves and enhances the built environment
- contributes to the development of a more pleasant, safe and vibrant public realm
- enhances tourism and economic development; creating an overall sense of place
- creates cultural links through the promotion of opportunities for community development, community engagement and community partnerships

## Where can public art be located?

Public art can be located in a variety of places including:

- highly visible intersections and community gateways
- areas of high pedestrian traffic
- outdoor public spaces

- underutilized sites with potential for growth
- municipally owned land and buildings

## How will public art be implemented in new community areas?

Local municipalities are encouraged to undertake Cultural Master Plans/Public Art Master Plans during the secondary planning process for new communities.



Example of public art in a park

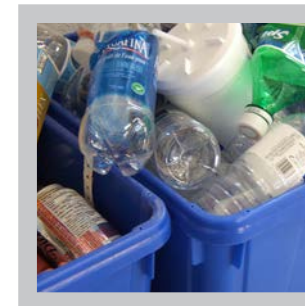
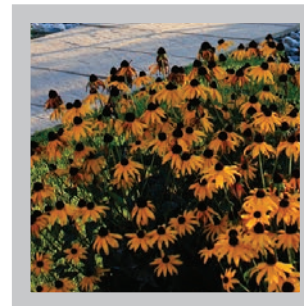
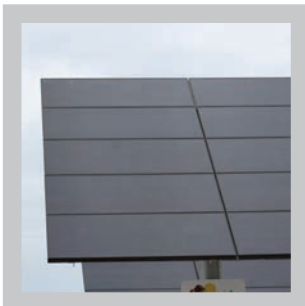
## Chapter 5.0

# Sustainable Buildings

Sustainable Buildings are a key component of creating complete and sustainable communities.

Sustainable Buildings contribute to climate resiliency by conserving more energy and water, supports industry by buying locally-sourced materials and products and supports health by providing improved indoor environments.

York Region has made a corporate commitment to achieving LEED® certification for new buildings or facilities the Region builds and encourages the construction of sustainable buildings in the private sector through incentive programs.





# SB1 – Achieve High Building Energy Efficiency

## Objective:

To reduce energy demand by achieving a high level of energy efficiency in new buildings.

## ROP POLICY

### 5.2.20

To work with local municipalities and the development community to achieve energy efficiency levels that exceed the Ontario Building Code for residential buildings, and the Model National Energy Code for non-residential buildings.

## What is the Model National Energy Code for Buildings?

The Model National Energy Code for Buildings sets minimum requirements for the design and construction of energy efficient building and covers the building envelope, lighting, electrical power, and heating, ventilating and air conditioning (HVAC) systems that affect energy efficiency. It does not apply to housing or small buildings addressed in Part 9 of the Ontario Building Code.

## What is an EnerGuide Rating?

EnerGuide is a Government of Canada initiative that rates the energy consumption and efficiency of new homes. The rating is calculated based on standard operation assumptions and creates a standardized measure of energy performance for homes on a scale of 0 to 100.

## What is the Relationship between EnerGuide Rating and the Ontario Building Code?

In January 2012, the Ontario Building Code (OBC) was updated to include requirements for enhanced energy efficiency. If new homes constructed under these requirements were evaluated through the EnerGuide Rating System, most would receive an EnerGuide rating of 80.

## What is Energy Star?

Energy Star is a rating system that looks to achieve 25% better energy efficiency over the Ontario Building Code. This program is currently being revised to reflect recent changes to the Ontario Building Code in energy efficiency. It is anticipated that with the next update, Energy Star qualified new homes would rate approximately 83 on the EnerGuide scale.



## What are the potential strategies that can be used to achieve an energy efficiency rating of EnerGuide 83?

Potential strategies to achieve improved energy efficiency include:

- improved building envelope performance (air tightness)
- energy efficient windows
- high efficiency HVAC and appliances
- heat pump systems
- solar assisted domestic hot water

# SB2 – Encourage Very High Building Energy Efficiency

## Objective:

To reduce energy demand by encouraging very high levels of energy efficiency in new buildings.

## ROP POLICY

### 5.2.21

To encourage the following energy efficiency and conservation targets for new buildings:

- Grade-related (3 storeys or less) residential buildings achieve a performance level that is equal to a rating of 83 or more when evaluated in accordance with Natural Resources Canada's EnerGuide for New Houses: Administrative and Technical Procedures.
- Mid- and high-rise residential (4 storeys and greater) and non-residential buildings be designed to achieve 40% greater efficiency than the Model National Energy Code for Buildings, 1997.
- Industrial buildings (not including industrial processes) be designed to achieve 25% greater energy efficiency than the Model National Energy Code for Buildings, 1997.

## What potential strategies and products can be used to achieve energy efficiency?

A suite of options can be used to achieve energy savings, including:

- high-efficiency fixtures, appliances and pumps
- variable speed drives on fans and pumps
- heat recovery ventilation
- connection to a district energy system
- demand control ventilation
- drain water heat recovery
- solar/renewable energy strategies
- individual metering and system sub-metering

## How do builders/developers demonstrate that buildings achieve intended energy efficiency targets?

There are several strategies that can be used to demonstrate achievement of energy efficient targets for grade-related residential, mid- to high-rise residential and non-residential development:

### Grade-Related Residential Development

- energy simulation and modelling
- blower door test
- certification through Green Building Rating System or Incentive Program that reference Energy Star standards for energy efficiency

### Mid to High-rise Residential and Non-Residential Development

- energy simulation and modelling
- building commissioning
- certification through a Green Building Rating System or Incentive Program that promotes energy efficiency

## How will these requirements be implemented through the municipal planning approval process?

Conditions of approval for planning applications in new community areas will identify the energy efficiency targets specified in the York Region Official Plan and respective local Community Energy Plans. Prior to receiving planning approval, builders and developers will have to provide a sustainability report that identifies how the sustainable building policies of the Regional Official Plan have been implemented. Specifically, this report should outline the technologies that will be employed to achieve energy efficiency. For grade-related development, a copy of the Energy Star qualified homes certificate can be submitted. For those builders not wishing to pursue Energy Star qualified homes, each home will have to be evaluated in accordance with Natural Resources Canada's EnerGuide for New Houses: Administrative and Technical Procedures and will have to submit an Evaluation Report prior to occupancy.

For other building types, the local municipalities will be able to verify that these efficiency targets have been met by requiring the submission of energy modelling and building commissioning reports.



# SB3 – On-site Renewable Energy

## Objective:

To reduce greenhouse gas emissions and peak energy demand by encouraging the transition to renewable sources of energy.

## ROP POLICY

### 5.2.26

That *development* shall include a *solar design strategy* which identifies approaches that maximize solar gains and facilitates future solar installations (i.e. solar ready).

### 5.2.28

To encourage all new buildings to include on-site *renewable or alternative energy systems* which produce 25% of building energy use. Where on-site *renewable or alternative energy systems* are not feasible, consideration of purchasing grid-source renewable energy is encouraged.

## What is solar orientation, passive solar gain and solar ready homes?

### Solar orientation

Passive solar orientation refers to how a building is placed on a site to take full advantage of the sun's natural heat. By facing the long side of a building to the south and the short sides to the east and west, the building will capture solar heat in the winter and block solar gain in the summer. Although it is best to face the building directly into the sun, it can be oriented up to 30 degrees away from due south and lose only 5 per cent of the potential energy savings.

### Passive solar gain

Passive solar gain involves using properly sized and oriented windows with thermal mass flooring to use solar power to heat buildings. A full-fledged "passive solar" building has a south facing glass area of 15 to 20 per cent of its floor area. With this much glass, additional features must be added, such as thermal storage mass and summer shading.

## What are the passive solar design elements at the buildings scale?

Individual building design contributes to ensuring a passive solar community design. At the building scale, the following design elements should be considered:

**Building Scale Passive Solar Design Elements**  
**Table 6**

Design Element	Description
Site and Orientation	Orientations that allow winter solar gains is desirable provided that the façade can be well-shaded during the summer months to avoid increased cooling requirements
Building Shape and Geometry	A compact building shape significantly reduces a buildings energy intensity and reduces the need for mechanical systems
Landscape Consideration	Landscape strategies can assist in achieving energy goals by reducing solar intensity, cooling load and the urban heat island
Windows	The size, location, type and detailing of windows affects the heating and cooling energy needs of the building
Solar Shading	External and internal shading absorb/reflect solar radiation
Thermal Mass	Thermal mass materials absorb heat and release that heat slowly when ambient air temperatures are cooler than the thermal mass
Thermal Insulation	Insulating materials are poor conductors which slow the rate of heat loss and gain
Air and Moisture Tightness	Air and moisture-tight building envelopes improve energy performance and prevent condensation

Source: City of Vancouver Passive Design Toolkit - Best Practices

### **Solar ready**

Buildings that can be readily retrofitted to incorporate solar technologies are referred to as being solar ready. Strategies to ensure the possibility of future solar retrofits include properly oriented roof surfaces, a conduit from the roof to a mechanical room and additional electrical requirements.

### **Is this achievable everywhere?**

In new community areas, there will be constraints that could limit opportunities to use solar energy. These constraints might include existing road patterns, shading from adjacent buildings and trees, density and steep slopes. Recognizing that certain techniques might not be employable in all situations, opportunities need to be maximized. How these technologies and techniques have been maximized will be demonstrated through a Solar Design Strategy.

### **What is a Solar Design Strategy?**

A Solar Design Strategy is a report that will be prepared in support of new secondary plans and development applications that considers possible solar design measures and identifies those measures that will be employed to maximize passive solar gains and facilitate future solar installations.

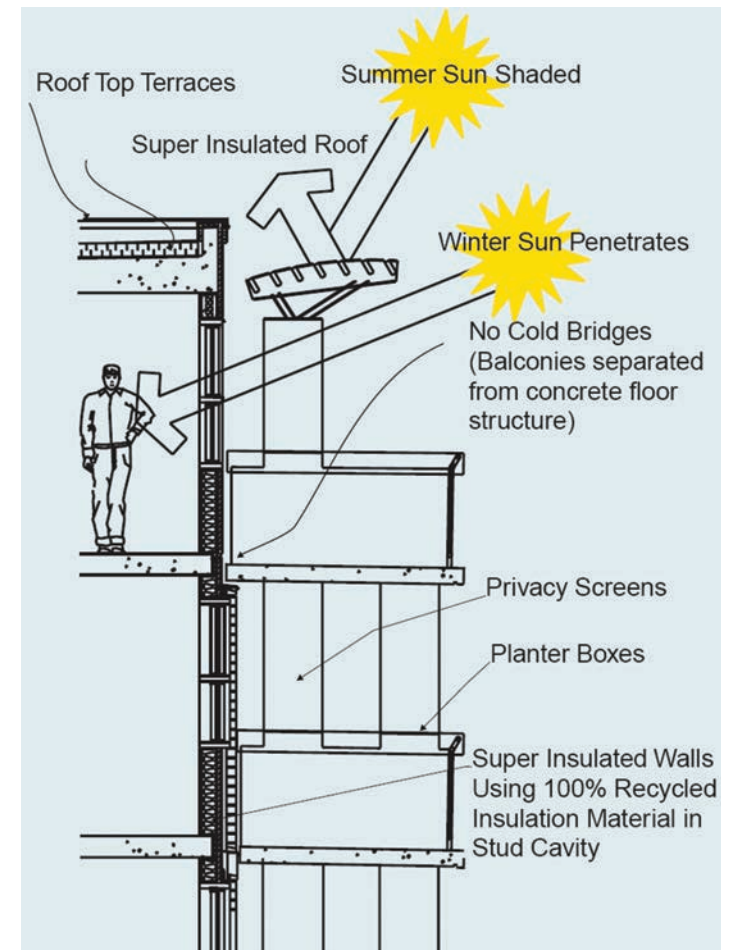


Figure 11: Passive solar heating design  
Source: Conservation Co-op, Ottawa



# SB4 – Water Efficiency

## Objective:

To maximize the sustainability of municipal water supplies by reducing potable water use.

## ROP POLICY

### 5.2.22

To work with local municipalities and the development community to achieve 10% greater water conservation than the Ontario Building Code (as amended to O. Reg. 315/11, January 1, 2012) for all new buildings.

### 5.2.23

To encourage that all new buildings achieve 20% greater water conservation than the Ontario Building Code (as amended to O. Reg. 315/11, January 1, 2012).

## How can water conservation be achieved in grade-related developments?

There are a variety of water conservation strategies that can be used in grade-related developments including:

**Residential Fixture and Appliance Specifications for Water Conservation**  
**Table 7**

Water Conserving Fixtures and Appliances	Very High Water Conserving Fixtures and Appliances
<ul style="list-style-type: none"><li>• 4.85 litres per flush (LPF) high efficiency single flush toilets shall be installed in 100% of bathrooms</li><li>• Low flow lavatory faucets (max flow of 5.87 litres per minute)</li><li>• Low flow shower faucets (max flow of 7.5 litres per minute)</li><li>• Water efficient dishwasher (<math>\leq 20.0</math> litres per cycle)</li><li>• Water efficient clothes washer (water factor of <math>\leq 7.5</math>)</li><li>• Hot water recirculation system</li><li>• Whole-home water and energy-saving humidifiers</li></ul>	<ul style="list-style-type: none"><li>• 4.1 LPF high efficiency single flush toilets shall be installed in 100% of bathrooms</li><li>• Low flow lavatory faucets (max flow of 5.6 litres per minute)</li><li>• Low flow shower faucets (max flow of 6.6 litres per minute)</li><li>• Water efficient dishwasher (<math>\leq 20.0</math> litres per cycle)</li><li>• Water efficient clothes washer (water factor of <math>\leq 5.5</math>)</li><li>• Hot water recirculation system</li><li>• Whole-home water and energy-saving humidifiers</li><li>• Additionally, can build to WaterSense for New Homes Technical Specifications and achieve 20% water efficiency</li></ul>

Source: Community Planning Branch, York Region

## What is WaterSense for New Homes?

WaterSense is a labelling program offered by the United States Environmental Protection Agency that certifies water efficient products, services and homes. New Homes earning the WaterSense label are certified to be at least 20 percent more efficient at conserving water than a conventional home.

### How can 10 per cent to 20 per cent water conservation be achieved in high-rise residential, industrial, commercial, and institutional development?

20 per cent water conservation can be achieved by employing strategies that in aggregate use 20 per cent less water than the water use baseline calculated for a building (not including irrigation). The baseline water usage of a building can be calculated according to the commercial and/or residential baselines outlined below. Calculations are based on estimated occupant usage and must include only the following fixtures and fixture fittings (as applicable to the project scope): toilets, urinals, bathroom faucets, showers, kitchen sink faucets and pre-rinse spray valves.

**Commercial and High-Rise Residential Fixture and Appliance Baseline Specifications**  
**Table 8**

	Current Baseline
Commercial Toilets	6.0 Litres per flush (LPF)
Commercial Urinals	8.3 L/min at 414 kilopascals (kPa) – private applications
Commercial Lavatory	1.9 LPF at 414 kPa – except private applications
Commercial Showerheads	0.95 Litres per cycle (metering faucet)
Pre-rinse Spray Valves	9.5 LPM ≤6.0 LPM
Residential Fixtures, Fittings and Appliances	Current Baseline
Residential Toilets	6.0 LPF at 414 kPa
Residential Lavatory Faucets	8.3 LPM at 414 kPa
Residential Kitchen Faucets	8.3 LPM at 414 kPa
Residential Showerheads	9.5 LPM at 552 kPa per shower stall

### Are there common approaches to water conservation in buildings?

The following approaches can be considered in any building type; including use of:

- WaterSense fixtures and fittings where available
- utilize high-efficiency and dry fixtures
- alternative on-site sources of water (e.g. rainwater, stormwater and condensate)
- grey water for non-potable applications



Typical residential fixtures



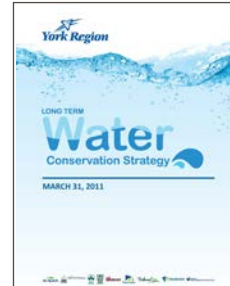
### What is York Region doing in support of water conservation?

Through the Water for Tomorrow Program, York Region has saved an estimated 22.4 million litres of drinking water per day, which translates to a total water savings sufficient to supply a community of about 88,000 people.

The Long Term Water Conservation Strategy (LTWCS) enhances and extends, to 2051, the Region's commitment to innovative water conservation and efficiency programming, water resource protection, energy conservation and greenhouse gas reduction.

The LTWCS includes a target scenario of "no new water" by 2051 meaning that the total amount of water used across all sectors in 2051 is equivalent to that used in 2011. To achieve the vision of "No New Water" the LTWCS will require:

- implementation of Regional incentive programs
- provincial support through Ontario Building Code and/or legislative changes to require the use of high efficiency fixtures in all new developments
- adoption of reused water (i.e. rainwater, stormwater and greywater) as a water source for all outdoor and other non-potable uses.



### Did you know that water conservation requirements of The Ontario Building Code will be changing?

In November 2012, The Ministry of Municipal Affairs and Housing announced changes to the Ontario Building Code related to water conservation. These changes include:

- Greywater (that is free of solids) is permitted as water supply for toilets, urinals, sub-surface irrigation and priming of traps
- Rainwater is permitted as a water supply for clothes washers, laundry trays, mop sinks, toilets, urinals, hose bibs, sub-surface irrigation and priming of traps

In 2014, maximum water consumption of fixtures in homes will be required to meet the following specifications:

**2014 Ontario Building Code  
Water Conservation Requirements  
Table 9**

Fixture	Maximum Water Consumption
Toilet	4.8 L/flush
Urinal	1.9 L/flush
Shower head	7.6 L/minute

Source: Ontario Building Code

# SB5 – Encourage LEED® Certified Buildings

## Objective:

To encourage the construction of sustainable buildings in new community areas.

## ROP POLICY

### 5.2.24

To encourage that new buildings be designed and certified to LEED® Silver, Gold, or Platinum standards, and to provide complementary incentive programs to achieve the successful implementation of LEED® buildings across York Region.

## What is LEED®?

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System® encourages and accelerates global adoption of sustainable green building and development practices through the creation and implementation of universally understood and accepted tools and performance criteria. (Source: USGBC)

LEED® is a third-party certification program for the design, construction and operation of high performance green buildings. Projects must meet a number of pre-requisites as well as earn a minimum number of points to achieve LEED® certification. Additional points are needed to achieve silver, gold, bronze or platinum levels of certification.

There are a variety of programs to address a wide range of building types and purposes including:

- LEED® Canada for New Construction and Major Renovations
- LEED® Canada for Core and Shell Development
- LEED® Canada for Homes
- LEED® Canada for Commercial Interior Design
- LEED® Canada for Existing Buildings - Operations and Maintenance
- LEED® for Neighbourhood Development

Each program promotes a holistic approach to sustainability by recognizing performance in five key areas including:



- sustainable site development
- water efficiency
- energy efficiency
- materials selection
- indoor environmental quality

## Is York Region committed to constructing LEED® buildings?

York Region has adopted a policy to require that all new regional facilities are constructed to a minimum LEED® Silver certification standard and have developed incentive programs based on the LEED® certification programs, applicable to all new residential developments.



Scott Somerville Fire and Rescue Services Station No. 7-9 and York Region Emergency Medical Services Paramedic Response Station - LEED Gold Certified



### **Are there other green building programs?**

There are a number of green building programs that are available. York Region is supportive of any green building program that promotes the development of more sustainable buildings. At this time, participation in these programs does not provide eligibility to the York Region Sustainable Development Incentive programs.

The following list identifies some additional green building programs:

- R-2000
- GreenHouse™ Certified Construction
- Living Building Challenge<sup>SM</sup>
- ENERGY STAR® Certified Homes
- Water Sense® for New Homes
- Boma BEST
- Green Globes



York Region EMS Headquarters - LEED Gold Certified

# SB6 – Improved Indoor Air Quality

## Objective:

Supporting healthier indoor environments by encouraging enhanced air quality.

## ROP POLICY

### 5.2.29

To encourage enhanced indoor air quality in buildings, including the use of low or no volatile compound products; minimizing the leakage of combustion gases; reducing exposure to indoor pollutants by ventilating with outdoor air; and indoor moisture controls.

## Why is indoor air quality important?

As Canadians, we spend 90% of our time indoors<sup>1</sup>. The level of pollution in the air we breathe indoors can be significantly greater than levels outside. Poor indoor air quality increases the severity and the frequency of respiratory symptoms experienced by asthmatics. Biological pollutants, such as mould and house dust mites, and irritating chemical pollutants, such as nitrogen dioxide, ozone and formaldehyde can aggravate asthma. Implementing building design strategies that improve indoor air quality can reduce the incidence of respiratory disease, allergies and asthma, increase productivity and learning, and lead to improved quality of life for building occupants.

## What are some of the common sources of indoor air pollution?

There are several pollutants that can affect indoor air quality. They include:

- mould resulting from dampness and humidity
- products of combustion (e.g. carbon monoxide, nitrogen dioxide and wood smoke)
- pollutants from household products and building materials (e.g. asbestos, urea formaldehyde foam insulation, lead and volatile organic compounds)
- environmental tobacco smoke (numerous toxic chemicals)
- naturally produced pollutants (e.g. radon)

## What strategies can be used to control indoor air quality?

There are a range of strategies that can be used to control indoor air quality, including:

- ensure adequate ventilation with outdoor air:
  - mechanical ventilation (HVAC)
  - natural ventilation (passive design)
  - mixed ventilation (mechanical and natural)
- install high-efficiency air filters
- enhanced combustion venting measures
- monitor carbon dioxide levels, consider demand-control ventilation based on carbon dioxide levels
- specify low-emitting materials
- implement an indoor air quality management plan during construction

## How will this be implemented?

Applications for development will have to address how the proposed development is fulfilling the sustainability objectives of the Regional Official Plan, local official plans and associated secondary plans. Included will be a report on the measures being undertaken to ensure acceptable indoor air quality. Participation in a green building rating program that addresses indoor air quality and environmentally preferable products will address this component.

<sup>1</sup>Health Canada Website - [www.hc-sc.gc.ca/ewh-semt/air/in/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/air/in/index-eng.php)



# SB7 – Incentive Programs

## Objective:

To encourage the construction of sustainable buildings through incentive programs.

## ROP POLICY

### 5.2.25

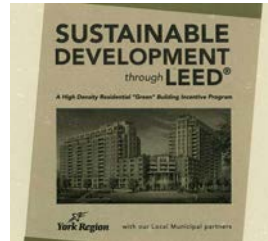
To regularly review and update sustainable building incentive programs within York Region together with local municipalities. These programs may include water and wastewater servicing allocation credits, density bonusing, expedited processing of development approvals or the use of local municipal community improvement plans and associated financial tools.

## Does York Region have any Incentive Programs?

York Region has developed two incentive programs to encourage sustainable building construction programs: the Sustainable Development through LEED program and the Sustainable Home Incentive Program. Municipal servicing allocation is used as an incentive in both of these programs.

### Sustainable Development through LEED

This is a voluntary incentive program to encourage the construction of more energy and water efficient, high-rise residential developments throughout York Region to further reduce water consumption across the Region beyond what is achieved through existing water conservation programs.



The Sustainable Development Through LEED Program applies to residential developments which are 4 or more storeys. Developments participating in this program must achieve four sustainability objectives, including:

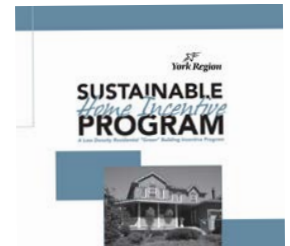
- significant water conservation
- conform with the York Region Transit-Oriented Development (TOD) Guidelines
- incorporate a three stream solid waste management system
- LEED Certification

This program offers three levels of servicing allocation as incentive:

- 20 per cent incentive level (Silver)
- 35 per cent incentive level (Gold)
- 40 per cent incentive level (Gold)

### Sustainable Home Incentive Program

The Sustainable Home Incentive Program is a voluntary incentive program to encourage the construction of more energy and water efficient grade-related residential developments throughout York Region. By offering incentives, in the form of servicing allocation credits, this program encourages the development industry to implement innovative green building practices in their new residential projects.



The Sustainable Home Incentive Program applies to grade-related residential developments that are three storeys or less. Developments participating in this program must achieve six sustainability objectives, including:

- water conservation
- energy conservation
- indoor air quality
- Renewable Energy
- resource management
- homeowner education

This program offers two levels of servicing allocation as incentive:

- 10 per cent incentive level (Certified)
- 20 per cent incentive level (Silver)

### Is York Region piloting any new incentive programs?

York Region has partnered with the Town of Newmarket and Mosiak Homes on a pilot project that will help York Region speed up approvals for green, low-impact residential developments. Homes built under this pilot project must achieve 25% greater water efficiency than under the Ontario Building Code and must employ low impact development techniques to manage stormwater. Techniques to be used to achieve proposed targets include three-litre toilets, low-flow shower heads, water saver humidifiers on furnaces, front-load washers, hot water recirculation supply systems, programmable thermostats and participation in Enbridge's savings by design program. The project will be used to analyse and determine efficiencies in the development approvals process and identify which water and energy conservation standards may be required to qualify for a possible expedited approvals process. If the model is successful, it could form the basis for a Region-wide expedited approvals process for low impact development.

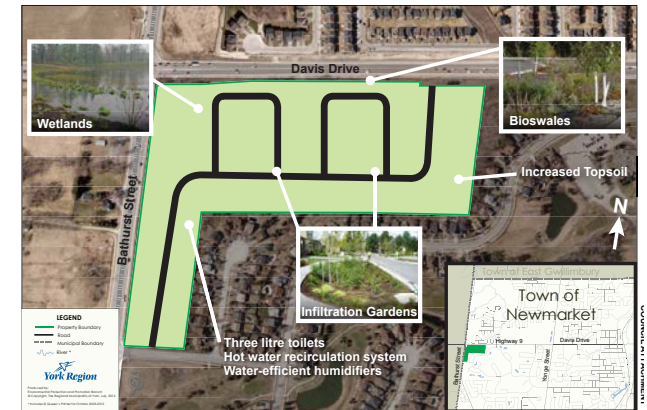


Figure 12: Innovative and Sustainable Housing Development Approvals Pilot Project

Source: Environmental Protection and Promotion Branch, York Region



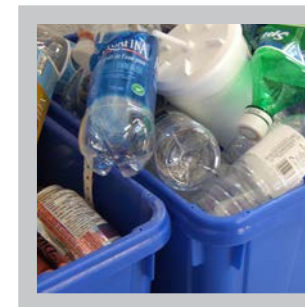
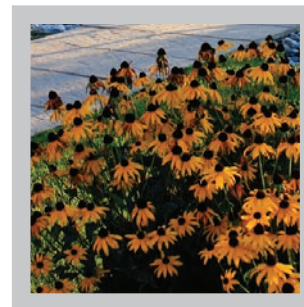


## Chapter 6.0

# Energy Efficiency

York Region has made a commitment to demonstrate leadership in energy conservation and innovation, to address climate change and to encourage the co-ordinated, efficient and safe integration of utilities to better serve residents and businesses.

As the Region grows, additional utility infrastructure will be required and an integrated approach utilizing innovative technologies, renewable energy systems and energy conservation practices, will sustain a high standard of living in York Region.





# EE1 – Community Energy Plans

## Objective:

To ensure planning for new community areas includes the preparation of a community energy plan.

## ROP POLICY

### 5.6.10

That the local municipality shall develop a Community Energy Plan for each *new community area* to reduce community energy demands, optimize passive solar gains through design, maximize active transportation and transit, and make use of renewable, on-site generation and district energy options including but not limited to solar, wind, water, biomass and geothermal energy.

## What is a community energy plan?

A community energy plan is a high level review of land use and community design options for the more efficient consumption of energy. A community energy plan considers the existing and potential energy use within a community including:

- land use planning (zoning, densities and land use patterns)
- transportation (pedestrian and cycling infrastructure and services, transit and traffic management)
- site design and building performance (energy efficiency, alternative energy supply and passive solar energy)
- infrastructure (including solid and liquid waste management)
- energy supply and delivery systems (including district energy, renewable energy and alternative energy systems)

## Why undertake a community energy plan?

A community energy plan provides a roadmap for reducing energy use, improving resiliency to climate change, and promoting economic development. Local municipalities will produce a community energy plan for new communities areas as a component of the secondary plan process.

## How do you develop a community energy plan?

The Natural Resources Canada, Community Energy Planning Guide – 2007, provides detailed information on the development of a Community Energy Plan through a 5 step process, as outlined below:

Step 1: Develop a **Community Vision** that allows the community to express its sustainability goals in terms of its economic, environmental and social ambitions. The outcomes of this visioning exercise should express

what the community should look like, how it should perform, and the timeframe over which this vision is to be achieved (20, 30, 50+ years).

- Step 2: Determine the **baseline condition** of the community by doing a data inventory for a particular point in time. This snapshot of the community can be used to spot trends and areas of high energy or resource use. At a minimum, the baseline conditions should provide a breakdown of primary energy users, consumption patterns and areas of concern. In the case of new community areas, the baseline could be the average base in the local municipality or a comparable area.
- Step 3: **Quantify the vision** by establishing realistic and achievable goals and targets for the community
- Step 4: CEP should be seen as a strategy, a mechanism that leads the community to **identify the actions, programs and projects** necessary to achieve the community vision.
- Step 5: **Implementation and Monitoring** of the community energy plan requires that consideration needs to be given to cross-linking the plan with processes and procedures currently in place throughout the community.

### **What is solar energy?**

There are two common types of technology that harness solar energy: solar photovoltaic or PV (converting light to electricity) and solar thermal (heating and cooling water and air). Solar PV is used primarily for grid-connected electricity to operate residential appliances, commercial equipment, lighting and air conditioning for all types of buildings. Solar energy can heat air that is to be used in an industrial, institutional, commercial or residential application. (Source: Canadian Solar Industries Association)

### **What is wind energy?**

The sun heats the planet to different temperatures in different places and at different times. This unequal distribution of heat is what creates wind as warm air rises and cooler air descends to fill the void. Wind is the ongoing movement of this air. Modern wind turbines use wind to turn a generator and produce electricity which is then used on site or contributed to the electrical grid. (Source: Canadian Wind Energy Association)

### **What is water energy?**

Hydropower is electrical energy derived from falling or running water. The water pressure that is created by water is used to turn the blades of a turbine. The turbine is connected to a generator, which converts the mechanical energy into electricity. (Source: Pembina Institute)

### **What is biomass energy?**

Biomass energy, or bioenergy, is the energy stored in non-fossil organic materials such as wood, straw, vegetable oils, and wastes from the forest, agricultural and industrial sectors. These materials can be burned directly, or converted into a gas or oil, to generate electricity (biopower) and heat. It can also

be converted into liquid fuels (biofuels) for our transportation needs. There are several ways of turning biomass into electricity and heat, including direct combustion, co-firing, gasification, pyrolysis and anaerobic digestion.

### **What is geothermal energy?**

In its simplest terms, geothermal means earth-heat or the thermal energy of Earth's interior. The main uses of geothermal energy are:

- direct use and district heating systems use hot water from springs or reservoirs near the surface
- electricity generation power plants require water or steam at very high temperature (300° to 700°F)

Geothermal heat pumps use stable ground or water temperatures near the Earth's surface to control building temperatures above ground.



PV Solar panels located in parking lot



### What is District Energy?

District Energy refers to a community scale network of buried pipes that with the aid of steam, hot or cold water carry thermal (i.e. heating and/or cooling) energy services to a collection of buildings in a defined geographic area. This thermal energy can be created using a variety of input feedstock fuels including biomass (forest, agricultural, municipal solid waste), biogas, renewable energy forms (eg. geo-exchange), natural gas and cool water. As such, it provides the opportunity to utilize locally available fuels to generate hot and cool space heating at a community scale and the opportunity to centrally substitute feedstock fuels over time. This is an important way for communities to create sustainable, resilient energy delivery systems and manage risks of being dependent on any one fuel or technology. (Source: Canadian District Energy Association)

### Have any local municipalities in York Region undertaken community energy plans?

Yes, the City of Markham, Town of East Gwillimbury and City of Vaughan have undertaken Community Energy Plans. Markham has an operating district energy plant that is currently servicing six million square feet of mixed-use development. In 2010, Markham District Energy started construction on a second district energy system in East Markham.

### How will the community energy plan be implemented?

Local municipalities will prepare the community energy plans as a component of the Secondary Plan for new community areas. The Secondary Plan and any associated official plan amendment will contain policies that require the implementation of the Community Energy Plans.

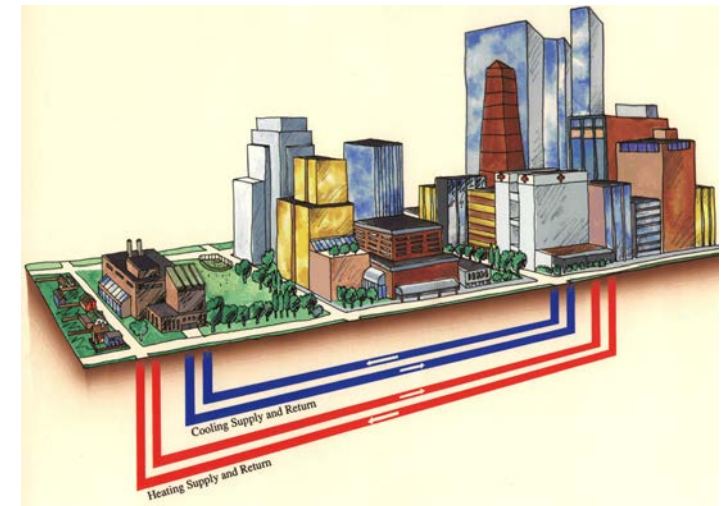


Figure 13: District Energy System  
Source: Courtesy of International District Energy Association

# EE2 – Passive Solar Gain

## Objective:

To reduce greenhouse gas emissions and peak energy demand by encouraging the transition to renewable sources of energy at the community scale.

## ROP POLICY

### 5.6.9

That *new community areas* be designed to maximize passive solar gains, and to ensure that all buildings are constructed in a manner that facilitates future solar installations in accordance with a *solar design strategy*.

## RELATED ROP POLICIES

### 5.2.26

That *development* shall include a *solar design strategy* which identifies approaches that maximize solar gains and facilitate future solar installations (i.e. solar ready).

## What is passive solar design?

See Guideline SB3 for information on the concepts of solar orientation, passive solar gain and solar ready.

## What are the passive solar design elements at the community scale?

### Orientation

At the community scale solar design elements include:

- street layout – optimize street layout to maximize good solar access
- lot layout – lots aligned along an east-west axis are ideal. There is some flexibility as lots can be oriented up to 30 degrees away from due south with a small loss in energy potential. For lots not ideally suited, consider alternative lot designs and roof orientations to ensure solar access

### Ensuring Solar Access

- establish solar setbacks to prevent overshadowing on neighbouring properties
- use modelling software to determine impact of a variety of community development scenarios

### Buildings

- encourage a mix of housing types arranged to maximize views and passive solar gains (use topography to your advantage)
- concentrate the highest densities on sites with the greatest potential for good solar access
- buildings should be articulated (stepped back) from the street to minimize the impact of height and to facilitate views and solar exposure

## What is a Solar Design Strategy?

A solar design strategy is a report that will be prepared in support of secondary plans and development applications that considers possible solar design measures and identifies those measures that will be employed to maximize passive solar gains and facilitate future solar installations.

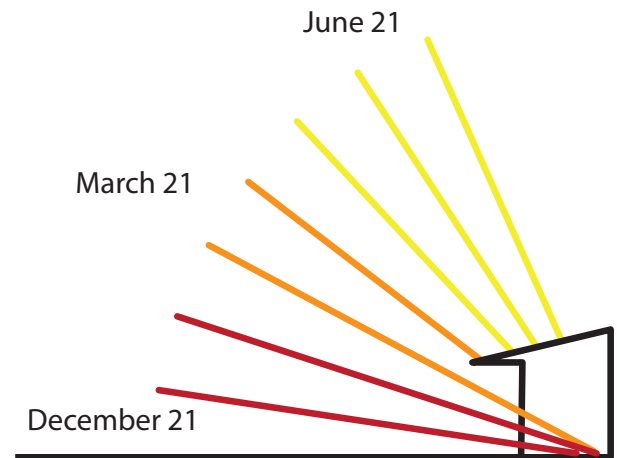


Figure 14: Seasonal variations in altitude of the sun  
Source: Long Range Planning Branch



# EE3 – On-site Renewable Energy

## Objective:

To encourage 25 per cent on-site renewable energy generation for all new buildings.

## ROP POLICY

### 5.2.28

To encourage all new buildings to include on-site *renewable or alternative energy systems* which produce 25% of building energy use. Where on-site *renewable or alternative energy systems* are not feasible, consideration of purchasing grid-source renewable energy is encouraged.

## What is on-site renewable energy?

Renewable energy is energy that is derived from natural sources that can be replenished. Technologies designed to capture and store this renewable energy include:

- photovoltaic solar panels that convert sunlight directly into electricity
- wind turbines that capture wind to turn rotors, which turns a generator and creates electricity
- transpired solar collectors that use sunlight to preheat air for heating purposes
- solar hot water heaters use the sun to heat water for domestic applications
- small-scale hydroelectric power plants flow water over turbines, which turn a generator to create energy
- fuel cells combine hydrogen and oxygen to produce electricity and ground source heat pumps transfer heat to the ground in summer and extract heat from the ground in the winter

## Are there any incentive programs to encourage on-site renewable energy projects?

The Ontario Power Authority has two programs:

- *Micro-fit Program* - applies to renewable energy projects under 10 kilowatts
- *FIT Program* - projects over 10 kilowatts

Both of these programs are intended to encourage renewable energy projects in Ontario. Owners of these projects are paid a fixed price for the energy produced. The fixed price is intended to cover the costs of the project and provide a return on investment for the term of the program contract.

## How do you measure energy use?

For the purpose of this guideline, energy use should be measured by average yearly energy consumption (kilowatt/hour) and not by price.

## What if on-site renewable energy technologies are not appropriate for my site?

Consider the purchase of green electricity or green power certificates.

## What is purchased grid-sourced renewable energy?

“Green electricity” is electricity that has been generated from renewable resources with minimal adverse environmental effects. By paying a premium for green energy, you help make renewable energy more economically feasible by creating consumer demand.

## Is York Region committed to renewable energy?

Renewable energy is an important aspect of the Region’s energy supply strategy. Current initiatives include:

- tendering and renewal of contract in early 2011 for electricity from low-impact green power generators in Ontario
- installation of a solar air heating SolarWall® at the Mount Albert Water Pollution Control Plant
- installation of small solar photovoltaic systems at the Stouffville Zone 2 Pumping Station, YRT transit shelters and the new EMS Operations Centre in East Gwillimbury
- feasibility study and related due diligence for large solar photovoltaic arrays at selected Regional facilities

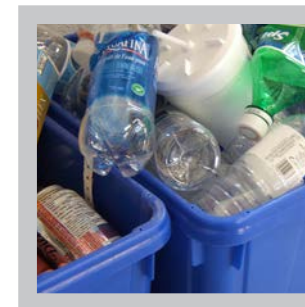
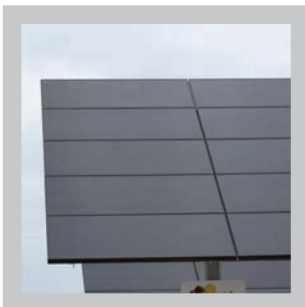
## Chapter 7.0

# Water Management

The growth anticipated in York Region will continue to put enormous pressure on the Region's environment and infrastructure.

Water efficiency and conservation contributes to a healthy watershed by providing the tools to use less water while maintaining the same standard of living.

In new community areas, this will be achieved by effectively managing stormwater and exploring techniques for reducing the outdoor use of potable water and other innovative water management techniques.





# WM1 – Comprehensive Master Environmental Servicing Plan

## Objective:

To create complete communities through a comprehensive and integrated secondary plan process.

## ROP POLICY

### 5.6.11

That comprehensive master environmental servicing plans shall be prepared and implemented. These plans will examine all water systems in a comprehensive and integrated manner to:

- a. understand the integration of all water systems to increase efficiencies;
- b. maximize water conservation in buildings and municipal infrastructure, including water-efficient landscaping and rainwater collection for reuse; and,
- c. minimize stormwater volume and contaminant loads, and maximize infiltration through an integrated treatment approach, which may include techniques such as rainwater harvesting, runoff reduction of solids and materials at source, phosphorus reduction, constructed wetlands, bioretention swales, green roofs, permeable surfaces, clean water collection systems, and the preservation and enhancement of native vegetation cover.

## What is a Comprehensive Master Environmental Servicing Plan?

A master environmental servicing plan is a plan prepared during the secondary plan process identifying the required municipal infrastructure necessary to support a proposed development including: water, wastewater, stormwater and transportation systems. A Comprehensive Master Environmental Servicing Plan examines the potential impacts of infrastructure systems on all water systems in a comprehensive and integrated manner.

## What should the Comprehensive Master Environmental Servicing Plan include?

A comprehensive master environmental servicing plan should address the following areas:

### Water and Wastewater

- identification of how the proposed development is to be serviced including connections to the existing local and regional systems
- description of issues surrounding required regulatory approvals (e.g. requirements for source water protection under the Clean Water Act)
- alignment with Regional and local master and capital plans
- water conservation measures being implemented at the system, community and building scale (i.e. avoiding dead ends within the water system that would require regular flushing to ensure water quality)

- measures being undertaken at the system and community scale to reduce wastewater production (i.e. sanitary sewer connections to temporary storm ponds during construction)

### Stormwater Management

- alignment with Regional and local master and capital plans
- identify of methods and technologies that will be used to reduce stormwater quantity (volume and flow) and improve water quality utilizing a treatment train approach to maximize infiltration, promote evapotranspiration and the re-use of stormwater
- identify the feasibility of implementing low impact development techniques
- identify a range of techniques that will be employed at the community scale
- identify the potential impact of proposed stormwater on the natural heritage and hydrologic features of the area and recommend mitigation strategies

### Transportation

- identification of natural heritage or hydrologic features including stream and open space crossings
- identification of any trail connections required through the natural heritage systems to facilitate the regional cycling and pedestrian master plan
- alignment with the Regional and local transportation master plans



### **Natural Heritage Resources**

- identification of existing biodiversity (flora and fauna) in sufficient detail to understand the ecosystem conditions at a local scale
- identification of areas of environmental significance (e.g. Regional Greenlands System, wellhead protection and vulnerable aquifer areas)
- identification of species of significance (endangered and threatened)
- identification of potential impacts of development on the natural environment and recommend mitigative measures
- identification of how the Greenlands Systems Plan forms a component of the enhanced Master Environmental Service Plan. This approach reflects the interdependence between water systems and natural heritage systems and allows for opportunities to protect and enhance both systems through water management

### **Natural Hazard Considerations**

- identification of areas that could be subject to flooding, erosion, and slope instability and how these areas will be protected from development and its potential impacts
- climate change - identify measures to be implemented at the community and systems scale to adapt to climate change, which could include:
  - measures to mitigate urban heat island effects
  - measures that reduce storm water run-off, increase infiltration and reduce flooding risk
- measures that reduce disturbance to natural vegetation during construction and community design that encourages active modes of transportation

### **Phasing and Sequencing Plans**

- identify phasing and sequencing required to service development within the secondary plan that respects local and regional infrastructure master plans and 10-year construction schedules



Pileated woodpecker



# WM2 – Integrated Treatment Train Approach to Stormwater Management

## Objective:

To utilize innovative techniques for stormwater management.

## ROP POLICY

### 5.6.11

That comprehensive master environmental servicing plans shall be prepared and implemented. These plans will examine all water systems in a comprehensive and integrated manner to:

- c. minimize stormwater volume and contaminant loads, and maximize infiltration through an integrated treatment approach, which may include techniques such as rainwater harvesting, runoff reduction of solids and materials at source, phosphorus reduction, constructed wetlands, bioretention swales, green roofs, permeable surfaces, clean water collection systems, and the preservation and enhancement of native vegetation cover.

## Why do we need an improved approach to stormwater management?

Environmental monitoring undertaken by the Toronto and Region Conservation Authority has shown that the environmental health of watersheds continues to decline as a result of urbanization, despite the use of conventional stormwater management techniques. Increasingly, watershed plans are identifying the need for low impact development practices to protect the health and increase the resiliency of these systems.

## What is a treatment train approach to stormwater management?

A treatment train approach to stormwater utilizes a series of practices that meet stormwater management objectives of water quality, water balance, erosion and flood control for a particular watershed. The treatment train approach employs a hierarchy of stormwater management techniques to achieve improved stormwater quality and quantity, including:

- source controls (e.g. soak-away pits, rain gardens, and green roofs, etc.)
- conveyance controls (e.g. roadside ditches, subsurface pipes or combinations of these measures designed to provide storage and promote infiltration)
- end-of-pipe measures (e.g. dry ponds, wet ponds, constructed wetlands, etc.)

## What is low impact development (LID)?

Low impact development includes a range of control techniques for stormwater management that attempt to minimize changes on the water balance of an area. This is accomplished through implementation of innovative site design and engineering practices applied in a distributed manner. The principles of low impact development include:

- using an ecosystem (landscape) based approach to planning
- focusing on preventing stormwater runoff
- treating stormwater as close to source as possible
- creating multi-functional landscapes
- providing education and maintenance

## What are the benefits of utilizing these approaches?

There are many benefits of implementing LID techniques including:

- reduced pollution and improved water quality
- reduced downstream impacts resulting from stormwater run-off including erosion
- creation of habitat
- recharged groundwater systems

Typical low impact development designs incorporate more than one type of practice or technique to provide integrated treatment of stormwater runoff from a site. The precise type and number of LID practices varies depending on proposed land use, soils, geology, groundwater levels, groundwater uses and



## RELATED ROP POLICY

### 2.3.13

To require the preparation of comprehensive master environmental servicing plans as a component of secondary plans to protect, improve or restore water quality and quantity including hydrologic function of water systems. Such plans will incorporate best management practices with a goal that water balance and hydrologic functions will be maintained as much as possible. These plans will emphasize water conservation and may include water reuse and innovative technologies.

sensitivity of the receiving water body. Planning for this type of stormwater management approach requires a comprehensive examination as early as possible in the planning process. Flexibility and innovation are necessary ingredients to ensure that the stormwater management solution is comprised of a suite of practices that are fully integrated into the landscape of a proposed development.

#### **What are some of the techniques that can be employed?**

There are a wide range of low impact development techniques that can be employed to maximize infiltration and minimize stormwater volume and contaminant loads, including:

**Rainwater Harvesting:** Rainwater harvesting is the practice of collecting rainwater and storing it for later use. Rainwater harvesting systems are comprised of a roof catchment, conveyance network, rainwater storage tank, pump and fixtures. Systems can also incorporate treatment technologies to improve the quality of rainwater and provisions for periods of insufficient rainfall (a water make-up supply) and times of excessive rainfall (overflow provisions). For the purposes of the New Communities Guidelines, rainwater harvesting and reuse will be used to offset outdoor use of potable water. The rainwater harvesting systems that can be employed are scalable depending on the development context (i.e. detached home vs. apartment building). See WM4 for further discussion on rainwater harvesting.

**Constructed Wetlands:** Constructed wetlands are shallow pools developed specifically for storm waste water treatment that create growing conditions suitable for wetland plants. Constructed wetlands differ from other artificial wetlands in that they are not typically intended to replace all of the functions of natural wetlands. Rather, they are designed to provide water quality benefits by minimizing point and nonpoint source pollution into streams, natural wetlands and other receiving waters. They can also play a water quantity management role.

**Bioretention Swales:** Bioretention swales provide both stormwater treatment and conveyance functions and consist of a soil bed planted with suitable non-invasive (preferably native) vegetation. Bioretention swales are used to remove a wide range of pollutants, such as suspended solids, nutrients, metals, hydrocarbons and bacteria from stormwater runoff.

**Green Roofs:** A green roof is a roofing system that includes a layer of vegetation and growing medium installed on top of a conventional roof. There are two types of green roofs: intensive roofs, which are thicker and can support a wider variety of plants (including trees) but are heavier and require more maintenance and extensive roofs, which are covered in a light layer of vegetation.





**Permeable Surfaces:** Impermeable surfaces created by urbanization interfere with water catchment systems, reducing the quantity of water reaching the aquifers and increasing water runoff and the risk of downstream erosion and flooding. The use of permeable surfaces can mitigate against these impacts by allowing rainwater to be absorbed into the earth. Permeable pavements allow stormwater to infiltrate into underlying soils promoting pollutant treatment and recharge, as opposed to producing large volumes of rainfall runoff requiring conveyance and treatment.

**Clean Water Collection System:** A community based rainwater harvesting system that collects run-off from residential roof areas for conveyance through perforated pipes within the municipal right-of-way. The perforated pipes are used to enhance safe groundwater recharge in lands undergoing increased imperviousness due to urbanization by using relatively clean water from roof areas.



Bioretention cell incorporated into parking lot  
Source: Toronto Region Conservation Authority

# WM3 – Outdoor Use of Potable Water

## Objective:

To restrict the use of potable water for outdoor watering.

## ROP POLICY

### 5.2.31

To restrict the use of potable water for outdoor watering.

## What is potable water?

Drinking water or potable water is municipally treated water that is safe for human consumption. York Region's water supply sources are from groundwater and surface water. The source water is pumped to a treatment facility where it is treated to remove impurities and to ensure that it meets Ontario's stringent water quality levels. It is then pumped to water towers and reservoirs for use throughout our communities.

## York Region Long Term Water Conservation Strategy

The Long Term Water Conservation Strategy provides overarching guidance for Regional water conservation and efficiency programming for the next 40 years. The Long Term Water Conservation Strategy enhances and extends, to 2051, the Region's commitment to innovative water conservation and efficiency programming, water resource protection, energy conservation and greenhouse gas reduction. Specifically, the Long Term Water Conservation Strategy contemplates activities to reduce per capita water consumption including outdoor water use.

## Why restrict outdoor use of potable water?

During the hottest periods of the summer months, demand on municipal water supplies almost doubles. This increased demand places a tremendous strain on municipal water supply. Municipalities often use outdoor water restrictions to manage this increased demand and to ensure a sufficient supply of water for emergency services. Each of York Region's nine municipalities have adopted an Outdoor Water Use Bylaw, which regulates the outdoor use of municipal drinking water.

## Are there alternatives to using potable water?

There are a variety of alternatives to reduce or eliminate the use of potable water outdoors, such as:

### Landscaping

- drought tolerant landscaping can reduce the demand for water through drought tolerant design and native plant selection. Landscaping can also contribute to stormwater management by promoting infiltration



Sweeping driveways is an alternative cleaning method that doesn't require outdoor use of potable water

### Outdoor Cleaning Methods

- clean driveway with broom instead of hose
- cleaning car with a bucket and sponge

### Alternative sources of water

- rainwater Harvesting Systems can be used to collect and store larger volume of rainwater that can be used for irrigation and watering (see WM4 for detailed information)



# WM4 – Rainwater Harvesting

## Objective:

To require the installation of rainwater harvesting systems to reduce outdoor use of potable water.

## ROP POLICY

### 5.2.32

To require the installation of rainwater harvesting systems on all new residential buildings for outdoor irrigation and outdoor water use.

## What is rainwater harvesting?

Rainwater harvesting is the process of intercepting, diverting and storing rainfall for future use. In new community areas, York Region is promoting the reuse of rainwater for outdoor water use and irrigation.

## What are the benefits of rainwater harvesting?

- reduces demand on municipal water supply
- allows for storage of seasonal rains for use in off peak times of droughts and urban water bans
- manages site runoff (potentially avoiding downstream erosion, flooding and contamination) by capturing runoff from buildings

## What are the components of a rainwater harvesting system?

**Catchment surface:** is the surface from which rainfall is collected. Rooftops are the preferred catchment surface for rainwater harvesting systems.

**Pre-treatment:** a filter screen that removes debris, dust, leaves and other material that accumulates on rooftops from being introduced into the rainwater harvesting system.

**Delivery systems:** consist of gutters, downspouts and pipes that carry stormwater runoff into storage tanks.

**Storage tank:** container used to store harvested rainwater. The required size of storage tank is dictated by several variables: rainfall and snowfall frequencies and totals, the intended use of the harvested water and the catchment surface area.

**Distribution:** the system used to move the harvested rainwater to final destination for reuse. Typical outdoor applications use gravity to feed hoses via a tap and spigot. For underground cisterns or large sites, a water pump may be needed.

**Overflow and diversion:** direct rainwater away from storage tank to a permeable surface when storage capacity is exceeded.

## Rainwater harvesting systems are feasible on all new residential buildings

The size of the storage tanks range in size from small storage tanks for residential land uses to large cisterns for high density residential land uses. Designs and styles can be found to suit almost any application.

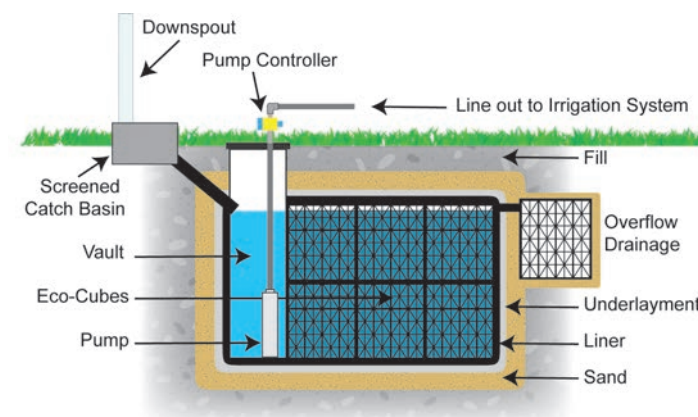


Figure 15: Underground rainwater harvesting system  
Source: Enviroscape L.A.

# WM5 – Water Efficient Landscaping

## Objective:

To encourage the use of water efficient, drought resistant landscaping

## ROP POLICY

### 5.2.33

To encourage the use of water conserving, drought resistant landscaping by:

- increasing topsoil depths and/or providing soil scarification;
- installing drought resistant sod;
- providing landscape features that minimize the demand for water and synthetic chemicals by utilizing native and drought resistant species; and,
- installing permeable driveway surfaces.

## What is water efficient landscaping?

Water efficient landscaping is a design approach that results in landscapes and gardens with low water needs.

## Why is increasing topsoil depth important?

Increasing topsoil depth ensures that there is sufficient soil depth to promote root growth and a healthier lawn. Encouraging deeper root growth will also result in reduced watering needs of any turf ed areas.

## What is Scarification?

Scarification is the breaking up of the subsoil to mix it with the top soil added after construction is completed. When different types of soils are laid down in layers without this breaking up and mixing, water that is applied often stops moving vertically and does not successfully infiltrate deep into the soil. Scarification breaks soil layers so that water that is applied can be used more efficiently.

## What is drought resistant sod?

Drought-resistant sods are those sods that have a high tolerance to drought conditions and therefore do not have the same watering needs as a traditional sod.

## What is xeriscaping?

Xeriscaping is landscaping and gardening in ways that reduce or eliminate the need for supplemental water from irrigation.

## What are the elements of water efficient landscaping?

**Planning and Design:** taking into account the regional and microclimate conditions, existing vegetation and topographical conditions.



Water efficient gardening through use of native and drought tolerant species

**Soil Analysis:** proper selection of plants for soil type. When appropriate, enhance soil by improving drainage or water holding capacity.

**Appropriate Plant Selection:** based on the plants adaptability to the landscape, desired effect, color, texture and plant size.

**Practical Turf Areas:** how and where it is used can significantly reduce water use especially when drought-tolerant varieties are incorporated into the design.

**Efficient Irrigation:** watering only when plants need water with non-potable water supply. Watering deeply encourages deeper root growth, resulting in a healthier drought-tolerant landscape.

**Appropriate Maintenance:** proper landscape and irrigation maintenance will preserve and enhance a quality water efficient landscape.





### **What are permeable pavements?**

Permeable pavements can be used as an alternative to traditional hard surface paving systems that create expanses of impervious surface such as parking lots, driveways, access roads, plazas and walkways. Examples of permeable pavement types include: open joint permeable pavers, pervious concrete and porous asphalt. Permeable paving allows for filtration, storage or infiltration of runoff, which can reduce stormwater flows compared to traditional impervious paving surfaces like concrete and asphalt.

### **How will water efficient landscaping techniques be implemented in New Communities Areas?**

Water efficient landscaping will be implemented through the following:

- policies in the Secondary Plan that require water efficient landscaping practices
- development applications will be accompanied by landscaping plans demonstrating how water efficiency has been considered
- Regional and local municipalities should continue to specify native species for street trees
- developers who offer landscaping packages should only provide water-efficient options



Permeable pavement allows stormwater to drain through for infiltration into native soil.

Source: Toronto Region Conservation Authority

# WM6 – Green Roofs

## Objective:

To encourage all development to incorporate green roofs into building design

## ROP POLICY

### 5.2.34

To encourage local heat island effects mitigation in all *development* including:

- a. green and/or white roofs;
- b. locating trees or other plantings to provide shading for at least 50% of sidewalks, patios, and driveways, and within 15 metres of buildings; and,
- c. installing light-coloured paving materials including white concrete, open pavers and any material with a solar reflectance index of at least 29.

## What are green roofs?

Green roofs are comprised of a layer of vegetation and soil installed on top of a conventional roof. There are two basic types of green roofs: intensive and extensive. Intensive/active green roofs have a deep growing medium. An extensive green roof has a shallow growing medium and the landscaping is designed to be more self-sustaining and require less maintenance.

## What are the benefits of green roofs?

Green roofs provide a number of benefits in urban areas: they are beneficial to water conservation, stormwater management and source protection; they can improve energy efficiency; reduce heat island effects; support local food production; and create urban green space for passive recreation or aesthetics.

## What are the components of a green roof system?

A green roof, is typically comprised of the following components:

- a roof structure capable of supporting the weight of a green roof system
- a waterproofing system designed to protect the building and roof structure
- a drainage layer that consists of a porous medium capable of water storage for plant uptake
- a geo-synthetic layer to prevent fine soil media from clogging the porous media
- soil with appropriate characteristics to support selected green roof plants
- plants with appropriate tolerance for harsh rooftop conditions and shallow rooting depths



Green roof

Source: Earth Rangers Centre for Sustainable Technology





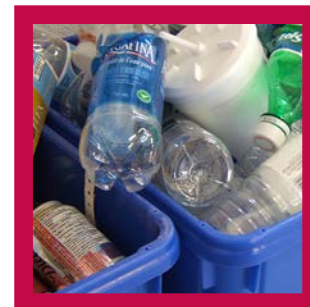
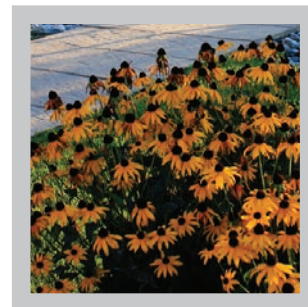
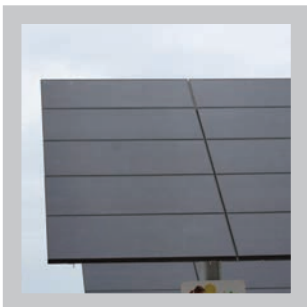
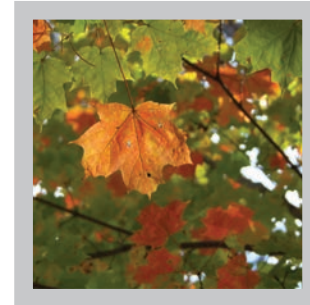
## Chapter 8.0

# Resource Management and Education

York Region has adapted a conservation-first approach to servicing the needs of residents. The approach aims to maximize the use of existing infrastructure, promote locally sourced materials and reduce waste.

Education is also key to ensuring the successful implementation of the policies in the York Region Official Plan.

York Region has a leadership role in educating regional and local staff, stakeholders and residents by sharing information, providing expertise and raising public awareness.





# RM1 – Construction Waste Diversion

## Objective:

To encourage the diversion of construction and demolition waste.

## ROP POLICY

### 5.2.36

To ensure that all new development reduces construction waste and diverts construction waste from landfill consistent with policy 7.4.14 of this Plan.

### 7.4.14

To encourage the diversion of construction and demolition waste to meet or exceed the Region's diversion targets of policy of 7.4.2.

## RELATED ROP POLICY

### 7.4.2

To surpass waste management regulatory requirements by:

- achieving at least 80% diversion from landfill by 2010;
- achieving over 90% diversion from landfill by 2016; and,
- eliminating the disposal of unprocessed waste in landfill by 2020.

## Why is waste diversion important?

The Ontario Ministry of the Environment reported that in 2002, 9.4 million tonnes of waste was generated in Ontario and sent to either landfills in Ontario and the United States or to incineration facilities. Much of this waste could have been reduced, reused or recycled. By diverting reusable or recyclable wastes from landfills or incinerators, we can extend the life of landfills, reduce airborne emissions, reduce the potential for groundwater and land contamination and conserve valuable natural resources.

## How is York Region Addressing Waste?

Responsible waste management is a key priority to ensure York Region's growth is managed sustainably. York Region is currently undertaking a Master Plan to ensure the right decisions are made in waste management based on York Region's strategic plans and regulatory requirements. By developing a long-term plan for waste management the Region makes a commitment to sustainability for the community. One of the key themes of the Master Plan will be reduction through advocacy and collaboration including actions that:

- encourage the Province to require waste reduction programs in the industrial, commercial and institutional sectors
- encourage the diversion of construction and demolition waste to meet or exceed the Region's diversion targets of ROP policy 7.4.2

SM4RT LIVING will guide York Region's waste management decisions over a 25 year time frame with recommended solutions to be implemented during the period 2012-2017 and beyond. The master planning exercise commenced in spring 2011 and will continue until mid-2013.

## What can the development industry do to address waste?

In new communities, developers are encouraged to prepare an integrated waste management plan that outlines how construction and demolition waste is going to be managed to achieve waste diversion targets. The Plan should include the following elements:

**Analysis of expected job-site waste:** summarize the general categories of waste likely to be produced on the project.

**Measurement and documentation:** estimate rough quantities in each waste category and document.

**Removal methods:** document how waste materials will be removed from the project site.

**Removal costs and revenues:** generate a table of likely materials and their costs/credits per unit.

**Options for disposal:** mention any specific methods that are special or unusual opportunities.

**Handling procedures:** summarize the roles of the contractor and trades participating. A site plan with space allocated and receptacles indicated etc.

**Personnel:** a list that describes individuals and their responsibilities.

**Hazardous wastes:** summarize any special material, WHMIS and HAZMAT procedures.

**New opportunities:** continue throughout the project to explore opportunities to recycle, reuse or minimize (in other ways) the project's negative impacts on people and the environment.

### Techniques to Consider for Diverting Waste:

There are a number of strategies that can be used to divert waste, including:

- re-use
- material selection
- recycled content
- end of lifecycle disposal
- salvageable or recyclable
- enabling source separation
- design features that promote recycling
- on-site composting and biodegrading



Example of demolition waste diversion



# RM2 – Three Stream Waste

## Objective:

To implement three-stream waste collection capabilities in all multi-residential buildings.

## ROP POLICY

### 7.4.9

To require that all new multi-unit residential buildings incorporate three-stream waste collection capabilities.

## RELATED ROP POLICIES

### 7.4.10

To work with local municipalities to require existing multi-unit residential buildings to participate in three-stream waste collection.

### 7.4.11

To work towards three-stream waste collection in Regional facilities.

## Why is three-stream waste collection in higher density residential buildings important?

As the Region intensifies, higher density residential buildings will become an increasingly larger proportion of the housing stock. It is important that all new high density residential buildings are designed to include the internal structures and space needed to manage three-stream waste (recycling, organics and residual waste). Currently, Markham, Newmarket, Richmond Hill and Vaughan require new high-density residential construction to include three-stream waste management capabilities.

## What do three-stream collection systems include?

Three-stream waste collection systems include the following:

- single chute systems with tri-sorting equipment and lock-out chute doors
- triple chute systems
- recycling rooms with no chutes (for smaller buildings)

## How will this be implemented?

Local municipalities must include the following three-stream waste collection components in site plan approval conditions for multi-residential building units:

- provide three-stream sorting and collection systems for organics, recyclable materials and residual waste
- design and construct internal material storage room(s) with sufficient space to store organics, recyclable materials and residual waste for a minimum of one week
- design and construct the system so that it promotes access to diversion services (organics and recycling) that are as convenient as disposal (residual waste)

## What design considerations should I be aware of?

Owner and occupant education and signage are important to ensuring successful three-stream waste collection program in multi-residential buildings. Many of the local municipalities have developed resources (e.g. information pamphlets) that can be used in educational campaigns for residents.

**Three Stream Waste Design Consideration  
Table 10**

Internal Building Design Considerations	External Building Design Considerations
<ul style="list-style-type: none"><li>• multi-sort on every floor</li><li>• adequate internal storage must be provided</li><li>• internal location must be sized appropriately for size of building and collection frequency</li><li>• separate ventilation (odour control) required</li><li>• must have equal access to Recycling and Green bins, as tenants have for garbage</li><li>• design of internal storage must be carefully designed (no waste sitting next to air intake vents)</li></ul>	<ul style="list-style-type: none"><li>• concrete loading area and adequate curbs</li><li>• pick up times need to correspond with noise by-laws</li><li>• access routes, truck turning radius for three-stream pick up</li></ul>

# RM3 – Environmentally Preferable Products

## Objective:

To encourage increased use of environmentally preferable products.

## ROP POLICY

### 5.2.30

To encourage the use of environmentally preferable materials including low volatile organic compound products, adhesives and finishes, high-renewable and recycled content products and certified sustainably harvested lumber in all new development.

## RELATED ROP POLICY

### 5.2.29

To encourage enhanced indoor air quality in buildings, including the use of low or no volatile organic compound products; minimizing the leakage of combustion gases, reducing exposure to indoor air pollutants by ventilating with outdoor air; and indoor moisture controls.

## What are environmentally preferable products?

Environmentally preferable products have reduced negative impact on human health and the environment when compared with competing products or services that serve the same purpose. This comparison applies to raw materials, manufacturing, packaging, distribution, use, reuse, operation, maintenance and disposal. Environmentally preferable products can often possess more than one environmentally friendly attribute.

## What are volatile organic compounds (VOC's) and off-gassing?

Volatile organic compounds are organic (containing carbon) chemicals that can easily evaporate into the air. The release of volatile organic compounds can negatively impact indoor air quality which in turn can impact the health of occupants.

## What are recycled content products?

Recycled content products are defined as the percentage of a material in a product that is recycled from the manufacturing waste stream or consumer waste stream and used to make new materials; recycled content is expressed as a percentage of the total material volume or weight. Recycled content products can contain pre-consumer and/or post-consumer materials.

**Post-Consumer Recycled Content:** materials that are recycled after used for its intended purpose (e.g. gypsum).

**Pre-Consumer Recycled Content:** materials that are recycled from waste generated during the manufacturing process (e.g. sawdust).

**High-renewable materials and products:** are agricultural building products (fibre or animal) that take 10 or less years to grow or raise. Rapidly renewable materials such as bamboo, cork, and straw are considered sustainable in the construction and renovation industry because they have the capacity to regenerate quickly. The recycled content is expressed as a percentage of the total material cost.

**Certified wood:** wood that has been issued a certificate from an independent organization with developed standards of good forest management. This certificate verifies that wood products come from responsibly managed forests.



# RM4 – Locally-Sourced Materials

## Objective:

To encourage increased use of locally and regionally-sourced materials.

## ROP POLICY

### 5.2.35

To encourage the use of locally/regionally sourced building materials and to support the building and land development industry on the availability of local building materials.

## What are locally sourced/regional materials?

Locally sourced materials are building materials that are extracted, processed and manufactured close to a project site, expressed as a percentage of the total materials cost. In the LEED Rating System, regional materials are defined as materials that have been extracted, harvested or recovered and manufactured within 800 kilometre of the project site for a minimum of 10 per cent or 20 per cent, based on cost, of the total materials value.

## What does extraction, harvested and manufactured mean?

- extraction is the removal of natural materials from the earth for the purposes of human use
- harvested refers to an activity where all or part of a plant has been collected and removed from the location of its growth
- manufactured are those activities associated with the production of materials, goods or products

It is important to know where the product has been extracted, harvested and manufactured when determining if a material is locally/regionally-sourced.

## What are the benefits of locally sourced/regional materials?

There are benefits to choosing local/regional building materials in construction projects, including:

- reduced environmental impacts associated with transportation
- reduced costs associated with transportation
- support for the local economy

## How to incorporate locally sourced/regional materials into your project?

- be familiar with local policies that promote local materials
- establish and maintain a library of regional materials and manufacturers
- set goals early in the design process for the use of locally produced wood and other materials
- assess the availability of regional materials and determine the best available products to minimize the project's environmental impacts
- use life cycle assessment tools in the decision-making process because local materials may have a significantly lower carbon footprint than imported alternatives
- set appropriate local materials targets based on the project's budget and ensure related requirements are captured in the construction documents along with approved alternatives
- examine case studies on green building projects in your area for information on the use of local/regionally-sourced materials

## What kinds of locally sourced materials would be available for a development project in York Region?

- sand
- aggregate
- wood
- concrete
- masonry
- insulation

# RM5 – Comprehensive Building Owner/Operator Training

## Objective:

To ensure comprehensive building owner/operator training.

## ROP POLICY

### 5.2.37

To work with local municipalities and the building and land development industry to develop resident, building owner and operator educational materials and training on sustainable buildings.

## RELATED ROP POLICY

### 5.2.38

To work with local municipalities and the building and land development industry to provide each resident, worker and employer with information on the sustainability features of their communities including water and energy conservation, and mobility options.

## Why is comprehensive building owner/operator training important?

How a building is operated and maintained influences the sustainability of the building over its entire life. The performance of a building can be greatly impacted by how it is operated and maintained. Education of homeowners and building operators is essential to ensuring the highest level of building performance.

## What information should be included in the Building Owner/Operator Training Manual?

An operations and maintenance manual or binder should include the following information:

- the product manufacturers' manuals for all installed equipment, fixtures and appliances
  - general information on efficient use of energy, water and natural resources
  - operations and maintenance guidance for any mechanical systems installed in the building including:
    - space heating and cooling equipment
    - mechanical ventilation equipment
    - humidity control equipment
    - radon protection system
    - renewable energy system
    - irrigation, rainwater harvesting and/or greywater system
  - guidance on occupant activities and choices, including the following:
    - cleaning materials, methods and supplies
    - water-efficient landscaping
    - waste management equipment and activities
- impacts of chemical fertilizers and pesticides
  - irrigation
  - lighting selection
  - appliance selection
  - walkthrough of building with the occupant(s), featuring the following:
    - identification of all installed equipment
    - instruction on how to use the measures and operate the equipment
    - information on how to maintain the measures and equipment



Education materials could be provided to homeowners







# Appendices



# Additional Resources

	Directing Growth
DG1	Integrated Design Process; History and Analysis, International Initiative for a Sustainable Built Environment Integrated Design Process Guide, Canadian Housing and Mortgage Corporation Roadmap for the Integrated Design Process, Prepared for the BC Green Building Roundtable
DG2	Places to Grow Tools - Visualizations, Ministry of Infrastructure Visualizing Density, Lincoln Institute of Land Policy 2031 Land Budget, Corporate and Strategic Planning, York Region
DG3	Making Ends Meet in York Region Discussion, Community and Health Services Department, York Region
DG4	Economic Development Action Plan, Corporate and Strategic Planning, York Region
	Community Design
CD2	Streetscape Program, Transportation and Community Planning Department, York Region Towards Great Regional Streets - A Path to Improvement Design Guidelines for 6-Lane Regional Streets, York Region, 2008 Coordinated Street Furniture: Urban Design Guidelines, Transportation and Community Planning Department, York Region
CD3	Live Work Units, City of Edmonton By-law, City of Edmonton Live-Work Use Guidelines, City of Vancouver, 2006 Tomorrow's Property Today, Sustainable live-work development in a low carbon economy, Tim Dwelly, Andy Lake and Lisa Thompson, Live Work Network, 2008
CD4	Economic Analysis of Human Services Costs to 2031 - Recommendations For Enhancing Human Services Planning in The Regional Municipality of York, Community and Health Services Department, York Region Community Collaborative Planning Guide: Weaving Collaboration into a Tapestry of Change, Human Services Planning Board of York Region
CD5	Housing Matters: A Review of the Housing Market in York Region, Corporate and Strategic Planning and Community and Health Services Department, York Region Building Foundations: Building Futures, Ontario's Long-Term Affordable Housing Strategy, Government of Ontario, 2010 Strong Communities through Affordable Housing Act, 2011

CD6	<p>Built Environment Standard  Transportation Standard  Planning for Barrier-Free Municipalities, Ministry of Municipal Affairs and Housing  Centre for Universal Design, North Carolina State University  Age Friendly Cities Guide, World Health Organization  Age Friendly Cities Checklist, World Health Organization</p>
CD7	<p>City of Toronto Green Roof Benefits  Green Roofs: A Resource Manual for Municipal Policy Makers, CMHC, 2006  New York Urban Heat Island Mitigation Manual  Shade: A Planning Guide, York Region Sunsense Coalition  Reducing Urban Heat Islands: Compendium of Strategies: Trees and Vegetation, Environmental Protection Agency  Clean Air Partnership  The Urban Heat Island Effect, Climate Change and Health, Health Canada</p>
CD8	<p>Georgetown South Project, Supplemental Human Health Assessment of Air Quality Impacts, Metrolinx, February 2011  BC MOE - Environmental Best Management Practices for Urban and Rural Land Development in British Columbia  NCCEH - Minimizing Children's Non-residential Exposure to Traffic-related Pollution  Ontario Ministry of Environment. 2010. Resources. <a href="http://www.ene.gov.on.ca/environment/en/resources/results/listing#d">http://www.ene.gov.on.ca/environment/en/resources/results/listing#d</a>  Regional Municipality of Halton. 2009. Official Plan Amendment No. 38 <a href="http://www.halton.ca/common/pages/UserFile.aspx?fileId=33306">http://www.halton.ca/common/pages/UserFile.aspx?fileId=33306</a>  California Environmental Protection Agency. 2005. Air Quality and Landuse Handbook: A Community Health  Perspective. <a href="http://www.arb.ca.gov/ch/handbook.pdf">http://www.arb.ca.gov/ch/handbook.pdf</a></p>
	<b>Sustainable Transportation</b>
ST1	<p>York Region Transportation Master Plan Update, 2009  York Region Pedestrian and Cycling Master Plan, 2008  York Region Transportation Impact Study Guidelines, 2007  York Region 10-Year Road Construction Program  York Region Transit (YRT) - 5 Year Service Plan (2006 – 2011)  Metrolinx Regional Transportation Plan, The Big Move, 2008  York Region Transit-Oriented Development Guidelines, 2006</p>





ST2	Taming the Flow—Better Traffic and Safer Neighbourhoods, Research Highlight, Canadian Mortgage and Housing Corporation, July 2008 Giving Pedestrians an Edge – Using Street Layout to Influence Transportation Choice, Research Highlight, Canadian Mortgage and Housing Corporation, July 2008 York Region Pedestrian and Cycling Master Plan, 2008
ST3	York Region Pedestrian and Cycling Master Plan, 2008 What is Walkability? How Do You Measure It? Take-a-ways from This Year’s TRB Meeting, Placemaking Blog Project for Public Spaces, February 16th, 2011 Mobility Hub Guidelines for the Greater Toronto and Hamilton Area, Metrolinx, 2010 Canada Walks Creating Safer Communities, An Introduction to Crime Prevention Through Environmental Design for Architects, Planners, and Builders, Royal Canadian Mounted Police and Canadian Mortgage and Housing Corporation, 1998
ST4	York Region Pedestrian and Cycling Master Plan Implementation - 2011 Progress Report York Region Pedestrian and Cycling Master Plan Implementation - York Region Pedestrian and Cycling Master Plan, 2008 Canadian Institute of Transportation Engineers – Sustainable Transportation through Site Design
ST5	Walking and Cycling – PedShed Analysis, Active Healthy Communities, Heart and Stroke Foundation Transit Supportive Guidelines, 2011 Draft, Ontario Ministry of Transportation
ST6	Transit-Oriented Development Guidelines, 2006, York Region
ST7	Mobility Hub Guidelines for the Greater Toronto and Hamilton Area, Metrolinx, 2010
ST8	Parking Management Strategies, Evaluation and Planning 18 February 2011 by Todd Litman, Victoria Transport Policy Institute Mobility Hub Guidelines for the Greater Toronto and Hamilton Area, Metrolinx, 2010
	<b>Natural Heritage and Open Space</b>
NH2	Terrestrial Natural Heritage System Strategy (2007), Toronto and Region Conservation Authority Natural Heritage Reference Manual (2010), Ontario Ministry of Natural Resources York Region’s Greening Strategy (2012), Environmental Services Department, York Region York Region Natural Heritage Trails Concept Study, Corporate and Strategic Planning, York Region
NH3	Natural Heritage Restoration Plan Guidelines, Toronto and Region Conservation Authority (TRCA) Natural Heritage Reference Manual (2010), Ontario Ministry of Natural Resources York Region’s Greening Strategy (2001), Regional Municipality of York Principles and Guidelines for Ecological Restoration in Canada’s Protected Natural Areas, Parks Canada



NH4	A Guide to Road Ecology in Ontario, Ontario Road Ecology Group NCHRP Report 480: A Guide to Best Practices for Achieving Context Sensitive Solutions, US Department of Transportation, Federal Highway Administration On-line TDM Institute, Victoria Transport Policy Institute
NH5	Terrestrial Natural Heritage System Strategy (2007), Toronto and Region Conservation Authority Natural Heritage Reference Manual (2010), Ontario Ministry of Natural Resources York Region's Greening Strategy (2001), Regional Municipality of York
NH6	York Region Natural Heritage Trails Concept Study York Region Pedestrian and Cycling Master Plan and Lake to Lake Cycling Route and Walking Trail
NH7	Community Gardens Program Toolkit, Parks and Recreation Division, City of Toronto Community Garden Resources, Community Planning, Social Planning, City of Vancouver, GTA Agricultural Action Plan, 2005
NH8	The Role of Recreation, Parks and Open Space in Regional Planning , Alberta Recreation and Parks Association North Oakville Urban Design and Open Space Guidelines, 2009, Town of Oakville
NH9	Public Art Policy and Public Art Committee, City of Markham Cultural Master Plan, Town of Newmarket Public Art Toolkit, Creative City Network of Canada Public Art Planning, City of Toronto
<b>Sustainable Buildings</b>	
SB1/SB2	Model National Energy Code for Buildings, Natural Resources Canada Water and Energy Saving Tips for Multi-Unit Residential Buildings, Canadian Mortgage and Housing Corporation A Guide to Innovation in the Design and Construction of High-Rise Residential Buildings, Canadian Mortgage and Housing Corporation ASHRAE Standard 90.1-1999, Energy Standard for Buildings Except Low-Rise Residential Buildings, American Society of Heating, Refrigerating and Air-Conditioning Engineers TECHNICAL BULLETIN No.27 – 031011 Changes the Canadian Building and Energy Codes, Logix Insulated Concrete Forms EnerGuide and Energy Star, Natural Resources Canada website
SB3	Solar Ready Technical Guidelines, Canadian Solar Industries Association and Natural Resources Canada Solar Energy for Buildings, Introduction Solar Design Issues, Keith Robertson and Andreas Athienitis, Canadian Mortgage and Housing Corporation



SB4	York Region Water for Tomorrow Program – Industrial Water Audits York Region Long Term Water Conservation Strategy, 2010 York Region Sustainable Development Through LEED 2010, 2007 York Region Sustainable Home Incentive Program Implementation Guide WaterSense
SB6	Exposure Guidelines for Residential Indoor Air Quality (1987), Health Canada
	<b>Energy</b>
EE1	Natural Resources Canada Community Energy Planning Guide – 2007, Canmet Energy Technology Centre Community Energy Planning, A Guide for Communities Volume 1, and A Guide for Communities, Volume 2 Canmet Energy Technology Centre, Natural Resources Canada Technical Series 02-112, Community Energy Management – Foundation paper, Canada Mortgage and housing Corporation Town of East Gwillimbury Community Energy Plan, Garforth International, 2009
EE2	City of Vancouver, Passive Design Toolkit, Best Practices
EE3	Green Electricity: A Buyer's Guide, North American Green Purchasing Initiative, Commission for Environmental Cooperation, 2008 Renewable Energy Certificates, EPA's Green Power Partnership, Environmental Protection Agency, 2008
	<b>Water Management</b>
WM1	The Soft Path for Water in a Nutshell, Oliver M. Brandes and David B. Brooks, University of Victoria Low Impact Development Strategies and Tools for NPDES Phase II Communities, U.S. EPA Office of Water Master Environmental Servicing Plan Requirements In support of Secondary Plans, 2007, Toronto and Region Conservation Authority
WM2	Understanding Stormwater Management: An Introduction to Stormwater Management Planning and Design, Ministry of Environment, 2003 Low Impact Development Stormwater Management Planning and Design Guide, Credit Valley Conservation and Toronto Region Conservation Authority, 2010 Stormwater Management Planning and Design Manual, 2003, Ministry of Environment Sustainable Technologies Evaluation Program Website, Toronto and Region Conservation Authority Ontario Guidelines for Residential Rainwater Harvesting Systems, Christopher Despina, 2010 Residential Rainwater Harvesting Design And Installation Best Practices Manual, City of Guelph, 2011 Clean Water Collector (CWC) System Implementation Report, Clarifica Water Resources and Environmental Consulting and Schaeffers Consulting Engineers



WM3	York Region Water Efficiency: An At Home Guide, Water for Tomorrow Long Term Water Conservation Strategy, York Region
WM4	CVC/TRCA SWM DESIGN GUIDELINE MANUAL: Rainwater Harvesting Guidelines for Residential Rainwater Harvesting Systems Manual, Canadian Mortgage and Housing Corporation Residential Rainwater Harvesting Design And Installation Best Practices Manual, City of Guelph, 2011 Evaluating the Feasibility and Developing Design Requirements and Tools for Large-scale Rainwater Harvesting in Ontario, Canadian Mortgage and Housing Corporation, Research Highlight, 2009
WM5	York Region Water Efficient Plants Selection Guide, Water for Tomorrow Program, York Region A Selection of Native Plants for your Garden, Toronto and Region Conservation Authority Beautiful Lawns and Gardens Through Water-Efficient Landscaping, Ontario Clean Water Agency. Water Efficient Landscaping: Preventing Pollution and Using Resources Wisely, Environmental Protection Agency
WM6	Low impact Development Manual, 2010 Toronto and Region Conservation Authority and Credit Valley Conservation Authority Toronto Green Roof Construction Standard Supplementary Guidelines, City of Toronto
	<b>Resource Management and Education</b>
RM1	A Guide to Waste Audits and Waste Reduction Work Plans for Construction and Demolition Project, Ministry of Environment Construction Management Plan, United States Environmental Protection Agency DLC Waste Management Toolkit, Greater Vancouver Regional District
RM2	THREE-STREAM WASTE MANAGEMENT IN NEW HIGH-RISE RESIDENTIAL BUILDINGS, Planning and Economic Development Committee, June 24th, 2010, York Region City of Vaughan Waste Collection Standards, City of Vaughan
RM3	EcoLogo, Canadian third party eco-labeling program for environmentally preferable products OntarioGreenSpec.ca, Ontario Green Building Products and Services Website Database of Environmental Information for Products and Services, Environmental Preferable Purchasing, Environmental Protection Agency
RM4	LEED Rating Systems, Canadian Green Building Council Website OntarioGreenSpec.ca, Ontario Green Building Products and Services Website Restoration Services Buildings, Toronto and Region Conservation Authority, SAB Magazine, March/April 2008, Jim Taggart
RM5	LEED Canada for Homes 2009, Rating System, Canadian Green Building Council







# Checklists



# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
Directing Growth	DG1	That local municipalities prepare comprehensive secondary plans for new community areas That each new community area shall be planned in a comprehensive and co-ordinated manner	5.6.1 5.6.2	<input type="checkbox"/> <input type="checkbox"/>	
	DG2	To require that cultural heritage resources be identified and conserved	3.4.6 3.4.10	<input type="checkbox"/> <input type="checkbox"/>	
	DG3	That new community areas shall meet or exceed a minimum density of 20 residential units per hectare and a minimum density of 70 residents and jobs per hectare in the developable area	5.6.3	<input type="checkbox"/>	
	DG4	That new community areas shall contain a wide range and mix of housing types, sizes and affordability To encourage the construction of new rental units with a full mix and range of unit sizes	5.6.4 3.5.20	<input type="checkbox"/>	<input type="checkbox"/>
	DG5	That local municipalities prepare comprehensive secondary plans for new employment lands To allow a limited amount of ancillary uses on employment lands That employment land development be designed to be walkable and transit accessible That development of fully serviced employment lands be compact and achieve an average minimum density of 40 jobs per hectare in the developable area To work with local municipalities to provide a diverse mix of lot sizes on employment lands	4.3.14 4.3.11 4.3.15 4.3.16 4.3.17	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
	CD1	That new community areas shall contain community core areas within a reasonable walking distance from the majority of the population To require underground installation of utilities in new community areas and Regional Centres and Corridors To require that new retail be walkable, transit-supportive, and integrated into communities and pedestrian and cycling networks	5.6.5 7.56 4.4.1	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
Community Design	CD2	That new community areas shall have high-quality urban design, attractive buildings, landscaping and public streetscapes To employ the highest standard of urban design That retail, commercial, office and institutional structures be carefully designed in compact form and be pedestrian-oriented, transit-supportive and multi-storey where applicable	5.6.7 5.2.8 (a- h) 5.2.9	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
	CD3	That within new community areas, live-work opportunities be provided through a combination of flexible zoning permissions and accommodations for combined residential and business or personal services, office use and home occupations	5.6.6	<input type="checkbox"/>	
	CD4	That new community areas shall be planned to consider human services needs, including educational, social, health, arts, culture and recreational facilities That public health and other human services be incorporated into the design and evaluation of new community areas and Regional Centres and Corridors To require local municipalities to prepare detailed sequencing plans within each secondary plan	5.6.8 3.1.5 5.1.9	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	CD5	That a minimum 25% of new housing units are affordable or that development demonstrates how it contributes to a minimum of 25% affordable housing in the Region To encourage the development of intrinsically affordable housing	3.5.6 3.5.8	<input type="checkbox"/>	<input type="checkbox"/>
	CD6	That communities be designed to ensure accessibility to people of all ages, culture and abilities To ensure that public building and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling and transit systems That communities be designed in a manner that facilitates inclusivity and accessibility for residents, workers and visitors To encourage accessibility features in all new housing	5.2.7 3.3.5 3.3.11 3.5.19	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>



# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
	CD7	To encourage local heat island effects mitigation in all development That new community areas be designed so as to reduce urban heat island effects and consider integrating green and white roofs, greening to provide shade and light-coloured surface materials	5.2.34 (a- c) 5.6.16	<input type="checkbox"/>	<input type="checkbox"/>
	CD8	To require health, environmental and cumulative air quality impact studies that assess the impact on human health for development with significant known or potential air emission levels near sensitive uses such as schools, daycares and seniors' facilities That sensitive uses such as schools, daycares and seniors' facilities not be located near significant known air emissions sources such as controlled access provincial 400-series highways To reduce vehicle emissions by ensuring that communities are designed to prioritize pedestrians and cyclists, reduce single occupancy automobile use and support public transit and transportation demand management initiatives To discourage the location of land uses sensitive to noise and vibration and safety issues, in proximity to rail facilities, rail corridors and intermodal yards, to avoid issues of compatibility	3.2.5 3.2.6 3.2.3 7.2.71	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
	ST1	That a mobility plan is prepared consistent with policy 5.6.12 That development requiring Regional approval is supported by a transportation study	5.6.12 (a-j) 5.2.4	<input type="checkbox"/> <input type="checkbox"/>	
	ST2	That communities are designed to ensure walkability That development is designed to provide walkability and accessibility To ensure that public buildings and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling and transit systems	5.2.3 5.2.8 (f) 3.3.5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
Sustainable Transportation	ST3	That new community areas shall be designed to implement the York Region Pedestrian and Cycling Master Plan.	5.6.13	<input type="checkbox"/>	
		That the York Region Pedestrian and Cycling Master Plan's Planning and Design Guidelines are applied	7.2.3	<input type="checkbox"/>	
		Mobility plans shall be completed to ensure that communities are designed with an interconnected system of pedestrian and bicycle paths	5.6.12 (b)	<input type="checkbox"/>	
	ST4	Mobility plans shall be completed to ensure that communities are designed so transit can easily service the majority of the population	5.6.12 (c, d, h)	<input type="checkbox"/>	
		To achieve higher transit usage by creating a system of parking and drop off facilities for commuters	7.2.25 (e)		<input type="checkbox"/>
	ST5	That development is designed to meet or exceed the York Region Transit-Oriented Development Guidelines	5.2.8 (g)	<input type="checkbox"/>	
		That mobility plans are completed to ensure that new community areas are designed to meet the York Region Transit-Oriented Development Guidelines	5.6.12 (g)	<input type="checkbox"/>	
		To require new development applications to demonstrate how the proposed development is transit-oriented	7.1.7	<input type="checkbox"/>	
	ST6	That mobility plans shall be completed to ensure that trip-reduction strategies consistent with policies of Section 7.1 are promoted	5.6.12 (j)	<input type="checkbox"/>	
		To work with local municipalities and the building and land development industry to provide information on the sustainability features of their communities including water and energy conservation, and mobility options	5.2.38		<input type="checkbox"/>
		That secondary plans and zoning by-laws shall incorporate standards that include preferential locations for carpooling and car-sharing spaces and bicycle storage requirements	5.2.10 (f)	<input type="checkbox"/>	



# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
	ST7	That mobility plans shall be completed to ensure that parking standards are consistent with policy 5.2.10 That secondary plans and zoning by-laws shall incorporate parking management policies and standards	5.6.12 (i) 5.2.10 (a-f)	<input type="checkbox"/> <input type="checkbox"/>	
Open Space Natural Heritage	NH1	That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment To require a Greenlands System Plan as a component of secondary plans that is consistent with policy 5.6.14 of this Plan	5.6.14 (a-g) 2.1.11	<input type="checkbox"/> <input type="checkbox"/>	
	NH2	That the Regional Greenlands System plan evaluates the potential impacts of development on key natural heritage and hydrologic features	5.6.14 (a)	<input type="checkbox"/>	
	NH3	That the Regional Greenlands System plan identifies areas and opportunities for enhancement and restoration	5.6.14 (b)	<input type="checkbox"/>	
	NH4	A Greenlands System Plan shall be prepared that identifies infrastructure that minimizes impacts and enhances the system That infrastructure design and construction minimize impacts and enhance the system That the planning, design and construction of infrastructure projects within the Regional Greenlands System shall enhance the system	5.6.14 (c, d) 2.1.12 2.1.13	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	NH5	To undertake land securement focused primarily within the Regional Greenlands System That land securement initiatives assist in implementing the Regional Greenlands System trails network	2.1.14 2.1.17	<input type="checkbox"/> <input type="checkbox"/>	
	NH6	That the Regional Greenlands System plan identifies a trail system with the Greenlands System To work with local municipalities, conservation authorities and trail organizations on initiatives that contribute to, or complement, the creation of a Regional Greenlands System trails network	5.6.14 (e) 2.1.18	<input type="checkbox"/> <input type="checkbox"/>	

# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
	NH7	That the Regional Greenlands System plan examines the feasibility of providing local community garden plots To support locally grown and produced agricultural products To support local food production and procurement To support York Region's agricultural industry by encouraging the provision of community gardens and other urban agriculture practices	5.6.14 (f)  3.1.8 6.3.16 6.3.17 (d)	<input type="checkbox"/>	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	NH8	That new community areas be designed to include an integrated open space network	5.6.15		<input type="checkbox"/>
	NH9	That new community areas shall be planned to consider human services needs, including educational, social, health, arts, culture and recreational facilities.	5.6.8		<input type="checkbox"/>
Sustainable Buildings	SB1	To work with local municipalities and the development community to achieve energy efficiency levels that exceed the Ontario Building and the Model National Energy Code	5.2.20		<input type="checkbox"/>
	SB2	To encourage energy efficiency and conservation targets for new buildings	5.2.21		<input type="checkbox"/>
	SB3	That development shall include a solar design strategy which identifies approaches that maximize solar gains and facilitates future solar installations To encourage all new building to include on-site renewable or alternative energy systems	5.2.26 5.2.28	<input type="checkbox"/>	 <input type="checkbox"/>
	SB4	That new buildings work to achieve 10% greater water conservation than the Ontario Building Code That new buildings are encouraged to achieve 20% greater water conservation than the Ontario Building Code	5.2.22 5.2.23	<input type="checkbox"/>	 <input type="checkbox"/>

# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
	SB5	To encourage new buildings to be designed and certified to LEED® Silver, Gold or Platinum standards, and to provide complementary incentive programs	5.2.24		<input type="checkbox"/>
	SB6	That buildings are encouraged to achieve enhanced indoor air quality	5.2.29		<input type="checkbox"/>
	SB7	To regularly review and update sustainable building incentive programs	5.2.25	<input type="checkbox"/>	
Energy Efficiency	EE1	The local municipality shall develop a Community Energy Plan for each new community area	5.6.10	<input type="checkbox"/>	
	EE2	That new community areas be designed to maximize solar gains, and to ensure that all buildings are constructed in a manner that facilitates future solar installations That development shall include a solar design strategy	5.6.9 5.2.26	<input type="checkbox"/> <input type="checkbox"/>	
	EE3	To encourage all new buildings to include on-site renewable or alternative energy systems which produce 25% of building energy use	5.2.28		<input type="checkbox"/>
Water Management	WM1	Comprehensive master environmental servicing plans shall be prepared and implemented to increase water conservation and efficiency	5.6.11 (a – c)	<input type="checkbox"/>	
	WM2	Comprehensive master environmental servicing plans shall be prepared and implemented to utilize innovative techniques for stormwater management To require the preparation of comprehensive master environmental servicing plans as a component the development process to minimize stormwater impacts	5.6.11 (c) 2.3.13	<input type="checkbox"/> <input type="checkbox"/>	
	WM3	To restrict the use of potable water for outdoor watering	5.2.31	<input type="checkbox"/>	
	WM4	To require the installation of rainwater harvesting systems on all new residential buildings for outdoor irrigation and outdoor water use	5.2.32	<input type="checkbox"/>	
	WM5	To encourage the use of water conserving, drought resistant landscaping	5.2.33 (a-c)		<input type="checkbox"/>
	WM6	To encourage local heat island effects mitigation in all development	5.2.34 (a-c)		<input type="checkbox"/>



# Checklist 1 - New Community Areas

Category		Guideline	ROP Policy	Required	Optional
Resource Management and Education	RM1	To ensure that all new development reduces construction waste and diverts construction waste from landfill consistent with policy 7.4.14 of this Plan	5.2.36		<input type="checkbox"/>
		To encourage the diversion of construction and demolition waste to meet or exceed the Region's diversion targets of policy of 7.4.2	7.4.14		<input type="checkbox"/>
		To surpass waste management regulatory requirements	7.4.2 (a-c)	<input type="checkbox"/>	
	RM2	To require that all new multi-unit residential buildings incorporate three-stream waste collection capabilities	7.4.9	<input type="checkbox"/>	
		To work with local municipalities to require existing multi-unit residential buildings to participate in three-stream waste collection	7.4.10		<input type="checkbox"/>
		To work towards three-stream waste collection in Regional facilities	7.4.11	<input type="checkbox"/>	
	RM3	To encourage the use of environmentally preferable materials in all new development	5.2.30		<input type="checkbox"/>
		That buildings are encouraged to achieve enhanced indoor air quality	5.2.29		<input type="checkbox"/>
	RM4	To encourage the use of locally/regionally sourced building materials	5.2.35		<input type="checkbox"/>
	RM5	To develop resident, building owner and operator educational materials and training on sustainable buildings	5.2.37		<input type="checkbox"/>
		To provide each resident, worker and employer with information on the sustainability features of their communities	5.2.38		<input type="checkbox"/>



## Checklist 2: New Communities Guidelines Applicable Region-wide

Category		Guideline	ROP Policy	Required	Optional
Directing Growth	DG4	That new community areas shall contain a wide range and mix of housing types, sizes and affordability To encourage the construction of new rental units with a full mix and range of unit sizes	5.6.4 3.5.20	<input type="checkbox"/>	<input type="checkbox"/>
	DG5	That local municipalities prepare comprehensive secondary plans for new employment lands That employment land development be designed to be walkable and transit accessible That development of fully serviced employment lands be compact and achieve an average minimum density of 40 jobs per hectare in the developable area	4.3.14 4.3.15 4.3.16	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	CD1	To require underground installation of utilities in new community areas and Regional Centres and Corridors To require that new retail be walkable, transit-supportive, and integrated into communities and pedestrian and cycling networks	7.5.6 4.4.1	<input type="checkbox"/> <input type="checkbox"/>	
	CD2	To employ the highest standard of urban design. That retail, commercial, office and institutional structures be carefully designed in compact form and be pedestrian-oriented, transit-supportive and multi-storey where applicable	5.2.8 (a- h) 5.2.9	<input type="checkbox"/>	<input type="checkbox"/>
Community Design	CD4	To require local municipalities to prepare detailed sequencing plans within each secondary plan	5.1.9	<input type="checkbox"/>	
	CD5	That a minimum 25% of new housing units are affordable or that development demonstrates how it contributes to a minimum of 25% affordable housing in the Region To encourage the development of intrinsically affordable housing	3.5.6 3.5.8	<input type="checkbox"/>	<input type="checkbox"/>



## Checklist 2: New Communities Guidelines Applicable Region-wide

Category		Guideline	ROP Policy	Required	Optional
Community Design	CD6	That communities be designed to ensure accessibility to people of all ages, culture and abilities	5.2.7	<input type="checkbox"/>	
		To ensure that public building and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling and transit systems	3.3.5	<input type="checkbox"/>	
		That communities be designed in a manner that facilitates inclusivity and accessibility for residents, workers and visitors	3.3.11	<input type="checkbox"/>	
		To encourage accessibility features in all new housing	3.5.19		<input type="checkbox"/>
	CD7	To encourage local heat island effects mitigation in all development	5.2.34 (a- c)		<input type="checkbox"/>
	CD8	To require health, environmental and cumulative air quality impact studies that assess the impact on human health for development with significant known or potential air emission levels near sensitive uses such as schools, daycares and seniors' facilities	3.2.5	<input type="checkbox"/>	
		That sensitive uses such as schools, daycares and seniors' facilities not be located near significant known air emissions sources such as controlled access provincial 400-series highways	3.2.6	<input type="checkbox"/>	
		To reduce vehicle emissions by ensuring that communities are designed to prioritize pedestrians and cyclists, reduce single occupancy automobile use and support public transit and transportation demand management initiatives	3.2.3	<input type="checkbox"/>	
		To discourage the location of land uses sensitive to noise and vibration and safety issues, in proximity to rail facilities, rail corridors and intermodal yards, to avoid issues of compatibility	7.2.71		<input type="checkbox"/>
	ST1	That development requiring Regional approval is supported by a transportation study	5.2.4	<input type="checkbox"/>	
	ST2	That communities are designed to ensure walkability	5.2.3	<input type="checkbox"/>	
		That development is designed to provide walkability and accessibility	5.2.8 (f)	<input type="checkbox"/>	
		To ensure that public buildings and facilities are designed to be accessible, and are located in proximity to pedestrian, cycling and transit systems.	3.3.5	<input type="checkbox"/>	

## Checklist 2: New Communities Guidelines Applicable Region-wide

Category		Guideline	ROP Policy	Required	Optional
Sustainable Transportation	ST3	That the York Region Pedestrian and Cycling Master Plan's Planning and Design Guidelines are applied  Mobility plans shall be completed to ensure that communities are designed with an interconnected system of pedestrian and bicycle paths	7.2.3  5.6.12 (b)	<input type="checkbox"/>  <input type="checkbox"/>	
	ST4	To achieve higher transit usage by creating a system of parking and drop off facilities for commuters  That development is designed to meet or exceed the York Region Transit-Oriented Development Guidelines	5.6.12 (c, d, h) 5.2.8 (g)	<input type="checkbox"/>	<input type="checkbox"/>
	ST5	That development is designed to meet or exceed the York Region Transit-Oriented Development Guidelines  To require new development applications to demonstrate how the proposed development is transit-oriented	5.2.8 (g)  7.1.7	<input type="checkbox"/>  <input type="checkbox"/>	
	ST6	To work with local municipalities and the building and land development industry to provide information on the sustainability features of their communities including water and energy conservation, and mobility options  That secondary plans and zoning by-laws shall incorporate standards that include preferential locations for carpooling and car-sharing spaces and bicycle storage requirements	5.2.38  5.2.10 f)		<input type="checkbox"/>  <input type="checkbox"/>
	ST7	That secondary plans and zoning by-laws shall incorporate parking management policies and standards	5.2.10 (a-f)	<input type="checkbox"/>	
	NH1	To require a Greenlands System Plan as a component of secondary plans that is consistent with policy 5.6.14 of this Plan	2.1.11	<input type="checkbox"/>	

## Checklist 2: New Communities Guidelines Applicable Region-wide

Category		Guideline	ROP Policy	Required	Optional
Open Space and Natural Heritage	NH2	That the Regional Greenlands System plan evaluates the potential impacts of development on key natural heritage and hydrologic features	5.6.14 (a)	<input type="checkbox"/>	
	NH4	That infrastructure design and construction minimize impacts and enhance the system That the planning, design and construction of infrastructure projects within the Regional Greenlands System shall enhance the system	2.1.12	<input type="checkbox"/>	
			2.1.13	<input type="checkbox"/>	
	NH5	To undertake land securement focused primarily within the Regional Greenlands System That land securement initiatives assist in implementing the Regional Greenlands System trails network	2.1.14	<input type="checkbox"/>	
			2.1.17	<input type="checkbox"/>	
	NH6	To work with local municipalities, conservation authorities and trail organizations on initiatives that contribute to, or complement, the creation of a Regional Greenlands System trails network	2.1.18	<input type="checkbox"/>	
Sustainable Buildings	NH7	To support locally grown and produced agricultural products	3.1.8		<input type="checkbox"/>
		To support local food production and procurement	6.3.16		<input type="checkbox"/>
		To support York Region's agricultural industry by encouraging the provision of community gardens and other urban agriculture practices	6.3.17 (d)		<input type="checkbox"/>
	SB1	To work with local municipalities and the development community to achieve energy efficiency levels that exceed the Ontario Building and the Model National Energy Code	5.2.20		<input type="checkbox"/>
	SB2	To encourage very high energy efficiency and conservation targets for new buildings	5.2.21		<input type="checkbox"/>
	SB3	That development shall include a solar design strategy which identifies approaches that maximize solar gains and facilitates future solar installations	5.2.26	<input type="checkbox"/>	
	SB4	That new buildings work to achieve 10% greater water conservation than the Ontario Building Code	5.2.22	<input type="checkbox"/>	
		That new buildings are encouraged to achieve 20% greater water conservation than the Ontario Building Code	5.2.23		<input type="checkbox"/>



## Checklist 2: New Communities Guidelines Applicable Region-wide

Category		Guideline	ROP Policy	Required	Optional
	SB5	To encourage new buildings to be designed and certified to LEED® Silver, Gold or Platinum standards, and to provide complementary incentive programs	5.2.24		<input type="checkbox"/>
	SB6	That buildings are encouraged to achieve enhanced indoor air quality	5.2.29		<input type="checkbox"/>
	SB7	To regularly review and update sustainable building incentive programs	5.2.25	<input type="checkbox"/>	
Energy Efficiency	EE2	That development shall include a solar design strategy	5.2.26	<input type="checkbox"/>	
	EE3	To encourage all new buildings to include on-site renewable or alternative energy systems that produce 25% of building energy use	5.2.28	<input type="checkbox"/>	
Water Management	WM2	To require the preparation of comprehensive master environmental servicing plans as a component the development process to minimize stormwater impacts	2.3.13	<input type="checkbox"/>	
	WM3	To restrict the use of potable water for outdoor watering	5.2.31	<input type="checkbox"/>	
	WM4	To require the installation of rainwater harvesting systems on all new residential buildings for outdoor irrigation and outdoor water use	5.2.32	<input type="checkbox"/>	
	WM5	To encourage the use of water conserving, drought resistant landscaping	5.2.33 (a-c)		<input type="checkbox"/>
	WM6	To encourage local heat island effects mitigation in all development	5.2.34 (a-c)		<input type="checkbox"/>
	RM1	To ensure that all new development reduces construction waste and diverts construction waste from landfill consistent with policy 7.4.14 of this Plan	5.2.36	<input type="checkbox"/>	<input type="checkbox"/>
		To encourage the diversion of construction and demolition waste to meet or exceed the Region's diversion targets of policy of 7.4.2.	7.4.14		
		To surpass waste management regulatory requirements	7.4.2 (a-c)	<input type="checkbox"/>	

## Checklist 2: New Communities Guidelines Applicable Region-wide

Category		Guideline	ROP Policy	Required	Optional
Resource Management	RM2	To require that all new multi-unit residential buildings incorporate three-stream waste collection capabilities	7.4.9	<input type="checkbox"/>	
		To work with local municipalities to require existing multi-unit residential buildings to participate in three-stream waste collection.	7.4.10	<input type="checkbox"/>	
		To work towards three-stream waste collection in Regional facilities.	7.4.11		<input type="checkbox"/>
	RM3	To encourage the use of environmentally preferable materials in all new development	5.2.30		<input type="checkbox"/>
		That buildings are encouraged to achieve enhanced indoor air quality	5.2.29		<input type="checkbox"/>
	RM4	To encourage the use of locally/regionally sourced building materials	5.2.35		<input type="checkbox"/>
	RM5	To develop resident, building owner and operator educational materials and training on sustainable buildings.	5.2.37		<input type="checkbox"/>
		To provide each resident, worker and employer with information on the sustainability features of their communities	5.2.38		<input type="checkbox"/>

# Checklist 3: New Communities Guidelines Applicable to Employment lands

Category		Guideline	ROP Policy	Required	Optional
Directing Growth	DG5	That local municipalities, in consultation with York Region, prepare comprehensive secondary plans for new employment lands that are consistent with the applicable policies in Sections 5.2 and 5.6 of this Plan	4.3.14	<input type="checkbox"/>	
		That development on fully services employment lands be compact and achieve a region-wide average minimum density of 40 jobs per hectare in the developable area This target is expected to be higher for lands adjacent to centres and corridors	4.3.16	<input type="checkbox"/>	
		To require local municipalities to include employment land conversion policies within local official plans and secondary plans that are consistent with the employment land conversion policies of the Province and the Region	4.3.10	<input type="checkbox"/>	
		To allow a limited amount of ancillary uses on employment lands, provided that the proposed uses are intended to primarily service businesses in the employment lands and that ancillary uses collectively do not exceed 15% of an employment area as defined in the local official plan	4.3.11	<input type="checkbox"/>	
		To require local municipalities, through local official plan policies, to determine the location, amount and size of ancillary uses on employment lands that is commensurate with the planned function, size and scale of the overall employment land area	4.3.12	<input type="checkbox"/>	
		That local municipalities include official plan and secondary plan policies and zoning provisions to allow only employment and ancillary uses on Local Corridors and other major streets within employment lands	4.3.13	<input type="checkbox"/>	
	CD1	That new community areas shall have high-quality urban design, attractive buildings, landscaping and public streetscapes	5.6.7	<input type="checkbox"/>	
		To employ the highest standard of urban design	5.2.8 (a- h)	<input type="checkbox"/>	
		That retail, commercial, office and institutional structures be carefully designed in compact form and be pedestrian-oriented, transit-supportive and multi-storey where applicable	5.2.9		<input type="checkbox"/>



# Checklist 3: New Communities Guidelines Applicable to Employment lands

Category		Guideline	ROP Policy	Required	Optional
Community Design	CD3	To require local municipalities to prepare detailed sequencing plans within each secondary plan	5.1.9	<input type="checkbox"/>	
	CD5	That communities be designed to ensure accessibility to people of all ages, culture and abilities Urban design to provide pedestrian scale, safety, comfort, accessibility and walkability	5.2.7	<input type="checkbox"/>	
			5.2.8 (a, f)	<input type="checkbox"/>	
	CD6	To encourage local heat island effects mitigation in all development	5.2.34 (a- c)		<input type="checkbox"/>
	CD7	To require health, environmental and cumulative air quality impact studies that assess the impact on human health for development with significant known or potential air emission levels near sensitive uses such as schools, daycares and seniors' facilities	3.2.5	<input type="checkbox"/>	
		That sensitive uses such as schools, daycares and seniors' facilities not be located near significant known air emissions sources such as controlled access provincial 400-series highways	3.2.6	<input type="checkbox"/>	
		To discourage the location of land uses sensitive to noise and vibration and safety issues, in proximity to rail facilities, rail corridors and intermodal yards, to avoid issues of compatibility	7.2.71		
	ST1	That a mobility plan is prepared consistent with policy 5.6.12 That development requiring Regional approval is supported by a transportation study	5.6.12 (a-j)	<input type="checkbox"/>	
			5.2.4	<input type="checkbox"/>	
	ST2	Mobility plans shall be completed to ensure that communities are designed with an interconnected transportation system That communities are designed to ensure walkability	5.6.12 (a, b, e, f) 5.2.3	<input type="checkbox"/> <input type="checkbox"/>	

# Checklist 3: New Communities Guidelines Applicable to Employment lands

Category		Guideline	ROP Policy	Required	Optional
Sustainable Transportation	ST3	That employment land development be designed to be both walkable and transit accessible where possible  That development is designed to provide walkability and accessibility  To ensure that public buildings and facilities are designed to be accessible and are located in proximity to pedestrian, cycling and transit systems	4.3.15  5.2.8 (f) 3.3.5	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
	ST6	That development is designed to meet or exceed the York Region Transit-Oriented Development Guidelines  To require new development applications to demonstrate how the proposed development is transit-oriented	5.2.8 (g)  7.1.7	<input type="checkbox"/> <input type="checkbox"/>	
	ST7	That mobility plans shall be completed to ensure that trip-reduction strategies consistent with policies of Section 7.1 are promoted  That secondary plans and zoning by-laws shall incorporate standards that include preferential locations for carpooling and car-sharing spaces and bicycle storage requirements	5.6.12 (j)  5.2.10 (f)	<input type="checkbox"/>	<input type="checkbox"/>
	ST8	That mobility plans shall be completed to ensure that parking standards are consistent with policy 5.2.10  That secondary plans and zoning by-laws shall incorporate parking management policies and standards	5.6.12 (i)  5.2.10 (a-f)	<input type="checkbox"/> <input type="checkbox"/>	
	NH1	That a Greenlands System Plan shall be prepared that identifies how the Greenlands System will be managed in an urban environment  To require a Greenlands System Plan as a component of secondary plans that is consistent with policy 5.6.14 of this Plan	5.6.14 (a-g)  2.1.11	<input type="checkbox"/> <input type="checkbox"/>	
Open Space and Natural Heritage	SB1	To work with local municipalities and the development community to achieve energy efficiency levels that exceed the Ontario Building and the Model National Energy Code	5.2.20		<input type="checkbox"/>

# Checklist 3: New Communities Guidelines Applicable to Employment lands

Category		Guideline	ROP Policy	Required	Optional
Sustainable Buildings	SB2	To encourage energy efficiency and conservation targets for new buildings	5.2.21 (a, b, c)		<input type="checkbox"/>
	SB3	That development shall include a solar design strategy which identifies approaches that maximize solar gains and facilitates future solar installations	5.2.26	<input type="checkbox"/>	
		That new community areas shall be designed to maximize passive solar gains, and be constructed in a manner that facilitates future solar installations	5.6.9	<input type="checkbox"/>	
	SB4	That new buildings work to achieve 10% greater water conservation than the Ontario Building Code	5.2.22	<input type="checkbox"/>	
		That new buildings are encouraged to achieve 20% greater water conservation than the Ontario Building Code	5.2.23		<input type="checkbox"/>
	SB5	To encourage new buildings to be designed and certified to LEED® Silver, Gold or Platinum standards, and to provide complementary incentive programs	5.2.24		<input type="checkbox"/>
	SB6	That buildings are encouraged to achieve enhanced indoor air quality	5.2.29		<input type="checkbox"/>
Energy Efficiency	EE1	The local municipality shall develop a Community Energy Plan for each new community area	5.6.10	<input type="checkbox"/>	
	EE2	That new community areas be designed to maximize solar gains, and to ensure that all buildings are constructed in a manner that facilitates future solar installations	5.6.9	<input type="checkbox"/>	
		That development shall include a solar design strategy	5.2.26	<input type="checkbox"/>	
	EE3	To encourage all new buildings to include on-site renewable or alternative energy systems which produce 25% of building energy use	5.2.28		<input type="checkbox"/>
	WM1	Comprehensive master environmental servicing plans shall be prepared and implemented to increase water conservation and efficiency	5.6.11 (a–c)	<input type="checkbox"/>	



# Checklist 3: New Communities Guidelines Applicable to Employment lands

Category		Guideline	ROP Policy	Required	Optional
Water Management	WM2	To require the preparation of comprehensive master environmental servicing plans as a component of the development process to minimize stormwater impacts	2.3.37	<input type="checkbox"/>	
	WM3	To restrict the use of potable water for outdoor watering.	5.2.31	<input type="checkbox"/>	
	WM4	To require the installation of rainwater harvesting systems on all new residential buildings for outdoor irrigation and outdoor water use.	5.2.32	<input type="checkbox"/>	
	WM5	To encourage the use of water conserving, drought resistant landscaping	5.2.33 (a-d)		<input type="checkbox"/>
	WM6	To encourage local heat island effects mitigation in all development	5.2.34 (a-c)		<input type="checkbox"/>
Resource Management and Education	RM1	To encourage the diversion of construction and demolition waste to meet or exceed the Region's diversion targets of policy 7.4.2. To surpass waste management regulatory requirements	7.4.14 7.4.2 (a-c)	<input type="checkbox"/>	<input type="checkbox"/>
	RM3	To encourage the use of environmentally preferable materials in all new development That buildings are encouraged to achieve enhanced indoor air quality	5.2.30 5.2.29		<input type="checkbox"/> <input type="checkbox"/>
	RM4	To encourage the use of locally/regionally sourced building materials	5.2.35		<input type="checkbox"/>
	RM5	To develop resident, building owner and operator educational materials and training on sustainable buildings To provide each resident, worker and employer with information on the sustainability features of their communities	5.2.37 5.2.38	<input type="checkbox"/> <input type="checkbox"/>	

## THE REGIONAL MUNICIPALITY OF YORK

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