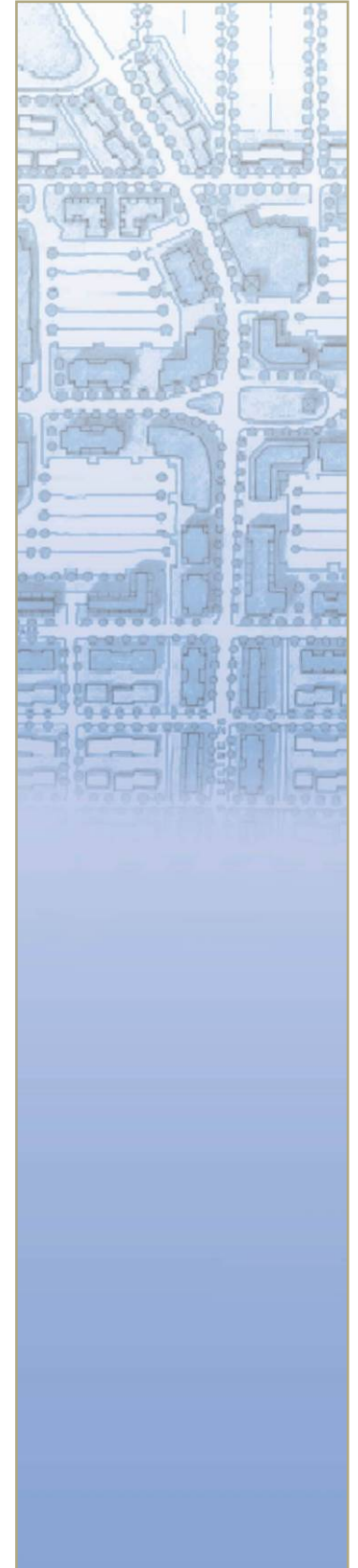


APPENDIX B  
GUIDELINE # 2

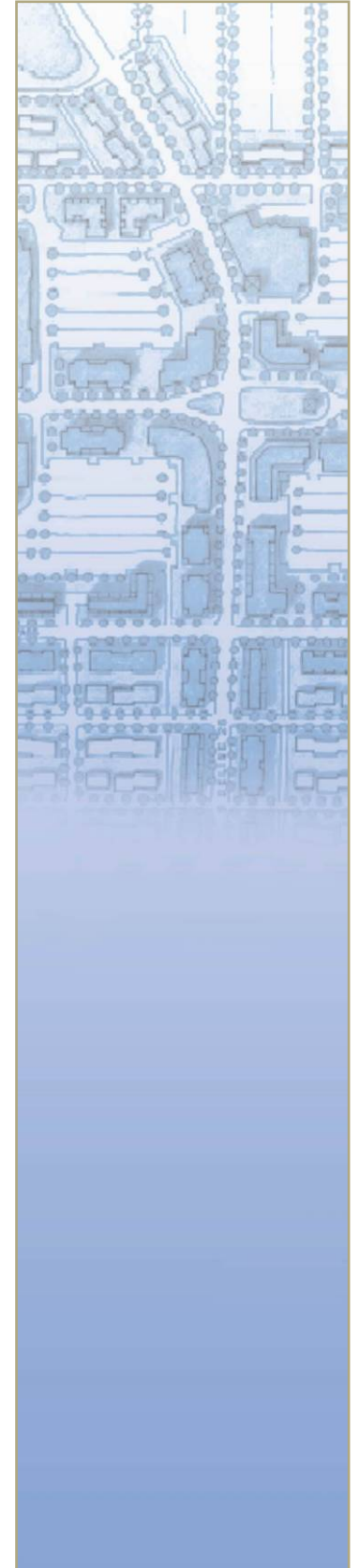
PLAN OF SUBDIVISION, SITE PLAN, REZONING AND BUILDING PERMIT GUIDELINES



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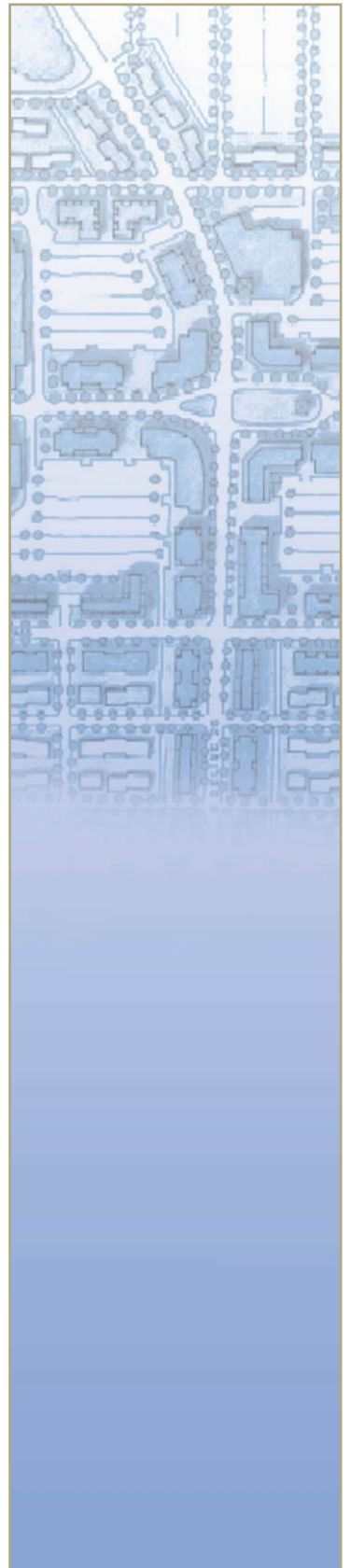
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Attachment A: Building Materials Check List  
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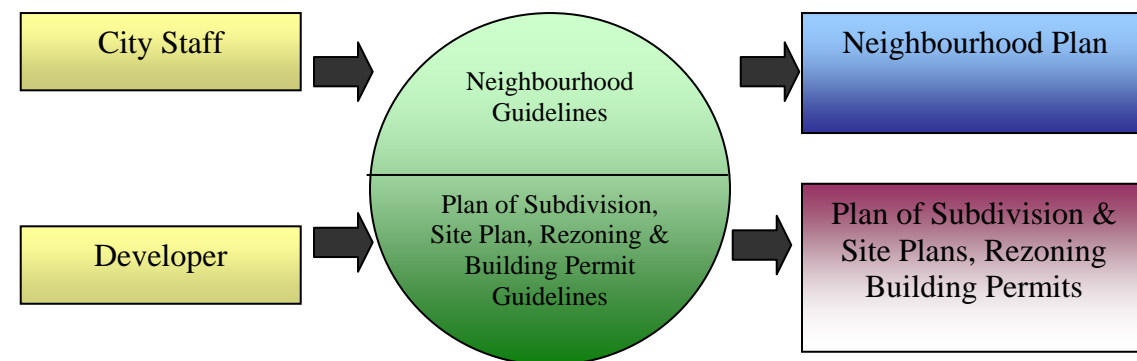
## GUIDELINE USER MANUAL - SUSTAINABLE DEVELOPMENT GUIDELINES

The following sections describe the Pickering Sustainable Development Guidelines for neighbourhoods and subdivisions/sites/buildings, and explain how to use the Guidelines.

### 0.1 WHO SHOULD USE THE GUIDELINES

These Guidelines are intended to be used by landowners, developers, consultants, designers, builders and City of Pickering staff. The Guidelines apply to two levels of detail in the planning process: one set of Guidelines, **Guideline #1**, for the preparation of neighbourhood plans (typically undertaken by the City) and a second set of more detailed Guidelines, **Guideline #2**, for plans of subdivision, site plans, rezoning and building permits (undertaken by developers/land owners/builders). The Guidelines are intended to apply to all new development – residential and employment for infill, redevelopment and new designated urban areas. Most applications in the City proceed in two phases. First, a Neighbourhood Plan is completed for a large area defining the street pattern, land use mix, phasing and servicing. Second, individual Plans of Subdivision and then Site Plans and Building Permits are pursued for blocks, lots and sites within the neighbourhood. Rezoning applications are also needed in some cases. These applications apply more detail to individual sites or blocks within a neighbourhood plan. Developments within the existing built boundary will typically not go through the neighbourhood plan phase. **Figure 2** graphically illustrates the process.

**Figure 2: Who Uses The Guidelines And What Are They Used For?**



### 0.2 DESCRIPTION OF THE GUIDELINES

As explained in **Section 0.1** there are two sets of Sustainable Development Guidelines. **Guideline #1** pertains to the preparation of neighbourhood plans. Guideline #2 is to be used for development of plans of subdivision, site plans, rezoning and building permits. Each set of Guidelines is divided into the following categories:




- Pre-Consultation;
- Environmental Protection;
- Location of Development/Selection of Lands;
- Design of Development, Land use and Distribution;
- Design of Development, Density and Compact Built Form;
- Design of Development, Connections;
- Resource Efficiency; and,
- Evolution/Monitoring.

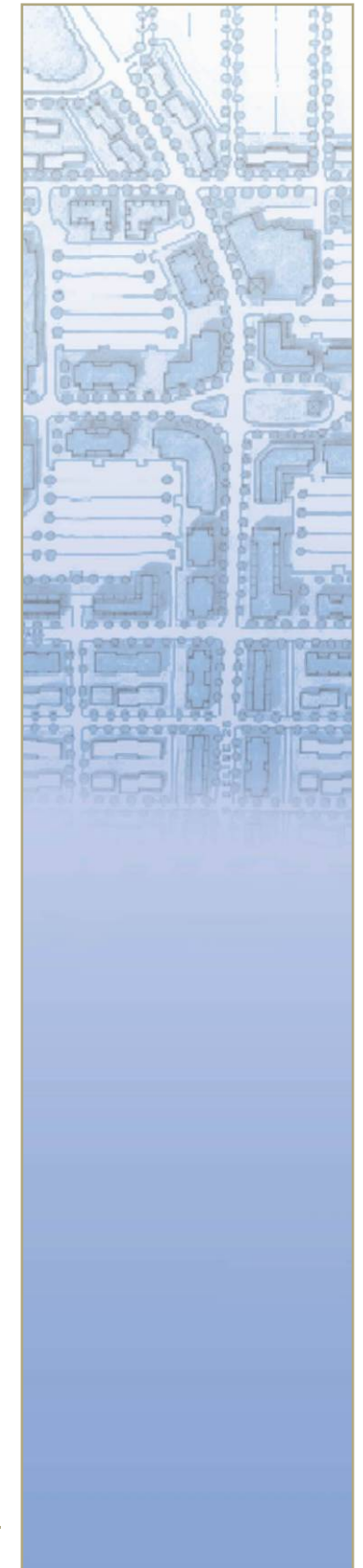
The Guidelines for plans of subdivision, site plans, rezoning and building permits also contain a section for Pedestrian Oriented Communities.

### 0.3 HOW TO USE THE GUIDELINES




Each guideline includes a combination of required and optional design criteria. The Required criteria are mandatory and must be met. No points are assigned for the required criteria.

For Guideline #1, the applicant may choose among the optional criteria to meet the following point targets:

- Level 1: 13 points 
- Level 2: 29 points 
- Level 3: 35 points 



For Guideline #2, the applicant may choose among the optional criteria to meet the following point targets:

Level 1: 19 points	
Level 2: 41 points	
Level 3: 80 points	

Level 1 is considered to be the minimum level of points required by all plans.

For Guideline #2, the intent is to meet Level 1 through a series of approvals. The mechanics for implementation of the Guidelines is intended to be developed through testing of and consultation on the Guideline.

Proponents of projects who exceed Level 1 will receive recognition by the City. Other benefits of meeting Levels 2 or 3 include marketing opportunities, possible access to provincial/federal or other green funds and the personal gratification of contributing to an improved quality of life and healthier environment. During the upcoming consultation on the Guidelines, the City intends to explore other incentives to encourage implementation of optional sustainable development elements.

The intent of the optional criteria is to allow flexibility for the applicant to choose criteria that reflect the unique character of the area/site and business or marketing plan of the applicant. The minimum optional level of points is considered to be easily achievable with minimum extra cost to the developer.

Applicants will demonstrate compliance with the criteria through the applications, designs and reports they submit to the City Planning & Development Department. For some criteria, consultation with the Toronto Region Conservation Authority will also take place to judge compliance. The criteria have been designed to allow a great deal of flexibility for applicants to be creative, innovative and to move beyond the boundaries of conventional design and development to demonstrate sustainable outcomes.

The City of Pickering will judge conformance with the criteria for each application received. Neighbourhood plans are typically completed by the City in consultation with affected land owners. Guideline #1 will be met through this process. The criteria in Guideline #2 will be met through the succession of applications at the site level, typically beginning with a Plan of Subdivision and ending with a Building Permit. Guideline #2 is designed to be flexible so that it applies to infill and redevelopment as well as development in designated urban areas.

The following provides examples of how the Guidelines will apply. The number which precedes each guideline, (such as 7.3 in example 1) refers to the section in the table where you will find the complete guideline, which includes the policy, status (required or optional), points allocation and graphics. Note that not all applications will apply to all development projects.

*Example 1: Pedestrian Safety and Comfort, Guideline #1*

*This guideline mandates that local street sections will be designed for both pedestrians and automobile use in a safe manner. The “R” indicates that this is a required element, applicable to the preparation of all Neighbourhood Plans. Since it is a required element, no points are awarded for meeting this guideline.*

**7.3 PEDESTRIAN SAFETY AND COMFORT (R)**

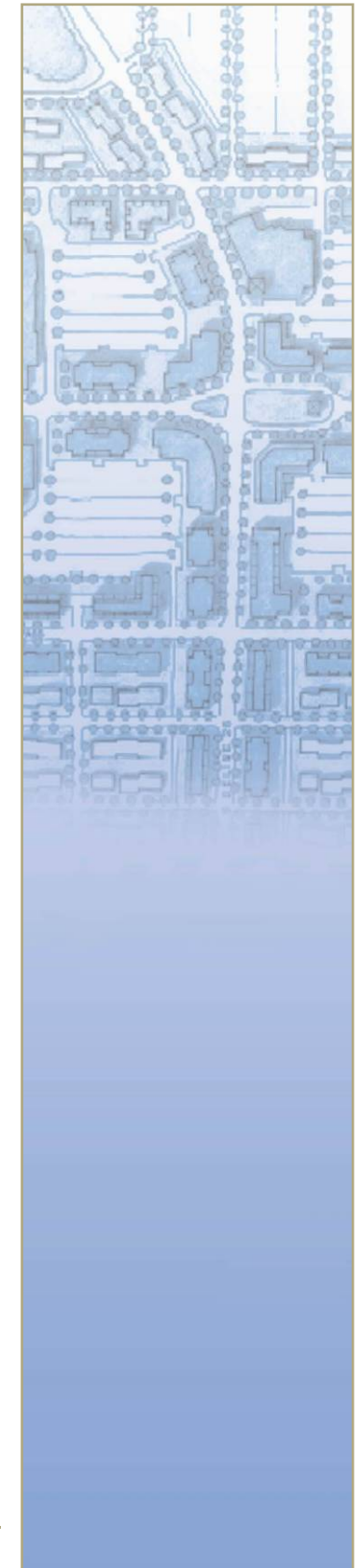
- *The plan establishes that local street sections will be scaled to achieve functional requirements while promoting an intimate pedestrian scale, slow traffic and optimized land use efficiency (refer to Section 6.3 of Plan of Subdivision/Site Plan Target for more details).*

*Example 2: Pedestrian Safety and Comfort, Guideline #2*

*This guideline is related to the example described above and provides an additional level of detail that cannot be addressed in the Neighbourhood Plan scale. The guideline provides specific measurements that will allow local streets to be designed for pedestrian safety and comfort, while maintaining the functional requirements of the road. The “R” indicates that this is a required element.*

**7.3 PEDESTRIAN SAFETY AND COMFORT (R)**

- *The plan designs local residential streets to achieve functional requirements while promoting an intimate pedestrian scale, slow traffic and optimized land use efficiency, including:*
  - *minimum of 18m right-of-way assuming 8.5m pavement width,*
  - *utilities in common trench;*
  - *sidewalk on one side only when density along street is less than 30 upnh;*
- *Further reduction from 18m with municipal approval (A rear lane system may offer the opportunity for some utilities to be located along the lane thereby allowing the street R.O.W. to be reduced);*
- *The plan will also accommodate for streetscape amenities such as:*
  - *benches;*
  - *street trees;*
  - *pedestrian scaled street lighting;*
  - *shelter at public areas such as awnings, arcades and setbacks; and,*
  - *curb cuts at intersections for accessibility.*



*Example 3: Energy Efficient Appliances, Guideline #2*

*This guideline is applicable at the building permit application stage of the planning process. The guideline is also an optional item, meaning that it is not required. The guideline is worth three points.*

**8.3 ENERGY EFFICIENT APPLIANCES (O)**

- *Where the builder is providing appliances, all Energy Star eligible appliances must be Energy Star compliant.*

*Example 4: Natural Habitat Protection, Guideline #1*

*This guideline is a general measure for capturing any efforts related to natural habitat protection that exceed the current provincial requirements. This is an optional guideline worth three points.*

**2.14 NATURAL HABITAT PROTECTION (O)**

- *The plan goes beyond provincial requirements and contains extraordinary provisions to restore natural habitat on and off-site. Achievement will be evaluated by the City in consultation with TRCA.*

*Example 5: Native Species and Planting*

*This guideline is a more specific policy that builds upon the one described in Example 4 above. The guideline is optional and offers a range of points (from 2-4) for incorporating varying amounts of native species into the project.*

**2.21 NATIVE SPECIES & PLANTING (O)**

- *The project uses native species for 50% of the landscaped area.*  
OR
- *The project uses native species for 75% of the landscaped area.*  
OR
- *The project uses native species for 100% of the landscaped area.*  
OR
- *The project incorporates a site design for native species documented in a Landscape Master Plan.*

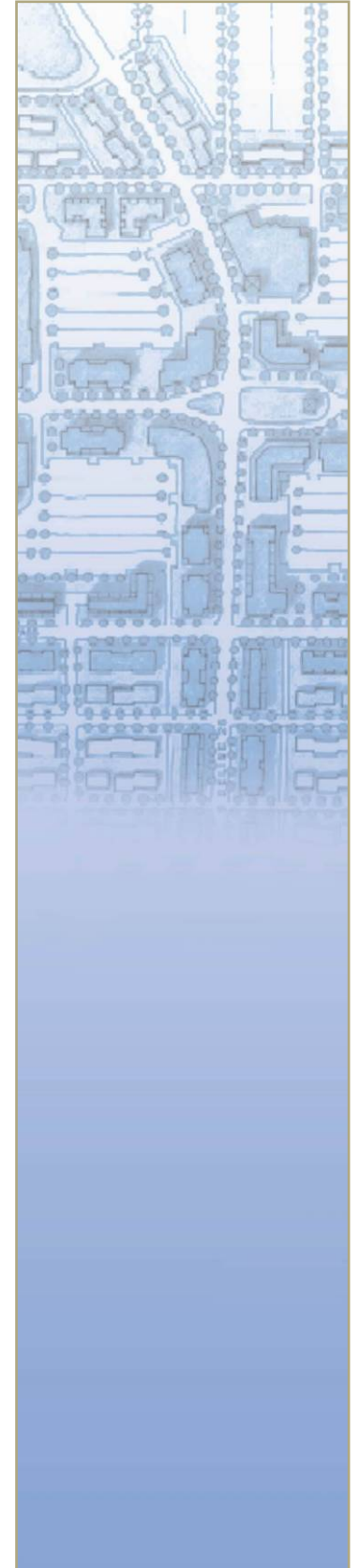
**0.4 THE GUIDELINES**

Each guideline contains four main columns entitled:

- **Guideline** (This column provides a description of the specific guideline and its status as either a required or optional guideline.);
- **Points** (If the guideline is optional, this column will contain a number which indicates the number of points allotted to the corresponding guideline.);

- **Rationale** (This column provides a brief rationale, emphasizing any local, regional and/or provincial policies that provide a basis for the specific guideline.);
- **Untitled** (This fourth column will occasionally include a graphic illustrating the guideline.).

The following page contains a graphic which illustrates how to read the Guidelines.




*Guideline #2: Draft Sustainable Design Guidelines*  
*Plan of Subdivision, Site Plan Approval, Rezoning and Building Permit Performance Targets*

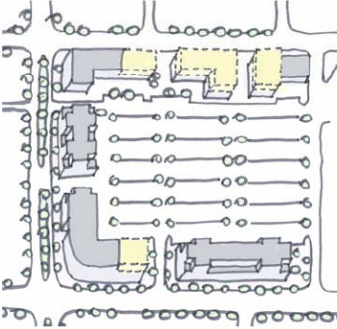
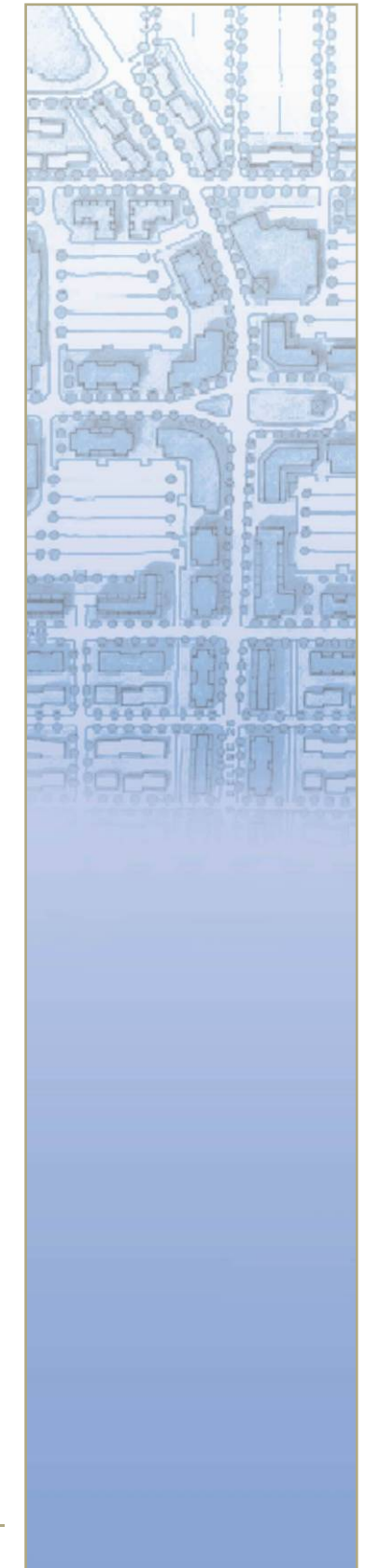
*R = Required  
O = Optional*

*Total Points  
Level 1 = All required elements, plus a minimum of 19 points  
Level 2 = All required elements, plus a minimum of 41 points  
Level 3 = All required elements, plus 80 points*

GUIDELINE	POINTS	RATIONALE
<p><b>5.4 INCREASED DENSITY AND MIXED-USE (O)</b></p> <ul style="list-style-type: none"> <li>The project exceeds the minimum densities above to achieve residential density of at least 100 upha.</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>The project, for commercial retail developments provides a required minimum floor space index of 0.50 FSI and for commercial office developments provides a required minimum floor space index of 1.0 FSI;</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>The project for a mixed-use development exceeds a combined residential/commercial density of 1.4 FSI with a minimum of 0.25 FSI of commercial components.</li> </ul>	5	<ul style="list-style-type: none"> <li>Mixed use development is encouraged whenever possible. A minimum of 2 storeys should be encouraged, which at 0.35 could occur at visible/corner locations of a development.</li> </ul>
<p><b>5.5 FUTURE INTENSIFICATION (R)</b></p> <ul style="list-style-type: none"> <li>The plan features the following with respect to future intensification:               <ul style="list-style-type: none"> <li>Along major mixed-use corridors and at focal nodal areas, whenever phased development is proposed, the plan implements The Master Development Concept required for the neighbourhood plan. Future intensification and mixed use is accommodated for in initial phases through the following measures:</li> <li>The plan contains a concept plan for future intensification (to be registered on title in agreement) approved through development guidelines for lands;</li> <li>Restrict the establishment of certain long term, low intensity uses (such as gas stations) at key intersections for</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>To promote compact urban form ensure that the project has potential for future intensification when development is to be phased and that initial phases of development do not preclude intensification;</li> </ul>






Multiple unit dwelling



## Guideline #2: Draft Sustainable Development Guidelines Plan of Subdivision, Site Plan Approval, Rezoning and Building Permit Guidelines

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Level 3 = All required elements, plus 80 points 

### GUIDELINE

### POINTS

### RATIONALE

#### 1.0 PRE CONSULTATION AND ON-GOING CONSULTATION

##### 1.1 COMPLETION OF EXTENSIVE PRE-CONSULTATION ON SUSTAINABILITY ELEMENTS (O)

- The proponent can demonstrate a pre-consultation process that exceeds *Planning Act* or other approval requirements and has obtained input regarding the sustainable community planning elements in the Guideline.

3

- Consultation helps to build support for sustainable community development and will enhance the potential for long-term implementation of the strategies.

##### 1.2 ON-GOING EDUCATION PROGRAM (O)

- The plan<sup>1</sup> incorporates a resident education program regarding sustainability elements and provides long-term secured funding (e.g. minimum 10 years). Program may include opportunities for environmental inspections, home maintenance education/programs/incentives.

5

- An on-going education program will help to ensure a long-term understanding of and commitment to the sustainability practices in the community.

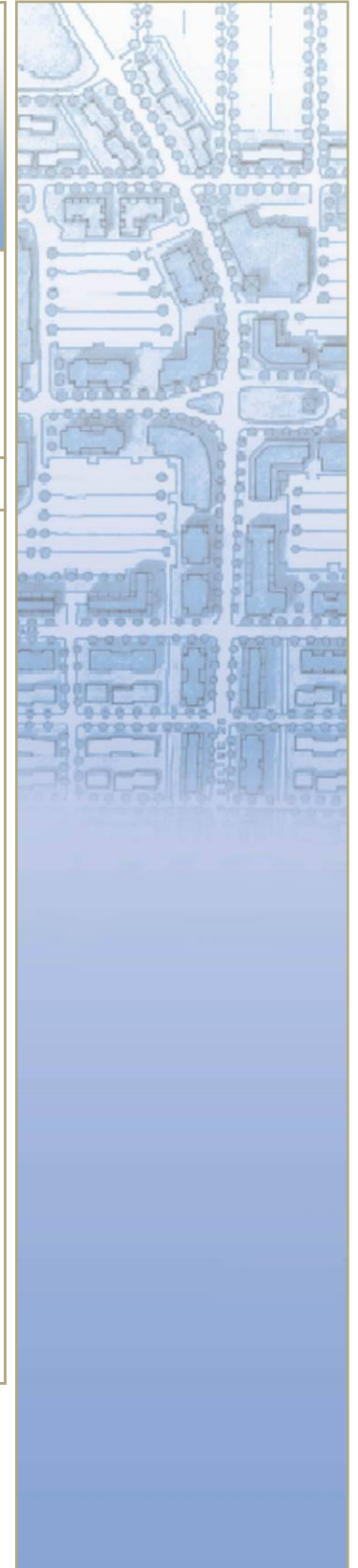
#### 2.0 ENVIRONMENTAL PROTECTION

##### 2.1 WATERSHED AND SUB-WATERSHED PLANNING (R)

- The plan implements objectives and targets for comprehensive environmental protection identified in watershed and/or sub-watershed planning plans completed for the entire planning area.




- Watershed and sub-watershed planning provides the foundation for environmental planning in southern Ontario. Sustainability strategies for a particular development should build on the objectives and targets of this bio-regional scale analysis.

<sup>1</sup> The term "plan" refers to either a site plan, rezoning, plan of sub-division or building permit with more than 10 units.



## Guideline #2: Draft Sustainable Development Guidelines Plan of Subdivision, Site Plan Approval, Rezoning and Building Permit Guidelines

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Level 3 = All required elements, plus 80 points 

### GUIDELINE

### POINTS

### RATIONALE

#### 2.2 MASTER ENVIRONMENTAL SERVICING PLAN (MESP), (R)

- The Plan implements the objectives and targets of the Master Environmental Servicing Plan.

- An MESP is a required, comprehensive analysis that integrates information on the natural heritage system with hard infrastructure requirements in a manner that ensures both protection of the function of the natural system and a cost effective and efficient infrastructure plan.

#### 2.3 CONSERVATION AUTHORITY REGULATIONS (R)

- The Plan implements the objectives and requirements of all Conservation Authority regulations including the *Generic Regulations*.

- All developments must adhere to the Generic Regulations as a requirement of approval.

#### 2.4 OAK RIDGES MORaine PLAN (R)

- The Plan reflects and implements the objectives and targets of the *Oak Ridges Moraine Plan*.

- All developments must adhere to the ORM Plan as a requirement of approval.

#### 2.5 GREENBELT PLAN (R)

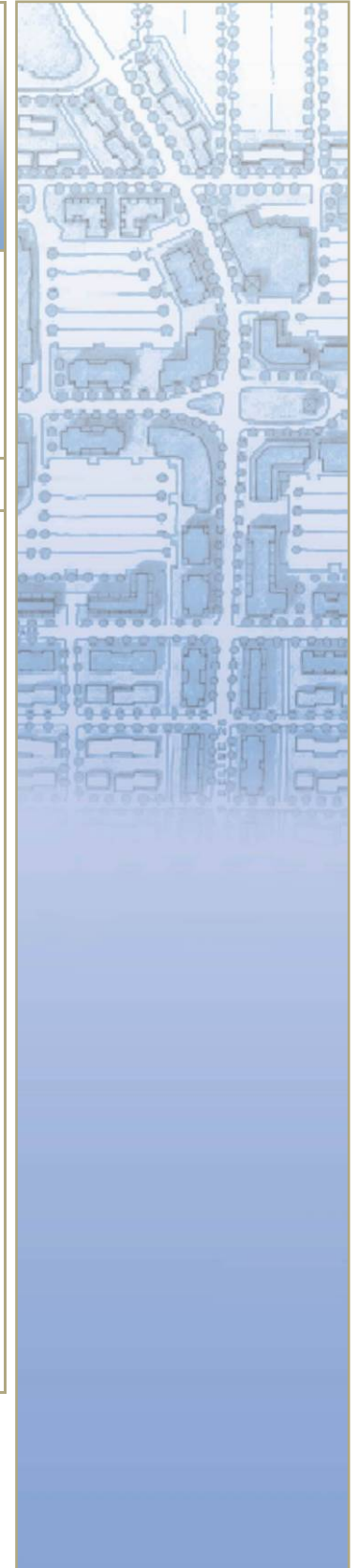
- The Plan reflects and implements the objectives and targets of the *Provincial Greenbelt Plan*.

- All developments must adhere to the Greenbelt Plan as a requirement of approval.

#### 2.6 CONFORMANCE TO PROVINCIAL POLICY STATEMENT (PPS) FOR BUILDING STRONG COMMUNITIES (R)




- The Plan reflects the requirements and intent of the PPS with respect to building strong communities.

- All developments must conform to the PPS as a requirement of approval.



## Guideline #2: Draft Sustainable Development Guidelines Plan of Subdivision, Site Plan Approval, Rezoning and Building Permit Guidelines

R = Required  
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Total Points  
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Level 3 = All required elements, plus 80 points 

### GUIDELINE

### POINTS

### RATIONALE

#### 2.7 CONFORMANCE TO PPS FOR WISE USE AND MANAGEMENT OF RESOURCES(R)

- The plan reflects requirements and intent of the PPS with respect to :
  - Natural heritage
  - Water
  - Agriculture
  - Minerals and petroleum
  - Mineral aggregate resources
  - Cultural heritage and archaeology

- All developments must conform to the PPS as a requirement of approval.

#### 2.8 CONFORMANCE TO PPS FOR PROTECTING PUBLIC HEALTH AND SAFETY (R)

- The plan reflects requirements and intent of the PPS with respect to :
  - Natural Hazards
  - Human Made Hazards

- All developments must conform to the PPS as a requirement of approval.

#### 2.9 STORMWATER QUALITY (R)

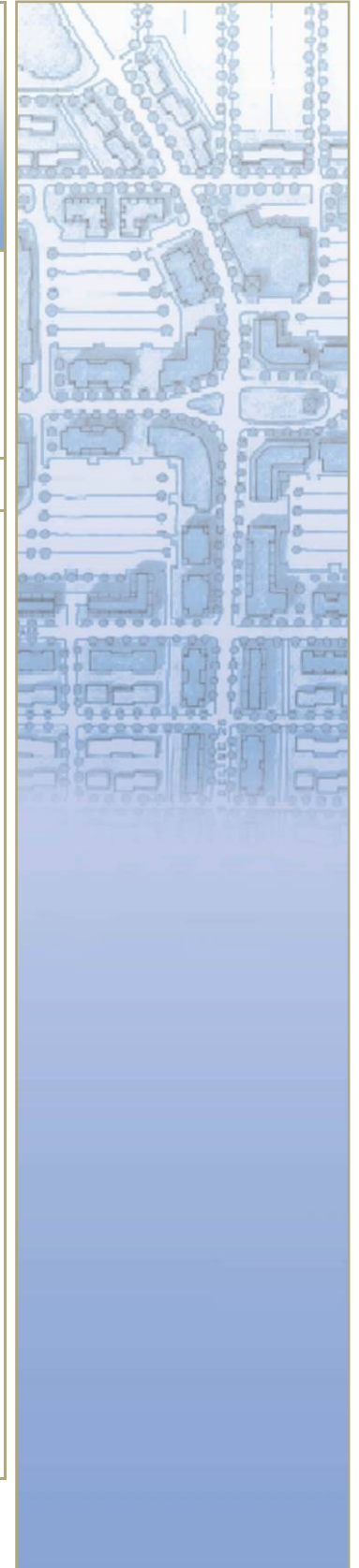
- A stormwater management plan is implemented to capture and treat the stormwater run-off to maintain run-off quality based on targets established in the neighbourhood plan and MESP.

- Stormwater management is required by the Conservation Authorities and the Province. These targets build on those requirements.

#### 2.10 MAINTAIN OR REDUCE STORMWATER RUNOFF RATES (R)




- A stormwater management plan is implemented to meet or exceed stormwater runoff targets established in the neighbourhood plan and MESP.

- Stormwater management is required by the Conservation Authorities and the Province. These targets build on those requirements.



## Guideline #2: Draft Sustainable Development Guidelines Plan of Subdivision, Site Plan Approval, Rezoning and Building Permit Guidelines

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Level 3 = All required elements, plus 80 points 

### GUIDELINE

### POINTS

### RATIONALE

#### 2.11 WATER BALANCE AND SOURCE WATER PROTECTION (R)

- Targets for water balance and source water protection established in the MESP and Neighbourhood Plan are implemented.

- Meeting targets for water balance and source water is fundamental to the environmental protection and enhancement goals of the City, Conservation Authority and Province.

#### 2.12 GROUND WATER PROTECTION PLAN (R)

- The plan meets or exceeds established groundwater targets and complies with any use prohibitions as defined in an area ground water protection study.

- Ground water protection plans have been completed for most of southern Ontario including the City of Pickering. Individual plans must adhere to these plans to meet PPS requirements as well as to ensure the long-term health of the ground water system.

#### 2.13 INTEGRATED ENVIRONMENTAL SYSTEMS PROTECTION (O)

- The plan contains innovative elements that integrate various environmental objectives. Achievement will be evaluated by the City in consultation with TRCA.

3

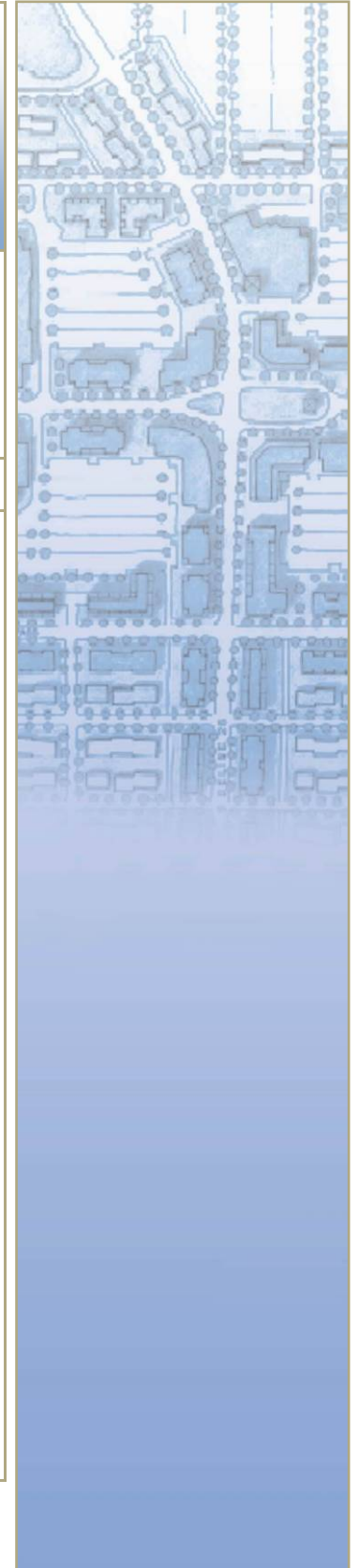
- An important overall objective for planning is to consider the interrelationships among system elements in achieving a high level of overall sustainability. One example would be to design public spaces to enhance aesthetic and natural heritage values as well as meet surface and ground water balance targets and reduce water and energy consumption.

#### 2.14 EXCEEDING REGULATORY REQUIREMENTS (O)

- The plan goes beyond requirements of Provincial or Conservation Authority and MESP requirements in a deliberate attempt to protect the features and functions of the natural heritage system. Achievement




3

- One objective of the Guidelines is to “move the yardstick” with respect to sustainable design. Existing provincial regulation and policy define comprehensive requirements that contribute to

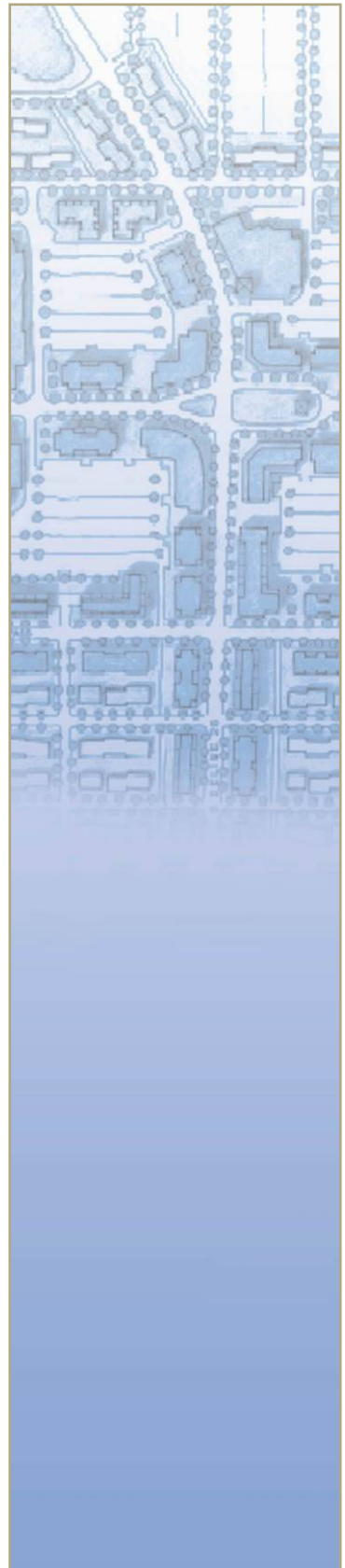


## Guideline #2: Draft Sustainable Development Guidelines Plan of Subdivision, Site Plan Approval, Rezoning and Building Permit Guidelines

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 Level 3 = All required elements, plus 80 points 

GUIDELINE	POINTS	RATIONALE
<p>will be evaluated by the City in consultation with TRCA.</p> <ul style="list-style-type: none"> <li>The plan goes beyond requirements of Provincial or Conservation Authority and MESP requirements in a deliberate attempt to minimize stormwater impacts, increase permeability and achieve re-use of stormwater.</li> </ul>	3	<p>sustainability. The City would like to encourage proposals that go beyond these regulated standards and show commitments and innovation with respect to protecting the natural heritage system within the existing built area (through infill/redevelopment) or in new development areas. Examples may include advanced urban forestry practices, enhanced buffers, integrated stormwater management and park/open space system elements. The TRCA will provide input and advice on this performance target.</p>
<p><b>2.15 BIODIVERSITY PROTECTION AND ENHANCEMENT (O)</b></p> <ul style="list-style-type: none"> <li>Plan goes beyond requirements of Federal, Provincial or Conservation Authority legislation and requirements in a deliberate attempt to protect and enhance biodiversity through an aquatic and terrestrial natural heritage strategy. Achievement will be evaluated by the City in consultation with TRCA.</li> </ul>	3	<ul style="list-style-type: none"> <li>The protection of rare species and ecological communities maintains and enhances biodiversity. Development proposals that go beyond existing requirements reflect desirable leadership and innovation.</li> </ul>
<p><b>2.16 NATURAL HERITAGE PROTECTION (O)</b></p> <ul style="list-style-type: none"> <li>The project establishes a management plan for a period longer than 10 years for any significant PPS features and their buffers located within the plan area, and creates a guaranteed funding source for the implementation of the management plan.</li> </ul>	3	<ul style="list-style-type: none"> <li>The Planning approval process establishes the starting point for environmental protection. An on-going management plan and funding process provides greater assurance that the plan is successfully implemented, monitored and continuously improved as necessary.</li> </ul>



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### GUIDELINE

### POINTS

### RATIONALE

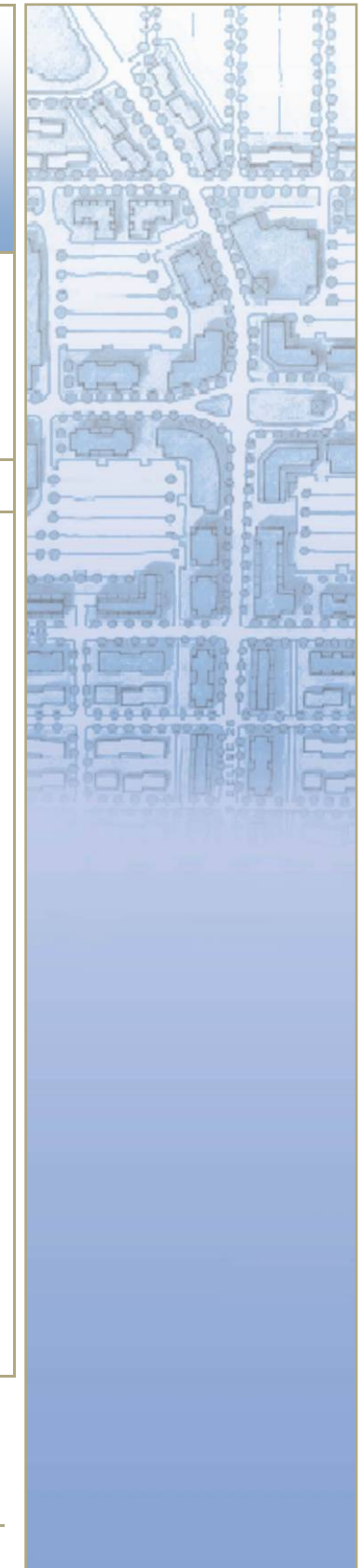
#### 2.17 REQUIRED RESIDENTIAL SITE DESIGN TO MAXIMIZE PERMEABILITY (R)

- The following summarizes the provisions for paved areas for different lot width categories.

- Increased areas of permeability protect water balance by increasing infiltration and reduce irrigation water needs.




Single Detached Houses				
Type	Lot Width	Garage Capacity	Paved Driveway Capacity	Max Paved Driveway Width
Small Lots	Less than 10.4m	1 car	1 car	3.7 m
Mid Sized Lots	10.4 to 11.6m	1 car + storage	2 cars	4.6 m
Mid-Large Sized Lots	11.6m to 14m	2 cars	2 cars	5.5 m
Large Lots	Greater than 14.0m	2 cars + above	2 cars	6.5 m

Semi-Detached Houses & Townhomes				
Type	Lot Width	Garage Capacity	Paved Driveway Capacity	Max Paved Driveway Width
Semi	7.2m-8.2m	1 car	1 car	2.5m
Semi	8.2m-9.2m	1 car	1 car	3.1m
Townhouse	6-7m	1 car	1 car	2.5m
Townhouse	7-8m	1 car	1 car	3.1m
Lots with Rear Yard Parking	Greater than 11.6	1 car +	1 car	3.1m
Lots with Laneways	NA	NA	NA	NA

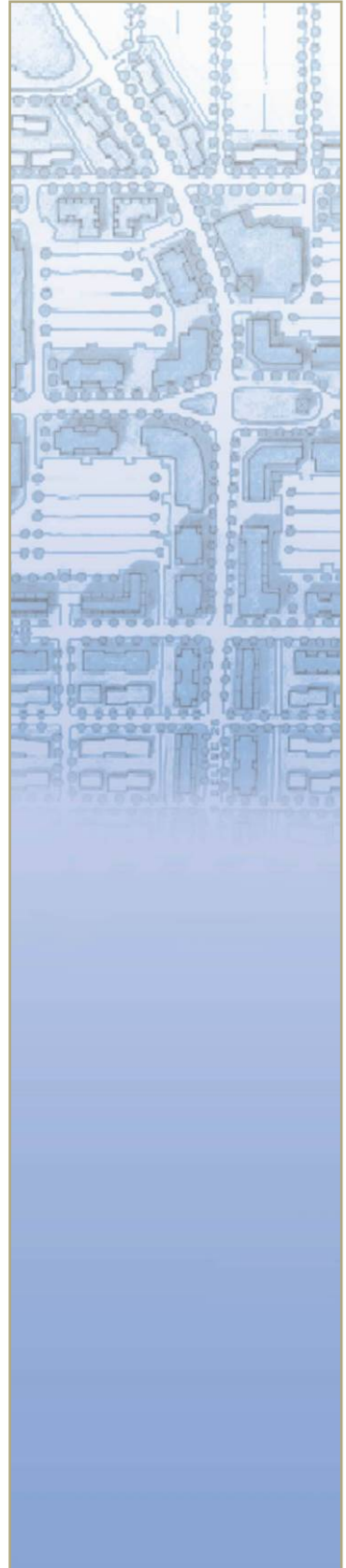


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GUIDELINE	POINTS	RATIONALE
<p><b>2.18 OPTIONAL RESIDENTIAL SITE DESIGN TO MAXIMIZE PERMEABILITY (O)</b></p> <ul style="list-style-type: none"> <li>• Use permeable materials for paved areas that achieves:               <ul style="list-style-type: none"> <li>○ 25% increase in permeability relative to conventional methods;</li> <li>○ 50% increase in permeability relative to conventional methods;</li> </ul> </li> </ul>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;">2</div> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> </div>	<ul style="list-style-type: none"> <li>• Increased areas of permeability protect natural water balance by increasing infiltration and reduce irrigation water needs.</li> </ul>
<p><b>2.19 REQUIRED COMMERCIAL/EMPLOYMENT/INSTITUTIONAL SITE DESIGN TO MAXIMIZE PERMEABILITY (R)</b></p> <ul style="list-style-type: none"> <li>• A minimum of 25% of the site area not occupied by a building is permeable unpaved area.</li> </ul>		<ul style="list-style-type: none"> <li>• Increased areas of permeability protect natural water balance by increasing infiltration and reduce irrigation water needs.</li> </ul>
<p><b>2.20 REQUIRED COMMERCIAL/EMPLOYMENT/INSTITUTIONAL SITE DESIGN TO MAXIMIZE PERMEABILITY (R)</b></p> <ul style="list-style-type: none"> <li>• Use permeable materials for paved areas that achieves a 25% increase in permeability relative to conventional methods.</li> </ul>		<ul style="list-style-type: none"> <li>• Increased areas of permeability protect natural water balance by increasing infiltration and reduce irrigation water needs.</li> </ul>
<p><b>2.21 NATIVE SPECIES &amp; PLANTING (O)</b></p> <ul style="list-style-type: none"> <li>• The project uses native species for 50% of the landscaped area.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• The project uses native species for 75% of the landscaped area.</li> </ul> <p>OR</p>	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin-bottom: 5px;">2</div> <div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">3</div> </div>	<ul style="list-style-type: none"> <li>• Plantings of native species enhance the potential for urban forests to work as a natural system with surrounding native landscapes and have lower maintenance requirements for water and energy.</li> </ul>

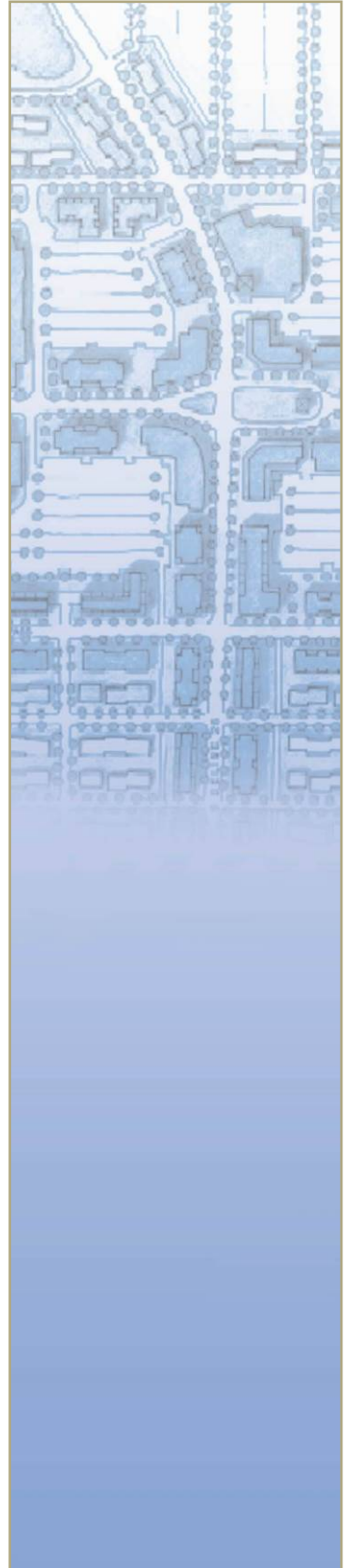


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GUIDELINE	POINTS	RATIONALE
<ul style="list-style-type: none"> <li>The project uses native species for 100% of the landscaped area.</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>The project incorporates a site design for native species documented in a Landscape Master Plan</li> </ul>	<p>4</p> <p>2</p>	
<p><b>2.22 LANDFORM CONSERVATION (R)</b></p> <ul style="list-style-type: none"> <li>The project maximizes Landform Conservation through detailed design that minimizes substantial re-grading of natural topography, while conforming with the Municipality's requirements for site drainage and grading.</li> </ul>		<ul style="list-style-type: none"> <li>Retention of natural topography helps to protect natural water and heritage systems as well as the aesthetic appeal of cultural heritage landscapes.</li> </ul>
<p><b>2.23 NET ENVIRONMENTAL GAIN (O)</b></p> <ul style="list-style-type: none"> <li>The Neighbourhood Plan establishes extraordinary opportunities to achieve a net environmental gain to the watershed to compensate for any unavoidable impacts (e.g. road/utility crossings of features, CO<sub>2</sub> production, habitat/food land loss). Achievement will be evaluated by the City in consultation with TRCA.</li> </ul>	<p>3</p>	<ul style="list-style-type: none"> <li>One objective of the Guidelines is to “move the yardstick” with respect to sustainable design. This target provides an opportunity for proponents to apply innovation in design to produce a net gain to the watershed through the development process. The net gain must be within the watershed. The TRCA will provide input and advice on this performance target. The target will be met through production of a report describing the net gain analysis and outcome.</li> </ul>
<p><b>2.24 PESTICIDE AND FERTILIZER USE (O)</b></p> <ul style="list-style-type: none"> <li>The plan includes a process to implement safe and minimal use of pesticides and fertilizers on public and/or private lands.</li> </ul>	<p>2</p>	<ul style="list-style-type: none"> <li>Reduced pesticide and fertilizer use contributes to improved water quality, a healthy environment and safer habitats for vegetation and wildlife species.</li> </ul>





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### GUIDELINE

### POINTS

### RATIONALE

- The plan incorporates a program for landowner education and outreach on safe pesticide and fertilizer use.

#### 2.25 MINIMIZE CONSTRUCTION RELATED ENVIRONMENTAL IMPACTS (R)

- The plan identifies the limits of building area through the creation of building footprint zones and includes requirements that limit disturbance beyond the footprint.

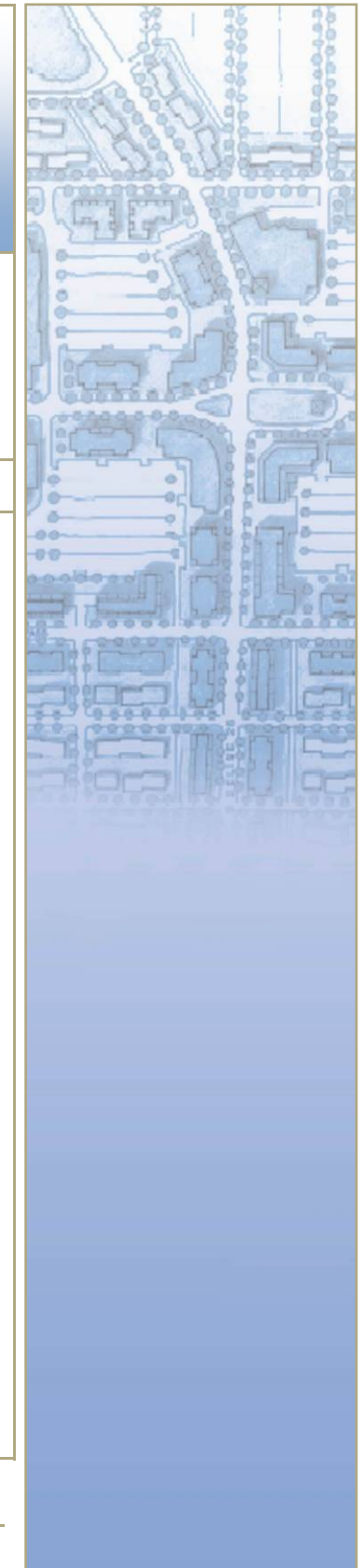
- Construction related impacts have significant long-term implications for the surrounding natural environment. These impacts are reduced through directed development to already built-up areas so that impacts may even be reduced over existing and/or limiting construction disturbance. Common construction practices significantly limit the potential for vegetation and in particular for trees to thrive due to soil compaction and/or inadequate soil depth. The objective of these targets is to encourage proponents to adjust construction practices to limit disturbance and enhance the urban landscape to reflect the surrounding natural areas.

#### 2.26 COMPENSATION FOR UNAVOIDABLE IMPACTS (O)

- In order to compensate for any unavoidable impacts of the plan (e.g. road/utility crossings of features), the Plan implements the opportunity to restore native habitat off-site or purchase of land or conservation easements on off-site locations equal to or larger than 100% of the area impacted by the project or three hectares, whichever is larger. The plan also includes provisions for the long-term protection of these areas. The land selection will be conducted with the conservation authority and possibly the MNR and should reflect the larger area




3

- Some impacts to natural heritage are unavoidable in order to provide for needed linear public infrastructure facilities. These impacts can be offset through off-site habitat restoration or purchase.



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### POINTS

### RATIONALE

Conservation Authority or Municipal natural heritage systems plan mapping and objectives, be within the same watershed as the project and be identified as important for conservation for natural or cultural purposes. Achievement will be evaluated by the City in consultation with TRCA.

#### 2.27 EROSION AND SEDIMENTATION CONTROL (R)

- The draft plan/rezoning/site plan is supported by a sedimentation and erosion control plan specific to the proposal demonstrating prevention of soil loss during construction through a program to limit extent of soil stripping at one time, to limit stormwater runoff and/or wind, to limit and manage sedimentation of storm sewer or receiving streams and prevent polluting of the air with dust and particulates, including a monitoring and maintenance program. The plan complies with recommendations in the Erosion and Sediment Control Guideline for Urban Construction, 2006 TRCA.

- This target builds on the requirements of the PPS to further encourage strategies to limit erosion and soil loss.

#### 3.0 LOCATION OF DEVELOPMENT/ SELECTION OF LANDS

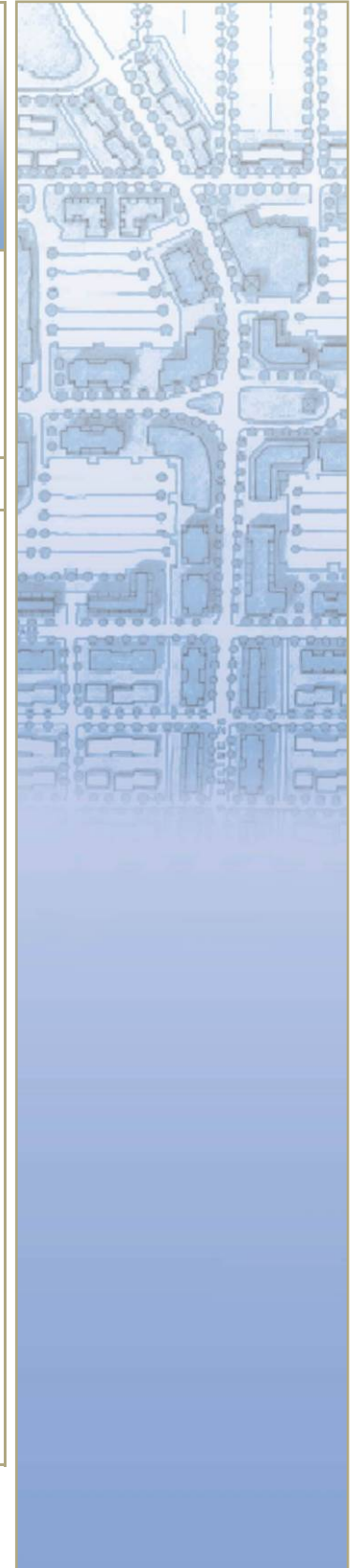
##### 3.1 SITE TYPOLOGY (O)

The plan pertains to lands that are:

- on previously developed lands at a higher density;
- on a greenfield site adjacent to existing development;
- on a vacant infill site; or,
- on a brownfield site that was either undeveloped or previously developed and may be contaminated.

3  
5  
3  
3




- The Provinces' Growth Plan for the Greater Golden Horseshoe directs future growth to Urban Growth Centres and lands within the existing built boundary (which can include previously developed sites and brownfield sites). The Provincial Policy Statement directs new greenfield development to areas that are adjacent to existing development.



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#### POINTS

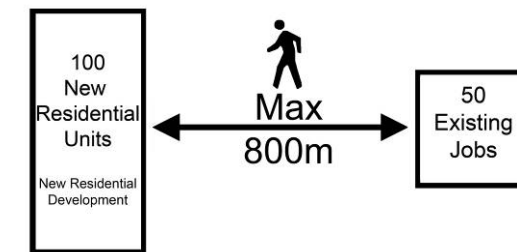
#### RATIONALE

### 4.0 DESIGN OF DEVELOPMENT – LAND USE AND DISTRIBUTION

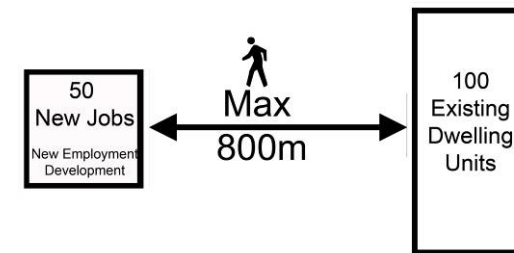
#### 4.1 DIVERSITY OF USES (R)

- The subject lands are less 3 ha (7 ac), i.e. small development.
- OR
- A residential development is located within 800m (10 min. walking distance) of existing jobs equal to or greater than 50% of the proposed number of dwelling units. For the purpose of this target, jobs that will be in existence within 6 months of completion of the dwelling units may be considered as existing jobs.
- OR
- A commercial or employment related development is located within 800m or 10 min. walking distance of existing dwelling units. The number of jobs provided in the new development must equal at least 50% of the number of existing dwelling units. For the purpose of this target, dwelling units that are completed within 6 months of completion of new jobs may be considered as existing dwellings.

- The City's Official Plan promotes a diversity of uses and the creation of public spaces that complement and support activity generated by the surrounding buildings. The Regional Official Plan along with the Places to Grow Plan and Provincial Policy Statement all promote development that has the ability to foster close live-work arrangements and access to public amenity space. A distance of 800 metres represents an average walking time of 10 minutes which is considered the maximum comfortable walking distance.



10-minute walk between new residential units and existing jobs

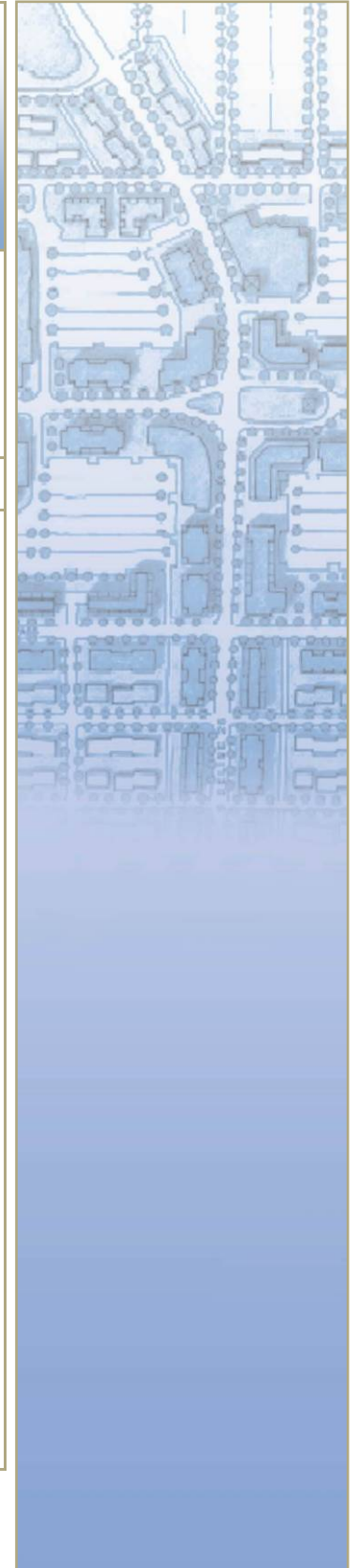


10-minute walk between new jobs and existing residential units

#### 4.2 CONSTRUCTION PHASING (R)




- The plan implements the neighbourhood plan requirement to include both a residential and a non-residential component being constructed at the same time.

- The Provincial Policy Statement directs development phasing to provide community services to meet both current and future needs. Also, phasing that considers the implementation of non-residential uses and residential uses at the same time will help to prevent potential land use conflicts.



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### GUIDELINE

### POINTS

### RATIONALE

#### 4.3 RESIDENTIAL & NON-RESIDENTIAL PHASING (O)

- The plan includes both a residential and a non-residential component being constructed at the same time, and the non-residential component consists of additional neighbourhood amenities provided in mixed use focal nodes or corridors.

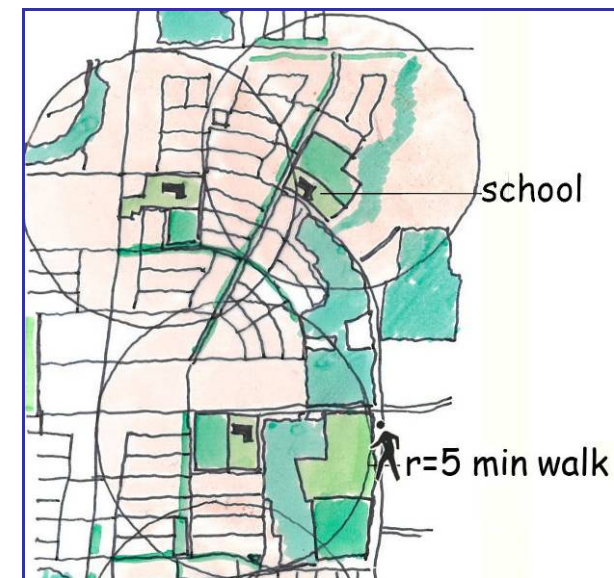
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- The target ensures that residential communities that are being constructed prior to commercial areas serving those communities are serviced by convenient commercial uses in the interim.

#### 4.4 PROXIMITY TO SCHOOLS (R)

- The lands subject of the draft plan/ rezoning/ site plan abut an existing elementary school which can serve/accommodate the population.
- OR
- The lands subject of the draft plan/rezoning/site plan abut a designated elementary school site which can serve/accommodate the population.
- OR
- The plan contains a block or blocks for an elementary or secondary school.
- AND
- The plan is designed to place at least 75% of the residences within 800 metres walking distance of a school that is (or will be) open to the public.

- Schools should be located in proximity to new residential developments to ensure that residents have access to schools and a variety of transportation options (walking, cycling, transit). 800 metres is a 10-minute walking distance which is considered to be the maximum comfortable distance to walk to a destination. 400m (5 min.) is preferred, especially for smaller children.






Plan illustrating 5 min. walking distance to schools

#### 4.5 PROVISION OF MIXED USES AND COMMERCIAL STREETScape ENVIRONMENTS (R)

- The Growth Plan for the Greater Golden Horseshoe supports the idea of mixed use development that is pedestrian friendly. The City

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### GUIDELINE

### POINTS

### RATIONALE

- The neighbourhood plan's provision of mixed use is implemented through the following:

- The plan contains a block for, or the lands are located such that all residential areas are within 400 m walking distance, of at least 2 of the following amenities:
  - Retail uses
  - Entertainment
  - Educational facilities
  - Government services or other civic buildings
  - Offices
  - Medical facilities
  - Recreational facilities

OR

- The plan locates all new residential uses within 800m of main street mixed use commercial development with multiple community amenities.

OR

- The plan contains a block for, or the lands are located within 800 metres walking distance of 6 services and amenities.

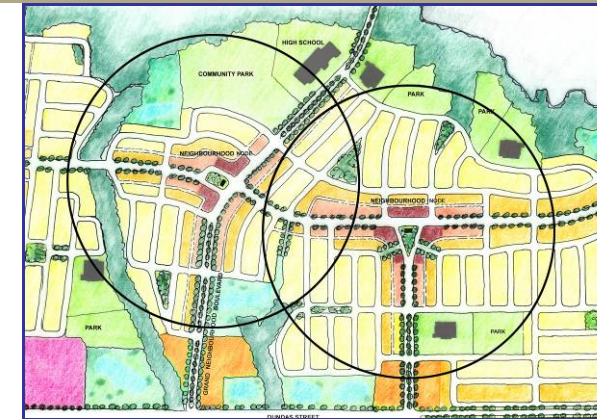
#### 4.6 ENHANCED ACCESS TO AMENITIES (O)

- The plan contains a block for, or the lands are located such that all residential areas are within 400 m walking distance, of
  - at least 4 of the amenities listed below:
  - at least 5 or more of the following amenities:
    - Retail uses
    - Entertainment

3

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of Pickering's Official Plan is also supportive of pedestrian access to mixed use areas.






Commercial Nodes accessible within a 5 min. walk  
(Radius indicates 400m)

- Communities that provide comfortable pedestrian access (5 min. walking distance) to convenient commercial uses encourage live/work possibilities, promote walking and reduce dependency on the car for short trips.

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### GUIDELINE

### POINTS

### RATIONALE

- Educational facilities
- Government services or other civic buildings
- Offices
- Medical facilities
- Recreational facilities

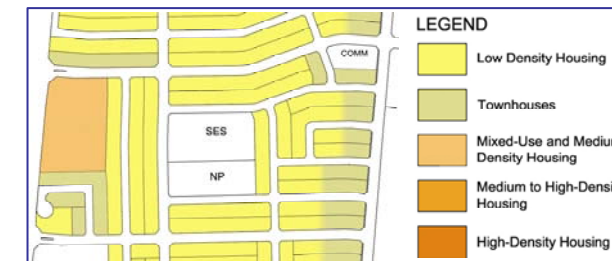


Street related retail

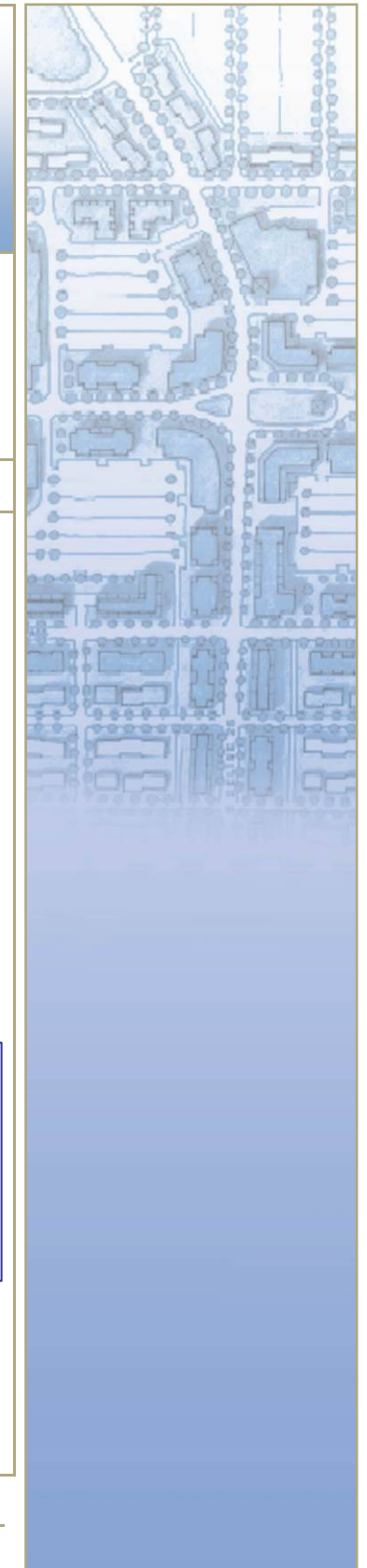
#### 4.7 ENHANCED HOUSING DIVERSITY (R)

- The plan provides a variety of residential housing types/sizes within the project or within 400m of the project. Housing categories are as follows:
  - single-detached,
  - semi-detached,
  - townhouses,
  - multiple family units,
  - apartments,
  - accessible units,
  - accessory units,
  - small/large tenure

- Provincial planning policy requires a mix of housing types to meet a variety of lifestyles and incomes. Planning for a wide variety of housing within the community enables citizens from a range of economic levels, age groups and family structures to live within the same community, creating a balanced social diversity/cross section.






Range of housing type within a single neighbourhood



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### GUIDELINE

### POINTS

### RATIONALE

#### 4.8 RENTAL AND FOR-SALE HOUSING AFFORDABILITY (O)

The plan includes a portion of rental units priced for households earning below area median income such that:

- 20% of units are priced for 50% of area median income;
- at least 40% of total units are priced for up to 80% of area median income;
- at least 10% of for-sale housing priced for households up to 100% of the area median income;
- at least 20% for-sale housing priced for households up to 120% of the area median income.

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- This target enables citizens from a wide range of economic levels and age groups to live within a community and therefore creates a balanced social diversity/cross section.



For-sale houses in a residential neighbourhood

#### 4.9 RETAIL PARCEL SIZES (R)

- The plan implements the neighbourhood distribution of retail uses to foster pedestrian environments by permitting the division of commercial lands into small commercial parcels;

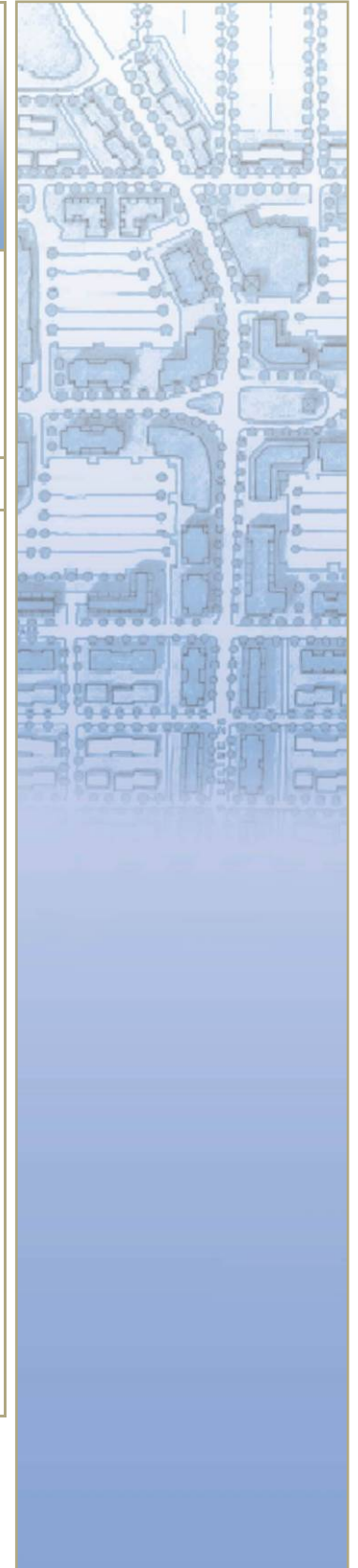
OR

- Parcels shall be a maximum of 2.5ha accommodating a variety of retail sizes within a single commercial block that is configured to foster pedestrian development and a diverse retail experience.

- Flexibility with respect to commercial block size and use will allow plans to accommodate a variety of forms and sizes of retail development and therefore streetscape diversity. Commercial nodes are scaled to produce a pedestrian oriented environment.






Commercial block with street-related retail divisions



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### POINTS

### RATIONALE

#### 4.10 COMMERCIAL CONCENTRATION (R)

- The plan locates commercial functions as street-related retail. Where large retail anchors are provided at block interiors, these are to be combined with street related retail components.

- The Provincial Policy Statement directs municipalities to plan for a variety of employment types. Flexibility with respect to commercial block size and use will allow plans to accommodate a variety of forms and sizes of retail development.



Large retail with street related components such as arcades, setbacks and awnings

#### 4.11 MIXED USE COMMERCIAL CONCENTRATION (O)

- Street related commercial nodes should be within a 5 to 10 minute walk (400 to 800m) from residential areas.
- Street related retail components are provided at the ground floor of mixed-use multi-storey structures with residential, office or institutional uses at upper storeys.

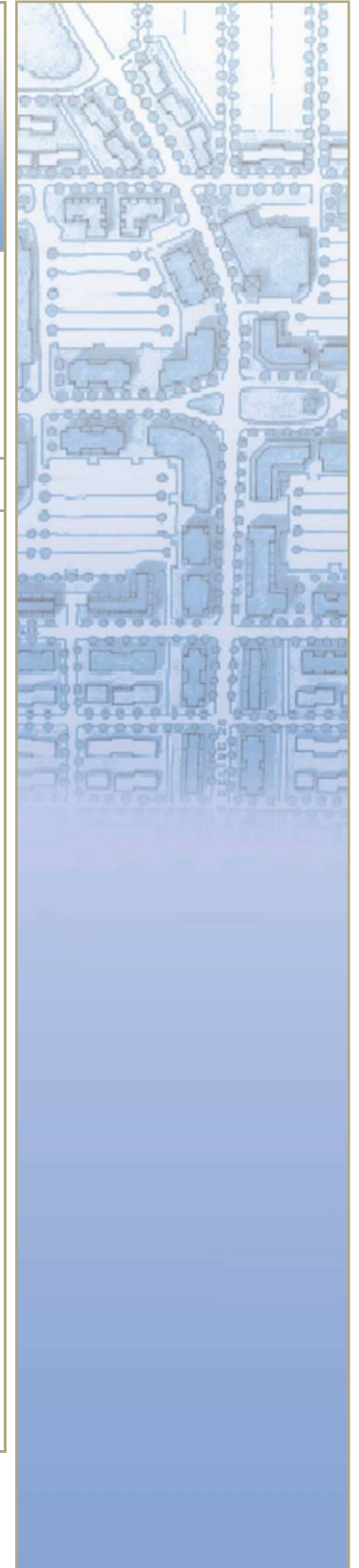
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- Smaller retail units located at the street edges promote walking along sidewalks for shopping trips, as opposed to driving from store to store within a large retail site or sites.






Street-related retail with mixed-uses at upper storeys





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**GUIDELINE**

**POINTS**

**RATIONALE**

**4.12 PROXIMITY TO PUBLIC SPACES (R)**

- The main front entrance of residential or commercial buildings are within 800 metres walking distance of a publicly accessible public space, such as a park, plaza, or town square.

OR

- The plan contains a block for publicly accessible space, such as a park, plaza, or town square.

- Parks, plazas, public squares and other public open spaces provide a focus for neighbourhoods and mixed use centres. The integration of these spaces with the surrounding environment will ensure that the spaces are well used, vibrant places. They share the ability to accommodate many different types of uses and people. They are meeting and gathering places, places for markets and entertainment, places to see and be seen.



Community space adjacent to a pedestrian shopping area

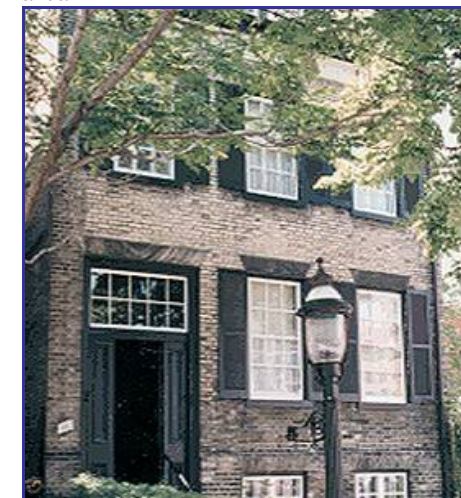
**4.13 APPLY REGIONAL PRECEDENTS IN URBANISM AND ARCHITECTURE (O)**

- Where possible the plan integrates or reflects local and regional historical patterns of neighbourhood development.
- Incorporate into the project one or more buildings that have been designated as historic and rehabilitate the buildings.

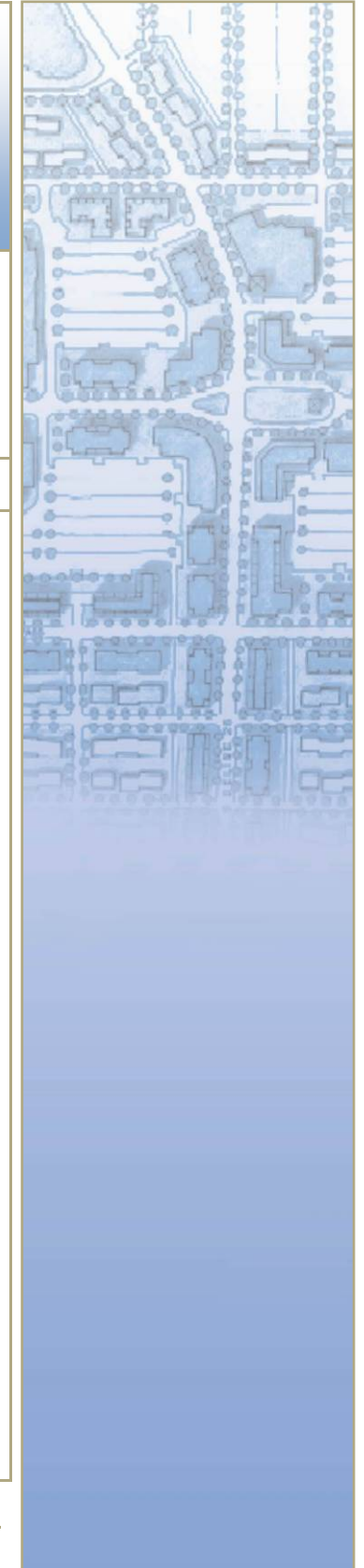
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2

- The reflection/interpretation of local and regional development patterns within a new development provides continuity between the past and the existing context and reinforces distinctive cultural heritage features. This is encouraged in the CPDP as a means to preserve Pickering's rich native and euro-centred settlement patterns. Rehabilitation/preservation or re-use of historic buildings fulfill sustainable development objectives of redevelopment and re-use of existing infrastructure. Preservation of historic building materials and form contributes to creating communities with distinct elements that are reflective or unique to the cultural history of the area.






Integration of a historic building into neighbourhood design



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**GUIDELINE**

**POINTS**

**RATIONALE**

**5.0 DESIGN OF DEVELOPMENT – DENSITY AND COMPACT BUILT FORM**

**5.1 RESIDENTIAL DENSITY (R)**

- The plan implements the net net density achieved at the Neighbourhood Plan level.

- The overall density of a site excluding public roads and widenings, public parks, natural environment areas, school sites and similar public land areas is referred to as “net net density”.

**5.2 INCREASED RESIDENTIAL DENSITY (O)**

- The plan exceeds the average net net density for residential areas by achieving:
  - 25-30uph for low density designated areas;
  - 60-80uph for medium density designated areas;
  - Over 120 uph for high density designated areas.

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- Providing higher densities promotes the principles of compact form. Higher densities increase the activity level around developments, enabling efficiency of transit and walk-ability.

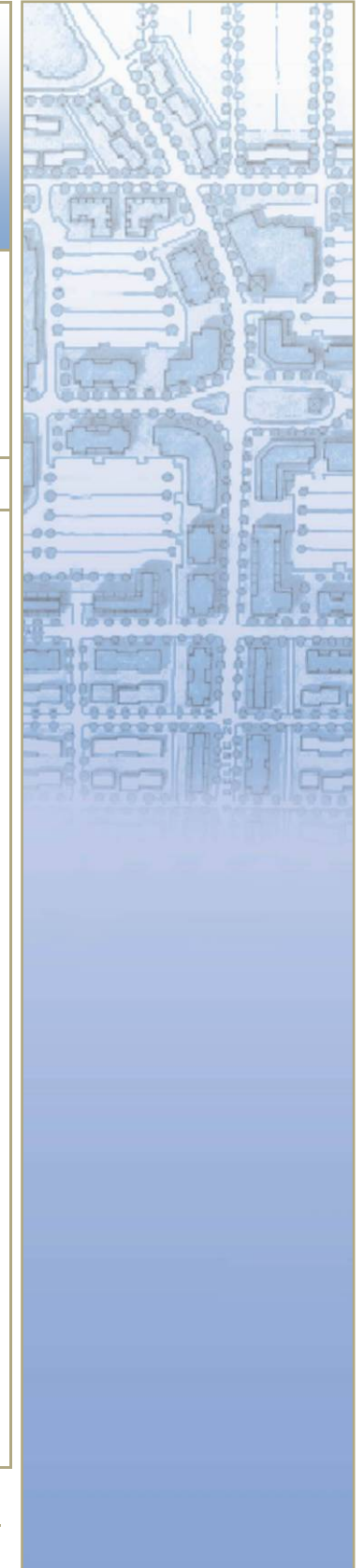


Example of medium density housing

**5.3 COMMERCIAL DENSITY (R)**




- The plan for commercial components of the development has a required minimum floor space index (FSI) of 0.35.
- The plan also locates the highest density mixed-use development and non-auto oriented retail/service facilities along internal collector roads

- The ratio of the total floor area of a building or buildings to the gross area of the lot on which the building or buildings are located is referred to as the floor space index (FSI). For example, an FSI of 0.35 would indicate that the total floor area of a



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### GUIDELINE

### POINTS

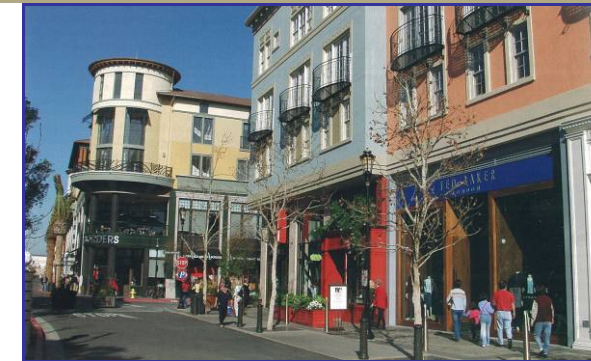
### RATIONALE

rather than boundary arterial roads;  
OR

- The project for a mixed-use development achieves a minimum combined residential/commercial density of 0.75 FSI with a minimum of 0.15 FSI of commercial component.

building could be up to 0.35 times the area of the lot on which it is located.

- A minimum floor space index of 0.35 promotes higher density commercial development which will promote infrastructure and create a vibrant community.
- The plan is pedestrian friendly and creates commercial mainstreets thus reducing vehicular traffic.



Mixed-use development

#### 5.4 INCREASED DENSITY AND MIXED-USE (O)

- The project exceeds the minimum densities above to achieve residential density of at least 100 upha.

AND

- The project, for commercial retail developments provides a required minimum floor space index of 0.50 FSI and for commercial office developments provides a required minimum floor space index of 1.0 FSI;

5

OR

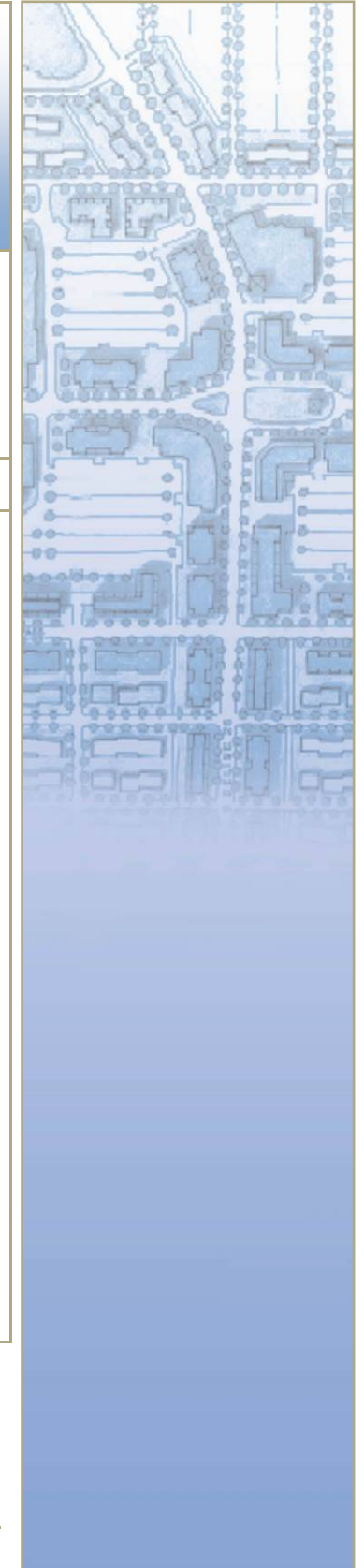
- The project for a mixed-use development exceeds a combined residential/commercial density of 1.4 FSI with a minimum of 0.25 FSI of commercial components.

5

- Mixed use development is encouraged whenever possible. A minimum of 2 storeys is encouraged. A floor space index of 0.35 is considered to be ideal for high visibility areas, such as corner locations and along major corridors.






Multiple unit dwelling



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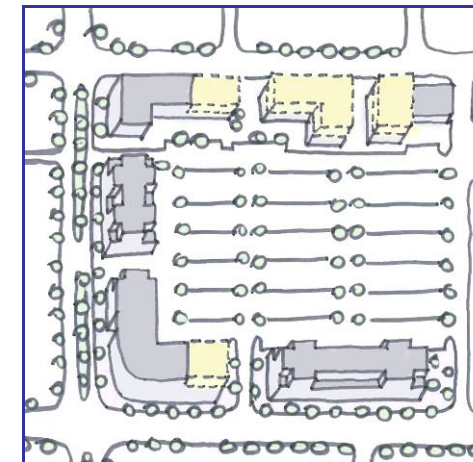
### POINTS

### RATIONALE

#### 5.5 FUTURE INTENSIFICATION (R)

- Along major mixed-use corridors and at focal nodal areas, whenever phased development is proposed, the plan implements The Master Development Concept required for the neighbourhood plan. Future intensification and mixed use is accommodated for in initial phases through the following measures:
  - The plan contains a concept plan for future intensification (to be registered on title in agreement) approved through development Guidelines for lands;
  - The plan restricts the establishment of certain long term, low intensity uses (such as gas stations) at key intersections for intensification (e.g., at intersections between Type A arterials; (can permit as mid block on Type A).
  - The plan establishes zoning for full intensification project;
  - The project installs essential infrastructure for a full intensification project;
  - The plan for draft plan/rezoning/site plan approval of the initial phase facilitates achievement of subsequent phases of the concept plan.

- To promote compact urban form, ensure that the project has potential for future intensification when development is to be phased and that initial phases of development do not preclude intensification.

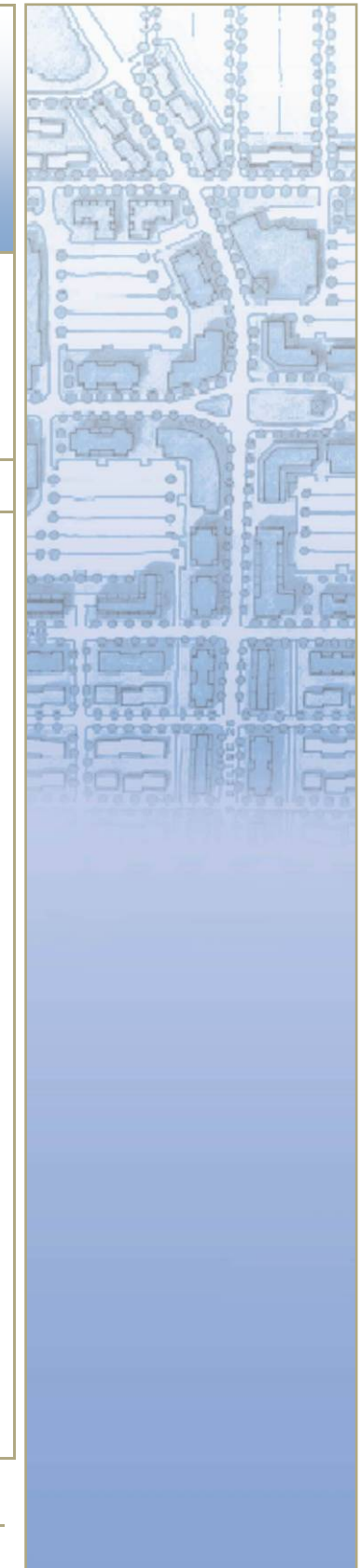


Sketch illustrating potential future intensification of a commercial site with an FSI above 0.35

#### 6.0 DESIGN OF DEVELOPMENT - CONNECTIONS




##### 6.1 OPEN AND CONNECTED COMMUNITIES (R)

- The plan designs streets, sidewalks and public spaces to be available for the general public, and not enclosed in a gated enclave.
- The creation of an open and well connected community can help to foster a strong sense of community, improve road network efficiency and



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GUIDELINE

POINTS

RATIONALE

safety. The creation of public roads ensures a consistent level of access, maintenance and reliability for all new development.



Typical neighbourhood plan with residential and institutional development accessible from public streets

### 6.2 PROTECT LINKED OPEN SPACE SYSTEM (R)

- The Plan implements a linked open space system (may include natural features, parkettes, pedestrian linkages, and street boulevards) that interconnect allowing pedestrian, bicycle and other recreational activity continuously throughout the community.




- Linked open space systems have numerous benefits including encouraging healthy habits, habitat continuity, aesthetic improvement and encouraging non-auto modes of travel.



Parkette with focal element contributes to creating a Sense of Place

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### GUIDELINE

### POINTS

### RATIONALE

#### 6.3 PROVISION OF INTERCONNECTED TRANSPORTATION NETWORK (R)

- The plan supports the neighbourhood plan for alternative methods of transportation by providing multiple routes for pedestrian, transit, cycle and vehicular traffic.

- A well connected street network promotes pedestrian, cycling and transit convenience by providing a variety of routes through the area.



Pedestrian and bicycle connection

#### 6.4 SUPPORT FOR ALTERNATIVE TRANSPORTATION (O)

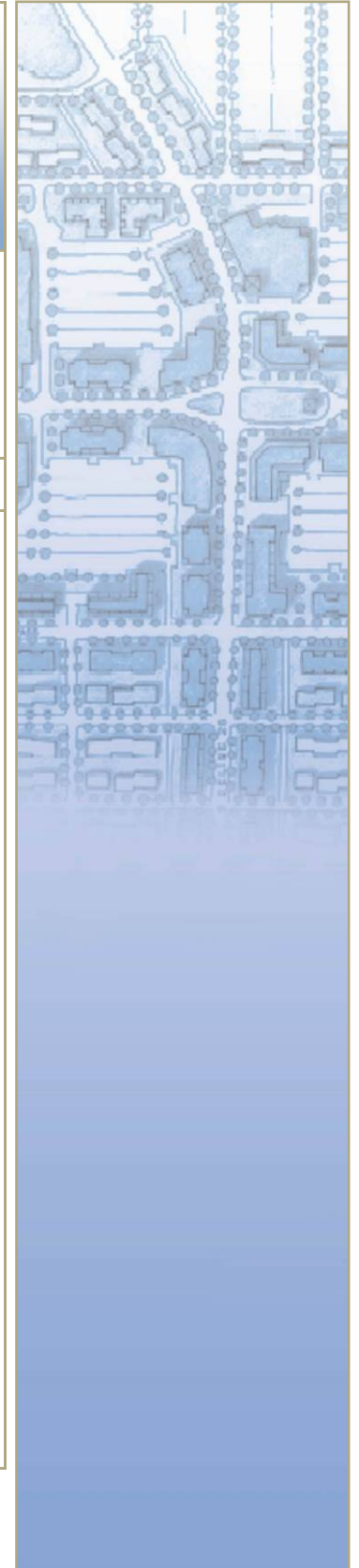
- The plan includes provisions for or promotes re-fuelling for alternative transportation.
- The plan contains or promotes trip end facilities such as bike storage facilities and showers in commercial buildings.
- The plan promotes the use of neighbourhood electric vehicles.

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- Sustainable design encourages the provision of a wide range of transportation choices, including walking, cycling, transit and alternative vehicles. This target will result in many advantages such as public health through exercise, air quality, et cetera.



Natural Gas re-fuelling station



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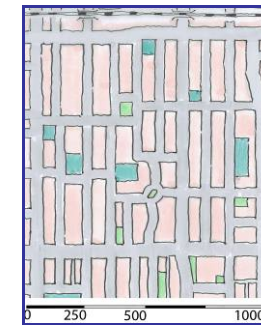
### POINTS

### RATIONALE

#### 6.5 STREET NETWORK (R)

- The plan supports the neighbourhood's connected street network by providing at least 40 intersections per square km of newly developed land.
- The plan is designed to include a pedestrian or bicycle through connection in new cul-de-sacs.
- The plan uses cul-de-sac streets sparingly and only in locations that cannot be easily served by a connected street system or to help preserve environmental features.

- A well connected street network creates multiple routes through the neighbourhood and thus promotes pedestrian and cycling convenience, and reduces traffic through alternative vehicular routes.
- Through connections for pedestrians and bicycles provide a network which allows for easy and faster access to destinations.

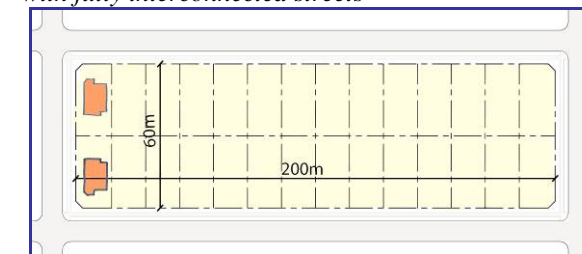


Plan illustrating 1km<sup>2</sup> of a traditional neighbourhood with fully interconnected streets

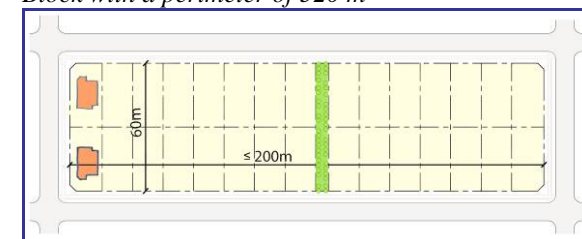
#### 6.6 BLOCK PERIMETER (R)

- The plan is designed on the basis of medium to short block lengths with a recommended maximum block perimeter of 550 metres. The perimeter of each block includes the properties bounded by the sidewalk, or publicly accessible walkway, but does not include the sidewalks themselves.
- Where block perimeters exceed 550 metres, a through block pedestrian linkage must be provided.

- Blocks of a maximum perimeter of 550m promote connectivity of neighbourhoods. They create a dense network of streets and should be flexible to accommodate both residential and commercial lot sizes. A good network of streets allows pedestrians to choose from a variety of routes to reach their destination.



Block with a perimeter of 520 m



Block with a perimeter of more than 550m with an internal pedestrian link

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### GUIDELINE

### POINTS

### RATIONALE

#### 6.7 LANES (O)

- The plan is designed to include lanes in residential areas at primary locations such as major streets and open spaces to provide streetscapes uninterrupted by garages.
- The plan is designed to include lanes or private drives in mixed-use or retail areas at the rear of street related retail for service and loading.

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- The inclusion of lane access at primary locations fosters pedestrian oriented streetscapes. At arterial roadways, lane access replaces the need for combined local and arterial roadways, creating a more pedestrian scale.
- The use of lanes and private drives to service retail and mixed-use buildings improves the pedestrian experience at the street.



Example of rear lane development with direct pedestrian access to rear yards

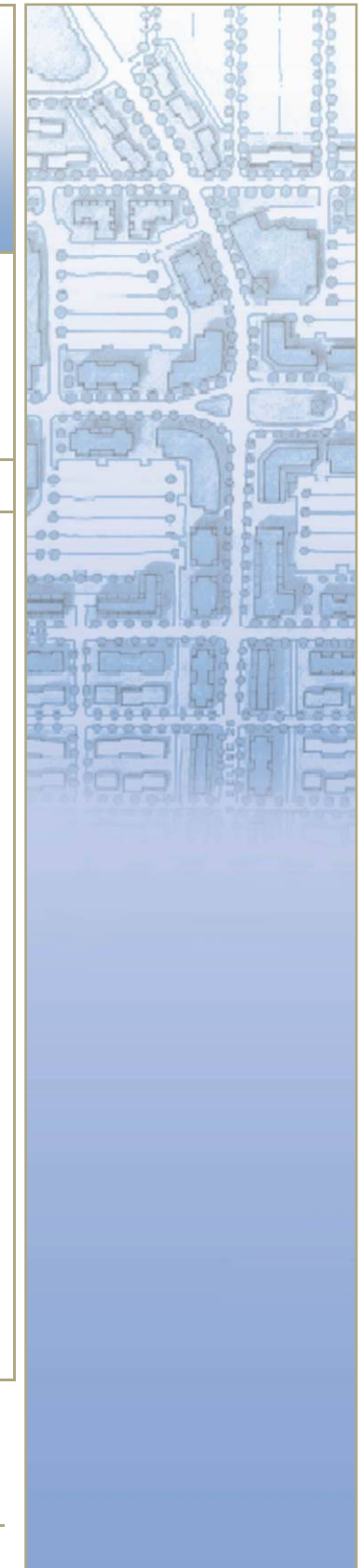
#### 6.8 CYCLING NETWORK (R)

- The plan contains roads with bike lanes as part of the City's network and contains designated cycling paths.

- The creation of bike lanes offers people a viable alternative to automobile travel and promotes a healthy lifestyle. The improvement of City's bike infrastructure is consistent with the Official Plan.



On-street bicycle trail





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GUIDELINE	POINTS	RATIONALE
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### 6.9 TRANSIT AMENITIES (O)

- For all the roads serviced by transit the plan accommodates transit stops at 200 m to 250 m intervals.
- The plan promotes/requires, in addition to signs with schedules and route information at each stop, all bus stops on Major Transit Spines and Minor Transit Spines to have shelters with benches.
- The plan provides for enhanced transit amenities (examples include upgrading the adjacent bus stop shelters to include amenities such as solar powered lighting, bike racks at bus stops if appropriate, etc).

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- The Provincial Policy Statement and the Growth Plan for the Greater Golden Horseshoe promotes development that is transit supportive and provides enhanced transit amenities. The provision of bus shelters, ETA for buses or bike racks at high usage stops can increase transit ridership. 250 metres represents a 2-3 minute walk.



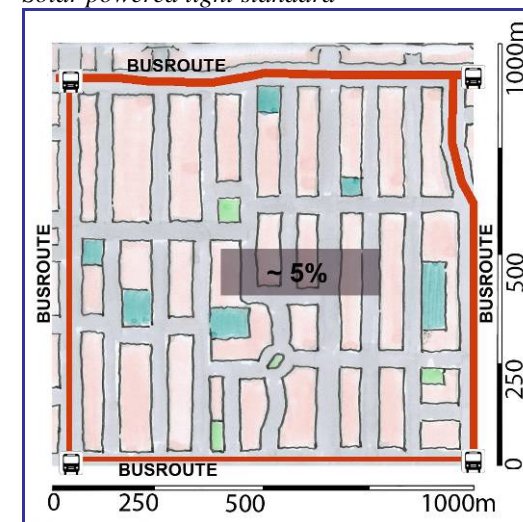
Solar powered light standard

### 6.10 TRANSIT ORIENTED COMPACTNESS (O)

- The design of the plan locates two-thirds of the proposed intensity (residential density and non-residential density) within 250 metres walking distance of a transit stop/planned transit stop.
- The design of the street pattern and walkway connections enables 90% of proposed residents, jobs and service uses within:
  - 400 metres walking distance of an existing transit stop;
  - 50% within 250 metres of transit stop;
  - 66% within 250 metres;
- The project is designed such that short sides of blocks are oriented along transit route streets wherever possible.

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- The Provincial Policy Statement and the Growth Plan for the Greater Golden Horseshoe encourage development along major corridors with access to transit. Access to transit is considered to be a fundamental aspect of neighbourhood design, as it offers residents and commuters an alternative to auto-oriented travel. Distances reflect incrementally reduced walking distances to transit.
- Orienting the short sides of blocks to transit streets facilitates convenient and direct pedestrian access to transit stops.



95% of residents live within 400m of a transit stop

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### GUIDELINE

### POINTS

### RATIONALE

#### 6.11 PARKING MANAGEMENT (O)

- The development utilizes transit proximity, and pedestrian and cycling modes of transportation to encourage alternate modes of transportation allowing reduction of vehicular parking requirements. Transportation modelling that supports such reductions has been provided.
- The project includes provision of on-street parking, such parking is contributing to provision of parking requirements.
- The project defines priority parking for green vehicles such as alternative fuel vehicles and car-share vehicles.
- For high density and mixed-use elements the project provides for cash in lieu of parking.

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- Reduction of parking requirements promotes more efficient land use, compact form, reduction of stormwater run-off and heat sink effect.
- Reduction of surface parking areas creates enhanced walkable streetscapes.



On-street parking at a neighbourhood commercial area

#### 6.12 PARKING LOCATION (R)

- The project locates surface parking areas at the interior of blocks or to the rear or sides of built areas in order to minimize their impact on streetscapes.




- Parking located at interior, rear and side yard locations helps to mitigate the detrimental affect of parking on streetscapes and promotes more walkable streets.



Parking court at interior of a commercial block

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### GUIDELINE

### POINTS

### RATIONALE

#### 6.13 CORRIDOR FRONTAGE (R)

- The plan contains policies requiring the establishment of blocks fronting arterial roads to create corridors for long term intensification.

- Future development that is planned along arterial roads should require that buildings are located at the arterial street frontages, with the majority of surface parking in the interior of the site. This site planning practice will permit eventual street-related building mass and reduce the impact of cars visible in the streetscape.



*Initial commercial buildings located at street frontage with potential for future intensification*

#### 7.0 DESIGN OF DEVELOPMENT -PEDESTRIAN ORIENTED COMMUNITY

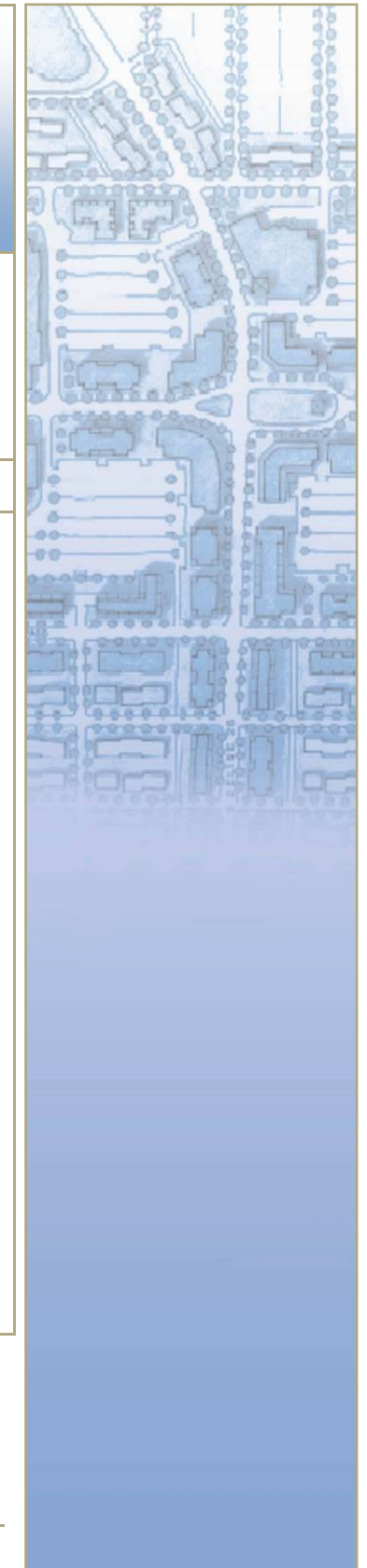
##### 7.1 AMENITIES IN PROXIMITY (R)

- If the Neighbourhood Plan does not contain an area of convenience commercial uses (daily amenities) within 400-800m of the residential areas, the Subdivision Plan permits commercial convenience uses within a 5-10 minute walking distance along an interconnected local street system with pedestrian sidewalks.

- Pedestrian oriented communities provide a better quality of life through increased physical exercise, stronger involvement in the community and less dependence on the car. Where it is not achieved at the Neighbourhood Plan level, the Subdivision Plan should incorporate convenient walking distance to local amenities.






*Neighbourhood convenience retail*



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### GUIDELINE

### POINTS

### RATIONALE

#### 7.2 PEDESTRIAN NETWORK (R)

- The Plan provides sidewalks of a minimum of 1.5 metre width on all sides of all streets except where density is less than 30 units per net hectare or on an industrial collector road.

- Sidewalks play an important role in social interaction between pedestrians and those living, working or shopping along the route. A minimum sidewalk width of 1.5m ensures equal access to pedestrian paths for all residents and allows equal access for individuals with mobility issues.

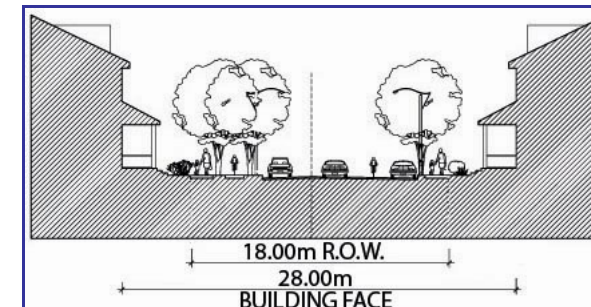


Local residential street with sidewalks on both sides

#### 7.3 PEDESTRIAN SAFETY AND COMFORT (R)

- The plan designs local residential streets to achieve functional requirements while promoting an intimate pedestrian scale, slow traffic and optimized land use efficiency, including:
  - minimum of 18m right-of-way assuming 8.5m pavement width,
  - utilities in common trench;
  - sidewalk on one side only when density along street is less than 30 upnh.
- Further reduction from 18m with municipal approval (a rear lane system may offer the opportunity for some utilities to be located along the lane thereby allowing the street R.O.W. to be reduced).
- The plan will also accommodate for streetscape amenities such as:
  - benches
  - street trees
  - pedestrian scaled street lighting




- The Growth Plan for the greater Golden Horseshoe requires that new development be designed in a manner that creates street configurations, densities and an urban form that is compatible with pedestrian activities; Narrower pavement widths fulfill/promote many objectives such as compact form and efficient land use. They also create a sense of community through visual connection and proximity between pedestrians and buildings. It also contributes to creating a pedestrian-scaled “envelope” or “enclosure” to the street. 18.0m is an acceptable average local street width found in municipalities across southern Ontario. Some municipalities will consider R.O.W.’s less than 18.0m based on demonstrated community benefit (improved walkability).



Street section

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**GUIDELINE**

**POINTS**

**RATIONALE**

- shelter at public areas such as awnings, arcades and setbacks
- curb cuts at intersections for accessibility.

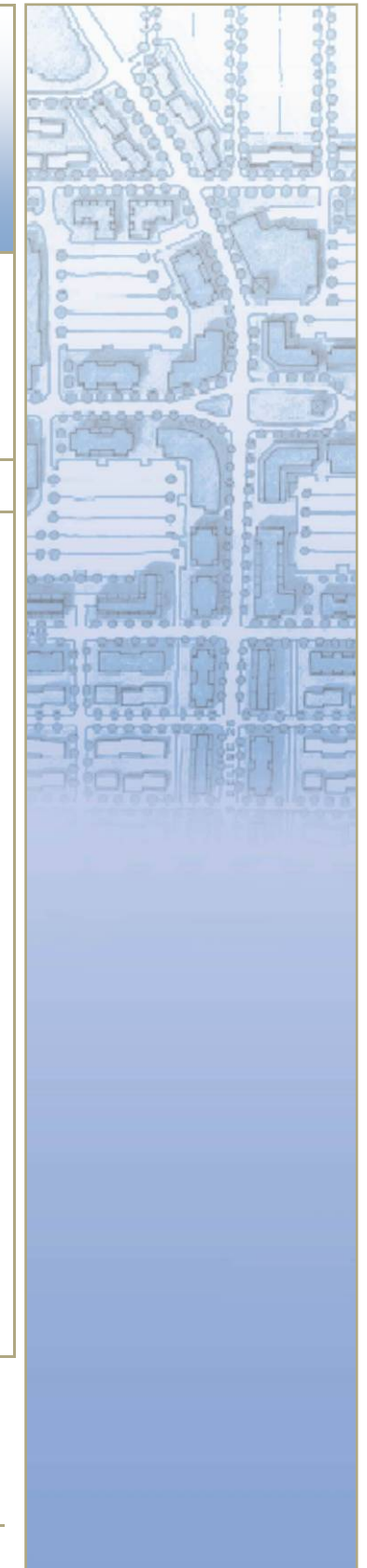
- Benches play an important role in community public spaces by providing opportunities for relaxation, social interaction and community comfort at transit stops.
- Street trees improve the quality of urban environment. They offer privacy screens, provide shade and absorb harmful gases and other pollutants. The hardiness of the tree species should be selected to withstand/survive the environmental impacts of their location, i.e. exposure to higher traffic volumes, snow removal, boulevard width and sidewalk planters. Wherever feasible, trees should be native species.
- Pedestrian scaled lights improve walkway illumination for pedestrian traffic and enhance community safety and business exposure.



*Example of streetscape amenities*






*Example of retail with setbacks and arcades to enhance the streetscape*



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### GUIDELINE

### POINTS

### RATIONALE

#### 7.4 PEDESTRIAN ORIENTED STREETSCAPES (R)

- The project's commercial buildings are designed and built so that each building has a front façade and at least one entrance that faces a publicly accessible space (no 'back walls'), such as a street, square or plaza.
- All ground-level non-residential interior spaces that face a public space have transparent glass (dark or reflective glass not to be included) on at least 33% of the ground-level façade, and no stretches of blank walls longer than 10.0m along sidewalks;
- The internal collector roads with street related retail should be in the range of 4-5 traffic lanes to support comfortable and safe pedestrian crossings.

OR

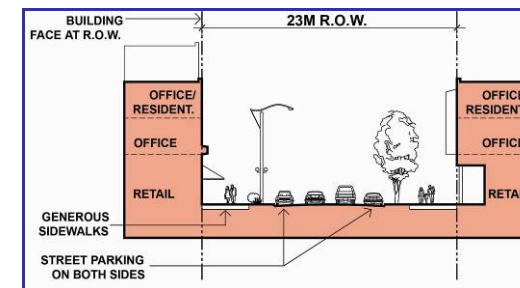
- The ratio of building height to distance across the street between building frontages should be a minimum of 1:3.
- 30% of all building frontages are permitted within a 3.0m built-to-zone of the front property line.
- Mixed-use and commercial buildings are adjacent to the sidewalk.

#### 8.0 RESOURCE EFFICIENCY

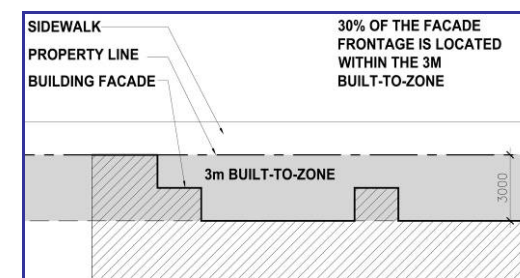
##### 8.1 ENERGY PERFORMANCE FOR RESIDENTIAL BUILDINGS (O)

- At the time of submission of building permit applications and subsequent issuance of building permits the dwellings meet Energy Star for New Homes. Points will be awarded for the following

- Street widths, building heights and façade articulation that relate to the smaller scale of the pedestrian, as opposed to the movement and speed of the car, create attractive and comfortable environments that encourage pedestrian activity. For example, street widths that are narrow enough to cross quickly and safely encourage shopping on both sides of the street, or display windows with transparent glass convey an open and inviting exposure of businesses to shoppers, or buildings that are built close to the street property line with some setback variation create a close physical and visual connection to pedestrians, or building heights should be high enough to create a sense of "enclosure" to the street.



Retail Street section






Plan illustrating 3.0m built-to-zone

- Energy Star and Energuide are publicly accepted measures of energy performance. Energy Star for New Homes is being adopted voluntarily by a growing number of Ontario builders.

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### GUIDELINE

### POINTS

### RATIONALE

Energuide ratings:

- Energuide 80;
- Energuide 82;
- Energuide 84;
- Energuide 86;

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- 8

- The Office of Energy Efficiency (OEE) website, Energuide ratings are described as follows:

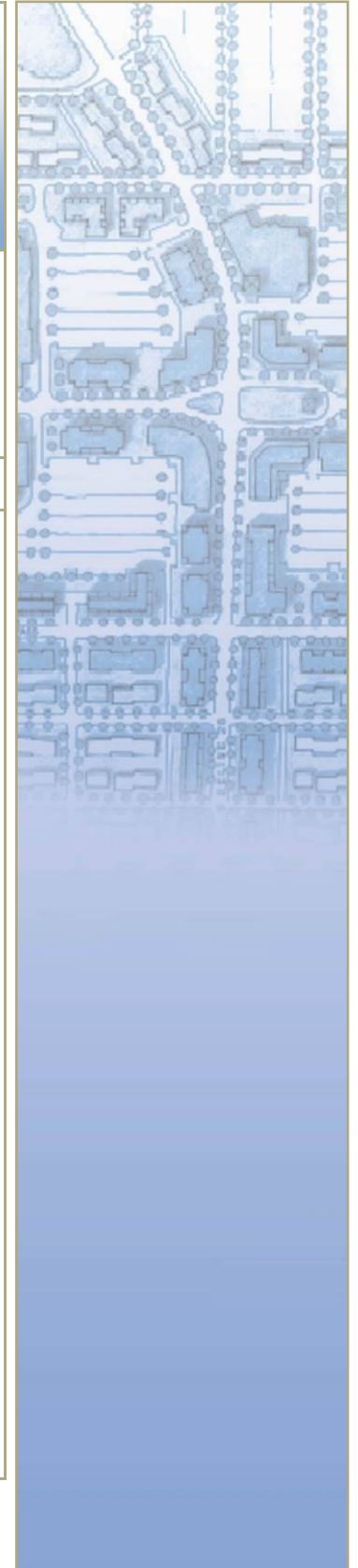
House Characteristics	Typical Rating
New house built to minimum building code standards	65 to 70
Typical new house with some energy efficiency improvements	70 to 74
Significantly upgraded energy-efficient new house	75 to 79
Highly energy-efficient house	80 and higher

<http://oee.nrcan.gc.ca/english/index.cfm>

- Currently, an OEE Energuide rating of 78 is required to achieve an Energy Star for New Homes rating.
- CBIP is a well accepted protocol for evaluating a building's relative energy performance. The threshold of 25% is a prerequisite for both LEED and CBIP funding. The new Ontario Building Code (OBC) requirements result in buildings that achieve an energy rating that performs 16% to 18% better than the MNECB.




### 8.2 ENERGY PERFORMANCE FOR COMMERCIAL BUILDINGS (O)

- Part 3 Buildings design and construct to comply with the requirements of LEED Canada-NC Version 1.0 EA Prerequisite 2:
  - Reduce the design energy consumption of commercial buildings to comply with Natural Resources Canada's Commercial Building Incentive Program (CBIP) requirement for a 25% reduction relative to the consumption of the reference building designed to the



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### GUIDELINE

### POINTS

### RATIONALE

Model National Energy Code for Buildings 1997 (MNECB).

- 30% reduction
- 35% reduction
- 40% reduction
- 45% reduction
- 50% reduction
- 55% reduction
- 60% reduction.

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#### 8.3 ENERGY EFFICIENT APPLIANCES (O)

- Where the builder is providing appliances, all Energy Star eligible appliances must be Energy Star compliant.

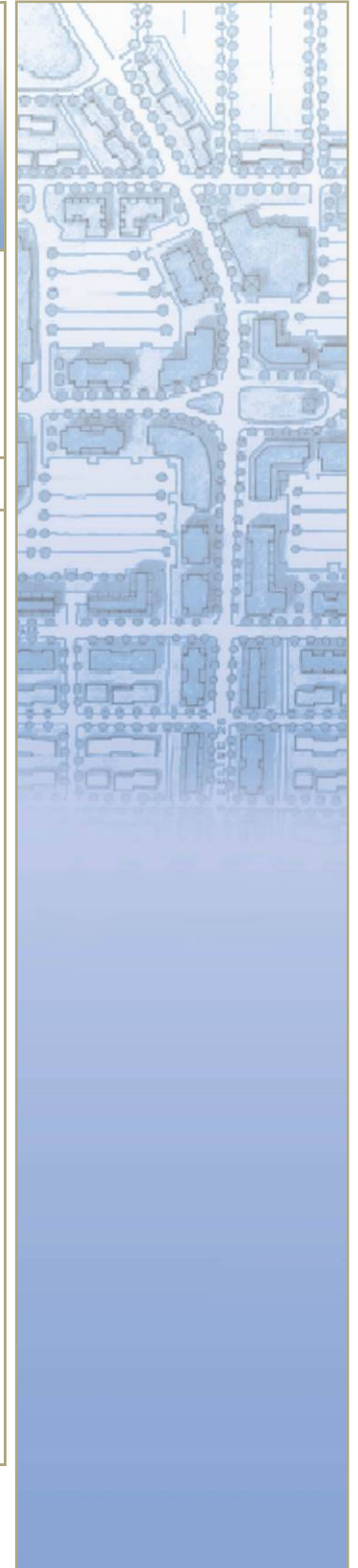
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- Appliances consume a significant portion of the energy used in a residence. Energy Star appliances are readily available in the market and are likely the best accepted appliance energy rating system.

#### 8.4 PASSIVE SOLAR GAIN (R)

- The plan will includes a report describing how passive solar gain has been accommodated in the plan/design considering street/lot




- Passive solar gain reduces the heating and lighting requirements for buildings at no cost to the owners. This target encourages proponents to





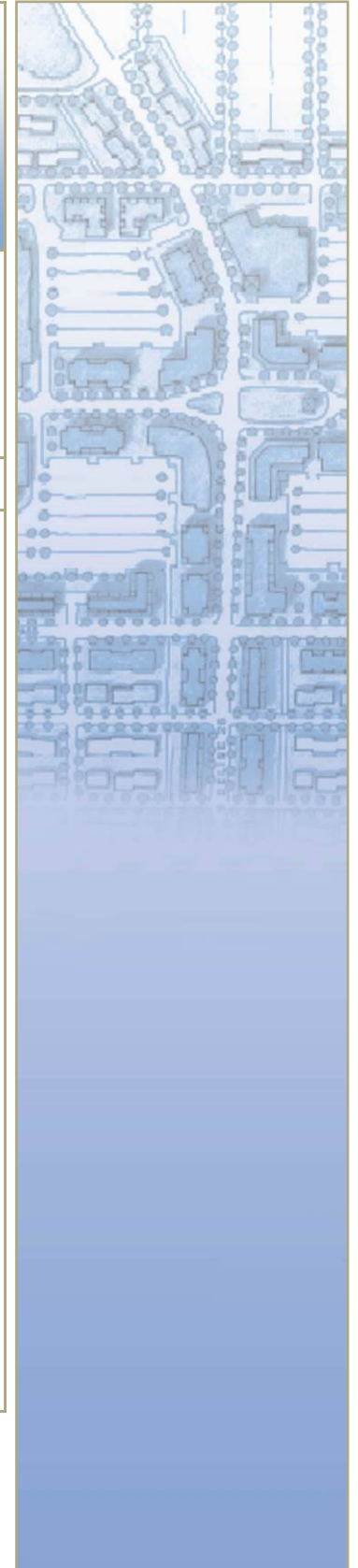
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Level 3 = All required elements, plus 80 points 




GUIDELINE	POINTS	RATIONALE
<p>orientation, fenestration on units and building height/separation distance.</p> <p><b>8.5 PRIVATE OUTDOOR LIGHTING (R)<sup>2</sup></b></p> <ul style="list-style-type: none"> <li>The plan will include a report describing how energy efficiency and elimination of light intrusion has been accommodated in the plan/design considering for example, lumen output, alternative energy sources (e.g. solar power) and analysis of light intrusion/appropriate levels outside of property limits.</li> </ul>		<p>explicitly consider the opportunities for passive solar gain through street and building orientation, fenestration and building height/separation. With respect to orientation for example, the level of benefit will relate to the number of lots fronting on an east-west road versus the number fronting on a north-south road.</p> <ul style="list-style-type: none"> <li>This target encourages proponents to explicitly consider strategies that address two primary environmental impacts of exterior lighting: light pollution and energy consumption. It is recognized that outdoor lighting is important to allow the use of outdoor spaces at night, but by providing lights we limit visibility of the night sky, and disrupt the activities of nocturnal animals. Exterior lighting should be designed to provide adequate light only where it provides benefit by using full-cutoff fixtures that are positioned to direct light downward, contained within the site.</li> <li>Energy Consumption – Outdoor lighting should be designed to minimize non-renewable energy use. This could include minimizing levels of illuminance, using timers and high efficiency lamps and fixtures, and providing power from renewables.</li> </ul>

<sup>2</sup> Private outdoor lighting refers to all lighting on private spaces, including parking areas, play areas etc.



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Level 3 = All required elements, plus 80 points 

### GUIDELINE

### POINTS

### RATIONALE

#### 8.6 REQUIRED WATER EFFICIENCY IN BUILDINGS (R)

- The plan will include the following measure to maximize water efficiency: For multi-unit and condominium residential, design and construct multi-units and condominium residential with individual water metres.

AND

- Design and construct with fixtures having the following maximum flow rates:

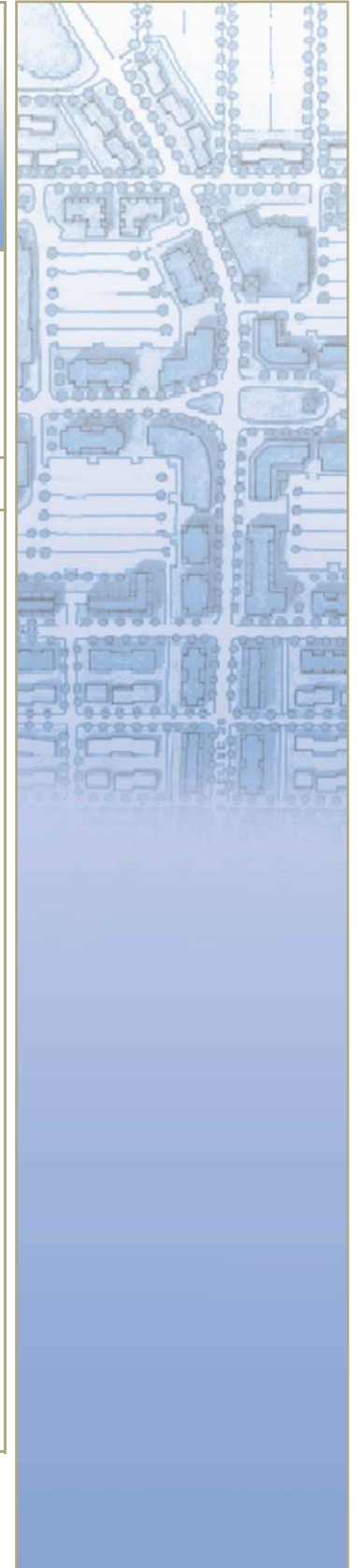
Fixture	Flow
Toilet	4.2 L/flush
Urinal	1.9 L/flush
Lavatory	6.8 L/min
Kitchen Sink	6.8 L/min
Shower	5.7 L/min

Attachment B includes a calculator (table) that provides a performance path for achieving compliance. Additional credits can be achieved if additional water savings are achieved (confirmed through calculations prepared consistent with the calculator included in Attachment B).

- The use of effective low flow fixtures can reduce water consumption with no impact on performance. Reducing water use lowers the strain on natural resources and infrastructure. 1997 OBC Code and Guide for Plumbing sets maximum allowable flow rates for fixtures at:




Fixture	Flow
Toilet	6.0 L/flush
Urinal	3.8 L/flush
Lavatory	8.35 L/min
Kitchen Sink	8.35 L/min
Shower	9.5 L/min

- However, there is now a wide selection of fixtures available that exceed these performance levels often at costs competitive with poorer performing models. See [http://www.toronto.ca/watereff/flush/pdf/toilet\\_list\\_75.pdf](http://www.toronto.ca/watereff/flush/pdf/toilet_list_75.pdf) for a list of over 30 toilets that meet the low flow requirement.



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### GUIDELINE

### POINTS

### RATIONALE

#### 8.7 OPTIONAL WATER EFFICIENCY IN BUILDINGS

- Achieve improved water saving as calculated using the attached spreadsheet (see Attachment B):
  - 30% savings;
  - 40% savings.

4

8

- See 8.6

#### 8.8 WASTE MANAGEMENT - OPERATIONS (R)

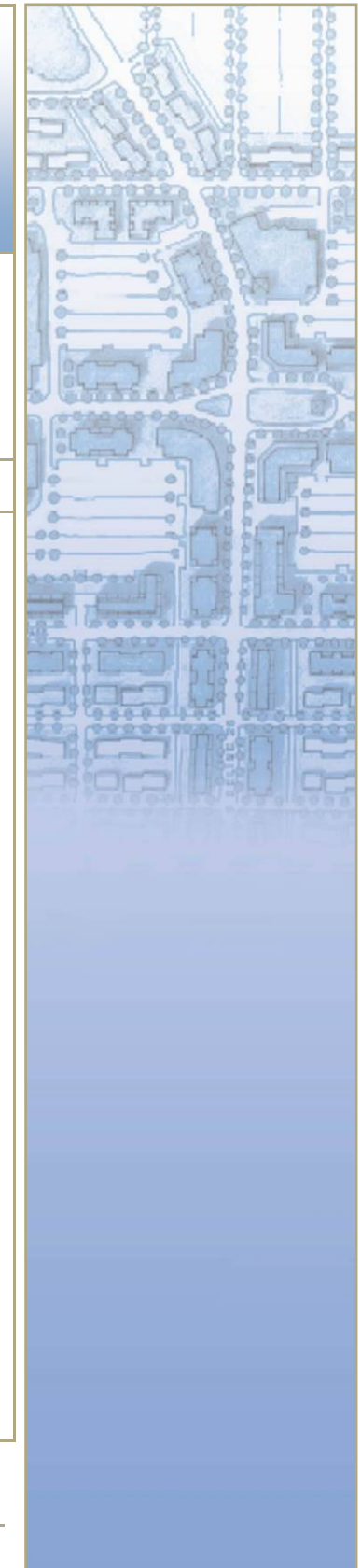
- The plan will:
  - Design and construct multi-unit and condominium residential in accordance with submitted waste management plan demonstrating best practice of residential waste management through on-site separation and storage.

- Multi-unit and condominium residences tend to have much lower diversion rates than single family dwellings. Targeting these structures should help to improve diversion rates.

#### 8.9 WASTE REDUCTION - CONSTRUCTION (R)




- The Plan follows a best practice for on site construction waste management and material/recycling/salvage with on-site separation. As a minimum this will include:
  - Developing a Waste Audit and Waste Reduction Plan as defined in Ontario Regulation 102/94; and
  - Divert from landfill a minimum of 50% of all waste generated on site.

- Recycling of construction waste and use of recycled and regional materials reduces the demand for virgin materials and the environmental impacts associated with extraction, processing and transportation of resources.



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### GUIDELINE

### POINTS

### RATIONALE

#### 8.10 REQUIRED MATERIAL SELECTION (R)

Design and construct according to requirements of Material Selection (see Attachment A) for applicable building type (Part 3 or Part 9).

- Reducing construction waste results in reduced costs from landfill tipping fees and reduces the need for landfill expansion, thus helping to protect open space.
- The extraction of raw materials, fabrication, and transportation of products all have an impact on the environment. Product selection, therefore, can be carried out to reduce these inputs without impacting performance.

#### 8.11 OPTIONAL MATERIAL SELECTION (O)

- The plan incorporates eight (8) optional items from the Materials Selection found in Attachment A.

3

- The extraction of raw materials, fabrication, and transportation of products all have an impact on the environment. Product selection, therefore, can be carried out to reduce these inputs without impacting performance.

#### 8.12 GREEN UPGRADES AVAILABLE TO HOME BUYERS (O)

- At the time of submission of the plan the developer/builder includes one or more of the following green upgrade options:
  - Offer xerophytic landscape package;
  - Offer rain barrels with overflow to storm sewer (sizes to vary with lot size);
  - Offer native plant species;
  - Offer upgrade for net metering;
  - Offer upgrade for smart metering;
  - Offer upgrade to LED lighting for 20% of all fixtures;

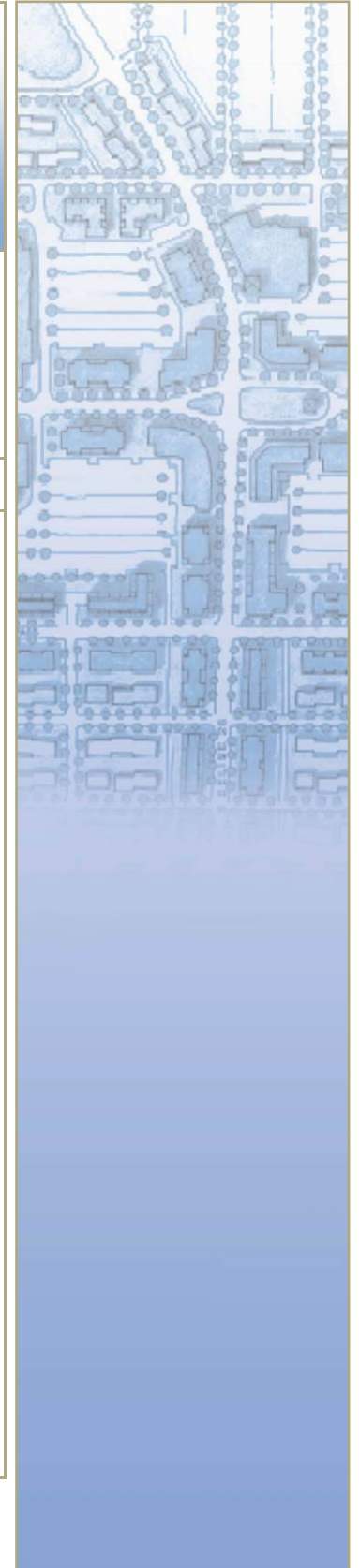
1

(for 1)

3




(for 3)

- Offering optional green upgrades achieves two objectives:
  - Requires that developers develop an understanding of green technologies including costing and design strategies, and develop the capacity to deliver them; and
  - Educates purchasers regarding green strategies and gives them the option of incorporating them.

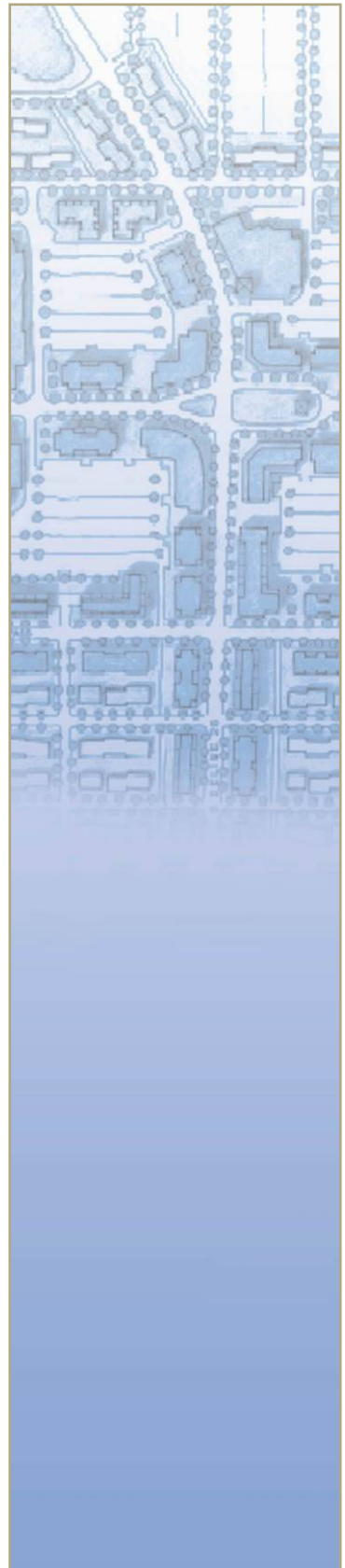


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GUIDELINE	POINTS	RATIONALE
<ul style="list-style-type: none"> <li>○ Offer upgrade to occupancy sensors;</li> <li>○ Offer upgrade to active solar hot water and space heating;</li> <li>○ Offer other energy saving methods related to heating and cooling such as external awning over larger windows, shade landscape package, thermal window blinds;</li> <li>○ Other innovative packages approved by the City;</li> <li>○ Provision of a Homeowners' Guide with information on the variety of green upgrades.</li> </ul>	<div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">5</div> 5 (for 3+)	
<p><b>8.13 ON-SITE POWER GENERATION (O)</b></p> <ul style="list-style-type: none"> <li>• The plan will develop or incorporate on-site natural gas sources of power generation to meet 5% of the energy needs of all buildings and uses and commonly owned infrastructure in the project.</li> </ul>	<div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">4</div>	<ul style="list-style-type: none"> <li>• Local energy production:               <ul style="list-style-type: none"> <li>○ increases the resilience of the electrical grid;</li> <li>○ increases residents' awareness of where their power comes from; and</li> <li>○ makes conversion to renewable energy sources simpler.</li> </ul> </li> </ul>
<p><b>8.14 ON-SITE RENEWABLE POWER GENERATION (O)</b></p> <ul style="list-style-type: none"> <li>• The plan will develop or incorporate on-site renewable sources of power generation (wind, solar, biomass) to meet 5% of the energy needs of all buildings and uses and commonly owned infrastructure in the project.</li> </ul>	<div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">8</div>	<ul style="list-style-type: none"> <li>• Local green power production does all of the above, and it reduces emissions.</li> </ul>
<p><b>8.15 DISTRICT ENERGY (O)</b></p> <ul style="list-style-type: none"> <li>• The plan will include a design for a district energy system.</li> </ul>	<div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">4</div>	<ul style="list-style-type: none"> <li>• The use of district energy can result in lower energy intensity. It makes the conversion to alternative and renewable energy sources simpler as compared to a decentralized system.</li> </ul>



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### GUIDELINE

### POINTS

### RATIONALE

#### 8.16 GREEN BUILDING CERTIFICATION (O)

- The plan will include documentation of, the intention to complete, or the completion of, a green building certification process (Acceptable certification programs include: LEED, and Green Globes).

- The use of Green Building Certification systems results in a better educated industry and public, competition between developers, and typically higher performance buildings.

#### 8.17 WASTE WATER MANAGEMENT (O)

- The plan includes the following:
  - Design and construct greywater and/or stormwater systems to capture and reuse at least 25% of greywater and stormwater.
  - Additional Credit if 50% of greywater and stormwater is captured and reused on the site.
  - Additional Credit if 75% of greywater and stormwater is captured and reused on the site.

2

5

7

- Greywater re-use reduces the loading on infrastructure (both storm sewers and potable water systems).

#### 8.18 HEAT ISLAND REDUCTION (O)

- The plan provide shade within 5 years for at least 30% of non-roof impervious surfaces or the use of light-coloured/high-albedo materials for at least 30% of the non-roof impervious surfaces.

3

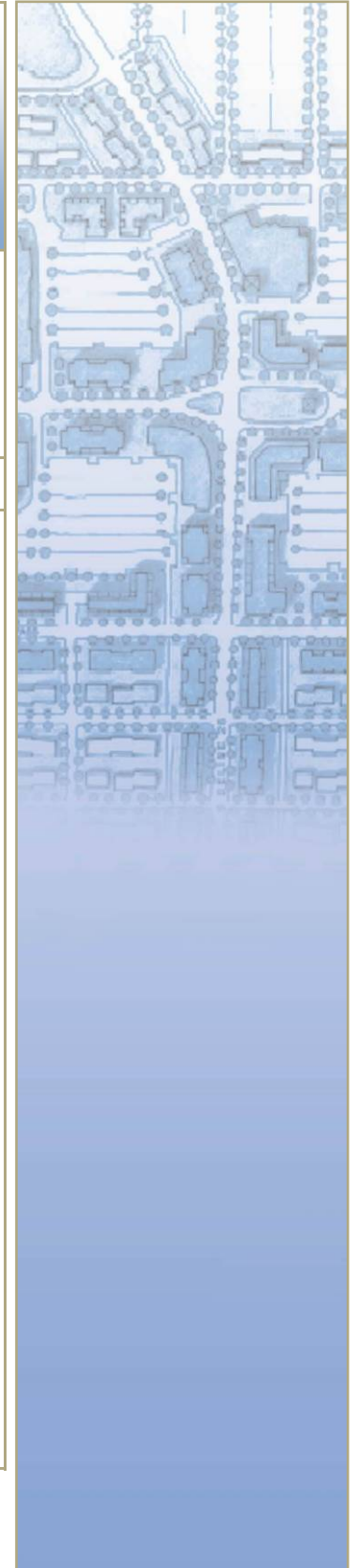
- The use of dark, non-reflective surfaces for roofs, parking areas and walkways contributes to heat-island effect by absorbing more solar radiation and emitting it back to surrounding areas as heat, raising ambient temperatures and increasing building cooling loads. Light coloured, reflective surfaces mitigate this effect.

#### 8.19 HEAT ISLAND REDUCTION (ROOFING)

- The plan provides for the use of Energy Star compliant and high




3

- Using highly reflective and emissive materials or installing green roofs can reduce heat island



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### GUIDELINE

### POINTS

### RATIONALE

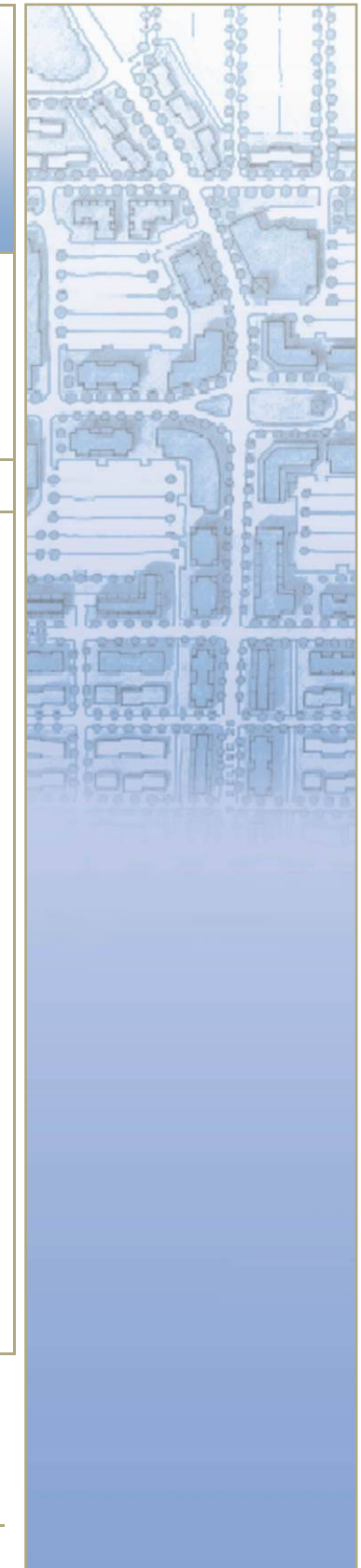
emissivity roofing for a minimum of 75% of the roof surface of all buildings in the project or the installation of a green (“vegetated”) roof for at least 50% of the roof area of all buildings within the project or the combinations of high albedo and green roof can be used providing that they collectively cover 75% of the roof area of all buildings.

effects as described above.

#### 8.20 DURABLE BUILDINGS




- Part 9 Buildings: At the time of submission of the draft plan of subdivision/rezoning/site plan, submit a plan describing initiatives to be implemented that will specifically address building durabilities. Strategies to achieve durability should include (but are not limited to):
  - minimum roof overhangs;
  - perimeter drainage;
  - drainage plane behind exterior cladding;
  - flashing details.
- Part 3 Buildings: Prior to issuing the building design documentation for tender, develop a Capital Plan for the building as designed and obtain a sign-off from the land owner that the level of maintenance described is acceptable.

- A building’s durability can have a significant impact on waste (energy, materials, and money). The BC leaky condo crisis provides evidence of this. This requirement specifies some key cladding requirements and requires that the developer consider and plan how their project will address durability concerns.
- See above. In the case of commercial buildings, design options are too varied to prescribe specific design strategies. However, linking a building’s predicted maintenance requirements to design decisions, gives future users the opportunity to influence durability strategies.



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### GUIDELINE

### POINTS

### RATIONALE

#### 9.0 MONITORING AND PROCESS TO ADDRESS EXCEPTIONS

##### 9.1 MONITORING PLAN (O)

- The plan incorporates a program for monitoring the sustainable design elements for a minimum of 10 years including a guaranteed funding mechanism.

3

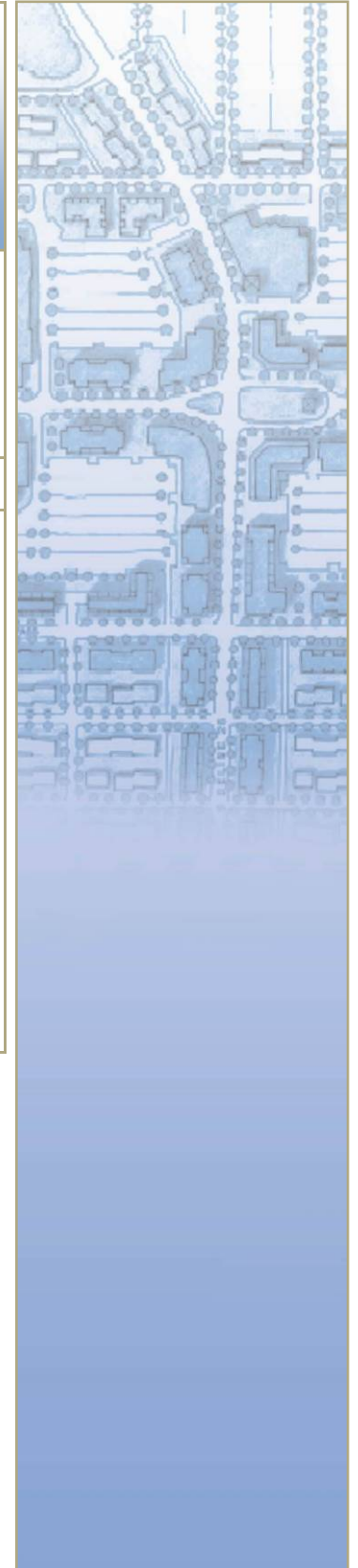
- A monitoring program can help to inform upon the effectiveness of the Guidelines in specific locations.

##### 9.2 EXCEPTIONS (O)

- Applicants may submit a request for exceptions to any of the above requirements to the City of Pickering staff for review.

No Points

- It is recognized that exceptions may exist that allow proponents to meet the objectives of a criterion in a unique or innovative manner. The City will consider whether submissions describing the rationale for exceptions and how the City's sustainability objectives are being met through an alternate design approach.





ATTACHMENT A  
BUILDING MATERIALS CHECKLIST

**Materials Selection**

**Intent:** Select products to reduce the environmental impacts associated with energy-intensive extraction, processing and transportation of materials. These include materials with high recycled and regional content and low material intensity.

**Requirements:** Implement ALL of the required items. Achieve an additional credit by implementing eight (8) optional items.

**1. Foundation**

Required:

- Use fly-ash in concrete to achieve a 20% reduction in Portland cement
- Use regionally produced concrete or block (within 800 km)

Optional:

- Use fly-ash in concrete to achieve a 40% reduction in Portland cement
- Use recycled concrete, asphalt or glass for sub-base

**2. Structure****Part 3 Buildings:**

Required:

- Use fly-ash in concrete to achieve a 20% reduction in Portland cement
- Use structural steel with at least 50% recycled content

Optional:

- Use fly-ash in concrete to achieve a 50% reduction in Portland cement
- Use structural steel with at least 80% recycled content

**Part 9 Buildings:**

Required:

- Use structural insulated panels

OR

- If using wood - Use advanced framing techniques:
  - Align doors and windows with stud spacing where practical
  - Framing spaced at 24" on center
  - Single top plates
  - No headers on non-bearing walls
  - Stacked floor plans
- If using Light Gauge Steel – Follow best practices outlined in HUDUSER's Prescriptive Method For Residential Cold-Formed Steel Framing <http://www.huduser.org/publications/doc/pm2.doc>, including:
  - Framing spaced at 24" on center
  - Single top plates
  - In-line structural members

Optional:

- Use finger-jointed framing material (eg. plates and studs)

- Use FSC (or equivalent) certified sustainable dimensional or engineered lumber in 50% of all wall, floor and roof framing
- Use FSC (or equivalent) certified sustainable dimensional or engineered lumber in 75% of all wall, floor and roof framing
- Use decking materials made from sustainably-harvested lumber (FSC or equal)
- Use non-structural decking materials made with at least 50% recycled content (by weight)

**3. Roofing**

Required:

- Use 40-year roofing material or 40-year asphalt shingles

Optional:

- Use recycled content roofing material (at least 50% post consumer content)
- Use long life roofing materials (concrete, slate, clay)

**4. Insulation**

Required:

- Insulation with 25% recycled content material (by weight)

Optional:

- Insulation with 50% recycled content material (by weight)
- Use CFC-free, HCFC-free, formaldehyde-free foam insulation

**5. Exterior Finishes**

Optional:

- Use recycled content sheathing (at least 50% by weight)
- Use FSC (or equivalent) sustainably-harvested wood siding
- Use regional brick or stone (within 800 km)

**6. Interior Finishes**

Required:

- Drywall used is made from at least 50% recycled content by weight
- Carpet systems meet or exceed the requirements of the Carpet and Rug Institute's Green Label Indoor Air Quality Test Program

Optional:

- Wood flooring made from sustainably-harvested lumber (FSC or equal)
- Bamboo, cork or linoleum flooring used
- Domestic wood flooring from reused/recovered or re-milled sources
- Carpet pad made from recycled content textile, carpet, or tire waste
- Ceramic or glass tile is made from at least 50% recycled content (by weight)
- Exposed finishes (in lieu of paint) for 25% of wall area

**7. Windows and Doors**

Required:

- If used, tropical hardwood must come from FSC-certified sources (or equal)

Optional:

- Doors must contain no urea-formaldehyde based binders

- Door must constitute one or more of the following:
  - Recycled material (at least 50% by weight)
  - Recovered content (eg. agri-fibre, re-milled wood products)
  - Reclaimed/reused doors
- Windows made from wood or composites. Wood must be FSC-certified.
- Use finger-jointed windows

#### **8. Cabinetry and Trim**

Optional:

- Use finger-jointed trim
- Cabinetry and trim contain no added urea-formaldehyde resins
- CPA/EPP certified composition wood used

ATTACHMENT B  
WATER EFFICIENCY PERFORMANCE STANDARDS

**Water Efficiency Performance Standards**

The maximum rates allowed in the 1997 OBC Code and Guide for Plumbing, Section 7.6.4 Water Efficiency Building Code are:

Fixture	Flow
Toilet	6.0 L/flush
Urinal	3.8 L/flush
Lavatory	8.35 L/min
Kitchen Sink	8.35 L/min
Shower	9.5 L/min

Water efficient fixtures can significantly reduce water use in a building and help save on water heating costs, and therefore fixtures with flows less than code requirements are recommended. There are two options for determining compliance with this water efficiency performance standard:

**Prescriptive Path**

This is the simplest method to achieve water reductions required by the City of Pickering. The following table outlines the maximum allowable flow rates for each fixture type. Ensure each fixture installed in the building

Fixture	Flow	Rationale
Toilet	4.2 L/flush	Dual-flush toilets are within the price range of standard one-piece toilets, with various models available (the flow of a dual flush is typically 3 or 6 LPF). See the attached Appendix A for a list provided by the City of Toronto water efficiency office. They are installed in most LEED-Certified buildings.
Urinal	1.9 L/flush	Half-flush urinals and waterless urinals are readily available in a price range similar to conventional products.
Lavatory	6.8 L/min	Inexpensive aerators can be installed on existing faucets to reduce flow while maintaining pressure and laminar flow.
Kitchen Sink	6.8 L/min	
Shower	5.7 L/min	Low-flow, high performance shower faucets are available for nominal price increase and significant water savings.

**Performance Path**

If certain conditions require that some fixtures exceed the flows required by the prescriptive path, the performance path may be followed. For each fixture in the building, list the flow rates in a table as shown below. Set the flowrate for dual flush toilets equal to 2/3 the maximum flow rate.

**Calculations**

1) Enter values into blank cells for each installed fixture and flow rate. Column headings indicate where calculations are required.

2) The fixture use/person for Residential buildings can be estimated using the following guidelines:

Typical uses:	Main Toilet	4 flush/day	Lav	4 mins/day	Shower	10 mins/day
	Extra Toilet	1 flush/day	Lav	1 min/day		
	Kitchen Faucet	6 mins/day				

For Commercial buildings, the toilet use varies between female and male occupants (to account for urinals)

The following fixture used can be used as an estimate:

Female Toilet	3 flush/day	Lav	3 mins/day	Shower	10 min/day
Male Toilet	1 flush/day				
Urinal	2 flush/day				
Kitchen Faucet	1 min/day				

Note: Lavatories and Kitchen Sinks assume 1 minute duration per use

For Commercial buildings, assume 50 % male and 50% female occupants, and that only 10% of occupants will use showers

3) Determine the base and design flows by multiplying the number of occupants (2) by the fixture use/person (3) and the corresponding flows (1) or (5)

4) Determine the total daily base and design flows by adding all the fixtures in columns (4) and (6)

5) Determine the annual base and design use by multiplying the number of work days by the corresponding daily flows For Residential buildings use 365

Fixture	Design Flow		Number of Occupants		Fixture Use/Person		Daily Design Flow		Base Flow		Daily Base Flow	
	(1)		(2)		(3)		(4)=(1)X(2)X(3)	(5)		(6)=(2)X(3)X(5)		
Toilets	4.2	L/flush	Male1	100	1	flush/day	420	L/day	6	L/flush	600	L/day
	4.2	L/flush	Female1	100	3	flush/day	1260	L/day	6	L/flush	1800	L/day
		L/flush	Male2			flush/day	0	L/day	6	L/flush	0	L/day
		L/flush	Female2			flush/day	0	L/day	6	L/flush	0	L/day
Urinals	1.9	L/flush	Male1	100	2	flush/day	380	L/day	3.8	L/flush	760	L/day
		L/flush	Male2			flush/day	0	L/day	3.8	L/flush	0	L/day
Lavatories	6.8	L/min	Male1	100	3	min/day	2040	L/day	8.35	L/min	2505	L/day
	6.8	L/min	Female1	100	3	min/day	2040	L/day	8.35	L/min	2505	L/day
		L/min	Male2			min/day	0	L/day	8.35	L/min	0	L/day
		L/min	Female2			min/day	0	L/day	8.35	L/min	0	L/day
Kitchen Sinks	6.8	L/min	Sink1	200	1	min/day	1360	L/day	8.35	L/min	1670	L/day
		L/min	Sink2			min/day	0	L/day	8.35	L/min	0	L/day
		L/min	Sink3			min/day	0	L/day	8.35	L/min	0	L/day
Showers	5.7	L/min	Male	10	10	min/day	570	L/day	9.5	L/min	950	L/day
	5.7	L/min	Female	10	10	min/day	570	L/day	9.5	L/min	950	L/day
Daily Total					Daily Design Flow	8640	L/day	Total Base Flow		11740	L/day	
Annual Total	260	Work Days	Annual = Daily x Work Days		Annual Design Flow	2246400	L	Annual Base Flow		3052400	L	
								Percent Reduction		26.4%		