

# Town of Ajax Green Development and Environmental Design Guidelines

## INTRODUCTION

The Town of Ajax Green Development and Environmental Design Guidelines (GDEDG) is a tool designed to aid in evaluating development applications through the lens of sustainability and climate change mitigation and adaptation by providing a suite of mandatory and optional metrics. The GDEDG is rooted in existing best practices, common strategies, and progressive standards and regulations to promote sustainable site and building design. The GDEDG has been established in pursuit of a more sustainable and resilient Ajax community.

## APPLICABILITY

All new Site Plan and/or Draft Plan of Subdivision Applications submitted to the Town are required to complete the GDEDG Checklist as part of the application. The GDEDG is applicable to the following development types:

- **Low-Density Residential:** Residential developments less than 4 storeys with a minimum of 5 dwelling units.
- **Mid to High-Density Residential and Non-Residential:** Residential developments 4 storeys and higher and all industrial, commercial, and institutional developments.

Renovation and expansions to existing buildings are not required to meet the GDEDG requirements but are encouraged to implement relevant sections of the GDEDG where possible.

## LEVELS OF ACHIEVEMENT

There are two levels of achievement for the GDEDG: Tier 1 and Tier 2.

- **Tier 1** is the minimum required level of achievement. To achieve Tier 1, developments must meet all applicable Tier 1 requirements.
- **Tier 2** is a voluntary higher level of achievement. To achieve Tier 2, developments must meet all applicable Tier 2 Core requirements.

Exemptions from specific requirements in the GDEDG may be granted on a case-by-case basis at the discretion of the Town.

## PROCESS

- **Phase 1 Pre-consultation submission:** The GDEDG will be discussed. Town staff will review the application and provide comments related to the GDEDG Checklist.
- **Phase 2 Pre-consultation submission of Site Plan and/or Draft Plan of Subdivision Application:** A preliminary complete GDEDG Checklist will be required as part of the submission package at Phase 2 Pre-Con for Site Plan or Draft Plan of Subdivision Applications. Town staff will review the checklist and evaluate which metrics are implemented correctly based on the other documents and drawings in the submission.
- **Initial Complete Submission and Resubmission of Site Plan and/or Draft Plan of Subdivision Application:** A complete GDEDG checklist will be required as part of the submission package for Site Plan or Draft Plan of Subdivision Applications, for any re-submission and circulation of Site Plan or

Draft Plan of Subdivision applications, including any changes or updates. At the submission of the applications, the proponent will include a completed GDEDG Checklist. Town staff will review the checklist and evaluate which metrics are implemented correctly based on the other documents and drawings in the submission. When the town provides its comments back to the proponent, these comments will include consideration of the GDEDG Checklist: any mandatory metrics that are not met will be required to be addressed, any incorrectly claimed metrics will be noted, and an overall score will be provided to the proponent accompanied by the targets and incentives.

- **Final Submission:** The GDEDG Checklist will be included in the final submission, and the final attainment of GDEDG metrics will be the basis for providing applicable incentives.

## INCENTIVES

Non-financial incentives will be available to projects that achieve Tier 2 of the GDEDG. These incentives may include expedited reviews, improved marketing through Ajax networks, and annual awards presented by Mayor and Council. Incentives will be provided case-by-case basis at the discretion of the Town.

# Category Overview

## AIR

The Air Category focuses on improving local outdoor air quality by mandating requirements or restrictions on airborne pollutant source control and reductions. The category also focuses on minimizing impact on microclimates and human and wildlife habitats.

## ENERGY

The Energy Category focuses on buildings and their energy performance during the operational stage.

## NATURAL ASSETS AND HABITAT

The Natural Assets and Habitat Category focuses on the preservation, restoration, and enhancement of the site and surrounding areas.

## WASTE AND MATERIALS

The Waste and Materials Category focuses on reducing the waste generation during the construction and operational phases of the development.

## WATER

The Water category focuses on reducing the use of potable water for indoor and outdoor water uses, as well as rainwater management.

## OTHER

The Other Category contains the elements of sustainable development that do not fall within any of the other Impact Categories. These elements may affect factors such as human health, wellbeing, and satisfaction.

## MID TO HIGH-DENSITY RESIDENTIAL AND NON-RESIDENTIAL REQUIREMENTS

### AIR

A1. Green Parking		
Intent		Promote the use of alternative transportation by reserving preferred parking spots for car sharing or fuel efficient/hybrid/electric vehicles. Green vehicles will reduce environmental impact related to gas consumption.
Requirements	Tier 1	For projects with 20 or more parking spaces, provide dedicated parking spaces for "green vehicles" in 5% of the total site parking spaces (does not apply to compact cars). Dedicated parking spaces should be located in preferred areas close to building entries.
Details		<p>Examples of "green vehicles" include:</p> <ol style="list-style-type: none"> <li>1. Carpooling</li> <li>2. Carshare</li> <li>3. Hybrid vehicles</li> <li>4. Electric vehicles</li> </ol>
Documentation		- Parking plan(s) indicating the location of dedicated green vehicle parking spaces

<b>A2. Electric Vehicle Infrastructure</b>		
Intent		Promote the use of electric cars by providing electric vehicle (EV) charging stations.
Requirements	Tier 1	Residential and Mixed-Use Development: If 20 or more parking spaces are provided, design and construct 50% of all parking spaces to have EV charging stations or be EV Ready.
		Non-Residential Developments: If 20 or more parking spaces are provided, design and construct 25% of all parking spaces to have EV charging stations or be EV Ready.
		If less than 20 parking spaces are provided, design and construct at least 10% of total parking spaces (or a minimum of 1 space, whichever is greater) to have EV charging stations or be EV Ready.
	Tier 2 (core)	Residential and Mixed-Use Developments: Design and construct at least 75% of the total parking spaces (or a minimum of 1 space, whichever is greater) to have EV charging stations or be EV Ready
		Non-Residential Developments: Design and construct at least 50% of the total parking spaces (or a minimum of 1 space, whichever is greater) to have EV charging stations or be EV Ready.
Tier 2 (optional)	Design and construct at least 100% of total parking spaces (or a minimum of 1 space, whichever is greater) to have EV charging stations or be EV Ready.	
Details		To be EV ready, infrastructure that enables the future installation of Electric Vehicle Supply Equipment (EVSE) must be provided at the time of construction. This includes providing an adjacent Energized Outlet capable of providing Level 2 Charging or higher to the parking space.
Documentation		- Parking plan(s) indicating the location of EV chargers or EV Ready spaces

<b>A3. Heat Island Effect – Roof</b>		
Intent		Reduce the heat island effect to minimize impact on microclimates and human and wildlife habitats.
Requirements	Tier 1	Include heat island reduction measures for 100% of the available roof area.
	Tier 2 (core)	Include a green roof for 10% of the available roof area.
Details		Available roof area excludes any roof area covered by mechanical equipment, energy generation systems such as solar PV, or skylights. Examples of heat island reduction measures include: 1. Cool roofing (high albedo/light-coloured) 2. Solar PV 3. Green roof
Documentation		- Roof plan(s) indicating the heat island reduction measures, including the SRI value(s) of roofing material(s)

<b>A4. Heat Island Effect – Non-Roof</b>		
Intent		Reduce the heat island effect to minimize impact on microclimates and human and wildlife habitats.
Requirements	Tier 1	Include a combination of heat island reduction measures for at least 50% of site hardscapes (not including surface parking).
	Tier 2 (core)	Include a combination of heat island reduction measures for at least 75% of site hardscapes (not including surface parking).
	Tier 2 (optional)	Include a combination of heat island reduction measures for at least 75% of all site hardscapes, including surface parking.
Details		<p>Examples of non-roof heat island reduction measures include:</p> <ol style="list-style-type: none"> <li>1. Hardscape shading (such as shading from trees, architectural structures, or energy generation systems)</li> <li>2. High-albedo surface materials</li> <li>3. Open grid pavers (greater than 50% pervious)</li> </ol>
Documentation		- Site plan(s) indicating the heat island reduction measures

<b>A5. Pedestrian Friendliness</b>		
Intent		Encourage a pedestrian friendly environment by promoting walkability and safety to reduce car use and thereby reduce environmental impacts such as pollution, traffic congestion, and noise.
Requirements	Tier 1	Construct a network of suitable pedestrian facilities and multi-use paths within the development. The pedestrian network should connect the development with surrounding neighbourhoods, be integrated with the Town’s trail system, and implement recommendations of the Town’s Integrated Transportation Master Plan
		If cul-de-sacs are necessary, provide pedestrian connections in the cul-de-sacs.
		Provide streetscape amenities such as benches and waste receptacles.
		Provide continuous sidewalks on both sides of all public roads.
	Make all sidewalks/walking paths a minimum of 1.8 m wide to allow for physical distancing as well as to accommodate for wheelchair users and other people with disabilities.	
	Tier 2 (core)	In key locations where there is anticipated conflict between motorists and a high volume or high frequency of pedestrians, provide visible crossings or other pedestrian connections with the appropriate signage and pavement markings. The crossing or connection must provide connections between pedestrian facilities and destinations. Pedestrian connections should not connect to a driveway or other area that puts pedestrians exposed to vehicular traffic without appropriate signage and pavement markings.
Details		Pedestrians include people with disabilities using mobility aid devices. When providing pedestrian crossings, consider curb ramps and depressed curbs (designed according to AODA standards).
Documentation		- Site plan(s) highlighting targeted element(s)

A6. Active Transportation		
Intent	Reduce air pollution and GHG emissions related to car use by promoting active transportation. Active transportation also reduces fuel-dependency, traffic congestion, and noise pollution.	
Requirements	Tier 1	Provide safe and direct routes that encourage use of active transportation modes and connect to transit, commercial areas, community facilities, and parks.
		Bicycle parking is provided in conformance with Town Zoning Bylaw.
		High-density residential buildings: long-term bicycle parking spaces are provided for 30% or more of the building's units.
		Non-residential and mixed-use buildings: long-term bicycle parking spaces are provided for 10% of employees and short-term bicycle parking spaces are provided for 7.5% of peak visitors.
		Non-residential and mixed-use buildings: one trip-end facility (i.e. showers and a change room) is provided for each gender for every 30 bicycle parking spaces provided (minimum of 1 facility when more than 5 bicycle parking spaces are provided).
Details	<p>Bikes include adaptive bikes, trikes, and scooters for people with disabilities. Long-term bicycle parking must be in a weather protected, secure area with controlled access.</p> <p>Short-term bicycle parking must be in a highly visible and easily accessible location in close proximity to main building entrances.</p>	
Documentation	<ul style="list-style-type: none"> <li>- Plan(s) indicating safe and direct active transportation routes</li> <li>- Plan(s) indicating location, number, and type (long-term/short-term) of bicycle parking spaces</li> <li>- Plan(s) indicating trip end facilities</li> </ul>	

## ENERGY

E1. Energy Performance & Emissions																																																		
Intent		Address climate change by reducing GHG emissions associated with the operations of new buildings. Energy conservation targets establish the minimum level of energy efficiency for buildings to reduce environmental and economic impacts associated with excessive energy use.																																																
Requirements	Tier 1	Achieve at least 15% energy efficiency improvement over OBC, SB-10, Division 3 (2017)																																																
	Tier 2 (core and optional)	Using whole-building energy modelling, demonstrate annual Total Energy Use Intensity (TEUI), Thermal Energy Demand Intensity (TEDI) and GHG Emission Intensity (GHGI) performance limits provided in the table below. Note that Multi Unit Residential Buildings are referred to as MURB in the table.																																																
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">TEUI (kWh/m<sup>2</sup>/yr)</th> <th colspan="2">TEDI (kWh/m<sup>2</sup>/yr)</th> <th colspan="2">GHGI (kg CO<sub>2</sub>e/m<sup>2</sup>/yr)</th> </tr> <tr> <th>Core</th> <th>Optional</th> <th>Core</th> <th>Optional</th> <th>Core</th> <th>Optional</th> </tr> </thead> <tbody> <tr> <td><b>MURB (&gt;6 storeys)</b></td> <td>135</td> <td>100 to 75</td> <td>50</td> <td>30 to 15</td> <td>15</td> <td>10 to 0</td> </tr> <tr> <td><b>MURB (&lt;6 storeys)</b></td> <td>130</td> <td>100 to 70</td> <td>40</td> <td>25 to 15</td> <td>15</td> <td>10 to 0</td> </tr> <tr> <td><b>Commercial Office</b></td> <td>130</td> <td>100 to 65</td> <td>30</td> <td>22 to 15</td> <td>15</td> <td>8 to 0</td> </tr> <tr> <td><b>Commercial Retail</b></td> <td>120</td> <td>90 to 70</td> <td>40</td> <td>25 to 15</td> <td>10</td> <td>5 to 0</td> </tr> <tr> <td><b>Mixed Use</b></td> <td colspan="6">Calculated using an area weighted average of the performance targets from the other building types above</td> </tr> </tbody> </table>		TEUI (kWh/m <sup>2</sup> /yr)		TEDI (kWh/m <sup>2</sup> /yr)		GHGI (kg CO <sub>2</sub> e/m <sup>2</sup> /yr)		Core	Optional	Core	Optional	Core	Optional	<b>MURB (&gt;6 storeys)</b>	135	100 to 75	50	30 to 15	15	10 to 0	<b>MURB (&lt;6 storeys)</b>	130	100 to 70	40	25 to 15	15	10 to 0	<b>Commercial Office</b>	130	100 to 65	30	22 to 15	15	8 to 0	<b>Commercial Retail</b>	120	90 to 70	40	25 to 15	10	5 to 0	<b>Mixed Use</b>	Calculated using an area weighted average of the performance targets from the other building types above					
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Tier 2 (core)	For any building types not covered by the Tier 2 (core) TEUI, TEDI, and GHGI targets listed above, achieve at least 25% energy efficiency improvement over OBC, SB-10, Division 3 (2017)																																																	
Documentation		- Energy Modelling Report or other documentation demonstrating compliance with the targeted standard																																																

E2. Operational Systems Verification		
Intent		Verify that the operational performance of the building meets the design intent.
Requirements	Tier 2 (core)	Commission the project using best practice commissioning.
	Tier 2 (optional)	Conduct a Whole-Building Air Leakage Test to improve the quality and air tightness of the building envelope. The project must target equal to or less than 2 L/s/m <sup>2</sup> (at 75 Pa) through whole-building air infiltration testing.
Details		Commissioning process should be in accordance with ASHRAE Guideline 0-2013. Standard commissioning scope must include HVAC systems, pumps, DHW, building automation, and lighting. The inclusion of other systems such as plumbing fixtures, electrical distribution, and building envelope is encouraged.
Documentation		<ul style="list-style-type: none"> <li>- Commissioning Plan</li> <li>- Whole-Building Air Leakage Test results</li> </ul>



<b>E3. On-Site Renewable Energy</b>		
Intent	Encourage and recognize increasing levels of on-site renewable energy self-supply to reduce environmental and economic impacts associated with fossil fuel energy use.	
Requirements	Tier 2 (optional)	Achieve one or more of the following: <ol style="list-style-type: none"> <li>1. Design all new buildings for solar readiness</li> <li>2. Use community or on-site renewable energy production to provide at least 10% of the energy needs of all buildings and communally owned infrastructure in the project</li> </ol>
Details	Strategies to design a building for solar readiness may include the following: <ol style="list-style-type: none"> <li>1. Install conduit from the roof to the mechanical room/electrical box</li> <li>2. Ensure that the building structure has adequate structural capacity to accommodate future installation of renewable energy systems</li> <li>3. Ensure that sufficient area is allocated for the future installation of renewable energy systems</li> </ol> Sources of on-site renewable energy production may include: <ol style="list-style-type: none"> <li>1. Solar PV</li> <li>2. Solar thermal</li> <li>3. Wind systems</li> <li>4. Georexchange</li> </ol>	
Documentation	<ul style="list-style-type: none"> <li>- Drawings, plans, or other documentation demonstrating that the project is solar ready</li> <li>- Energy Modelling Report or other documentation demonstrating the percentage of the project’s energy needs provided by on-site renewable sources</li> </ul>	

<b>E4. Light Pollution Reduction</b>		
Intent	Minimize light trespass from buildings or sites to reduce development impact from lighting on nocturnal environments. Reduce sky-glow to increase night sky access and improve nighttime visibility through glare reduction.	
Requirements	Tier 1	Utilize Dark Sky compliant fixtures that have the Dark Sky Fixture Seal of Approval for exterior lighting (allow no uplight). If the above is unavailable, use high efficiency, exterior lighting that is full cut-off and shield exterior light fixtures >1000 lumens to provide night sky lighting
	Tier 2 (core)	Implement the following: <ol style="list-style-type: none"> <li>1. Do not allow architectural lighting between 11pm and 5am.</li> <li>2. Non-residential and Mixed-use buildings: Develop lighting controls that reduce nighttime spillage of light by 50% from 11pm to 5am.</li> </ol>
Documentation	<ul style="list-style-type: none"> <li>- Exterior lighting plan(s), schedule(s), or other documentation indicating targeted element(s)</li> </ul>	

## NATURAL ASSETS AND HABITAT

N1. Habitat Corridors		
Intent		Provide continuous environments to support habitats.
Requirements	Tier 1	Where appropriate, incorporate habitat corridors into roadway design.
		Identify existing adjacent natural areas (potential wildlife habitat) and if feasible, consider providing continuous connection between these areas through the project site.
		Maintain/protect vegetated buffer along watercourses as a habitat corridor to allow for unimpeded and protected wildlife movement.
		Per TRCA Post-Construction Restoration Guidelines, provide native species for 100% of landscape plantings.
Details		Per TRCA Post-Construction Restoration Guidelines, native plantings should be suitable given the soil, moisture, and light conditions of the site, as well as any specific stresses. Cultivars of native species are generally not acceptable. While invasive species are not permitted, non-invasive exotic species may be used in some limited areas. Plantings should also be compatible and complementary to the existing vegetation communities.
References		<a href="#">TRCA Post-Construction Restoration Guidelines</a>
Documentation		<ul style="list-style-type: none"> <li>- Site plan(s) highlighting implemented element(s)</li> <li>- Plant schedule(s) or other documentation demonstrating that plantings are native</li> </ul>

N2. Bird Friendly Design		
Intent		Minimize impact of wildlife habitats.
Requirements	Tier 1	Design the building(s) in accordance with the guidelines laid out in the Canadian Standards Association 's (CSA) Bird Friendly Building Design Standard A460.
Details		<p>Requirements of the CSA Bird Friendly Design Standard A460 include:</p> <ul style="list-style-type: none"> <li>- Glazing to be treated up to 16 to 20 m above grade or to the top of the mature tree canopy, whichever is greater</li> <li>- Treat a minimum of:                             <ul style="list-style-type: none"> <li>o 90% of glazing with collision deterrent markers</li> <li>o All glazing that creates fly-through conditions, including glass railing systems</li> <li>o All glazing adjacent to natural areas</li> <li>o All non-vision glazing, including spandrels</li> </ul> </li> <li>- Collision Deterrent Markers (visual markers):                             <ul style="list-style-type: none"> <li>o Size – minimum of 4 mm in diameter</li> <li>o Density – max 50 mm between markers</li> <li>o Contrast – high contrast under varying daylight conditions</li> <li>o Surface – must be applied to the first surface of glass</li> </ul> </li> </ul>
References		<a href="#">CSA Bird Friendly Building Design Standard A460</a>
Documentation		<ul style="list-style-type: none"> <li>- Elevations indicating bird-friendly glazing measures implemented, including treated area, type of treatment, density of visual markers, etc.</li> <li>- Summary table of treated glazing areas for each elevation</li> </ul>

<b>N3. Native Species</b>		
Intent		Mitigate site damage by restoring native and adaptive vegetation.
Requirements	Tier 1	Per the Ontario Invasive Species Act, do not plant invasive species. Use native species for 75% of the new landscaping planted areas (including grassed areas).
	Tier 2 (core)	Use native species for 100% of the new landscaping planted areas (including grassed areas). Do not use non-native species.
References		<a href="#">Ontario Invasive Species Act</a>
Documentation		<ul style="list-style-type: none"> <li>- Site plan(s) indicating the landscaped area(s) planted with drought-tolerant and low-maintenance species</li> <li>- Plant schedule(s) or other documentation demonstrating that plant species are drought-tolerant and low-maintenance</li> </ul>

<b>N4. Natural Heritage Systems (NHS)</b>		
Intent		Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.
Requirements	Tier 1	Wherever possible, ensure that the plan maximizes views and vistas to visible landmarks, including NHS features.
		Ensure that all lands within the NHS are in public ownership.
		Designate all NHS features and associated vegetation protection zones (VPZs) for protection through a Natural Heritage Evaluation.
		Establish a Restoration & Enhancement Plan that contributes to the overall enhancement of the NHS in accordance with the Town’s restoration & securement strategies (e.g. Ajax Shoreline Improvement Strategy).
	Tier 2 (core)	Integrate natural heritage features into the public green space and parks systems (i.e. by locating public spaces adjacent to natural features) and the Municipality’s trail system, where appropriate.
		Demonstrate ecological gain above and beyond the municipal natural heritage requirements.
Maintain public views and accessibility to the NHS by maintaining 50 to 75% of the NHS bounded by a combination of roads and open space.		
References		Ajax Shoreline Improvement Strategy
Documentation		<ul style="list-style-type: none"> <li>- Plan(s), drawing(s), or other documentation demonstrating targeted feature(s)</li> </ul>

<b>N5. Drought-Tolerant Landscaping</b>		
Intent		Reduce (potable) water use for landscaping irrigation by planting drought-tolerant landscaping.
Requirements	Tier 1	Use drought-tolerant, low-maintenance plant species for at least 50% of the planted landscaped area.
	Tier 2 (core)	Use drought-tolerant, low-maintenance plant species for at least 75% of the planted landscaped area.
		Incorporate drought-tolerant species and xeriscaping for water conservation and incorporate bioswales, rain gardens, and rainwater harvesting for low-impact irrigation.
Documentation		<ul style="list-style-type: none"> <li>- Site plan(s) indicating the landscaped area(s) planted with drought-tolerant and low-maintenance species</li> <li>- Plant schedule(s) or other documentation demonstrating that plant species are drought-tolerant and low-maintenance</li> <li>- Site plan(s) indicating water conservation and low-impact irrigation strategies implemented</li> </ul>

<b>N6. Topsoil</b>		
Intent		Promote biodiversity and habitats for vegetation and wildlife by preserving topsoil.
Requirements	Tier 1	Minimize exportation of non-hazardous topsoil from the site and maintain integrity of topsoil during removal, stockpile, and re-installation onsite.
		Planting beds have a topsoil layer with an organic matter content of 10 to 15 % by dry weight and a pH of 6.0 to 8.0. The topsoil layer should have a minimum depth of 60 cm. The subsoil should have a total uncompacted soil depth of 90 cm
	Tier 2 (core)	Retain and reuse all uncontaminated on-site soil in areas not covered by the building and parking footprint or hard surfaces OR adjust, amend, or replace with soil of equal or better quality.
		60 cm topsoil layer for entire landscaped area consists of a native soil / amendment mixture as recommended by a Certified Arborist, based on native soils testing.
Documentation		<ul style="list-style-type: none"> <li>- Planting detail(s) or other documentation indicating applicable soil characteristics (depth, pH, organic matter content)</li> <li>- Results of (or commitment to conducting) a soil test which demonstrates suitability of existing soil for re-use as planting growth medium, with or without appropriate amendments</li> </ul>

N7. Healthy Trees		
Intent		Support vegetation in urban areas and ensure maintenance of trees.
Requirements	Tier 1	Existing healthy trees are maintained and/or protected on site in accordance with the approved Tree Preservation Plan.
		Provide the following minimum soil volumes: 1. For small size trees (shared): 18 cubic metre per tree 2. For small size trees (individual): 20 cubic metre per tree 3. For medium size trees (shared): 28 cubic metre per tree 4. For medium size trees (individual): 30 cubic metre per tree 5. For large size trees (shared): 36 cubic metre per tree 6. For large size trees (individual): 40 cubic metre per tree
		Where existing trees must be removed, provide trees or cash-in-lieu in accordance with the Town’s tree replacement formula derived from Site Plan Review Manual Section 3.5.4 “Tree Replacement Program”
	Tier 2 (optional)	Implement one or more of the following: 1. Maintain all healthy on-site trees that are 30 cm or more DBH (diameter at breast height). 2. Do not plant more than 25% of the same tree species. 3. If soil volumes are limited, coordinate with utilities and install soil cells
References		Town of Ajax Tree Replacement Formula
Documentation		<ul style="list-style-type: none"> <li>- Tree Preservation Plan</li> <li>- Tree Planting Plan including soil volume (soil depth and area), species, and quantity for each planting area</li> <li>- Tree replacement or cash-in-lieu calculations</li> </ul>

N8. Street Tree Planting		
Intent		Reduce the heat island effect by providing adequate shade from trees.
Requirements	Tier 1	Where trees are planted in a row in an urban area (e.g. street trees, trees in a parking area, parks, etc.), alternate tree species at least every 2 trees or in accordance with approved municipal standards.
		For all municipal street trees, provide medium size street trees with a minimum soil volume in accordance with the requirements of N6. Healthy Trees.
	Tier 2 (core)	Provide shade within 10 years for at least 50 to 75% of the walkways/sidewalk lengths. All trees should be selected from the applicable municipal tree list. If surface parking is provided, plant shade trees native to the Region at a minimum ratio of 1 tree for every 5 parking spaces supplied
Documentation		<ul style="list-style-type: none"> <li>- Tree Planting Plan indicating species and quantity for each planting area</li> <li>- Plan(s) or drawings indicating walkway/sidewalk length shaded within 10 years</li> </ul>

<b>N9. Urban Agriculture</b>		
Intent		Promote urban agriculture to raise awareness around local food, reduce environmental and economic impact from transport of food, and increase green space.
Requirements	Tier 2 (optional)	Implement one or more of the following: 1. Dedicate 15% of roof space or ground level space for local food production. 2. Residential buildings: Provide 80 square feet per dwelling unit of garden space.
Documentation		- Plan(s) indicating dedicated garden area and total roof or ground level area

## WASTE AND MATERIALS

<b>M1. Construction Waste Reduction and Management</b>		
Intent		Facilitate the reduction of waste and the safe and proper disposal of waste generated during building construction. Diverting waste from landfills reduces the extraction of virgin natural resources and minimize land, water, and air pollution.
Requirements	Tier 1	Develop and implement a Construction and Demolition Waste Management Plan to demonstrate diversion of 50% or more of all non-hazardous construction, demolition, and land clearing waste from landfill.
	Tier 2 (core)	Develop and implement a Construction and Demolition Waste Management Plan to demonstrate diversion of 75% or more of all non-hazardous construction, demolition, and land clearing waste from landfill.  Provide at least one recycling or reuse station dedicated to separation, collection, and storage of materials for recycling (at a minimum, wood, gypsum board, paper, corrugated cardboard, glass, plastics, and metals).
Documentation		- Construction and Demolition Waste Management Plan - Plan(s) highlighting the recycling or reuse station(s) - Waste Diversion Report indicating total Construction and Demolition Waste diversion rate(s) of the project.

<b>M2. Operational Waste Reduction and Management</b>		
Intent		Facilitate the reduction of waste generated and the safe and proper disposal of waste generated during building operations. Diverting waste from landfills reduces the extraction of virgin natural resources and minimize land, water, and air pollution.
Requirements	Tier 1	Residential Buildings: Provide a waste collection and sorting system for garbage, recycling, and organics (e.g. single chute with a tri-sorter, three separate chutes, central location for separate collections, etc.).  Provide a dedicated area or areas within or attached to the building for the collection and storage of recycling and organic waste that is equally as convenient as the garbage facility.
	Tier 2 (core)	Provide a dedicated collection area or room for the collection of household hazardous waste, electronic waste, and/or household textile.
Details		Household hazardous waste may include products such as motor oil, windshield fluid, household cleaning products, paint, glue, pesticides and garden products, medical sharps, and medication.
Documentation		- Drawing(s) or plan(s) indicating type and location of waste sorting system

## WATER

W1. Water Conservation		
Intent		Increase water efficiency to reduce the burden on municipal water supply and wastewater systems.
Requirements	Tier 1	Install individual water meters for multi-unit residential units, with a bulk municipal reader.
		Provide a watering program for trees for the first year after planting and use non-potable water through rainwater harvesting.
	Tier 2 (core)	Use WaterSense® water fixtures that obtain a 40% reduction over the baseline fixture (i.e. as mandated by the Building Code).
	Tier 2 (optional)	<p>Implement one or more of the following:</p> <ol style="list-style-type: none"> <li>1. Provide a watering program for trees for the first 2 years after planting and use non-potable water through rainwater harvesting.</li> <li>2. Design and construct greywater and/or stormwater systems to capture and reuse at least 25% of greywater and stormwater.</li> <li>3. Use a non-potable watering system for irrigation purposes.</li> <li>4. Use a system that recovers and uses non-sewage or grey water for flushing and irrigation purposes.</li> <li>5. Install a drain water heat recovery unit.</li> <li>6. Design dwelling units/buildings as "greywater ready" (i.e. plumbing infrastructure roughed in, adequate utility room space).</li> </ol>
Documentation		<ul style="list-style-type: none"> <li>- Drawing(s) indicating water meters</li> <li>- Watering program methods and watering schedule</li> <li>- Plumbing fixture specifications or other documentation demonstrating WaterSense® labelling and flush/flow rates</li> <li>- Calculations demonstrating water use reduction over baseline fixtures</li> <li>- Plan(s), drawing(s), or other documentation indicating implementation of targeted element(s)</li> </ul>

W2. Stormwater Management		
Intent	Manage stormwater runoff to limit disruption and pollution of natural water flows by reducing impervious cover, promoting on-site infiltration, and capturing and treating stormwater runoff.	
Requirements	Tier 1	Submit and implement a Stormwater Management Plan demonstrating at least 80% removal of total suspended solids for 90% of annual rainfall. (ETV Qualified Treatment units to confirm removal rates).
		For lots 2 ha or larger, provide erosion control to the threshold of the most “erosion-sensitive” portion of the receiving watercourse.
		Include provisions for reduced parking standards where alternative parking is available and/or standards for permeable paving or stormwater infiltration compensation where development proposals exceed minimum parking requirements.
		A minimum of 25% of the site area not occupied by a building is permeable unpaved area.
		Retain runoff from all rainfall events up to 5 mm depth on site for infiltration or greywater reuse.
		Design all ponds with Enhance Level of Protection (Level 1).
	Tier 2 (optional)	Achieve one or more of the following: <ol style="list-style-type: none"> <li>1. Achieve post-development runoff reductions to no more than 50% of annual precipitation (approx. 10mm rainfall event retention).</li> <li>2. Use an innovative Stormwater Management Design plan that demonstrates less reliance on end-of-pipe facilities and more on conveyance and at-source strategies. This may include employing a treatment train approach with a minimum of three treatment units.</li> <li>3. Provide erosion control by on-site detention of the 25mm design storm event for a minimum of 24 hours.</li> <li>4. Of the minimum of 25% permeable area requirement under W2. Stormwater Management, Tier 1, allot a portion of this area to constructing a minimum of one LID landscaping feature to provide both functional and aesthetic benefit to the site (Rain garden, bioswale, constructed wetland, vegetated filter strip).</li> </ol>
Documentation	<ul style="list-style-type: none"> <li>- Stormwater Management Report, Plan(s), and drawing(s) to verify compliance</li> <li>- Site plan(s) highlighting permeable unpaved area(s)</li> </ul>	



W3. Hydrology and Watershed Protection		
Intent		Limit disruption of natural hydrology.
Requirements	Tier 1	Ensure specific objectives and targets of watershed and/or sub-watershed plans/studies applicable to the development are implemented within the Site Development Area or Project Area (boundaries).
		Ensure specific targets for water balance/water budget and source water protection established in the MESP and Neighbourhood Plan are implemented.
		Meet or exceed established groundwater recharge targets and compile with any use prohibitions as defined in an area ground water protection study which are above the minimum 5 mm retention target defined in W3 Stormwater Management.
		Meet Water Quality Target for 80% Total Phosphorus removal through a combination of at-source, conveyance, and end-of-pipe stormwater management water quality controls, with an emphasis on the “treatment-train” approach to providing water quality management.
	Tier 2 (optional)	Achieve one or more of the following: <ol style="list-style-type: none"> <li>1. 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, CO2 production, habitat/food land loss). Achievement will be evaluated by the Town in consultation with TRCA.</li> <li>2. Implement green infrastructure (e.g. bioswales) within some of the public rights-of-way subject to the Town approval.</li> </ol>
Documentation		- Stormwater Management Report, Plan(s), and drawing(s) to verify compliance