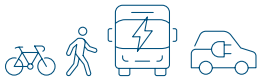
Caledon Green Development Standard:

Metrics Overview



Theme 1: Community Design and Mobility

Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.

Metrics:

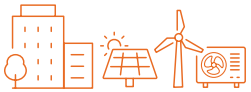
- 1.1 Housing Diversity
- 1.2 Connection to Parks and Open Space
- 1.3 Light Pollution Reduction
- 1.4 Active Transportation
- 1.5 Public Spaces
- 1.6 Mixed Use Neighbourhoods
- 1.7 Electric Vehicle (EV) Charging

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

Metrics:

- 2.1 On-Site Green Infrastructure
- 2.2 Healthy Soils
- 2.3 Plant Species
- 2.4 Urban Heat Island
- 2.5 Stormwater Quantity and Quality
- 2.6 Bird-Friendly Design



Theme 3: Buildings and Energy

Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.

Metrics:

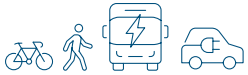
- 3.1 Operational Energy and GHG Emissions
- 3.2 Building Resilience
- 3.3 Solar Readiness
- 3.4 Embodied Carbon
- 3.5 Water Conservation
- 3.6 Construction Waste
- 3.7 Owner Education

Theme 1: Community Design and Mobility

Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.	
1.1 Housing Diversity	
Context	**Rationale:** Encourage a diverse housing stock that offers more accessible and affordable options to a range of residents, and improves energy efficiency and access to active transportation. **Official Plan 9.0:** The Town will establish housing targets and will adapt to innovative designs and trends. This will take the form of intensification, additional residential units, inclusionary zoning, and purpose-built affordable housing **Application Reviewers:** Policy Planning.

Metric Requirement	Submission Requirements
Low-Rise Residential Subdivisions: No more than 50% of units are single/semi detached.* Additional units are provided in a range of housing types and sizes, including at least two of the following types: • Townhouses/row houses; • Additional Residential Units within homes; • Multiplexes; • Mid/high-rise buildings; • Dedicated rental housing units; • Live-work units; and • Affordable units. *Rationale must be provided if this target is not going to be achieved.	**Draft Plan of Subdivision:** **Planning Justification Report provide:** • Housing analysis detailing the percent (%) units of each housing or tenure type, included in the proposed development and a detailed rationale if target is not met; • The total percent (%) by category should each add up to 100%; and • Housing Assessment Report required for applications proposing more than 50 units. **Draft Plan:** Identify the housing types and tenure types. **Site Statistics Template:** Complete the Housing Diversity Tab.

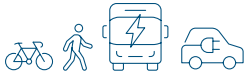
Theme 1: Community Design and Mobility



Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.	
1.2 Connection to Parks and Open Space	
Context	**Rationale:** Provide access and visibility to parks and open spaces that promote accessibility, safety, and physical activity, and supports urban biodiversity. **Official Plan 14.4.2(b)(c):** Parkland will be planned in a manner that prioritizes street frontage for visibility from the public realm to promote accessibility and safety, and avoids locations to the rear of adjacent properties and uses; and to be accessible by pedestrian, cyclists, transit and motor vehicles, as appropriate. **Application Reviewers:** Parks and Natural Heritage, and Transportation Engineering (for trail and other active transportation connections).

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential: Provide new or enhanced visual and physical connections to open space areas, parkland, and the Natural Heritage System for the proposed development (e.g., vistas, public access blocks, single-loaded roads, trails, sidewalks).	**Draft Plan of Subdivision and Site Plan:** **Landscape Plan:** Highlight any open space/natural areas/parks on map that abut the development site, as well as the connections to them that are provided in the site/landscape design. **Community Design Guideline or Urban Design Brief:** Include a brief description of the spaces and connections provided, referring to the highlighted Plan(s).

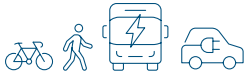
Theme 1: Community Design and Mobility



Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.	
1.3 Light Pollution Reduction	
Context	**Rationale:** Minimize light pollution and its impacts on nocturnal wildlife and preserve the natural night sky. **Official Plan 7.7.4:** Lighting will be internally oriented within a property to minimize glare and light pollution on adjacent properties, environmentally protected areas or public roads. DarkSky-compliant lighting fixtures and smart lighting solutions that reduce lighting requirements will be encouraged. **Application Reviewers:** Development Engineering, and Parks and Natural Heritage (for horizontal light trespass).

Metric Requirement	Submission Requirements
Low-Rise Residential: Low-rise residential developments are encouraged to adhere to the Five Principles for Responsible Outdoor Lighting outlined by the DarkSky International Association. **Multi-Unit Residential and Institutional, Commercial, and Industrial (ICI):** Follow the specifications in the Town's Outdoor Lighting Standards Manual, including for street and walkways/bikeways lighting, commercial, institutional and condominium: • All lighting fixtures must be DarkSky approved. If a DarkSky Fixture Seal of Approval is not available, fixtures must be full-cutoff (0 BUG uplight) and with a colour temperature rating of 3000K or less; • All street and walkway/bikeway lighting fixtures must have NEMA 7 -pin ANSI 136.41 receptacle and photocells; and • All other fixtures must have photocells or astronomic time clock operations to limit lighting when daylight is adequate. **All Sites:** Sites adjacent to natural features shall have no lateral light trespass into the feature (Environmental Policy Areas [EPAs] identified in Caledon's Official Plan or in Zoning, Natural Heritage System [NHS] in updated Official Plan). **Exclusions:** • Traffic control lights; and • A rationale may be provided for why these are not feasible in certain instances.	**Draft Plan of Subdivision:** **Lighting Design Plan:** Provide a narrative in the Lighting Design Plan describing how the development is following the Five Principles for Responsible Outdoor Lighting. **For sites adjacent to NHS or EPAs:** On the Lighting Design Plan indicate lighting levels (expressed in foot candles) at the border of the natural feature. **Site Plan:** **For street and walkway/bikeways lighting and outdoor lighting for ICI and Condominium:** Meet the submission requirements as outlined in the Town's Outdoor Lighting Standard Manual. **Lighting Design Plan:** Indicate the locations and types of lighting fixtures in the Lighting Design Plan. Provide a list of the lighting fixture types and indicate whether each is DarkSky approved, how they meet DarkSky requirements (if not DarkSky approved), or if they are exempt (traffic control). Also indicate whether they have photosensors or astronomic time clock operations, and integrated photovoltaic cells. **For low-rise residential:** Providea narrative in the Lighting Design Plan describing how the development is following the Five Principles for Responsible Outdoor Lighting. **For sites adjacent to NHS or EPAs:** In the Lighting Design Plan indicate lighting levels (expressed in foot candles) at the border of the natural feature.

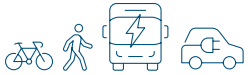
Theme 1: Community Design and Mobility



Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.	
1.4 Active Transportation	
Context	**Rationale:** Facilitate and encourage active transportation by enhancing the availability of pedestrian and cycling amenities and designing complete, well-connected communities. **Official Plan 11.4.1(a):** Develop an active transportation system that prioritizes comfortable and accessible pedestrian and cycling facilities that meet the needs of a diverse range of users, including children, youth, seniors and people of all abilities. **Official Plan 7.3.3:** New streets will be designed to include pedestrian and cyclist amenities to promote active transportation. **Official Plan 22.7.3:** The development of pedestrian-oriented focal points that are walkable from nearby areas is requires. These spaces should be easily accessible and visible to the public, contain seating amenities, hard landscaping, and natural elements, and provide passive recreation uses, possible public or private programmed activities and public art. Adjacent commercial uses are encouraged to be integrated with and front upon these spaces. **Official Plan 7.2.4:** Align new streets in a grid pattern to create pedestrian-scaled development blocks to ensure connectivity and better provide for active transportation. **Application Reviewers:** Transportation Engineering (ATMP requirements), and Peel Public Health (HDA) where applicable.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial and Industrial: Follow all requirements outlined in the Active Transportation Master Plan, including for sidewalks, trails, cycling network and bicycle parking. For industrial or employment sites, provide outdoor amenity area and appropriate walkways within the site for employees. AND Achieve a minimum score of Silver* (70%–79%) on the applicable Peel Healthy Development Assessment for the categories of Streetscape Characteristics, Street Connectivity, and Efficient Parking. *Rationale must be provided if this score will not be met including proposed alternatives.	**Draft Plan of Subdivision and Site Plan:** **Traffic Impact Study (Active Transportation Section):** Demonstrate the Active Transportation strategies being incorporated in the development, as per the Town's Active Transportation Master Plan. See the GDS Guidebook for additional guidance. **Peel Healthy Development Assessment (HDA):** Demonstrate minimum score of Silver (70%–79%) on the applicable Peel HDA for the categories of Streetscape Characteristics, Street Connectivity, and Efficient Parking. Include relevant drawings/mark-ups on the Site Plan, Pedestrian Circulation Plan, etc.

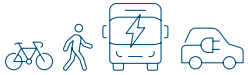
Theme 1: Community Design and Mobility



Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.	
1.5 Public Spaces	
Context	**Rationale:** Creating vibrant public spaces encourages the use of active travel modes with destinations within walking distances of homes, and reduces emissions from travel. **Official Plan 7.7.1(d):** Where appropriate, particularly in densely populated areas, provide at-grade or grade-related public spaces such as plazas, forecourts and public courtyards. **Application Reviewers:** Planning and Development Services (Urban Design).

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional and Commercial: In dense developments where private yard space is limited, provide a common outdoor amenity space at a recommended rate of 4.0 square meters per dwelling unit (minimum 40 square metres provided in a common location). Amenity type and design to be approved by Town staff.	**Draft Plan of Subdivision:** **Draft Plan of Subdivision and Urban Design Brief/Community Design Guidelines:** Indicate the size and location of amenity area on the draft plan and describe its function, etc. in the Urban Design Brief or Community Design Guidelines. **Site Plan:** **Site Plan and Urban Design Brief:** Indicate the size and location of amenity area on the site plan and provide a description of its function, etc. in the Urban Design Brief or other documentation.

Theme 1: Community Design and Mobility

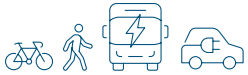


Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.

1.6 Mixed Use Neighbourhoods

Context	**Rationale:** Design communities that enable active transportation opportunities by locating travel destinations close to homes. **Official Plan 2.3.8:** Plan for healthy and complete communities that offer a mix of housing and employment opportunities for all, a range of parks, open spaces and amenities, and the choice to conveniently access shopping and services without a car. **Application Reviewers:** Planning and Development Services (Urban Design) or Peel Public Health

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional and Commercial: Provide for a mix of uses within the same lot or block and site residential dwellings in close proximity to a range of community amenities. Planned or future amenities may be included. **Strategic growth areas:** Three or more community amenities are within 500 m (equivalent to a 5-minute walk) of 75% of dwelling units along connected routes. **Other residential areas:** Three or more community amenities are within 800 m of 75% of dwelling units (equivalent to a 10-minute walk) along connected routes. Community amenities could include: • Essential businesses like grocery stores, pharmacies, etc.; • Services such as childcare, medical centres, etc.; • Schools; • Community and recreation centres; • Cultural and social amenities; • Parks, outdoor spaces; and • Transit stations/stops. **Note:** Large-scale developments (more than 50 ha) should include a distinct neighbourhood centre wherever possible that includes a compatible mix of uses such as residential, parks, retail, and community services.	**Draft Plan of Subdivision and Site Plan:** **Draft Plan/Site Plan and site map:** Include a map of the subject site with the proposed development overlaid. On this map: • Highlight the area that accounts for 75% of the Dwelling Units (DUs) and identify the approximate geographic centre; • Identify the (minimum 3) amenities within 800 m/500 m walking distance from the project's geographic centre (for low/high-density developments); and • Show the mix of uses within the proposed development. **Community Design Guidelines/Urban Design Brief:** Provide a brief description of the community amenities that will be sited in close proximity to residents, any neighbouhood 'hubs,' and how the community design will facilitate active modes of transportation. Compliance may be demonstrated through the Peel Healthy Development Assessment under the 'Service Proximity' theme area. **Note:** If part of a plan of subdivision has already conducted this analysis, this metric will not be required.

Theme 1: Community Design and Mobility 

Objective: Create complete, connected communities that enable active and sustainable modes of transportation and enhance well-being for Town residents.

1.7 Electric Vehicle (EV) Charging

Context	**Rationale:** Support low-carbon personal vehicles to reduce transportation emissions. **Official Plan 11.2.3(b):** To support the climate change objectives and policies of this Plan, the Town will implement a transportation system that supports targets for zero-emissions vehicles by 2035 and net zero greenhouse gas emissions by 2050 including expansion of public electric vehicle charging infrastructure. **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, Institutional, Commercial, and Industrial: Provide EV-Ready parking spaces at the following rates: • **Low-Rise Residential:** Minimum one vehicle space per residential dwelling unit is EV-Ready. • **Multi-Unit Residential:** Minimum 50% of parking spaces are EV-Ready. Visitor parking spaces in multi-unit buildings are exempt. • **Non-Residential (Institutional, Commercial, and Industrial):** Total of 20% of non-fleet parking spaces are EV-Ready. Encourage minimum 5% of spaces to be equipped with EV Supply Equipment (EVSE). • **Mixed-Use:** Apply the requirements above for residential and non-residential parking that are provided in the same lot. • **For all building sites:** Encourage dedicated parking spaces for carshare services or carpooling, as well as charging spaces for e-bikes and scooters.	**Draft Plan of Subdivision:** **Letter of Commitment:** Signed by a qualified professional (e.g., electrical engineer) and the owner/developer/builder confirming the number EV-Ready spaces and EVSE-installed (if applicable). **Building Drawings (prior to permit):** Indicate location(s) of energized outlet(s). **Site Plan:** **Site Plan, Traffic Plan, or Parking Study:** Identify: • The number and location of total parking spaces included per building on the site; • The number of total parking spaces that will be EV-Ready; and • The percentage of parking spaces that will be EV-Ready. **Site Statistics Template (for multi-unit residential and non-residential):** Complete the Electric Vehicle Charging Tab.

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

2.1 On-Site Green Infrastructure

Context	**Rationale:** meet the following green infrastructure objectives • Build in adaptation and resilience across the stormwater system in response to climate change; • Reduce urban heat island effect; • Protect natural water balance and water quality; • Improve biodiversity by enhancing habitat for pollinators and other wildlife; and • Enhance green space in urban areas for aesthetics, recreation, and human well-being. **Official Plan 5.3.1(f):** Integrate green infrastructure and low impact development such as green roofs and permeable surfaces into the design of infrastructure, wherever possible. **Application Reviewers:** Parks and Natural Heritage, and Development Engineering.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial, and Industrial: Meet minimum green cover targets across the site by completing the Green Factor Tool. Eligible green infrastructure features must comply with specifications in the GDS and other Town standards and guidelines. • **Low-Rise Residential:** 0.60; • **Multi-Unit and Residential in Strategic Growth Areas:** 0.50; • **Institutional, and Commercial:** 0.30; and • **Industrial:** 0.2. **Note:** Mixed use sites can pro-rate their required factor based on the gross floor area of each of the types of development on the site.	**Draft Plan of Subdivision and Site Plan:** **Green Factor Scoresheet:** Complete worksheet and scoresheet and demonstrate the score achieved. **Landscape and Planting Plans:** Include notations indicating Green Infrastructure features, locations (including any rooftop features), and size/area as well as plant lists providing numbers, species, sizes, and locations of plants. **Arborist's Report:** Indicate the type and size of trees to be preserved.

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

2.2 Healthy Soils

Context	**Rationale:** Ensure newly planted trees have adequate volume and quality of soil to reach maturity. **Official Plan 25.8.4:** To ensure the long-term viability of trees planted as part of approved development, the Town will require appropriate tree species, soil volume, drainage, and technology through by-laws, site plan control, landscape standards, and Green Development Standards. **Official Plan 12.5.12(c):** The Town will incorporate measures into subdivision and site plan agreements to ensure that the development and site alteration minimizes the removal of vegetation, grading and soil compaction. **Application Reviewers:** Parks and Natural Heritage, and Development Engineering.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial, and Industrial: **Soil volume:** Provide access to a minimum of 30 m3 soil volume for newly planted trees or tree-specific soil volume indicated in municipal tree species guide. Where two or more trees share the same soil volume, 20 m3 per tree is sufficient. Indicate soil depth used to calculate soil volume. Root ball may be factored into soil volume calculation. Provide a minimally compacted topsoil layer/upper horizon. Refer to the Planting Medium Terms of Reference for soil specifications. Stockpiled soils used for planting areas must be tested and amended to achieve the soil properties outlined in the Planting Medium Terms of Reference. Structured soil cells or other appropriate technologies may be used to achieve this metric, particularly in denser urban areas. **Grading and compaction:** Where feasible and appropriate, use selective grading techniques that reduce soil compaction and preserve the natural landform as much as possible. Techniques may include lot selection, road alignment, building placement, or use of "cluster development." Preserving the natural landform can help preserve soil health and enhance opportunities for LID features by maintaining natural drainage.	**Draft Plan of Subdivision and Site Plan:** **Soils Report:** Indicate the results of soil tests in accordance with the Town's Planting Medium Terms of Reference Soils report to be signed by a qualified professional (e.g., pedologist). **Landscape Plan:** Indicate the locations of trees and planting areas, and provide mark-ups for the areas/depths/volumes/soil quality. **Grading Plan:** Indicate techniques used to minimize grading and soil compaction, where applicable. **Draft Plan of Subdivision:** If it is too early in the application review process to provide the required details, applicants may provide a Letter of Commitment signed by a landscape architect and the owner/developer/builder confirming the metric requirements will be achieved and that compliance will be demonstrated in subsequent submissions of the Landscape Plan and through detailed designed.

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

2.3 Plant Species

Context	**Rationale:** Enhance biodiversity and habitat for pollinators. **Official Plan 13.12.9:** The Town, as a condition of development approval, will require the planting of appropriate native species as conditions of development and site alteration applications. **Application Reviewers:** Parks and Natural Heritage.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial, and Industrial: Landscape plan to include no invasive species and a minimum of 50% native plant species. Select drought-tolerant species from local climate zones wherever possible. Refer to Town species list for public trees and Credit Valley Conservation (CVC) planting guidelines for landscaped areas. For areas adjacent to the Natural Heritage System, buffer plantings must be 100% native plant species. Provide a 2-year watering and maintenance program (only for Draft Plan of Subdivision). **Note:** Providing a higher ratio of native plant species will receive credit on the Green Factor Score.	**Draft Plan of Subdivision and Site Plan:** **Landscape Plan:** Show total landscaped area and highlight native and drought-tolerant species. For sites adjacent to Natural Areas, the Landscape Plan must show the site and surrounding area, highlighting Natural Features and their buffer areas, and labelling the native plant species to be planted in the buffers. **Watering Plan:** Submit plans for a 2-year watering and maintenance program indicating frequency of watering, pruning, fertilizer application, etc. signed by Landscape Architect.

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.	
2.4 Urban Heat Island	
Context	**Rationale:** Reduce urban heat island effect of large building and pavement areas by increasing shade, incorporating reflective paving and rooftop materials, and increasing the landscape area. **Official Plan 5.3.3:** To reduce the urban heat island effect, the Town will implement measures to protect, maintain or enhance the urban forest tree canopy cover; and promote green roofs and white roofs on residential, commercial, industrial, office and institutional rooftops. **Application Reviewers:** Parks and Natural Heritage.

Metric Requirement

Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial, and Industrial:

Rooftops:

For all sloped-roof buildings: Install cool roof over 100% of available roof area – high-albedo/light-coloured materials with a Solar Reflective Index (SRI) of 78 or over for low-sloped roofs (<2:12), or 29 for steep-sloped roofs (>2:12). Exempt if installing solar PVs over 50% of available roof area.

For all flat-roof buildings (slope <2:12): Install cool roof over 90% of available roof area. Exempt if installing solar PVs and/or green roof over minimum 50% of available roof area.

Multi-Unit Residential, and Institutional, Commercial, and Industrial:

Paving:

Paved areas are to be treated with at least two of the following strategies covering at least 50% of total paved area*:

- High-albedo paving materials with an initial solar reflectance of at least 0.33 or SRI of 29;
- Canopy of large-growing shade trees planted in landscape islands at regular intervals or in hedgerows to maximize both shading and ecological value. Canopy coverage to be calculated at 75% maturity (also contributes to, and can be demonstrated through, the On-Site Green Infrastructure Metric);
- Shade from architectural structures that are vegetated or have an initial solar reflectance of at least 0.33 at installation or an SRI of 29;
- Shade from structures with energy generation; and
- Open grid pavement with at least 50% perviousness (can be demonstrated through the On-Site Green Infrastructure Metric).

*For Industrial Sites: Total paved area excludes loading bays, freight parking, and fire lanes.

(Submission requirements continued on next page)

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

2.4 Urban Heat Island *(continuation)*

Submission Requirements

Draft Plan of Subdivision:

Letter of Commitment (at Draft Plan): From Landowner and/or Builder to install cool roof.

Roof Plan (prior to permit): Show the extent of cooling features over roof area and specifications for any SRI-compliant materials.

Site Plan:

Roof Plan: Show the extent of cooling features over roof area and specifications for any SRI-compliant materials.

Site Plan: Indicate:

- The total paved area;
- 50% paved areas highlighted with compliant cover/materials and their types;
- Specifications for any SRI-compliant materials being used; and
- Total parking area/spaces and total trees being added within the site. Note that soil volume requirements must be met per the Healthy Soils metric.

Site Statistics Template: Complete the Urban Heat Island tab.

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

2.5 Stormwater Quantity and Quality

Context	**Rationale:** Mitigate stormwater impacts from urbanization and improve water quality by maintaining the natural water cycle to the greatest extent possible. **Official Plan 12.5.3:** The Town will employ a treatment train approach to stormwater management to meet overall site water balance, water quality, water quantity and erosion. The treatment train approach uses source, conveyance and end-of-pipe controls to manage stormwater where it falls, along its path and prior to entering the natural environment. A hierarchical method is applied where each step is exhausted before proceeding to the next, as follows: retention, filtration, and conventional stormwater management. **Application Reviewers:** Development Engineering.

Metric Requirement

Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial, and Industrial:

Water balance:

- Control the infiltration deficit per the criteria identified in the water balance assessment* through stormwater retention low impact development (LID) practices.**

  OR

- Control, to the greatest extent possible,*** the 27 mm event using a hierarchical application of LID measures to achieve the target beginning with (1) retention, followed by (2) filtration, in accordance with site constraints outlined in the GDS Guidebook's Stormwater Quantity and Quality Specifications, where each step is exhausted before proceeding to the next.

Stormwater quality:

- Ensure 80% Total Suspended Solids (TSS) removal, to the greatest extent possible*** through a hierarchical approach using (1) retention, (2) filtration, and (3) conventional stormwater management, with each step exhausted before proceeding to the next. If an approved stormwater management plan already exists for the site, follow those criteria.

Notes:

* Water balance assessment to be completed in line with the Town's approved Terms of Reference.

** LID feature specifications following the Sustainable Technology Evaluation Program's Low Impact Development Stormwater Management Planning and Design Wiki Guide. Note: Green infrastructure features implemented through the On-Site Green Infrastructure metric may help to achieve the LID requirements of this metric.

*** In accordance with the site constraints identified in the GDS Guidebook's Stormwater Quantity and Quality Specifications.

(Submission requirements continued on next page)

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

2.5 Stormwater Quantity and Quality *(continuation)*

Submission Requirements

Draft Plan of Subdivision and Site Plan:

Stormwater Management Plan: Identify the infiltration deficit being controlled as per the water balance assessment and describe the LID strategies proposed to manage it, and the strategies to address water quality. Reference appropriate engineering drawings and specifications for LID features.

Theme 2: Green Infrastructure

Objective: Improve stormwater management, reduce urban heat island, and enhance habitat through urban green space.

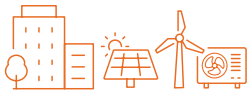
2.6 Bird-Friendly Design

Context	**Rationale:** Provide bird-friendly environments and reduce bird collisions caused by buildings. **Official Plan 7.8.8:** The Town will promote bird-friendly building and site design. **Application Reviewers:** Planning and Development Services (Urban Design).

Metric Requirement	Submission Requirements

Low-Rise Residential (at Draft Plan of Subdivision or Site Plan):
 	
Builders are encouraged to adhere to the CSA A460:19 Bird-Friendly Building Design Standard, in particular specifications for window glazing.
 	
Multi-Unit Residential, and Institutional, Commercial, and Industrial:
 	
Design buildings in accordance with CSA A460:19 Bird-Friendly Building Design Standard, including at minimum treating glazing up to 16m above grade or to the top of the mature tree canopy, whichever is greater.
 	
• Treat a minimum of:
  • 90% of glazing with collision deterrent markers;
  • All glazing that creates fly-through conditions, including glass railing systems;
  • All glazing adjacent to natural areas; and
  • All non-vision glazing, including spandrels.
• Collision Deterrent Markers (visual markers) details:
  • Size: minimum 4mm in diameter;
  • Density: maximum 50mm between markers;
  • Contrast: high contrast under varying daylight conditions; and
  • Surface: must be applied to the first (exterior) surface of glass.
 	
Rooftop vegetation: Where there is glazing adjacent to green roofs and/or other rooftop vegetation, the bird collision mitigation strategy shall be applied to a height of 4m from the surface of the green roof or the height of the adjacent mature vegetation, whichever is greater.
 	
Grate porosity: Grade-level building ventilation grates shall have a porosity not greater than 20mm x 20mm or 40mm x 10mm.
	Draft Plan of Subdivision:
	
	Community Design Guidelines/Urban Design Brief: Describe any measures being taken to implement bird friendly design strategies in accordance with the CSA Standard.
	
	Site Plan:
	
	Building Elevation Plans: Indicate bird-friendly glazing measures implemented, including treated area, type of treatment, density of visual markers, etc.
	
	Site Statistics Template: Complete the Bird-Friendly Design tab.

Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.	
3.1 Operational Energy and GHG Emissions	
Context	**Rationale:** Reduce contributions to climate change from new buildings by improving energy efficiency and switching to low-carbon energy sources. These actions will have co-benefits for residents and businesses including lower energy bills, improved comfort, and better air quality. **Official Plan 5.2.2:** To support energy conservation and conversion, the Town will maximize opportunities for the implementation of renewable energy systems and alternative energy systems on a site-specific or district-wide basis; and encourage opportunities for conservation, energy efficiency and demand management such as high-performance building envelopes and ventilation systems; and encourage the shift away from natural gas in favour of renewable and alternative energy generation, including but not limited to, low-carbon district energy heating and cooling systems, microgrids, geo-exchange systems, air source heating and cooling pumps, anerobic digestion, and waste heat recovery. **Application Reviewers:** Energy and Environment.
Metric Requirement	

Low-Rise Residential (3 storeys and under):

Design and construct to minimum: Tier 3 energy performance under the National Building Code (NBC) 2020 section 9.36 or follow a recognized labelling program equivalent to ENERGY STAR for New Homes version 17.1 revision 2.

AND

Reduce operational greenhouse gas (GHG) emissions by an additional 20% (demonstrated through energy modelling report or by installing low carbon equipment listed in the GDS Guidebook's Operational Energy and GHG Emissions Specifications).

Alternative Pathway: design and construct to the current version of the Ontario Building Code and install a hybrid heating system (3-season air source heat pump with gas furnace).

For Multi-Unit Residential (above 3 storeys), Institutional, Commercial, and Industrial: Meet the following Greenhouse Gas Intensity (GHGI), Thermal Energy Demand Intensity (TEDI), and Total Energy Use Intensity (TEUI) targets:

Multi-Unit Residential:

- GHGI: 15 kg $CO_2e/m^2/yr$;
- TEUI: (> 6 storeys) 135 $kWh/m^2/yr$ and (< 6 storeys) 130 $kWh/m^2/yr$; and
- TEDI: (> 6 storeys) 50 $kWh/m^2/yr$ and (< 6 storeys) 40 $kWh/m^2/yr$.

Commercial Office:

- GHGI: 15 kg $CO_2e/m^2/yr$;
- TEUI: 130 $kWh/m^2/yr$; and
- TEDI: 30 $kWh/m^2/yr$.

Commercial Retail:

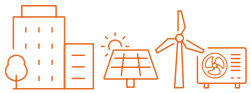
- GHGI 10 kg $CO_2e/m^2/yr$;
- TEUI: 120 $kWh/m^2/yr$; and
- TEDI: 40 $kWh/m^2/yr$.

Industrial:

- GHGI: 15 kg $CO_2e/m^2/yr$;
- TEUI: 130 $kWh/m^2/yr$; and
- TEDI: 60 $kWh/m^2/yr$.

(Submission requirements continued on next page)

Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.

3.1 Operational Energy and GHG Emissions

Metric Requirement *(continuation)*

However, projects that come within 15% of the TEDI and TEUI thresholds are permitted where alternative improvements in performance are made (e.g., embodied carbon reductions, installation of on-site renewable energy).

Provide a zero-carbon transition plan that lays out a pathway toward achieving carbon neutrality in the future, including how the building is designed to support this transition, such as providing the necessary infrastructure for full building electrification and avoidance of on-site combustion of fossil fuels.

Submission Requirements

Draft Plan of Subdivision:

Letter of Commitment: Indicating the option being pursued signed by the landowner/builder and a qualified energy advisor if applicable, and to submit the following documents:

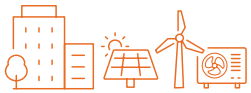
- **Performance Path:** Energy Modelling Report and templates prior to building permit.
- **Labelling Program:** Submit EEDS and BOP (if applicable) forms and post-construction verification report.
- **Alternate Pathway:** Follow standard requirements for OBC compliance and provide specifications for hybrid heating equipment and terms of installation (i.e., rental, add-on, etc.).

Site Plan:

Low-Rise Residential: Follow submission requirements outlined above for Draft Plan of Subdivision applications.

Multi-unit residential and non-residential: Submit energy modelling report and accompanying templates as described in Energy Modelling Report Guidelines prior to building permit. Provide a high level net zero transition plan.

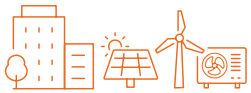
Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.	
3.2 Building Resilience	
Context	**Rationale:** Enhance the ability of buildings to withstand future climate impacts including flooding, high winds, and heat. **Official Plan 5.4.4(j):** The Green Development Standards will address matters including, but not limited to measures for climate change adaptation. **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements
Low-Rise Residential: Using the reference guides in the GDS Guidebook, implement at least two measures to increase resilience to climate-related impacts in the areas of basement flooding, high wind, and/or extreme heat. **Multi-Unit Residential:** Provide a resilience strategy for the building that includes measures to address climate risks including flooding, high wind, extreme heat, and power outages to improve outcomes for residents in the context of climate change. At a minimum, the strategy should include a refuge area for residents with heating, cooling, lighting, potable water, and power available.	**Draft Plan of Subdivision and Site Plan:** **Building Resilience Strategy Template and Letter of Commitment:** Using the template provided, list building resilience features that will be incorporated into building design, signed by the landowner/builder indicating commitment to implement features.

Theme 3: Buildings and Energy



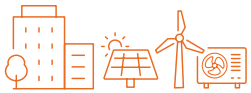
Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.

3.3 Solar Readiness

Context	**Rationale:** Ensure all buildings are able to accommodate rooftop solar PV systems in future, and encourage greater adoption of local renewable energy generation. **Official Plan 5.2.2:** The Town will encourage the design and orientation of buildings and new communities to maximize passive solar energy gain and minimize energy loss from prevailing winds. **Official Plan 5.2.8:** The Town will encourage large-scale solar photovoltaic installations in appropriate locations, such as the rooftops of commercial and employment buildings or parking structures. **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, and Institutional, Commercial, and Industrial: All buildings with a pitched roof are designed to be solar-ready according to specifications outlined in NRCan's Photovoltaic Ready Guidelines, and buildings with a flat roof are designed to be solar-ready, verified by a certified installer by the North American Board of Certified Energy Practitioners (NABCEP). **Low-Rise Residential:** Builders are encouraged to explore opportunities to work with renewable energy providers, the Local Distribution Company, and/or building or homeowners on installation of solar PVs. **Multi-Unit Residential, and Institutional, Commercial, and Industrial:** Applications for buildings with rooftop area greater than 50,000 square feet must conduct a feasibility assessment for the installation of an appropriately-sized solar PV system, conducted by a qualified solar provider or other energy professional, and in consultation with the Local Distribution Company. The assessment may consider options for rooftop, ground, cladding and/or other systems, and arrangements such as net metering, virtual net metering, self-generation, third-party ownership, etc.	**Draft Plan of Subdivision and Site Plan:** **Letter of Commitment:** • For pitched roofs, submit a letter of commitment signed by developer and/or builder/homeowner that confirms all new buildings will be designed for solar readiness. Attach the NRCan Photovoltaic Ready Guidelines' Checklist and Builders Declaration. • For flat roofs, submit a letter of commitment signed by a qualified professional (e.g., NABCEP, professional engineer, and/or architect) and the developer/builder that confirms all new buildings will be designed for solar readiness. Where applicable, provide documentation of solar feasibility assessment from local hydro utility and a solar provider. **Building and Roof Plans (prior to permit):** On the roof plan, indicate locations of conduit(s), HVAC, and/or other rooftop equipment, and highlight locations for potential future solar or thermal systems. Building plans must demonstrate structural capacity for solar PVs and show location designated for future electrical equipment, and be prepared by a qualified professional (e.g., NABCEP, professional engineer, and/or architect).

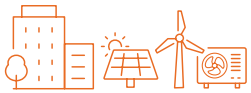
Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.	
3.4 Embodied Carbon	
Context	**Rationale:** Foster a greater understanding of the GHG emissions associated with building materials through reporting and benchmarking. **Official Plan 5.4.4(d):** The Green Development Standards will address matters including, but not limited to embodied carbon of building materials. **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements
Low-rise residential (3 storeys or less): Conduct a Materials Emissions Assessment using MCE2 or equivalent tool, to measure A1–A3 stage emissions for all structural, enclosure, and major finishes (e.g., cladding, flooring, ceilings, interior wall sheathing). **All other buildings:** Report embodied carbon in these bulk materials based on the relevant Environmental Product Disclosures (EPD): concrete, steel, masonry, wallboard, glass, thermal insulation, and wood. AND Include concrete mixes that are at least 10% below the Concrete Ontario baselines per mix type.	**Draft Plan of Subdivision:** **Letter of Commitment:** Signed by the developer or builder to submit the Materials Emissions Assessment prior to building permit as part of draft plan conditions. **Site Plan:** **Materials Emissions Assessment (low-rise residential):** Submit reporting page from MCE2 or BEAM tool. **Embodied Carbon Reporting Template (all other buildings):** Complete template indicating embodied carbon in specified materials.

Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.

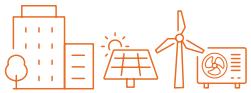
3.5 Water Conservation

Context	**Rationale:** Conservation and efficient use of potable water to achieve Caledon's goal of one-third of homes to reduce their water consumption by 50%. **Official Plan 5.4.4(k):** Mandatory Green Development Standards to address matters related to water conservation and efficiency. **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements

Low-Rise Residential:
 	
• Install high-efficiency Water Sense-labelled toilet and lavatory faucets or equivalent.
• For single detached homes: Each house includes a separate, non-potable watering system with minimum capacity of 180 L to harvest rainwater for irrigation purposes in a location approved by the Town.
 	
Multi-Unit Residential, Institutional, Commercial, and Industrial:
 	
• Install water fixtures or use non-potable water sources that achieve a minimum 25% reduction in potable water consumption in the building over baseline water fixtures.
• Where soft landscaping exists on-site, reduce potable water use for irrigation by 40% using strategies that could include:
  • Drought-tolerant, native or adaptive vegetation that requires little to no water in the local climate;
  • Use of high-efficiency irrigation, such as drip irrigation;
  • Use of captured rainwater for irrigation; and
  • If captured rainwater is used, provide a Letter from a qualified professional (e.g., professional engineer) confirming the proposed cistern size and the calculations to demonstrate the volume of captured water expected.
	Draft Plan of Subdivision and Site Plan:
	
	Letter of Commitment: Signed by a qualified professional (e.g., architect, professional engineer, landscape architect) and the owner/developer/builder that confirms:
	
	• **Low-rise:** Installation of Water Sense or equivalent fixtures and rainwater harvesting system.
	• **Other buildings:** the percent (%) reduction in potable water used to irrigate, relative to a midsummer baseline case. For information on how to achieve this credit, refer to LEED v4 BD+C WE Credit: Outdoor Water Use Reduction Option 2 and use the calculation tool to demonstrate.

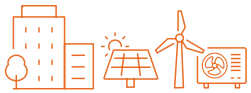
Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.	
3.6 Construction Waste	
Context	**Rationale:** Promote re-use and re-purposing of building materials to reduce waste, and diversion to reduce building materials going to landfill. **Official Plan 12.8.1:** The Town of Caledon will promote reduction, reuse, and recycling programs (3Rs) and strive for a cost-effective waste management system to minimize environmental impacts **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements
Low-Rise Residential, and Multi-Unit Residential: All projects must develop and implement a Construction and Demolition Waste Management Plan and divert at least 50% of the total construction and demolition material from landfill; diverted materials must include at least four material streams. Plan must be certified by a verified third party or developed in accordance with the requirements in LEED Construction and demolition waste management planning credit. **Institutional, Commercial, and Industrial:** All projects must develop and implement a Construction and Demolition Waste Management Plan in accordance with O. Reg. 103-94 and divert at least 50% of the total construction and demolition material from landfill; diverted materials must include at least four material streams.	**Draft Plan of Subdivision and Site Plan:** **Construction and Waste Management Plan:** Provide a Construction and Waste Management Plan identifying reuse, source reduction, and diversion strategies signed by landowner/builder and verified third party (if not pursuing LEED).

Theme 3: Buildings and Energy



Objective: Support low carbon, energy efficient and resilient buildings and renewable energy systems.

3.7 Owner Education

Context	**Rationale:** Educate owners, maintenance staff, and occupants of sustainable building and site features to bring attention to their purpose and ensure that they are properly operated and maintained. **Application Reviewers:** Energy and Environment.

Metric Requirement	Submission Requirements
Low-Rise Residential, Multi-Unit Residential, Institutional, Commercial, and Industrial: Distribute a Town-approved sustainability handout to all new building owners/tenants, outlining sustainability features (e.g., green building materials, energy efficiency, resilience, transit stop locations) and encouraging other activities (e.g., low-water gardening, green cleaning materials, alternate pest control measures, purchasing green power). The sustainability handout shall also include an itemized list of all "green" technologies and programs that the applicant has committed to undertake within this GDS, including references and attachments for any ongoing maintenance requirements or standards, and should include information to assist building owners/tenants in installing solar PVs. Provide permanent signage for Green/LID/site features to ensure owners/tenants are aware of the features and the services they provide.	**Draft Plan of Subdivision and Site Plan:** **Letter of Commitment:** From the developer/owner indicating that manuals will be prepared, submitted to the Town staff for review prior to distribution, and provided to new owners/tenants detailing GDS-related features and maintenance requirements in adherence with the Town's Terms of Reference.

Caledon Green Development Standard:

Metrics Overview