Green Development Standards: Exploring Metrics and Proposing Incentives

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What are Green Development Standards (GDS)?

- **Voluntary or mandatory measures implemented by municipalities to encourage sustainable community design**
- **Metrics to guide development at a level of planning and design that focuses on the community as a whole**
- **Goals:**
  i. Minimize GHG emissions
  ii. Preserve the natural environment
  iii. Create thriving, connected communities
  iv. Improve public health

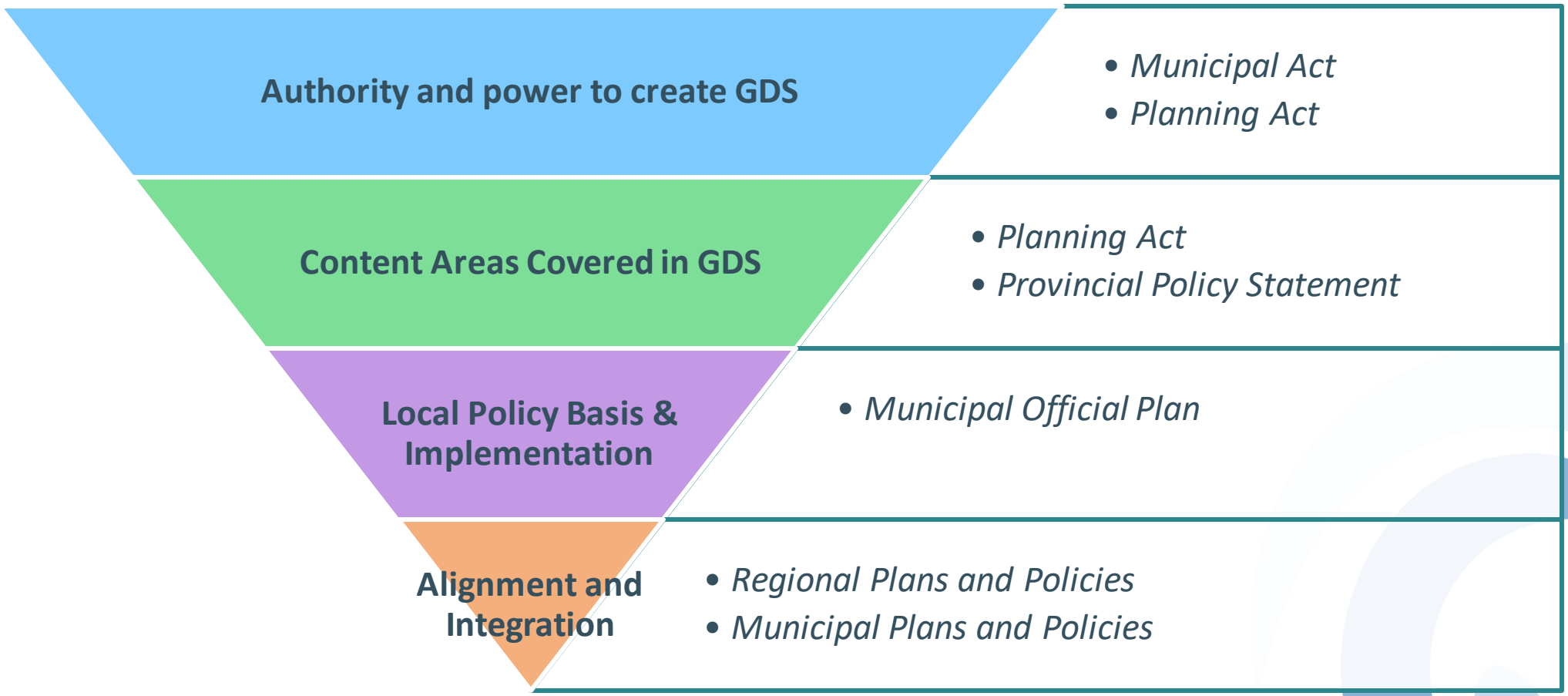
Why Green Development Standards?

- **Ontario's population is projected to grow by 30.2 per cent (4.3 million) between 2017 to 2041.**
- **In order to reach GHG targets, new buildings need to be built to minimize GHG emissions (net zero)**
  - This is easier and cheaper than retrofitting them later
- **Opportunity for municipality to ensure that new development considers public health, climate change, energy, and resource use.**

What are the benefits of Green Development Standards?

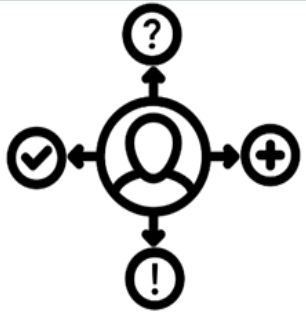
- Building better quality buildings
- Reducing operating costs through decreased need for heating and cooling
- Increasing resilience to extreme weather and power disruptions
- Reduce GHG emissions
- Improve air quality and reduce the urban heat island effect
- Reduce storm water runoff and potable water consumption while improving the quality of storm water draining to water bodies
- Protect and enhance ecological functions, integrate landscapes and habitats and decrease building-related bird collisions and mortalities
- Divert household and construction waste from going to landfill sites.

Legislative Framework



GDS Milestone Framework

1. **Declaration Phase**



2. **Metric Development and Consultation**

3. **Implementation**

4. **Monitoring and Reviewing**

Part of Clean Air Partnership's Climate Action Support Centre project

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What do Green Development Standards cover?

Energy Efficiency

Bird Friendly Design

Proximity to Transit

Street Amenities

Compact, mixed-use development

Active Transportation

Stormwater

Soil Health

Proximity to School/ Amenities/Parks

Electric Vehicle Charging

Tree Canopy

Green space/ Parks

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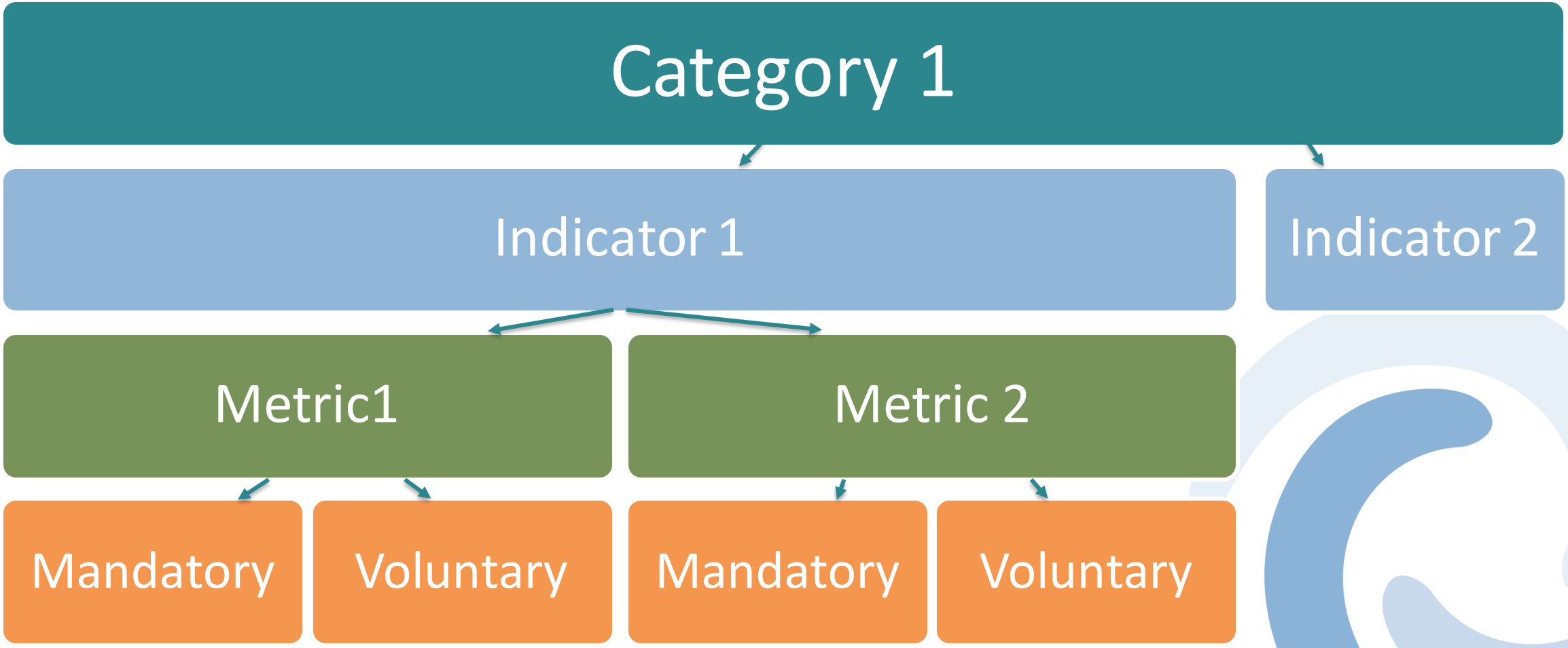
What do Green Development Standards look like?

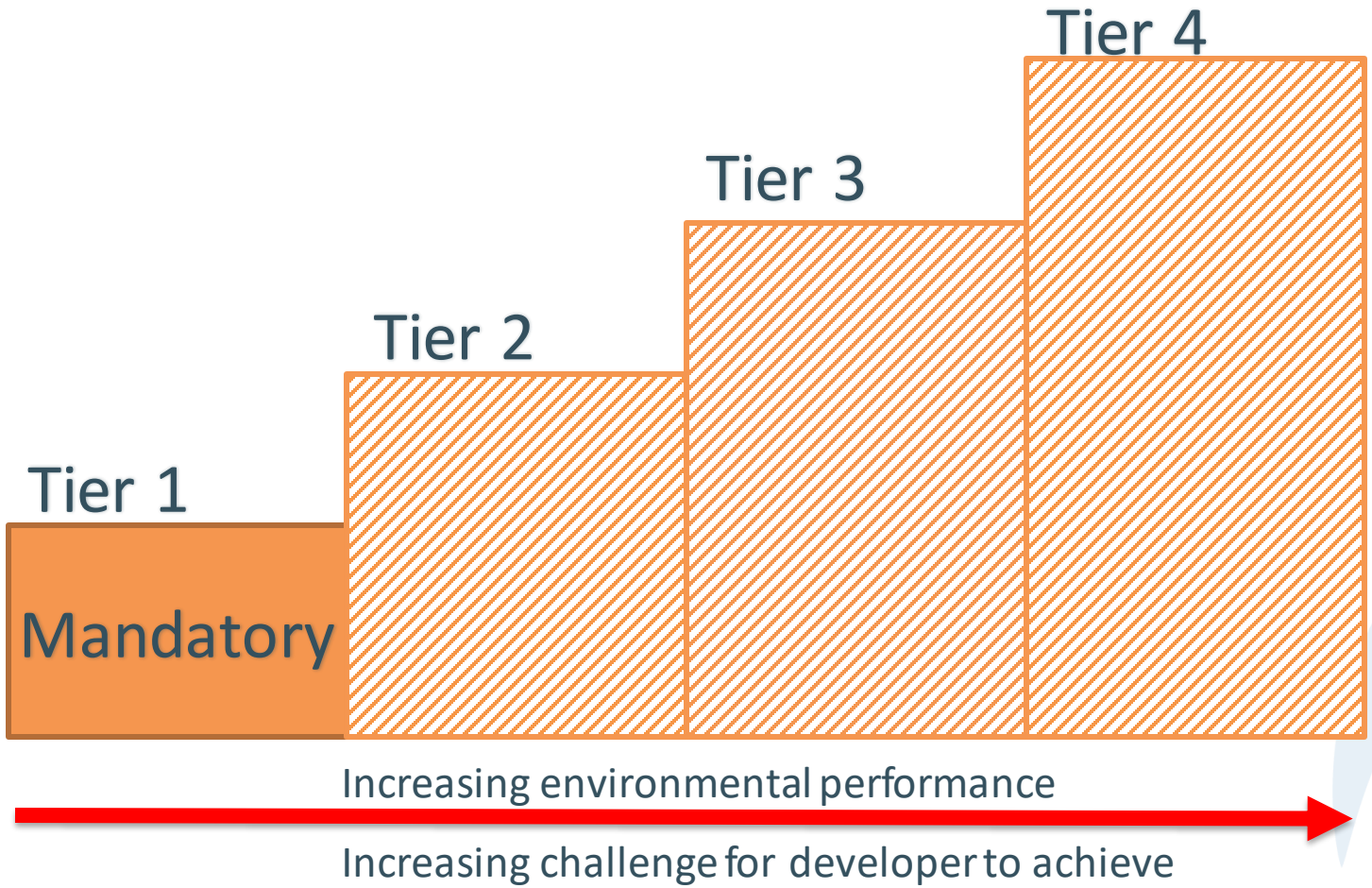


Metric Organization by Categories

- **Currently, jurisdictions are using different category names. In the future, moving towards harmonized categories will make it easier for developers working across the region**

Toronto	Vaughan/Brampton/Richmond Hill	Halton Hills
1. Air Quality 2. Energy Efficiency, GHG & Resilience 3. Water Balance, Quality and Efficiency 4. Ecology 5. Solid Waste	1. Built environment 2. Mobility 3. Natural environment and open space 4. Infrastructure and buildings	1. Air Quality 2. Energy Conservation 3. Community Design 4. Innovation and Green Features 5. Waste Management 6. Communication

Tiered, Prescriptive Approach to GDS



Tiered Approach to GDS (Toronto Green Standard)

Example metrics from Toronto Green Standard version 3 for Low Rise Residential

Increasing environmental performance

Development Feature	Water Balance (Stormwater Retention): Capture and manage rainfall to improve water quality and aquatic ecosystem health while enhancing the resilience of infrastructure to extreme rainfall events.
TIER 1	**WQ 2.1 Stormwater Retention & Reuse** Retain runoff generated from a minimum of 5 mm depth of rainfall from all site surfaces through infiltration, evapotranspiration and water harvesting and reuse.
TIER 2	**WQ 2.2 Advanced Stormwater Retention & Reuse (Core)** Retain runoff generated from a minimum of 10 mm depth of rainfall from all site surfaces through infiltration, evapotranspiration and water harvesting and reuse.
TIER 3	**WQ 2.3 High Performance Stormwater Retention & Reuse (Core)** Retain runoff generated from a minimum of 25 mm depth of rainfall from all site surfaces through infiltration, evapotranspiration and water harvesting and reuse.

Menu Approach to GDS (example)

Category	Points
Infrastructure and Buildings	25 Points available
Built environment	25 Points available
Mobility	25 Points available
Natural environment and open space	25 Points available
Total Points Available	**100**
Minimum Points Required	**70**

→ 8 metrics in this category

Menu Approach to GDS (example)

Category 1 (i.e Infrastrucutre and Buildings)	
Metric 1	
Mandatory	0 points
Recommended Minimum Target	2 points
Aspirational Target	2 points
Metric 2	
Mandatory	0 points
Recommended Minimum Target	2 points
Aspirational Target	2 points
Point Total	

Menu approach (Vaughan example)

Planning Act, PPS provide broad areas to cover

Building Types

Third Party Systems (eg. LEED)
Other GDS
Regional Plans/Policies

Site (S) Metrics											
Category	Indicator	Metric	Mandatory Target	Recommended Minimum Target			Aspirational Target			Precedent	Points	Implementation
				Single Family	Multi	Commercial / Retail/Inst	Single Family	Multi	Commercial			
Infrastructure and Buildings	Energy conservation	Building energy efficiency	OBC	EnerGuide 83 2 POINTS	35% improvement 3 POINTS		EnerGuide 85 2 POINTS	35% improvement or more 11 POINTS		LEED ND GIBp2 TGS TIER I & TIER II	21	Demonstrated at time of: Building Permit Secured by: Subdivision or Site Plan agreement

Mandatory Measures

Voluntary Measures

Can be adjusted to reflect cost/effort/municipal priorities

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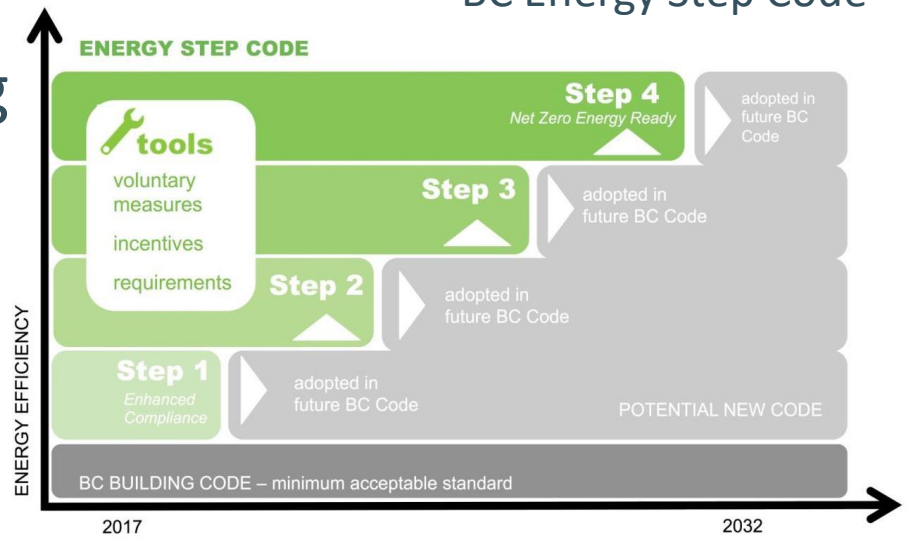
Energy Efficiency metric

- Key metric for helping to curb emissions from new buildings
- National Building Code and BC Energy code moving towards net zero energy ready
- Toronto and Vancouver Green Standards moving towards net zero emissions
- Benefits of a Stepped Approach:
  - **For Builders and Developers:** consistent, long-term expectations, predictable capacity building
  - **For Local Governments:** Flexibility for local planning and development practices, builds cooperation with stakeholders

BC Energy Step Code



Comparing Energy Metrics Across Municipalities

(Low-rise residential)

Toronto Green Standard		Vaughan/Brampton/Richmond Hill Sustainability Metrics		Halton Hills Green Development Standards
Tier 1	ENERGY STAR® for New Homes, version 17 or R-2000®	**Mandatory**	Design all buildings in accordance with OBC.	➢ Current Energy Star® requirements ➢ Energy Star® compliant light fixtures. ➢ Solar panels on streetlights. ➢ Occupancy sensors in and motion sensors for all exterior lighting fixtures. ➢ Zonal HVAC heating and cooling controls. ➢ On-demand water heating. ➢ Triple pane windows with low emissive coatings to help reflect heat and sunlight. ➢ Indoor (basement) and outdoor clothesline.
Tier 2	ENERGY STAR® for New Homes, version 17 or R-2000® or CHBA Net Zero, or Passive House or other zero emissions standard certification. ENERGY STAR® labeled refrigerators, ceiling fans, clothes washers and dishwashers	**Recommended Minimum**	EnerGuide 83 (or equivalent) (2 POINTS)	
Tier 3	CHBA Net Zero ready	**Aspirational**	EnerGuide 85 (or equivalent) (2 POINT)	
Tier 4	CHBA Net Zero Home Labelling Program or Passive House Standards			

Energy Management/Renewables

Toronto Green Standard		Vaughan/Brampton/Richmond Hill Sustainability Metrics	
Tier 1	GHG 2.1 On-site Renewable Energy City-owned residential buildings: For new buildings with a gross floor area of greater than 100m2 install renewable energy devices to supply at least 5 per cent of the building's annual energy consumption from one or a combination of energy sources	**Mandatory**	N/A
Tier 2	GHG 2.2 Solar Readiness (Core) Ensure that buildings are designed to accommodate connections to solar technologies.1,4,5 GHG 2.3 On-Site Renewable Energy (Optional) Design on-site renewable energy systems to supply one of the following: a) Minimum of 5 per cent of the building's annual energy consumption from one or a combination of acceptable renewable energy sources;1,2,3,4,5 OR b) Minimum of 20 per cent of the building's annual energy consumption from geoexchange.	**Recommended Minimum**	Develop an energy strategy for the development, identifying opportunities for conservation, energy sharing, renewables, etc… (2 POINTS)
		Aspirational	In an intensification area, where district energy has been deemed viable by the municipality, carry out a district energy feasibility study. (3 POINTS)

Tying Incentives to GDS

- There is general industry acceptance of municipalities using green development standards
- Incentives can encourage developers to create high-performing projects
- Innovative solutions can provide advantages to the municipality and to the developer

Determining Effective Incentives

- Stakeholder Engagement: Understand the needs and motives of your audience
  - This builds a sense of ownership of the proposed program
  - This can maximize program value – ensure the incentives will be used
- Predictability and Simplicity: Programs need to last as long as projects, and be easy to navigate with minimal administrative burden
- Partner with local utilities, non-profits, and other industry actors
- Ensure financial and administrative feasibility for the municipality

Potential Incentives for Green Development

1. Community Improvement Plans
2. Development Charge Rebates
3. Tax Increment Based Grants
4. Expedited Approval Process
5. Recognition Program
6. Density/Height Increases
7. LIC Financing

Community Improvement Plans

- Municipalities may create Community Improvement Plans to direct funds and implement policy initiatives toward a specifically designed project area.
- Community Improvement Plans (CIPs) allow for the use of grants and loans, which can be used for 'planning or replanning, design or redesign, resubdivision … development or redevelopment, construction, reconstruction and rehabilitation, [and] improvement of energy efficiency.'
- CIPs can be implemented through DC rebates and tax grants

Development Charge Rebates

- Fees collected from developers and builders to pay for municipal infrastructure and services
- Green/Net-zero energy developments should provide less strain on municipal infrastructure (in theory)
- DC rebates should attribute back to savings on municipal infrastructure costs, ie. Reduced sewer use, reduced waste, etc.
- This can have financial implications on the municipality: DCs are a stable revenue stream, and capital costs increase with growth

Tax Increment Based Grants

- A Tax Increment Based Grant is a financing tool for targeted areas in a municipality (a CIP) to attract private sector investment and stimulate development
- The TIBG permits the deferral of taxes on an incremental scale to encourage the remediation of sites with various issues and significant financial outlay before new development can occur.
- This presents little financial implication to municipalities when used to target properties or areas that are underused and yielding little tax revenue to the municipality

Expedited Approval Process

- Some developers have expressed interest in an expedited approval process for exemplary sustainability projects.
- However, this strategy is dependent on how long it usually takes to process an application
  - Building permits tend to be processed quickly
  - GDS require proper documentation to be submitted with applications
  - May not be administratively feasible

Recognition/Awards Programs

- Builders who achieve exemplary standards in residential and neighbourhood projects can be recognized through awards programs.
- Being the recipient of such an award can provide a substantial boost to the marketing efforts of the developer.
- A municipality may create specific awards for Green Development, or, as a distinct category as part of a larger urban design awards process.
  - Awards should be automatically presented to builders, so the incentive is not based on subjective voting, but rather performance
- This incentive is low cost, easy to implement, and technically feasible for most municipalities (though may work best when combined with other incentives, and require sponsorship partners for funds)

Density/Height Increases

- Section 37 of the Planning Act permitted additional height and density to developers in exchange for funds dedicated towards community benefits.
- Bill 108 has replaced this provision with a new Community Benefit Charges (CBC) framework. The CBC framework allows municipalities to impose charges to pay for the cost of facilities, services and other matters required because of new development.
  - Costs eligible for development charges are excluded from CBCs. Eligible services and the methodology for calculating CBCs is TBD.
- Some developers have expressed interest in pursuing green development and energy efficiency in exchange for additional density (ie. Height increase).
  - This would have limited negative financial implications on the municipality, and can generate revenue from development charge fees and additional property tax revenue from additional units

LIC Financing for New Builds

- Developers are hesitant to add measures that increase the upfront costs of properties
- Legislation changes in 2012 allow for Local Improvement Charges (LICs) to be used on individual properties to finance energy efficiency, green energy, etc.
- To be used on a new build, a **property owner** – *not a developer or home builder* – would have to voluntarily agree to the LIC attachment
- Additional capital costs associated with the building envelope, fuel switching, renewable energy, or resilience measures could be financed with an LIC loan
- At the time of sale or possession, the property owner can choose to: pay out that loan, add it to their mortgage, or attach it to the property as an LIC (thereby voluntarily agreeing to the LIC).
- Decisions likely need to be made before properties are technically purchased (pre/development application)
- Operational savings from decreased energy use can offset the loan repayments

Thank you!

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