



SUSTAINABILITY METRICS PROGRAM

CITY OF MARKHAM DEVELOPMENT SERVICES COMMITTEE

May 25th, 2021



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INTRODUCTION TO THE SUSTAINABILITY METRICS PROGRAM

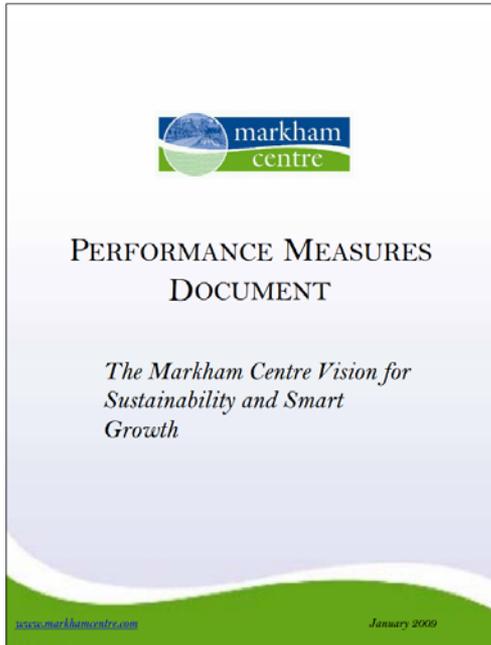


PURPOSE OF THE METRICS

- Implementation tool for achieving Markham's Official Plan objectives of building healthy, sustainable and complete communities.
- Supports increased sustainability performance for new developments through measurable criteria and actions.
- Provide short and long-term benefits to Markham:
 - Using municipal infrastructure more efficiently;
 - Reducing GHG emissions from new buildings and transportation;
 - Improving health and wellness of residents;
 - Increasing resilience; and
 - Offering cost efficiencies (lower lifecycle costs) for residents and businesses.



PREVIOUS GREEN DEVELOPMENT STANDARDS



- Performance measures for Markham Centre was developed in 2002 and updated in 2007 to further consider LEED criteria
- In 2006, the Council approved a directive for medium and high density residential developments to achieve minimum LEED silver
- The LEED Silver standard was intended to be an interim measure until a citywide Sustainable Development Checklist could be implemented
- A draft Sustainability Checklist and Community Energy Plan has been applied to new developments in the Future Urban Area since 2018.



MUNICIPAL PARTNERSHIP



MORRISON HERSHFIELD

- In 2019, Markham joined a partnership with the municipalities of Richmond Hill, Vaughan and Brampton to update the Sustainability Metrics.
- Sustainability Metrics program has been implemented in Brampton, Richmond Hill and Vaughan since 2014.
- Current update aims to address changes in legislation and provincial policy, evolving best practices, and introduces new metrics to reduce GHG emissions and promote energy efficiency.
- Partnership supports sharing of knowledge and resources, and will establish of a consistent standard across the four municipalities.
- Technical review of Metrics was lead by Morrison Hershfield.



POLICY DIRECTION

- There is a clear policy framework supporting the development and application of green development standards:



From Left to Right: The Municipal Act, Planning Act, 2020 Provincial Policy Statement, York Region Official Plan, City of Markham Official Plan, Markham's Strategic Plan, Greenprint (Markham's Sustainability Plan) and Markham's Municipal Energy Plan



PROJECT PHASES





SUSTAINABILITY METRICS OVERVIEW



OVERVIEW OF SUSTAINABILITY METRICS

- Point based system in which applicants are not required to achieve every metric or target, but they are required to achieve enough metrics to attain a total score that is above a minimum threshold.

Benefits of Threshold Score Approach:

1. Ensures that development applications are achieving a measurable level of sustainability performance to support the City's sustainability goals
 2. Provides flexibility for developers to tailor the sustainability design features to their site and development objectives
- A detailed review of threshold scores will be completed in Phase 2, with a recommendation to DSC in Q4 of 2021



SUSTAINABILITY METRICS SCOPE

Sustainability Metrics are organized into five general categories of sustainability

Built Environment (BE)

Mobility (M)

Natural Environment and Open Space (NE)

Infrastructure and Buildings (IB)

Innovation (New)

Each category consists of a subset of metrics with a range targets.



SUSTAINABILITY METRICS SCOPE

Built Environment (BE)	Mobility (M)	Natural Environment and Open Space (NE)	Infrastructure and Buildings (IB)
<ul style="list-style-type: none"> • Proximity to Amenities • Providing Mixed-use Development • Design for Life Cycle Housing • Community and Neighborhood Scale • Cultural Heritage Conservation • Enhancing Urban Tree Canopy and Shaded Walkways and Sidewalks • Salt Management • Carshare & Carpool Parking • Surface Parking Footprint • Electric Vehicle Charging Stations 	<ul style="list-style-type: none"> • Block Length • School Proximity to Transit Routes, Cycling Networks, and Walkways • Intersection Density • Promote Walkable Streets • Pedestrian Amenities • Bicycle Parking • Implementing Trails and Cycling Infrastructure • Proximity to Active Transportation Network • Distance to Public Transit • Traffic Calming 	<ul style="list-style-type: none"> • Preserve Existing Healthy Trees • Soil Quantity and Quality for New Trees • Healthy Soils • Connection to Natural Heritage • Natural Heritage System Enhancements • Supporting Pollinators • Dedicate Land for Private Fruit and Vegetable Garden Space • Access to Public Parks • Stormwater Quantity • Stormwater Quality • Rainwater and Greywater Use • Multi-purpose Stormwater Management 	<ul style="list-style-type: none"> • Buildings Designed and/or Certified under an Accredited “Green” Rating System • Universal Design • Building Accessibility • Embodied Carbon of Building Materials: Supplementary Cementitious Materials • Embodied Carbon of Building Materials: Life Cycle Assessment • Embodied Carbon of Building Materials: Material Efficient Framing • Reduce Heat Island: Non-Roof • Reduce Heat Island: Roof • Passive Solar Alignment • Controlling Solar Gain • Solar Readiness <div style="background-color: #f0e6f8; padding: 10px; text-align: center;"> <p>Innovation (New)</p> </div> <ul style="list-style-type: none"> • Energy Strategy • Building Energy Efficiency and Emissions • Reduce Potable Water Use • Back-up Power • Extreme Wind Protection • Sub-Metering of Thermal Energy and Water • Reduce Light Pollution • Bird-friendly Design • Solid Waste



METRIC INTENT

LEGEND
 Metric Category: Built Environment Mobility Natural Environment & Open Space Infrastructure & Buildings Innovation

Appendix A

Metric: NE-2. Soil Quantity and Quality for New Trees			
Applicable To:	<input type="checkbox"/> Block Plan <input checked="" type="checkbox"/> Draft Plan <input checked="" type="checkbox"/> Site Plan To provide soil quantity and quality that enables new trees to thrive.		
Metric Intent:	Higher amounts of good quality soil help ensure thriving long-lived plant life.		
	Points	Requirements	Documenting Compliance
Good Target:	2 points	Provide a minimum of 30m ³ of soil for each new tree and a minimum of 100 cm of uncompacted soil depth. Where there is a grouping of trees, provide a minimum of 20m ³ of soil for each new tree, and a minimum of 100 cm of uncompacted soil depth, or equivalent municipal standard.	Submit: As part of Draft Plan of Subdivision submission, provide a Letter of Commitment from a qualified professional (landscape architect or architect) and the owner/ developer/ builder confirming that the metric requirement will be achieved and that details will be provided in the Landscape Plan during subsequent submission.
Great Target:	+2 additional points (total 4 points)	Provide 25% more than the total soil volume required by municipal standards.	Following Draft Plan approval and as part of the technical review/detailed design, on the Landscape Plan specify and identify the tree planting locations, soil quality and the soil volume provided per tree As part of a Site Plan submission, on a Landscape Plan and/ Drawings: <ul style="list-style-type: none"> Show the tree planting locations, soil quality and the soil volume provided per tree.
Excellent Target:	2 points	Provide uncompacted topsoil layer of tree pits, trenches, or planting beds with the following properties: <ul style="list-style-type: none"> Organic matter content of 10 to 15% by dry weight and a PH of 6.0 to 8.0. A minimum depth of 100 cm, or in accordance with municipal standards, whichever is higher. Provide adequate drainage. 	
References:	Vaughan's Tree Protection Protocol Toronto Green Standard v3 TRCA (2012) Preserving and Restoring Healthy Soils Best Practice Guide for Urban Construction Credit Valley Conservation (2017) Healthy Soils Guideline for the Natural Heritage System Vineland Research (2019) Ontario Landscape Tree Planting Guide Sustainable Technologies Evaluation Program (STEP) (2017) Compost Amended Planting Soil Specifications		

- Helps to better explain why this is important
- Promotes “buy in”



OF POINTS AND THRESHOLDS

LEGEND
Metric Category: Built Environment | Mobility | Natural Environment & Open Space | Infrastructure & Buildings | Innovation

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Progressive Targets

- Good (“baseline sustainability performance”)
- Great (“enhanced sustainability performance”)
- Excellent (“best in class sustainability performance”)



REQUIREMENTS

LEGEND
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- Clear requirements, quantified where possible



DOCUMENTATION

LEGEND
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- Clear documentation and submission requirements



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- For more information

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NEXT STEPS



IMPLEMENTATION FRAMEWORK



- Integration with development review and planning approval process
- Testing and recommendations for threshold scores
- Preparation of applicant guidebook and checklist tool
- Review of potential incentives
- Outreach and Training



BILD WORKING GROUP



- Partnership between the partner municipalities (Cities of Richmond Hill, Brampton, Vaughan and Markham) and the Building Industry and Land Development (BILD) York and Peel Chapters
- Created in response to BILD's submission letter in December 2020, the core objective of the Working Group is to address issues and challenges respecting the Metrics, improve metric clarity, uptake and document compliance of metric implementation



THANK YOU