Photos by City of Brampton, City of Richmond Hill, City of Vaughan and City of Markham (top let to bottom right)

Updating the Sustainability Score Thresholds

For the Sustainable New Communities Program

(also referred to as the Sustainability Metrics Program)

February 2022

SSG

Disclaimer

SSG was retained by the City of Brampton to conduct the Sustainability Score Thresholds analysis presented in this report. Consequently, the values shown in this report are based on Brampton's suite of Sustainability Metrics, and they may differ for the other partner municipalities depending on any differences of Metrics between the partner municipalities.

Reasonable skill, care, and diligence has been exercised to assess the information acquired during the preparation of this analysis, but no guarantees or warranties are made regarding the accuracy or completeness of this information. This document, the information it contains, the information and basis on which it relies, and associated factors are subject to changes beyond the author's control. The information provided by others is believed to be accurate but has not necessarily been verified.

Land Acknowledgement

The City of Brampton recognizes and acknowledges that our work takes place on the Treaty Territory of the Mississauga's of the Credit First Nation, and before them, the traditional territory of the Haudenosaunee, Huron and Wendat. We also acknowledge the many First Nations, Metis, Inuit and other global Indigenous people that now call Brampton home. We are honoured to live in, work on, and enjoy this land.

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Glossary

Benchmark Performance methodology	A methodology for establishing Sustainability Score Thresholds that uses the average performance of all development applications in each municipality to determine Bronze, Silver, and Gold thresholds.
Climate Performance	An approach to deepen the integration and reporting of climate change actions as part of the Sustainable New Communities Program.
Diffusion Innovation Theory	A social science theory developed by E.M. Rogers in 1962 that explains how, over time, new technology or ideas gain momentum and diffuse throughout society. The rate of uptake is described in five stages: innovators, early adopters, early majority, late majority, and laggards.
Greenhouse Gas Emissions (GHG)	Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself and by clouds. This process causes the greenhouse effect. Also referred to as 'Emissions' throughout this report.
Multi-Criteria Analysis (MCA)	A method to support decision-making according to predetermined criteria and objects. MCAs combine quantitative and qualitative data to evaluate various criteria, are transparent, and allow for expert and local judgement to be incorporated.
Percentage Improvement methodology	A methodology for establishing Sustainability Score Thresholds that uses the median performance of all development applications in each municipality, and applies a percent increase to set its Bronze, Silver and Gold Score Thresholds.
Qualifier Metrics	Sustainability Metrics that have associated qualifying questions that determine if a Metric is applicable. This is dependent on development type and/or involvement of site features (e.g. does the site contain a cultural heritage resource?).
Universal methodology	A methodology for establishing Sustainability Score Thresholds that is based on the total points at the "Good" level. It uses the Diffusion Innovation Theory to determine the Thresholds.
Sustainability	Pertains to "meeting the needs of the present without compromising the ability of future generations to meet their needs" through the three pillars — economic, environmental, and social.
Sustainability Assessment Tool (SAT)	An online/digital platform developed as part of the Sustainable New Communities Program to allow applicants to calculate the Sustainability Score of an application. Each Sustainability Metric is

	assigned a point value, and the combination of Metrics selected by the development proponent results in an overall Sustainability Score.
Sustainability Indicator (Indicator)	A criterion/theme to measure sustainability performance of a development proposal. Sustainability Indicators are organized into five categories – Built Environment, Mobility, Natural Environment and Open Space, Infrastructure and Buildings, and Innovation, and have associated Metrics.
Sustainability Metric (Metric)	The specific measure/action that must be undertaken to improve sustainability performance. Each Metric is assigned a point value, and the combination of Metrics selected by the development proponent results in a Sustainability Score.
Sustainable New Communities Program	A program originally developed by the Cities of Brampton, Richmond Hill, and Vaughan, to encourage and evaluate the sustainability performance of development proposals. Also referred to as the Sustainability Metrics Program.
Sustainability Score	The total number of points based on the Sustainability Metrics achieved by a development proposal. The score will fall within one of three Thresholds - Bronze, Silver and Gold.
Sustainability Score Threshold	Performance levels achieved by the Sustainability Score of a development proposal, and categorized as Bronze, Silver, or Gold.

Contents

Executive Summary

The Sustainable New Communities Program (also referred to as the Sustainability Metrics Program) aims to advance the environmental sustainability performance of new construction in the City of Brampton, the City of Richmond Hill, the City of Vaughan, and most recently the City of Markham.

These partner municipalities commenced a two phase refresh of the Sustainable New Communities Program in 2018 to incorporate the updates in policies, plans, and best practices that have developed since the Program was originally created between 2013 and 2015. This report is the second phase of the update which recommends methods for establishing new Sustainability Score Thresholds. It also identifies approaches to better integrate climate action into the Program.

The methodology recommended to establish new Thresholds is referred to as the Universal (Pathway 1 and 2) methodology. This methodology establishes a baseline using points associated with all "Good" level Metrics which all applicants have the ability to achieve regardless of the location or context of their development site. The Universal methodology offers two options – Pathway 1, which removes OBC-interior related Metrics from the baseline, and Pathway 2, which includes them.

This report recommends that the municipalities adopt the Universal – Pathway 1 methodology for the Thresholds in 2022, and that they increase the Thresholds by adopting the Universal – Pathway 2 in 2026. This phased approach would:

- Create consistent Thresholds across multiple municipalities;
- Improve sustainability performance over time;
- Enable industry to adjust to the updated Program requirements while preparing to adopt Pathway 2 (OBC-interior metrics), which will enhance the sustainability performance of future sites;
- Allow municipalities to perform an ongoing review and analysis of the updated Sustainable New Communities Program, and to adapt to the Program as necessary; and
- Recognize leaders in sustainable design and development by creating Score Thresholds that are better representative of the total points available.

This report also recommends that municipalities implement a minimum energy and GHG performance standard for buildings. This requirement would align the energy efficiency performance of new construction with municipal climate action and community energy plans, thereby reducing the amount of building stock that would need to be retrofitted in the future to meet efficiency standards.

1. Introduction

The Sustainable New Communities Program[1], co-launched in 2013 by the City of Brampton, the City of Richmond Hill, and the City of Vaughan, is a planning tool that aims to advance municipal sustainable community development objectives through planning and development approvals. The Program allows for development applicants to choose from a menu of metrics that result in a Sustainability Score. The Program offers flexible approaches to facilitate sustainable community design. Applicants must submit their Sustainability Score and supporting documentation for Site Plan, Draft Plan of Subdivision, and Block Plan development applications.

In 2021, the partnership expanded to include the City of Markham and finalized updates to the Sustainability Metrics. The updates reflected new sustainable approaches and practices in the planning, design, and construction of buildings and neighhourboods, amendments to the Planning Act, other changes to provincial legislation and plans, updates to the Ontario Building Code (OBC), and revisions to municipal plans, policies and guidelines that have been enacted since the Program was first developed.

Currently, Richmond Hill and Brampton require applicants to achieve a Sustainability Score that at a minimum achieves the Bronze Score Threshold. As part of the Sustainable New Communities Program update, Vaughan and Markham will also be considering requiring a minimum Bronze Score Threshold for development applications.

As part of an earlier and separate phase of the Sustainable New Communities Program update, the partner municipalities revised the suite of Metrics to reflect revised environmental sustainability and climate change goals and objectives. The Sustainability Score Thresholds analysis presented in this report is part of the second stage of the update, which:

a) Recommends a methodology to create new Sustainability Score Thresholds that supports and reflects the updated Sustainability Metrics;

b) Provides elevated sustainability performance requirements for areas identified as urban or town centres and intensification corridors; and

c) Identifies approaches to better integrate and report climate action through the Thresholds and Sustainable New Communities Program.

[1]In 2022, the City of Brampton renamed the Sustainability Metrics Program to the Sustainable New Communities Program; however, the partner municipalities may choose to continue to use the Sustainability Metrics Program.

Table 1: Update of the Sustainable New Communities Program.

Phase	Description	Status
1	Review and update of the Metrics	Complete
2	Update the Thresholds	Addressed by this project
3	Update outreach and education materials, and develop new training videos to improve knowledge and compliance.	Underway
4	Investigate incentives.	To be completed

1.1 The Sustainability Performance Metrics

The Sustainable New Communities Program consists of 52 Sustainability Indicators ("Indicator") organized into five categories – Built Environment, Mobility, Natural Environment and Open Space, Infrastructure and Buildings, and Innovation (Table 2).

Table 2: Sustainability Indicators within the five categories of the Sustainable New Communities Program.

Built Environment (BE)	Mobility (M)	Natural Environment and Open Space (NE)
• BE-1: Proximity to Amenities • BE-2: Mixed-Use Development • BE-3: Housing Diversity • BE-4: Community and Neighbourhood Scale • BE-5: Cultural Heritage Conservation • BE-6: Urban Tree Canopy and Shaded Walkways/Sidewalks • BE-7: Salt Management • BE-8: Carshare and Carpool Parking • BE-9: Surface Parking Footprint • BE-10: Electric Vehicle Charging Stations	• M-1: Block Length • M-2: School Proximity to Transit and Cycling Networks • M-3: Intersection Density • M-4: Walkable Streets • M-5: Pedestrian Amenities • M-6: Bicycle Parking • M-7: Trails and Cycling Infrastructure • M-8: Active Transportation Network • M-9: Distance to Public Transit • M-10: Traffic Calming	• NE-1: Tree Conservation • NE-2: Soil Quantity and Quality for New Trees • NE-3: Healthy Soils • NE-4: Natural Heritage Connections • NE-5: Natural Heritage System Enhancements • NE-6: Supporting Pollinators • NE-7: Dedicated Fruit/Vegetable Garden Space • NE-8: Park Access • NE-9: Stormwater Quantity • NE-10: Stormwater Quality • NE-11: Potable Water Use • NE-12: Multi-purpose Stormwater Management
Infrastructure and Buildings (IB)		**Innovation (I)**
• IB-1: Buildings Designed/Certified Under "Green" Rating System • IB-2: Accessibility for Multi-Unit Dwellings • IB-3: Building Accessibility (Barrier Free Entry/Egress) • IB-4: Embodied Carbon of Building Materials: Supplementary Cementitious Materials • IB-5: Embodied Carbon of Building Materials: Life Cycle Assessment		• I-1: Innovation

• IB-6: Embodied Carbon of Building Materials: Material Efficient Framing • IB-7: Heat Island Reduction: Non-Roof • IB-8: Heat Island Reduction: Roof • IB-9: Solar Gain Control • IB-10: Solar Readiness • IB-11: Energy Strategy • IB-12: Building Energy Efficiency, GHG Reduction, and Resilience • IB-13: Rainwater and Greywater Use • IB-14: Back-up Power • IB-15: Extreme Wind Protection for Ground-Oriented Development • IB-16: Sub-Metering of Thermal Energy and Water • IB-17: Light Pollution Reduction • IB-18: Bird-Friendly Design • IB-19: Solid Waste	

Each Indicator has associated Sustainability Metrics ("Metric(s)") that are used to grade elements of proposed projects. The Metric Levels are "Good", "Great", "Excellent," and "Exceptional[2]", with "Good" denoting the baseline sustainability performance for each Indicator, "Great" indicating enhanced performance, and "Excellent" and "Exceptional" identifying the best-in-class performance.

Each Metric has an assigned point value (Figure 1). Applicants can choose a combination of Metrics to implement in their development proposal, which results in an overall Sustainability Score. The Sustainability Score identifies whether a development proposal achieves a Sustainability Score Threshold ("Score Threshold") of Bronze, Silver, or Gold.

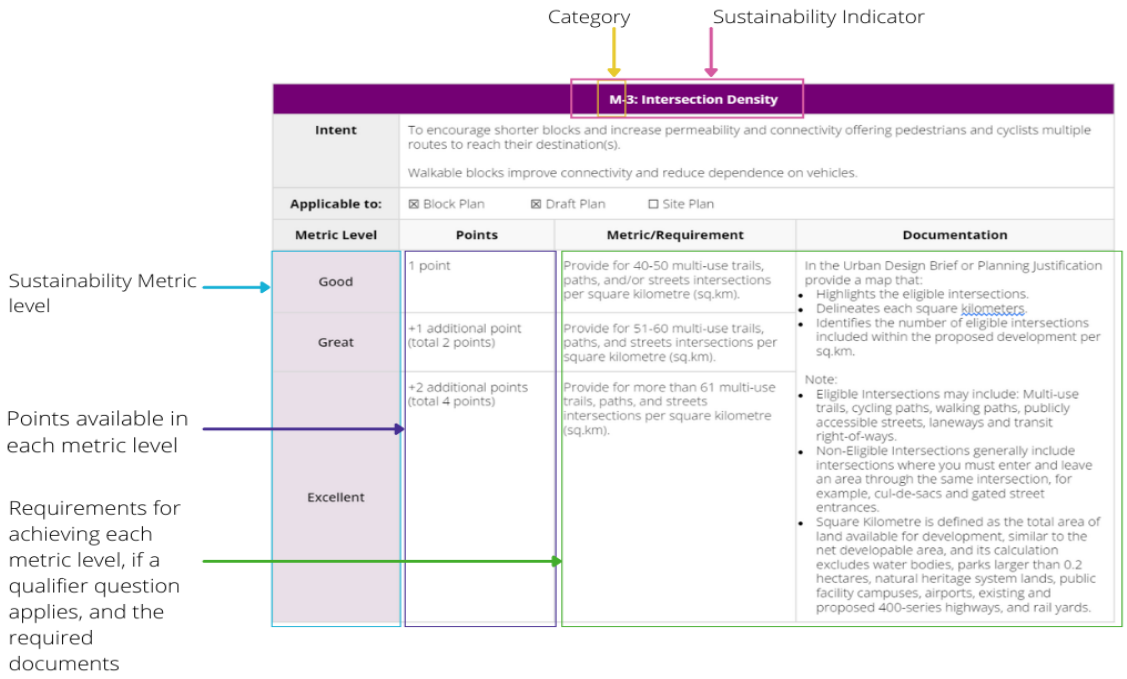

Figure 1. Sample Sustainability Indicator showing indicator's intent, development application applicability, metric levels and requirements, and necessary supporting documentation.

[2] The "Exceptional" level only applies to two Metrics: IB-12: Building Energy Efficiency, GHG Reduction, and Resilience, and I-1: Innovation.

The performance of past development applications[3] submitted to the four partner municipalities were assessed using the updated Sustainability Metrics. The Sustainability Score for each application was then compared to the Score achieved under the original Program (Appendix A). This process informed the development and analysis of the methodologies used to establish new Thresholds.

However, it is important to note that while this analysis offers insight into revised performance standards and the updated Metrics, it is also limited because the examined applications predated the new Metrics and Thresholds. Existing applications were developed to meet the standards of older policies, guidelines, industry best practices, and the previous suite of Metrics. As a result, these applications do not reflect what is undertaken by developers and builders today, or what they would pursue and achieve under an updated Program.

2. Thresholds Update Methodology

2.1 Project Approach

Table 3. Approach for establishing the recommended Thresholds.

Step	Description	Outcome
1. Assess original and updated Sustainability Metrics	Apply original and updated Sustainability Metrics to calculate scores for Block Plans, Plans of Subdivision, and Site Plans approved within the last 5 years.	Understanding of the impact of updated Metrics on the Thresholds.
2. Develop Threshold methodologies	Consult with the municipalities and review best practices to identify different methodologies for establishing Thresholds.	Identification of Threshold methodologies.
3. Recommended Methodology	Assess the strengths and weaknesses of each Threshold methodology, apply Multi-Criteria Analysis (MCA), and conduct stakeholder consultation.	Evaluate the performance of each methodology with respect to community/city objectives.
4. Recommended Thresholds	Refine Threshold methodologies based on stakeholder input; evaluate the impact of the Thresholds for each methodology, and conduct final evaluation using a Multi-Criteria Analysis.	Recommend final Thresholds based on recommended methodology.

[3] 60 Site Plans, 39 Draft Plans and 4 Block Plans approved within approximately the last five years. They included a variety of development typologies ranging from residential, mixed, and industrial uses, and low, medium density, and high density development.

2.2 Engagement Approach

The project involved soliciting input and feedback from the Technical Advisory Team (TAT), composed of staff from the partner municipalities, and two rounds of external stakeholder workshops with the York and Peel Chapters of the Building Industry and Land Development Association (BILD). The TAT hosted an additional meeting with BILD representatives in January 2022. SSG did not facilitate this meeting but was available as a resource to present information and answer questions.

An engagement strategy was designed (Appendix C) that set the following objectives:

1. Develop understanding of the Threshold method;
2. Facilitate inclusive conversations among interested and affected parties to document stakeholder concerns and aspirations; and
3. Incorporate stakeholder feedback from interested and affected parties to address the challenges and opportunities in the application and outcomes of the Sustainable New Communities Program.

Table 4. Overview of the engagement process.

Meeting	Description	IAP2 Level of engagement	Outcome
Technical Advisory Team Meeting 1: Start-up and Success Criteria	Define criteria to evaluate the Thresholds.	Collaborate	Agreement on the criteria.
Technical Advisory Team Meeting 2: Approaches to Sustainability Score Thresholds	Review methodologies for identifying Thresholds.	Collaborate	Feedback on potential methodologies.
Technical Advisory Team Meeting 3: Recommended Approach	Review recommended methodology and resulting Thresholds.	Involve	Feedback on recommended approach.
Stakeholder Meeting 1	Review methodologies for identifying Thresholds and criteria used for Multi-Criteria Analysis.	Involve	Feedback on potential methodologies.
Stakeholder Meeting 2	Review recommended methodology and resulting Thresholds.	Involve	Stakeholders understand new Thresholds.

The results of the engagement process are summarized in Appendix D.

2.3 Threshold Methodologies

After assessing the previous Thresholds set by the partner cities and how the updated Sustainability Metrics would affect the Sustainability Scores of past development applications,[4] four methodologies were developed — Universal, Percentage Improvement, Benchmarking, and External Standard.

2.3.1 Universal[5]

This methodology specifies "Good" level Metrics as the baseline sustainability performance for each Indicator, while also considering the context-specific nature of development applications. Two options were identified for the Universal methodology – Pathway 1 and Pathway 2.

Setting the Thresholds

The three Sustainability Score Thresholds — Bronze, Silver, and Gold — are calculated using increments derived from the Diffusion of Innovation Model.[6] This model represents a common approach for determining the way in which new technologies and advancements are societally adopted (Figure 2).

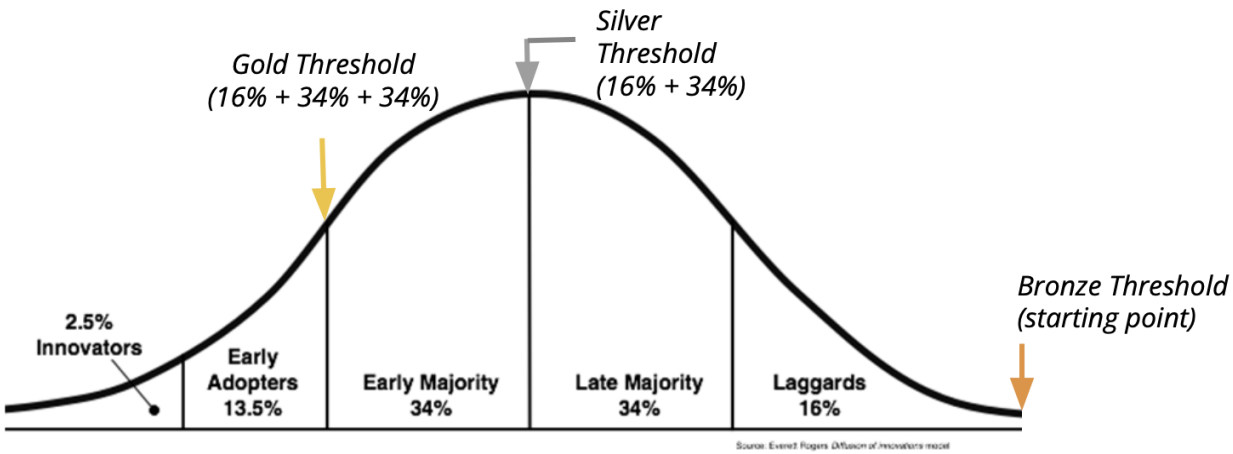

Figure 2. Diffusion of Innovation model highlighting the Bronze, Silver and Gold threshold levels.[7]

In the context of this project, the Threshold levels are defined as:

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[4] 60 Site Plans, 39 Draft Plans and 4 Block Plans approved within approximately the last five years. They included a variety of development typologies ranging from residential, mixed, and industrial uses, and low, medium density, and high density development.

[5] During the engagement process the Universal methodology was referred to as Relativism, the City of Brampton updated the methodology name in February 2022

[6] Rogers, E. M. (2010). Diffusion of Innovations. Simon and Schuster.

[7] *Ibid.*

- **Bronze Score Threshold** = model's **starting point and late majority group**. Applications are meeting the baseline performance and up to a 49% increase in points.
    - The Threshold level is calculated using the equations identified in Universal – Pathway 1 and Universal – Pathway 2
- **Silver Score Threshold** = model's **early majority group**. Applications have adopted mainstream innovation techniques and have an enhanced sustainability performance.
    - The Threshold level is calculated as: Bronze Threshold + 50% increase.
- **Gold Score Threshold** = model's **early adopters and innovators groups**. Applications have adopted new ideas and technologies to enhance sustainability and GHG emission reduction performance.
    - The Threshold is calculated as: Bronze Threshold + 84% increase.

Universal – Pathway 1

Universal – Pathway 1 calculates the baseline of the Bronze Score Threshold by adding together all points associated with the "Good" level metrics, and subtracting the points of the "Good" level metrics that have qualifier questions, as well as the points of the "Good" level metrics that are Ontario Building Code (OBC) interior-related matters.

Pathway 1 Bronze Score Threshold

= points available based on all "Good" level metrics - points available in "Good" level metrics that have qualifier questions - "Good" level metrics that are OBC-related interior matters

Since the Metrics with qualifier questions are typically site-specific, the removal of these points ensures that the baseline score does not include points associated with a very particular feature of the development site/project (e.g. BE-5 Cultural Heritage Conservation) that may not benefit all applicants. OBC-interior related Metrics were initially removed from the baseline and then reincorporated in a subsequent phase to allow time for the industry to adapt to the updated Metrics.

Table 5. Universal - Pathway 1: Bronze Threshold baseline calculation.

	Site Plans	Draft Plans	Block Plans
Total points available	241	194	76
Total points for Metrics under the "Good" level	83	62	29
Total points for Metrics under the "Good" level that have qualifier questions and are not OBC interior related	18	17	10
Total points for Metrics under the "Good" level that are related to interior OBC	24	18	0
Calculation for Bronze Score Threshold baseline	86-18-27	62-17-18	29-10
Total: Updated Bronze Score Threshold	41	27	14
% of total points available represented	17%	11%	18%

For a list of the “Good” level metrics that are OBC interior-related, and their associated points, please refer to Appendix B.

Table 6 and Figure 4 identifies the points for each Threshold level. Threshold levels for Silver and Gold levels were calculated using the same Diffusion of Innovation model outlined above.

Table 6. Sustainability Score Thresholds resulting from the UNiversal - Pathway 1 methodology.

	Total points available	Bronze	Silver	Gold
Site Plan	241	41 - 61	62 - 75	76 - 241
Draft Plan	194	27 - 40	41 - 49	50 - 194
Block Plan	76	14 - 20	21 - 25	26 - 76

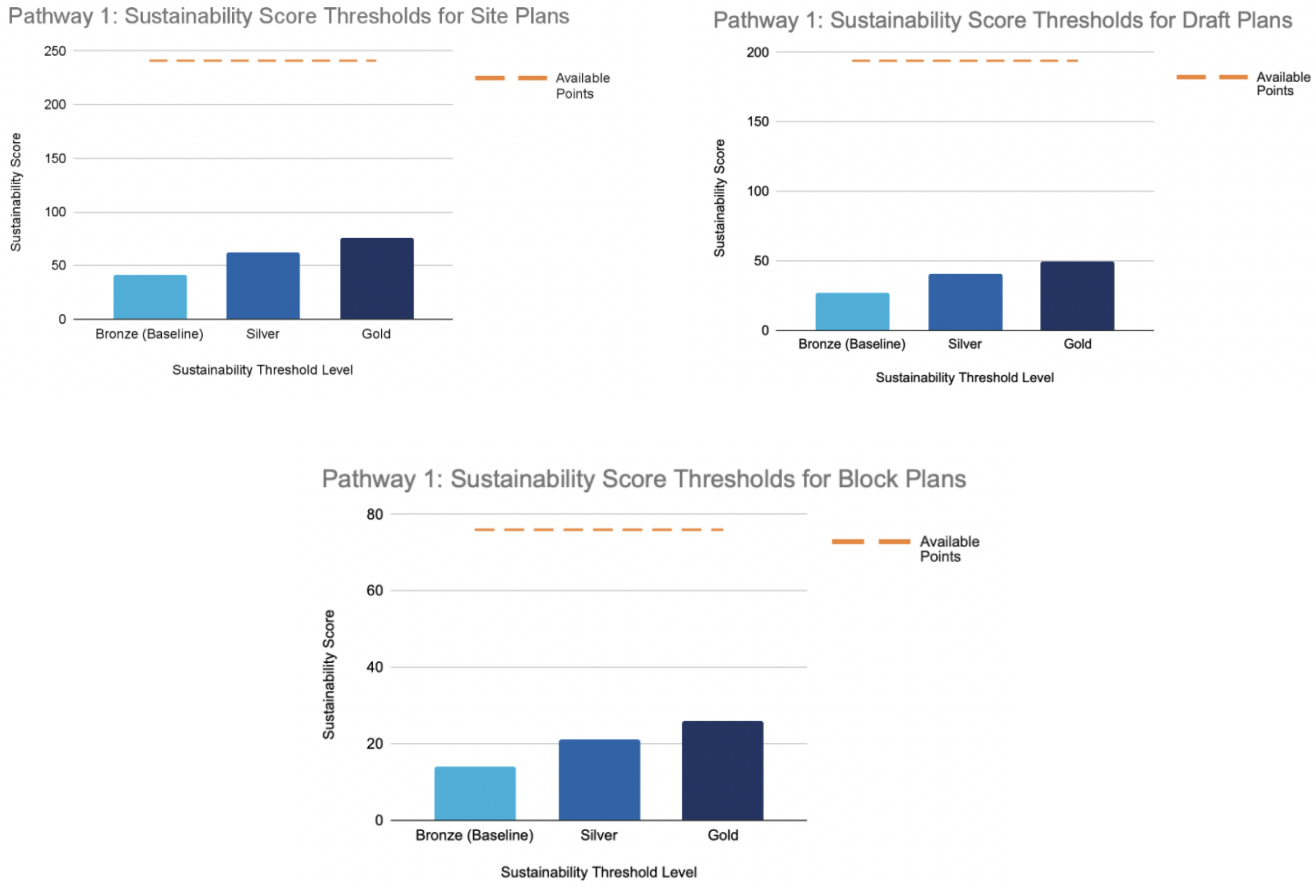

Figure 3. Universal - Pathway 1: minimum points for each Threshold (Bronze, Silver, and Gold) according to application type. The orange dotted line represents the total points available for the application type.

Universal – Pathway 2

Universal – Pathway 2 takes a similar approach to Pathway 1 but does not remove points associated with the “Good” level OBC interior-related Metrics from the baseline. Rather, it calculates the baseline of the Bronze Score Threshold by adding together all points associated with the “Good” level metrics, and subtracting only the points of the “Good” level metrics that have qualifier

questions. The inclusion of OBC-interior Metrics in the baseline score would further increase the sustainability performance of applicants, while still allowing flexibility for how applicants achieve the baseline.

Pathway 2 Bronze Score Threshold
= points available based on all "Good" level metrics – points available in "Good" level metrics that have qualifier questions

For a list of the "Good" level metrics that have qualifier questions, and their associated points, please refer to Appendix B.

Table 7. Universal - Pathway 2 setting the baseline for the Bronze Threshold.

	Site Plans	Draft Plans	Block Plans
Total points available	241	194	76
Total points for all metrics under the "Good" level	83	62	24
Total points for all metrics under the "Good" level with qualifier questions	28	18	10
Calculation for Bronze Threshold (baseline)	83-28	62-18	24-10
Total: Bronze Threshold	55	44	14
% of total points available	23%	18%	18%

The Bronze, Silver and Gold Thresholds are calculated based on the Diffusion of Innovation model (Figure 2) described earlier.

*Silver Score Threshold = Bronze Score Threshold * 1.5*
*Gold Score Threshold= Bronze Score Threshold * 1.84*

Table 8 and Figure 5 identifies the Sustainability Score Thresholds for each application type.

Table 8. Sustainability Score Thresholds resulting from the Universal - Pathway 2 methodology.

	Total points available	Bronze	Silver	Gold
Site Plan	241	55 - 81	82 - 101	102 - 241
Draft Plan	194	44 - 65	66 - 80	81 - 194
Block Plan	76	14 - 20	21 - 25	26 - 76

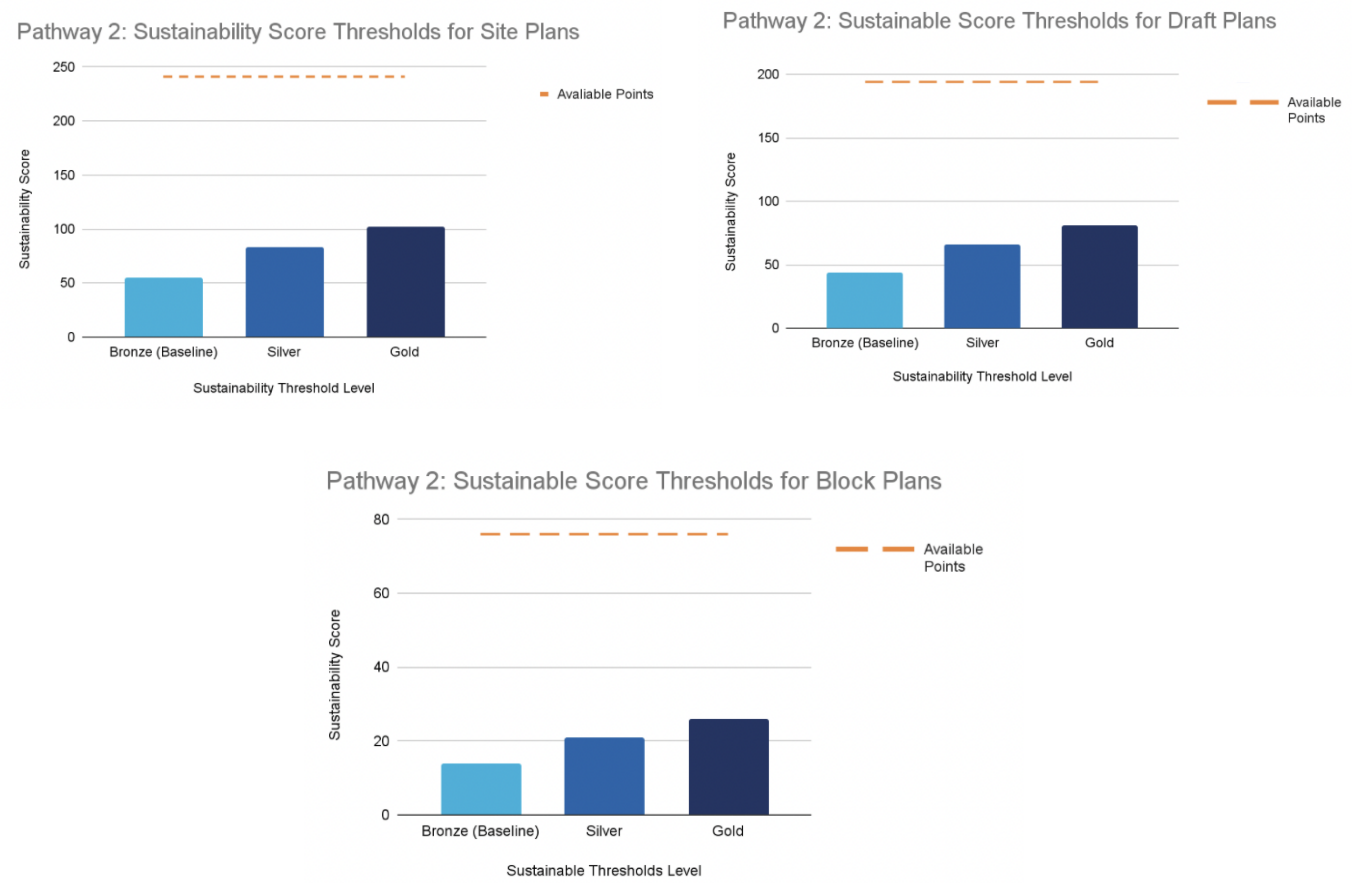

Figure 4. Universal - Pathway 2: minimum points for each Threshold (Bronze, Silver, and Gold) according to application type. The orange dotted line represents the total points available for the application type.

2.3.2 Percentage Improvement

The Percentage Improvement methodology uses the median Sustainability Score (based on the updated Metrics) of all sample development applications from each municipality to calculate a baseline, and applies the Diffusion of Innovation model to determine the subsequent Thresholds.

- Baseline = median sustainability performance of past applications
- Bronze = median sustainability performance + 20%
- Silver = median sustainability performance + 50%
- Gold = median sustainability performance + 84%

The baseline was calculated using a sample of the previously approved development applications that did not take into account the updated Sustainability Metrics. Consequently, the average performance of these development applications using updated Metrics were very low, which resulted in a low baseline and Thresholds (refer to Table 9 and FIgure 5). For example, the Gold

Threshold for Site Plans and Draft Plans requires only 12% and 15% of the total points available, respectively.

Table 9. Sustainability Score Thresholds resulting from the Percentage Improvement methodology.

	Total points available	Baseline	Bronze	Silver	Gold
Site Plan	241	15	18-22	23-27	28-241
Draft Plan	194	16	19-23	24-28	29-194
Block Plan	76	21	25-31	32-38	39-76

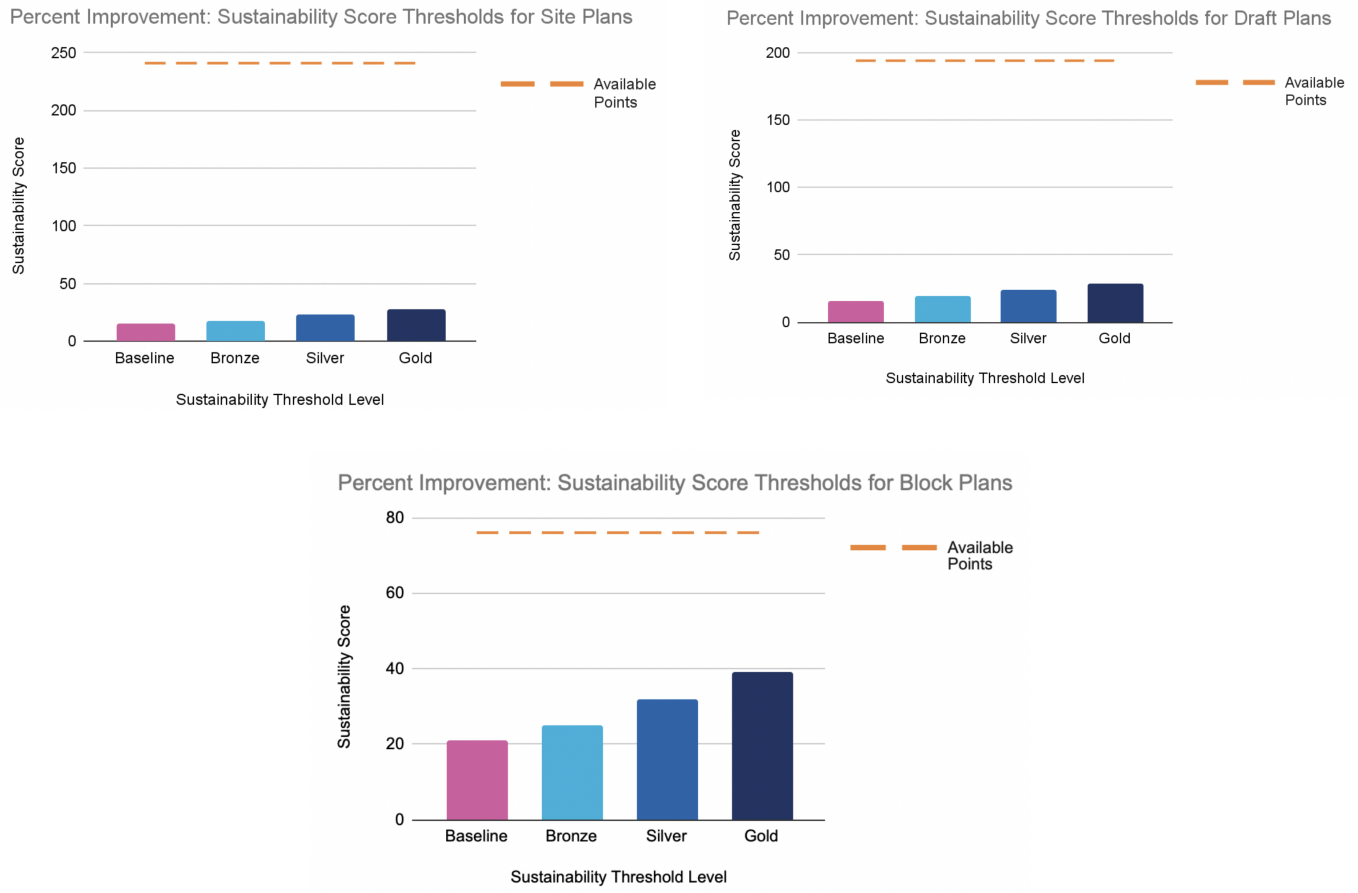

Figure 5. Percentage Improvement: Baseline and minimum points for each Threshold (Bronze, Silver, and Gold) for each development type. The orange dotted line represents the total points available for the application type.

2.3.3 Benchmarking

The Benchmark Performance methodology uses the average score of sample development applications from each municipality to calculate the baseline. Similar to the Percentage Improvement approach, previously submitted development applications were examined against the updated Metrics to calculate the average performance. The Bronze, Silver, and Gold thresholds were determined as follows:

- Baseline = average score of applications by municipality
- Bronze = average score of top 50% of applications by municipality
- Silver = average of score of top 25% of applications
- Gold = average of score of top 10% of applications

The Benchmarking methodology is impacted by the same challenge as the Percentage Improvement methodology: the baseline is calculated using previously submitted development applications which could not have taken updated Sustainability Metrics into account at the time of application submission.

As seen in Figure 6, the Benchmark Performance methodology sets Thresholds that are low when compared to the total points available for each application type (see Appendix B for Benchmark Performance for each municipality). The Gold Threshold for Brampton's Site Plan and Draft Plan equate to achieving only 9% and 15% of the total points available.

Table 10. Benchmarking performance threshold point ranges.

	Total points available	Baseline	Bronze	Silver	Gold
Brampton					
Site Plan	241	18	17-19	20-21	22-241
Draft Plan	194	17	17-21	22-26	28-194
Markham					
Site Plan	241	18	18-19	20-26	27-241
Draft Plan	194	23	25-28	29	30-194
Richmond Hill					
Site Plan	241	14	15-17	18-21	22-241
Draft Plan	194	14	15-17	18-19	20-194
Vaughan					
Site Plan	241	12	12-13	14-16	17-241
Draft Plan	194	15	16-18	19	20-194

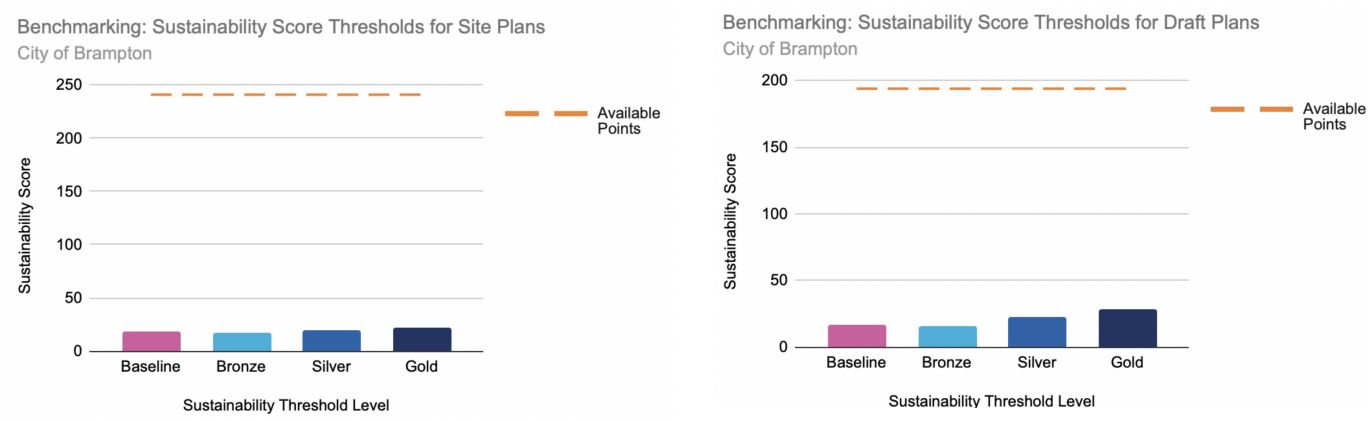

Figure 6. Benchmark Performance baseline and minimum points for each Threshold (Bronze, Silver, and Gold) for the City of Brampton for Site Plan and Draft Plan applications. The orange dotted line represents the total points available for the application type.

2.3.4 External Standard

This methodology aims to establish Thresholds in alignment with a third party green standard, such as Leadership in Energy and Environmental Design (LEED), but was not explored further based on feedback received through the engagement process.

BILD and TAT identified the following challenges posed by this methodology:

- It did not provide a site specific context;
- It was inflexible and restrictive, and the baseline would have to be updated frequently to stay in alignment with revisions to external programs; and
- Determining the third party green standard that is most appropriate and achieving a direct alignment/comparison between the updated Sustainability Metrics and the metrics of the selected third party standard would be difficult.

As a result of this feedback, External Standard methodology was not evaluated.

3. Integrating Climate Change

Climate change is the greatest long-term global challenge that society is facing. Human-induced climate change poses risks to public health, economic growth, public safety, infrastructure, livelihoods, and the world's biodiversity and ecosystems. It is critical that society avoid long-term investments that increase GHG emissions at a time when emissions need to be reduced as quickly as possible.

There is a growing understanding of the cost that climate change imposes on households, businesses, and governments. These costs take two forms - the cost of the energy transition away

from the use of fossil fuels to address climate change,[8] and the cost of adapting or mitigating the impacts of climate change.[9] Buildings cause a significant portion of annual GHG emissions globally, as well as a significant portion of each municipal partner's annual emissions (e.g. Markham- 49%; Richmond Hill- 42%; Brampton-37%; Vaughan-50%[10]). To effectively reduce emissions, every building that is not constructed to net zero standards today will need to be retrofitted to be more energy efficient, imposing a financial and logistical burden on both the owners or occupants of those buildings and society at large.

As the Canadian Institute for Climate Choices writes in a recent report on infrastructure and climate change, "public and private infrastructure owners have been more concerned with short-term budgets and balance sheets than long-term planning, leaving long-term risks like climate change unaddressed."[11] This paradigm is shifting, however, and many governments and businesses are developing business models that specifically address the causes and impacts of climate change.[12]

The partner municipalities in the Sustainable New Communities Program have developed and approved, or are in the process of creating, strategic long-term climate action and community energy plans, including:

- City of Markham's *Municipal Energy Plan: Getting to Zero* (2017);
- City of Brampton's *Our Energy Transition: Community Energy and Emissions Reduction Plan* (2020);
- City of Richmond Hill's *Path to a Low Carbon Future: Community Energy and Emissions Plan* (2021); and
- City of Vaughan's *Municipal Energy Plan* (2016; currently under review).

Reducing GHG emissions from new buildings is a common action identified in each of these plans, and the Sustainability New Communities Program is a key tool for realizing the goals and targets of improved energy and GHG performance in new developments and communities.

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[8] In this case, transition costs are the costs of decarbonizing buildings. In the near future, municipalities and other levels of government are likely to impose carbon limits on homes, which will require investments by households and other actors. The City of Vancouver, which pioneers policy approaches on climate change, is currently developing emissions limits for single family homes and buildings. For more information, visit https://vancouver.ca/green-vancouver/how-we-build-and-renovate.aspx.

[9] For an example of one aspect of the costs, refer to the Canadian Institute for Climate Choices. (2021). Underwater: The Costs of Climate for Canada's Infrastructure. Retrieved from: https://climatechoices.ca/wp-content/uploads/2021/09/Infrastructure-English-FINAL-Sep29.pdf

[10] Municipal Energy and Emissions Database. Retrieved from: https://meed.info/en/ca/

[11] Opp. Cit. p. vi

[12] For example, as of January 2021 the Race to Zero includes more than 5,000 companies, 67 sub-national regions, over 1000 cities (including the City of Brampton), 441 banks and investment companies, and others. For more details, see: https://racetozero.unfccc.int/

Four approaches to further integrate climate performance into the Sustainability New Communities Program were identified.

Table 11. Approaches to increase integration and reporting of climate action into the Sustainable New Communities Program.

	Minimum Performance (Option A)	Minimum Performance (Option B)	Climate Score	Project GHG Emissions	Climate Ranking
Description	Requires applications to achieve a minimum number of points across a range of climate-related Indicators.	Requires applications to achieve specific metrics level under IB-12: Energy Efficiency and GHG Reductions.	Assigns a score based on the points achieved across a range of climate-related Indicators.	Indicates the GHG reduction compared to current practices through achieving specific metrics across climate-related Indicators.	Highlights top-ranking performance on climate-related indicators.

3.1 Minimum Performance

Option A

In this approach, planning applications are required to achieve a minimum number of points under specific climate-related Indicators, resulting in the enhanced climate performance of that development. Under this option, applicants would select a combination of Metrics for each Indicator to achieve the minimum number of points required under the themes of Building, Transportation, Active Transportation, and Embodied Carbon, as outlined in Table 12. The minimum number of points escalates over time.

Fourteen Metrics in the Mobility (M), Built Environment (BE), and Infrastructure & Buildings (IB) categories were identified as directly advancing climate action objectives in the transportation, building, and energy sectors. The total points available in each of the categories were calculated and phased the scores over time to maximize performance ("climate-optimized") by 2030.

Table 12. Minimum Performance Option A.

	Building	Transportation	Active Transportation	Embodied Carbon
Metrics	IB-12: Building Energy Efficiency & GHG Reduction	BE-1: Proximity to Amenities BE-10: EV Charging	M-4: Walkable Streets M-5: Pedestrian Amenities M-6: Bicycle Parking M-7: Trails and Cycling Infrast. M-8: AT Network M-9: Distance to Public Transit	IB-4: Supp. Cementitious Materials IB-5: Life Cycle Assessment IB-6: Material Effic. Framing IB-9: Solar Gain Control IB-10: Solar Readiness
2022	10	5	6	6
2024	13	5	8	8
2026	17	7	8	10
2030	20	10	14	20

For example, in 2024 an application would need to receive 13 points from IB-12: Building Energy Efficiency and GHG Reduction, 5 points across from BE-1: Proximity to Amenities and BE-10: EV Charging.

Option B

Option B focuses specifically on ensuring that new construction helps municipalities achieve energy efficiency and GHG emission reduction targets as identified in their community energy plans, climate action plans, environmental master plans, and/or climate emergency declarations. By establishing minimum building performance requirements, Option B includes an implementation pathway for new construction to achieve the CHBA Net Zero Homes Program or Passive House requirements, consistent with Toronto Green Standard (Version 3)[13] and Whitby Green Standard implementation timeframes. Applications would be required to achieve minimum energy and GHG performance as outlined in IB-12: Energy Efficiency and GHG Reduction. The "Good" level shown in Table 13 would become mandatory in 2022.

Table 13. Minimum performance requirements.

Implementation year	IB-12: Energy Efficiency and GHG Reductions Metric level	Requirement
2022	Good	**Part 9 Residential Buildings** (3 storeys or less and less than 600 m2 in gross floor area), design the building(s) to achieve ENERGY STAR® for New Homes version 17.1 or R-2000® requirements, or equivalent.

[13] The City of Toronto recently expedited the implementation of the Toronto Green Standard so that Toronto Green Standard Version 4 Tier 3 will apply in 2028.

		Part 3 Buildings – Multi-Unit Residential, Office and Retail (more than 3 storeys or more than 600 m2 in gross floor area), develop a whole-building energy model, and design and construct the building to achieve the following whole-building performance metrics: ● Total Energy Use Intensity (TEUI): 170 kWh/m2/yr ● Thermal Energy Demand Intensity (TEDI): 70 kWh/m2/yr ● Greenhouse Gas Emissions Intensity (GHGI): 20 kgCO2/m2/yr. **All Other Part 3 Buildings**, develop a whole-building energy model, and design and construct the building to achieve at least a 15% improvement in energy efficiency over the Ontario Building Code (OBC) SB-10, Division 3 (2017) reference building.
2024	Great	**Part 9 Residential Buildings** (3 storeys or less and less than 600 m2 in gross floor area), design, construct, and label the building(s) to achieve ENERGY STAR® for New Homes version 17.1 or R-2000® requirements, or equivalent. **Part 3 Buildings – Multi-Unit Residential, Office and Retail** (more than 3 storeys or more than 600 m2 in gross floor area), develop a whole-building energy model, and design and construct the building to achieve the following whole-building performance metrics: ● Total Energy Use Intensity (TEUI): 135 kWh/m2/yr ● Thermal Energy Demand Intensity (TEDI): 50 kWh/m2/yr ● Greenhouse Gas Emissions Intensity (GHGI): 15 kgCO2/m2/yr **All Other Part 3 Buildings**, develop a whole-building energy model, and design and construct the building to achieve at least a 25% improvement in energy efficiency over the Ontario Building Code (OBC) SB-10, Division 3 (2017) reference building.
2028	Excellent	**Part 9 Residential Buildings** (3 storeys or less and less than 600 m2 in gross floor area), design and construct the building(s) to be Net Zero ready in accordance with the CHBA Net Zero Home Labelling Program, or equivalent. **Part 3 Buildings – Multi-Unit Residential, Office and Retail** (more than 3 storeys or more than 600 m2 in gross floor area), develop a whole-building energy model and design the building to achieve the following whole-building performance metrics associated with a near-net zero emissions level of performance: ● Total Energy Unit Intensity (TEUI): 100 kWh/m2/yr ● Thermal Energy Demand Intensity (TEDI): 30 kWh/m2/yr ● Greenhouse Gas Emissions Intensity (GHGI): 10 kgCO2/m2/yr **All Other Part 3 Buildings**, develop a whole-building energy model and design the building to achieve at least a 37% improvement in energy efficiency over the Ontario Building Code (OBC) SB-10, Division 3 (2017) reference building.
2032	Exceptional	**Part 9 Residential Buildings** (3 storeys or less and less than 600 m2 in gross floor area), design and construct the building(s) in accordance with the CHBA Net Zero Home Labelling Program or Passive House standards, or equivalent.

		Part 3 Buildings – Multi-Unit Residential, Office and Retail (more than 3 storeys or more than 600 m2 in gross floor area), develop a whole-building energy model and design the building to achieve the following whole-building performance metrics associated with a near-net zero emissions level of performance: • Total Energy Unit Intensity (TEUI): 75 kWh/ m2 yr • Thermal Energy Demand Intensity (TEDI): 15 kWh/m2/yr • Greenhouse Gas Emissions Intensity (GHGI): 5 kgCO2/m2/yr **All Other Part 3 Buildings**, develop a whole-building energy model and design the building to achieve at least a 50% improvement in energy efficiency over the Ontario Building Code (OBC) SB-10, Division 3 (2017) reference building.

3.2 Climate Grade

In this approach, applications are assigned a Climate Grade based on how the proposed developments would perform. Inspired by the energy and climate ratings applied to buildings in the United Kingdom (Figure 7), each development application would be assigned a grade that highlights its level of performance, with "A" denoting the best performing projects and "D" denoting the worst performing projects. The score would be based on the achievement of a minimum number of points under specific Indicators, as outlined in Table 14. The identification and allocation of points applies the same method as described in 3.1 Minimum Performance Option A.

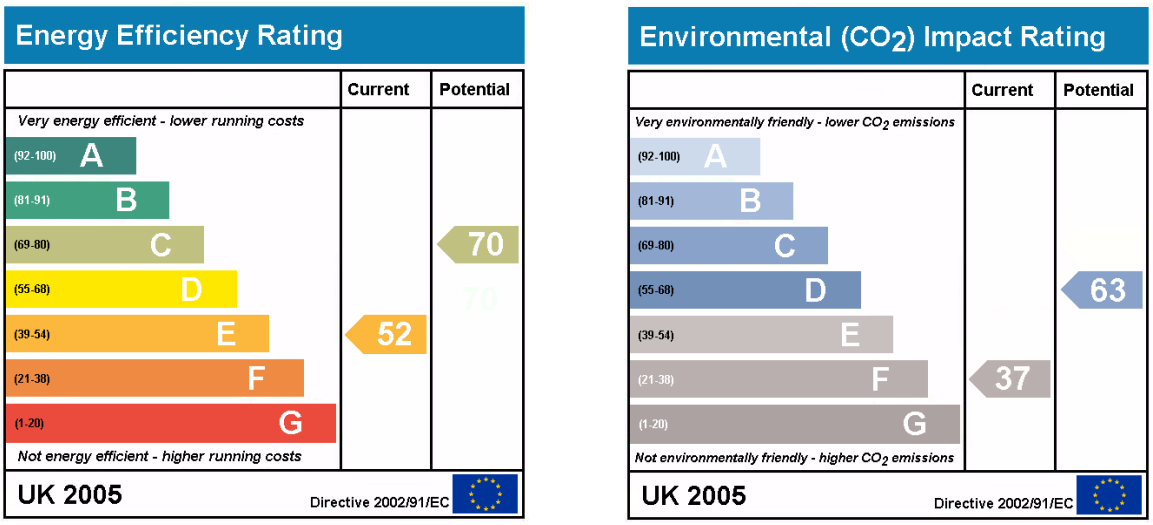


Figure 7. Example of labels applied to buildings in the UK, which can be adopted to the Climate Grade approach.

For example, to achieve a Climate Ranking of A, applications would be required to achieve 20 points in IB-12: Energy Efficiency and GHG Reduction, 10 points from the BE-1: Proximity to Amenities and BE-10: EV Charging categories, 14 points from the M-4: Walkable Streets, M-5 Pedestrian Amenities, M-6: Bicycle parking, M-7: Trails and Cycling Infrastructure, M-9: Distance to Public Transit categories, and 20 points from the IB-4 Supplementary Cementitious, IB-5 Life Cycle Assessment, IB-6 Material Efficiency Framing, IB-9 Solar Gain Control, and IB-10 Solar Readiness categories.

Table 14. Climate Grade method.

Grade	Building	Transportation	Active Transportation	Embodied Carbon
Metrics	IB-12: Building Energy Efficiency & GHG Reduction	BE-1: Proximity to Amenities BE-10: EV Charging	M-4: Walkable Streets M-5: Pedestrian Amenities M-6: Bicycle Parking M-7: Trails and Cycling Infrast. M-8: AT Network M-9: Distance to Public Transit	IB-4: Supp. Cementitious Materials IB-5: Lifecycle Assessment IB-6: Material Effic. Framing IB-9: Solar Gain Control IB-10: Solar Readiness
A	20	10	14	20
B	17	7	8	10
C	13	5	8	8
D	10	5	6	6

3.3 Project GHG Emissions

This approach involves evaluating applications based on achievements in identified GHG emissions reduction Metrics, focusing on transportation and building-related GHG emissions. Applications that achieve the Metrics identified in Table 15 would receive a "label" indicating that they enable (a) a lifestyle that results in a 50% GHG reduction from standard current practices, or (b) a zero emissions lifestyle.

The underlying logic of this approach is that the built environment can either enable or constrain a household's ability to reduce GHG emissions. An assessment of the "Excellent"/"Exceptional" level for each of the points listed in Table 15 indicates that the proposed building and available transportation choices (walking, cycling, transit, and electric vehicle (EV) infrastructure) could be close to emission-free. The "Great" level for each of these Metrics also enables a low carbon lifestyle, but denotes lower accessibility to zero-emission transportation modes and less efficient buildings. The "Great" level would enable a 50% reduction in emissions from the status quo.

Table 15. GHG emissions metrics.

50% Emissions Reduction	Zero Emissions
Achieves the "Great" level in all of the following metrics: • BE-1: Proximity to Amenities • BE-10: EV Charging • M-6: Bicycle Parking • M-9: Distance to Public Transit • IB-12: Building Energy Efficiency & GHG Reduction	Achieves the "Excellent" level in all of the following metrics: • BE-1: Proximity to Amenities • BE-10: EV Charging • M-6: Bicycle Parking • M-9: Distance to Public Transit • IB-12: Building Energy Efficiency & GHG Reduction

3.4 Climate Ranking

This approach is a branding initiative whereby applications that achieve specific Metrics can be labelled and marketed as projects that are leading in emissions reduction and/or adapting to climate change. All Metrics that influence transportation and building operational and embodied emissions have been identified as GHG mitigation activities. Those Metrics that increase readiness and resilience for a changing climate are identified for climate adaptation.

Table 16. Climate Ranking Metrics.

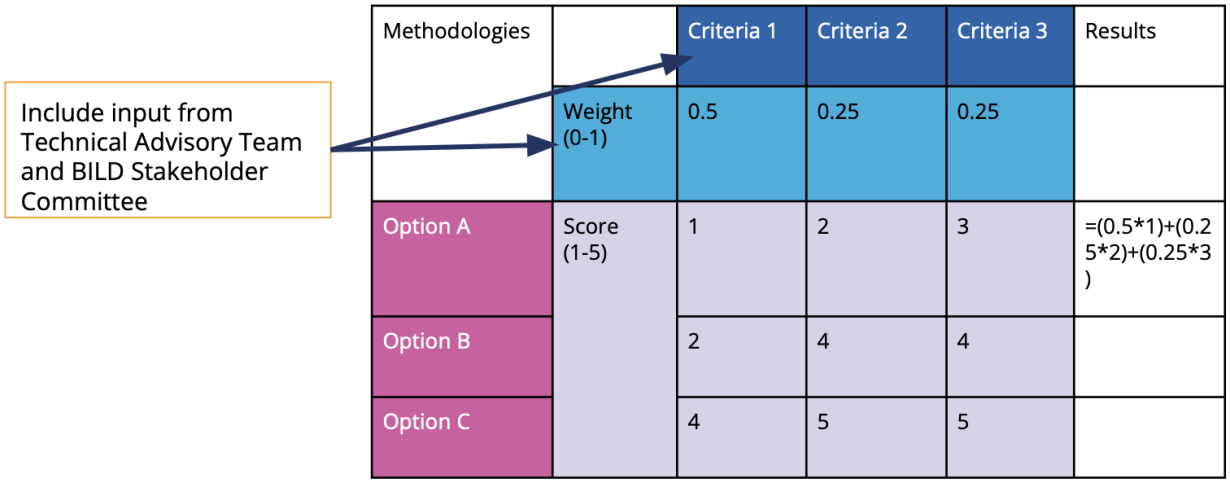
Climate Challenger (reducing GHG emissions; mitigation)	**Climate Adapter (preparing for climate change; adaptation)**
Achieves "Excellent" level for the following metrics: • BE-1: Proximity to Amenities • BE-10: EV Charging • M-6: Bicycle Parking • M-8: AT Network • M-9: Distance to Public Transit • IB-4: Supp. Cementitious Materials • IB-5: Life Cycle Assessment • IB-6: Material Efficient Framing • IB-9: Solar Gain Control • IB-10: Solar Readiness • IB-12: Building Energy Efficiency & GHG Reduction	Achieves "Excellent" level for the following metrics: • BE-6: Tree Canopy and Shaded Walkways • NE-1: Tree Conservation • NE-3: Healthy Soils • NE-5: NHS Enhancements • NE-9: Stormwater Quantity • IB-7: Heat Island Reduction (Non-Roof) • IB-8: Heat Island Reduction (Roof) • IB-14: Backup Power • IB-15: Extreme Wind Protection

Figure 8. Example of labels that could be applied to applications which achieve the relevant climate-related metrics.

4. Choosing the Best Methodology

4.1 Analyzing the Methodologies: Multi-Criteria Analysis

Multi-Criteria Analysis (MCA) is a method to support decision-making according to predetermined criteria and objects. MCA combines quantitative and qualitative data in a transparent format which can incorporate both expert and local judgement (Figure 9). In this project, MCA was used with input from the Technical Advisory Team (TAT) and members of the BILD York and Peel chapters to refine the criteria and to evaluate the methodologies.



Methodologies		Criteria 1	Criteria 2	Criteria 3	Results
	Weight (0-1)	0.5	0.25	0.25	
Option A	Score (1-5)	1	2	3	=(0.5*1)+(0.25*2)+(0.25*3)
Option B		2	4	4	
Option C		4	5	5	

Figure 9. Visual representations of the MCA.

The criteria used to evaluate the methodologies includes:

- **Transferability:** Can the methodology be adopted by multiple municipalities?
- **Material improvement:** Does the methodology increase sustainability performance?
- **Progression:** Does the methodology have a mechanism to increase performance over time?
- **Practicality:** Can the methodology be easily implemented?
- **Adaptability:** Does the methodology take into consideration the local context of the development site?

Table 17. MCA results from SSG's analysis. Note: the criteria weighting (row 2) were developed in consultation with stakeholders.

	Transferability	Material Improvement	Progression	Practicality	Adaptability	Score
Weighting	3.4	3.2	2.5	4.1	3.3	-
Universal	5	5	2	3	4	63.5
Percent Improvement	2	2	5	3	3	47.9
Benchmarking	2	1	5	3	3	44.7

The MCA results indicate the preferred Sustainability Score Threshold methodology as Universal. The analysis found that neither Percent Improvement nor Benchmarking facilitate material improvements in the sustainability performance of development proposals. This result follows from the observation that the baseline scores were calculated from development applications completed prior to the development of the updated Sustainability Metrics.

4.2 Insights from the Engagement Process

Stakeholder engagement was set at the "Involve" level of the International Association of Public Participation (IAP2) spectrum. The methodologies, MCA, and recommendations were refined through ongoing communication with municipal staff. External stakeholders, including the development industry, were engaged at key milestones in the project.

The first workshop took place on October 29, 2021 and stakeholders provided input on the Threshold methodologies, the MCA criteria and weighting, and the various approaches to further the integration and reporting of climate change. Thirty-seven stakeholders attended this workshop, and an average of 40% of attendees provided feedback in the workshop engagement activities.

See Appendix C and D for the engagement strategy and detailed engagement summary. The input received from stakeholders during the first workshop directly informed the final recommendations in the following ways:

- **Result 1:** Stakeholders identified the potential strengths and weaknesses of each proposed threshold methodology.
- **Result 2:** Stakeholders approved the proposed criteria, provided additional criteria, and selected the weighting for the MCA used to select the recommended methodology. In addition, stakeholders participated in an MCA to increase understanding of the analysis process and determine their preferences. Universal scored the highest in the stakeholder MCA.

- **Result 3:** Stakeholders questioned the appropriateness of the External Standard as a methodology. Following additional internal research, this methodology was not explored further following the first workshop.
- **Result 4:** Participants ranked the approaches to improve integration and reporting of climate change. Minimum Climate Performance received 80% support from participants.

At the second workshop, held on December 7, 2021, stakeholders were informed how their feedback shaped the final recommendations and presented the recommended approaches. During the workshop, no stakeholders suggested modifications to the recommendations.

The TAT hosted a third meeting with select representatives of BILD York and Peel chapters (known as the BILD Working Group) on January 6, 2022 as a follow-up discussion on the recommendations presented at Workshop #2. SSG did not facilitate this workshop, however, members from the consulting team attended as a resource to answer questions regarding the methodologies and approaches. Based on the feedback received from the BILD Working Group, the recommendations were further refined, particularly as they relate to Universal – Pathway 2, and Minimum Performance Option B.

5. Recommendations

5.1 Recommended Methodology for Setting New Thresholds: Universal

Recommendations were developed based on feedback from external stakeholders and the TAT and results of the MCA.

Recommendation #1: Implement Universal methodology to establish new Thresholds for the updated Sustainable New Communities Program, commencing with Pathway 1 in 2022.

Table 18. Universal - Pathway 1 - implementation in 2022.

	Total points available	Bronze	Silver	Gold
Site Plan	241	41 - 61	62 - 75	76 - 241
Draft Plan	194	27 - 40	41 - 49	50 - 194
Block Plan	76	14 - 20	21 - 25	26 - 76

The engagement process identified Universal as the preferred methodology. It was also the highest scoring option in the Multi-Criteria Analysis. Additional strengths of the Universal – Pathway 1 are summarized below:

- The methodology results in a consistent set of Thresholds across municipalities.
- Establishing the Thresholds using the Diffusion of Innovation model provides a reliable approach to calculate the percentage increases between each Threshold level (Bronze, Silver, and Gold).
- By removing all "Good" level metrics associated with qualifier questions, the methodology takes into account differences in site specific contexts in which developers are only required to meet the total points available for Metrics that are applicable to all sites.
- In contrast to the other methodologies, the approach recognizes leaders in sustainable design and development by creating Score Thresholds that are more representative of the total points available.
- It is independent of the performance of previously approved development proposals (e.g.. average and median previous scores were not used to set the baseline) which were not reflective of current municipal policies, plans, and guidelines, industry best practices, or the updated suite of Sustainability Metrics.

Recommendation #2: Monitor and evaluate the development applications under the updated Sustainable New Communities Program, and transition to Thresholds to Universal – Pathway 2 in 2026.

Table 19. Universal - Pathway 2 - implementation in 2026.

	Total points available	Bronze	Silver	Gold
Site Plan	241	55 - 81	82 - 101	102 - 241
Draft Plan	194	44 - 65	66 - 80	81 - 194
Block Plan	76	14 - 20	21 - 25	26 - 76

Monitoring the Sustainability Scores following the formal launch of the updated Sustainable New Communities Program is a best practice to adapt the program, as needed. These adaptations might include responding to updates in municipal energy plans, Building Codes, or Provincial and Federal climate change directives, as well as ongoing communication with the public and stakeholders. Additionally, the new data gathered from green development standards and programs in each municipality can be used by the Province in assessing updates to the Ontario Building Code.

The phased approach, which increases the Score Thresholds over a scheduled period of time, allows applicants to adapt to the new Metrics and Thresholds before performance requirements are enhanced, and enables municipalities to evaluate the progress of applications meeting each

Threshold. The benefits of adopting Universal – Pathway 2 in a phased manner are summarized below:

- It provides a mechanism to increase sustainability and climate performance over time.
- It provides certainty to industry so that they have time to adjust without disruption to the updated Program requirements.
- It allows municipalities to perform an ongoing evaluation of the Sustainability Scores, Metrics and Thresholds, and to adapt the Program as necessary.

As the new Metrics and Thresholds are implemented, it may be easier than anticipated for applicants to achieve a Sustainability Score within and above the (minimum) Bronze Threshold. The phased approach enables the municipalities to evaluate whether the scores are advancing sustainability performance as intended and to align an incentives program accordingly.

Recommendation #3: Apply the Silver Score Threshold as the minimum performance for urban/town centres and intensification corridors.

Provincial and municipal policies, standards, and guidelines facilitate the achievement of Metrics related to compact urban-form (e.g. BE-1: proximity to amenities, BE-2: mixed-use development, BE-9: surface parking footprint, M-8: distance to transit). It is therefore recommended that each municipality consider elevating the minimum Threshold requirement for development in these areas to the Silver Sustainability Score Threshold. This avoids creating separate Metrics and Thresholds for these areas, while ensuring that new developments achieve higher sustainability performance.

For the City of Markham, a higher standard may be appropriate for medium and high density developments to ensure there is no decrease in performance requirements when transitioning from LEED to the Sustainable New Communities Program. In this case, the City should evaluate whether the Silver Threshold exceeds the existing LEED Silver requirement for medium and high density development.

Recommendation #4: Incorporate the Climate Change Minimum Performance Option B into the Sustainable New Communities Program.

Every tonne of GHG emissions matters, and all buildings and infrastructure that are not energy efficient result in additional emissions, and impede climate change mitigation and adaptation. Incorporating the Minimum Performance Option B to the Sustainable New Communities Program ensures an increase in building performance, which is critical to reducing emissions and avoids creating additional building stock that will need to be retrofitted in the near future. As IB-12 is an OBC-interior related Metric, the points available for the “Good” level are not included in the Universal – Pathway 1 Bronze Threshold (baseline) calculation; by achieving this mandatory Metric requirement, an application is well on the way to achieving the Bronze Threshold.

Table 20. Summary of Climate Performance requirements.

	2022-2023	2024-2027	2028-2031	2032-2035
Climate Performance Requirement	Achieve "Good" level	Achieve "Great" level	Achieve "Excellent" level	Achieve "Exceptional" level
IB-12: Energy Efficiency and GHG Reductions Metric requirements summary	**Part 9 Residential Buildings** (3 storeys or less, and less than 600 m2 GFA): design the building(s) to achieve ENERGY STAR® for New Homes version 17.1 or R-2000® requirements, or equivalent. **Part 3 Buildings Multi-unit residential, Office, and Retail** (more than 3 storeys or more than 500 m2 GFA): develop a whole-building energy model, and design and construct the building to achieve the following whole-building performance metrics: • TEUI: 170 kWh/m2/yr • TEDI: 70 kWh/m2/yr • GHGI: 20 kgCO2/m2/yr **All Other Part 3 Buildings:** develop a whole-building energy model, and design and construct the building to achieve at least a 15% improvement in energy efficiency over OBC.	**Part 9 Residential Buildings** (3 storeys or less, and less than 600 m2 GFA):design , construct, and label the building(s) to achieve ENERGY STAR® for New Homes version 17.1 or R-2000® requirements, or equivalent. **Part 3 Buildings Multi-unit residential, Office, and Retail** (more than 3 storeys or more than 500 m2 GFA): develop a whole-building energy model, and design and construct the building to achieve the following whole-building performance metrics: • TEUI: 135 kWh/m2/yr • TEDI: 50 kWh/m2/yr • GHGI: 15 kgCO2/m2/yr **All Other Part 3 Buildings:** develop a whole-building energy model, and design and construct the building to achieve at least a 25% improvement in energy efficiency over OBC.	**Part 9 Residential Buildings** (3 storeys or less, and less than 600 m2 GFA): design and construct the building(s) to be Net Zero ready in accordance with the CHBA Net Zero Home Labelling Program, or equivalent. **Part 3 Buildings Multi-unit residential, Office, and Retail** (more than 3 storeys or more than 500 m2 GFA): develop a whole-building energy model, and design and construct the building to achieve the following whole-building performance metrics: • TEUI: 100 kWh/m2/yr • TEDI: 30 kWh/m2/yr • GHGI: 10 kgCO2/m2/yr **All Other Part 3 Buildings:** develop a whole-building energy model, and design and construct the building to achieve at least a 37% improvement in energy efficiency over OBC.	**Part 9 Residential Buildings** (3 storeys or less, and less than 600 m2 GFA): design and construct the building(s) in accordance with the CHBA Net Zero Home Labelling Program or Passive House standards, or equivalent. **Part 3 Buildings Multi-unit residential, Office, and Retail** (more than 3 storeys or more than 500 m2 GFA): ddevelop a whole-building energy model, and design and construct the building to achieve the following whole-building performance metrics: • TEUI: 75 kWh/m2/yr • TEDI: 15 kWh/m2/yr • GHGI: 5 kgCO2/m2/yr **All Other Part 3 Buildings:** develop a whole-building energy model, and design and construct the building to achieve at least a 50% improvement in energy efficiency over OBC.

Of the four approaches for reducing emissions, the Minimum Performance was preferred by stakeholders and the TAT. Unlike Minimum Climate Performance Option B, Option A includes Metrics that are already being met in development. Therefore, Option A was deemed unnecessarily broad for advancing climate performance. The other three climate approaches are marketing tools

that are complementary and could be used along with Minimum Performance Option B approach at the discretion of each municipality.

The performance requirements/tiers and implementation timeframe generally align with those of the City of Toronto's Green Development Standards (Version 3), as well as the Town of Whitby's Green Development Standards (2020). It should be noted that the City of Toronto will be transitioning to TGS Version 4 in May 2022, and will be requiring the CHBA Net Zero Home Labelling Program or Passive House Standard for new construction by 2028, four years earlier than this proposal does. The performance requirements and implementation timeframe recommended in Table 20 will enable a consistent and predictable approach for developers across multiple municipalities.

A mandatory requirement ensures that the building stock is future-proofed and that no additional costs will need to be incurred to decarbonise these buildings. Making the requirement mandatory also levels the playing field and stimulates innovative approaches in the built environment to increase efficiency and lower capital costs.[14] Importantly, more efficient buildings also have lower operating costs for households and better air quality and thermal comfort for occupants.[15] High performance buildings provide emergency resilience to extreme climate events; for example, net-zero buildings often can provide power when centralized energy grids are down.[16]

6. Conclusion

The objective of the Sustainable New Communities Program is to advance the sustainability performance of new construction in the participating municipalities. This Program, however, will also catalyze co-benefits in public health, climate change mitigation and adaptation, natural heritage conservation, water and air quality, and economic development.

The revamp to the suite of Sustainability Performance Metrics was undertaken as part of an earlier and separate phase of the Sustainable New Communities Program update. This report serves as the second phase of the update, and identifies methods for establishing new Sustainability Performance Thresholds. The methods were evaluated against select criteria identified through stakeholder consultation; these included transferability, material improvement, progression, practicality, and adaptability. Based on the analysis, the Universal methodology was the best performing against the criteria.

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[14] For a detailed analysis of the impacts of increased building performance, see: Bernhardt, R. (2021). Addressing the Cost of Efficiency. Retrieved from: https://energystepcode.ca/app/uploads/sites/257/2021/05/Cost-of-Efficiency-Report-2021-final.pdf

[15] CHBA (2021). Do Net Zero Homes save you money? Retrieved from: https://blog.chba.ca/2021/10/26/do-net-zero-homes-save-you-money/

[16] Enck, J. (2021). Delivering Disaster-Resilient Buildings. Retrieved from: https://facilityexecutive.com/2021/10/delivering-disaster-resilient-buildings/

Universal – Pathway 1 established a baseline performance requirement by removing all points associated with all “Good” level Metrics that do not have qualifier questions and do not relate to OBC-interior matters. The removal of these two types of Metrics takes into account the differences in site contexts, ensuring developers are only required to meet the total points available to all sites, and also enables the industry to adjust to the updated Program requirements prior to increasing performance requirements. The phased approach, in which municipalities transition to Universal – Pathway 2 in 2026, is recommended so applicants in the municipalities have sufficient time to increase sustainability performance.

This approach is cautious. If applicants easily achieve or exceed the Bronze Threshold of Pathway 1, the partner municipalities should consider transitioning to Pathway 2 earlier than 2026. Phases three and four of the Sustainable New Communities Program Update involves identifying incentives, and updating outreach and education. Monitoring the Sustainability Scores will be crucial in understanding the Program's success and providing evidence of community co-benefits to justify this public investment.

In addition to the broader Sustainability Thresholds, a climate change Minimum Performance is recommended to ensure that the Sustainable New Communities Program advances the climate action goals and targets of the partner municipalities. As noted previously in this report, eliminating GHG emissions is no longer optional; it is a scientific imperative. The climate emergency requires immediate innovation, ambition and accelerated action.

The building and development industry has continued to innovate in the face of major societal challenges, highlighted by initiatives such as the Canada Green Building Council, Canadian Home Builders Association's Net Zero Homes program, and by pioneering net zero projects. The Sustainable New Communities Program provides a mechanism to further stimulate and accelerate this ongoing innovation.

Appendices

Appendix A: Assessment of Original and Updated Sustainability Metrics Methodology

To evaluate the performance of approved planning development applications under the updated Sustainability Metrics, the municipalities[17] provided a random sample of Site Plan, Draft Plan of Subdivision, and Block Plan applications that were approved within the last 5 years and under the original Metrics Program. 60 Site Plans, 39 Draft Plans and 4 Block Plans were evaluated and analyzed for trends by Metric category and municipality.

This assessment contributed to identifying key insights for establishing new Thresholds and determining Threshold approaches that are:

- Aligned with the climate goals of the four partner municipalities;
- Aligned with external third-party performance standards currently being applied by industry or non-profit organizations;Reflective of emerging technologies and trends; and
- Incorporate consideration for an enhanced approach for urban/town centres and intensification areas.

Table A1. Summary of application scores by a) Site Plan, b) Draft Plan and c) Block Plan under original and updated Sustainability Metrics.

Municipality	Number of Site Plan Applications	Average Score (under original Sustainability Metrics)	Average Score (under updated Sustainability Metrics)
Site Plan			
All	60	32	18
Brampton	15	38	17

[17] The City of Richmond Hill's City Council approved in-principle to update the City's Sustainability Metrics Tool and Threshold scoring on January 27, 2021. The threshold methodology generally aligned a minimum threshold with the community's Official Plan and other legislative requirements, based on a qualitative assessment of Good, Very Good or Excellent. Since each of the partner municipalities have unique official plans, this methodology was not used in this assessment.

Markham[18]	15	–	18
Richmond Hill	15	43	14
Vaughan	15	40	12
Draft Plan			
All	39	33	17
Brampton	10	38	17
Markham	10	–	23
Richmond Hill	10	33	15
Vaughan	9	30	15
Block Plan[19]			
All	4	30	20
Brampton	3	29	22
Vaughan	1	31	14

The scores under the updated Sustainability Metrics were lower across all municipalities and development application types. As noted in Section 2.1, the performance of applications under the updated Metrics cannot be taken as an absolute measurement of how future applications may perform.

The existing applications do not reflect what is undertaken by developers and builders today or how they can achieve points under the updated suite of Metrics, as these applications were developed in the context of older policies, guidelines, programs, and industry best practices, Metrics and Thresholds.

In addition, the higher performance in Block Plan applications was a result of a small sample size of 4 and is not representative of how applications may perform under the updated Metrics.

[18]The City of Markham joined the updated Sustainable New Communities Program Project in 2019, therefore there were no applications under the original Metrics.

[19]Only Brampton and Vaughan Block Plans were assessed under the updated Metrics. The City of Richmond Hill does not have a Block Planning process and the City of Markham did not approve any Block Plans in the last 5 years.

Appendix B: Detailed Methodologies and Results

The following section provides an overview of the information used to calculate the Thresholds for Universal, Percentage Improvement, and Benchmarking methodologies.

Universal methodology

Universal – Pathway 1

The baseline for the Bronze Threshold for Universal – Pathway 1 is calculated as:

- The total points of all "Good" level Metrics;
- Minus the points of all "Good" level Metrics with a qualifier question that are also not OBC-interior metrics (Table B1);
- Minus the points of all "Good" level Metrics for OBC-interior related (Table B2).

This calculation ensures that points associated with a Metric are not removed twice if the Metric has both a qualifier question and is OBC-interior related.

A modification in calculating the total points of all "Good" level metrics was made for Sustainability Metric IB-1 (Green Building Certification), which was set to 1 point instead of its original 7 points. This modification was made because in order for a planning application to achieve a total of 7 points for this Metric, the application would need to have seven certified green buildings on site. As a result, to allow for fairness it is assumed that all applications can achieve one building that would have a Green Building Certification.

Table B1. "Good" level metrics that have qualifier questions, and that are not OBC-interior related,[20] and available points for each application type.

Indicator Number	Metric	Points		
		Site Plan	Draft Plan	Block Plan
BE-5	Cultural Heritage Conservation	1	1	1
BE-5	Cultural Heritage Conservation	1	1	NA
M-2	School Proximity to Transit and Cycling	NA	1	1
M-10	Traffic Calming	1	1	NA
M-10	Traffic Calming	1	1	NA
NE-1	Tree Conservation	3	3	3
NE-4	Natural Heritage Connections	2	2	2
NE-5	Natural Heritage System Enhancements	1	1	NA

[20] Metrics that are also "Good" level OBC-interior related are: IB- 2, IB-14, IB-16, IB-19. The associated points are listed in Table B2 and were only removed once as noted in the previous equation.

NE-5	Natural Heritage System Enhancements	1	1	NA
NE-5	Natural Heritage System Enhancements	1	1	NA
NE-8	Park Access	3	3	3
NE-11	Potable Water Use	2	NA	NA
NE-12	Multi-purpose Stormwater Management	1	1	NA
Total points		**18**	**17**	**10**

Table B2. All "Good" level OBC-interior related metrics. Note: Block Plans do not have any OBC-interior metrics in the "Good" level.

Indicator Number	Metric	Points	
		Site Plan	Draft Plan
BE-10	Electric Vehicle Charging Stations	3	3
IB-1	Buildings Designed/Certified under Green Rating System	1	1
IB-2	Universal Design	2	NA
IB-10	Solar Readiness	NA	3
IB-12	Building Energy Efficiency, GHG Reduction	3	3
IB-12	Building Energy Efficiency, GHG Reduction	3	3
IB-13	Rainwater and Greywater Use	1	1
IB-14	Back-Up Power	1	1
IB-14	Back-Up Power	1	1
IB-15	Extreme Wind Protection	2	2
IB-16	Sub-Metering of Thermal Energy and Water	2	NA
IB-16	Sub-Metering of Thermal Energy and Water	2	NA
IB-19	Solid Waste	1	NA
IB-19	Solid Waste	1	NA
IB-19	Solid Waste	1	NA
Total points		**24**	**18**

Universal – Pathway 2

The baseline for the Bronze Threshold for Universal - Pathway 2 is calculated as:

- The total points of all "Good" level Metrics;
- Minus the points of all "Good" level Metrics with a qualifier question (Table B3).

Table B3 lists all “Good” level Metrics with a qualifier question and the associated points for each application type. The point value of 1 was applied to the IB-1 Metric, as detailed in the previous section.

Table B3. “Good” level metrics that have qualifier questions and that are not OBC-interior related, and available points for each application type.

Indicator Number	Metric	Points		
		Site Plan	Draft Plan	Block Plan
BE-5	Cultural Heritage Conservation	1	1	NA
BE-5	Cultural Heritage Conservation	1	1	NA
M-2	School Proximity to Transit and Cycling	NA	1	1
M-10	Traffic Calming	1	1	NA
M-10	Traffic Calming	1	1	NA
NE-1	Tree Conservation	3	3	3
NE-4	Natural Heritage Connections	2	2	2
NE-5	Natural Heritage System Enhancements	1	1	NA
NE-5	Natural Heritage System Enhancements	1	1	NA
NE-5	Natural Heritage System Enhancements	1	1	NA
NE-8	Park Access	3	3	3
NE-11	Potable Water Use	2	NA	NA
NE-12	Multi-purpose Stormwater Management	1	1	NA
IB-2	Accessibility For Multi-Unit Dwellings	2	N/A	N/A
IB-14	Back-Up Power	1	1	NA
IB-16	Sub-Metering of Thermal Energy and Water	2	NA	NA
IB-16	Sub-Metering of Thermal Energy and Water	2	NA	NA
IB-19	Solid Waste	1	NA	NA
IB-19	Solid Waste	1	NA	NA
IB-19	Solid Waste	1	NA	NA
Total points		**28**	**18**	**10**

Percentage Improvement

The baseline for Percentage Improvement is calculated using the median Sustainability Score (based on the updated Metrics) of all sample development applications from each municipality, and applied the Diffusion of Innovation Model to determine the subsequent Thresholds.

- Baseline = median sustainability performance of past applications
- Bronze = median sustainability performance + 20%
- Silver = median sustainability performance + 50%
- Gold = median sustainability performance + 84%

Calculation:

- Baseline = 15

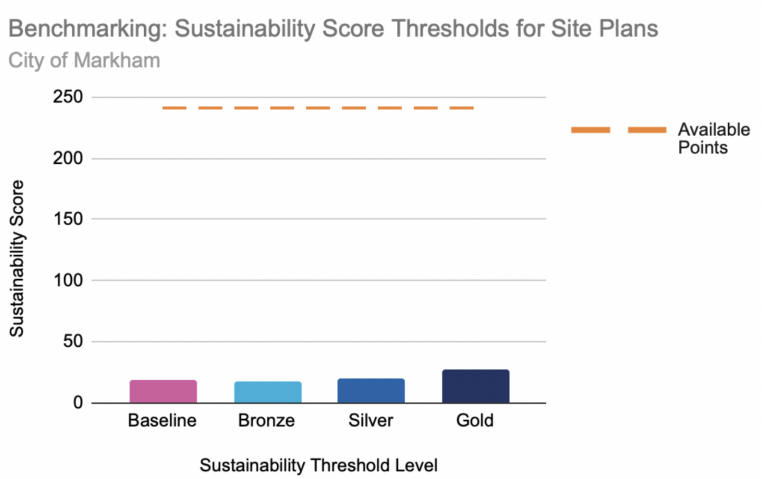
$$Bronze\ Score\ Threshold = Baseline * 1.2$$
$$Silver\ Score\ Threshold = Bronze\ Score\ Threshold * 1.5$$
$$Gold\ Score\ Threshold = Gold\ Score\ Threshold * 1.84$$

Table B4. Sustainability Score Thresholds resulting from the Percentage Improvement methodology.

	Total points available	Baseline	Bronze	Silver	Gold
Site Plan	241	15	18-22	23-27	28-241
Draft Plan	194	16	19-23	24-28	29-194
Block Plan	76	21	25-31	32-38	39-76

Benchmarking

Benchmarking uses the average scores of sample development applications for each municipality to calculate the baseline; thus Block Plans were not assessed because only one municipality had enough sample Block Plan applications to calculate an average score. Figures B1 to B3 summarize the baseline, Bronze, Silver, and Gold Thresholds for each muncipality's Site Plans and Draft Plans .



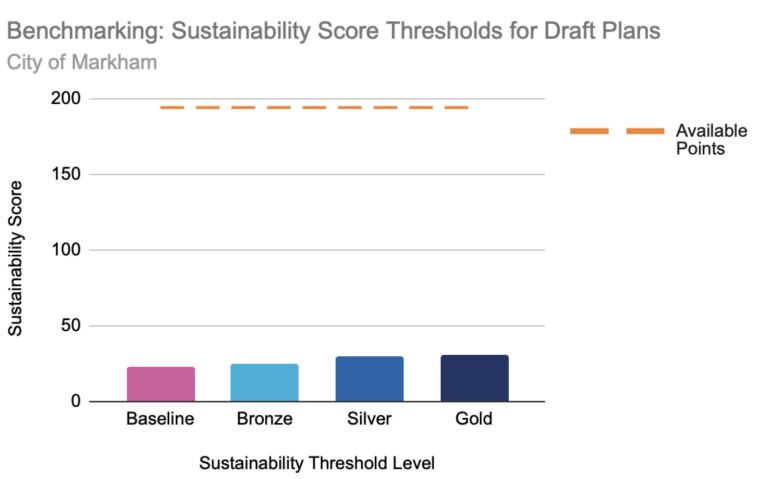
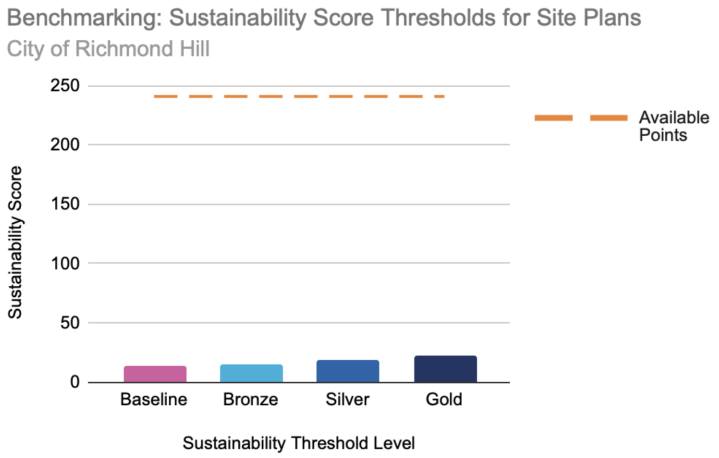


Figure B1. Benchmark Performance baseline and minimum points for each Threshold (Bronze, Silver, and Gold) for the City of Markham for Site Plan and Draft Plan applications. The orange dotted line represents the total points available for each application type.



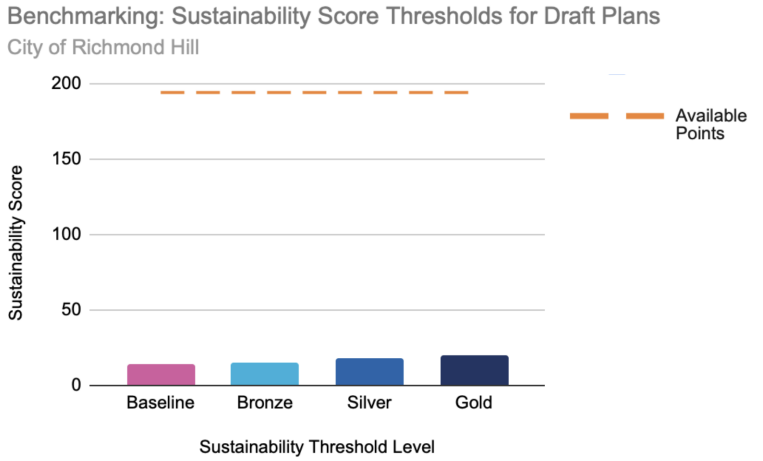
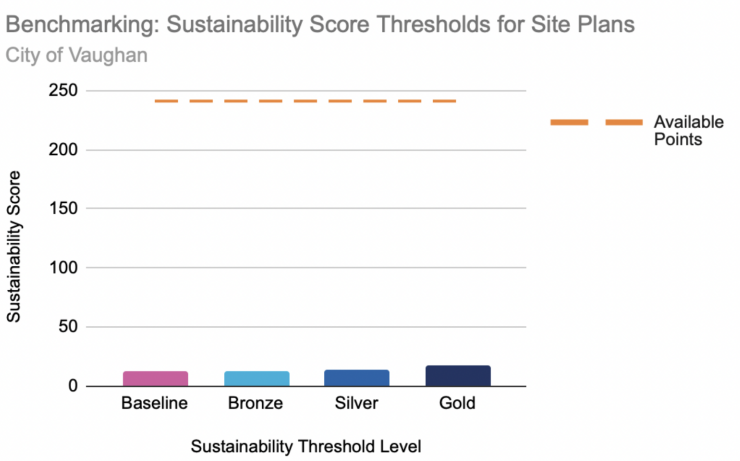


Figure B2. Benchmark Performance baseline and minimum points for each Threshold (Bronze, Silver, and Gold) for the City of Richmond Hill for Site Plan and Draft Plan applications. The orange dotted line represents the total points available for each application type.



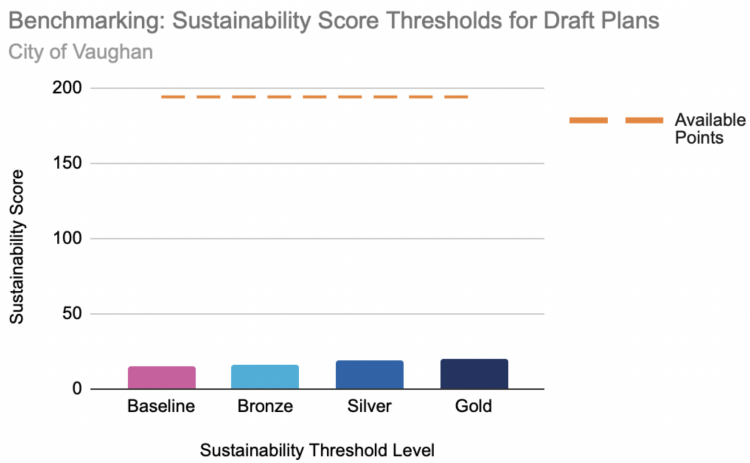
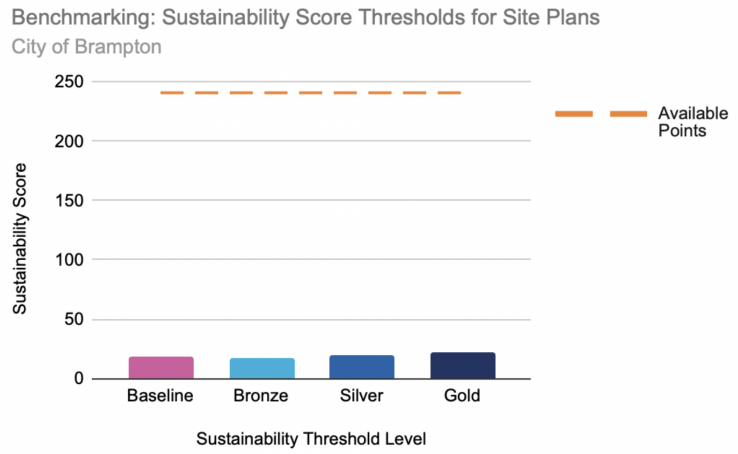


Figure B3. Benchmark Performance baseline and minimum points for each Threshold (Bronze, Silver, and Gold) for the City of Vaughan for Site Plan and Draft Plan applications. The orange dotted line represents the total points available for each application type.



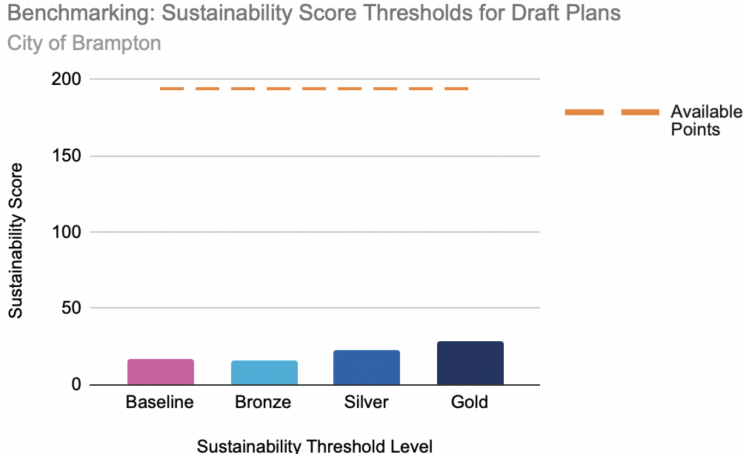


Figure B4. Benchmark Performance baseline and minimum points for each Threshold (Bronze, Silver, and Gold) for the City of Brampton for Site Plan and Draft Plan applications. The orange dotted line represents the total points available for each application type.

Appendix C: Engagement Plan

Document Intent

This Engagement Plan outlines the purpose, approach, and desired outcomes of engagement, as well as the roles and responsibilities of SSG, the City of Brampton, the City of Richmond Hill, the City of Vaughan, and the City of Markham during the engagement process.

Background

Context

The City of Brampton is seeking to update the Sustainability Score Thresholds for development proposals that were originally launched in collaboration with the City of Richmond Hill and the City of Vaughan between 2013 and 2015. Development proposals in these three cities are evaluated against Sustainability Metrics, generating a Sustainability Score. Thresholds are associated with different scores, and the municipalities can encourage, incentivize, or require a certain performance level using the thresholds.

Between 2018 and 2021, the Cities of Brampton, Richmond Hill, Vaughan, and Markham developed an updated set of Sustainability Metrics to reflect the changing policy environment. The aim of this project is to update the Thresholds to reflect the updated Metrics and align with environmental and climate action goals and targets of the four partner municipalities. Higher levels of performance will be identified for urban/town centres and intensification areas.

Supporting Strategic Documentation

The Sustainability Performance Metrics and the municipally approved development applications will provide useful background information for engagement activities, such as stakeholder meetings and workshops. Drawing examples, principles, and approaches from these documents will increase the unified Sustainability Metric's alignment with other plans and help to integrate all these different, but related, initiatives.

What is Being Decided and Who Decides?

All of the partner municipalities expect the new Sustainability Performance Thresholds to be prepared for approval by their Councils in 2022[21]. This project will achieve their aim to better align the Sustainability Performance Metrics and Thresholds to further efforts to address climate action and overall environmental sustainability.

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[21] The City of Richmond Hill independently developed new Thresholds that were approved, in principle, by its Council in 2021. Participation in this current work will inform the final Thresholds that Richmond Hill will move forward with.

Stakeholders will have an opportunity to provide input on the methodologies used to determine new

Thresholds, and this feedback will shape the final Thresholds. The consulting team will engage the municipalities through the Technical Advisory Team, which includes representatives from the City of Brampton, the City of Markham, the City of Richmond Hill, and the City of Vaughan. The Team will influence methodology development and the formulation of alternative methods.

The consulting team and the City of Brampton will engage representatives of the development sector through the Building Industry and Land Development Association (BILD). The Atmospheric Fund (TAF), Clean Air Partnership, and Canada Green Building Council will also be approached for input. These representatives will be engaged through Stakeholder Meetings in which they will be asked to share their methodology preferences.

Engagement Strategy

The Engagement Strategy is the framework that will ensure key internal and external interested or affected parties are informed about the project and given opportunities to provide feedback and contribute to creating the best Sustainability Score Thresholds possible. The strategy will also help build stakeholder support for implementation of the new Thresholds.

Guiding Principles

The following principles should guide the design and execution of all engagement activities:

- Engagement meeting formats will be guided by interested or affected parties' preference.
- While in-person engagement opportunities are preferred, the challenges of COVID-19 direct us to online engagement for the near future. Online engagement opportunities will be as interactive as possible. In-person opportunities will be planned should physical distancing measures be modified during the active engagement period.
- Engagement conversations will be values-based.
- We, the Project Team, will communicate values and educate interested or affected parties about complexity before and during the active engagement period in order to raise the general level of understanding around climate action planning.
- We, the Project Team, will involve key interested or affected parties in the information collection process to demonstrate process integrity and build credibility for recommendations.
- Communication of background information and engagement opportunities (times, dates, online venues) will happen in a reasonable time prior to engagement.
- Interested or affected parties will have opportunities to provide input.
- Concerns and aspirations will be discussed to formulate options for consideration.

- Decision-making will be consensus-based. In the event that a consensus is not possible, the decision-maker will consider the advice received during the engagements as much as possible in making the required decisions.

Engagement Objectives

Principally, the Engagement Plan seeks to:

1. Build understanding about the process necessary to undertake meaningful climate action;
2. Facilitate inclusive conversations among interested or affected parties to document stakeholder concerns and aspirations; and
3. Use stakeholder input as part of a collaborative problem-solving process with all interested or affected parties to identify opportunities and address the challenges associated with applying the Sustainability Score Thresholds in the four municipalities.

These objectives require the City of Brampton to deliver certain outputs (tangible deliverables) and outcomes (changes in understanding, perspective, relationships, level of trust, etc.). These outputs and outcomes will support the municipalities and the interested or affected parties in reviewing and adjusting the Sustainability Score Thresholds. Engaging with key interested or affected parties will provide opportunities to address concerns, discuss implications, and articulate the journey ahead. This will ensure that the new Thresholds are feasible, ambitious, equitable, and effective.

The following recommended objectives for this Engagement Plan have been informed by SSG's experience.

Objective 1: To inform, and more importantly, to engage interested or affected parties about the reformed Sustainability Score Thresholds.

- **Outcome:** Interested and affected parties understand the changes, planning, and investment required for the Sustainable New Communities Program to succeed, as well as the increasing costs of inaction. They also understand that change is achievable, and that financial and quality-of-life benefits will be realized as the updated Program is achieved.
- **Outcome:** Interested and affected parties know how to get involved, are motivated to identify alternative approaches, and become partners in the realization of the new Thresholds and Sustainable New Communities Program overall.

Objective 2: To involve interested and affected parties in gathering feedback to inform the update to the Sustainability Score Thresholds. This will ensure that the Thresholds reflect the four municipalities' operational realities, strategic visions, expertises, and cultures. It will also ensure critical stakeholder impacts are considered.

- **Outcome:** The four municipalities collaborate with their implementation partners to maximize the impact of the Thresholds.

- **Output:** Stakeholder input on Thresholds approaches that will be used to make decisions about new Thresholds.
- **Output:** Contact lists of stakeholders who wish to continue to participate in the Sustainable New Communities Program Update' implementation.

Objective 3: To inform interested and affected parties about how their involvement will shape the new Sustainability Score Thresholds and to provide feedback to those interested or affected parties about the development of the new Thresholds and progress in implementing them over the long term.

- **Outcome:** Interested or affected parties understand the impact of their participation in shaping the updated Thresholds.
- **Output:** Interested and affected parties were informed how their feedback shaped the final recommendations through Workshop 2: What We Heard and Recommendations.

References in this section to "inform, consult, involve, and collaborate" are explained in Figure D1: IAP2 (International Association of Public Participation) Spectrum of Engagement.

Givens

Givens are facts that are outside the scope of engagement, which means they are not negotiable. The givens for this engagement include the following:

- Climate change is real and is primarily driven by human activity.
- The Sustainability Metrics have been updated.
- The Cities of Brampton, Vaughan, Markham, and Richmond Hill will set new Sustainability Score Thresholds.

Interested or Affected Parties

Working with the Technical Advisory Team, we will identify who should be engaged and how to reach them. Additionally, we will review the Cities' existing efforts. This approach may be limited to the minimum three sessions defined in the RFP or extended beyond that, if required, based on our preliminary analysis and discussions with the Project Manager and the Technical Advisory Team.

Technical Advisory Committee (TAT) Members

- City of Brampton
    - Stavroula Kassaris, Environmental Planner
    - Kristina Dokoska, Environmental Planner
- City of Markham
    - Marty Chan, Senior Planner
    - Mattson Meere, Senior Planner

- City of Richmond Hill
    - Brian DeFreitas, Senior Planner
    - Christine Lee, Policy Researcher
- City of Vaughan
    - Ashley Faulkner, Senior Planner
    - Andrew Haagsma, Planner

Interested and Affected Parties

- Steering Committee Members
    - Michael Hoy, Supervisor of Environmental Planning, City of Brampton
    - Tony Iacobelli, Manager of Natural Heritage, City of Markham
    - Ruth Rendon, Senior Environmental Planner, City of Vaughan
    - Sybelle von Kursell, Manager of Policy Planning, City of Richmond Hill
- Building Industry and Land Development Association (BILD) - York and Peel chapters
- Clean Air Partnership
- Region of Peel
- The Atmospheric Fund (TAF)
- York Region

Engagement Timeline

Phase 1: Engagement Design

Project initiation: September 2021–October 2021

Activity	SSG role	City role	Objectives	Timeframe
Engagement Plan design	Draft Engagement Plan	Refine and approve	All	November

Phase 2: Active Engagement Period

October 2021–December 2021

Activity	IAP2 Spectrum Level	SSG Role	City Role	Objectives	Timeframe
Technical Advisory Team communication updates.	Inform. Promise to the Technical Advisory Team: We will keep you informed about the plan's progress and opportunities for you to become involved.	Assist in developing regular project updates for distribution through Brampton communication channels.	Edit and draft key messages. Create invites for engagement meetings.	1–3	Sept.-Dec.
Technical Advisory Team Meeting 1—Start-up and Success Criteria: SSG will meet the Technical Advisory Team to discuss the project approach and work plan, including when the Committee will be engaged. SSG will also seek input on the engagement approach and success criteria for the project.	Collaborate. Promise to the Technical Advisory Team: We will incorporate your preferences and feedback to the greatest extent possible, and we will seek advice in formulating methods.	Introductory presentation of project. Discuss challenges and opportunities. Define what success looks like in the project.	Edit draft messaging and presentation. Create invites for engagement events.	1–3	Sept.

Technical Advisory Team Meeting 2— Approaches to Sustainability Score Thresholds: SSG will present the methodologies for identifying thresholds and the results of a multi-criteria analysis to the Technical Advisory Team. Input will be provided through breakout groups and a post-presentation survey.	Involve. Promise to the Technical Advisory Committee: We will incorporate your preferences and feedback to the greatest extent possible, and we will seek advice in formulating alternatives.	Prepare an overview of the project process and milestones. Provide digital framework/exercise tools. Respond to questions about the methodology.	Coordinate meeting timing and hosting. Review presentation materials prior to the meeting.	1–3	Oct.
Stakeholder Meetings 1: SSG wlll involve ey stakeholder groups, including, but not limited to municipal staff, BILD, and development industry consultants. SSG will present the	Involve. Promise to the BILD Stakeholder Committee: We will incorporate your preferences and feedback to the extent possible, and we will seek advice in formulating alternatives.	Lead the workshop, finalize ideas, ask questions, and outline methodologies. Identify and communicate possible methodologies.	Identify and convene group members. Review presentation materials prior to the meeting. Coordinate meeting timing and hosting.	1–3	Nov.

methods and assessment to solicit input through breakout groups and a post-presentation survey. SSG will prepare an agenda and a presentation and distribute them to the Project Manager a week before the meeting(s). SSG will also take meeting minutes.					
Stakeholder Meeting 2: SSG will present the recommended methodology and thresholds to the stakeholders.	Involve. Promise to the BILD Stakeholder Committee: We will incorporate your preferences and feedback to the greatest extent possible, and we will seek advice in formulating alternatives.	Lead the workshop, finalize ideas, ask questions, and outline methodologies. Identify and communicate possible methodologies.	Review presentation materials prior to the meeting. Coordinate meeting timing and hosting.	2, 3	Dec.

IAP2 Public Participation Spectrum

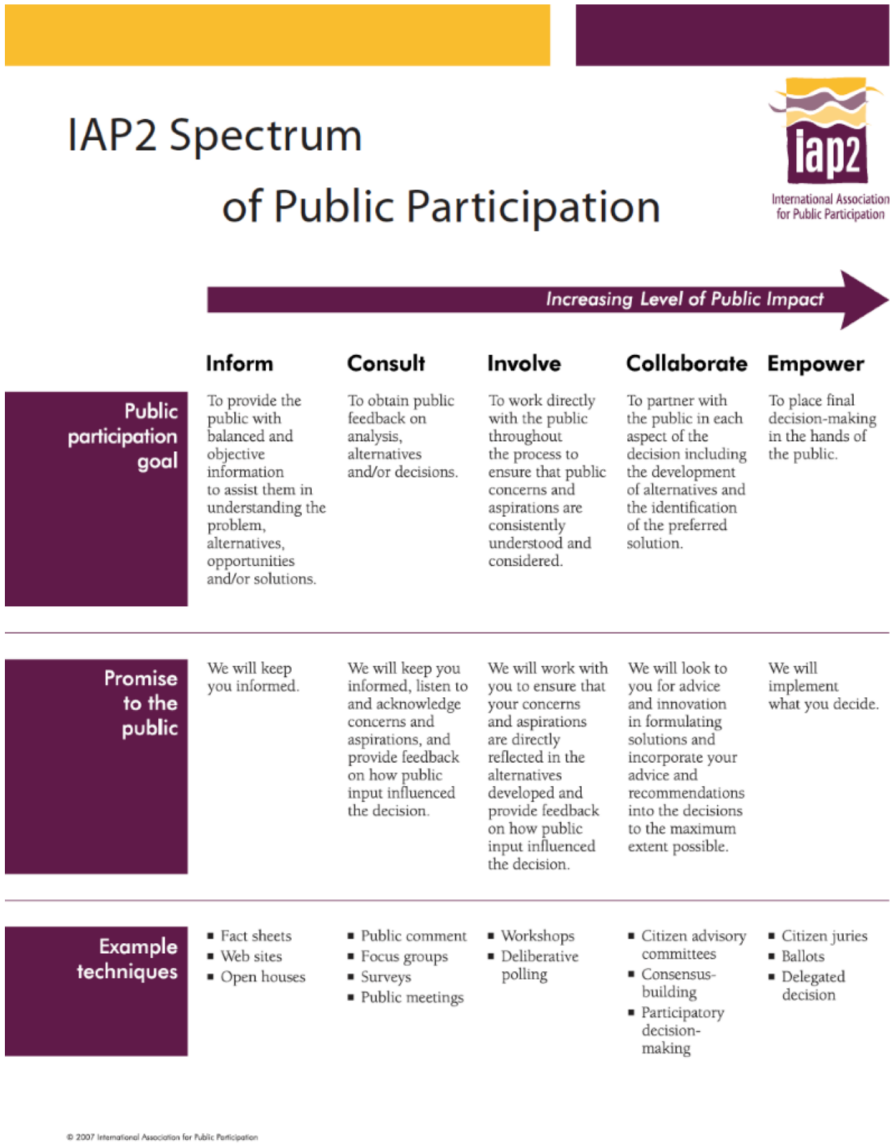

Figure C1. IAP2 Spectrum of Public Participation.

Appendix D: Engagement Summary

How We Engaged

To meet the engagement objectives identified in the Engagement Plan (Appendix D), SSG engaged with interested and affected parties through a series of Technical Advisory Team (TAT) meetings and stakeholder workshops.

Technical Advisory Team (TAT)

The TAT is composed of representatives from the four partner municipalities: the City of Brampton, the City of Markham, the City of Richmond Hill, and the City of Vaughan.

During the first TAT meeting, SSG collaborated with the TAT to discuss the project approach, work plan, and the engagement approach and timeline. At the second TAT meeting, SSG presented the methodologies for identifying thresholds and results from the preliminary multi-criteria analysis.

At the final TAT meeting, SSG presented the recommended methodology for updating the Sustainability Score Thresholds, the recommended approach for enhancing climate change performance integration, and the approach for enhanced sustainability performance requirements for urban/town centres and corridors. SSG collaborated with the TAT on the development of the final stakeholder workshop presentation and recommended approaches. Since feedback from the TAT was integrated throughout the project, this report focuses on the engagement results of the stakeholder workshops.

Stakeholder Workshops

Key stakeholders from the Building Industry and Land Development Association (BILD), development industry consultants, municipal and other government agencies staff attended the two stakeholder workshops. During the first workshop, SSG presented the methodologies for identifying new Thresholds, the multi-criteria analysis (MCA) for selecting the preferred methodology, and the approaches to enhance climate change performance integration and reporting; stakeholders provided feedback on each of these topics. During the second workshop, SSG presented the recommended Threshold methodology, integration approach to enhance climate change performance, and the proposed approach for urban/town centres and corridors. Feedback was gathered during the workshop and through a post-workshop comment period.

Engagement Results

Who Participated

Sixty-seven stakeholders attended the two stakeholder workshops.

Thirty-seven stakeholders attended workshop 1. Eight were representatives from the consulting industry and non-profits, 20 were representatives from the development industry, and nine were

representatives from either the municipal or regional governments. In addition, 14 representatives from TAT and SSG attended. TAT members, other municipal staff and SSG did not participate in the engagement activities.

Thirty stakeholders attended workshop 2. Four were representatives from the consulting industry and non-profits, 17 were representatives from the development industry, and nine were representatives from either the municipal or regional governments. In addition, nine representatives from TAT and SSG attended; TAT members, municipal staff and SSG did not participate in the engagement activities.

Recommended Threshold Methodology

Workshop 1 Engagement Activity

SSG presented the four Threshold methodologies and used Metimeter (Menti), an online interactive presentation software to facilitate polling and open question periods to collect feedback on each methodology. SSG advised workshop participants that feedback would be used to inform the final recommended Score Threshold approach; however, participation during the engagement periods for the methodologies was low with an average of 32% of stakeholders responding to the four engagement questions and little discussion despite attempts to encourage questions and comments from workshop attendees.

Universal[22]

Sixteen workshop participants responded to the question on Universal. Many participants suggested that Universal is a context-specific, local, simple, and customizable approach.

> *"[Universal] is the most flexible as it reflects the local context. That is very important because the existing context is out of a developer's control."*

> *"[Universal] seems easy to be accountable and probably the best received."*

Percentage Improvement

Thirteen workshop participants responded to the question on Percentage Improvement. Many participants suggested that Percentage Improvement is a simple, clear, achievable, and progressive approach.

> *"Percentage Improvements may be good to ensure projects are continually improving site conditions. Great to monitor progress over time."*

Benchmarking

Seven workshop participants responded to the question on Benchmarking. Although the engagement question asked for strengths of the methodology, most of the feedback highlighted areas of concern. The participants' most prominent concerns about the Benchmarking methodology

[22] During the engagement process the Universal methodology was referred to as Relativism, the City of Brampton updated the methodology name in February 2022.

are that it is competitive, difficult, unpredictable, and not context-specific. However, two participants suggested the methodology is efficient and easy.

> *"Benchmarking may be competitive and may also align with opportunities for incentives. The constraint is that there could be many approaches that are meeting the base minimum score, so the benchmarking [threshold levels are] rather low."*

External Standard

Twelve workshop participants responded to the question on external standards. Although the engagement question asked for strengths of the methodology, a mix of strengths and concerns were expressed. Participants suggested that it is a credible, researched, and well-known approach. The participants' most prominent concerns were that it is not context-specific and that it is cumbersome, restrictive, and difficult.

> *"For the external standard, is there just one standard which is the focus, or are there multiple ones?"*

Workshop 2 Universal Methodology Engagement Activity

In workshop 2, SSG presented the recommended methodology to update the Sustainability Score Thresholds — Universal Phased Approach. During the workshop, SSG used three engagement activities to encourage participants' questions and feedback, including opportunities and challenges.

Engagement Activity 1

The question period was hosted live with participants asking questions directly to SSG consultants and the TAT. The majority of the questions focused on the updated Sustainable New Communities Program overall and the timelines for implementation.

Engagement Activity 2

Workshop participants were asked about the opportunities offered by the Universal methodology via a Menti poll. Six stakeholders provided feedback during the activity. Stakeholders said the approach:

- Offers flexibility for different sites (two comments);
- Enables incremental improvement and clear direction for improvements over time (two comments);
- Is geography specific (two comments); and
- Involves simple implementation and is easy to understand (one comment).

Engagement Activity 3

Workshop participants were asked about the challenges of the Universal methodology via a Menti poll. Three stakeholders provided feedback during the activity. They indicated the approach:

- Might not meet the climate action challenge and municipal GHG goals (two comments); and
- Did not provide a clear way to progress standards beyond 2026 (one comment).

Multi-Criteria Analysis

Workshop 1 Engagement Activities

Engagement Activity 1

In workshop 1, SSG presented the four multi-criteria analysis (MCA) criteria for analyzing the proposed Threshold methodologies. Based on feedback from participants, a fifth criterion was added to identify whether the methodology can be adapted to reflect the local and site context.

The following MCA criteria used in the analysis were finalized based on stakeholder feedback:

- **Transferability:** Can the methodology be adopted by multiple municipalities?
- **Material improvement:** Does the methodology increase performance?
- **Progression:** Does the methodology have a mechanism to increase performance over time?
- **Practicality:** Can the methodology be easily implemented?
- **Adaptability:** Can the methodology be adapted to reflect the local and site context?

Engagement Activity 2

In the second engagement activity, SSG used a Menti poll to set the weighting for the MCA criteria which were used to select the recommended methodology. Participants were asked to weigh each criterion on a sliding scale from 1 to 5, where 1 was of lowest importance and 5 was of highest importance. Table D1 displays the weighting averaged from the responses provided by the 20 stakeholders who participated in this activity.

Table D1. MCA weighting criteria selected by workshop participants.

	Transferability	Material Improvement	Progression	Practicality	Adaptability
Weighting	3.4	3.2	2.5	4.1	3.3

Engagement Activity 3

In the third engagement activity, a poll was used to score each Threshold methodologies against the selected MCA criteria. The aim of the activity was to increase participant knowledge of the MCA process by developing a trial score for the Threshold methodologies. While the weighting of each criteria selected in engagement activity 2 was used in SSG's final MCA process, the scoring in engagement activity 3 was only a practice and was not used as the final scoring for selecting the final recommended methodology. Approximately 37% of stakeholders participated in this engagement activity, which indicated a preference for Universal and Percentage Improvement (Table D2).

Table D2. Workshop 1 results of the MCA engagement activity.

	Transferability	Material improvement	Progression	Practicality	Adaptability	Score
Weighting	**3.4**	**3.2**	**2.5**	**4.1**	**3.3**	**-**
Universal	3.5	2.3	1.8	3.9	3.9	52.62
% Improvement	2.8	3.6	3.8	2.9	2.9	47.54
Benchmarking	2.4	2.6	2.9	2.2	2.8	41.60
External	3.4	2.5	2.0	2.7	1.6	30.88

Workshop 2

An engagement activity was not completed in workshop 2. Instead, a question period was offered. In addition, workshop participants were informed about how their feedback on the MCA weighting was integrated into the selection of the final recommended Threshold methodology.

Enhancing Climate Change Integration

Workshop 1 Engagement Activity

SSG presented four approaches for enhancing integration of climate change into the Sustainable New Communities Program and used a menti-poll to collect feedback on the workshop attendees' support for each approach. Participants were asked to rank their support for each approach on a scale of strongly disagree, disagree, agree, and strongly agree.

SSG advised that the poll would be used to inform the selection of the recommended approach. Participation was higher than in the engagement activity for the Threshold methodologies, with an average of 50% of stakeholders participating in the climate change engagement activities.

Minimum Climate Performance

Twenty stakeholders participated in the Minimum Climate Performance approach Menti poll:

- 50% strongly agreed;
- 30% agreed;
- 5% selected agreed; and
- 15% disagreed.

Climate Score

Seventeen stakeholders participated in the Climate Score approach Menti poll:

- 12% strongly agreed;
- 35% agreed;
- 35% disagreed; and
- 18% strongly disagreed.

GHG Calculation

Nineteen stakeholders participated in the GHG Calculation approach Menti poll:

- 5% strongly agreed;
- 63% agreed;
- 0% disagreed; and
- 32% strongly disagreed.

Climate Ranking

Eighteen stakeholders participated in the Climate Ranking approach Menti poll:

- 11% strongly agreed;
- 17% agreed;
- 22% disagreed; and
- 50% strongly disagreed.

Workshop 2

An engagement activity was not completed in workshop 2, Instead, a question period was offered. In addition, workshop participants were informed about how their feedback from the first workshop was used to select the final recommended approach for enhancing the integration of climate change into the Sustainable New Communities Program.

General Feedback

A post-workshop participant poll was available for stakeholders to provide general feedback. Two workshop participants provided the following feedback via this activity:

> *"A good sample of approaches to integrate climate action into the metrics, keeping in mind the goal of zero emissions by 2030 and the need to move toward that performance objective."*
>
> *"It was excellent to see a thorough and quantitative analysis that 'filled the variable space' so that a range of options were represented. This certainly makes the recommended approach more defensible."*

Additional Engagement

Following the Stakeholder Workshop #2, BILD requested a meeting with TAT and the BILD Working Group to discuss the recommendations presented at the first workshops. The BILD Working Group was initially established during the Sustainability Metrics updates phase. The Working Group is comprised of representatives of builders/developers who frequently work in York and Peel region, as well as a building science consultant. SSG did not facilitate this workshop; however, a project team member was available during the call as a resource and to answer questions pertaining to the recommendations.

During the meeting, the BILD Working Group provided feedback on the proposed Thresholds and building energy and GHG emission performance requirements, as well as the importance of reviewing implementation of the new Metrics and Thresholds, particularly before any transition to higher performance requirements is pursued. The meeting informed the final recommendations of this report.

Integrating Feedback

The feedback from the two stakeholder workshops/meetings was used to develop the final recommended Threshold approach and the final recommended approach for enhancing the integration and reporting of climate action into the Sustainable New Communities Program.