RICHMOND HILL
INCORPORATED 1873

Agenda Item 12

COMMITTEE OF THE WHOLE MEETING
September 16, 2013
SRPRS.13.125

Planning and Regulatory Services
Planning Policy Division

SUBJECT: Measuring the Sustainability Performance of New Development in Brampton, Richmond Hill and Vaughan: Final Sustainability Metrics and Terms of Reference for Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill (SRPRS.13.125) File No. D10-PL-SDG

PURPOSE:

The purpose of this staff report is threefold:

- To provide the Final Sustainability Metrics prepared as part of the partnership project "Measuring the Sustainability Performance of New Developments in the Town of Richmond Hill, City of Vaughan and the City of Brampton";
- To recommend that the Final Sustainability Metrics be used as part of the planning application review process to inform Interim Growth Management Strategy Criteria #5 (Developments that represent sustainable and innovative community and building design); and
- To set out the Terms of Reference to initiate "Phase 3" of this project, which will focus on implementation and monitoring in Richmond Hill.

RECOMMENDATION(S):

a) **That Staff Report SRPRS.13.125 including the Final Sustainability Metrics attached as Appendix 'A' be approved;**

b) **That Staff be directed to use the Final Sustainability Metrics attached as Appendix 'A' as part of the planning application review process to inform Interim Growth Management Strategy Criteria #5 (Developments that represent sustainable and innovative community and building design);**

c) **That the Terms of Reference for Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill contained in SRPRS.13.125 be received for information and that all comments be referred back to Staff; and**

d) **That Mott MacDonald be confirmed to undertake Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill at a cost not**

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greater than $73,000 CDN (exclusive of HST) to be funded from the existing approved Planning and Regulatory Services Department Capital Budget.

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INTRODUCTION:

Developing policy and measuring progress towards sustainability has become increasingly important in managing growth and improving health and well-being within cities. Concerns over public health, climate change, energy, and resource use have brought sustainability to the forefront for those planning, building, and managing communities in Ontario. Provincial legislation, plans and policies speak to the importance of sustainability within the Provincial Policy Statement (PPS, 2005), the *Planning Act* (Bill 51 amendments), and the *Places to Grow Act*, 2005.

Responding to the growing priority of sustainable development, Richmond Hill has joined together with the City of Vaughan and the City of Brampton to produce sustainability guidelines and sustainability metrics as key planning tools to guide the sustainability performance of new development applications.

This partnership began in July 2010 when Council approved the budget for Staff to work with Vaughan and Brampton and to apply to the Federation of Canadian Municipalities' (FCM) Green Municipal Fund (GMF) grant program (Staff Report SRPRS.10.096). FCM awarded the GMF grant for the partnership project entitled "*Measuring the Sustainability of New Development in Brampton, Richmond Hill and Vaughan*" in late 2010. In 2011, a Memorandum of Understanding (MOU) was signed by the three Planning Commissioners of the partner municipalities to establish the partnership. Through this partnership, Richmond Hill, Vaughan and Brampton have been able to leverage the FCM GMF grant towards a common purpose of enhancing the sustainability performance of new development through the planning process.

BACKGROUND:

In April 2013, the Draft Sustainability Metrics were released for public comment (Staff Report SRPRS.13.057). The Draft Sustainability Metrics were posted on the Town's website for public comment, and two consultation sessions were held with the Building Industry and Land Development Association (BILD) on April 25, 2013 and May 27, 2013. Following the release of the Draft Sustainability Metrics, TRCA and Clean Air Partnership undertook peer reviews of the Metrics (Appendix "B").

The sustainability metrics aim to:

- Provide a tool to quantify and rank the sustainability performance of proposed development applications;
- Level the playing field across the three partner municipalities by providing a consistent set of sustainability metrics that will apply across all three municipalities; and
- Improve the sustainability performance of future developments.

The Final Sustainability Metrics advance the general understanding of how sustainability measures, when applied as part of the planning approval process, can help the partner

municipalities move towards more healthy and sustainable communities. While the Final Sustainability Metrics establish a consistent set of Metrics across the partner municipalities, in Richmond Hill, the Sustainability Metrics present an opportunity to inform one of the Interim Growth Management Strategy (IGMS) criteria used since 2008 (see SRPD.08.032 and SRPD.09.065), specifically Criteria #5: *Developments that represent sustainable and innovative community and building design*, to further the sustainable design policies in the Richmond Hill Official Plan – *Building a New Kind of Urban* (see Section 3.2.3 of the OP).

OVERVIEW OF FINAL SUSTAINABILITY METRICS

The Final Sustainability Metrics were created through a review and synthesis of existing sustainability standards, such as LEED for Neighbourhood Development (LEED ND) and the Toronto Green Development Standard, along with other municipal sustainability guidelines and standards (e.g. Pickering Sustainable Development Guidelines; East Gwillimbury Thinking Green! Development Standards), and input from stakeholders (BILD, TRCA, Clean Air Partnership, York Region, Peel Region).

The Final Sustainability Metrics are organized into two tables based on the planning scale to which the metrics apply. The tables include:

Table 1: Block Plan and Draft Plan of Subdivision Metrics; and
Table 2: Site Plan Metrics.

Within these two tables, the Final Sustainability Metrics are organized into categories that have been identified as the main structuring elements of a sustainable community:

1. *Built Environment* – this category speaks to how to inform site design and connections within a development.

2. *Mobility* – this category identifies how a variety of transportation and mobility options can be made available to residents to carry out their daily lives within and beyond the community.

3. *Natural Environment and Open Space* – this category is centred on the preservation and enhancement of the natural heritage system, and the promotion of linkages to a diverse range of open spaces, parks and recreation facilities.

4. *Infrastructure and Buildings* – this category identifies means to maximize energy and water conservation and minimize the consumption of non-renewable resources.

Within each of the four categories noted above, a set of Performance Indicators have been developed as follows:

Sustainability Metrics Category	Performance Indicators	
Built Environment	• Compact Development • Land Use Mix & Diversity • Green Buildings • Site Accessibility • Housing Unit Mix • Landscape and Street Tree Planting/ Preservation	• Natural Green Space • Parking • Pedestrian Connections • Cultural Heritage Resources • Community Form • Tree Canopy • Natural Heritage
Mobility	• Site Permeability • Transit Supportive • Active Transportation • Walkability • Street Network/Block	
Natural Environment & Open Space	• Parks • Stormwater • Urban Agriculture • Natural Heritage System • Soils and Topography	
Infrastructure & Buildings	• Energy Conservation • Potable Water • Lighting • Bird Friendly Design • Materials & Solid Waste Management • Heat Island	

The Performance Indicators listed in the above Table are further broken down into approximately 45 quantitative Sustainability Metrics that are organized into 'Mandatory', 'Recommended Minimum' and 'Aspirational' targets (see Appendix "A"). The 'Mandatory' targets represent the existing standard or required policy, which all planning applications are currently required to satisfy (e.g. Ontario Building Code, OP). The 'Recommended Minimum' targets are considered '*doing better than the mandatory requirements*', representing targets the partner municipalities would like applicants to achieve in the future as part of the planning application review process. The 'Aspirational' targets are considered '*best in class*', representing targets that the partner municipalities may need to offer incentives for in order to achieve in the future.

The Sustainability Metrics will be used as part of the planning application review process to inform IGMS Criteria #5. Additional incentives that could be used to entice applicants to achieve 'Aspirational' metrics will be looked at as part of a future phase of this project. Not every Metric will be applicable to every planning application and most likely there will be a continuum of Metrics achieved by planning applications between the 'Recommended Minimum' and 'Aspirational' targets.

Below is one example of a Metric and how the Metric Table is organized:

Site Metrics					
Category	**Indicator**	**Metric**	**Mandatory Target**	**Recommended Minimum Target**	**Aspirational Target**
Natural Environment and Open Space	Stormwater	Stormwater Quantity	Retain runoff volume from the 5mm rainfall event on site. Provide quantity or flood control in accordance with applicable Municipal and conservation authority requirements.	Retain runoff volume from the 10mm rainfall event on site. (3 POINTS)	Retain runoff volume from the 15mm rainfall event on site. (3 Points)

As outlined in the example table above (and the full versions of the tables attached in Appendix "A"), each Metric in the 'Recommended Minimum' and 'Aspirational' column is given a point allocation. The point allocation was created using priorities agreed to among the three partner municipalities, namely:

1. Energy Conservation, including District Energy;
2. Water Conservation;
3. Stormwater Management;
4. Walkability/Mobility;
5. Natural Systems; and
6. Local Food Production.

OVERVIEW OF COMMENTS RECEIVED ON DRAFT SUSTAINABILITY METRICS

Overall, the Draft Sustainability Metrics were well received and stakeholders commended the partner municipalities for seeking their input and involving them in the preparation of the Final Sustainability Metrics. The following section outlines the main comments received on the Draft Sustainability Metrics (Comment Letters are attached in Appendix "C").

Flexibility

The comments requested that participation in the Sustainability Metrics be voluntary and that the municipalities take a more flexible approach to the implementation of the Metrics. Richmond Hill has been obtaining various sustainable design measures using voluntary IGMS criteria since 2008 and servicing allocation as an incentive. In Richmond Hill, the Final Sustainability Metrics will be used as part of the planning application review process to inform IGMS Criteria #5 (Developments that represent sustainable and innovative community and building design). At the outset, the point score outlined in the Static Tables will have no implication (i.e. the Sustainability Metrics will function as a means of broadening the list of things the Town is looking for under Criteria #5 and

applicants will continue to identify Sustainability Metrics proposed to obtain servicing allocation).

Metric Reconciliation

The comments noted that certain metrics shown in the Draft Block Plan/Draft Plan of Subdivision Table do not belong in the Draft Block Plan/Draft Plan of Subdivision Table as they are not considered at this stage of the planning process (e.g. bike parking, on-street parking, surface parking, carpool parking, potable water, material reuse). The Final Block Plan/Draft Plan of Subdivision Table has been modified to delete metrics that apply only to Site Plans.

It was also noted that the Draft Site/Building Table should be revised to deal only with matters that can be considered as part of the Site Plan process. In the Final Table, any metrics that were Building-related (e.g. indoor air quality) have been deleted and the Table has been renamed "Site Metrics".

Specific Metric Comments

A number of comments were received related to minor language changes. For example, in the Stormwater Quantity Metric (Metric #25 on the Site Metrics Table, #24 on the Block Plan/Draft Plan of Subdivision Metrics Table), the reference to "TRCA requirements" was changed to "conservation authority requirements", given that two different conservation authorities have jurisdiction over the City of Brampton. By and large, the majority of the comments related to these types of suggestions, which help improve the readability or clarity of the Metrics, have been included in the Final Sustainability Metrics Tables.

Comments were also received suggesting that the four Draft Parks Metrics (Urban Square, Parkette, Neighbourhood Park, Community Park) be collapsed into one Park Metric. BILD noted in their comments that not every development will have every type of park. As a result, the Draft Parks Metrics have been collapsed into one Parks Metric in the Final Tables that focuses on Parks Accessibility:

Site Metrics					
Category	**Indicator**	**Metric**	**Mandatory Target**	**Recommended Minimum Target**	**Aspirational Target**
Natural Environment and Open Space	Parks	Parks Accessibility		Provide 2 road frontages for each urban square, parkette, and neighbourhood park provided and 3 road frontages for each community park provided. (3 POINTS)	Provide 3 or more road frontages for all parks provided. (3 POINTS))

As part of the consultation with BILD and TRCA, a number of Draft Metrics were identified for which the point allocation seemed low to those in attendance. Additional points have been allocated to certain Metrics in the Final Tables as a means of making

certain Metrics more enticing (e.g. stormwater quantity, stormwater quality, restore and enhance soils) once a threshold score is set.

Implementation Comments
A number of comments focused on next steps, specifically on tools, education/training and further projects that could help to streamline the implementation of the Sustainability Metrics. Below is a summary of the main suggestions:

Implementation Guidebook
An Implementation Guidebook was suggested to describe how each of the Metrics should be quantified, among other matters. In response to this comment, a Draft Implementation Guidebook has been prepared, which will be used by each of the partner municipalities as part of the implementation process. In Richmond Hill, an Implementation Guidebook will be finalized as part of Phase 3 of this project (Implementation and Monitoring in Richmond Hill).

Excel-Based Dynamic Implementation Tool
As part of this partnership project, the consultant created an Excel-based "Dynamic Implementation Tool". This Tool helps to streamline which Sustainability Metrics are applicable to a proposed planning application based on information entered by the applicant about the proposed application (e.g. Draft Plan of Subdivision, Site Plan, single-family, multi-residential, commercial, etc.). As part of the comments, BILD expressed an interest in providing comments on the Dynamic Tool.

The Dynamic Tool will be used by the partner municipalities to streamline the implementation of the Sustainability Metrics. Each municipality may decide to customize the Dynamic Tool based on its local context. In Richmond Hill, input from applicants, including BILD, will be gathered on the customization of the Dynamic Tool as part of Phase 3 of this project. Until Phase 3 is completed, the Static Tables forming part of the Final Sustainability Metrics Report (Appendix 'A') will be used to inform Criteria #5 as part of the existing IGMS submission process.

Education/Training
Education/training sessions were suggested to ensure all public agencies and Town staff who review planning applications are implementing the Sustainability Metrics consistently. Education/training workshops could focus on how applicants should be filling in the Dynamic Tool, and also how public agencies and Town Staff should be evaluating the Metrics provided. Education/training workshops will be completed as part of Phase 3 of this project.

Final "Score"
The comments requested a final "score" expectation for each level of implementation in order to assess the feasibility of achieving the Sustainability Metrics. A "score" for applications in Richmond Hill will be determined as part of Phase 3 of this project. The "score" will be informed by previous planning applications approved by Council over the past 5 years while implementing the IGMS criteria and stakeholder consultation.

Updating Existing or Creating Alternative Engineering Standards
The comments acknowledge that engineering standards may not always be in line with the Sustainability Metrics. It was suggested that as part of the implementation process, each municipality revisit current Town standards to identify which standards need to be updated or for which an alternative engineering standard should be created to further streamline the implementation of the Sustainability Metrics.

Town Staff recognize that it would be useful to explore the above mentioned implementation-related comments. In order to understand what is being implemented and monitored, Council must first approve the Final Sustainability Metrics (see Appendix "A").

TERMS OF REFERENCE FOR PHASE 3: IMPLEMENTATION AND MONITORING IN RICHMOND HILL

Once Council has approved the Final Sustainability Metrics, a third phase of this project will be initiated entitled "Phase 3 – Implementation and Monitoring in Richmond Hill", which has been designed to work with stakeholders to tackle implementation-related comments. An application was made to the Ministry of Infrastructure's Places to Grow Implementation Fund to obtain partial funding for this phase of this project in response to the comments received that certain implementation-related projects should be initiated to further the Sustainability Metrics. The Town received an application acknowledgement letter from the Ministry of Infrastructure that indicated the Town would be advised of a decision by Aug. 23, 2013 (See Appendix "D"). At the time of this report, no decision had been made on the Town's application.

When will Phase 3 be undertaken?
Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill will be completed following Council approval of the Final Sustainability Metrics (Fall 2013 to March 2014).

Work Program
A preliminary work program with the target dates for key elements is described below. It is important to note that the dates are targets. It is necessary to have flexibility in the process since consultation, education and training will be undertaken as part of Phase 3.

Phase 3 will include the following key components:

1. **Establishment of a Threshold Score** (Fall 2013)
   As noted above, the point score outlined in the Static Tables will have no implication at the outset should Council approve the use of the Final Sustainability Metrics to inform IGMS Criteria #5. However, given that Richmond Hill has been obtaining sustainability measures as part of the planning application review process using IGMS criteria # 5 since 2008, there is a need to ensure that the progress made over the past 5 years is not lost. This will be achieved through the establishment of a threshold score. Past planning applications approved for servicing allocation using IGMS criteria will

be analyzed to determine what each application would score using the Sustainability Metrics and these findings will be used to inform a recommended threshold score or set of scores which will be brought to Council for consideration of approval.

2. **Customization of the Dynamic Implementation Tool** (Fall 2013)
A Testing Workshop will be undertaken with Town Staff to determine how the Dynamic Tool needs to be refined to reflect Richmond Hill's unique policy context and planning approvals process. A Testing Workshop will also be held with the Development Industry (including BILD) to introduce the industry to the Dynamic Tool and answer any technical questions.

3. **Education/Training Workshops** (Fall 2013/Winter 2014)
Education and Training Workshops will be held for both Internal Staff and External Planning Consultants and Public Commenting Agencies to explain any changes to the planning approval process, how to enter information into the Dynamic Tool, and answer any questions.

4. **Research and Analysis of Incentives** (Winter/Spring 2014)
A cost-benefit analysis will be prepared to understand the long-term cost savings that could be realized by obtaining certain "Aspirational" Metrics (e.g. SWM quality/quantity improvements; Energy Conservation measures; Water conservation measures). Based on this analysis, recommended financial incentive tools the Town could implement to obtain the "Aspirational" Metrics (e.g. DC rebate for certain conservation measures, SWM rebate), including descriptions of other municipalities who have used the incentive tools recommended will be assessed. The creation of an Awards Program to Recognize High Achievers will also be evaluated.

5. **Evaluation of Town Standards and Specs in relation to the Final Sustainability Metrics** (Winter/Spring 2014)
The Richmond Hill Standards and Specs Manual will be reviewed in relation to the Final Sustainability Metrics and recommendations prepared for how the Town's Engineering standards need to be revised or, where an alternative standard is more appropriate. This information will be used to inform a future update of the Richmond Hill Standards and Specs Manual.

6. **Creation of a Monitoring Tool** (Winter/Spring 2014)
A Monitoring Tool will be created to help the Town track the final sustainability score of planning applications (i.e. following approval of an application by Council). This tool will be used to monitor the implementation of the Sustainability Metrics and to inform future revisions/reviews of the Metrics.

Who will undertake Phase 3?
The Town's Planning and Regulatory Services Department (Planning Division) will be the project lead for Phase 3. Should the Town's application for a Places to Grow Implementation Fund grant be successful, the Strategic Initiatives Division of the CAO's Office will coordinate matters related to grant. Staff recommend that consulting services

from Mott MacDonald to complete Phase 3 be retained. The project manager at Mott MacDonald was the lead project manager for Phase 2 of the project (Final Sustainability Metrics). Halsall Associates (lead consultant) with The Planning Partnership (sub-consultant) were retained to complete Phase 2 of the project between 2012 and 2013. Since that time, the lead project manager for Phase 2 of the project left Halsall Associates for a position at Mott MacDonald.

Given the lead project manager's previous involvement in Phase 2 of the project from 2012 to 2013, it is advantageous for the Town to retain consulting services from Mott MacDonald through a single source non-competitive acquisition in accordance with Section 6.6(d)(v) of the Town's Procurement By-law No. 58-10 for the following reasons:

- Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill will implement the Final Sustainability Metrics prepared for the partner municipalities in Phase 2 of the project;
- The project manager has an intimate knowledge of the Final Sustainability Metrics having lead Phase 2 of the project while working for Halsall Associates (e.g. familiarity with the formulation and evolution of the Sustainability Metrics, familiarity with development industry interests given involvement in Development Industry and BILD Workshops, familiarity with the draft Excel-based Dynamic Tool and draft Implementation Guidebook);
- The project manager has worked with Town Staff to undertake the consultation with development stakeholders as part of Phase 2 of the project, providing a level of consistency to stakeholders;
- The consulting firm's professional expertise includes the range of engineering professionals required to complete Phase 3 of the project, with expertise in sustainable development, mechanical engineering, structural engineering, building information monitoring, and whole life building cost analysis;
- Minimal lead-up time will be required to familiarize the project manager with Phase 2 of the project, the Town's Interim Growth Management Strategy and the policies of the OP, providing time and cost saving advantages to the Town; and
- Given the project manager's involvement in Phase 2 of the project, the Town has a level of certainty that the consulting firm's direction will not conflict with previous documents approved by Council, enabling Council's approved direction to be fully implemented.

Staff have contacted Mott MacDonald to determine whether they have the capacity to complete the work in accordance with the approved Planning and Regulatory Services Department budget of $73,000.00 for Phase 3. The consultant has confirmed that the study can be completed within the approved budget. Mott MacDonald has the qualifications and experience to complete this work. Staff have determined that the price quoted by Mott MacDonald is fair and reasonable.

FINANCIAL/STAFFING/OTHER IMPLICATIONS:

The Final Comprehensive Report on Measuring the Sustainability Performance of New Development was completed as part of the partnership project between the City of Brampton, the City of Vaughan and the Town of Richmond Hill, and is partially funded

through the Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) grant program. There are no financial/staffing/other implications.

Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill is funded by an existing budget item in the Planning and Regulatory Services Department 2013 Capital Budget. If approved, funding from the Ministry of Infrastructure's Places to Grow Implementation Fund will be used toward the cost of completing Phase 3. There are no financial/staffing/other implications.

RELATIONSHIP TO THE STRATEGIC PLAN:

The work undertaken as part of this partnership project in collaboration with the City of Vaughan and the City of Brampton, specifically the Final Sustainability Metrics, help to achieve the four goals of the Town's Strategic Plan, *A Plan for People, A Plan for Change* as follows:

Stronger Connections in Richmond Hill:
The Final Sustainability Metrics will encourage stronger connections by improving connections in the environment and strengthening physical connections in the community. Stronger connections are also being fostered through this partnership with other governmental agencies and NGO partners.

Better Choice in Richmond Hill:
The Final Sustainability Metrics will enhance access to transit facilities and pedestrian and cycling facilities, along with improving accessibility in the built environment.

A More Vibrant Richmond Hill:
The Final Sustainability Metrics will promote a more vibrant Richmond Hill by looking to the future and guiding change towards a more sustainable community. This project initiates change through leadership, collaboration with other levels of government and NGOs, and innovation in continuing to promote sustainability as part of the planning process through research and measurement.

Wise Management of Resources:
The Final Sustainability Metrics will promote wise management of resources in Richmond Hill by encouraging energy efficient buildings, renewable energy, water conservation, naturalization and planting, and local food production.

CONCLUSION AND NEXT STEPS:

It is recommended that this staff report and the Final Comprehensive Report on Measuring the Sustainability Performance of New Development, including the Final Sustainability Metrics attached as Appendix "A", be approved and that the Final Sustainability Metrics be used as part of the planning application review process to inform IGMS Criteria #5 (Developments that represent sustainable and innovative community and building design). Staff will report back on additional

implementation/monitoring initiatives as part of Phase 3: Sustainability Metrics Implementation and Monitoring in Richmond Hill.

APPENDIX CONTENTS

"A"- Final Comprehensive Report on Measuring the Sustainability Performance of New Development: Final Sustainability Metrics (July 2013)

"B" - TRCA and Clean Air Partnership Peer Reviews of Draft Sustainability Metrics

"C" – Comment Letters Received on Draft Sustainability Metrics

"D" – Application Acknowledgement Letter – Places to Grow Implementation Fund

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Measuring the Sustainability Performance of New Development
FINAL COMPREHENSIVE REPORT

PREPARED FOR THE CITIES OF BRAMPTON AND VAUGHAN AND TOWN OF RICHMOND HILL

Prepared by Halsall Associates Limited
July 2013

CONTENTS

APPENDICES

EXECUTIVE SUMMARY

The project, Measuring Sustainability Performance of New Development in Brampton, Richmond Hill and Vaughan, is a collaboration of municipal partners (City of Brampton, Town of Richmond Hill, and City of Vaughan) and environmental partners (TRCA and Clean Air Partnership). A Memorandum of Understanding was signed by the municipal partners in January 2011 following confirmation of matching funds of $85,000 from the Green Municipal Fund of the Federation of Canadian Municipalities. This project has been developed in two phases. Phase 1 consisted of developing the *Sustainable Community Development Guidelines (SCDGs)* for the City of Brampton. Phase 2, the primary focus on this report, was informed by Phase 1 to develop sustainability metrics for development applications. A 3rd phase is likely to follow, with the focus by each municipality on project implementation, monitoring and sharing results between the municipalities.

The intended result of this Phase of the project is a user-friendly checklist of sustainability performance metrics to integrate into the planning application review process that are consistent among the partner municipalities. The consulting team of Halsall Associates and The Planning Partnership has delivered the Final Comprehensive Report according to the RFP requirements. The focus of the Final Comprehensive Report is to:

- Describe the engagement and review process followed for the project;
- Explain the structure of the Sustainability Performance Metrics and Tools;
- Identify potential implementation incentives; and
- Communicate opportunities for next steps.

The final list of deliverables for this phase of the project includes:

- This Final Comprehensive Report;
- Sustainability Performance Metrics, Targets and Precedents (Appendix A in the Final Comprehensive Report);
- An excel-based dynamic tool for implementation;
- A manual and user guide to inform the dynamic tool entries;
- A Metrics log that tracks the ongoing feedback and revisions from the public and private sector working sessions (Appendix C in the Final Comprehensive Report); and
- A Guidebook to assist in the calculation of select metrics and overall submission requirements.

The Sustainability Performance Metrics are organized as a matrix, identifying the indicators, metrics, targets, precedents and point allocation for each metric. The Sustainability Performance Metrics can apply to a range of planning application types (e.g. block plans, draft plans of subdivision, site plans) and consists of four categories, twenty eight indicators and up to 45 metrics (depending on the plan type).

It was determined through the evaluation and consultation process to identify mandatory and enhanced performance targets for each metric, where applicable. Mandatory targets represent the "*business as usual*" situation, that is, the target required to be satisfied for an application to be considered for approval by the municipality. Two tiers of enhanced performance targets are identified: the minimum performance targets, which are considered as "*doing better than you need to*", while the aspirational performance targets are considered as "*best in class*". Points are awarded when a proposed plan

satisfies the recommended minimum and/or aspirational targets for the various metrics. No points are awarded for metrics in which only the mandatory targets are satisfied.

As a result, the Sustainability Performance Metrics are structured in a manner that allows an applicant to select the appropriate metrics to demonstrate whether an enhanced performance target, either the recommended minimum or aspirational, is met. This allows the applicant to tailor the sustainable design features to the site. It is the intent that each municipality will identify a threshold sustainability score for incentives it wishes to offer applicants to encourage implementation of the recommended minimum or aspirational metrics. While the Sustainability Performance Metrics will be consistent across the partner municipalities, each municipality will elaborate how it intends to encourage the implementation of the Sustainability Performance Metrics as part of the planning application review process based on its own unique context.

1.0 VISION AND SUSTAINABILITY GOALS

Developing policy and measuring progress towards sustainability has become increasingly important in managing growth and improving health and wellbeing within cities. Concerns over public health, climate change, energy, and resource use have brought sustainability to the forefront for those planning, building and managing communities in Ontario. Provincial legislation, plans and policies now speak to this sustainability priority as evident in the Provincial Policy Statement (PPS 2005) and the *Planning Act* (Bill 51), and the *Places to Grow Act*, 2005. A number of municipalities in the GTA, including Toronto, East Gwillimbury and Pickering, have developed Sustainability Guidelines, Standards or Metrics as one set of planning tools to achieve healthy, complete, sustainable communities.

Responding to this growing priority for sustainable development, the Cities of Brampton and Vaughan and the Town of Richmond Hill (the municipal partners) have joined together to produce a consolidated set of sustainability guidelines, including metrics and targets as key planning tools to guide the sustainability performance of new development applications including Secondary Plans, Block Plans, Subdivisions and Site Plans. The Sustainability Guidelines, Sustainability Performance Metrics and companion tools also aim to:

- Provide consistency of sustainability guidelines and metrics across the three municipalities, which will simplify the process and create efficiencies for developers;
- Provide a tool to quantify and rank the intended performance of proposed projects/plans; and
- Improve the submission and review process for the municipal partners and developers.

The guidelines act to complement and support other provincial/municipal requirements, such as the Ontario Building Code, urban design and healthy community guidelines, master environmental servicing plans, environmental impact studies, natural heritage evaluations, and growth management plans. Policy direction for this project is supported in various documents approved or adopted by the three partner municipalities as described below.

1.1 City of Brampton

Brampton is planned as a dynamic, urban, sustainable municipality, where growth is managed that protects the environment, enhances its heritage as a Flower City, contributes to the economy and enhances the quality of life. The City of Brampton has an inventory of over 175 environmental sustainability plans, programs, projects and initiatives. Below is a brief outline of three of the most relevant programs: the Official Plan; Environmental Master Plan; and Development Design Guidelines.

Brampton's Official Plan 2006 "Our Brampton ... Our Future" (OP 2006) provides the overarching policy support for implementing triple-bottom line sustainability in all aspects of City functions. The OP's Sustainable City Concept is further supported by policies provided in Transportation, Natural Heritage and Environmental Management, Recreational Open Space and Urban Design.

Brampton Grow Green will be the City's first Environmental Master Plan and will provide a sustainable environmental framework for the City as both a land use approval authority and a corporation. The EMP is intended to:

- bring cohesion to current environmental initiatives, policies and programs across City departments and services;
- identify new best practices to guide the City's operational, planning and regulatory functions;
- develop community and stakeholder awareness, collaboration and partnerships for environmental sustainability; and
- act in combination with the OP 2006, the Strategic Plan and the Growth Management Program as the City's Integrated Community Sustainability Plan.

City Council approved the *Development Design Guidelines* (DDGs) in 2003 with a focus on new development. The City is now preparing the newest chapter of the DDGs, the *Sustainable Community Development Guidelines* (SCDGs) which is Phase I of the larger collaborative project between Brampton, Vaughan and Richmond Hill. The SCDGs provides the framework to guide the development of specific metrics and targets (i.e. to be determined in Phase II) by providing a comprehensive list of potential sustainability measures, practices and policy strategies. Both phases are intended to guide the planning and design aspects of sustainable communities at a range of scales from Secondary Plan Areas, Block Plan Areas, and Draft Plan of Subdivision and Site Plans.

In support of the SCDGs, other City programs and initiatives include:

- Brampton's Growth Management Program – manages growth through the delivery of services and structures;
- Parks, Culture and Recreation Master Plan – provides a framework to direct the development and delivery of recreation facilities to promote active lifestyles;
- PathWays Master Plan – provides a long term plan to provide infrastructure for alternative and active modes of transportation across the City;
- Transportation and Transit Sustainable Master Plan – provides a framework for the delivery of an integrated multi-modal transportation network.

1.2 City of Vaughan

Building on the Strategic Plan, *Vaughan Vision 2020,* and *Green Directions*, the Vaughan Official Plan (VOP 2010) is the largest single policy document emerging from *Vaughan Tomorrow*. VOP 2010, adopted by Council in September 2010, will help secure the City's green policy transformation. This project addresses section 9.1.3 of the VOP 2010 in referring to the development of "green development standards".

Green Directions Vaughan is the City's Community Sustainability and Environmental Master Plan (CSEMP). The plan establishes the principles of sustainability to be used in the development of other plans and master plans to achieve a healthy natural environment, vibrant communities and a strong economy. Green Directions Vaughan includes a series of recommended actions that span the entire sphere of municipal responsibility, including operational and regulatory functions. A specific action item directs the City to develop sustainability guidelines for use in the development review process.

The City-wide Urban Design Guidelines and Standard, scheduled to be undertaken in 2014 upon approval of the 2014 capital budget, is a complementary document to the City of Vaughan's new Official Plan (VOP) that is critical in implementing the "Plan for Transformation" into an attractive, livable and healthy community with a distinct identity. Whether the Sustainability Metrics document is integrated into the City-wide Urban Design Guidelines and Standard or acts as a companion checklist will be decided by City staff.

1.3 Town of Richmond Hill

The Richmond Hill Official Plan, partially approved by Order of the OMB on April 5, 2012, represents a fundamental shift in the Town's approach to land use planning. The Official Plan establishes a vision for "building a new kind of urban" community through a focus on environment-first/sustainability, city-building, and place-making. In doing so, the Plan aims to harness the process of urbanization as a positive force on the landscape, establishing policies that aim to improve and enhance the environment over the long term. Policies in the Official Plan direct the Town to prepare Town-wide urban design guidelines and sustainable design criteria to ensure the placemaking and sustainable design policies are addressed through individual development applications.

The Final Town-wide Urban Design Guidelines will follow the Sustainability Metrics prepared as part of Phase II of this project. These documents will be used together as two new tools to foster a *new kind of urban* community as part of the development application review process.

2.0 INTRODUCTION

2.1 Purpose of Sustainability Performance Metrics

The Sustainability Performance Metrics will provide a tool to help municipal staff and developers inform, guide, and quantify the sustainability performance of new development. By adopting the proposed sustainability metrics as a lens through which to evaluate future development, communities will become more liveable. Residents will be healthier, more physically active, and more resource conscious.

Sustainability metrics and targets have been defined to help guide and quantify the sustainability performance for various scales of land use planning (i.e. site plans, subdivision/neighbourhood plans, block plans).

2.2 Process and Consultation

This project is a collaboration between the three partner municipalities and is being undertaken in two phases (summarized below). A continued third phase is likely to follow, with the focus on project implementation in each municipality, monitoring and sharing results.

Phase I: Sustainable Community Development Guidelines (SCDGs) for the City of Brampton.

Phase I was led by The Planning Partnership and included the preparation of qualitative urban design principles for the City of Brampton. A high-level summary of the SCDGs are included in Section 4.0. This document was shared with Vaughan and Richmond Hill as part of the FCM partnership. Vaughan and Richmond Hill are using the document to inform their own municipal-wide Urban Design Guideline projects. The four sustainability themes used in the Phase 1 document, namely: 1. Built Environment; 2. Natural Heritage/Open Space; 3. Mobility; and 4. Infrastructure; were used to organize the Sustainability Performance Metrics prepared in Phase II of the project.

Phase II: Sustainability Performance Metrics for the Cities of Brampton and Vaughan and Town of Richmond Hill.

Phase II was led by Halsall Associates, working collaboratively with The Planning Partnership. Building on the principles and guidelines developed under Phase I, and using the four sustainability themes established in the Phase I document, quantitative sustainability metrics were developed for the municipal partners. The final sustainability metrics (see Appendix A) were developed to help inform and measure the sustainability performance of new developments within the three municipalities.

Phase II of the project followed the process below to ensure the final sustainability metrics are realistic from a technical perspective and implementable as part of the planning application review process:

1. Develop draft sustainability metrics and review with the Municipal Partners Technical Advisory Team (TAT);
2. Identify development sites within the partner municipalities upon which to test the practicality and implementability of the draft sustainability metrics;

3. Chair a collaborative workshop with municipal staff and key stakeholders (Workshop 1) to evaluate the draft metrics and apply them to the selected test sites (see section 3.4.1 for Workshop 1 feedback);
4. Chair a collaborative forum with the development industry to inform the industry about the project and gather input on implementation of draft sustainability metrics (see section 3.6 for the Developer Forum feedback);
5. Chair a collaborative workshop with municipal staff and key stakeholders (Workshop 2) to refine certain sustainability metrics and discuss implementation, including a proposed dynamic tool to guide users through the applicable sustainability metrics (see section 3.4.2 for Municipal Workshop 2 feedback);
6. Consolidate feedback and revise draft sustainability metrics;
7. Draft sustainability performance metrics brought to municipal Councils for public input;
8. Individual municipal workshops (Workshop 3) to test the draft sustainability performance metrics;
9. Peer review by the TRCA and the Clean Air Partnership on draft sustainability metrics (provided under separate cover);
10. Two working sessions with BILD members on draft sustainability performance metrics;
11. Finalize Sustainability Performance Metrics; and
12. Develop and deliver an Implementation tool (the dynamic sustainability tool).

Phase III: Implementation and Monitoring of the Sustainability Performance Metrics

Phase III is beyond the scope of this project but will likely include further collaboration among the partners. Municipal specific fine tuning of the Sustainability Performance Metrics and implementation strategies will respond to local conditions. The main components of this phase will likely include:

- Amendment considerations to existing documents (OP, Site Plan, Secondary Plans, etc...);
- Revisions and/or development of municipal standards, such as related to engineering design criteria and urban design;
- Submission requirements;
- Education and communication;
- Internal testing of implementation tool;
- Customizing the point thresholds and associated incentives;
- Pilot projects; and
- Staff resourcing considerations.

2.3 Document Organization

The proposed sustainability performance metrics have been incorporated into both static and dynamic tools. The static tool acts as a checklist for municipal staff and developers to help inform the sustainability performance of the proposed development. The checklist is structured with the headings listed below:

- Categories;
- Indicators;
- Performance metrics;
- Mandatory, minimum and aspirational targets;

- Precedents; and
- Point allocation.

A further description and definition of the categories, indicators, metrics and targets are provided in Sections 3.2 and 5.0. The sustainability performance metrics, precedents and point allocations are included in Appendix A, with further rationale behind each of the metrics presented in Appendix B.

The excel-based Dynamic Tool provides an efficient and effective means for applicants and municipal staff to quantify the sustainability performance of proposed plans. For each of the sustainability performance metrics, strategic questions are posed within the tool and points are awarded depending on user inputs. To cater to a variety of planning scales recognized in the review of development applications (i.e. Block Plan, Draft/Neighbourhood Plan, and Site Plans) and project types (i.e. greenfield, employment land and intensification), the sustainability metrics have been differentiated into the categories listed below. It should be noted that many of the sustainability performance metrics may be applicable at various scales of development and therefore, across multiple plan type applications.

1) Block Plan;
2) Draft/Neighbourhood Plan; and
3) Site Plan.

The static tool is available for reference, while the intent of the dynamic tool is to provide an efficient and effective implementation of the sustainability performance metrics through the development review and approval process.

2.4 Tiers of Guidelines and Performance Metrics

The sustainability performance metrics were identified through review of best-in-class precedents including LEED for Neighbourhood Development (LEED ND) and similar sustainability guidelines implemented by other GTA municipalities, and reviewed through multiple technical stakeholder engagements. Each of the metrics and targets was evaluated against the following criteria:

- Realistic;
- Informative;
- Clear/Transparent;
- Manageable;
- Relevant;
- Measureable; and
- Impactful.

Three performance levels were identified for each of the metric targets:

- Mandatory;
- Recommended Minimum; and
- Aspirational.

All projects must satisfy the mandatory performance requirements to be considered for approval. This is essentially the existing standard or requirement according to relevant legislation and/or policies. The recommended minimum and aspirational target levels vary for each metric, but were informed and defined by the inputs from multiple technical stakeholder engagements. The minimum performance targets are considered as "*doing better than you need to*", while the aspirational performance targets are considered as "*best in class*".

Based on input from the Workshops, it became clear that not all metrics should carry the same weighting/point allocation. Metrics that support the municipalities' priorities and provide multiple sustainability benefits were considered to have a greater weighting/point allocation. The following indicators were considered to align with the municipalities' sustainability priorities in addition to providing the greatest impact on creating more sustainable built form and healthy communities:

1) Energy Management (Energy conservation/district energy);
2) Walkability and Mobility;
3) Water Management (Conservation, Stormwater);
4) Local food production; and
5) Natural Systems.

2.5 How to Use the Metrics

The performance metrics form a sustainability checklist organized as a matrix, identifying the indicators, metrics, targets, precedents and point allocation for each metric. This static tool serves as a reference for municipal staff and applicants to follow when preparing certain types of planning applications (e.g. block plans, draft plans of subdivision, site plans). The checklist identifies the key sustainability priorities for the municipalities and the relative importance (point allocation) against the various metrics.

The dynamic tool, based on the static tool checklist, was developed to improve the implementation of the sustainability metrics. The intent of the dynamic tool is to have applicants fill in the relevant inputs. The dynamic tool will generate both an *Application* and *Community* score that reflects the proposed plan's achievement of the applicable sustainability metrics. An *Application* score will only consider metrics and their associated point tally that the applicant has control over. The *Community* score will reflect the overall score of the proposed plan in relation to all applicable metrics, including those metrics typically under the municipalities' or region's influence (i.e. accessibility to schools, public transportation, etc...). The dynamic tool will be supported by a user manual and a reference guide (the draft user manual and reference guide will likely be further refined by each of the partner municipalities as part of the implementation process). Both documents are intended to explain how the tool works, the point structure and how a user enters the appropriate inputs for scoring.

2.5.1 Metric Point Allocation

LEED for Neighbourhood Development (LEED ND), other municipal sustainability performance guidelines and the sustainability priorities for each of the partner municipalities was used to help inform the point allocation for each metric. Points are ONLY awarded when a proposed plan satisfies the recommended minimum and/or aspirational targets for the various metrics. No points are awarded for metrics that satisfy mandatory targets.

Table 1 provides a summary of the draft point breakdown for the various plan types (Site, Draft and Block), broken out by the four categories.

Table 1: Point Total Breakdown

Categories	Point Allocation		
	Site Plan	Draft Plan	Block Plan
Built Environment	82	64	58
Mobility	18	26	26
Natural Environment & Open Space	27	28	28
Infrastructure & Buildings	78	20	11
Total	**205**	**138**	**123**

As shown, the totals for each of the plan types varies, depending on the number of metrics that have been defined for the plan type. To simplify the ranking procedure, each of the plan types will be normalized and evaluated based on a 100% score. Table 2 summarizes the percentage breakdown point allocation for the key sustainability priorities, as defined by the partner municipalities (see section 2.4).

Table 1: Point Total % Breakdown

Municipal Sustainability Priorities	Point Breakdown (%)		
	Site Plan	Draft Plan	Block Plan
Energy Management	26%	13%	9%
Walkability and Mobility	34%	52%	64%
Water Management	14%	8%	9%
Local Food Production	2%	3%	3%
Natural Systems	6%	13%	9%
Other Categories	**Point Breakdown (%)**		
	Site Plan	**Draft Plan**	**Block Plan**
Parking	8%	0%	0%
Materials and Solid Waste	4%	1%	0%
Economy	3%	5%	6%
Certification	3%	4%	0%
Total	**100%**	**100%**	**100%**

As shown, the Draft and Block plan point accumulation and resulting score are heavily influenced by walkability, comprising of over 50% of the overall score. This weighting emphasizes that new community and neighbourhood developments will need to integrate multiple disciplines and stakeholders into the planning efforts to perform well within the ranking.

The impact of walkability is still heavily weighted within the Site Plan metrics, but as expected, the building scale features start to have a greater influence on the overall score of the plan.

2.5.2 Mandatory Metrics and Minimum Point Threshold

In addition to the point allocation identified above, all mandatory metrics need to be satisfied for an application to be considered for approval by the municipality. Mandatory metrics are not assigned point allocations, as shown in Appendix A.

It should be noted that not all plan types will score in every category. Depending on the metric and plan type, the respective points will either be excluded from the total or the plan will be docked points. For example, a plan that only includes single family homes is excluded from Metric 49 (solid waste storage collection areas). As a result, those two points will be excluded from the total. On the other hand, if a plan does not have access to Basic or Lifestyle amenities, the plan will be docked points.
It is recommended that a minimum point threshold be established by each municipality for any incentive programs the municipality wishes to offer. Minimum point thresholds should be advanced as part of the implementation strategy in each municipality.

2.5.3 Point Structure

Appendix A provides a summary of the points allocated to each of the metrics, broken out by the Recommended Minimum and Aspirational Targets. For the most part, the point allocation is fairly straight forward. If a plan satisfies the Recommended Minimum and/or Aspirational targets, the relevant points will be awarded to the plan. In certain examples, a sliding scale has been developed to account for the potential variability within the metric. The following provides a high level summary of the metrics that utilize a sliding scale point structure.

Table 2: Point Structure - Sliding Scale

Applicable Plan Type	Metric	Point Structure
Draft, Block ,Site Plans	Proximity to Basic Amenities	6pts awarded to minimum 6pts awarded to aspirational 2pts awarded per amenity, for a maximum of 3 amenities Maximum pts = 12
Draft, Block, Site Plans	Proximity to Lifestyle Amenities	3pts awarded to minimum 3pts awarded to aspirational 1pt awarded per amenity, for a maximum of 3 amenities Maximum pts = 6

Draft, Block, Site Plans	Design for Life Cycle Housing	A minimum of 10% is required to be considered for a potential point. <u>Block/Draft Plan</u> *Accommodation Type – 2pts* - 1pt if 2 of 3 Accommodations are >10% - 2pts if 3 Accommodations are > 10% *Ownership – 2pts* - 2pts if Affordable/low-income housing > 10% *Housing Type – 3pts* - 1pt if 2 of the 4 housing types are >10% - 2pts if 3 of 4 housing types are > 10% - 3pts if 4 housing types are > 10% <u>Site Plan</u> *Accommodation Type – 3pts* - 1pt if 2 of 5 Accommodations are >10% - 2pts if 5 Accommodations are > 10% - 3pts if 5+ Accommodations are > 10% *Ownership – 1pt* - 1pt if Affordable/low-income housing > 10% *Housing Type – 3pts* - 1pt if 2 of the 4 housing types are >10% - 2pts if 3 of 4 housing types are > 10% - 3pts if 4 housing types are > 10%
Site Plans	Building Energy Efficiency	*Minimum Target (3pts)* - Achieve 35% better than MNECB and/or EnerGuide 83 (if applicable) *Aspirational Target (14pts)* - Submetering – 3pts - Commissioning – 3pts - For every 5% improvement in energy efficiency (over 35%), award an additional point (i.e. 60% improvement would yield 8 total points)
Site Plans	Solar Readiness	1pt awarded for minimum target Up to 7 additional points can be awarded for Aspirational target 1pt – 1% renewable energy generation An additional point for every 2% renewable energy generation increment (i.e. 13% generation is 7 points).

412

3.0 STUDY APPROACH

3.1 Background Research on Sustainability Metrics

The work carried out in Phase I of this project, the *Sustainable Community Development Guidelines* (SCDGs) served to inform the sustainability metrics and targets developed in Phase II. The sustainability metrics and targets were further informed by other municipal Sustainability Guidelines. The following is a list of references that were reviewed during the process of developing the sustainability metrics to be considered for this project:

- Brampton Official Plan 2006 "*Our Future... Our* Brampton";
- Brampton Grow Green;
- Brampton Development Design Guidelines;
- Brampton Sustainable Community Development Guidelines (SCDGs);
- Vaughan Vision 2020;
- Green Directions (Vaughan OP 2010);
- Richmond Hill Official Plan – Building a New Kind of Urban;
- Richmond Hill Strategic Plan – A Plan for People, A Plan for Change;
- Places to Grow *Better Choices, Brighter Future.* 2006;
- City of Toronto Green Development Standard;
- Seaton Sustainable Place-Making Guidelines, City of Pickering;
- Health Background Study, Region of Peel, City of Toronto, Heart & Stroke Foundation;
- Peel Region Official Plan
- Thinking Green! Development Standard, Town of East Gwillimbury;
- Sustainable Pickering;
- Markham Centre Performance Measures, Town of Markham;
- Markham Greenprint, Town of Markham;
- York Region Sustainability Strategy, Towards a Sustainable Region, Region of York;
- York Region Official Plan;
- Vision 2026 Towards a Sustainable Region, Sustainability Progress Report 2010, Region of York; and
- LEED for Neighbourhood Development (LEED ND).

3.2 Selecting Performance Metrics and Increments

Prior to identifying the appropriate indicators, metrics and targets, it was important that the team come to a common understanding of the typical language used to help define sustainability metrics. Indicators, metrics and targets are commonly used in the industry and the meaning can be inconsistent if not properly defined during the initial stages of the project. Although the definitions may vary, the following definitions were considered for this project:

1) Indicators: Key impacts within each sector that the municipality will strive to change and report against to represent its sustainability performance. Specific indicators have been developed for each of the plan types (i.e. Block Plan, Draft/Neighbourhood Plan, and Site Plan). An example of an indicator is "energy consumption".

2. Metrics: The outcome(s) that will be reported to define performance in an indicator. Metrics can be qualitative or quantitative. An example of a metric for the indicator "energy consumption" may be ekWh/m^2.

3. Targets: The desired end-state or goal that a planning application could achieve for a particular metric. Targets are derived from current performance efficiencies, policies and external benchmarks. Targets are typically separated into the following hierarchy:
   - Mandatory;
   - Recommended Minimum; and
   - Aspirational.

The precedent research outlined in Section 3.1 highlighted that there are potentially hundreds of sustainability performance indicators, metrics and targets that could be used to help inform future planning. Given the number of precedents, the consultant and municipal Technical Advisory Team (TAT) agreed that, in order to develop an implementable tool, the number of identified performance metrics needs to be manageable, measurable and clear. On projects as diverse and comprehensive as this one, there is often a desire to "cast a wide net" given how broad the idea of sustainability is, and how substantive the potential impact can be.

Identifying appropriate sustainability performance metrics for this project was initiated with a brain-storming session with the consultant team. Synergies between indicators were identified and performance metrics were drafted that align with municipal priorities. Performance metrics that promoted multiple sustainability benefits (i.e. proximity to amenities generally contributes to reduced Vehicle Kilometres Travelled, improved connections, increased active transportation, and improved health) were also identified to help simplify and consolidate the number of metrics. Upon completion of this brainstorming session and research phase, the key performance metrics were identified and presented to the TAT.

The sustainability performance tool developed for this project consists of four categories, twenty eight indicators and up to 45 metrics (depending on the plan type). Based on background research of other municipal sustainable guidelines and feedback from the workshops, this appears to be a manageable set of performance metrics that capture the sustainability priorities for the municipalities while being clear and concise enough to maintain current service levels for the planning approvals process.

3.3 Test Sites and Evaluation Criteria

The consultant team worked with the municipal Technical Advisory Team (TAT) to select test sites that would be used to test the proposed sustainability metrics. Various test sites were reviewed for appropriateness and were selected based on the following evaluation criteria:

- Variation in scale and plan application;
- Data availability; and
- One test site per municipality.

The three candidate test sites in Table 3 were selected. Key design/planning characteristics are also summarized in the Table.

Table 3: Test Site Selection

MUNICIPALITY	TEST SITE	KEY CHARACTERISTICS
City of Vaughan	**Nashville Heights Community – Block 61** 	Scale: Draft Block Plan Type: Greenfield Size: 185 ha Population: 8,000 Jobs: 700 Density: 14 units/ha (approximately 2600 residential units) Parks: 6 Neighbourhood parks, linear parks and 2 Public Squares Schools: 2 Elementary Schools
City of Brampton	**Queen Street East Redevelopment** 	Scale: Site Plan (considered a collection of site plans) Type: Corridor Redevelopment/Intensification Size: 33.37 ha Population: 13,250 Jobs: 2,700
Town of Richmond Hill	**Yonge Street and 16th Avenue (NE Corner)** 	Scale: Site Plan Type: Urban Node Intensification Size: 9.37 ha Population: 2,500* Jobs: 1,250* Density: 148 units/ha

* Assumes 1.8 ppu and overall resident to employee ratio of 1:2

Evaluating each of the selected sites using a set of proposed sustainability metrics served as a means to test and ensure that the draft metrics are realistic, manageable, impactful, clear and measureable. For each of the test sites selected, information was provided by the TAT and consolidated by the consultant team. Workshop packages were developed for each of the test sites demonstrating how certain sustainability performance metrics would be evaluated for each site.

3.4 Results of the Municipal Workshops

Two full-day municipal workshops were facilitated by the consultant team to review the proposed sustainability tools (sustainability performance checklist and dynamic tool), test the sustainability performance metrics against the test sites and gather feedback on implementation. Municipal staff from the following departments attended:

- Planning – Policy;
- Planning – Development;
- Engineering;
  - Stormwater Management
  - Transportation
  - Infrastructure;
- Planning - Building Standards;
- Natural Environment;
- Parks and Urban Forestry;
- Solid Waste/Public Works;
- Urban/Community Design; and
- Cultural Heritage.

3.4.1 Municipal Workshop 1 – Metrics Testing

Municipal Workshop #1 was held on September 25, 2012 and included approximately 40 municipal staff from Brampton, Richmond Hill and Vaughan, and representatives from the Clean Air Partnership, the Region of Peel, and the Region of York. The workshop was divided into two sessions:

1) Presentation - General project introduction and context;
2) Break out groups – Review performance metrics and test against the selected sites.

The intent of the workshop was to:

- Introduce the project and describe the key deliverables;
- Introduce the test sites;
- Demonstrate how the draft metrics would be applied to the test sites; and
- Obtain preliminary technical feedback on the draft sustainability metrics and targets.

The workshop also provided an opportunity for the City of Vaughan to present the initial findings and analysis for their Greenhouse Gas (GHG) and Energy forecasting initiative. The purpose of the initiative is to identify the energy conservation opportunities and resulting GHG implications, by considering various energy reduction and efficiency scenarios.

The feedback from the workshop was consolidated and reviewed by the consultant team and with the municipal TAT, and a metrics revision log (included in Appendix C) was developed to track the evolution of the sustainability metrics and targets. The log was updated throughout the course of this project to reflect technical feedback received.

The outcome and key findings from the Municipal Workshop #1 are summarized below:

Metrics applied to test sites
The workshop was used as a testing exercise to check that the draft sustainability performance metrics could be practically applied to typical planning application types at various scales of development including Greenfield, intensification/redevelopment, and infill. Each breakout group was assigned one of the three test sites outlined in Table 4, and were instructed to apply/consider each of the proposed metrics to assess/determine whether the metrics:

- Were understandable, measurable and quantifiable;
- Applied to the test site in question; and
- Had clear, consistent language/terms.

Draft metrics that required more discussion
The breakout groups served as an opportunity to review each of the draft metrics included in the Secondary/Block Plan, Subdivision/Neighbourhood Plan, Site Plan and Building Plan charts. Through this exercise, the groups identified metrics that needed more discussion, and in some cases, additional technical input. Although the discussions varied from group to group, there was generally agreement that the following metrics needed to be refined and in some cases, better quantitative metrics needed to be established:

- Walkability;
- Proximity to amenities and schools;
- Access to local food;
- Housing mix;
- Energy and water conservation;
- Stormwater management; and
- Parking/bike parking.

3.4.2 Municipal Workshop 2

Municipal Workshop 2 was held after the Developer Forum, on November 7, 2012. Workshop 2 included approximately 35 to 40 municipal staff from Brampton, Richmond Hill and Vaughan, and representatives from the TRCA and the Region of Peel. The intent of the workshop was to update municipal staff on the progress of finalizing a list of draft sustainability metrics, highlight the feedback from the developer forum and obtain specific feedback on the following:

- Engineering-related metrics;
- Implementation strategies/considerations;
- Metric point allocation; and
- Dynamic tool functionality.

The outcome and key findings from the Municipal Workshop #2 are summarized below:

Engineering-specific metrics
A primary focus of the Municipal Workshop 2 was to discuss certain engineering-related metrics including the following:

- Building energy efficiency;
- District energy viability;
- Stormwater quantity;
- Stormwater quality;
- Stormwater re-use;
- Speed controls; and
- Walkability.

Most of the discussion focussed on setting the mandatory, minimum and aspirational targets. For metrics regarding stormwater, TRCA agreed to work with the team to provide direction on the quantity and quality (including temperature) metrics and targets. The discussion surrounding walkability raised a number of challenges and opportunities, where the current road/sidewalk design standards may conflict with the proposed minimum and aspirational targets presented in the proposed sustainability metrics. It is recognized that during the implementation phase each municipality will need to revisit its current regulations and standards and consider creating alternative design standards to address sustainability objectives.

The municipal workshop also reviewed the key takeaways from the developer forum. The key takeaways and developer concerns included topics surrounding project implementation and tool roll out, developer incentives and transparency/consistency of language. The developer forum feedback is summarized in section 3.6

The metrics feedback was consolidated and revisions were tracked in the sustainability metrics log (Appendix C).

Project implementation and incentives
The workshop was used to help identify the key challenges and opportunities related to the implementation of the proposed sustainability metrics. A priority identified for the implementation of the sustainability metrics was to embed the metrics into existing required documentation and procedures (i.e. address within reports/studies/plans that are already required as part of a complete application). For example, the metrics could be used at the beginning of the planning approvals process (e.g. the pre-submission stage) like a screening tool, clarifying the minimum sustainability performance by setting out what the municipality expects at the outset. The metrics could result in an efficiency improvement by consolidating multiple report requirements into one document

(i.e. transportation plan, urban design guidelines, stormwater management plan, etc...) and by quantifying the sustainability performance each development is achieving.

Key implementation questions that came up during the workshop include:

1) How can you avoid having the applicant say they will do something but don't follow through, particularly after an incentive has been awarded?
2) When in the process is the score confirmed and when is the incentive granted?
3) Will a project need to undertake an evaluation more than once?
4) Who within the municipalities would be managing this plan evaluation/process?

Potential incentive strategies were also discussed including reducing the approval time for projects that are pushing the sustainability bar. Although the specific mechanisms were not defined, a specific staff structure to expedite approvals for aspirational projects was discussed as an incentive for leading edge projects. The municipal partners may review this as one of several incentive options.

Point allocation
At the time of Workshop 2, the point allocation had not been defined for each metric relative to Mandatory, Minimum and Aspirational targets. The discussion at the workshop focused on informing municipal staff about how the dynamic tool will be structured on a point based system informed by the municipal priorities relative to development application type.

Points are awarded for a development application based on which Minimum and/or Aspirational targets are achieved. The overall sustainability performance of the development proposal would be quantified and broken out into the four categories (i.e. built environment, mobility, green space/natural environment and infrastructure). The score quickly allows municipal staff to appreciate the overall sustainability performance of the proposed plan, while also identifying key opportunities to further improve the application's performance relative to municipal priorities based on the categories.

Dynamic Tool
A preview of the dynamic tool was presented to the group to highlight the overall layout and general functionality of the tool. This introduction provided municipal staff the opportunity to raise any comments, concerns or opportunities to improve the tool functionality. Generally the group seemed comfortable with the direction and application of the dynamic tool, although prior to releasing the dynamic tool for public use, each municipality will carry out an internal evaluation against existing applications to ensure that the output is reasonable and the sustainability performance score aligns with known project expectations. The roll out plan of the dynamic tool was discussed at a high level and it was agreed that the tool would need to undergo testing during a future phase (Project Implementation) of this project as defined by each of the municipal partners.

3.4.3 Municipal Workshop 3

A third set of half-day municipal workshops was carried out in April 2013 to further test the sustainability metrics and rank the performance of various plan and development types. The workshops consisted of individual sessions in each of three municipalities with a collection of municipal planners, engineers, natural heritage, urban design and building staff. The following types of plans were reviewed and scored within the three half-day sessions:

- Town of Richmond Hill
  - Low-density Draft Plan
  - Mixed Use Site Plan (targeting LEED Silver)
- City of Brampton
  - Mixed Use Block Plan
- City of Vaughan
  - Commercial Plaza Site Plan.

The outcome of the three workshops demonstrated that the plans could effectively be scored within a three hour working session with municipal staff. The workshop also quickly highlighted opportunities for the developer team to consider to help improve the application score. Overall, the score outcome matched the expected performance that was anticipated by the municipal staff.

3.5 Results of the Peer Review

Both the Toronto and Region Conservation Authority (TRCA) and the Clean Air Partnership (CAP) are providing third party review of the sustainability metrics. Both reviews are provided under separate cover.

CAP's review is primarily focused on the transferability of the metrics and tools outside the three municipalities. TRCA's review is primarily focused on the natural heritage elements, stormwater, water, biodiversity, and soil and tree quality.

3.6 Results of the Developer Forum

Similar to the municipal Workshop 1, a private sector forum was held October 17, 2012 to introduce the project objectives to the development community, including consultants. Municipal staff identified developers working in their municipalities and also attended the forum. The following table summarizes the private sector representation at the forum:

Table 4: Developer Forum Participation

Greenpark Homes	Brookfield Homes	EMC Group	Tridel
GHD (BILD member)	Amos Environmental + Planning	Savanta Inc (BILD member)	Daniels
Deltera	MMM Group	Starlane Home	Liberty Development
TACC Developments	Metrus Development Inc. (BILD Member)	Stantec	Provident Energy Management
Times Group Corporation	Reliance Comfort	PCL Construction	Clearsphere

The developer forum was held with the intent to:

1. Introduce the project;
2. Introduce the structure of the sustainability metrics;
3. Identify high priority indicators/metrics;

4. Identify and prioritize incentive mechanisms; and
5. Identify current regulatory, policy and industry barriers for sustainable development.

The key takeaways from the developer forum are summarized below.

General Comments

- Language needs to be consistent and transparent;
- Where possible, metrics should be supported by benchmarks and precedents;
- Metric weighting/point allocation should reflect municipal priorities, sustainability impact and potential cost (capital and savings) implications;
- Need to clearly separate Private from Public metric responsibilities;
- How can we actually monitor and measure the performance of a community/plan? We need to ensure that the design and performance intent is supported by a quantifiable result and is monitored over time;
- Need to ensure that metrics align with engineering and regulatory standards. Some standards (i.e. road dimension, sidewalks) are seen as barriers to current development practices; and
- The developer community is accepting of municipalities using this type of evaluation system. The developers want to be more sustainable but they see certain municipal standards as a barrier from a time-perspective.

Review of draft metrics

The forum also provided an opportunity for input on the proposed categories of sustainability metrics. Based on feedback at the Forum, many of the development industry's priorities were already included within the draft categories of sustainability metrics. Additional performance metrics that were proposed include:

- Public Engagement – interest in a metric that incentivizes developers to provide education packages for new residents and signage throughout the community to explain the sustainability features of the project;
- Developer Acknowledgement – interest in an Awards program that recognizes developers that have built sustainable projects.

Incentive Opportunities

The developer forum also provided an opportunity to identify and prioritize potential incentive mechanisms to reward/acknowledge Aspirational projects. The developer group were in agreement that the best incentive is to expedite the approval process for high-performing sustainability projects. Currently, innovative and pioneering initiatives are seen to take longer through the development approvals process, whereas the opposite could occur in order to promote sustainable projects. To provide an accelerated approvals process for innovative and pioneering sustainability projects, the municipalities need to ensure that technical review staff are well informed and engaged in the sustainability metrics, and that a municipal champion is identified, to advance and shepherd the development application through the approvals process.

Development charge rebates and increased density allowances were also discussed. The industry didn't feel that these incentives provide the same emphasis or traction as compared to an expedited approvals process for high-performing sustainability projects.

3.7 BILD Workshops

BILD requested an additional consultation and engagement session for interested BILD members to further engage in a more detailed discussion on the draft sustainability metrics and to better understand how the tool would be used as part of the planning process. Two half-day workshops were held with approximately 30 BILD members. A general overview of the static tool was presented, followed by an explanation of the point based system and how the points would be used to trigger potential incentives.

Some concerns were raised regarding the point-based system, particularly around metrics that the industry considered were outside their control (i.e. location of schools, access to public transit, etc...). The metrics and overall structure of the tool were developed to address this concern by separating the metrics into two categories: *Applicant* and *Community*. Eligibility for incentives offered by the partner municipalities will be evaluated based on the *Applicant* score of the plan. The *Community* score will be used as a monitoring tool by the partner municipalities to understand the overall performance of a plan, along with matters the municipalities or Regions may need to address to create more sustainable communities.

4.0 PHASE I SUSTAINABILE COMMUNITY DEVELOPMENT GUIDELINES SUMMARY

As mentioned in section 2.2, this project is being completed in two phases, with a possible third phase focused on project implementation. Phase I of the project was led by the City of Brampton and The Planning Partnership, with the goal to develop *Sustainable Community Development Guidelines* (SCDGs). The Phase I SCDGs will be a new chapter in the City of Brampton's Development Design Guidelines and will assist the City in the review of development applications and technical reports and documentation. The SCDGs will serve to help describe the qualitative sustainability aspects proposed developments should aim to achieve, including highlighting examples of how they could be achieved.

The focus of the guidelines is on qualitative urban design and community development principles. The guidelines apply to a range of development scales, which include Secondary Plans, Block Plans, and Draft Plans of Subdivision, and Site Plans. These guidelines helped serve to inform the metric and target priorities for Phase II of the project. The section below summarizes the process, principles and key outcomes from Phase I of the project.

Phase I was initiated with precedent research to help inform the SCDGs. Precedent research included a review of policies, municipal guidelines and recognized standards, including but not limited to:

- Seaton Sustainable Place-Making Guidelines, City of Pickering;
- Health Background Study, Region of Peel, City of Toronto, Heart and Stroke Foundation;
- Thinking Green Development Standard, Town of East Gwillimbury;
- Markham Centre Performance Measures, Town of Markham; and
- LEED 2009 for Neighbourhood Development, Canadian Alternative.

Each of the standards and guidelines were reviewed in detail and summarized in order to appreciate and understand the reporting requirements, overall intent and implementation considerations. The background precedent research was used to help develop the format and delivery of the SCDGs.

Phase I also included a study of five, large-scale, City of Brampton sustainability initiatives. This study was used to further reinforce the City's sustainability commitments and ensure these commitments were well established as SCDG priorities. The five precedent initiatives that were evaluated in Phase I include:

1) Mount Pleasant Village – Transit-oriented development;
2) The Pearson Eco-business Zone – Partners in Project Green;
3) The Transportation and Transit Master Plan;
4) ZUM – Bus Rapid Transit (BRT) Service; and
5) Higher order transit – Hurontario/Main Street Master Plan.

This background research provided a general overview of how the City of Brampton desires to shape its future. The review, while not exhaustive, also identified gaps that need to be further addressed in City policies to assist in the development of the SCDGs.

Based on the City of Brampton's priorities and long term vision, the following guiding principles were developed for the SCDGs:

1) Support the mix and diversity of land uses in a compact, transit supportive development form to help balance residential, employment and services and to improve active travel (i.e. walkability, transit use, etc.) between homes, workplaces, schools and amenities;

2) Preserve the natural heritage system, urban agricultural and open spaces by directing development to existing communities;

3) Provide residents with access to locally grown food;

4) Provide for a range and mix of housing opportunities, choices and accessibility for all income levels and needs;

5) Create walkable and connected communities with neighbourhood amenities and priority destinations within walking distance of residents. Enhance streetscapes to encourage residents to be physically active and socially engaged;

6) Provide a variety of economical, safe and accessible mobility options through the provision of a connected network of streets, sidewalks, bicycle lanes, trails and public transit systems;

7) Encourage the responsible use of resources to ensure long-term sustainability, reduce greenhouse gas emissions and demands on energy and water, and improved waste management;

8) Create jobs concurrent with residential growth to ensure a long term balanced economy while encouraging live-work opportunities;

9) Ensure that growth and development is fiscally sustainable;

10) Optimize opportunities for infill, intensification and revitalization;

11) Promote place-making that instills a sense of civic pride; and

12) Preserve the City's rich cultural heritage through adaptive reuse and restoration.

In order to achieve the sustainability goals of the SCDGs, it is essential that good planning and urban design be prioritized. The form of the built environment influences a person's lifestyle choices, which when considered on a broader scale, can contribute to the success or failure of the sustainability goals. The specifics of achieving the goals of the SCDGs should be set out through performance measures that can be logically and clearly followed, implemented and measured by those who design and build communities, as well as those who administer the review process and manage the community. It should be noted that the onus of achieving these goals falls equally on the public and private sectors.

5.0 SUSTAINABILITY PERFORMANCE METRICS

The guiding principles and performance indicators developed under Phase I of the project served as a basis to help inform the sustainability performance metrics and targets for Phase II of the project. As a result, the overall format, logic and priorities are shared between the two phases.

As identified in section 2.3, the Sustainability Performance Metrics consists of a grouping of themes, indicators, performance metrics, targets, and precedents. The following section provides a summary of the hierarchy and how the themes and indicators were selected.

5.1 Sustainability Categories

The Sustainability Performance Metrics are organized into four categories. The four categories represent the main structuring elements of a community which are required to achieve a sustainable and healthy living environment.

The following provides a description of each theme area and why each is an important component of a sustainable community. Each theme area has a number of corresponding indicators that are listed in the following section.

Built Environment
The indicators for Built Environment speak to how we inform place and connections within the development. The intensity and diversity of land uses influences decisions on where we live, work, and how we move around the community. A mix of housing types and amenities, employment and live-work opportunities located within walking distance, provides the opportunity for residents to meet their day to day needs without reliance on the private automobile. Further provision for life-cycle housing and accessible buildings allows residents to establish and remain in their communities throughout the various periods of their lives.

Mobility
The indicators of Mobility identify how a variety of transportation options must be available to residents to carry out their daily lives within and beyond the community. A sustainable community is one that encourages physical activity, facilitates active transportation, and supports public transit in place of automobile dependence. The most vulnerable population groups (children, elderly, disabled, and low income individuals) are the most affected by choices available to them for mobility and access to services and amenities. Designing a safe, convenient, and accessible environment for walking and cycling encourages these alternative modes of transportation. Emphasis on mobility and active transportation not only reduces energy use and GHG emissions, but contributes directly to improving public health and the quality of life of residents.

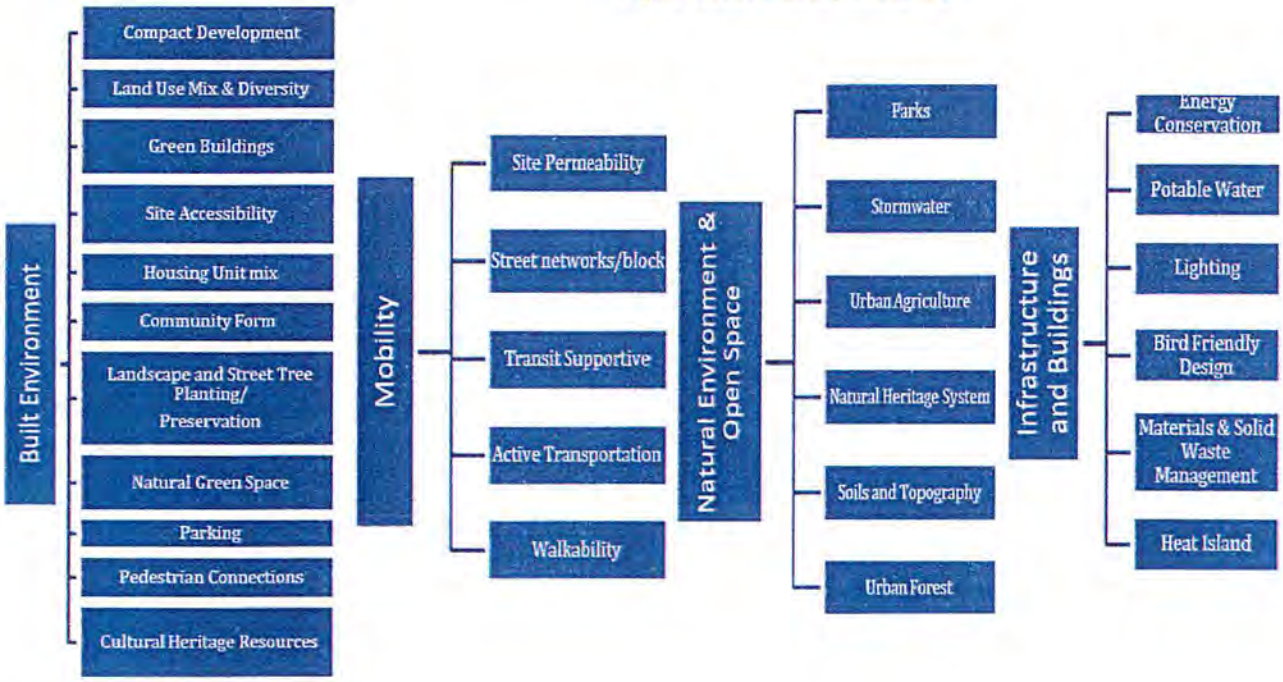
Natural Environment and Open Space
The natural environment, urban forest, and the open space system are essential components of a healthy, sustainable community. Firstly, the preservation and enhancement of the natural heritage system ensures the health of the environment and supports recreational and cultural opportunities in a community. Secondly, ensuring residents have convenient access to a connected and diverse range of open spaces, parks, and recreation facilities offers opportunities for improved public health and connections within the community.

Infrastructure and Buildings
The Infrastructure and Buildings indicators identify the means to maximize energy and water conservation and minimize the consumption of non-renewable resources. New buildings and communities should be designed with a focus on reducing water, waste, and energy use. Since human activity is the principal cause of elevated levels of greenhouse gases and demands on energy, water, and waste systems, the measures focus on means of reducing this impact on both the built and natural environments.

5.2 Indicators

For each of the categories, performance indicators have been selected, informed by background research, including other municipal sustainability guidelines, and private and public sector workshop feedback. Within each of the four categories, the performance indicators identify the characteristics that need to be considered in order to achieve the sustainability goals defined for new developments. Figure 1 summarizes all of the sustainability performance indicators that have been selected for the Cities of Brampton and Vaughan and the Town of Richmond Hill.

Figure 1: Sustainability Indicators



As shown, the list of sustainability indicators covers a wide spectrum of built form, mobility, public realm and design issues, all of which will contribute to the overall health, prosperity and performance of a new development. It should be noted that not all indicators will be applicable to all plan applications. As referenced in section 2.3, the applicability of the various indicators are filtered based on the development application type (i.e. Block plan, draft plan, and site plan) and project type (greenfield, employment land, intensification).

5.3 Sustainability Metrics and Targets

For each of the sustainability performance indicators listed above, specific performance metrics and mandatory, minimum and aspirational targets have been identified. The metrics and targets have been defined based on internal and stakeholder consultations, in addition to referencing supplemental standards (such as LEED ND and other municipal guidelines).

The sustainability metrics and targets have been reviewed through multiple consultation and engagement sessions, and by a third party review provided by the TRCA and CAP.

As is the case with the Toronto Green Standard, the sustainability metrics and targets are expected to evolve and change as market acceptance and implementation of sustainability measures improves with experience. As new priorities are identified, the metrics, targets and dynamic tool can be re-evaluated on a regular basis.

A list of the sustainability performance metrics, targets and point allocation is included in Appendix A.

5.4 Sustainability Metric Precedents

As referenced in section 3.1, background research was carried out to help inform the development of the sustainability performance metrics. As shown in Appendix A, a precedent is referenced for over 80% of the metrics, identifying a recognized standard, municipal policy or guideline or provincial policy that has helped inform the mandatory, recommended minimum and aspirational targets. Highlighting these precedents should help improve the adoption and acceptance of the sustainability performance metrics, in both the private and public sectors, as they have already gained acceptance in other development communities.

6.0 IMPLEMENTATION

While the sustainability metrics themselves will be consistent across the partner municipalities, how they are implemented will vary slightly in each municipality. Each municipality is at a different stage in terms of integrating sustainability thinking into its planning application review process. As a result, a third phase of this project will likely be initiated by each of the partner municipalities to address specific implementation and monitoring issues.

Collaboration amongst the partner municipalities is still expected during the next phase, with each municipality defining how it wishes to implement and incentivize the sustainability metrics based on its unique governance structure and local context. In addition to tailoring or customization of the tools developed as part of Phase 2, components of this next phase will likely include:

- Amendments to existing documents (OP, Site Plan, Secondary Plans etc.);
- Revisions and/or development of municipal sustainability standards;
- Revisions to submission requirements;
- Education and Communication;
- Customizing the tools for local context/conditions;
- Customizing the point thresholds and associated incentives;
- Pilot projects;
- Governance;
- Staff resourcing; and
- Update Terms of Reference of various technical background studies (e.g. Transportation Studies, Servicing Reports, Stormwater Plans, etc.) to reference Sustainability Performance Metrics.

6.1 Submission Requirements

The submission requirements to demonstrate compliance against the Municipalities' sustainability requirements will be identified by each municipality in the implementation phase of the project. The submission requirements will likely include the following supporting documentation:

- Submit a print out of the (application's) plan's sustainability score at pre-application consultation meeting (similar to East Gwillimbury), identifying that all Mandatory targets have been satisfied;
- Municipal receipt and review of technical background reports (in conformance with a complete application package) including draft sustainability checklist;
- Municipality and commenting agencies review reports, plans, sustainability checklist and/or sustainability report. The sustainability checklist, for example, will identify the performance target achieved for each metric and where the data supporting a metric's quantification is located in the reports/plans (i.e Metric 23 is quantified under Section X of the transportation report).

6.2 Recommended Incentive Strategies

The municipal partners may choose to establish incentive programs to support the implementation of the sustainability metrics. Where an incentive is offered, the municipality will establish a threshold point score that the proposed planning application must achieve to be considered for the incentive. Incentives will be based on the *Application* score, while the *Community* score will serve as a monitoring tool to track the overall sustainability performance of the plan. Each of the municipal partners will implement incentive programs at its own pace with additional work likely being completed as part of a future Phase 3.

The following incentive opportunities were identified as part of the background review and consultation and engagement process to further encourage the implementation of the sustainability metrics in new developments. It should be noted that these incentives have been discussed at a high level at the Municipal and Developer workshops. The actual viability of implementing each incentive within the partner municipalities may require additional study:

- Establish municipal cross-department working groups/committees to help implement the sustainability tool and develop alternative municipal design standards;
- Expedited approval process for high performing applications;
- Increased opportunities for density (in urban centres);
- Servicing allocation;
- Stormwater discharge tax;
- Development charge rebates: and
- Awards program to recognize and celebrate high performing projects.

Based on the feedback received at the Developer Forum and BILD workshops, the preferred incentive to encourage higher sustainability performance targets (i.e. Minimum or Aspirational) is an expedited approval process. Feedback at the developers form, and the BILD workshops identified concerns that the current approvals process takes too long, and is too iterative. As a result of this drawn out process, developers are frustrated and unwilling to commit to innovative sustainability projects. Additionally, innovative projects that go beyond standard building practices are often further delayed as current engineering standards are often at odds with engineering standards proposed in "innovative and pioneering" projects.

High level background research was undertaken on expedited approval processes used in other cities/municipalities to encourage and reward higher performing developments. A high level summary of these incentives is provided below. For further details, we recommend each municipality to follow up directly with the program champions.

Table 5: Expedited Approvals Summary

City	Incentive Program	Description and Key Features
Chicago, IL	Green Permit	Eligible projects include green technologies (green roofs, renewables, rainwater harvesting) or LEED certification. Qualifying projects are offered an expedited building approval process (< 30 days) and possible reduction in permit fees. Developers are provided with a single point contact to coordinate submission requirements and meetings and a 7-step process to follow.
San Diego, CA	Sustainable Building Expedite	Eligible projects will certify to LEED Silver or include solar PV to generate a proportion of the building's energy. Qualifying projects are offered expedited building approvals that are expected to reduce the review process time by 25% (compared to a normal approval process). The program is reviewed annually and revised every three years
Seattle, WA	Priority Green Permitting	Eligible projects demonstrate high performance thresholds in energy (>15% better than Seattle's Building Code), water efficiency (WaterSense plumbing fixtures) and waste reduction (75% construction waste diversion). Eligible projects can also include LEED certification (Gold or Platinum) or Built Green (level 4 or 5). Qualifying projects are offered a single point contact, priority in scheduling meeting, faster initial review and construction permitting process. Developers hire an approved verifier or consultant, who documents and verifies compliance.
Santa Monica, CA	Expedited Permitting for Green Buildings	Eligible projects will certify to LEED. Applicants must also highlight key building design features that contribute to the environmental performance of the project.
Ottawa, ON	Green Lane Express	Qualifying projects follow an integrated approval process. Municipal champions have been trained in the process and are LEED accredited. Municipal champions follow the development application from initial concept to final approval.

While most programs implemented elsewhere focus on the building scale, common elements are featured in multiple programs:

- Single point contact within the municipality;
- Trained municipal staff;
- Annual review of design standards and programs; and
- Interdepartmental communication/collaboration.

In December 2012, York Region completed a study which scanned incentive programs across Canada (*Municipal Sustainable Development Incentive Programs*). The intent of the scan was to highlight the successes, challenges, implementation strategies and uptake of various incentive programs. The key conclusions of this report aligned well with the common elements that were featured in the incentive programs listed above. The key conclusions and associated municipalities are listed below:

- **Identify a Local Champion** – Dedicated champions to be trained on the overall value of the program and not just focus on a primary interest area (Guelph and Caledon).
- **Interdepartmental Staff Consultation** – Cross department working groups for staff to share challenges and successes (Caledon and Hamilton).
- **Private Sector Engagement** – Follow up sessions with developers and consultants to gather feedback on the process, value and opportunities for improvement.

- **Post Implementation Performance** – Need to evaluate if the program and measures are demonstrating value. Most programs to date have not considered how to actually monitor, measure and track ongoing performance of the metrics/standards adopted.
- **Private Sector Signoff on Aspiring Projects** – For projects targeting high performance, a private sector consultant could be considered to verify and sign-off on the performance achieved by the plan (Toronto Tier 2 verification).

6.3 Recommendations for Next Steps

Each of the partner municipalities will likely implement the sustainability metrics using a slightly different approach. Below is a high level overview of what should be considered as part of each municipality's implementation phase:

1. Customization of the Dynamic Implementation Tool;
2. Education/Training Workshops for Internal Staff and External Planning Consultants and Commenting Agencies;
3. Creation of a Monitoring Tool;
4. Research and Analysis of Incentives; and
5. Evaluation of Municipal Standards and Specs in relation to the Final Sustainability Performance Metrics.

APPENDIX A - Site Metrics

Site (S) Metrics													
Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target			Aspirational Target			Precedent	Total Available Points
			Building Type		Single Family Home	Multi-Fam Buildings (>3 storeys)	Commercial/ Retail/Inst	Single Family Homes	Multi-Fam Buildings (>3 storeys)	Commercial/ Retail/Inst		
Built Environment	Compact Development	1	Floor area ratio/Floor Space Index (usually applies only to multi-unit medium density and high density)	Satisfy Municipal Official Plan requirements							Municipal OP	
	Land use mix and diversity	2	Proximity to Basic Amenities		50% of DU and jobs are within a 800m walking distance to existing or planned Basic Amenities Basic amenities include: 1. Grocery store/farmers market, place to buy fresh produce 2. Community/Recreation Centre 3. Pharmacy 4. Library (UP TO 6 POINTS) If the amenities are not within the distance specified above and the site is designated as mix use, the mix of population and employment uses achieves a 2:1 ratio on the site. (3 POINTS)			75% of DU and jobs are within a 400m walking distance to existing or planned Basic Amenities Basic amenities include: 1. Grocery store/farmers market, place to buy fresh produce 2. Community/Recreation Centre 3. Pharmacy 4. Library (UP TO 6 POINTS) If the amenities are not within the distance specified above and the site is designated as mix use, the mix of population and employment uses includes major office space, an anchor commercial/retail tenant or a minimum of 3 stories of employment uses. (3 POINTS)			Municipal OP Thinking Green Item 1, 2, 9 LEED NC SSc2	12
		3	Proximity to Lifestyle Amenities		50% of DU and jobs are within a 800m walking distance to existing or planned Lifestyle amenities Lifestyle Amenities include: 1. General retail 2. convenience store 3. Theatre 4. Coffee store 5. Hair salon 6. Bank 7. Place of worship 8. Daycare 9. Restaurant/Pub Other (UP TO 3 POINTS)			75% of DU and jobs are within a 400m walking distance to existing or planned Lifestyle amenities Lifestyle Amenities include: 1. General retail 2. Convenience store 3. Theatre 4. Coffee store 5. Hair salon 6. Bank 7. Place of worship 8. Daycare 9. Restaurant/Pub Other (UP TO 3 POINTS)			Municipal OP Thinking Green Item 1, 2, 9 LEED NC SSc2	6
	Green Buildings	4	Building(s) designed and/or certified under an accredited "green" rating system	Municipal buildings greater than 500m² must be designed to LEED Silver or alternative equivalent	Site includes 1 or more green buildings certified under a recognized third party standard (i.e. Energy Star, LEED NC, CS, CI, EB, Homes) (2 POINTS)			Additional aspirational points are available for development plans that include 5 or more buildings. Buildings on site will be certified under a recognized third party standard (i.e. Energy Star, ASHRAE 189, LEED NC, CS, EB, Homes, etc...) 2 points if 50% to 75% of buildings are certified +2 points if 76% to 100% of buildings are certified			Municipal OP Sustainable Design and Construction Policy for Municipal Buildings LEED ND GIBp1	6

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target		Aspirational Target		Precedent	Total Available Points
Built Environment	Site Accessibility	5	Universal Design	Design 10% of residential units in apartment buildings to provide a barrier-free path of travel from the suite entrance door to the doorway of at least one bedroom at the same level, and at least one bathroom in accordance with OBC.	Design a minimum of 20% of the DU in accordance with ICC/ANSI A117.1 Universal Design Standards (or equivalent) (1 POINT)	N/A	Design a minimum of 30% of the DU in accordance with ICC/ANSI A117.1 Universal Design Standards (or equivalent) (1 POINT)	N/A	Accessibility Act Municipal Accessibility Plan LEED ND NPDc11 OBC Requirement	2
		6	Number of universally accessible points of entry to buildings and sites	100% of primary entrances	100% of emergency exits (1 POINT)		100% of all entries and exits (1 POINT)		Accessibility Act Municipal Accessibility Plan LEED ND NPDc11	2
	Housing Unit mix	7	Design for life cycle housing		The housing types includes a diversified mix that caters to singles, families, multi-generational, live-work, mixed use, affordable/low income, attached, detached, townhome and med-to-high-rise residential. (POINTS AWARDED BASED ON A SLIDING SCALE)	N/A	The housing mix includes a mix of housing types, catering to singles, families, multi-generational, live-work, mixed use, affordable/low income, attached, detached, townhome and med-to-high-rise residential. (POINTS AWARDED BASED ON A SLIDING SCALE)	N/A	Municipal OP	7
	Landscape and Street Tree Planting / Preservation	8	% Tree canopy within proximity to building/pedestrian infrastructure	Satisfy municipal planting requirements	Provide shade within 10 years for at least 50% of the walkways/sidewalk lengths All trees should be selected from the applicable municipal tree list. (2 POINT)		Provide shade within 10 years for at least 75% of the walkways/sidewalk lengths. All trees should be selected from the applicable municipal tree list. (2 POINTS)		Municipal OP LEED ND NPDc14	4
		9	Maintain existing healthy trees	Arborist Report provided that identifies and evaluates where on-site healthy mature trees will be protected (in-situ or moved) or removed.	Where healthy mature trees must be removed, new trees (not including street trees) are provided on site or as determined by the municipality to mitigate the lost canopy coverage of the trees removed. (2 POINTS)		Healthy mature trees greater than 20 cm. DBH preserved in situ on site. (2 POINTS) Smaller healthy trees (less than 20 cm. DBH) transplanted. (1 POINT)		Municipal Precedent	5
		10	Soil Quantity and Quality		Pits, trenches or planting beds should have a topsoil layer with an organic matter content of 10 to 15 % by dry weight and a pH of 6.0 to 8.0. The topsoil layer should have a minimum depth of 60 cm. The subsoil should have a total uncompacted soil depth of 90 cm. Minimum soil volume of 30 cubic metres per tree. (2 POINTS)				TGS TIER I Canadian Cities with Soil Volume Standards TRCA - Preserving and Restoring Healthy Soils: Best Practice Guide for Urban Construction	2
	Natural Green Space	11	Proximity to accessible natural green space		Visual and pysical connections (such as public access blocks, single loaded roads) are provided to the natural heritage system and parks. (1 POINTS)		Visual and physical connections (such as public access blocks, single loaded roads) are provided to 50% of the natural heritage system. (2 POINTS)			2

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target			Aspirational Target			Precedent	Total Available Points
Built Environment	Parking	12	Bicycle Parking	Satisfy Municipal Standards		Provide a minimum 0.6 bike parking spots per unit Provide a minimum 5% of bike parking at grade (1 POINT)	0.13 bike parking spots for permanent employees for every 100m2 GFA. Provide 0.15 bike parking spots for visitors for every 100m2 of GFA. (1 POINT)		Provide a minimum of 0.8 bike parking spots per unit Provide a minimum 10% of bike parking at grade (1 POINT)	Place bike parking in weather protected areas in close proximity to building entry (1 POINT) For office or institutional buildings, provide 1 shower (for men and women) for every 30 bike parking spots and a change room. (2 POINTS)	TIER I & TIER II	4
		13	Off-Street Parking		N/A	Locate all new off-street parking at the side or rear of buildings (1 POINT)		N/A	Less than 20% of the total development area is allocated to new, off-street surface parking facilities. (1 POINT) Consolidate 85% or more of the surface parking to parking structures in Intensification Areas. (5 POINTS)		LEED ND NPDC5	7
		14	Surface Parking			Develop and implement a strategy to minimize surface parking for permanent employees and residents. (1 POINT)						1
		15	Carpooling and Efficient Vehicle Parking				3% of the site parking spots (or a minimum of 4 parking spots) to be dedicated to car pooling and/or fuel efficient / hybrid vehicles and/or carshare/zip car (does not apply to compact cars). Dedicated parking spots located in preferred areas close to building entries. (1 POINT)			5% of the site parking spots to be dedicated to car pooling and/or fuel efficient / hybrid vehicles and/or carshare/zip cars (does not apply to compact cars). Dedicated parking spots located in preferred areas close to building entries. (1 POINT)	TGS LEED NC SSc4.3	2
	Pedestrian Connections	16	Traffic Calming		75% of new residential-only streets designed with traffic calming strategies. (1 POINT) 50% of new non-residential and/or mixed-use streets are designed with traffic calming strategies (1 POINTS)			100% of new residential-only streets designed with traffic calming strategies. (1 POINT) 75% of new non-residential and/or mixed-use streets are designed with traffic calming strategies (1 POINT)			LEED ND NPDc1	4

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target		Aspirational Target		Precedent	Total Available Points
Built Environment	Pedestrian Connections	17	School Proximity to Transit routes & Bikeways		All schools are located within a 400m walking distance to transit routes and/or dedicated bike network (2 POINTS)		All schools are located within a 200m walking distance to transit routes and/or dedicated bike network (2 POINTS)			4
		18	Proximity to school		50% of dwelling units are within 800 meters walking distance to public/private elementary, montessori, and middle schools (2 POINTS) 50% of dwellings units are within 1600 meters to a high school (1 POINT)	N/A	75% of dwelling units are within 400 meters walking distance to public/private elementary, montessori, and middle schools (2 POINTS) 75% of dwellings units are within 1000 meters to a high school (1 POINT)	N/A	LEED ND NPDC15	6
	Cultural Heritage Resources	19	Cultural Heritage Conservation	Comply with Cultural Heritage Conservation policies under provincial legislation (i.e. the Ontario Heritage Act, Planning Act and PPS, etc.), Standards and Guidelines for Historic Places, municipal Official Plan, municipal by laws, Municipal Register of Cultural Heritage Resources and/or Municipal Heritage Inventory.	100% evaluation of properties included in the Municipal Heritage Inventory and/or Register, and 100% retention and protection of cultural heritage resources that qualify for designation under the Ontario Heritage Act. (2 POINT)		100% conservation of cultural heritage resources identified in the Municipal Heritage Register or Inventory and their associated landscapes and ancillary structures in accordance with the Standards and Guidelines for the Conservation of Historic Places in Canada. (2 POINTS)		Municipal OP policies on Cultural Heritage Ontario Heritage Act Municipal Inventory of Buildings of Architectural and Historical Significance	4
Mobility	Site Permeability	20	Connectivity	Connect buildings on the site to off-site pedestrian paths, surface transit stops, parking areas (car and bike), existing trails or pathways, or other destinations (e.g. schools). Outdoor waiting areas located on the site must offer protection from weather. Where a transit stop is located within a walking distance of the project site boundary, the building main entrance should have a direct pedestrian linkage to that transit stop.			Provide amenities and street furniture (benches, additional bike parking, landscaping) along connections provided on the site and between the site and adjacent destinations. (2 POINTS)		TGS TIER II Municipal OP	2
	Transit supportive	21	Distance to public transit		Site is within 800m walking distance to an existing or planned commuter rail, light rail, bus rapid transit or subway with stops or Site is within 400m walking distance to 1 or more bus stops with frequent service. (3 POINTS)		Site is within 400m walking distance to an existing or planned commuter rail, light rail , bus rapid transit, or subway with frequent stops or Site is within 200m walking distance to 1 or more bus stops with frequent service. (3 POINTS)		Regional OP (proximity) Municipal OP (if revised to speak to connectivity) LEED NC 2009 SSc4.1	6
	Active Transportation	23	Proximity to cycling network		75% of residents/jobs are within 400 meters of existing or approved bicycle path/network		100% of residents/jobs are within 400 meters of existing or approved bicycle path/network			4

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target		Aspirational Target			Precedent	Total Available Points
Mobility	Walkability	23	Provide walkable streets	Sidewalks must be in accordance with the applicable Municipal Standards. Sidewalk width must be at least 1.5 meters.			On 100% of street, continuous sidewalks or equivalent provisions must be provided on both sides of streets, where not a mandatory requirement. (2 POINTS) Provide pedestrian amenities to further encourage walkable streets. (2 POINTS)			LEED ND NPDc1	4
Natural Environment & Open Space	Parks	24	Park Accessibility		Provide 2 road frontages for each urban square, parkette, and neighbourhood park provided and 3 road frontages for each community park provided. (3 POINTS)		Provide 3 or more road frontages for all parks provided. (3 POINTS)			LEED ND Cornell Community Mt. Pleasant Village Brampton Development Design Guideline Existing Policies	6
	Stormwater	25	Stormwater Quantity	Retain runoff volume from the 5mm rainfall event on site. Provide quantity or flood control in accordance with applicable Municipal and conservation authority requirements	Retain runoff volume from the 10mm rainfall event on site. (3 POINTS)		Retain runoff volume from the 15mm rainfall event on site. (3 POINTS)			TRCA's Stormwater Management Criteria TRCA SWM Criteria Document	6
		26	Stormwater Quality	Remove 80% of Total Suspended Solids (TSS) on an annual loading basis from all runoff leaving the site (based on the post development level of imperviousness). All ponds will be designed with Enhance Level of Protection (Level 1).	N/A	81% to 90% of Total Suspended Solids (TSS)removed from a 10mm rainfall event. (1 POINTS)	N/A	91% to 100% of Total Suspended Solids (TSS)removed from a 15mm rainfall event. (4 POINTS)		TGS TIER II	5
		27	Rainwater Re-use			Buildings designed for rainwater re-use readiness (i.e plumbing infrastructure included in building) (1 POINT)	Rainwater captured on-site and used for low-grade functions (i.e. toilet/urinal flushing, irrigation) (3 POINTS)				4
		28	Stormwater Architecture/Features			Introduce stormwater amenities that provide both functional and aesthetic benefit to the site. (2 POINTS)					2
	Urban Agriculture	29	Dedicate land for local food production		Provide 80ft2/DU of garden space (2 POINTS)	N/A		Dedicate 15% of roofspace for local food production (2 POINTS)	N/A	LEED ND NPDc13	4

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target		Aspirational Target		Precedent	Total Available Points
Infrastructure and Buildings	Energy conservation	30	Solar Readiness		100% of all new building designed for solar readiness (i.e. electrical conduit/plumbing riser roughed in) (1 POINT)		On-site energy generation from renewable energy source (points awarded based on % of renewable energy generated relative to total building) (SLIDING POINT SCALE)		LEED NC EAc2	4
		31	Passive solar alignment		Applies to 50% of new buildings: The building(s)'s long axis is within 15 degrees of E-W The building(s) E-W lengths are at least as long as the N-S lengths (3 POINTS)		Applies to 75% of new buildings: The building(s)'s long axis is within 15degrees of E-W The building(s) E-W lengths are at least as long as the N-S lengths (3 POINTS)		LEED ND GIBc10	6
		32	Building energy efficiency	Design all buildings in accordance with OBC.	Single family homes or multiunit residential buildings (3 storey or lower) must be built to EnerGuide 83 (or equivalent). (3 POINTS)	Buildings must be designed to 35% better than MNECB (3 POINTS - MAXIMUM)	Single family homes or multiunit residential buildings (3 storey or lower) must be built to EnerGuide 85 (or equivalent) (1 POINT)	Buildings energy perforamcne exceeds MNECB by 35% or more (SLIDING POINT SCALE) Building commissioning required for all buildings (multi-unit res above 3 storeys, commercial, inst) (3 POINTS) Building electricity sub-metering required for all tenants and per residential suite (3 POINTS)	LEED ND GIBp2 TGS TIER I & TIER II	21
		33	District energy viability		Develop an energy strategy for the development, identifying opportunities for conservation, energy sharing, renewables, etc... (2 POINTS)		In an intensification area, where district energy has been deemed viable by the municipality, carry out a district energy feasibility study. (3 POINTS)			5
	Potable Water	34	Reduce potable water used for irrigation		Reduce potable water used for irrigation by 50%, compared to a midsummer baseline case. (2 POINTS)		No potable water is used for irrigation. (4POINTS)		LEED NC WEc1 TIER I	6
		35	Water Conserving Fixtures	Include plumbing fixtures with the following maximum flow rates: Residential: Toilets: 6LPF Faucets: 8.3LPM Showerhead: 9.5LPM CRI Same as Residential with: Urinals 3.8LPF Faucets 8.3LPM (private applications only), 1.9LPM all other Satisfy applicable municipal standards (e.g. York Region Official Plan policy 5.2.22)	Include water fixtures that obtain a 10% to 20% reduction over the baseline fixture (Mandatory target fixture or applicable municipal standard). (3 Points)		Include water fixtures that obtain > 20% reduction over the baseline fixture (Mandatory target fixture). (3 POINTS)		LEED ND GIBp3 TIER I and TIER II TGS	6

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target	Aspirational Target	Precedent	Total Available Points
Infrastructure and Buildings	Lighting	36	Parking garage lighting	Minimum level of illumination of 50 lux	Use occupancy sensors (motion and thermal) on 2/3 of parking lighting fixtures, while always maintaining a minimum illumination of at least 30 lux (1 POINT)			1
		37	Reduce light pollution	Satisfy applicable municipal standards	Shield exterior light fixtures >1000 lumens to provide night sky lighting No uplighting allowed (1 POINT)	Develop lighting controls that reduces night time spillage of light by 50% from 11pm to 5am (non residential) No architectural lighting allowed between 11pm and 5am (1 POINT)	LEED NC SSc8 TIER I and TIER II	2
		38	Energy Conserving Lighting	Satisfy applicable municipal standards	Use LEDs and photocells on all exterior (exposed) lighting fixtures (2 POINTS)			2
	Bird friendly design	39	Bird Friendly Design		Use a combination of Bird Friendly Design strategies to treat at least 85% of the exterior glazing located within the first 12m of the building above-grade (including interior courtyards). Visual markers on the glass should have a spacing no greater than 10cm x 10cm Where a greenroof is constructed with adjacent glass surfaces, ensure the glass is treated 12m above greenroof surface (2 POINT)		TGS TIER 1 City of Toronto Bird Friendly Design Guidelines	2
	Materials & Solid Waste Management	40	Solid Waste	Satisfy applicable municipal standards	Storage and collection areas for recycling and organic waste are within or attached to the building or deep collection recycling and organic waste storage facilities are provided. (1 POINT)	Three chute system is provided. (1 POINT)	TGS TIER I	2
		41	Recycled / Reclaimed Materials	Satisfy Municipal Standards	Minimum 25% of recycled/reclaimed materials should be used for new infrastructure including roadways, parking lots, sidewalks, unit paving, etc. (1 POINT)	Minimum 30% of recycled/reclaimed materials should be used for new infrastructure including roadways, parking lots, sidewalks, unit paving, etc. (1 POINT)	LEED ND GIBc1S	2
		42	Material Re-use and Recycled Content		At least 5% reused content in building materials and/or landscaping materials (hardscaping such as paving or walkways) is provided. (1 POINT) At least 10% recycled content in building materials and/or landscaping materials (hardscaping such as paving or walkways). (1 POINT)	At least 10% reused content in building materials and/or landscaping materials (hardscaping such as paving or walkways) is provided. (1 POINT) At least 15% recycled content in building materials and/or landscaping materials (hardscaping such as paving or walkways). (1 POINT)	TGS TIER II	4

Category	Indicator	Metric #	Metric	Mandatory Target	Recommended Minimum Target		Aspirational Target		Precedent	Total Available Points
Infrastructure and Buildings	Heat Island	43	Reduce heat island effect from the built form - Non Roof			For 50% of the site's hardscape, include any combination of the following: - Underground/covered parking - Hardscape shading - Hardscape material with an SRI > 29 - Open grid pavers (>50% pervious) (2 POINTS)		For 75% of the site's hardscape, include any combination of the following: - Underground/covered parking - Hardscape shading - Hardscape material with an SRI > 29 - Open grid pavers (>50% pervious) (1 POINT)	Municipal OP LEED NC SSC7.1/7.2 TGS TIER I & II	3
		44	Reduce heat island effect from the built form - Roof			*Cool Roof* For 75% of the roof area, include roofing materials with solar reflective index (SRI) of: Low-sloped roof: 78 Steep-sloped roof: 29 (2 POINTS) *Vegetated Roof* Install vegetated roof for 50% of the roof area (4 POINTS) An additional 2 points is awarded if a Cool roof is installed on the remaining 50%		*Cool Roof* For 90% of the roof area, include roofing materials with solar reflective index (SRI) of: Low-sloped roof: 78 Steep-sloped roof: 29 (1 POINT) *Vegetated Roof* Install vegetated roof for 75% of the roof area (2 POINT) An additional 2 point is awarded if a Cool roof is installed on the remaining 25%	Municipal OP LEED NC SSC7.1/7.2 TGS TIER I & II	8

APPENDIX A - Block and Draft Plan

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Built Environment	Compact Development	B&D	1	Persons & Jobs per hectare *Note:* Each municipality defines density ranges by land use types within the Official Plan and the Secondary Plans	Places to Grow - 50 (min) ppl+jobs/ha or as further defined in the municipal Official Plan York Region - 70 (min) ppl+jobs/ha or as further defined in the municipal Official Plan and / or approved Secondary Plan				*M*
		B	2	Location Efficiency	Height and/or density conforms to the minimum or maximum targets established in the applicable Municipal Official Plan	Achieve a 50% increase in density along existing or planned mid block collectors, planned for transit (1 POINT)	Achieve a 100% increase in density along existing or planned mid block collectors planned for transit (2 POINTS)		*3*
	Land use Mix and diversity	B&D	3	Proximity to Basic Amenities		50% of DU and jobs are within a 800m walking distance of at least 3 existing or planned Basic Amenities (Amenities listed below) Basic amenities include: 1. Grocery store/farmers market, place to buy fresh produce 2. Community/Recreation Centre 3. Pharmacy 4. Library (UP TO 6 POINTS)	75% of DU and jobs are within a 400m walking distance of at least 3 existing or planned Basic Amenities (Amenities listed below) Basic amenities include: 1. Grocery store/farmers market, place to buy fresh produce 2. Community/Recreation Centre 3. Pharmacy 4. Library (UP TO 6 POINTS)	Thinking Green Item 1, 2, 9 LEED NDPc3	*12*
		B&D	4	Proximity to Lifestyle Amenities	Satisfy Municipal Official Plan requirements	50% of DU and jobs are within a 800m walking distance of at least 3 existing or planned basic amenities (Amenities listed below) Lifestyle Amenities include: 1. General retail 2. Convenience store 3. Theatre 4. Coffee store 5. Hair salon 6. Bank 7. Place of worship 8. Daycare 9. Restaurant/Pub Other (UP TO 3 POINTS)	75% of DU and jobs are within a 400m walking distance of at least 3 existing or planned basic amenities (Amenities listed below) Lifestyle Amenities include: 1. General retail 2. Convenience store 3. Theatre 4. Coffee store 5. Hair salon 6. Bank 7. Place of worship 8. Daycare Restaurant/Pub Other. (UP TO 3 POINTS)	Thinking Green Item 1, 2, 9 LEED NDPc3	*6*

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Built Environment	Landscape and Street Tree Planting / Preservation	D	5	Urban Tree Diversity	Where trees are planted in a row in an urban area (e.g. street trees, trees in a parking area, park, etc.), alternate tree species at least every 2 trees or in accordance with approved municipal standards.				
		D	6	Maintain existing healthy trees	Arborist Report provided that identifies and evaluates where on-site healthy mature trees will be protected (in-situ or moved) or removed.	Where healthy mature trees must be removed, new trees (not including street trees) are provided on site or as determined by the municipality to mitigate the lost canopy coverage of the trees removed. (2 POINTS)	75% of healthy mature trees greater than 20 cm. DBH are preserved in situ on site. (3 POINTS)	Municipal Precedent	5
		D	7	Soil Quantity and Quality	Satisfy Municipal Tree Planting Standards	Pits, trenches or planting beds should have a topsoil layer with an organic matter content of 10 to 15 % by dry weight and a pH of 6.0 to 8.0. The topsoil layer should have a minimum depth of 60 cm. The subsoil should have a total uncompacted soil depth of 90 cm. Minimum soil volume of 30 cubic metres per tree (2 POINTS)		TGS TIER I Canadian Cities with Soil Volume Standards TRCA - Preserving and Restoring Healthy Soils: Best Practice Guide for Urban Construction	2
	Green Buildings	D	8	Building(s) designed and/or certified under an accredited "green" rating system	Public Buildings greater than 500m² must be designed to LEED Silver or alternative equivalent	Site includes 1 or more green buildings certified under a recognized third party standard (i.e. Energy Star, ASHRAE 189, LEED NC, CS, CI, EB, Homes, etc...) (2 POINTS)	Additional aspirational points are available for development plans that include 5 or more buildings. Buildings on site will be certified under a recognized third party standard (i.e. Energy Star, ASHRAE 189, LEED NC, CS, EB, Homes, etc...) 2 points if 50% to 75% of buildings are certified +2 points if 76% to 00% of buildings are certified	Municipal OP Sustainable Design and Construction Policy for Municipal Buildings LEED ND GIBp1	6

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Built Environment	Housing Unit Mix	B&D	9	Design for life cycle housing:		The housing types include a diversified mix that caters to singles, families, multi-generational, live-work, mixed use, affordable/low income, attached, detached, townhome and med-to-high-rise residential. (POINTS AWARDED BASED ON A SLIDING SCALE)	The housing types include a diversified mix that caters to singles, families, multi-generational, live-work, mixed use, affordable/low income, attached, detached, townhome and med-to-high-rise residential. (POINTS AWARDED BASED ON A SLIDING SCALE)	Thinking Green Item 3 LEED NDPc4	7
	Community Form	B	10	Community and Neighbourhood Scale		Community form based on a hierarchy of the following: *Community* - formed by a clustering of neighbourhoods, typically 6 to 9 (depending on topography and natural features), to sustain a viable mixed use node and public transit. *Neighbourhood* - shape and size defined by 400 metres (5 minute walk) from centre to perimeter with a distinct edge or boundary defined by other neighbourhoods or larger open spaces. *Neighbourhood centre* - acts as a distinct centre or focus with a compatible mix of uses that include medium and high-density, retail or community facilities, and a parkette/village square. *Mixed use node* - central to the cluster of neighbourhoods the node should include higher residential densities, retail, employment opportunities, be accessible, and served by public transit. (4 POINTS)	———		4

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Built Environment	% of Tree canopy within proximity to building/ pedestrian infrastructure	B&D	11	% canopy coverage	Provide street trees on both sides of streets according to Municipal Standards.	Tree-Lined Streets Provide street trees on both sides of new and existing streets within the project and on the project side of bordering streets, between the vehicle travel lane and walkway, at intervals averaging no more than 9 meters. (1 POINT) Shaded Streets Provide shade within 10 years of planting for at least 50% of sidewalk lenghts. All trees should be selected from the applicable Municipal tree list. (1 POINT)	Tree-Lined Streets Provide street trees on both sides of new and existing streets within the project and on the project side of bordering streets, between the vehicle travel lane and walkway, at intervals averaging no more than 6 meters. (1 POINT) Shaded Streets Provide shade within 10 years of planting for at least 75% of sidewalk lenghts. All trees should be selected from the applicable Municipal tree list. (1 POINT)	LEED ND NPDc14	4
	Natural Heritage	B&D	12	Connection to Natural Heritage		Visual and physical connections (such as public access blocks, single loaded roads) are provided to 25% of the natural heritage system. (2 POINTS)	Visual and physical connections (such as public access blocks, single loaded roads) are provided to 50% of the natural heritage system. (2 POINTS)		4
	Pedestrian Connections	B&D	13	Traffic Calming		75% of new residential-only streets designed with traffic calming strategies. (1 POINT) 50% of new non-residential and/or mixed-use streets are designed with traffic calming strategies (1 POINT)	100% of new residential-only streets designed with traffic calming strategies. (1 POINT) 75% of new non-residential and/or mixed-use streets are designed with traffic calming strategies (1 POINT)	LEED ND NPDc1	4
		B&D	14	School Proximity to Transit routes & Bikeways		All schools are located within a 400m walking distance to transit routes and/or bikeways (2 POINTS)	All schools are located within a 200m walking distance to transit routes and/or bikeways (2 POINTS)		4
	Pedestrian Connections	B&D	15	Proximity to school		50% of dwelling units are within 800 meters walking distance to public/private elementary, montessori, and middle schools (2 POINTS) 50% of dwellings units are within 1600 meters to a public/private high school (1 POINT)	75% of dwelling units are within 400 meters walking distance to public/private elementary, montessori, and middle schools (2 POINTS) 75% of dwellings units are within 1000 meters to a public/private high school (1 POINT)	LEED ND NPDc15	6

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Built Environment	Cultural Heritage Resources	B&D	16	Cultural Heritage Conservation	Comply with Cultural Heritage Conservation policies under provincial legislation (i.e. the Ontario Heritage Act, Planning Act and PPS, etc), Standards and Guidelines for Historic Places, municipal Official Plan, municipal by-laws, Municipal Registar of Cultural Heritage Resources and/or Municipal Heritage Inventory.	100% evaluation of properties included in the Municipal Heritage Inventory and/or Register, and 100% retention and protection of cultural heritage resources that qualify for designation under the Ontario Heritage Act. (2 POINT)	100% conservation of cultural heritage resources identified in the Municipal Heritage Register or Inventory and their associated landscapes and ancillary structures in accordance with the Standards and Guidelines for the Conservation of Historic Places in Canada. (2 POINTS)		4
Mobility	Street networks/block	B&D	17	Block perimeter/length		75% of block perimeters do not exceed 550m. 75% of block lengths do not exceed 250m. (2 POINTS)	100% of block perimeters do not exceed 550m. 100% of block lengths do not exceed 250m. (2 POINTS)	Thinking Green Item 3 LEED NPDp1	4
		B&D	18	Intersection density		Street intersections per sq km = 40 to 50 (2 POINTS)	Street intersections per sq km =51 to 60 (1 POINT) Street intersections per sq km >61 (1 POINT)	LEED NPDp3 Neptus Foundation	4
	Transit supportive	B&D	19	Distance to public transit	Satisfy Official Plan Targets	50% of residents/employment is within 800m walking distance to existing or planned commuter rail, light rail or subway with frequent stops or 50% of residents/employment is within 400m walking distance to 1 or more bus stops with frequent service. (3 POINTS)	75% of residents/employment is within 400m walking distance to existing or planned commuter rail, light rail or subway with frequent stops or 75% of residents/employment is within 200m walking distance to 1 or more bus stops with frequent service. (3 POINTS)	LEED NC 2009 SSc4.1 LEED ND SLLc3	6
	Active Transporation	B&D	20	Creation of Trail or Bike Paths	Comply with Master Plan		Advances the objectives of the applicable Pedestrian and Cycling Master Plan (2 POINTS)		2
		B&D	21	Proximity to cycle network		75% of residents/jobs are within 400 meters of existing or approved by council path/network (2 POINTS)	100% of residents/jobs are within 400 meters of existing or approved by council path/network (2 POINTS)		4

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Mobility	Walkability	B&D	22	Promote walkable streets	Sidewalks must be in accordance with the applicable Municipal Standards. Sidewalk width must be at least 1.5 meters.	On 75% of streets, continuous sidewalks or equivalent provisions must be provided on both sides of streets, where not a mandatory requirement. (2 POINTS)	On 100% of street, continuous sidewalks or equivalent provisions must be provided on both sides of streets, where not a mandatory requirement. (2 POINTS) Provide pedestrian amenities to further encourage walkable streets. (2 POINTS)	LEED ND NPDc1	6
Natural Environment & Open Space	Parks	B&D	23	Park Accessibility		Provide 2 or more road frontages for each urban square, parkette, and neighbourhood park provided and 3 road frontages for each community park provided. (3 POINTS)	Provide 3 or more road frontages for all parks provided. (3 POINTS)	LEED ND Cornell Community Mt. Pleasant Village Existing Policies	6
	Stormwater	B&D	24	Stormwater Quantity	Retain runoff volume from the 5mm rainfall event on site or achieve best efforts Provide quantity or flood control in accordance with applicable Municipal and conservation authority requirements	Retain runoff volume from the 10mm rainfall event on site. (3 POINT)	Retain runoff volume from the 15mm rainfall event on site. (3 POINTS)	TGS TIER II TRCA DIRECTION	6
		B&D	25	Stormwater Quality	Remove 80% of Total Suspended Solids (TSS) on an annual loading basis from all runoff leaving the site (based on the post development level of imperviousness). All ponds will be designed with Enhance Level of Protection (Level 1).	Remove 81% to 90% of Total Suspended Solids (TSS) from all runoff leaving the site during a 10mm rainfall event. (Based on the post development level of imperviousness). (1 POINTS)	Remove 91% to 100% of Total Suspended Solids (TSS) from all runoff leaving the site during a 15mm rainfall event. (Based on the post development level of imperviousness). (4 POINTS)	TGS TIER II TRCA DIRECTION	5

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Natural Environment & Open Space	Urban agriculture	B&D	26	Dedicate land for local food production		Provide 80ft2/DU of garden space (2 POINTS)	Provide the following garden space per site density DU Density Growing Space/DU 17-35DU/ha 200ft2 36-54DU/ha 100ft2 >54DU/ha 80ft2 (2 POINTS)	LEED ND NPDc13	4
	Natural Heritage System	B&D	27	Natural Heritage System Enhancements	Satisfy Municipal Official Plan requirements		Demonstrate ecological gain above and beyond the municipal natural heritage requirements. (2 POINTS)		2
	Soils and Topography	B&D	28	Restore and enhance soils	Undertake a Topsoil Fertility Test according to Municipal Standards	Undertake a Topsoil Fertility Test for the entire site and implement its recommendations. (1 POINT)	Development on highly permeable soils is avoided following TRCA and CVC Low Impact Development Stormwater Management Planningand Design Guide. (2 POINTS) In addition to implementing the recommendations of the Topsoil Fertility Test, a minimum topsoil depth of 200 m is provided across the entire site. (2 POINTS)	TRCA DIRECTION	5

Block Plan (B) & Draft Plan (D) Metrics									
Category	Indicator	Applies To	Metric #	Metric	Mandatory Target	Minimum Target	Aspirational Target	Precedents	Available Points
Infrastructure & Buildings	Energy conservation	B&D	29	Passive solar alignment		50% (or more) of the blocks have one axis within 15 degrees of E-W. E-W lengths of those blocks are at least as long as the N-S lengths of blocks (3 POINTS)	75% (or more) of the blocks have one axis within 15degrees of E-W E-W lengths of those blocks are at least as long as the N-S lengths of blocks (3 POINTS)	LEED ND GIBc10	6
		D	30	Building energy efficiency	Single Family Homes: Design all buildings in accordance with OBC.	75% of single family homes or multiunit residential buildings (3 storey or lower) must be built to EnerGuide 83 (or equivalent) (2 POINTS)	90% of single family homes or multiunit residential buildings (3 storey or lower) must be built to EnerGuide 85 (or equivalent) (2 POINT)		4
		B&D	31	Energy Management		Develop an energy strategy for the development, identifying opportunities for conservation, energy sharing, renewables, etc... (2 POINTS)	In an intensification area, where district energy has been deemed viable by the municipality, carry out a district energy feasibility study. (3 POINTS)		5
	Lighting	D	32	Reduce light pollution	Satisfy applicable municipal standards	Shield exterior light fixtures >1000 lumens to prevent night sky lighting No uplighting allowed (1 POINT)		LEED NC SSc8 TIER I and TIER II	1
		D	33	Energy Conserving Lighting	Satisfy applicable municipal standards	Use LEDs and/or photocells on all exterior (exposed) lighting fixtures (applies to street lights, park lights, pedestrian walkways). (2 POINTS)			2
	Material Management	D	34	Recycled / Reclaimed Materials	Satisfy applicable municipal standards	Minimum 25% of recycled/reclaimed materials should be used for new infrastructure including roadways, parking lots, sidewalks, unit paving, etc. (1 POINT)	Minimum 30% of recycled/reclaimed materials should be used for new infrastructure including roadways, parking lots, sidewalks, unit paving, etc. (1 POINT)		2

APPENDIX B – Rationale and Sources Used to Inform Metrics

Built Environment - Compact Development - Persons and jobs per ha

Rationale: To conserve land and promote active transportation, transit efficiency, liveability and improve public health.

Sources: Growth Plan for the Greater Golden Horseshoe; York Region OP 5.6.3 and New Community Guidelines (criterion CC2 refers to 20 residential unites per hectare and 70 residents and jobs per hectare as the required target in new greenfield areas); Emerald Hills Performance Assessment.

Built Environment - Compact Development – Floor area ratio/Floor space index

Rationale: Municipal official plans include land use designations and density schedules that apply to existing urban areas to achieve municipal growth management strategies with attention to placemaking, built form and urban design.

Built Environment - Compact Development – Location efficiency

Rationale: Promote multi-modal transportation choices and reduced vehicle use.

Sources: Emerald Hills Performance Assessment; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 3.

Built Environment - Land Use Mix and Diversity - Proximity to amenities

Rationale: Recognize sites with good community connections to services and/or promote services to encourage compact communities and multi-modal transportation options. Recognizes a fine grain mix of uses as promoted in municipal official plans. The metric and targets are adapted from the point scoring system used in LEED ND.

Sources: LEED Canada 2009 for New Construction, SS Credit 2; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) - SLL Credit 3; VOP 2010 Policy 4.2.2.14 ("To encourage the provision of transit service within 500 metres of at least 90% of residences and the majority of jobs, and consistent with approved YRT service standards and guidelines and within 200 metres of at least 50% of residents in the *urban area.*")

Built Environment – Site Accessibility – Universal design

Rationale: Improve accessibility for people of diverse abilities.

Built Environment – Green Buildings – Third-party certification

Rationale: Recognize appropriate independent third-party certification systems incorporated into development proposals.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – Green Infrastructure and Buildings (GIB) Prerequisite 1.

Built Environment - Housing Mix - Design for life cycle housing

Rationale: Enable residents from a wide range of economic levels, household sizes, and age groups to live in a community.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 4; VOP 2010 policy 2.1.3.2.j.

Built Environment – Landscape and Street Tree Planting/Preservation

Rationale: As part of the urban forest, street trees provide a range of ecosystem services including: cleaning air; intercepting rainfall that helps to mediate storm flows; evaporative cooling and summer shade to reduce building cooling loads; wind breaks; and carbon sequestration. As community amenities, street trees promote active transportation by providing a more walkable pedestrian environment.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 14.

Built Environment - Community Form - Community and neighbourhood scale

Rationale: Focus retail, personal, human and community services within community core areas (neighbourhood centre and mixed-use node) so that people can meet their daily needs within their own communities.

Sources: York Region OP policy 5.6.5, policy 4.4.1, and York Region New Community Guidelines (criterion CC5).

Built Environment – Natural Heritage/Natural Green Space – Proximity/connection to natural heritage/green space

Rationale: The human health and amenity benefits of proximity to nature and green spaces have been documented in peer-reviewed journals (e.g. Sullivan, Kuo and DePooter, 2004; Faber-Taylor and Kuo, 2001).

Sources: VOP 2010 policy 7.3.1.2 c (Neighbourhood Parks should generally be located within a 10-minute walk of the majority of the community served); Sustainable Sites Initiative: Guidelines and Performance Benchmarks, 2009, Credit 6.7.

Built Environment – Parking

Rationale: Encourage active transportation, promote efficient use of developable land, discourage the location of parking in front of buildings in order to support on-street retail and pedestrianization, and minimize the adverse environmental impacts of parking facilities.

Sources: LEED Canada 2009 for New Construction, SS Credit 4.4; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) - NPD Credit 5.

Built Environment – Pedestrian Connections – Traffic calming

Rationale: Provide walkable streets to encourage active transportation.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 1; Gilbert and Obrien. 2009. Child- and Youth-Friendly Land-Use And Transport Planning Guidelines for Ontario, Version 2. (http://www.kidsonthemove.ca/uploads/Guidelines%20Ontario%20v2.7.pdf)

Built Environment – Pedestrian Connections – School proximity to transit routes and bikeways

Rationale: Promote walking and cycling to schools and reduce traffic congestion at school sites.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 15; Forum: School Siting and School Site Design for a Healthy Community, 2012, City of Hamilton Public Health Services.

Built Environment – Pedestrian Connections - Proximity to schools

Rationale: Promote schools as community hubs and support students' health by encouraging walking and bicycling to school.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 15; Forum: School Siting and School Site Design for a Healthy Community, 2012.

Built Environment - Cultural Heritage Resources – Cultural Heritage Conservation

Rationale: Support municipal Official Plan policies to recognize and conserve cultural heritage resources, including heritage buildings and structures, Cultural Heritage Landscapes, and other cultural heritage resources.

Sources: Cultural Heritage Conservation policies under provincial legislation (i.e. the Ontario Heritage Act, Planning Act and PPS, etc), Standards and Guidelines for Historic Places, municipal Official Plan, municipal bylaws, Municipal Register of Cultural Heritage Resources and/or Municipal Heritage Inventory.

Built Environment – Tree Canopy

Rationale: Enhance the urban forest and provision ecosystem services including: cleaning air; intercepting rainfall that helps to mediate storm flows; evaporative cooling and summer shade to reduce building cooling loads; wind breaks; and carbon sequestration. As community amenities, street trees promote active transportation by providing a more walkable pedestrian environment.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 14.

Mobility – Site Permeability - Connectivity

Rationale: Encourage walking and transit use.

Source: Toronto Green Standard Tier 1 requirement (Pedestrian Infrastructure).

450

Mobility - Street Networks/Blocks - Block perimeter/length

Rationale: Blocks of dwelling units with a perimeter less than 550 metres promote connectivity of neighbourhoods, allows pedestrians to choose between a variety of routes to their destination, and should be flexible to accommodate both residential and commercial lot sizes.

Sources: Pickering Sustainable Development Guidelines (criterion 6.6); East Gwillimbury "Thinking Green" Item 3.

Mobility - Street Networks/Blocks – Intersection density

Rationale: Promote well-connected street networks that allow for multiple active transportation routes through the neighbourhood, and reduces traffic through alternative vehicular routes.

Sources: Pickering Sustainable Development Guidelines (criterion 6.5); Neptis Foundation "Shaping the Toronto Region" report (see Figure 35).

References:
Taylor, Z.T and von Nostrand, J. 2008. Shaping the Toronto region past, present and future: an exploration of potential effectiveness of changes to planning policies governing greenfield land development in the Greater Golden Horseshoe. Neptis Foundation. 198 pp

Mobility – Transit Supportive - Distance to public transit

Rationale: Support alternative transportation modes to vehicle use.

Sources: LEED Canada 2009 for New Construction, SS Credit 4.1; Pickering Sustainable Development Guidelines (criterion 6.10).

Mobility – Active Transportation

Rationale: Promote alternative modes of transportation and support public health.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – SLL Credit 4 (Bicycle Network and Storage).

Mobility – Walkability - Promote walkable streets

Rationale: Promote walking and other forms of active transportation by providing safe and comfortable street environments.

Sources: Pickering Sustainable Development Guidelines criterion 7.2; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 1 (Walkable Streets).

Natural Environment and Open Space - Parks

Rationale: Support park design policies in municipal official plans.

Sources: Municipal Official Plans; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 9 (Access to Civic and Public Square).

Natural Environment and Open Space – Stormwater – Stormwater quantity

Rationale: Implement a treatment-train approach to stormwater management that emphasizes source controls and conveyance controls to promote infiltration, evaporation, and/or re-use of rainwater. The objective is to maintain stream flows and thermal regimes within natural ranges of variation.

Sources: TRCA Stormwater Management Criteria (2012); MOE Stormwater Management Practices Planning and Design Manual; TGS Tier I and Tier II; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – Green Infrastructure and Buildings Credit 8 (Stormwater Management).

Natural Environment and Open Space – Stormwater – Stormwater quality

Rationale: Protect receiving water bodies from the water quality degradation that may result from development and urbanization (TRCA 2012).

Sources: Stormwater Management Criteria (TRCA 2012) (http://www.sustainabletechnologies.ca/Portals/_Rainbow/Documents/72d1cb7b-eaa6-4582-8e9e-87e668af62d5.pdf); Toronto Green Standard (Stormwater Quality – Stormwater Run-off).

Natural Environment and Open Space – Stormwater – Rainwater re-use

Rationale: Reduce potable water use.

Sources: Toronto Green Standard (Water Efficiency); York Region Official Plan (policy 5.2.32).

Natural Environment and Open Space – Stormwater – Stormwater architecture/features

Rationale: Naturalize stormwater management facilities to enhance the municipal natural heritage system and integrate into the open space system as visually and physically accessible amenities.

Sources: The Sustainable Sites Initiative: Guidelines and Performance Benchmarks, 2009 (Credit 3.7)

Natural Environment and Open Space – Urban Agriculture – Dedicate land for local food production

Rationale: Promote community-based food production and provide alternative passive recreational uses.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – NPD Credit 13.

Natural Environment and Open Space – Natural Heritage System – Natural heritage system enhancements

Rationale: Improve natural heritage system function with respect to wildlife habitat and/or ecological functions, including ecosystem services.

Sources: Municipal natural heritage system plans.

Explanatory Note: Point allocation has not yet been defined for different types natural heritage system enhancements. This metric will be the subject of ongoing research.

Natural Environment and Open Space – Soils and Topography – Restore and enhance soils

Rationale: Limit disturbance of healthy soil to: protect soil horizons and maintain soil structure; support biological communities (above-ground and below-ground); minimize runoff and maximize water holding capacity; improve biological decomposition of pollutants; and moderate peak stream flows and temperatures.

Sources: The Sustainable Sites Initiative: Guidelines and Performance Benchmarks, 2009; Low Impact Development Stormwater Management Planning and Design Guide (CVC and TRCA 2010); Preserving and Restoring Healthy Soil: Best Practices for Urban Construction (TRCA 2012).

References:
The Sustainable Sites Initiative: Guidelines and Performance Benchmarks, 2009 (http://www.sustainablesites.org/report/Guidelines%20and%20Performance%20Benchmarks_2009.pdf)

Infrastructure and Buildings – Energy Conservation – Solar readiness

Rationale: Encourage on-site renewable energy generation and/or solar thermal strategies.

Sources: LEED NC EA Credit 2; York Region Official Plan (policy 5.2.26).

Infrastructure and Buildings - Energy Conservation – Passive solar alignment

Rationale: Promote energy efficiency by creating the conditions for the use of passive solar design as well as solar photovoltaic and/or solar thermal strategies.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 10.

Infrastructure and Buildings - Energy Conservation – Building energy efficiency

Rationale: Reduce energy use and greenhouse gas emissions with consequent reductions in air, water, and land pollution and adverse environmental effects from energy production and consumption.

Sources: Toronto Green Standard (Minimum Energy Performance); LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Prerequisite 2 and Credit 2.

Infrastructure and Buildings - Energy Conservation – District energy viability
Rationale: District energy systems can provide more efficient heating and cooling for residential and commercial customers (providing there is density of development). This aids governments in reaching reduction targets for greenhouse gas emissions while also benefitting customers in reduced ongoing energy expenses and reduced one-time first costs for mechanical equipment.

Sources: Canadian District Energy Association (Web site, https://www.cdea.ca/faq/what-are-main-advantages-district-energy); York Region Official Plan (policy 5.6.10 regarding community energy planning); LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 12.

Infrastructure and Buildings – Potable Water - Reduce Potable Water Used for Irrigation

Rationale: Promote water use efficiency.

Sources: Toronto Green Standard (Water Efficiency); York Region Official Plan (policy 5.2.31); LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 4; LEED Canada 2009 for New Construction, WE Prerequisite 1.

Infrastructure and Buildings – Potable Water – Water conserving fixtures

Rationale: Promote water use efficiency.

Sources: Toronto Green Standard (Water Efficiency); York Region Official Plan (policy 5.2.21 and 5.2.23); LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 3; LEED Canada 2009 for New Construction, WE Credit 1.

Infrastructure and Buildings – Lighting - Parking Garage Lighting

Rationale: Reduce energy use while providing safe environments.

Infrastructure and Buildings - Lighting - Reduce light pollution

Rationale: Reduce nighttime glare and light trespass from the building and the site

Sources: Toronto Green Standard (Light Pollution Tier I and Tier II); LEED Canada 2009 for New Construction, SS Credit 8.

Infrastructure and Buildings - Lighting – Energy conserving lighting

Rationale: Reduce energy use while providing safe environments.

Infrastructure and Buildings - Bird-Friendly Design

Rationale: Ensure that design features minimize the risk for migratory bird collisions.

Sources: Toronto Green Standard

Infrastructure and Buildings - Materials and Solid Waste Management - Recycled/Reclaimed Materials

Rationale: Reduce the adverse environmental effects of extracting and processing virgin materials.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 15 (LEED ND credit 15 refers to a mix of recycled and reclaimed materials exceeding 50% of the mass of new infrastructure); Toronto Green Standard (Use of Recycled Materials); The Sustainable Sites Initiative: Guidelines and Performance Benchmarks – Credit 5.4 and 5.5.

Infrastructure and Buildings - Materials and Solid Waste Management – Solid Waste

Rationale: Promote waste reduction and diversion of materials from landfills.

Sources: LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 16; Toronto Green Standard (Storage and Collection of Recycling and Organic Waste); City of Vaughan Waste Collection Standards and Waste Collection By-Law 217-210.

Infrastructure and Buildings - Materials and Solid Waste Management- Material re-use and recycled content

Rationale: Reduce demand for new materials and promote diversion of materials from landfills.
Sources: Toronto Green Standard (Reuse of Building Materials); The Sustainable Sites Initiative: Guidelines and Performance Benchmarks – Credit 5.4 and 5.5.

Infrastructure and Buildings - Heat Island – Reduce heat island effects

Rationale: Reduce ambient surface temperatures, and provide shade for human health and comfort.

Sources: Toronto Green Standard (Urban Heat Island Reduction: At Grade and Roof); LEED Canada 2009 for New Construction – SS Credit 7.1 and 7.2; LEED 2009 for Neighbourhood Development with Canadian Alternative Compliance Paths (2011) – GIB Credit 9.

APPENDIX C - Sustainability Metrics Log

The following metrics log attempts to summarize the major revisions to the sustainability metrics based on the private and public sector workshops and feedback.

June 04, 2013 -Revisions from TAT meeting

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	Buildings Design/Certified to Green Standards	Revise Aspirational Target – only applicable to sites with 5 or more buildings	Site Metrics
2	Life Cycle Housing	Revised metric to remove "renters" reference and delete 1 or 2 bedroom reference for Block and Draft metrics	Site, Block and Draft Metrics
3	Connection to Natural Heritage	Revise metric to include a "Visual and physical connection are provided to natural heritage system"	Site, Block and Draft Metrics

May 11, 2013 – Comments and Revisions from BILD Workshop

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	Carpooling and Efficient Vehicle Parking	Minimal and Aspirational metrics to include "and/or"	Site Metrics
2	Park Accessibility	Revise metrics for Recommended Minimum: ~~A minimum of two parks of any type (i.e. urban square, parkette, neighbourhood park, community park, etc...) are included in the development plan.~~ Provide 2 ~~or more~~ road frontages for each urban square, parkette, and neighbourhood park provided and 3 road frontages for each community park provided. Aspirational Metric: ~~More than 2 parks are included in the development plan.~~ Provide 3 or more road frontages for all parks provided.	Site, Block and Draft Metrics
3	Stormwater Quantify	Revise Mandatory Metric: Retain runoff volume from the 5mm rainfall event on site. Provide quantity or flood ~~contol~~ control in accordance with applicable Municipal and ~~TRCA~~ conservation authority requirements.	Site, Block and Draft Metrics
4	Restore and Enhance Soils	Revise Aspirational Metric: Development on highly permeable soils is avoided following TRCA and CVC Low Impact Development Stormwater Management Planningand Design Guide.(2 POINTS) ~~For all areas to be revegetated, restore soils disturbed by previous development and soils disturbed during construction,including restoring micro-topography variation.(2 POINTS)~~ In addition to implementing the	Site, Block and Draft Metrics

		recommendations of the Topsoil Fertility Test, a minimum topsoil depth of 200m is provided across the entire site.(2 POINTS)	
5	General	Overall structure Decided to separate Private and public sector metrics. Developers will only be evaluated based on private sector score.	Site, Block and Draft Metrics

April 22, 2013 – Revisions from Municipal Working Sessions

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	General	Delete Building Metrics. Considered too specific	
2	Persons and Job per hectare	Delete Aspirational target. Mandatory target reworked to include reference to OP. Only applies to Greenfields	Block and Draft Plan
3	Location Efficiency	Revise Recommended Minimum metric to reference existing or planned transit corridors. Only applies to Greenfields	Block and Draft Plan
4	Proximity to Schools	Revised Minimum and Aspirational metrics to include public/private/montessori schools.	Site, Block and Draft Metrics
5	Parks	Decided that park metrics weren't working. Park metrics should be collapsed into an accessibility metric	Site, Block and Draft Metrics
6	Proximity to Amenities	Language revision. "Principle Amenities" changed to "Basic Amenities" and "Basic Amenities" changed to "Lifestyle Amenities". Metric only applies to Greenfields and Intensification	Site, Block and Draft Plan
7	Jobs/Resident	Delete Metric	Site Plan
8	Materials Management	Delete material management metrics (i.e. recycled / reclaimed materials)	Block and Draft Plan
9	Soils and Topography	Revise metric title to "Soils Quantify and Quality"	Site, Block and Draft Plan

November 8, 2012 - Revisions from Municipal Workshop #2

(highlighted cells are proposed metrics that are still under review but haven't been included in the list of draft sustainable performance metrics)

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	Stormwater Quantity	Revise metric • Mandatory target: 5mm event • Minimum target: 15mm event • Aspirational target: 25mm event (to be confirmed/informed by TRCA)	Community and Site Metric
2	Stormwater Temperature	Add metric • To be informed by TRCA	Community and Site Metrics
3	Energy efficiency	Revise metric • Mandatory target: 25% better than MNECB • Minimum target: 35% better than MNECB • Aspirational target: 45% better Additional points awarded up to 75% energy savings	Site/Building metrics
4	Grey water re-use	Add metric • Minimum: grey water readiness (same as rainwater readiness metric) • Aspirational: Grey water re-used on site for low grade functions (toilet flushing, irrigation)	Site/Building Metrics
5	Walkability	• Aspirational: provide pedestrian amenities to further encourage walkable streets. "Pedestrian amenities" include: shelter from rain, wind breaks, shade, seating, etc...	Community and Site Metrics
6	Parking	Add metric • Aspirational (CRI only) Paid parking is included for commercial, retail,	Site/Building metrics

		institutional parking lots	
7	Speed control	Revise metric • Remove reference to speed bumps • Include " use good road design strategies to reduce vehicular speeds. Supplemental measures can also include the traffic calming strategies listed"	Community and Site metrics
8	Cycling Infrastructure	Add metric • Minimum: Adopt dedicated bike lanes on streets with high traffic volume and speeds greater than 40km/hr • Aspirational: Adopt dedicated and protected bike lanes on streets with high traffic volumes and speeds that exceed 40km/hr. Protected bike lane strategies include: Buffered lanes and floating parking (recommended by Portland 2030 bicycle plan, adopted in NYC), bollards or posts (used in Montreal), extruded curbs, raised lanes (preferred in Germany), etc...	Community and Site metrics
9	Speed Control	Renamed metric to traffic calming	Community and Site metrics
10	% Tree canopy	Tree growth extended from 5 years to 10 – based on LEED ND precedent	Community and Site metrics
11	Stormwater re-use	Deleted	Community metrics
12	Existing Building Re-use	Expanded minimum target. Revised thresholds to 5%/10% (min) and 10%/15% Aspirational	Community and Site metrics
13	Passive solar aligment	Revised language	Community metrics
14	Intersection density	Revised targets based on municipal direction	Community metrics
15	Heat Island	Added aspirational metric 90% and 75%	Site metrics
16	Road Design Standard	Add metric: (Min) Municipality to carry out a Municipal Road Design Standard review to identify any potential sustainability opportunities	Community and Site Metrics
17	Public Transit Accessibility	Add metric: (Min) Municipality to carry out a Public	Community and Site metrics

		Transit Study to identify potential integration of public transit opportunities within the site	
18	School Accessibility	Add metric: (Min) Municipality to carry out a School Accessibility Study identify the potential opportunities to improve access to schools and synergies with active and public transit.	Community and Site metrics

Oct 26, 2012 - Revisions from Municipal feedback

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	Compact Development	• Removed reference to FSI • Revised to reflect Municipal OP	Community and Site Metric
2	Location Efficiency	Minimum target revised to: Greenfield Applications: • 2x the average density along transit corridors (within 200m from transit) All other Applications: • Height and/or density conforms to the minimum or maximum targets established in the applicable Municipal Official Plan	Community Metrics
3	Proximity to amenities	Added site specific metric • (Minimum) If the amenities are not within the distance specified above and the site is designated as mix use, the mix of population and employment uses achieves 2:1 ratio on the site (Aspirational) If the amenities are not within the distance specified above and the site is designated as mix use, the mix of population and employment uses includes major office space, an anchor commercial/retail tenant or a minimum of 3 stories of employment uses.	Site Metrics
4	Soil Quality	Revised metric • Provide a minimum soil volume of 30m3 per tree. The soil volumes should be based on a minimum soil depth of 0.8m and a maximum of 1.2m of high quality soil above a well drained sub soil or drainage layer. Ensure that groups of trees planted in hardscape can share soil volume, for	Site Metrics

		example, through the use of continuous soil planters. The use of soil cells is also encouraged	
5	Proximity to natural green space	Minimum target revised. Aspirational metric maintained. • Visual connections (such as public access blocks, single loaded roads) are provided to the natural heritage system and parks.	Site Metrics
6	Bicycle Parking	Revised Metric • Removed additional visitor parking requirements and provide a minimum of 5%/10 of bike parking at grade for visitors (MURBs) • Added reference to shower for CRI	Site Metrics
7	Parking Allocation	Removed prescriptive parking allocation. Replaced with % of total area	Site Metrics
8	Parking Designation	• Revised metric to include minimum # of spots and compact cars are exempt from target	Site Metrics
9	Safe routes to schools	Deleted metric	Community and Site Metrics
10	Proximity to natural green space	Minimum target revised. Aspirational metric maintained. • Visual connections (such as public access blocks, single loaded roads) are provided to the natural heritage system and parks.	Site Metrics
11	Connectivity	Revised Metric Minimum: Connect buildings on the site to off-site pedestrian paths, surface transit stops, parking areas (car and bike) or other destinations (schools) Aspirational: Provide amenities and street furniture (benches, additional bike parking, landscaping) along connections provided on the site and between the site and adjacent destinations	Site Metrics

12	Stormwater Quantity	Revised based on municipal feedback. 5mm and 15mm retention	Site Metrics
13	Stormwater Quality	Metric revised 80%/100% of Total Suspended Solids (TSS) removed from a 25mm rainfall event. Strategies should include low impact development measures such as: Stormwater ponds, oil-grit separators, bioswales, filters, treatment train approach, etc...	Site Metrics
14	Rainwater Re-use	Does not apply to single family homes	Site Metrics
15	Stormwater Features	Target moved to minimum	Site Metrics
16	Existing building reuse	Added metric At least 5% reused content in building materials and landscaping materials (hardscaping such as paving or walkways) is provided. At least 15% recycled content in building materials and landscaping materials (hardscaping such as paving or walkways).	Site Metrics
17	Solid Waste	Minimum target added. Storage and collection areas for recycling and organic waste are within or attached to the building. Aspirational target under review	Site Metrics
18	Shade/Comfort	Revised indicator to Tree Planting/reservation	Site Metrics

19	Maintain healthy trees	Added metric (Minimum) Arborist Report provided that identifies and evaluates where on-site healthy mature trees will be protected or removed. Where healthy mature trees must be removed, new trees are provided on site to compensate for the lost canopy coverage of the trees removed (Aspirational) Healthy mature trees greater than 20 cm. DBH preserved in situ on site. Smaller healthy trees (less than 20 cm. DBH) transplanted.	Site Metrics
20	Bird friendly	Revised minimum target Treat glass with a density pattern between 10-28cm for the first 12m of the building above grade. Where a greenroof is constructed with adjacent glass surfaces, ensure the glass is treated 12m above greenroof surface Bird friendly design strategies include: window fritt, films, decals, grills, louvers, internal screens, awnings, overhangs, artwork, etc	Site Metrics
21	Reduced Parking Footprint	Removed reference to parking spot allocation. Replaced with: (Minimum) Use no more than 20% of the total development area for all new off-street surface parking facilities, with no surface parking lot greater than 2 acres (Aspirational) Locate all new off-street surface parking at the site or rear of buildings	Site Metrics

Oct 12, 2012 – Revisions from TAT Conference call

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	Building Certification	• Deleted minimum target as it can't be required at site plan approval. • Aspiration target maintained	Site Metrics
2	Exposure to Second Hand Smoke	• Moved minimum target to aspirational (as it can't be required at site plan approval)	Site Metrics
3	Parks	• Removed reference to "Public" Parks as the indicator should be applied to accessible parks. • "Accessible" definition to be included in Glossary • "10-15 min" reference revised to "800m to 1200m"	Community and Site Metrics
4	Rainwater Re-use	• "Grey water" reference deleted in minimum target	Community and Site Metrics
5	Stormwater Amenities	• Indicator name created confusion. Changed to Stormwater Architecture/Features	Site Metrics
6	Bird Friendly Design	• Removed City of Toronto reference. Bird Friendly Design Guidelines to be defined in the Glossary	Site Metrics

Metrics to be added:

- Stormwater Temperature – Aspirational Target. **TRCA** to inform target.
- Maintain/Preserve Healthy & Mature Trees – Minimum Target. **Halsall and Michelle** to inform target.

Metrics to be revised / expanded with Input from Team:

Community and Site Metrics

- Compact Development – FSI may not be the appropriate metric to inform density. **Michelle** to review with Richmond Hill team.
- Proximity to Natural Green Space – **Michelle** to gather additional feedback as metric benefit/applicability was questioned during the workshop.
- Parking Allocation – **Municipal teams** to circulate parking metrics/targets and ensure appropriateness for each development type
- Exposure to Second Hand Smoke – **Tony** to discuss corridor pressurization requirements under current building code
- Safe routes to schools – **Tony** to review and reevaluate metric/targets
- Cultural/Heritage – **Mike** to circulate metrics with appropriate Brampton staff to help inform metrics/targets
- Site Permeability – **Halsall/TPP** to inform appropriate targets (reference LEED/best practices)
- Walkability – Expand metrics to include pedestrian buffers, etc... (LEED ND references). **TPP** to inform
- Stormwater Quality & Quantity – **Tony** to gain feedback from TRCA. Needs to consider the various soil types/capacities
- Energy Efficiency – **Tony** to follow up with building official. What, if anything, can we advocate for the minimum energy performance?
- Solid Waste – Designate area for waste stream separation (Multi-use residential and Commercial). **Halsall** to inform.

Community Specific Metrics

- Intersection Density – **Halsall** to reference Neptus figures
- Restore and Enhance Soils – **Halsall** to include details within targets
- Enhance Biodiversity – **Tony** to help define "Enhance" and minimum/aspirational targets
- Site dedicated to Parking/car infrastructure – **Halsall/TPP** to inform (based on Emmerald Hills metrics)

October 9, 2012 – Revisions from Municipal Workshop #1

Log#	Metric	Revisions / Additions / Deletions	Changes applied to:
1	Proximity to Amenities	• Amenities split between basic and principal. • Amenity provided for both categories. • Principal amenities will carry a higher point allocation	Community and Site Metrics

2	Building Certification	• % of buildings (no longer number of buildings) • Minimum target – designed to green standard • Aspirational target – certified to green standard	Site Metrics
3	Universal Design	• "or equivalent" added for Universal Design standard • ANSI A117 Standard to be defined in Glossary • Aspirational target – increased to 30% (previous version, aspirational and minimum target were equal)	Site Metrics
4	Universal Design – Access	• "emergency exits" added to minimum target • Aspirational target – 100% of all entries/exits	Site Metrics
5	Housing Unit Mix	• Metric revised to include all housing mixes • Points will be allocated depending on % and diversity of housing mix (point allocation TBD)	Community and Site Metrics
6	% Tree Canopy	• Minimum and Aspirational target increased from 20% and 40% to 50% and 75% • Time period of 5 years added • Drought tolerant and native added	Community and Site Metrics
7	Soil Quality	• Metric added. Precedent based on LEED ND	Site Metrics
8	Pesticide Use	• Removed metric. Considered a maintenance requirement, not related to design	Site Metrics

9	Speed Control	• Removed reference to speed limit • Replaced with traffic calming strategies • Traffic calming strategies defined in Glossary	Community and Site Metrics
10	School Proximity to Transit and bikeways	• Metric added • Minimum and Aspirational target set based on workshop #1 feedback	Community and Site Metrics
11	Safe Routes to Schools	• Metric added	Community and Site Metrics
12	Parks	• Relabeled as "Public Parks" • Distance changed to 400m walk (from 5min walk) • Parkette distance reduced to 200m • "Open Space" added to Urban Square	Community and Site Metrics
13	Stormwater	• Metrics simplified to focus on: Quality, Quantity, Re-Use, Amenities (site metrics only) • Precedents based on TGS TIER II	Community and Site Metrics
14	Local Food Production Dedicate Land	• Garden space moved to Minimum target • Aspirational target – Dedicate rooftop space for food production (Site metrics only) •	Community and Site Metrics
15	Local Food Distribution	• "Non-Permanent" added • "Designate land" added	Community and Site Metrics
16	Solar Readiness	• "100% of all" added	Site Metrics
17	District Energy	• "Consider connecting to a district energy system (if applicable") added	Site Metrics
18	Fixture Efficiency	• Relabeled to "Water Conserving Fixtures"	Site Metrics
19	Land Use Separation	• Removed	Community and Site Metrics
20	Efficient Lighting Fixtures	• Relabeled "Energy Conserving Lighting"	Site Metrics

Additional Site Metrics that were requested but haven't been included:

- Preserve / Enhance Wildlife Habitat
- Preserve / Enhance Wildlife Corridors
- Mental Health Amenities
- Design buildings to reflect community character
- Connection/Integration with existing land use/community
- Maintain existing healthy trees
- Bike paths leading to destination

Additional Community Metrics that were requested but haven't been included:

- Embodied Energy

Metrics that require further work/expansion

- Walkability
    - Intersection safety
    - Buffer between pedestrians and vehicles
- Cultural / Heritage Site
- Proximity to Green Space

Measuring Sustainability Performance of New Development

Sustainability Guidelines and Sustainability Performance Metrics

Summary of the Consultations with Clean Air Council Members and Clean Air Partnership Review

Report Prepared for the City of Brampton, Town of Richmond Hill and City of Vaughan

July 2013

Clean Air Council Green Development Background

The Greater Toronto Area (GTA) Clean Air Council (CAC) promotes the reduction of air pollution and greenhouse gas emissions and increased awareness of regional air quality and climate change issues through the collective efforts of all levels of government. The Council identifies and promotes effective initiatives to reduce the occurrence of air pollution and greenhouse gas emissions in the GTA and their associated health risks. The Clean Air Council works on the very simple premise that if one jurisdiction undertakes a clean air/climate change action that it makes sense to share their experience and lessons learned with other jurisdictions. In this way it helps to promote and raise the bar for the implementation of actions that will lead us to lower carbon and more healthy, livable and competitive communities.

There are many benefits to a collaborative approach to addressing air quality and climate change issues. Having multiple jurisdictions at the same table enhances networking and the exchange of resources and information. It ensures that no one group is working in isolation and that efforts are not unnecessarily duplicated. Inter-governmental and inter-regional cooperation also provides an opportunity to leverage scarce resources for research, outreach and other air quality improvement initiatives. Bringing together multiple staff from different departments and municipalities across the airshed also helps break down silos that may exist within and amongst municipalities, and increases cooperation on air quality and climate change issues.

The work plan for the Clean Air Council is determined by each member identifying their highest priority clean air and climate change actions; and where there is general commonality on priorities across the region, those actions are identified for collaboration via the Inter-governmental Declaration on Clean Air and Climate Change.

Corporate and Community Green Development Standards have been consistently identified as a high priority area. In order to facilitate collaboration and information exchange the Clean Air Partnership, as secretariat for the Clean Air Council, undertook a Green Development Scan documenting the various green development incentives, checklists and standards across the region; and coordinated a Green Development Community of Practice to increase sharing of experiences, lessons learned and collaboration on next steps. Through the Community of Practice, representatives identified the setting of green development standards and increasing greater consistency in standards across the region as a priority area of focus. Not only would this simplify the process for municipalities, but it would also serve to address developer's requests for simplification and consistency. In addition, greater consistency across the region would be much more effective at developing and fostering the green development market.

The collaboration between the City of Brampton, City of Vaughan and Town of Richmond Hill is an excellent example of how this goal of regional consistency can move forward. The Clean Air Partnership applauds the efforts of the above jurisdictions in moving towards the goal of increasing the construction of green developments and testing greater regional consistency in order to increase developer uptake and green construction market transformation.

Clean Air Partnership and Clean Air Council Activities in the Measuring Sustainability Performance of New Developments Project

Below is a summary of the activities undertaken by the Clean Air Partnership to provide input on metrics development and facilitate the Clean Air Council peer review of the Sustainability Guidelines and Sustainability Performance Metrics and discuss possible options for implementation.

The Clean Air Partnership attended a number of meetings with the Measuring Sustainable Performance of New Developments Project Team, participated in the municipal consultations undertaken by Vaughan, Brampton and Richmond Hill and provided input into metric development.

Following the development of the draft sustainability metrics, Measuring Sustainability Performance of New Developments Project municipal staff presented on the project and the metrics to Clean Air Council members in January of 2013 and again in April 2013.

Below is a summary of the Clean Air Council feedback and discussions:

- There are a number of municipalities that have developed green development incentives (usually in the form of development fee rebates), but the uptake from developers has not been significant.
- The incentive that has been found to increase interest and uptake of green development measures from developers has been the prioritization of application reviews.
- There has been significant interest expressed on the part of developers to have greater consistency on green development standards across the region.
- There are significant benefits to ensuring the consistency of information requested of developers by municipalities in the development application process and the dynamic tool being developed by this project may be able to simplify the application for developers and the review of the applications by municipal planning staff.
- It was recognized that there is a rationale for green development policies to begin at a voluntary level in order to build support and buy in from the development community. However, in order to see significant market transformation, mandatory green development standards are likely required. Incentives can be used to encourage developers to meet a specified higher green development level and prioritization of application review was recognized as an effective incentive.
- The need for flexibility in order to reach the green development levels was highlighted and that the focus should be on achieving goals as opposed to any specific technology. It is the outcome that is important, not necessarily how the outcome is achieved.
- While a municipality is limited in requiring developers to achieve greater building energy performance than those set out in the Ontario Building Code requirement, the

municipality does however have significant opportunities to set standards for site planning features around the building site that would require the incorporation of green development to a set standard that could achieve sustainability priorities.

- There was some discussion on the possible challenges to providing preferential treatment for certain development applications over others. The discussion centered on the recognition that the preferential treatment is available to all applications and all that is required is for an application to meet a certain green development standard. This opportunity is available to all applications. In addition, all applications are required to be reviewed within a set time frame, and as such, applications that do not meet the green development standard set for priority review are not penalized as the required time frame is being adhered to.
- It was noted that additional staff would likely be required to practically implement the incentive of expedited development application review.
- It is very important that the information developers are required to provide (application forms, support tools, etc) in order to determine their green development level be made available to them well in advance of the application submission.
- From the experiences of other jurisdictions that have instituted green development policies/standards, it is essential that all planning staff are trained on the various metrics and their rationale, so that they are able to communicate these metrics to development applicants. This training has been effective in increasing the number and quality of green development applications.
- Other CAC jurisdictions are keenly interested in the Richmond Hill, Brampton and Vaughan green development process and its associated outcomes and results. The approval of a consistent set of Green Development metrics and standards across these three jurisdictions will increase the likelihood of the transfer of those metrics and standards to other jurisdictions.

Green Development Best Practices

Based on the above consultations and research undertaken by CAP on the lessons learned and best practices from other jurisdictions' implementation of green development standards, CAP would like to provide the Measuring Sustainability Performance of New Developments Project Team with the following suggested best practices:

- Green development standards serve as an effective mechanism to achieve municipal sustainability priorities and the implementation of a variety of environmental, liveability and sustainability goals identified in various municipal official, strategic, sustainability and/or clean air climate change plans.
- Monitoring and reporting of the implementation and effectiveness of green development standards is a key component of any green development program and is instrumental in ensuring a feedback loop that will enable increased effectiveness of the green development standards to be achieved over time.

- A voluntary period for a green development standard is common in order to ensure appropriate time for the development community to become familiar with the expectations and submission requirements. Most effective green development standards, however, move into a mandatory level and then provide the opportunity for an additional level of green development via the provision of an incentive often in the form of development fee rebates or application review prioritization. Green development policies that remain voluntary are often unable to achieve significant developer uptake.
- Training of municipal staff on green development standards is instrumental in ensuring effective communication of the standards to developers. In addition, early communication with development applicants was a key factor in ensuring the likelihood of additional green development features being incorporated into development applications.
- Periodic reviews of the green development standard and stakeholder consultations is invaluable in refining the standard, identifying new market opportunities, documenting lessons learned and achieving greater buy-in and market transformation.
- A municipal inter-departmental green development team made up from a variety of municipal departments is an effective mechanism to ensure the inclusion of identified municipal sustainability drivers into the green development standard. Ongoing reviews of the standard from the inter-departmental team can ensure a more comprehensive identification of emerging sustainability drivers and green development market opportunities.
- Municipal green development standards can serve an effective role in fostering and encouraging green economic opportunities. Municipal economic development departments should be part of the green development inter-departmental team in order to identify opportunities to achieve synergies between green policies and economic development opportunities.
- A green development standard combined with a voluntary green development level can serve as an effective way to move the market in a way that ensures a level playing field, while still providing a mechanism to foster green competition. Developers that have already started to develop green measures expressed interest in being rewarded for their actions and want opportunities to maintain their competitive advantage. The combination of a mandatory standard and an additional higher voluntary level enables the standard to be set at a level that is high enough to push the development industry to improve, while allowing for green competition between developers; as this is what often spurs innovation and continuing improvement in sustainability performance.

Next Steps

While there is an excellent opportunity for municipalities to influence the inclusion of green features into new developments via the development reviews and approvals process, there is also the need to address the green development needs of the retrofit market (by far the vast majority of the building stock in the region). With the recent changes to the Ontario Municipal

Act allowing for local improvement charges (LIC) to be applied to energy efficiency upgrades on private properties, there is now a structure in place that enables municipalities in Ontario to develop community energy efficiency retrofit programs. CAP is working with the Clean Air Council and other Ontario municipalities via the Collaboration on Home Energy Efficiency Retrofits in Ontario (CHEERIO). The overall goal of this project is to collaboratively design a high-quality, multi-municipality pilot that will: a) assess the effectiveness of the LIC financing powers in accelerating deep residential energy retrofits; and b) provide insights and guidance regarding full-scale implementation. The priority focus will be on the residential sector in Ontario, both single-family and multi-unit.

Regional consistency in green development standards is a goal that any region should set for itself. Each municipality in a region should be aware of the standards that are in place within their region, and should identify opportunities to find a balance between alignment and consistency across the region, while ensuring local sustainability drivers are prioritized. As such, CAP would like to congratulate the City of Vaughan, City of Brampton and the Town of Richmond Hill on their efforts towards this goal. CAP commends the effort these jurisdictions are dedicating to reaching out to other regional jurisdictions and sharing their resources, expertise and lessons learned.

The members of the Clean Air Council have indicated that they would like to set up consultations with a number of departments within their jurisdictions and with other municipalities across the region to gather input on the metrics and their transferability across the region. CAP will be coordinating these consultations between September and November 2013.

CAP is pleased to be working with these jurisdictions towards the goal of ensuring greater uptake of green development metrics across the Greater Toronto, Hamilton and Southwestern Ontario area. The ability to transform the market and develop a green development economic base in the region will be greatly enhanced by the regional expansion of green development standards. Increased consistency will ensure a level playing field across markets and will also be more effective at moving the market towards green development opportunities and fostering a green development economic base.

Measuring Sustainability Performance of New Development

Sustainability Performance Metrics

Toronto and Region Conservation Authority

Peer Review Report

Prepared for the City of Brampton,

Town of Richmond Hill and City of Vaughan

July 2013

Toronto and Region Conservation Authority (TRCA) – The Living City

The Living City is TRCA's vision for a healthy, attractive, sustainable urban region prospering into the next century. Its foundation is the traditional conservation authority mandate, adapted for the distinct needs of an urbanizing city-region. TRCA agrees with the assertion by the United Nations that the future of the planet will be determined in rapidly expanding city-regions, such as our own Greater Toronto Area (GTA). We believe that the future of our region depends on decisive action now to change unsustainable practices, both individual and corporate, and to find creative new ways of city building and of living in our rapidly growing urban region.

TRCA works from the perspective that natural processes contribute to the physical form of cities and neighbourhoods; and that the development of urban areas influences and affects the health and ecological integrity of natural systems – that cities are part of, not separate from, nature. TRCA's quest for sustainable development, through building The Living City, seeks to reconnect human and natural environment objectives by working in partnership with the community.

The collaboration between the City of Brampton, Town of Richmond Hill and City of Vaughan, to integrate Sustainability Performance Metrics in the development review process, is consistent with TRCA's Living City approach to sustainable development. TRCA's engagement in the project and peer review comments are set within the context of the Living City principles.

TRCA Activities in the Measuring Sustainability Performance of New Developments Project

Below is a summary of the activities undertaken by the TRCA to provide input on metrics development and facilitate the TRCA peer review of the Sustainability Performance Metrics.

The TRCA attended and provided input into metric development at the municipal workshops held on September 25, 2012 and November 7, 2012 led by the Planning Partnership and Halsall Associates as part of the metrics testing and evaluation component of the project. A special half-day working session was organized by TRCA with the municipal partners on January 8, 2013 to review the consulting team's Interim Report in advance of issuing the Draft Comprehensive Report for public comment. TRCA issued comments on January 31, 2013 following the special working session. TRCA subsequently provided comments during the public comment period in May 2013 and to specifically address comments provided by BILD.

TRCA also recognizes that the municipal partners prepared a companion report to forecast energy use to 2031 based on build-out forecasts in the municipal official plans. TRCA welcomes the use of the "Getting to Carbon Neutral" toolkit in preparing the energy use forecast. This toolkit was prepared by the Sustainable Infrastructure Group and is available at http://www.trca.on.ca/dotAsset/81361.pdf.

TRCA Comments – January 31, 2013

TRCA issued the following comments on January 31, 2013. The municipal partners provided the consulting team with an interpretation of the comments below to integrate into the Sustainability Performance Metrics and comments that require further consideration during the implementation of the metrics in the development review process.

- The metrics that are chosen should be applicable at each scale or have surrogates that operate at each scale. There also needs to be an explanation or description of the rationale as to why the metric was chosen, what desirable outcome it relates to, as well as a description of how the metrics (or their surrogates) relate to each other across scales.
- It would be very useful to include examples of the application of the metrics at a variety of scales and how the results are interpreted.
- The metrics presented appear to be at different stages of development and use. It may be worthwhile placing the metrics into groups; those that are well developed and being applied elsewhere (good precedent); those that are relatively new, aren't being widely applied and may need further validation; a third category of metrics that are under development or examination; the fourth category would be more an identification of gaps in the metrics where research is needed to identify and develop an applicable metric.
- It would be useful to have a write up/discussion for each metric or combination of related metrics (one at each scale) that justifies its use , the precedent, what it is meant to measure and why that is important. In addition it should outline the thresholds, the origin and the rationale for each.
- The language around thresholds needs to be clearer. Mandatory needs to be a legislated (regulated or policy) threshold. The term minimum could be substituted with the term Recommended or Recommended Minimum. In implementation you may want to tie this threshold to an incentive. The last threshold should use a term that provides a degree of recognition that the developer could use in marketing, something like platinum, just as an example. This threshold could also be linked to an incentive.
- There was a question of whether FSI is a good measure of compact development at the site plan scale. At the site plan scale it may be more appropriate to look at percent lot coverage metric.
- Natural heritage system needs to be listed as a key amenity where there is proximity metric.
- There needs to be an adaptation of the distances used in the proximity to primary and secondary amenities to make sure they are applicable to our region.
- The Green Building Metric requires more thought. The location of the site plan will have a bearing on the size of the threshold. For example an urban growth centre with only 1 green building would be a failure not an aspirational target. Whereas in a rural setting or an urban setting that is only developing or redeveloping a small site, a single green building (independently certified) should be recognized.
- There are a number of issues with the Tree Planting/Preservation indicator and associated metrics. There needs to be a distinction made between those trees within the developable area versus the natural heritage system. There would need to be a modeling exercise at the site plan

stage to project what the canopy cover would be 10 years after development. We shouldn't be specifying drought tolerant or native but rather trees should be from a pre-approved list. Compensation for lost of existing trees is problematic on site and there would need to be designated sites outside of the development area for this. It may be worthwhile to look at including some form of tree diversity metric for trees within the developable area.

- The Region of York is currently undertaking a project entitled "Innovative and Sustainable Development Approvals Pilot Project ". The project team should contact Tara Clayton (project manager from the Region of York) to ensure coordination of these two initiatives. There is overlap between the two projects related to stormwater management, water efficiency, green buildings, and other sustainability metrics.
- The report mentions mandatory, minimum and aspirational targets to be established. The tables in the appendices do not include the mandatory targets. A separate table of mandatory requirements should be developed. The definition of "minimum" targets is "doing better than you need to". I recommend that the word "minimum" be changed to something different. Minimum implies mandatory and therefore this title is confusing. A number of the targets mentioned in the appendices (summary tables) don't include actual numbers. All targets should include quantitative targets otherwise they should be identified as an objective not a target.
- In reference to the Site Metrics summary table. The Soil Quality metric for the Tree Planting/Preservation indicator should be renamed "Soil Quantity and Quality". The wording for the minimum target should be changed to, "Pits, trenches or planting beds should have a topsoil layer with an organic matter content of 10 to 15 % by dry weight and a pH of 6.0 to 8.0. The topsoil layer should have a minimum depth of 60 cm. The subsoil should have a total uncompacted soil depth of 90 cm. Minimum soil volume of 30 cubic metres per tree."
- In reference to the Stormwater Quantity metric, the 5 mm rainfall runoff criteria should be listed as the mandatory target. TRCA's Stormwater Management Criteria Document, August 2012, should be listed as the precedent document for this criterion. I recommend that the minimum target be set as the 10 mm rainfall runoff criteria. A statement should be added that indicates that "Post to Pre Peak Flow Control for Flood Control is required as per TRCA requirements. See TRCA SWM Criteria Document". As discussed at the workshop on January 8, 2013, the following words should be added to this metric under Minimum Target: "All areas to be landscaped where soil or vegetation has been disturbed should have at least 20 cm of topsoil containing 5 to 15 % organic matter , a total uncompacted soil depth of at least 30 cm and a soil pH of 6.0 to 8.0". The precedent for this criteria is the "Preserving and Restoring Healthy Soils: Best Practices Guide for Urban Construction" document.
- Cultural/Natural Heritage indicator under built environment should be revised to read Cultural Heritage.
- The Proximity to Natural Green Space metric should be related to sight lines to the natural heritage system. The purpose would be to encourage "spurs" of the natural heritage system that extend into the developed area.
- The enhancing biodiversity metric is too narrow. It is a very difficult thing to measure and we need a set of surrogates that together provide a picture of biodiversity. For example, we should

be looking at a point system that would encourage the positioning of parks, stormwater/LID or other compatible land uses next to the natural heritage system. The concept is to use LID, parks and other fingers of green to reduce the matrix impact on the natural heritage system and they act as a transition/continuum from the built environment to the Natural Heritage System. This approach could be part of the aspirational target. In addition, less severing (crossings) of the natural heritage system could also be awarded points. Adding trails to the natural heritage system and the fingers of green and connecting the natural heritage system into the surrounding community could be a metric in the mobility or active transportation section. There may be an opportunity to have a separate meeting of TRCA staff to scope out this type of approach.

- The stormwater facilities should be encouraged to be outside/avoid the natural heritage system and there should be a metric or points system to support this position.
- Water temperature and nutrient loading should be included as part of the stormwater quality metric.
- Rainwater reuse may not need to be done everywhere. This may be more appropriate under an option under stormwater quantity.
- Enhancements to the aquatic system should be identified as a potential enhancement to the Natural Heritage System.
- In terms of urban agriculture there should be some mention of private enterprise utilizing some of the land allocation not just local residents.

TRCA Comments – June 24, 2013

TRCA issued subsequent comments on June 24, 2013 after reviewing the Draft Comprehensive Report made available as an attachment to staff reports brought forward by the municipal partners to their respective Councils. In addition, TRCA was able to address select comments from BILD related to stormwater quantity and quality.

Built Environment

- The Recommended Minimum Target for certified green buildings should be increased. The current target of one or more certified green buildings for the site level might be appropriate for a small in fill development but not for anything larger. This target should be revised to more of a percentage of the development such as is done with the aspirational target. Twenty-five percent or 50% as the recommended minimum would be more appropriate.
- Life cycle housing should include adaptive housing that is renovation ready for accommodation of aging in place and multi-generations.
- Inclusion of charging stations for electric vehicles under the parking indicator could facilitate deployment of charging infrastructure

Mobility

- The aspirational target for walkability might be better as a recommended minimum target.

Natural Environment and Open Space

- The stormwater metrics need to include a statement under mandatory target indicating that these are minimum requirements when a higher level is required under other legislation such as for the Oak Ridges Moraine.

Infrastructure and Buildings

- Aspirational target for water conservation may be too low given that water conservation toilets, faucets and showerheads readily available on the market have 50% less water use than the mandatory maximum flow rates indicated in the chart.

Comments/Questions from BILD and TRCA Response

Stormwater Quantity

BILD: Please provide rationale and supporting information from MNR/MOE with respect to TRCA direction. **TRCA**: We have been working with MOE on developing our criteria and MOE should be releasing a position paper on LID soon.

BILD: The metric should state that the runoff retention criteria can only be shown at a conceptual level at the Block Plan and Draft Plan stages, as it applies more to the Site Plan stage. **TRCA**: We will flag to the project team that the metric applies to several scales and is conceptual at the Secondary and Block Plans and detailed at the Site Plan scale.

BILD: The Mandatory Target should state "Retain runoff volume from the 5mm rainfall event, where feasible" this target should also only apply to site works, not community wide, including road works. **TRCA**: The LID Guide chapter 2 provides reference to related guidance documents for dealing with this type of issue as such, using the term where feasible is not necessary in this report.

BILD: The minimum target should be the 5mm event (which is not currently mandatory across all municipalities and CAs), with aspirational targets being 10-15mm. **TRCA**: The mandatory target is 5mm as developed in conjunction with all municipalities across TRCA and CVC service areas.

BILD: The municipalities will need to incorporate new standards that allow increased topsoil depths and non-standard ROWs that allow for LIDs to achieve the targets. **TRCA**: This would be an implementation item that the project team/individual municipality would need to address.

BILD: The quantity or flood control should be provided "in accordance with applicable municipal and conservation requirements". **TRCA**: We will recommend that the project team modify the text to indicate "Conservation Authority" where the text currently says TRCA.

BILD: The runoff retained on-site should count towards the required quantity or flood control, and therefore the SWM pond sizes and conveyance system sizes should be reduced in size accordingly. **TRCA**: This is an implementation item that will have to be worked out with each municipality as there currently is not one common approach taken.

BILD: Credit quantity must be given when LIDs are implemented, even on private property. **TRCA**: This is an implementation item that will have to be worked out with each municipality as there currently is not one common approach taken.

BILD: How are existing LID requirements or policies being considered as part of this program? **TRCA**: This document is setting indicators, metrics and quantified targets that will then be used to inform implementation in each municipality. Differences in existing LID policies between municipalities would need to be addressed through the implementation process.

BILD: Have the municipalities discussed the opportunity to implement SWM/LID facilities on public lands where the uses can be shared (i.e. parkland)? **TRCA**: Yes, we understand that municipalities are examining the opportunity for multi-use facilities.

Stormwater Quality

BILD: Please provide rationale and supporting information from MNR/MOE with respect to TRCA direction. **TRCA**: We have been working with MOE on developing our criteria.

BILD: The Mandatory Targets for Stormwater Quality are those set out in the MOE SWM Planning and Design Manual and do not necessarily require 80% TSS removal. Infill sites are not required to provide 80% TSS removal if discharging to an existing storm sewer, ditch or low quality stream. **TRCA**: In TRCA and CVC's jurisdiction, Level 1 water quality is required for all sites including infill sites. This criteria was developed in consultation with the MOE.

BILD: 80% TSS removal should be a minimum target with at least 1 point awarded to it. **TRCA**: 80% TSS removal is a mandatory requirement and thus does not warrant points under the current structure of the Sustainability Metrics project.

BILD: If stormwater quality strategies are to include a treatment train approach, then the end-of-pipe facility should not have to also provide 80% TSS removal. For example, if stormwater is conveyed to a SWM pond through swales then 40% TSS is removed in the swales, then the end-of-pipe facility only needs to remove approximately 66.667% TSS from the incoming flows to achieve 80% TSS removal from all runoff. Please remove the statement "All ponds will be designed with Enhanced Level of Protection (Level 1)". **TRCA**: TRCA and CVC are currently working with MOE to develop a methodology to give credit for LID towards end of pipe facilities.

MEMORANDUM

To: Tony Iacobelli, Senior Environmental Planner, Policy Planning, City of Vaughan
Rob Bayley, Manager or Urban Design, Development Planning, City of Vaughan
Paul Freeman, Manager (Policy), Planning & Regulatory Services, Town of Richmond Hill
Michelle Dobbie, Sr. Planner (Policy), Planning & Regulatory Services Department, Town of Richmond Hill
Michael Hoy, Environmental Policy Planner, Planning Design and Development Department, City of Brampton

From: BILD Peel & York Chapter Working Group

Subject: BILD Comments regarding *Measuring Sustainability Performance of New Development – Richmond Hill, Vaughan and Brampton*

Date: June 3, 2013

Introduction:

The Building Industry and Land Development Association (BILD) would like to thank staff for taking the time to meet with the Peel and York Chapters on April 25th, and for meeting with BILD's related working group on May 27th.

As a result of feedback received through these channels, we offer the following preliminary comments regarding the *Measuring Sustainability Performance of New Development – Richmond Hill, Vaughan and Brampton* document package and once again thank you for the opportunity to be engaged on this initiative. We look forward to further opportunity to help you refine these targets.

BILD remains committed to promoting sustainable communities and environmentally conscious development. In fact, a number of industry-accepted programs have been or are being developed for the purpose of improving access for builders and developers to sustainable building-practice initiatives. We value the opportunity to be part of these conversations where our industry experiences can be used to help determine best-practices and find value-added opportunities that work well in principle and in practice in the areas of sustainable planning, development and building.

That being said, the *Ontario Building Code Act* is legislation that has been carefully designed for the purpose of providing a clear set of uniform construction requirements to home builders in Ontario, and BILD continues to support the view that any proposed recommendations above *The Act* be brought forward under the principle of ***voluntary participation***.

Moreover, it is notable that the Building Code was amended in January 2012 to require that construction meet greater energy efficiency and green development standards and *The Planning Act* was similarly amended to support and optimize energy efficiency and sustainable design. The time to teach each other about this fluid landscape is now; the time for regulation is not.

BILD Green Policy Statement:

Refer to Appendix 1: Green Policy Statement

General Comments and Questions:

When thinking about sustainability, three fundamental pillars must be considered: Environmental, social and economical. These pillars need to be considered equally against municipal goals and objectives in order to achieve optimization around sustainability in a community building context.

Our industry has concerns with how additional staff resources will be dedicated to what is in short, a municipally driven initiative. Costs to implement any proposed metric above and beyond what is required by-law should not result in any cost to the new homebuyer. Again, economics being a pillar of sustainability, we would encourage a full cost-benefit analysis of each metric to determine if the perceived output merits the investment of time and money by the developer/homebuilder/municipality and ultimately the homebuyer.

- **Flexibility:**

Appreciating what we know to be the municipalities' direction with the metrics and BILD's position that participation be voluntary; BILD recommends the municipalities take a more flexible approach to the implementation of the metric qualifiers. If and where items are competing with one another, there should be a process for understanding how they are prioritized and ultimately prescribed.

In addition, an effective program would be one that is less prescriptive in terms of how targets are met, and allows for the proponent to determine how to best deliver on meeting certain targets.

- **Metric Reconciliation:**

All metrics need to be confirmed against mandatory existing design standards of the municipality, TRCA and/or CVC and the respective Regions. Where existing policy overlaps with the proposed metrics, there should not be any need to have this work reviewed under a new separate channel.

In addition, a reorganization of metrics may help bring clarity to the implementation of the document. For example, there are metrics that do not belong as part of any block or draft plan section and similarly there are metrics that do not belong in the building section. **Table 1** identifies other specific concerns related to the metrics.

- **Other Agencies:**

BILD's concerns twofold:

1. Have all the public agencies involved in the development process been made aware of this sustainability program and its metrics? In addition, are they willing to take on some of the responsibility and work with the development industry towards the goal of sustainability?
2. Will all staff involved in the review of applications be trained on how to instruct proponents on the application of metrics and how to evaluate the metrics thereafter?

In BILD's opinion, it is critical that any expectations through a sustainability program be clearly translated across municipal departments, and review be consolidated where possible.

- **Implementation:**

'Implementation Manual' – In order to better understand the quantitative value of the proposed metrics, a comprehensive 'implementation manual' should be created to highlight the analysis needed to proceed in good faith. This manual would describe each metric by highlighting its rationale for importance; identify its impact on approval timelines, the costs associated with implementation and how it contributes to a more sustainable community. Without this information, the metrics and how they will be used cannot be easily implemented. During implementation, each municipality would revisit current regulations and standards in order to identify which alternative standards are required (I.e. have a transitional period where you pilot the program).

BILD would also request to see the group's *'excel dynamic tool'* prior to any final document being approved, to provide comment.

Lastly, the industry requires a final *'score'* expectation for each level of proposed implementation. Without knowing the number for each level, it is difficult for the industry to determine its position on the feasibility of meeting the targets.

Questions at this time include:

- Will achieving a certain score be a condition of Block Plan/Official Plan/Draft Plan approval?
- How will staff review recommended minimums?
- Will staff start requesting them in a similar way to how guidelines are considered?
- How do you deal with Official Plan Amendment applications/Zoning By-law Amendment applications, only?
- Could incentive be provided for any proponent working towards *'aspiration' targets?*

Acknowledging engineering standards may not always be in line with proposed sustainability targets, BILD believes it is then crucial to indentify early-on, which metrics may be most acceptable for a given project. Priority must be given to the standards and not hinder a project when awarding points.
In an attempt to build clarity, BILD requests staff determine a mechanism for bringing the sustainability conversation in line with engineering and planning pre-consultations.

Specific Metric Comments:

Site Plan &Building Metrics (Presented as Table 1):	
Metric	**Comments**
General Comments:	• A general comment would be a suggestion that those who have agreed to address community wide issues, not be penalized if that removes the potential from their site (i.e. parkland, access to NHS). • In addition, points received in the block and draft plan stage, should be carried over to the site plan level.
15) *Carpooling & Efficient Vehicle Parking*	• Should this be 3% of the site parking spots to be dedicated to car pooling **and/or** fuel efficiency hybrid vehicles (right now it states and only)?
16) *Indoor Air Quality*	• We would kindly request that the metric reference standards/requirements rather than another certification program (e.g. LEED).

Block Plan and Draft Plan Metrics (Presented as Table 2):	
Metric	**Comments**
1) FAR – Density of Units	· This should be removed from the block plan and draft plan section, as it is more appropriate at Site Plan. · Change term 'FAR' to 'Density of Units' for the purposes of Block and Draft Plan considerations.
2) People & Jobs /ha	· The 3 municipalities are all working with different municipal & regional OP's. · The OP and ROP should be the only requirement. · All requirements that are aspirational are not applicable.
3) Location efficiency	· Please review and confirm definition of '*transit corridor*' against each municipal OP's. · Transit plans are dynamic and changes based on demographics, population etc. . · Also note that transit is not in the control of the developer or builder. What happens if transit is not provided? Developers can only plan for and build infrastructure capable of providing service. · 200m interval should be reconsidered and the metric scaled to account for density and location and related to the type of transit use
4) Proximity to Principal Amenities	· Some of these items are outside the control of the developer (library/community centres) therefore they should not be used to award points, especially as this metric awards the largest amount of points · Lands can only be planned or uses permitted; market conditions will dictate if things are provided. · List of amenities must be comprehensive or descriptive, rather than a very short exemplary list.
5) Proximity to Basic Amenities	· As noted above.
6) Urban Tree Diversity	· No comment at this time.
7) Maintain Healthy Trees	No comment at this time.
8) Soil Quality	· No comment at this time.
9) Buildings	· This is not a Block Plan issue, and should not be included in this section. It is a site plan issue.
10) Housing Unit mix	· The housing mix that is required is unclear. · Market conditions and location mix determine housing unit mix. · Tenure needs to be reconsidered and described. · Also needs to consider and differentiate between ground related, mid-rise and high-rise areas. · Housing mix is a City wide issue, not a single developer's responsibility, especially with respect to rental housing vs. ownership.
11) Community and Neighbourhood Scale	· Please describe and exemplify how this will be measured and work. Most plans are done this way.

Block Plan and Draft Plan Metrics (Presented as Table 2):	
Metric	**Comments**
12) Bike Parking	· This is a site plan issue and is not needed in the Draft Plan and Block Plan metrics.
13) Off Street Parking	· Should extra points be given for mid-rise uses that provide underground parking? · More of a site issue rather than Block and Draft Plan issue. · For retail it is better to have the off street parking at the front for ease of access. This helps with the market viability of the use. · From a sustainability perspective, shared parking should be included.
14) Surface Parking	· This is a site plan issue. · Once again, the municipalities should be looking at opportunities for shared parking. · From a sustainability perspective, a lot can be achieved in optimizing the requirements around this land use.
15) Carpool	· This is a site plan issue.
16) Natural Green Space	· If no physical access to natural/green space is provided, what is concern about being able to walk there? (i.e. woodlots on Bathurst street that are fenced in) · What if Block has limited green space? How does this point apply? · This is not applicable to all developments, in which case how can a proponent make up for this loss of 'points'?
17) Traffic Calming	· Please confirm what Engineering Departments will permit. · Recognize that in Vaughan sidewalks require wider ROW, promotes speeding and conflicts with other metrics. · The municipalities should advocate for more narrow ROWs.
18) School Proximity	· All streets within 100 m walking distance should have sidewalks on both sides leading to school; but consider that it shouldn't that roads are necessarily widened.
19) Proximity to School.	· School sites can be planned, but what happens if school board chooses not to acquire the land for future school uses. This is out of the developer's control.
20) Cultural Heritage Assessment	· Preservation of building on site should also be permitted and gain points. · Memorialization of local heritage should also be eligible for points. · If buildings are maintained, who owns and what compensation is available for buildings that do not have economic value? · How is the merit of enhanced protection determined?

Block Plan and Draft Plan Metrics (Presented as Table 2):	
Metric	**Comments**
	· It is unclear how much does each site merit protection and heritage?
21) Jobs/Residents	· This number is not realistic. It is typically used as a guideline for across an entire municipality and Region, not a single community/neighbourhood. Please provide rationale and how this can be accomplished. · By this metric, employment areas would fail this test. · In addition, this metric promotes employment land conversion.
22) Block Perimeter	· This metric should be removed from the chart.
23) Intersection Density	· Needs to be done based on net developable area, not gross area. NHS and places streets are not permitted should not skew metric. · Also note that engineering standards may limit ability to accomplish in terms of intersection geometry, access points and separation distances of intersections. · Would intersections per linear meter of road be a better metric? · The number of intersections required is questionable; intersections reduce water filtration, and tree canopy; increases heat island.
24) Transit Supportive	· Metric does not match York Region OP policies. (90% in 500 m and 50% in 200m). · Metric should be written related to providing infrastructure for transit, not the transit route. · As previously noted, the development community has no ability to provide transit.
25) Trail and bike paths	· No Comment.
26) Proximity to Trails	· No comment at this time.
27) Walkable Streets	· Is the City considering adjusting its engineering standards? · Current minimum width for a double sidewalk street in Vaughan for example is 21m. This seems to go against traffic calming and efficient use of land. A more realistic width is 19m.
28) Urban Square 29) Parkette 30) Neighborhood Park 31) Community Park	· These metrics should be based on providing a selection of the items, not providing every item. · As such, all of the park, green and public spaces should be included together. · Not every community will have a community park. · Maybe base points on providing 2 of the 4.
32) Stormwater Quantity	· Please provide rationale and supporting information from MNR/MOE with respect to TRCA direction. · The metric should state that the runoff retention criteria can only be shown at a conceptual level at the Block Plan

Block Plan and Draft Plan Metrics (Presented as Table 2):	
Metric	**Comments**
	and Draft Plan stages, as it applies more to the Site Plan stage. · The Mandatory Target should state "Retain runoff volume from the 5mm rainfall event, where feasible" this target should also only apply to site works, not community wide, including road works. · The minimum target should be the 5mm event (which is not currently mandatory across all municipalities and CAs), with aspirational targets being 10-15mm. · The municipalities will need to incorporate new standards that allow increased topsoil depths and non-standard ROWs that allow for LIDs to achieve the targets. · The quantity or flood control should be provided "in accordance with applicable municipal and conservation requirements". · The runoff retained on-site should count towards the required quantity or flood control, and therefore the SWM pond sizes and conveyance system sizes should be reduced in size accordingly. · Credit quantity must be given when LIDs are implemented, even on private property. · How are existing LID requirements or policies being considered as part of this program? · Have the municipalities discussed the opportunity to implement SWM/LID facilities on public lands where the uses can be shared (i.e. parkland)?
33) Stormwater Quality	· Please provide rationale and supporting information from MNR/MOE with respect to TRCA direction. · The Mandatory Targets for Stormwater Quality are those set out in the MOE SWM Planning and Design Manual and do not necessarily require 80% TSS removal. Infill sites are not required to provide 80% TSS removal if discharging to an existing storm sewer, ditch or low quality stream. · 80% TSS removal should be a minimum target with at least 1 point awarded to it. · If stormwater quality strategies are to include a treatment train approach, then the end-of-pipe facility should not have to also provide 80% TSS removal. For example, if stormwater is conveyed to a SWM pond through swales then 40% TSS is removed in the swales, then the end-of-pipe facility only needs to remove approximately 66.667% TSS from the incoming flows to achieve 80% TSS removal from all runoff. Please remove the statement "All ponds will be designed with

Block Plan and Draft Plan Metrics (Presented as Table 2):	
Metric	**Comments**
	Enhanced Level of Protection (Level 1)".
34) Urban Agriculture	· This is a parkland programming issue, and not a community design issue. · This metric should be removed.
35) Natural Heritage System	· Please describe ecological gain, is it area or is it function? · Municipalities need to clarify this.
36) Soils and Topography	· Please describe why topsoil fertility is an important metric in an urban community. · Base levels to ensure seed germination is understood, but how does this relate to the form of development? · It is understood that Brampton has a topsoil fertility test but Vaughan and Richmond Hill do note. · Please provide support for TRCA direction.
37) Urban Forest	· No comment at this time.
38) Energy Conservation	· Passive Solar. Debatable about what is more beneficial plus alignment maximizes heat gain in summer. Conflicts with street trees.
39) Building Energy Efficiency	· This metric should be removed from the Block Plan/Draft Plan section.
40) District Energy	· How does this apply to new communities of ground related housing? · Metric name should be adjusted to reflect what is being sought. · The municipalities need to define where this is applicable.
41) Potable Water	· This metric should be removed from the Block /Draft Plan section and move to site plan. · Low Impact Design landscaping or rain barrels can be offered as an upgrade/take –up to new homeowners. · Need to consider what the base line is, as this can change over time and is different for each municipality.
42) Reduce Light Pollution	· Please review against engineering standards.
43) Energy Conserving Lighting	· Please review against engineering standards
44) Material Reuse	· Site Plan/Building issue not block plan or draft plan issue.
45) Recycled / Reclaimed	· Confirm engineering standards will permit. · In addition, municipalities often to not want to use recycled materials. This is not a developers and/or builders choice.

Appendix	"D"
SRPRS	13.125
File(s)	D10-P1-SDG

Ministry of Infrastructure

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Ontario

June 28, 2013

Paul Freeman
Manager of Policy
225 East Beaver Creek Road
Richmond Hill, Ontario L4B 3P4

SUBJECT: Places to Grow Implementation Fund – Application Acknowledgement (File No. 2013-PTGIF-06)

Dear Mr. Freeman:

Thank you for applying to the Places to Grow Implementation Fund. This letter acknowledges receipt of your application.

You will be advised of a decision on your application by August 23, 2013.

For further information or inquiries about the status of your application, please contact Deanna Coop at 416-325-1529/1-866-479-9781 or via e-mail at Deanna.Coop@ontario.ca.

Sincerely,

Darryl Soshycki
Manager (A), Partnerships and Consultation
Ontario Growth Secretariat
Ministry of Infrastructure