



Clean Air Council Green Development Standards Workshop



ACKNOWLEDGEMENTS

Design

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About Clean Air Partnership

Clean Air Partnership (CAP) is a charitable environmental organization launched in June, 2000. CAP's mission is to help municipalities become sustainable, resilient, vibrant communities where resources are used efficiently, the air is clean to breathe and greenhouse gas emissions are minimized. We achieve this mission through research, knowledge transfer, and by fostering collaboration among all orders of government, academia, NGOs and a range of additional stakeholders.

INTRODUCTION

A Green Development Standards (GDS) Workshop was held on November 21st, 2018 and included attendees from over 30 Southern Ontario municipalities. Workshop participants were seeking information and updates on:

- progress on the development and implementation of municipal GDS;
- brainstorming related to generating senior staff and council buy-in to GDS;
- strategies used to build support and break down silos across municipal departments;
- lessons learned from GDS implementation;
- next steps for supports and actions that would support the development of GDS and increase the effectiveness of GDS' in place;
- stakeholder engagement efforts with a particular focus on the development community; and
- the value of moving forward in a region-wide collaborative.



HISTORY OF MUNICIPAL GREEN DEVELOPMENT STANDARDS IN ONTARIO

Since the mid-2000s several municipalities have developed green development checklists and/or incentives (usually in the form of development fee rebates) but the uptake of green measures from the development community was not as significant as was hoped for.

In order to address the lack of uptake from the development community, in 2006 East Gwillimbury implemented a mandatory standard that required Energy Star for new homes. In 2007, Vaughan also mandated Energy Star for all new residential homes. In 2008, Toronto implemented their voluntary GDS and in 2010, the Toronto GDS required a mandatory Tier 1 level. The Toronto GDS also included a higher Tier 2 level that was encouraged via a development charge rebate. In 2015, the City of Toronto began work on a Zero Emissions Framework (ZEF) for the update to their GDS, which was then adopted by Toronto City Council and was put into practice in 2018.

Starting in 2008, Vaughan, Richmond Hill and Brampton began to work collaboratively to develop their GDS. They are now in the process of reviewing the implementation of their GDS and identifying opportunities to improve its implementation and uptake of the metrics within. In 2010, the Town of Halton Hills developed their Green Development Evaluation Checklist, then moved from a voluntary approach to a mandatory approach for their GDS. The Town is also undergoing their third revision to their GDS to identify potential improvements. The City of Mississauga has also implemented a voluntary GDS framework that focuses on Low Impact Development (LID) metrics, but has aligned their GDS with their stormwater fee implementation, which was found to increase uptake from the development community.

Some municipalities who do not have a formal structure in place to advance a GDS have noted that there was a perception that Toronto was able to mandate a GDS as a result of the authority allocated to them via the City of Toronto Act. It was clarified at past GDS workshops that the only additional authority Toronto had within the City of Toronto Act that was not available via the Municipal Act was the authority to mandate a Green Roof By-law and that the GDS authority was available to all municipalities and resided in the Planning Act.

During 2016, the Clean Air Council provided feedback to the Ministry of Municipal Affairs asking for clarity on the municipal authority to implement GDS as well as requesting the authority for Green Roofs and other cool roof surfaces to be added into the updates to the Municipal Act. Updates (see below) speaking to the municipal authority on Green Development Standards and Green Roof/Cool Roofs by-laws were added into the 2017 update to the Municipal Act and City of Toronto Act.

Identifying the drivers and barriers of successful GDS policies is difficult for municipalities to do individually. As such Clean Air Council municipalities have been working collaboratively to advance GDS. Some of main issues identified by workshop participants that would be of value to discuss include:

- Policy development mandate
- Securing political leadership and championship
- Effective GDS development and implementation processes
- Monitoring and reporting
- Improving and updating metrics
- Engaging the development community; and
- Aligning GDS with existing municipal plans, policies and programs.

POLICY DEVELOPMENT MANDATE

The Planning Act provides municipal authority for the implementation of GDS through the provision for exterior sustainable design elements as part of Site Plan control (Section 41). In order to implement a GDS however, many municipalities have to undertake an Official Plan (OP) amendment or incorporate GDS language into their OP update. For example the Town of Richmond Hill has added in the below language to their OP.

- “The Town shall develop Sustainable Design Criteria to ensure the sustainable design policies of this Plan are addressed through individual development applications”.
- Policy 3.2.3(2) of RHOP: “The Site Plan Control By-law to be enacted by Council shall provide that for the purposes of ensuring consistency with the requirements of this Plan, high quality exterior design and the incorporation of sustainable design elements, the following matters (among others) shall be subject to the approval of Council: a. Matters relating to exterior design, including without limitation to the character, scale, appearance and design features of buildings and their sustainable design; (Policy 5.14(3) of RHOP)

Recent updates to the Municipal/City of Toronto Act (Bill 68) mentioned above have provided more clarity on the municipal authority to develop GDS including:

- Adding Climate Change as a Provincial Interest: Section 2 of the Planning Act 11. (1)Section 2 of the Planning Act is amended by adding the following clause: ‘The mitigation of greenhouse gas emissions and adaptation to a changing climate’
- Schedule 1: now includes: ‘Economic, social and environmental wellbeing of the municipality, including respecting climate change’.
- Green Standards: Environmental Standards, construction of buildings: authorizes a local municipality to pass a by-law respecting the protection or conservation of the environment that requires buildings to be constructed in accordance with provisions of the building code under the Building Code Act, 1992 that are prescribed under that act, subject to such conditions and limits as may be prescribed under that Act.
- Green Roofs or alternative roof surfaces: Without limiting sections 9, 10 and 11, the power described in subsection (1) includes the power to require the construction of green roofs or alternative roofs surfaces that achieve similar performance to green roofs.
- Municipalities may provide for or participate in long-term energy planning for energy use in the municipality.
- 33. Subsection 270 (1) of the Act adds: ‘The manner in which the municipality will protect and enhance the tree canopy and natural vegetation in the municipality’.

THE CONNECTION BETWEEN GREEN STANDARDS AND ONTARIO BUILDING CODE

Despite the above updates to the Municipal Act/City of Toronto Act, it is still believed that the OBC is the primary requirement for determining what is mandated for building energy requirements. However, it is important to remember that the energy performance/requirements placed on building construction/performance are only one of a number of metrics that are embedded within a GDS. Many of the metrics speak to the site as a whole and is not simply limited to the energy use of the building. It is also important to remember that if a developer voluntarily agrees to metrics above requirements through the application process, they are now secured through the planning process.

For the Toronto Green Standard (TGS) the City has determined that the building exterior is covered under Section 41 of the Planning Act. The TGS includes five categories of performance: air, energy, water, ecology and waste, and 4 tiers of performance as of v3 2018. Design Stage Energy modelling reports are required and reviewed by the city's Environment and Energy division prior to site plan approval. An As-constructed EMR is required for Tier 2 and above projects. Energy Modelling guidelines are found on the TGS web page along with all performance measures and specifications and Development Charge refund program procedures.

The Toronto Green Standard Version 3 sets out a 4-tiered step towards net zero emissions buildings with the goal that the last Tier (net zero emissions buildings) will be mandatory by 2030. At present, Tier 1 performance measures are required. Compliance is reviewed through the planning approval process. Applications pursuing the voluntary Toronto Green Standard Version 3 Development Charge Refund Program must meet the program requirements in addition to Tier 1.

The main goal of Toronto's energy model requirement is to help to inform and educate developers on what would be required and what it would cost to meet the Tier 1 (or higher) standard. There is still a perception that increasing energy efficiency will increase capital costs associated with the building's construction. There is recognition that increased costs at construction will pay for themselves over time, and result in ongoing energy costs savings. However, the hesitancy from developers seems to stem from the highly competitive nature of new building sales whereby any increases in purchase costs will place them at a disadvantage from other developers that have not built to higher energy standards. It was also recognized that in order to meet the greenhouse gas reduction targets set by municipalities, new buildings will need to be moving towards net zero emissions by 2030. It is important to keep in mind that buildings built to the present OBC will likely need to be retrofitted within ten years, costing more to retrofit and achieving poorer results than would have occurred if the building had been designed and built to the higher standard at the time of construction.

The mechanism used by other municipalities that have a GDS in place to address the OBC limitations is to provide a menu of metrics for developers to voluntarily commit to, whereby they have to reach a minimum threshold score in order to proceed through the development application process. This allows the municipality to track which metrics are getting uptake from the development community, better understand the barriers that result in certain metrics not being used, and to evaluate and improve upon metric uptake over time. The metrics that have been selected by developers are secured through the planning approval process.

NEXT STEPS RE: POLICY DEVELOPMENT MANDATE

- Undertake webinars and/or meetings where legal interpretations on municipal GDS authority from municipalities that have a GDS are shared with planning and legal staff from municipalities that do not have a GDS in place.
- Compile legal mandate documents from jurisdictions that have a GDS in place.
- Sharing across building departments across the network was also identified as a future action item.
- Reach out to the Planning Commissioners Network in order to facilitate sharing from Planning Commissioners that have a GDS in place with those who do not.



SECURING POLITICAL LEADERSHIP

Most municipalities with a GDS in place spoke to the significant value senior management and council support plays in securing the mandate and resources needed to implement a GDS. Efforts to share experiences on how support was secured was identified as a priority by workshop participants. It was also recognized that there is power in collectively building that needed support. As such, the following actions were identified for prioritization:

- CAP to develop a Terms of Reference for a Green Development Standard Community of Practice which would outline efforts across the network to advance GDS development and implementation. This would serve as a tool to build awareness of this collective effort and as a mechanism to secure council/senior management support for participation in such a network.
- Municipalities to use the Terms of Reference to inform senior management/council of this effort and gain a mandate to explore the development of a GDS.
- CAP to undertake continual efforts to track and share progress of GDS adoption, implementation and updates.
- Municipalities to inform CAP of any updates from their municipality re: GDS progress /issues or suggestions for actions that would help to build senior management and council support.
- Creation of awareness building case studies/videos of what GDS look like in action: what difference is it making to the building/site.
- More exploration of how to advance a cost benefit analysis that moves from what does it cost to have a GDS to what does it cost the municipality/community to not have a GDS. Existing cost benefit analysis available thus far will be highlighted in the 'Aligning GDS with Existing Municipal Plans, Policies and Programs' section of this report.
- Creation of an infographic/brief on the cost/benefits of GDS using existing research.



EFFECTIVE GDS DEVELOPMENT AND IMPLEMENTATION PROCESSES

Significant discussions occurred at the workshop between participants on the steps and processes that have been undertaken to develop a GDS as well as the processes that are required to implement a GDS.

- Participants noted that it would be particularly helpful to develop a flow chart for development and implementation steps to help guide the transfer of experiences. A toolkit documenting the various steps was also noted as being helpful. CAP will advance this action in 2019.



MONITORING & REPORTING AND IMPROVING & UPDATING METRICS

One of the key learnings from some jurisdictions that have a GDS in place is that implementation considerations and monitoring need to be factored into GDS development. Metric updates are also necessary every 3 – 4 years.

- Exploration and sharing of this action was identified as a priority topic to be shared at an upcoming workshop. The request was made that processes and results at the municipal level related to this action item should be documented and shared.



ENGAGING THE DEVELOPMENT COMMUNITY

Adrian Wang from Tridel joined the workshop to provide a developer's perspective on GDS.

- Most developers do not have an interest in being responsible for collecting on capital loans (that were required to build to a higher energy level) and then are repaid through operational savings over time. This can undermine the customer/ developer relationship. The concept for finding different pots to address the capital and operating divide is necessary, but developers do not want to be the capital debt collector.
- Future Workshop Discussion: Can Local Improvement Charges (LIC) play a role in the new build market?
- The marketplace is a bit more complicated with the different standards. The municipal GDS is the priority for developers as that is a required for planning approvals. LEED is still high on the radar and Energy Star is moving into the high-rise market. There is a challenge with the time lag between when marketing of the building happens and LEED certification is finalized and can be promoted.
- How are customers viewing the green aspects of the building in terms of their importance (in comparison to hardwood floors, countertops, etc)? It is still a small segment of the market that looks at that. Investors don't normally look for those green features. For customers that own their unit, affordability is often the priority. They like green features but do not want to pay for them. The comfort angle may be a better route to achieve this but we are still at the stage where that comfort consideration is a hard sell if it creates additional costs for the customer.
- How is natural gas metered in most condos? It is paid out of the condo fees and therefore there is a split incentive with regards to natural gas savings. Hydro is often separately metered.
- Improving the building envelope will result in savings because good design is always better than poor design and occupant behaviour may stay consistent but the better envelope will not be impacted by occupant design over time.
- A challenge is that many of the benefits of better building envelopes are experiential and people only realize the difference if they have experienced the before and after (cooler temperatures in summer, warmer in winter, less noise coming into units, increased resilience to stay in unit during energy disruptions etc). It is hard to get these on the radar when people are only thinking about getting in the market and meeting mortgage thresholds.
- Ongoing maintenance of energy and green systems are an issue for condos. There is more work needed to ensure ongoing functioning of the building's systems.
- Three bedroom condos are more challenging to sell than one bedroom condos, the per square foot pricing makes three bedrooms quite expensive in comparison to town and row houses.
- Solid waste systems are often well received by condo owners as many of them come from apartment buildings. We tend to stick with bi-sorters over tri sorters because tri sorters can get clogged.
- One of the incentives that would make a difference from the developer's perspective when it comes to district energy systems is allowing for more square footage available for sale in return for higher energy/green features. District energy opens up mechanical space for unit space but right now we can't trade that in for individual space for sale.

- The other area that needs to be factored in when you are looking at GHG reduction metrics, it requires moving from natural gas as a heating source to electricity. There is a price differential between natural gas and electricity in operational costs. This can be mitigated through building envelope improvements (requiring less heat overall) as well as newer heat pumps systems (VRF systems) that are more efficient. However, labour shortages are an issue with heat pump technologies which results in increased costs. Its not that these technologies are new, they are widely used in Europe, but we need to build up our local capacity in this market to increase the business case for these technologies locally. Sourcing triple pane windows is also an issue.
- Is Tridel looking only at Tier 1 of TGS version 3 for the time being? It depends, as the decision isn't only up to Tridel, we have institutional investors and they may or may not choose a higher option. If there are big institutional investors (such as pension plans) there are more opportunities to explore that but it is based on the business case but they are more willing to look at life cycle costs bringing together capital and operating costs.
- For EV spaces in parking spots it is a bit challenging in that determining who do we allocate the 20% of EV chargers to? This requirement hasn't come into play in the OBC for MURB and it remains to be seen if the requirements will be added into the 2019 OBC update. We are exploring different models to see what option is better to meet the EV direction. Is it paying for level 3 spots in communal areas so that we don't have to get chargers at each and every parking spot? What business model is going to work best for the market remains to be seen. Is it level 1 and 2 in parking spots. Or would public level 3 chargers work best? Or a combination of the two?
- Blower door testing across the Tower is still an issue. The units themselves are not an issue – rather for the Tower as a whole. We are unsure how that will work for air tightness testing. Toronto is working for how that requirement will be tested out. How it is handled in Europe may provide some insights.



ALIGNING GDS WITH EXISTING MUNICIPAL PLANS, POLICIES AND PROGRAMS

Workshop participants spoke to the connection between GDS metrics and the various municipal policies and plans that these metrics help advance. As part of the Brampton, Vaughan and Richmond Hill GDS work, a metric rationale document was developed to provide information on the intent of the metric and its connection to the municipal OP and associated Plans. [Richmond Hill's Guidebook and Glossary](#) incorporates that information.

In order to build the case for the development charge rebate for higher levels of the Toronto GDS, Toronto undertook a comprehensive cost benefit analysis in 2008. Mississauga also developed a number of studies to better understand the options related to stormwater management and stormwater fee rationale.

Below are links to the available cost benefits reports available.

- [2008 TGS Cost Benefit Analysis](#)
- [2012 Cost/Benefit Analysis of Proposed Energy Efficiency Requirements for the TGS Version](#)
- [2017 TGS Zero Emissions Building Framework](#)
- [Mississauga Stormwater Financing Reports](#)

The possibility exists to collectively undertake a regional Cost Benefit Analysis. This would likely require securing external funding alongside smaller financial supports from individual municipalities. It would be worthwhile as a start to pull out key numbers from the cost benefit reports available in order to build senior management and council support.

A new tool has been developed called [COMPASS](#) that provides a platform for energy reporting and benchmarking of energy models that are developed. This platform provides a repository of building energy models and a mechanism for benchmarking results and costs of those models over time. The possibility exists to connect the models with actual building performance as the Energy, Water and Waste reporting requirement is advanced in Ontario. CAP will organize a presentation of the tool in early 2019. In addition, incentives through Enbridge's Better Buildings by Design program provide a strong motivator for advancing a requirement that all development applications need to submit an Energy Modelling Report along with their application. The value and applicability of energy modelling report requirement has been identified as a topic for the next GDS workshop.

Aligning higher energy and building performance for new municipal buildings was also identified as an area that requires ongoing work and collaboration across the municipal network. Strategies to address the divide between capital and operating budgets was recognized as a priority in order to increase the likelihood of higher performing municipal buildings being constructed.

Additional linkages that would be good to highlight include (but are not limited to):

- Asset Management
- Urban Forestry
- Stormwater
- Advancing Health Determinants
- Transit Supportive Policies

Another potential future GDS workshop topic is around advancing discussions related to alignment between GDS and third party certifications (LEED, BOMA, Zero Carbon, Passive House, etc.); and using incentives for increasing the uptake of measures.