



MEMBER MOTION

Section 5.4.4(b) of Procedure By-law

Meeting: Committee of the Whole ☐ Council ☒

Meeting Date: Wednesday January 27, 2021

Subject/Title: Permeable Pavement Solutions to address Climate Change, Secondary Suites and Stormwater Management for Driveways, Sidewalks and Parking Lots

Submitted by: Councillor Muench

Whereas, climate change is affecting weather patterns, increasing the frequency and force of rain and flooding, leading to damaging and costly insurance and property damage; and

Whereas, Richmond Hill and its residents have placed a high degree of importance on our natural environment and on being environmentally focused which includes reducing GHG emissions; and

Whereas, the rapid growth of urbanization and densification in our City have led the landscape to become less Permeable due to coverage of buildings and paved surfaces; and

Whereas, the increasing coverage of the landscape and subsequent decrease of natural drainage have led to more runoff entering our streams, rivers and lakes at an increasing rate, causing flooding in communities and roads, erosion of streams, destruction of wildlife / aquatic habitat and a rise in ground temperature; and

Whereas, ageing stormwater infrastructure and the increasing imperviousness of cities all raise enormous challenges for sustainable urban stormwater management; and

Whereas, conventional stormwater management approaches have not been successful in achieving the level of management necessary in maintaining base-flow characteristics in streams, to prevent stream erosion and to avoid degradation of water quality and aquatic habitat, and

Whereas, Ontario Regulation 299/19 regarding additional residential unit dwellings and the effects of Bill 108, which became law in 2019 (as presented to Richmond Hill Council on December 2, 2020), require municipalities to update their official plans and zoning By-laws to permit additional residential units within houses that are single detached, semi-detached,

townhouses, and also, within accessory structures, which inevitably, create a need for wider driveways, additional parking spaces, and tandem parking, which in turn will put increased stormwater burdens on our stormwater infrastructure that does not have the capacity to take this burden on unchecked; and

Whereas, there is an emerging consensus by Conservation authorities and good planning principles that a larger proportion of stormwater should be managed naturally through our ecosystem, or if not possible, via alternatives that mimic the natural functions of pre-development hydrology; and

Whereas, Municipalities and Conservation authorities including the Toronto and Regional Conservation Authority (TRCA) continue to study and actively advocate for alternatives to decrease water runoff into our storm and wastewater infrastructure by utilizing stormwater ponds, reducing Non- Permeable usage of lands, increasing tree canopy, and promoting “greener initiatives” over the past 20 years; and

Whereas, the use and expansion of Stormwater Ponds should be minimized as Stormwater Ponds create safety, liability and health concerns to people and wildlife, and are (breeding areas) magnets for West Nile Virus. Furthermore, Stormwater ponds are costly to land development, hurting housing affordability; and

Whereas, Stormwater costs and subsequent stormwater tax rates continue to climb and have been increasing between 7.5% and 10% per year for the past 10 years; and

Whereas, Richmond Hill residents had significant sewer backflow insurance claims on January 11, 2020 during a storm event that will likely happen again and needs to be addressed; and

Whereas, the Federation of Canadian Municipalities (FCM) has incentives and substantial grants available to encourage Municipalities to utilize Permeable products; and

Whereas, Non Permeable traditional products used on driveways, sidewalks, and parking lots increase the imperviousness of land surfaces, resulting in increased volumes and rates of stormwater runoff, creating costly stormwater infrastructure maintenance and long term infrastructure costs to the City, taxpayer, and future residents; and

Whereas, today, Permeable paving products and systems are cost competitive to NON-Permeable products, and have proven installations for over three decades throughout Europe, Asia, United States, and Canada, with successful installations in Ontario Municipalities including Richmond Hill, Mississauga, Kitchener, Pickering and Toronto, to name a few; and

Whereas, incorporating “Permeable pavers and/or related Permeable systems” will reduce the Heat Island Effect, reducing the ground and Earth’s temperature; and

Whereas, the use of Permeable pavers and systems can help reduce pressure on sewer systems, avoid erosion in yards, prevent lawn chemicals and contaminants from entering rivers and watersheds, and replenish local aquifers; and

Whereas, cities including Richmond Hill require sustainable water management strategies, and have By-laws (84-03) that require the front of properties to be Permeable; and

Whereas, Utilizing Permeable products and systems meets Goal 4 of our Strategic Plan, in accordance with which is the use of “Wise Management of Resources”; and

Whereas, Permeable pavers will save millions of dollars of repair, maintenance and replacement costs to our Stormwater management systems;

Therefore Be It Resolved,

1. That the Commissioner of Planning and Infrastructure be directed to make all efforts to assist in achieving the spirit and intent of the following and initiate any and all amendment processes where necessary to amend Richmond Hill By-laws including 84-03 (if necessary) to include:

1.1 The following definitions (amendments as required) be added to our By-law(s) such as By-law 84-03 and all planning criteria as follows:

1.1.1 “Permeable”

- A suggestion is as follows (See University of Delaware fact sheet for reference - (attachment Item / link 1)
<https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/permeable-impermeable-surfaces/>
- Capable of being permeated,
- Penetrable especially,
- Having pores or openings that permit liquids or gases to pass through a Permeable membrane
- A cloth that liquids can pass right through is an example of something that would be described as Permeable. ... Rainwater sinks through Permeable rock to form an underground reservoir.

1.1.2 “Permeable Paver” (Amendments as required) A product that is Permeable and allows liquids or gases to go through it at a rate above the requirement of the 100 year storm criteria

- Permeable surfaces (also known as porous or pervious surfaces) allow water to percolate into the soil to filter out pollutants and recharge the water table.
- In Contrast, Impermeable / Impervious surfaces are solid surfaces that don't allow water to penetrate, forcing it to run off

- Whereby the 100 year storm is defined as rainfall event that has 98mm within a 24 hour period; and
- The “Permeable product or system” is able to absorb 4 inches of rain in a 24 hour period; and
- The “Permeable product or system” is able to absorb 4mm of rain per square foot; and
- The “Permeable Paver, Product or System” can manage a minimum of “4 inches of rain in a 24 hour period from all side surfaces through infiltration, evapotranspiration, water harvesting and reuse.

Further References (attached and linked)

- Impact Assessment Agency of Canada (attachment / link Item 2)
<https://www.canada.ca/en/impact-assessment-agency.html>
- Flood definition (Attachment / link Item 3)
https://www.ceaa.gc.ca/050/documents_staticpost/54755/96112/09.pdf
- 100 Year storm (attachment Item / link 4)
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/programs/?cid=nrcs142p2_020752
- University of Delaware fact sheet for reference - (attachment Item / link 5)
<https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/PERMEABLE-imPERMEABLE-surfaces/>

1.2 “Permeable System” (Amendments as required) A substance and system that allows liquids or gases to go through it at a rate above the requirement of the Ontario 100 year storm criteria (4 mm per square foot)

1.3 “Stormwater Management” (Amendments as required) A system that aims to reduce runoff of rainwater or melted snow into streets, lawns, and other sites

1.4 “Permeable Paver” and/or “Permeable System” has a minimum 15 year warranty

2. That the Commissioner of Planning and Infrastructure be directed to make all efforts to assist in achieving the spirit and intent of the following and initiate any and all amendment processes where necessary to amend Richmond Hill By-laws including 84-03 (if necessary) to include:

2.1 The City of Richmond Hill; amend By-law 84-03 to permit upon successful application, residential driveways to be retrofitted and be allowed to have surface area driveways greater than 55% of the property as long as the entire driveway

satisfies the “Permeable System as outlined in the Permeable definition in item 1 and meets all qualifications of installation by the warranty provider.

2.2 Note: A letter or engineering stamp with full warranty information and indemnity must be provided by the applicant for the “Permeable System” or by the product Warranty supplier

3. That all new planning applications must have Driveways that utilize “Permeable Paver or systems” with greater consideration to products or systems that have reduced GHG emissions

3.1 Note: An exception will exist for driveways that require gutter systems where Permeable products or Permeable systems may impede drainage and have the potential to create water damage to the property,

4. That the City of Richmond Hill as a priority objective encourages All Sidewalks going forward to use a “Permeable System” and/or pavers as outlined in Item 1, and in compliance that the system will meet or exceed the 100 year stormwater requirements unless deemed unfeasible
5. That the City of Richmond Hill as a priority objective encourages All commercial and industrial Parking Lots going forward to utilize “Stormwater Management” practices and “Permeable System” as outlined in Item 1, and in compliance that the system will meet or exceed the 100 year storm requirements unless deemed unfeasible,
6. That all City departments’ encourage, and support stormwater management best practices of development applications in the Multi-Residential, Non-Residential and Residential Properties.
7. That for development properties that utilize stormwater management, Permeable pavers or systems, a stormwater and wastewater technical credit or where possible, a financial credit, where applicable, be applied when evaluating planning proposals.
8. That the City of Richmond Hill provide a Stormwater Credit Program to offer Multi-Residential and/or Non-Residential Property (commercial and industrial) owners or tenants the opportunity to receive a reduction in their stormwater tax charge for implementing and maintaining stormwater management practices of Permeable pavers or systems on their property consistent or exceeding that offered by the City of Mississauga policy By-law as outlined below

8.1 Example of Mississauga credit program and storm By-Law (item 6 and 7 in attachments)

<https://web.mississauga.ca/wp-content/uploads/2020/03/19160938/09-01-04-Stormwater-Credit-Program-for-Multi-Residential-and-or-Non-Residential-Properties-Policy.pdf>

<https://www.mississauga.ca/wp-content/uploads/2019/05/05150013/Stormwater-Fees-and-Charges-By-law-0295-2020.pdf>

9. That as Commercial and Industrial Landowners may receive a form of Stormwater tax credit, so too must Residential property Owners. The City of Richmond Hill staff are to provide options in a report to Council before December 31, 2021, on how Residential Homeowners who expand their driveways and use a “Permeable System” in existing single detached, semi-detached and townhouses, as well as accessory structures, may benefit from Ontario Regulation 299/19 and Bill 108 and

9.1 Receive a Stormwater tax credit

10. That all development applications are to demonstrate innovative stormwater management measures as part of their application.
11. That for properties that utilize “Permeable Systems” and other stormwater systems beyond driveways, sidewalks, and parking lots, such as roof top terraces, an engineering, planning credit and / or financial credit is to be provided as consideration to the applicant
12. That through the increase of Permeable stormwater management and “Permeable System” usage, all planning applications should be required to provide technical calculations and appropriate credits which should reduce the size and scale of traditional “holding / stormwater ponds” as reductions in holding or stormwater ponds improves public safety, reduces operational costs to the city and assist in housing affordability initiatives by better utilization of land.
13. That a renewed collective organizational effort to reduce GHG and carbon footprint emissions by specifying and requiring Permeable products and systems (this will assist our Richmond Hill’s Community Energy & Emissions Plan) (CEEP) to become standard for driveways, sidewalks and parking lots which will assist in achieving our Net Zero 2050 targets.
14. That to enforce and ensure all property owners in Richmond Hill, (as with other Municipalities such as Toronto) follow stormwater management and enforcement practices including

14.1 Disconnecting any and all downspouts from City’s sewer system similar to Toronto (see below link for reference (item 8))

<https://www.toronto.ca/services-payments/water-environment/managing-rain-melted-snow/basement-flooding/mandatory-downspout-disconnection/>.

14.2 A modernized green or blue roof by law be enacted (see enclosed the link to the City of Toronto Roof By-law for reference) for buildings greater than 2,000m² (See links below item 9 & 10)

<https://www.toronto.ca/city-government/planning-development/official-plan-guidelines/green-roofs/green-roof-bylaw/>

http://www.toronto.ca/legdocs/municode/1184_492.pdf

15. Staff report back to Council by December 31, 2021 with

15.1 Status report on the impact of the January 10, 2020 had as a result of the stormwater and sewer backup into Richmond Hill residential and churches

15.2 A report on Stormwater Backflow valves and Sump Pump compensation options for residential households

16 That Staff undertake all necessary measures to respond to the effects above;

17 That the City of Richmond Hill send a copy of this resolution to York Regional Council and all other municipalities in Ontario, the Association of Municipalities of Ontario and the Federation of Canadian Municipalities.

Moved by: Councillor Muench

Seconded by: