

**STORMWATER INFRASTRUCTURE FUNDING STUDY – CITY-WIDE****Recommendation**

The Deputy City Manager of Public Works and the Director of Environmental Services, in consultation with the Chief Financial Officer/City Treasurer and the Director of Financial Services/Deputy Treasurer recommend:

1. That a variable, separate stormwater charge be applied to properties in the City of Vaughan be approved for 2017;
2. That the stormwater charge be applied to properties based on the stormwater run-off generation characteristic of property land-use;
3. That government agencies, places of worship, schools and non-profits be exempt from the stormwater charge based on the same criteria and legislation used for exempting property through the Assessment Act;
4. That Council direct staff to arrange for billing of the stormwater charge, as a separate charge, on the Water and Wastewater bill sent out, on the City's behalf, by PowerStream;
5. That Council direct staff to create a specific stormwater infrastructure reserve funded from the stormwater charge to fund stormwater capital projects; and
6. That the communication plan for the stormwater charge be implemented.

**Contribution to Sustainability**

This stormwater charge will directly support *Green Directions Vaughan* Goal 1: To significantly reduce our use of natural resources and the amount of waste we generate. Furthermore, it directly adds resolution to the following objective:

- Objective 1.3: To support enhanced standards of stormwater management at the City and work with others to care for Vaughan's watersheds

This stormwater charge will also support *Green Directions Vaughan* action 5.1.4 which notes that a strategy to assess vulnerability to climate change and plans be developed for mitigating impacts and remedial responses.

**Executive Summary**

In May 2015, staff presented to Finance, Administration and Audit Committee a proposed stormwater charge to fund all costs associated with a new stormwater program (Attachment 1). The proposed stormwater charge will enable the City of Vaughan to help protect resident and business property from the impacts of climate change. The stormwater charge is intended to charge all who contribute stormwater to the stormwater system based on the amount of stormwater run-off generated from their properties. This will provide transparency to the current way the City's stormwater services are funded and spread the cost of funding the stormwater services amongst all the property owners benefitting from the City's stormwater services. Committee directed staff to explore exemptions to the stormwater charge, particularly for non-profits and institutional properties. This report addresses that direction.

Currently, stormwater services are funded through the tax levy, and the wastewater rate and at times application of gas tax revenues. To ensure financial transparency and to ensure a sustainable funding source for the City's stormwater services, the stormwater charge will incorporate the funding budgeted for stormwater services in the wastewater rate.

Approximately 80,000 residents and 3,100 businesses pay the existing wastewater rate with the majority of the funds being limited to delivery of sanitary wastewater services. This has traditionally resulted in funding shortfalls for the stormwater and drainage services. As outlined in the background report presented in May 2015, a significant funding deficit exists in the long term funding required to ensure sustainability of the stormwater infrastructure. The stormwater charge would be applied to all properties except government agencies, places of worship, schools and non-profits, spreading the cost of the stormwater service amongst a larger number of properties (approximately 100,000). Therefore, the implementation of the stormwater charge will see a decrease in the amount that is currently charged for the current stormwater program. However, there will be an increase to the cost of stormwater services to large industrial/commercial/institutional (I/C/I). Intuitively this makes sense and was confirmed through the study as large I/C/I contribute more to the stormwater system than the average homeowner.

If approved, the stormwater charge will be included as a separate charge on the water and wastewater bill distributed by PowerStream. The implementation plan includes a comprehensive communication campaign to inform residents of the charge and communication tools after it has been implemented.

### **Economic Impact**

#### **The stormwater charge reflects a transparent and sustainable funding source for the stormwater service**

The stormwater charge has been developed to fully fund a stormwater service which will help protect private and business properties from flooding events. The stormwater charge will be applied to properties based on their stormwater run-off contributions and clearly identified as a separate charge, rather than as part of the wastewater rate and property taxes.

Currently, approximately 80,000 water and wastewater account holders pay for stormwater services. In 2016, the typical residential customer pays \$97.14 annually for stormwater services through a combination of wastewater rates and property taxes. If the proposed 2017 stormwater charge is approved, the typical residential customer would pay \$ ~~46.22~~ 44.12 per year.

The stormwater charge would be applied to approximately 100,000 tax roll numbers. Government agencies, places of worship schools and non-profits may be exempt from the stormwater charge in line with current property tax exemption legislation.

Many other municipalities in North America and across Ontario have implemented a stormwater charge, including Aurora, Markham and Richmond Hill, Kitchener, Waterloo, Hamilton, London and St. Thomas.

### **Communications Plan**

#### **The Engagement and Communication Plan continues to be an integral part of the Stormwater Infrastructure Funding Study**

Four Stormwater Advisory Committee (SAC) meetings were held during the project. The Committee was made up of representatives from rate payers' associations conservation agencies, Region of York as well as industrial, commercial and institutional property owners. The SAC provided advice on:

- the development of the stormwater program
- the preferred funding model
- the preferred allocation of charges by property type.

At their final meeting in May 2015, the SAC reaffirmed the need for an enhanced stormwater infrastructure program and agreed to the need for a stormwater rate, and the recommended approach to determining the stormwater rate charge.

Public engagement was also solicited through electronic communication, a survey and public meetings. Sixty six (66) respondents provided insights on a range of topics including how stormwater operating expenses should be funded, what actions individuals are willing to do to manage stormwater and what issues are of concern when managing stormwater. Survey results revealed that:

- 82 % of the survey respondents were homeowners, 10% occupied rental properties and 8% were business owners ;
- Respondents were equally concerned with a number of stormwater issues including
  - replacing aging infrastructure
  - managing increasing runoff and pollution from urban growth
  - active maintenance of stormwater facilities
  - erosion control and stream bank protection
  - flood mitigation, and
  - water quality protection
- Lastly, 39 % of respondents supported stormwater charge fees and 48 % supported sewer rates as a funding mechanism to properly operate and maintain the public stormwater system.

#### Implementation Plan – Communication Strategy

**The implementation plan includes a communication strategy to inform residents of the stormwater charge prior to the actual billing, as well as a plan to address incoming calls after the implementation of the stormwater charge**

The following activities are included as part of the communication strategy and will be implemented if Council approves the stormwater charge:

- within two weeks of Council approval staff will issue a press release and post to social media regarding the approval of the stormwater rate, the implementation schedule, billing process, web site link (for more details)and contact information.
- between Q2-Q3, 2016 a pre-implementation communication plan will be ramped up and will include an update of the website with relevant information, an information brochure, FAQs, educational video, by-law, rate schedule, implementation timeline, study background information and contact information;
  - the information brochure will be provided to each resident as an insert in the water and wastewater bill, as well as posted on social media and the City's website.
  - the FAQs document will address the types of questions the City anticipates receiving such as what is the rate, how it is applied, why is the stormwater rate needed.
  - the Stormwater section of the Environmental Services Department website will include relevant information such as FAQs, fact sheets and case studies as effective tools for communicating about the stormwater charge.
  - the educational video will be a visually appealing with a simple explanation of key points related to the need for a stormwater rate.

- On the first billing of the stormwater charge the final component of the implementation plan will be an informational brochure inserted with the billing. The stormwater rate will be separately identified and will have footnotes indicating where more information can be found.

**Environmental Services will prepare key messages that can be verbally communicated to residents by key partners City wide and assist with addressing the call volume that may result**

This activity will involve working with key partners such as Finance, Corporate Communications, Access Vaughan and Council Secretariat to communicate the stormwater charge message to the public. Targetting outside organizations such as the Chamber of Commerce and other industry associations as well as neighborhood associations could be very helpful to help communicate to businesses and the public. A community outreach campaign will need to ensure stakeholders are aware of the new charge, why it is needed, what the benefits are and how the charge will affect them. Access Vaughan staff, Councillors and Council Executive Assistants will be provided with speaking points and key messages in order to effectively handle calls from the public. The communication material will be presented in a simple, clear and consistent language in a variety of forms, including print, digital, web and social media.

**Purpose**

The purpose of this report is to seek approval of the stormwater charge, exemptions and implementation plan proposed for 2017.

**Background - Analysis and Options**

**On May 19, 2015 staff received direction from Council to report back on a stormwater funding model which takes into consideration institutional properties and reflects exempt properties**

**Institutional properties**

Staff addressed the comments raised at Finance, Administration and Audit Committee by modifying the industrial/commercial/institutional charge with the development of three charges: one for small I/C/I (<1acre), medium I/C/I (1-10acre), and large I/C/I (>10acre). This land area distribution enables more industrial, commercial and institutional properties to share the costs of the stormwater program in a way which more accurately reflects actual contribution to the stormwater system.

**Exempt properties**

The Finance, Administration and Audit Committee expressed concerns about applying a stormwater charge to non-profit entities, particularly those that receive government support and institutions that are not tax exempt. As a follow-up to discussions at Committee, the project team revisited the potential exemptions to the stormwater charge.

The approach used by staff to exempt properties from the Stormwater charge is based on the same criteria and legislation used for exempting property through the Assessment Act. This approach may provide exemptions for government agencies, places of worship, schools and non-profits.

Exemptions to the stormwater charge are applied in Markham, Kitchener and Mississauga.

If Council grants exemptions they should be clearly defined within the by-law to limit bonusing under the Municipal Act.

**The proposed stormwater charge with exemptions reflects that the cost of the stormwater service will be borne by those properties which are not exempt**

The table below compares the 2017 stormwater rate with all properties included in the rate calculation against the proposed rate with exempt properties removed from the rate calculation.

Property Type	Proposed stormwater charge	Proposed stormwater charge with exemptions
Non-residential (small)	\$ <del>37.42</del> 38.53	\$ <del>42.86</del> 44.12
Non-residential (medium)	\$ <del>966.07</del> 994.89	\$ <del>1,107.02</del> 1139.58
Non-residential (large)	\$ <del>14,925.53</del> 15,370.67	\$ <del>17,300.24</del> 17,809.10
Agricultural/Vacant	\$ <del>463.66</del> 477.92	\$ <del>640.50</del> 658.61
Residential (low density) – per unit	\$ <del>39.87</del> 41.00	\$ <del>46.22</del> 47.41
Residential (medium density) – per unit	\$ <del>24.70</del> 25.30	\$ <del>28.40</del> 29.03
Residential (high density) – per building	\$ <del>146.06</del> 150.54	\$ <del>169.89</del> 174.46

**The Committee also asked about priority setting, implementation of the program and impacts of other City initiatives.**

The Stormwater Infrastructure Funding Study delivered a comprehensive stormwater program which prioritized capital projects, enhanced the stormwater operations and maintenance activities and focused on asset management. Resources required to deliver the stormwater program will be identified as the program matures and presented for consideration in future budgets.

City initiatives which were raised at the Finance, Administration and Audit Committee included on lot parking and rented properties. The issue raised with on lot parking was a concern with the increase in hard surfacing to create parking spots on residential properties. In fact, the amendment to the Zoning By-law does not increase the hard surfaced area but simply allows people to park on already existing walkways. With respect to tenants in rented properties, the stormwater charge would be applied to the property and payable by the property owner.

**The stormwater charge will be included on the water and wastewater bill issued by PowerStream.**

PowerStream has recently upgraded its customer billing software and will be able to accommodate the City of Vaughan in 2017. PowerStream has also advised there would be a cost to implementing the new charge and an ongoing annual fee which is included in the stormwater rate.

**Relationship to Term of Council Service Excellence Strategy Map (2014-2018)**

This report supports the Term of Council Priorities to invest, renew and manage infrastructure and assets as well as continue to cultivate an environmentally sustainable city.

**Regional Implications**

Implementation of a stormwater charge will not have a direct impact on York Region operations staff. Aurora, Markham and Richmond Hill have recently implemented an annual stormwater charges.

## **Conclusion**

The stormwater charge will provide the City of Vaughan with a comprehensive stormwater program and a transparent and sustainable funding source to support it. This will allow the City to implement measures which will help protect property during extreme weather events. The stormwater charge would be applied to residential, non-residential and vacant properties based on the stormwater run-off generated by those properties. Government agencies, places of worship, schools and non-profits have been exempted from the proposed 2017 charge and the cost of using the stormwater service has been distributed amongst the non-exempt properties.

## **Attachments**

1. FAA Report, May 4, 2015
2. Executive Summary – City of Vaughan Stormwater Infrastructure Funding Study
3. Property Categorization
4. Proposed Storm service charges

## **Report prepared by:**

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Respectfully submitted,

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## **ATTACHMENT 1 – FAA REPORT – MAY 4, 2015**

### **STORMWATER INFRASTRUCTURE FUNDING STUDY UPDATE – CITY-WIDE**

The Finance, Administration and Audit Committee recommends:

- 1) That the recommendation contained in the following report of the Commissioner of PublicWorks and the Director of Environmental Services, dated May 4, 2015, be approved; and
- 2) That the presentation by the Director of Environmental Services and Mr. Andrew Grunda, Principal, Watson & Associates, Mississauga, and C2, presentation material entitled: “*Stormwater Infrastructure Funding Study*” dated May 4, 2015, be received.

#### **Recommendation**

The Commissioner of Public Works and the Director of Environmental Services, in consultation with the Director of City Financial Services/Deputy Treasurer recommend:

1. That this report be received for information.

#### **Contribution to Sustainability**

This project will directly support Green Directions Vaughan Goal 1: To significantly reduce our use of natural resources and the amount of waste we generate. Furthermore it directly adds resolution to the following objective:

- Objective 1.3: To support enhanced standards of stormwater management at the City and work with others to care for Vaughan’s watersheds
- This project will also support action 5.1.4 which notes that a strategy to assess vulnerability to climate change and plans be developed for mitigating impacts and remedial responses

#### **Economic Impact**

There are no immediate impacts resulting from the adoption of this report.

#### **Communications Plan**

It is recognized that development of a community understanding of the funding requirements of a significant city service, such as stormwater, requires a comprehensive program. Therefore, the project team has developed and initiated an Engagement and Communication Plan as an integral part of the Stormwater Infrastructure Funding Study. Citizens and key stakeholders continue to be engaged through all stages of the project including the development and establishment of stormwater program levels of service, and the exploration of funding models.

#### **To date:**

The Engagement and Communication Plan developed for the study follows the guidelines established by the International Association for Public Participation (IAP2) with respect to public engagement. A communications plan was developed to engage citizens, businesses and other stakeholders to ask for input and guidance in the development of stormwater levels of service and a funding model. The communications plan focuses on informing the public on defining stormwater, stormwater activities performed by the City and how citizens and businesses can help protect stormwater and the environment. Posters (Attachment 1), newsletter articles, electronic communication and the website were used as means of communication. The posters were put up in all of the City’s libraries and community centres.

The plan also includes involving, consulting and collaborating with key stakeholders through the use of a Stormwater Advisory Committee. The Stormwater Advisory Committee is made up of representatives from the following:

- Springfarm Ratepayer's Association
- Glen Shields Ratepayer's Association
- Mackenzie Ridge Ratepayer's Association
- Village of Woodbridge Ratepayer's Association
- Beverly Glen Ratepayer's Association
- Vaughan Mills
- BILD
- Canada's Wonderland
- Region of York
- York Housing Authority
- York Region District School Board
- Sustainable Vaughan
- Earth Rangers
- TRCA

The Stormwater Advisory Committee has met three times over the last couple of months and the work of this committee is reflected in this report.

Next steps:

In the recent *City of Vaughan: 2014 Citizen Satisfaction Survey, Key Findings Report*, citizens indicated that the most popular means of communication from the City was through mail, email, local newspapers and the website. Given this information the communications plan will continue with notifications in local newspapers, on the Vaughan website and newsletter information sent through e-mail. Interested citizens will be asked to participate in the discussion through the use of the survey. The final Stormwater Advisory Committee meeting will also be held in May 2015.

**Purpose**

The purpose of this report is to inform Council of staff's work to date to develop a sustainable funding framework for stormwater infrastructure and ask for feedback from FAA Committee to further inform the study.

**Background - Analysis and Options**

**Staff received direction from Council on April 8, 2014 to explore funding models for a stormwater program through a Stormwater Infrastructure Funding Study**

In a staff report for Finance, Administration and Audit Committee on March 31, 2014, staff informed Committee of the need for a dedicated funding source for a proactive and planned stormwater management program. The current stormwater program is reactive in nature and although there have been many studies following storm events and projects identified in a stormwater retrofit study and stormwater master plan, these projects and programs have not been acted upon due to lack of a planned stormwater program.

Vaughan is not unique in its challenge to fund a stormwater program. Municipalities across Ontario, Canada and the USA have experienced increasingly severe storm events which have put pressure on the stormwater system. Also, government ministries have stricter requirements with respect to water quality and have asked municipalities to look at more options to manage stormwater on properties rather than sending it all to a water course or other water body.

Council recognized this need to explore a funding model which would be a dedicated funding source and directed staff to initiate the Stormwater Infrastructure Funding Study.

**The goals and objectives, identified in the study for the stormwater program, focus on balancing stormwater program needs against sustainable funding**

The goal of the Stormwater Management Program is to protect public health and safety and the City's valuable natural and man-made resources by minimizing the impacts of stormwater runoff through on-going system assessments, proactive maintenance and operation of the City's assets, and well-considered investment in system upgrades and expansion.

The key objectives of the program are:

- Services provided by the City should be clearly defined, be based on an assessment of actual need, and be provided as efficiently as possible
- The City should seek to move from reactive management of stormwater system components to a proactive, priority-based asset management program
- The program should be realistic and achievable and establish clear lines of accountability and decision making.
- The stormwater program plan should be coordinated with on-going planning and growth initiatives to identify efficiencies and should include public participation as a fundamental component.
- Program funding should be a balanced approach and tied to level of service and sustainable financial program goals.

**The study has documented the City's current reactive stormwater program and has identified future planning, capital projects needs and identified studies**

Through an intensive gap analysis it was determined that four key areas need to be addressed to ensure that the goal for the stormwater program be realized. The four areas are listed below:

Asset Management: Services provided by the City should be based on an assessment of actual need and be provided as efficiently as possible.

Stormwater Planning and Engineering: The stormwater program plan should be coordinated with on-going planning and growth initiatives and should include public participation as a fundamental component.

Stormwater Operation and Maintenance: The City should seek to move from reactive management of stormwater system components to a proactive, priority-based asset management program.

Capital Improvements: Program funding should be tied to level of service and sustainable financial program goals. The stormwater program plan should be coordinated with on-going planning and growth initiatives to identify efficiencies and should include public participation as a fundamental component.

**The stormwater program gaps were further broken down into 'basic', 'medium', 'high' and 'maintain' levels of service within the previous four areas**

The 'maintain' level of service refers to continuing with the current program. The 'basic', 'medium' and 'high' levels of service are defined as follows:

- **Basic**: refocus of existing resources or add funds as a first step in enhancement to respond to service needs
- **Medium**: addition of staff/contractor/materials to increase capability to address service needs in a moderate approach.
- **High**: addition of staff/contractor/materials to address service needs as the highest priority in an aggressive approach.

See Attachment 2 for a detailed listing of Levels of Service and program needs.

**Staff, with input from the Stormwater Advisory Committee, recognized the need to improve levels of service to the 'medium' category for the majority of identified program needs**

The second Stormwater Advisory Committee meeting addressed the stormwater program needs and through discussion and the use of a prioritization tool recommended the 'medium' service level for the stormwater program. This level of service was further refined by staff based on internal resources and some modifications were made. The results of the prioritization tool are in Attachment 3.

**Currently, funding for the program is derived from three different sources: wastewater rate, tax levy and gas tax.**

Wastewater Rate: A small percentage (6.85%) of the wastewater rate has been dedicated since 2009 to fund stormwater operating activities. These activities are currently carried out by the Environmental Services Department

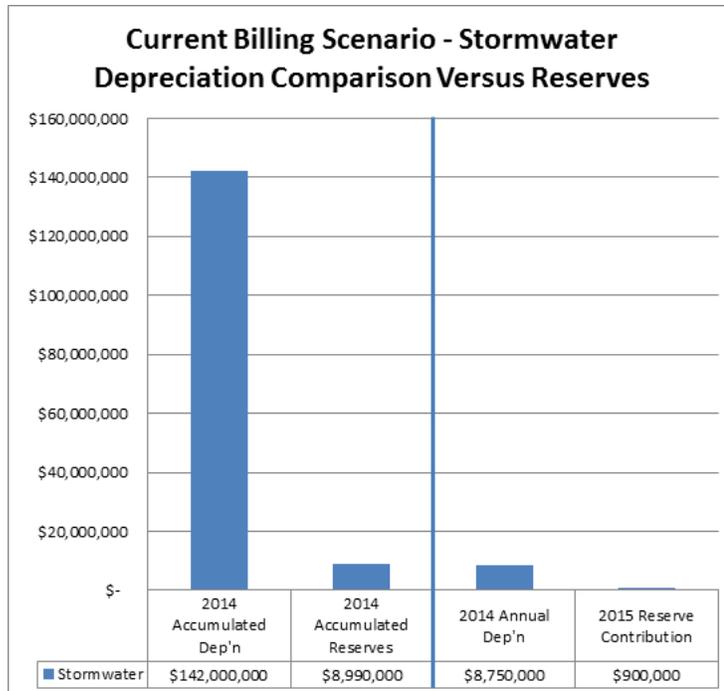
Tax Levy: Stormwater activities, such as street sweeping, ditch maintenance, etc., which are being performed by the Roads Division of the Transportation Services and Parks & Forestry Operation Department are funded by the general tax levy. Through this study, these activities have been identified as primarily stormwater activities and it is proposed that these be funded from the proposed stormwater funding source.

Gas Tax: Currently the storm pond maintenance/cleaning is funded by the gas tax. This funding source also funds many other City projects.

The activities listed above which are funded from the tax levy and gas tax have been incorporated into the analysis for the stormwater infrastructure funding study and the costs associated with these activities have been included when determining the overall stormwater program cost.

**The current stormwater program funding model does not meet future infrastructure repair and replacement needs**

Using annual depreciation as a basis for reserve funding is a best practice according to the National Guide to Sustainable Municipal Infrastructure. As discussed above, 6.85% of the wastewater rate which funds stormwater is used for operating activities with only a small portion of that contributing to future repair and replacement needs. This amount is insufficient to meet the amortization requirements for ageing stormwater infrastructure. As illustrated in the graph below the annual reserve contribution falls far short of the annual depreciation expense and therefore does not allow for any catch up funding against the accumulated depreciation. In the final study to be presented to Council later this year, the reserve calculation will be further described.



**The traditional funding model for stormwater has been examined by many municipalities across North America**

Climate change, more sophisticated environmental regulations, development and new stormwater retention technologies have put a more direct focus on stormwater activates. Many municipalities are now pursuing the benefits of implementing a direct and dedicated funding source to meet these new challenges. Continued reliance on traditional non-dedicated funding models can impact a municipality's ability to plan for and implement proactive operations and maintenance, thus ensuring a sustainable stormwater and infrastructure program.

**The 2014 to 2017 Budget Instructions encouraged departments to explore new user fee opportunities for existing non-revenue generating services**

Environmental Services has explored a new user fee for the stormwater service through the Stormwater Infrastructure Funding Study. As explained below, staff are now refining potential dedicated funding framework reliant upon new stormwater rates for residential, industrial, commercial, institutional and vacant/agricultural lands.

**Having evaluated stormwater rates of varying degrees and complexity, staff are realizing the benefits of a modified flat/utility rate based on run-off coefficient funding model**

There are several different funding models which were considered to fund a municipal stormwater program. These range from the simplistic with one flat rate for all residential and one flat rate for all industrial/commercial/institutional (I/C/I) to a very complex rate which measures impermeable area for each property and determines individual rates for each property.

A modified flat/utility rate considers a tiered approach where there are different rates for different types of property for residential, and for I/C/I. The run-off coefficient, is an element of the City's design standards, and is used during the development approval process to determine the stormwater infrastructure for each development application. The use of the run-off coefficient in the development of a stormwater rate will provide consistency with existing City processes.

Based on the experiences observed from other jurisdictions, staff is realizing that a modified flat/utility rate based on run-off coefficient funding model, which was also favoured by the Stormwater Advisory Committee (Attachment 4), may be the optimal choice for consideration by the City. This funding model is one which is also used by other Region of York municipalities (Attachment 5). This funding model uses the run-off coefficient as defined in the City's design standards to determine the run off for types of residential and I/C/I, which in turn is used to determine the stormwater contribution to the stormwater system. The resulting funding model has multiple rates for residential and rate for I/C/I. This funding model also has the advantage of being easiest to understand and quickest and least costly to implement.

**The residential and industrial/commercial/institutional yearly costs in 2016 have been estimated**

Applying the 'medium' levels of service for the stormwater program has resulted in an operating and capital budget increase from \$5,695,822 for 2015 to \$18,522,855 for 2025. Using the funding model described above, this results in a yearly rate for residential, ICI and vacant lands as shown in the table below:

Property Type	Yearly Potential 2017 Rate	Yearly Potential 2025 Rate
Residential (Low Density) – per unit	\$ 34.07	\$64.06
Residential (Medium Density) – per unit	\$21.11	\$38.28
Residential (High Density)	\$86.22	\$164.99
Commercial	\$690.29	\$1,321.59
Industrial	\$572.76	\$1,096.97
Institutional	\$2,160.56	\$4,122.16
Agricultural/Vacant	\$396.27	\$758.99

The draft numbers represented above will be further refined as the study explores possible exempt properties and low income relief.

**The stormwater infrastructure funding study will be completed next month with the final recommendations and a potential implementation strategy is proposed to be presented to Finance, Administration and Audit Committee later this year**

The next steps for the stormwater infrastructure funding study are to engage the general public through a variety of communication tools regarding the proposed levels of service and the proposed funding model. The Stormwater Advisory Committee will meet one more time to provide comments on the financial plan and proposed funding model.

Comments from the public and the Stormwater Advisory Committee will be incorporated into a report for consideration by FAA Committee late this year.

### **Relationship to Vaughan Vision 2020/Strategic Plan**

As we examine the current and future stormwater management services provided by the City, the program objectives and priorities will align with the Strategic Plan by supporting the following key themes:

- Pursuing *Service Excellence* by establishing and achieving service levels based on best practices and standards; by promoting actions that protect community safety and well-being; and by committing to protect and enhance the natural and built environments through the efficient use of resources.
- Pursuing *Organizational Excellence* by assessing and managing infrastructure to maximize useful life and ensure a sustainable future and by using financial resources wisely by making informed decisions that take into effect the impact on City residents and operations.
- Pursuing *Staff Excellence* by demonstrating effective leadership through engagement and collaboration of staff resources across business areas and by investing in development and retainage of skilled staff dedicated to service excellence.

### **Regional Implications**

York Region has been identified as a stakeholder and is a member of the Stormwater Advisory Committee.

### **Conclusion**

The Stormwater Infrastructure Funding Study will provide the City of Vaughan with a comprehensive stormwater program and a sustainable funding source to support it. The Stormwater Advisory Committee has been instrumental in defining the levels of service and

providing input into the choice of funding model. The next steps will be to provide FAA with a finalized draft rate later this year.

**Attachments**

- Attachment 1 – Stormwater posters
- Attachment 2 – Levels of Service and Program Needs
- Attachment 3 – Level of Service – Prioritization Table
- Attachment 4 – Funding Model – Prioritization Table
- Attachment 5 – Stormwater Rates in Other Municipalities

**Report prepared by:**

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Respectfully submitted,

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Commissioner of Public Works

Jennifer Rose  
Director of Environmental Services

**ATTACHMENT 2- EXECUTIVE SUMMARY – CITY OF VAUGHAN STORMWATER INFRASTRUCTURE FUNDING STUDY**

## Executive Summary

The City of Vaughan retained Watson & Associates (Watson) and AMEC Foster Wheeler (AMEC) to undertake a Stormwater Infrastructure Funding Study (Study). The principal goals of the Study were to identify, review, and evaluate alternative funding approaches to support the City's Stormwater Management Program, recommend a preferred funding alternative, and develop a strategy for the City to implement the plan.

The Study was undertaken in two phases, with the first comprising a comprehensive review of level of service options and rate structure options, while the second phase focused on developing a detailed ten-year stormwater program, identification of the potential fees to support the program needs, and consideration of implementation policy issues.

Extensive internal and public consultation was an integral part of the study process through the establishment of an Internal Steering Committee, a (external) Stormwater Advisory Committee, and facilitation of two public open houses. This open and transparent process established stakeholder buy-in.

Current stormwater-related services along with the groups responsible for carrying out each service were identified through consultation with City staff. The City's current stormwater management program, which is closely integrated with water and wastewater services and with roads maintenance, was quantified in terms of direct and indirect operating expenditures. Furthermore, the current level of annual spending on capital improvements was enumerated by analyzing historical expenditure levels. In total, this would provide for a 2014 cost of stormwater services of \$4.6 million.

Through interviews with staff and review of existing documents, a list of potential program gaps and known limitations within the existing stormwater management program in Vaughan was developed. For each of these gaps and limitations a summary of the challenge, assumptions, and options was developed including various investment options to address those gaps. The Internal Steering Committee and the Stormwater Advisory Committee evaluated the options, provided feedback on priorities, and refined the projected investment strategies that were finalized as recommended changes.

A 10-year operations and maintenance forecast was developed based on the priorities and LOS recommendations developed through consultation with stakeholders. The primary principle underlying the forecast is not allowing conditions in the City to worsen, while expanding the capacity of the City to address challenges in the performance and management of stormwater runoff through the infrastructure systems.

The full cost defined stormwater program operations and maintenance budget for 2016 is estimated at \$5.4 million. Based on a phase-in of the preferred LOS recommendations this is estimated to reach a total operating budget of \$8.4 million by 2026. Annual capital expenditure are forecast to increase to approximately \$6.9 million annually (2015\$) over the forecast period, compared with average historical spending of \$1.5 million annually.

Stormwater services are currently funded from two sources – the City’s wastewater rate and the general tax levy (for stormwater-related services undertaken by the Roads department). In order for the City to move to the target annual funding of \$15.3 million by 2026, the typical residential customer would see their annual “stormwater bill” (i.e. share of wastewater bill and property taxes funding stormwater services) increase from a 2016 level of \$97.14 to \$154.10 by 2026. Similarly, bill impacts for other customer types are presented in Table 1.

*Table 1: Annual Bill Impacts for a Cross Section of Customers*

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Residential</b> (300m <sup>3</sup> annual water cons. \$587,000 assessment)	\$ 97.14	\$ 100.47	\$ 105.31	\$ 109.66	\$ 115.05	\$ 120.72	\$ 126.71	\$ 133.02	\$ 139.68	\$ 146.70	\$ 154.10
<i>Annual Increase</i>		3.42%	4.82%	4.13%	4.91%	4.94%	4.96%	4.98%	5.00%	5.02%	5.04%
<b>Commercial</b> (4,260m <sup>3</sup> annual water cons. \$1,413,445 assessment)	\$ 1,250.87	\$ 1,298.21	\$ 1,367.10	\$ 1,437.70	\$ 1,514.28	\$ 1,595.03	\$ 1,680.16	\$ 1,769.92	\$ 1,864.56	\$ 1,964.34	\$ 2,069.55
<i>Annual Increase</i>		3.78%	5.31%	5.16%	5.33%	5.33%	5.34%	5.34%	5.35%	5.35%	5.36%
<b>Industrial</b> (4,690m <sup>3</sup> annual water cons. \$2,460,527 assessment)	\$ 962.91	\$ 1,457.58	\$ 1,533.39	\$ 1,609.18	\$ 1,693.47	\$ 1,782.33	\$ 1,876.03	\$ 1,974.83	\$ 2,078.99	\$ 2,188.82	\$ 2,304.62
<i>Annual Increase</i>		3.71%	5.20%	4.94%	5.24%	5.25%	5.26%	5.27%	5.27%	5.28%	5.29%
<b>Institutional</b> (3,360m <sup>3</sup> annual water cons.; tax exempt)	\$ 1,000.27	\$ 1,054.63	\$ 1,111.94	\$ 1,172.36	\$ 1,236.07	\$ 1,303.24	\$ 1,374.05	\$ 1,448.72	\$ 1,527.45	\$ 1,610.45	\$ 1,610.45
<i>Annual Increase</i>		3.88%	5.43%	5.43%	5.43%	5.43%	5.43%	5.43%	5.43%	5.43%	5.43%

Through consultation with stakeholders and the development of the preferred LOS and corresponding program it was determined that the City will require a dedicated funding source to provide sustainable financing for these critical services.

An array of funding model options was examined and presented to stakeholders, along with comparisons to municipal practice in other jurisdictions. Funding models were ranked against a variety of service criteria, including ease of calculation, linkage between fee paid and benefits derived from services, cost of administration, and user control over charging mechanism. Under the preferred funding model each property would be charged a flat rate based on its type as informed by its general impervious area characteristics. Rate projections for the various property types are summarized in Table 2.

**Table 2: Rate Projections under Recommended Rate Structure**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Flat Charge per Property</b>										
Non-Residential (small)	\$ 38.53	\$ 40.33	\$ 41.88	\$ 43.85	\$ 45.93	\$ 48.10	\$ 50.72	\$ 53.51	\$ 56.44	\$ 59.55
Non-Residential (medium)	\$ 994.89	\$ 1,041.19	\$ 1,081.38	\$ 1,132.28	\$ 1,185.83	\$ 1,241.89	\$ 1,309.66	\$ 1,381.47	\$ 1,457.23	\$ 1,537.49
Non-Residential (large)	\$ 15,370.67	\$ 16,086.13	\$ 16,706.93	\$ 17,493.39	\$ 18,320.71	\$ 19,186.77	\$ 20,233.81	\$ 21,343.23	\$ 22,513.69	\$ 23,753.76
Agricultural/Vacant	\$ 477.92	\$ 500.62	\$ 520.47	\$ 545.57	\$ 571.90	\$ 599.46	\$ 632.30	\$ 667.12	\$ 703.80	\$ 742.67
Residential (Low Density) - per unit	\$ 41.00	\$ 42.85	\$ 44.45	\$ 46.49	\$ 48.63	\$ 50.87	\$ 53.57	\$ 56.41	\$ 59.42	\$ 62.59
Residential (Medium Density) - per unit	\$ 25.30	\$ 26.33	\$ 27.20	\$ 28.33	\$ 29.51	\$ 30.75	\$ 32.25	\$ 33.83	\$ 35.50	\$ 37.26
Residential (High Density)	\$ 150.54	\$ 157.75	\$ 163.94	\$ 171.79	\$ 180.07	\$ 188.81	\$ 199.12	\$ 210.00	\$ 221.48	\$ 233.62

Based on recommendations from the Finance, Administration and Audit committee and consultation with City staff, an exemption policy was developed including all properties owned and occupied by entities not subject to municipal property taxes. Such properties would be considered exempt from the stormwater rate charge. If the City elects to include these exemption policies the forecast stormwater rates would be as summarized in Table 3.

**Table 3: Rate Projections under Recommended Rate Structure with Exemption Policy**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<b>Flat Charge per Property</b>	\$ 44.12	\$ 46.15	\$ 47.93	\$ 50.18	\$ 52.53	\$ 55.00	\$ 57.97	\$ 61.11	\$ 64.42	\$ 67.92
Non-Residential (small)	\$ 1,139.58	\$ 1,192.19	\$ 1,238.09	\$ 1,296.11	\$ 1,356.98	\$ 1,420.72	\$ 1,497.44	\$ 1,578.52	\$ 1,664.02	\$ 1,754.36
Non-Residential (medium)	\$17,809.10	\$18,631.21	\$19,348.52	\$20,255.23	\$21,206.59	\$22,202.66	\$23,401.63	\$24,668.71	\$26,004.87	\$27,416.74
Non-Residential (large)										
Agricultural/Vacant	\$ 658.61	\$ 688.40	\$ 714.43	\$ 747.41	\$ 782.00	\$ 818.17	\$ 862.16	\$ 908.51	\$ 957.58	\$ 1,009.26
Residential (Low Density) - per unit	\$ 47.41	\$ 49.45	\$ 51.20	\$ 53.44	\$ 55.79	\$ 58.25	\$ 61.27	\$ 64.47	\$ 67.83	\$ 71.38
Residential (Medium Density) - per unit	\$ 29.03	\$ 30.15	\$ 31.09	\$ 32.33	\$ 33.63	\$ 34.98	\$ 36.65	\$ 38.42	\$ 40.28	\$ 42.24
Residential (High Density)	\$ 174.46	\$ 182.44	\$ 189.23	\$ 197.89	\$ 207.03	\$ 216.66	\$ 228.24	\$ 240.46	\$ 253.34	\$ 266.95

Based on an analysis of the various rate structures and considering the input received from stakeholders, it is recommended that the City adopt a flat charge per property by property type, with non-residential divided into three categories – small, medium, and large. Adopting this rate structure would ensure that owners of smaller non-residential properties do not bear a disproportionate share of costs, while simultaneously providing the least amount of impact on institutional properties relative to the other rate options. Finally, exemption policies can be adopted at Council’s discretion, noting the impacts as identified in Table 3.

**ATTACHMENT 3- PROPERTY CATEGORIZATION**

**Property Categorization under Structure A**

<b>Property Type</b>	<b>Land Area (acres)</b>	<b>Run-off Coefficient</b>	<b>Impervious Area (acres)</b>	<b>Share of Total Impervious Area</b>
Commercial	4,689.96	0.75	3,517.47	16.49%
Industrial	8,982.73	0.75	6,737.05	31.58%
Institutional	1,311.61	0.75	983.71	4.61%
Agricultural/Vacant	43,149.75	0.10	4,314.98	20.23%
Residential (Low Density)	11,213.26	0.45	5,045.97	23.66%
Residential (Medium Density)	859.19	0.55	472.56	2.22%
Residential (High Density)	472.01	0.55	259.60	1.22%
<b>Total</b>	<b>70,678.51</b>		<b>21,331.33</b>	<b>100.00%</b>

<b># of Tax Roll Numbers</b>	<b># of Properties</b>
2,326	682
4,608	1,650
208	208
4,966	4,966
67,365	67,365
10,146	10,146
11,521	948
<b>101,140</b>	<b>85,965</b>

**ATTACHMENT 4- PROPOSED STORM SERVICE RATES WITH EXCEMPTIONS INCLUDED**

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
<u>Flat Charge per Property</u>											
Non-Residential (small)	\$ 42.86	\$ 44.12	\$ 46.15	\$ 47.93	\$ 50.18	\$ 52.53	\$ 55.00	\$ 57.97	\$ 61.11	\$ 64.42	\$ 67.92
Non-Residential (medium)	\$ 1,107.02	\$ 1,139.58	\$ 1,192.19	\$ 1,238.09	\$ 1,296.11	\$ 1,356.98	\$ 1,420.72	\$ 1,497.44	\$ 1,578.52	\$ 1,664.02	\$ 1,754.36
Non-Residential (large)	\$ 17,300.24	\$ 17,809.10	\$ 18,631.21	\$ 19,348.52	\$ 20,255.23	\$ 21,206.59	\$ 22,202.66	\$ 23,401.63	\$ 24,668.71	\$ 26,004.87	\$ 27,416.74
Agricultural/Vacant	\$ 640.50	\$ 658.61	\$ 688.40	\$ 714.43	\$ 747.41	\$ 782.00	\$ 818.17	\$ 862.16	\$ 908.51	\$ 957.58	\$ 1,009.26
Residential (Low Density) - per unit	\$ 46.22	\$ 47.41	\$ 49.45	\$ 51.20	\$ 53.44	\$ 55.79	\$ 58.25	\$ 61.27	\$ 64.47	\$ 67.83	\$ 71.38
Residential (Medium Density) - per unit	\$ 28.40	\$ 29.03	\$ 30.15	\$ 31.09	\$ 32.33	\$ 33.63	\$ 34.98	\$ 36.65	\$ 38.42	\$ 40.28	\$ 42.24
Residential (High Density)	\$ 169.69	\$ 174.46	\$ 182.44	\$ 189.23	\$ 197.89	\$ 207.03	\$ 216.66	\$ 228.24	\$ 240.46	\$ 253.34	\$ 266.95