

Clause 3 in Report No. 14 of the Committee of the Whole was adopted, without amendment, by the Council of The Regional Municipality of York at its meeting held on September 24, 2015.

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**INFLOW AND INFILTRATION REDUCTION PILOT PROJECT
AGREEMENT PRINCIPLES – TOWN OF NEWMARKET**

Committee of the Whole recommends adoption of the recommendations contained in the following report dated September 17, 2015 from the Commissioner of Environmental Services:

1. Recommendations

It is recommended that:

1. The Commissioner of Environmental Services be authorized to execute a tri-party agreement with the Town of Newmarket and Marianneville Developments Limited/Kerbel Group Inc. to undertake an inflow and infiltration reduction pilot project in the Town of Newmarket, in accordance with the principles outlined herein.
2. The Regional Clerk forward a copy of this report to the Town of Newmarket and the Marianneville Developments Limited/Kerbel Group Inc.

2. Purpose

This report seeks Council authorization to enter into a tri-party agreement with the Town of Newmarket and Marianneville Developments Limited/Kerbel Group Inc. to undertake an inflow and infiltration reduction pilot project in the Town of Newmarket in exchange for assignment of servicing capacity based on the principles outlined in this report.

3. Background

Council approved Developer-funded Inflow and Infiltration Reduction Pilot Program in 2010

In response to Ministry of the Environment and Climate Change conditions of approval for the Southeast Collector Trunk Sewer Project, York Region completed an Inflow and Infiltration Reduction Strategy in 2011 and partnered with all nine local municipalities to fund and implement the Strategy. One component of the Strategy is to partner with the building industry to reduce inflow and infiltration through capacity assignment incentive programs. An update to the Strategy is required every five years with the first update scheduled for March 2016.

The Developer-funded Inflow and Infiltration Reduction Pilot Program enables a developer to enter into a tri-party agreement with a local municipality and the Region to undertake an inflow and infiltration reduction project at their own cost and risk, in exchange for advancement of servicing capacity on a two-to-one basis.

On September 23, 2010, Council authorized the first inflow and infiltration reduction agreement with the City of Markham and Upper Unionville Inc. At the same time, Council also authorized staff to consider up to one similar developer initiated project in each of the other local municipalities. Subsequently, three similar inflow and infiltration reduction agreements were executed for works in the Town of Aurora, Town of Richmond Hill and City of Vaughan.

Marianneville Developments Limited/Kerbel Group Inc. represents the fifth group interested in undertaking a similar inflow and infiltration reduction pilot project. Marianneville Developments Limited/Kerbel Group Inc. own the Glenway lands located in the southeast quadrant of Davis Drive West and Bathurst Street with a planned build-out population of approximately 1,900 and 17365/17395 Yonge Street with a planned population of approximately 700 (see Attachment 1).

Works have been implemented in Aurora, Markham, and Vaughan

Since execution of the tri-party agreements, remedial works have been carried out in the Town of Aurora, City of Markham and City of Vaughan as summarized in Table 1.

Table 1
Remedial Works Completed through Developer-funded Inflow and Infiltration Reduction Program

Works Completed	Municipality		
	Aurora	Markham	Vaughan
Sewer point repairs	35		
Residential downspout disconnections	53	16	
Commercial roof leader disconnections	26		8
Sump pump disconnections	2		
Rectification of catch basin cross connections	7		7
Installation of watertight manhole covers	40		
Rectification of residential reversed sloped driveway cross connections through construction of new storm sewer		4	
Rectification of commercial site cross connection through construction of new storm sewer		1	
Rectification of infiltration through modification of existing sanitary manhole at commercial site		1	
Rehabilitation of sanitary sewer access hatches that allowed inflow from storm sewers during storm events			1
Total	163	22	16

Capacity recovered for advancement of new development totalled 10,042 persons

The principle of capacity assignment under provisions of this program is based on ensuring that flow generated from new development is fully compensated on a two-to-one basis with a reduction in inflow and infiltration. Based on the works completed in Table 1, a total of 20,084 persons capacity has been recovered through the developer-funded projects. With the two-to-one capacity assignment ratio, a total of 10,042 persons capacity was made available to new developments as shown on Table 2.

Table 2
Assignable Wastewater Conveyance Capacity recovered through Developer-funded Inflow and Infiltration Reduction Pilot Program

Municipality	Capacity (persons)
Aurora	4,006
Markham	1,488
Vaughan	4,548
Total	10,042

Town of Newmarket Council endorses a tri-party agreement with York Region and Marianneville Developments Limited/Kerbel Group Inc.

In April 2015, Regional staff commenced discussions with Town of Newmarket staff for an inflow and infiltration reduction pilot project to be undertaken by Marianneville Developments Limited/Kerbel Group Inc.

On May 11, 2015, Town of Newmarket Council adopted recommendations of their Committee of the Whole Report, entitled "*Inflow and Infiltration Reduction Pilot Project*" to enter into a tri-party agreement with York Region and Marianneville Developments Limited/Kerbel Group Inc. for an inflow and infiltration reduction pilot project (see Attachment 2) with an objective to reduce inflow and infiltration in the Newmarket sewer system and in turn generate wastewater conveyance capacity.

4. Analysis and Options

Marianneville Developments Limited/Kerbel Group Inc. project provides additional servicing capacity to support Newmarket growth

Similar to the other four developer initiated projects in Aurora, Markham, Richmond Hill and Vaughan, this pilot project will be undertaken by Marianneville Developments Limited/Kerbel Group Inc. at no cost to the Region or the Town.

As a result of deferral of the full implementation of Upper York Sewage Solutions (UYSS) project from 2018 to 2024, existing wastewater system capacity constraints in the York Durham Sewage System (YDSS) at the Aurora and Newmarket pumping stations will remain in effect to 2024. One of the benefits of the UYSS project is to remove capacity constraints at Aurora and Newmarket pumping stations by diverting flows away from the YDSS to the new Water Reclamation Centre, thereby creating capacity in the system to support new growth in Aurora and Newmarket. The proposed inflow and infiltration reduction pilot project by Marianneville Developments Limited/Kerbel Group Inc. will permit additional growth in Newmarket and help to bridge potential servicing capacity gap prior to implementation of UYSS.

The Marianneville Developments Limited/Kerbel Group Inc. project will be implemented in accordance with the recommended principles of agreement

To ensure that the project aligns with the Region's overall Inflow and Infiltration Reduction Program, the following principles of agreement are recommended:

- The work shall be funded by Marianneville Developments Limited/Kerbel Group Inc. at no cost to the Region and is not eligible for Regional development charge credits
- The work shall complement the Region's broader Inflow and Infiltration Reduction Program
- Capacity assignment to the Town of Newmarket shall be at the sole discretion of the Region. Capacity assignment will be provided in stages based on proven reduction of inflow and infiltration through remedial works carried out by Marianneville Developments Limited/Kerbel Group Inc.
- A Work Plan outlining remedial works shall be approved by the Region and the Town prior to commencement of the work.
- The project will be deemed to be complete if enough capacity is generated to support a total capacity assignment of 3,800 persons
- The method used to quantify inflow and infiltration reduction shall be one adopted by the Region with a baseline defined by the Region. Capacity assignment to the Town shall not exceed more than one unit for every two units of proven capacity created by inflow and infiltration reduction. The Region will at its sole discretion determine the exact allocation to be provided and also the credit ratio to be used, based on the nature of the remediation and the flow reduction verification process
- Prior to implementing the work, a resident communication protocol shall be established by the developers group and/or the Town to the satisfaction of the Region and the Town

- The Region and/or the Town may inspect the work and may require stoppage of work at their sole and absolute discretion, if the work has been commenced without obtaining the necessary approvals, or private properties entered without prior consent of property owners, and/or the work is not performed in accordance with the Region's overall Inflow and Infiltration Reduction Program
- All flow monitoring records obtained by the developer shall become the property of the Region at the end of the pilot project and shall be prepared in a form accepted by the Region
- The developer shall use the latest sewer inspection and commissioning standards developed by York Region in conjunction with local municipalities and the works shall be inspected to the satisfaction of the Region and the Town. As part of commissioning new sewers, flow monitoring shall be carried out at the sole expense of the developer to ensure and verify that new sewers are constructed without excessive inflow and infiltration to the satisfaction of the Commissioner of Environmental Services
- The developer shall be responsible for Regional staff costs in preparing and administering the agreement and shall pay legal fees incurred by the Region for the agreement
- The developer shall provide a Letter of Credit for the full estimated value of the work prior to carrying out the work
- The developer shall agree to fully indemnify the Region against any and all legal action that may arise during the design and construction of works and thereafter, as well as against any action taken against the Region as a result of the Region agreeing to proceed with this project
- Execution of the Agreement shall not be a condition precedent for draft plan approval, provided that the developer enters into a "no pre-sale agreement" for lands not having capacity commitments and provided that a Holding Zone be placed in all development lands not having capacity commitments

Link to key Council-approved plans

The Developer-funded Inflow and Infiltration Reduction Program supports the following 2015-2019 Corporate Strategic Plan objective:

- Optimize critical infrastructure systems capacity through reducing inflow and infiltration into the sanitary sewer system

Financial Implications

Marianneville Developments Limited/Kerbel Group Inc. will be undertaking the project at its own cost. The developer group will also be fully responsible for all Regional staff costs to prepare and administer the agreement as well as all legal fees incurred by the Region for the agreement.

In addition, servicing capacity generated by this project will permit additional growth and in turn additional development charges for the Region.

5. Local Municipal Impact

This project is the fifth developer funded inflow and infiltration reduction project in the Region and will benefit the Town of Newmarket with the removal of a portion of the inflow and infiltration in the Newmarket sewer system, at no cost to the Town. It also provides opportunity to mitigate the potential impact to growth as a result of the deferral of the implementation of UYSS.

6. Conclusion

Success of this project requires a tri-party agreement between York Region, the Town of Newmarket and Marianneville Developments Limited/Kerbel Group Inc. with sound and comprehensive principles to guide implementation of the project and ensure alignment with the Region's Inflow and Infiltration Reduction Strategy. This report seeks Council endorsement of the proposed agreement and authorization for the Commissioner of Environmental Services to execute the agreement.

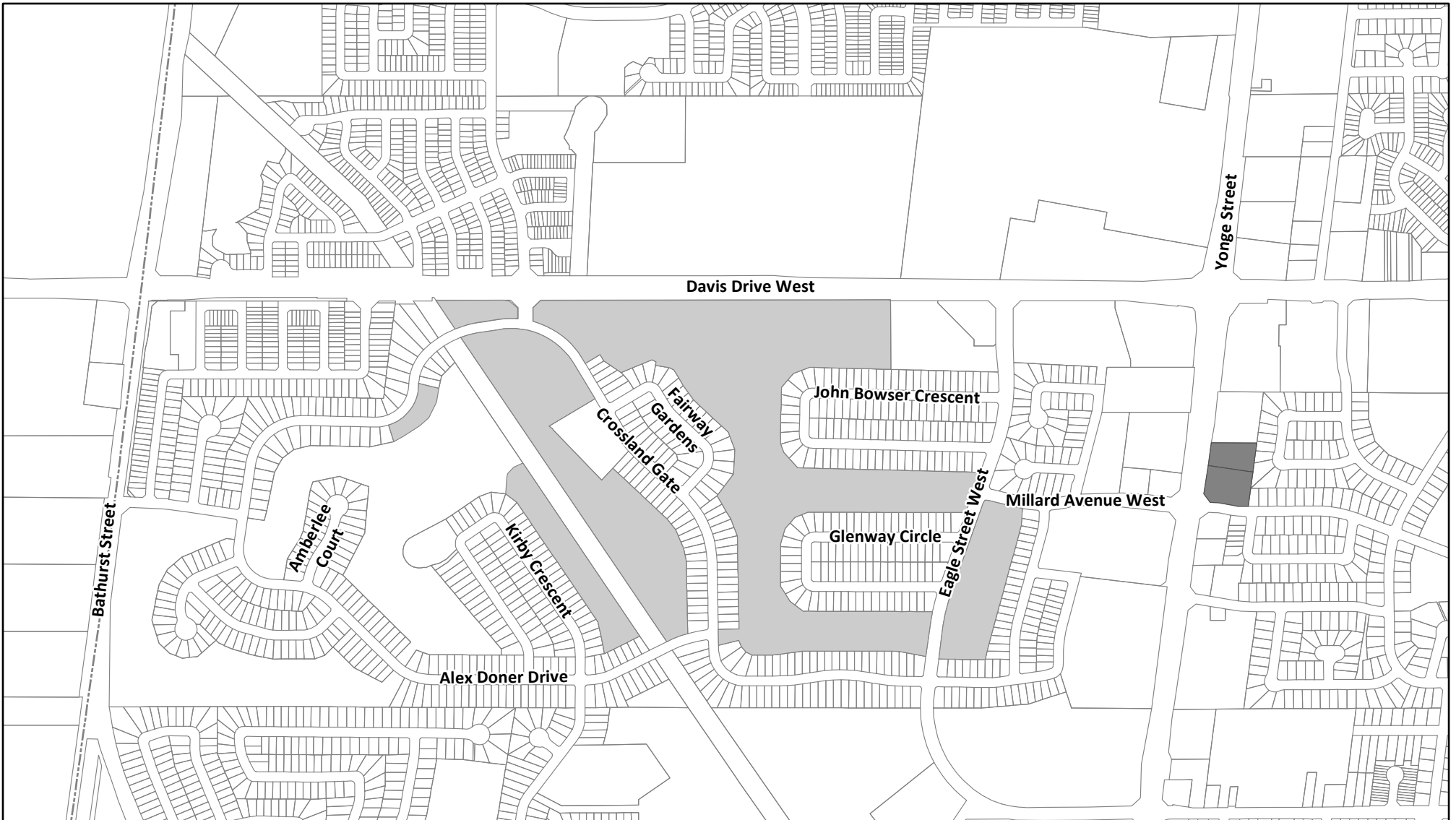
For more information on this report, please contact Stephen Fung, Director, Infrastructure Asset Management at Ext. 73025.

The Senior Management Group has reviewed this report.

September 17, 2015

Attachments (2)

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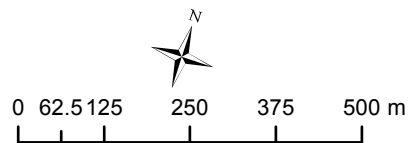


Location Plan

Marianneville Developments Limited/Kerbel Group Inc. -
 Inflow and Infiltration Reduction Pilot Project Agreement Principles - Town of Newmarket
 September 17, 2015

Produced by:
 The Regional Municipality of York
 Infrastructure Asset Management Branch, Environmental Services Department
 August, 2015

Data Sources:
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 See York.ca for disclaimer information.



Legend

- Glenway Lands
- 17365 / 17395 Yonge Street



ENGINEERING SERVICES
Town of Newmarket
395 Mulock Drive
P.O. Box 328, STN Main
Newmarket, ON L3Y 4X7

www.newmarket.ca
engineering@newmarket.ca
T: 905 895.5193
F: 905 953 5138

April 13, 2015

**DEVELOPMENT & INFRASTRUCTURE SERVICES REPORT
ENGINEERING SERVICES 2015-24**

TO: Committee of the Whole
SUBJECT: Inflow and Infiltration Reduction Pilot Project
ORIGIN: Director, Engineering Services

RECOMMENDATIONS

THAT Development and Infrastructure Services Report – ES 2015-24 dated April 13, 2015 regarding “Inflow and Infiltration Reduction Pilot Project” be received and the following recommendations be adopted:

- 1. THAT the Mayor and Clerk be authorized to execute a Tri-Party Agreement to the satisfaction of the Chief Administrative Officer, the Commissioner of Development and Infrastructure Services, the Director of Engineering and the Town Solicitor, with York Region and with Marianneville Developments Limited / Kerbel Group Inc. for an Inflow and Infiltration Reduction Pilot Project based on the principles identified in this report;**
- 2. AND THAT staff report back as to the outcome of the Inflow and Infiltration Reduction Pilot Project;**
- 3. AND THAT a copy of this report and Council extract be forwarded to representatives of Marianneville Developments Limited / Kerbel Group Inc. and York Region.**

BACKGROUND

In anticipation of the forecasted growth within York Region, an Individual Environmental Assessment (IEA) for the Southeast Collector (SEC) sanitary trunk sewer to expand the regional sewer system was initiated in 2005. The SEC trunk sewer is an important and necessary component of infrastructure to serve the future growth in the Region and the IEA was approved by the Ministry of the Environment (MOE) on March 31, 2010.

A decorative graphic in the bottom right corner consisting of two curved, overlapping lines, one dark grey and one light grey.

A series of conditions were imposed by the MOE as part of the IEA approval, which include the requirements for the Region and local municipalities to develop solutions to actively reduce inflow and infiltration (I/I) in both the regional and municipal sanitary systems by 10 percent by 2031. As a result, York Region has requested that local municipalities, as part of the assignment of the annual servicing allocation, partner with the Region to: 1) continue to seek out the sources of I/I; 2) adopt standards and guidelines to reduce I/I in new developments and within existing systems; and 3) develop funding and cost sharing principles to address future remediation projects.

WHAT IS INFLOW AND INFILTRATION?

Inflow and infiltration is “clean” water (i.e., not sanitary sewage) that enters the sanitary sewer or “wastewater” system during rain and snowmelt events, as well as seepage into the system from the surrounding groundwater. Such water adds to the burden of sewage treatment plants, because it adds into the plant a significant volume of water that does not need to be treated. The additional water also taxes the local sanitary sewer mains by increasing the volume of flow through the pipes, often to the point of surcharge. This increases the risk of sewage back-ups and also reduces the capacity of the pipes to accept flow from new developments being proposed upstream.

FIGURE 1: I/I Sources
(Source: York Region Website)

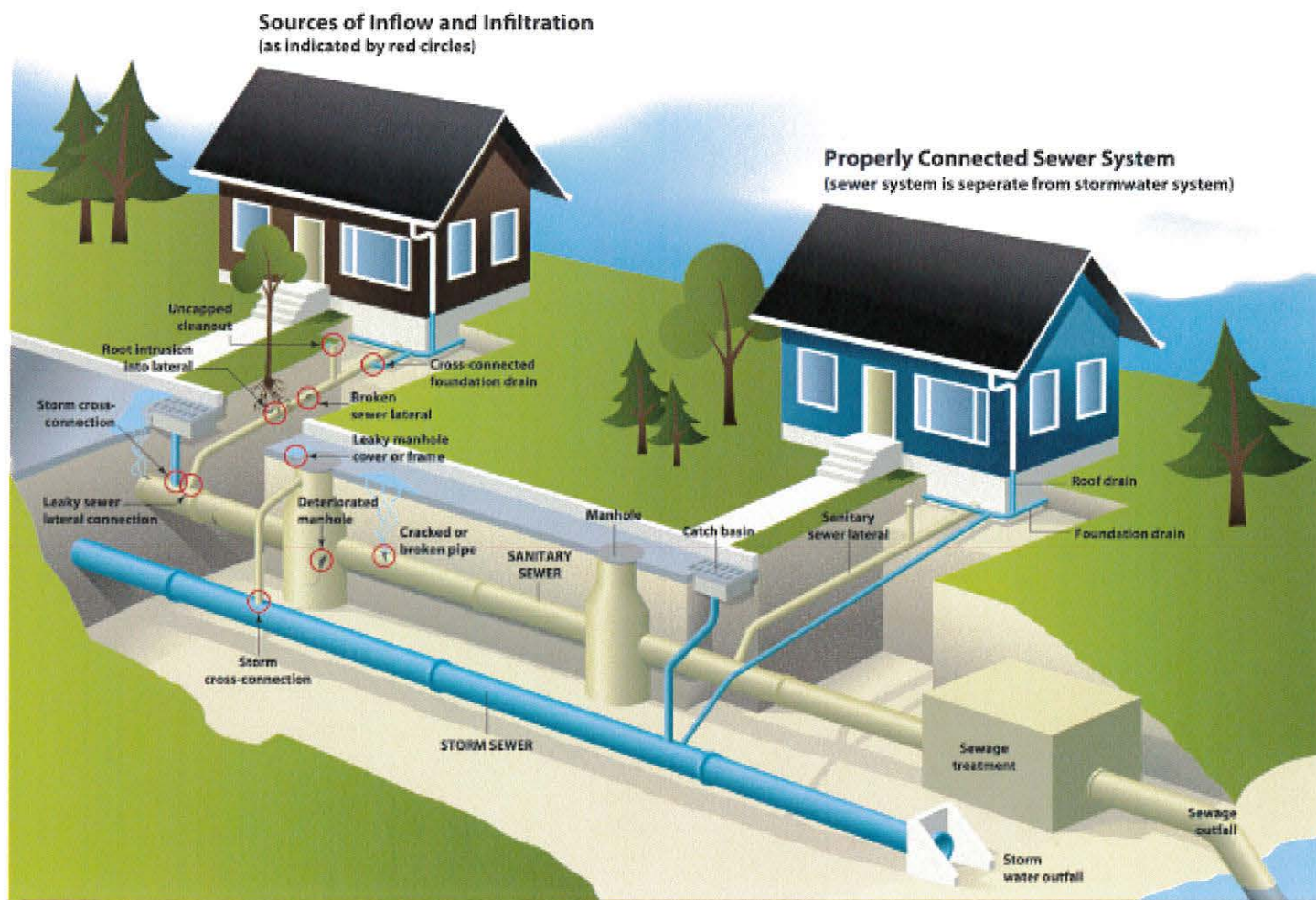


Figure 1 (above) shows a schematic of inflow and infiltration sources. "Inflow" can result from unsealed manhole covers, roof drain downspouts or sump pumps that are connected directly into the sanitary sewer instead of the storm sewer, or catchbasins and storm sewers that are connected directly into the sanitary sewer. "Infiltration" occurs through cracks and faulty joints in the pipes and manholes, resulting in groundwater seepage. In general, inflow and infiltration into the sanitary system is lower when the mains are newer; however, as the sewage infrastructure ages and the system deteriorates, the rate of inflow and infiltration into the system increases.

I/I REDUCTION PILOT PROJECT:

Although Newmarket has not had an opportunity to participate in an Inflow and Infiltration Reduction Pilot Project yet, four other local municipalities in York Region have. The City of Markham, the City of Vaughan, the Town of Aurora and the Town of Richmond Hill have already executed Tri-Party Agreements with York Region and a private sector partner or Landowners Group (LG). All four have successfully embarked upon or completed work programs and remediation works for Inflow and Infiltration Reduction Pilot Projects identical to the one being proposed in Newmarket. In all four cases, the same "Tri-Party Agreement" legal document was used to forge a partnership between the local municipality, York Region and a private sector / LG partner. Table 1 below shows a summary of the pilot projects in other local municipalities, including the potential allocation assignment and the name of the LG who participated in the project.

Table 1

York Region Inflow and Infiltration Reduction Pilot Projects Summary

MUNICIPALITY	LANDOWNERS GROUP	STATUS OF AGREEMENT	POTENTIAL CAPACITY ASSIGNMENT (person-units)
Markham	Upper Unionville Inc.	Executed (June 2011)	2500
Vaughan	Huntington Landowners Trustee Inc.	Executed (Sept. 2012)	4600
Aurora	Aurora 2C Landowners Group Inc.	Executed (Sept. 2012)	3300
Richmond Hill	North-East Leslie Landowners Group Inc.	Executed (May 2013)	2232
TOTAL CAPACITY RECOVERED AS OF MARCH 2015			7400+

An I/I Reduction Pilot Project requires the execution of a "Tri-Party Agreement" between the Town, York Region and a LG. The LG must be willing to fund 100 percent of the project costs. There is no cost to either York Region or to the Town. The LG hires, at its own expense, a qualified consulting engineer and also pays the costs of an additional engineering consultant who will act as a peer reviewer on behalf of the municipality and York Region to verify the works done by the LG and its consultant. The works involve monitoring the municipal sanitary sewer (wastewater) system throughout the Town (i.e., not necessarily in the areas that the LG is developing) and conducting standardized tests to determine areas within the Town's sanitary sewer network where there is high inflow and infiltration occurring.

Once the sources of I/I have been identified, a "work program" is prepared by the LG and its consultant to conduct the works required to remove/remediate the I/I sources. The work program is presented to the Town and to York Region for approval. The remediation being proposed can be as extensive as re-lining sections of sewer mains or lining manholes that show excessive infiltration. It can also involve disconnecting sources of inflow such as roof drains / downspouts or private catchbasins from the sanitary main and re-connecting them properly into the storm sewer instead, if desired. Any work being proposed by the LG and their engineering consultant is subject to review and approval by York Region and the Town, in concert with the peer reviewer. There is no cost to the Town or Region for any of the construction works or for any engineering services by the LG's consultant or the peer reviewer. Prior to conducting any works, the LG must submit a letter of credit for a sufficient amount to serve as remediation guarantees for all of the works that the LG is obligated to undertake in the work plan and for rectification of any deficiencies. This way, the Town is protected against the possibility of deficiencies or unsatisfactory/incomplete work. The LG must also provide adequate liability insurance, to the satisfaction of the Town. Once the work program has been concluded, subsequent flow monitoring will reveal how much I/I has been removed from the sanitary sewer system as a result of the project.

In exchange for assuming all of the costs to complete an approved monitoring and work program under the I/I Reduction Pilot Project, the Town, and ultimately the LG, earns additional units of capacity allocation for the LG's development. The additional allocation is calculated at a 2:1 ratio (i.e. for every 2 person-capacity units that are eliminated from the system as a result of the work program, the Town earns 1 person-capacity unit to allocate back to the LG for the development project). This helps the Town as much as the LG, as it frees up some additional capacity units for the Town to allocate to other developments to meet its growth needs as required. In essence, the work done by the LG at the LG's cost, adds to the capacity allocation bank of the Town. The number of units allocated to any project is usually equivalent to the balance between the number of units that have already been allocated by the Town and the number of units that will be required to bring the project to full build-out.

The Marianneville Developments Limited / Kerbel Group Inc. (the "LG") has approached the Town of Newmarket and expressed its interest to undertake and fund an I/I Reduction Pilot Project in a letter of intent dated June 12, 2014 (see attachment). The LG is proposing to use the services of two qualified engineering consultants (Cole Engineering and Civica Infrastructure Inc.), who are experienced in inflow and infiltration works and have provided the engineering services for similar pilot projects with other local municipalities in York Region. Town Staff has held preliminary discussions with York Region regarding the possibility of the project going ahead, if endorsed by Council. York Region is very interested in moving this project forward, as it will improve the sanitary sewer system and will help them meet the stringent requirements of MOE's IEA for the South-East Collector Trunk Sewer.

The overall benefits of entering into an I/I Reduction Pilot Project have been proven by other local municipalities in York Region who have participated in similar pilot projects. More specifically, the program will:

- Improve the level of service and capacity in the local sanitary sewer system by reducing I/I;
- Improve the level of service and capacity in the local systems by reducing I/I;
- Help improve the overall capacity of the YDSS (York District Sanitary Sewer);
- Reduce environmental impact associated with cross connections between sanitary and storm sewer systems;
- Create additional allocation for new development, in particular, if allocation becomes scarce in future years;
- Allow the potential to focus the pilot project to high priority areas;
- Allow the Town to concentrate its I/I CCTV Camera Inspections on other areas of the Town;
- Expedite the I/I reduction in the Town system at the Landowner Group's costs;
- Create a more efficient overall sanitary sewer system;
- Help satisfy MOE approval condition for the Southeast Collector IEA;
- Reduce total volume of sewage being treated at the treatment plant.

PUBLIC CONSULTATION

No public consultation was undertaken in the preparation of this report. If the recommendations are approved, then the process would incorporate a public consultation plan.

BUSINESS PLAN AND STRATEGIC PLAN LINKAGES

- Well-equipped and managed: Efficient management of capital assets and municipal services to meet existing and future operational demands.

HUMAN RESOURCE CONSIDERATIONS

There is no impact on current staffing levels.

IMPACT ON BUDGET

There is no impact on budget to the Town of Newmarket, as all costs will be funded by the Landowner Group.

CONTACT

For more information on this report, please contact Rachel Prudhomme at 905-895-5193 extension 2501; rprudhomme@newmarket.ca.

Prepared by:



R. Prudhomme, M.Sc., P.Eng.
Director, Engineering Services



P. Noehammer, P.Eng., Commissioner
Development & Infrastructure Services



MARIANNEVILLE DEVELOPMENTS LIMITED

June 12, 2014

Town of Newmarket
PO Box 328, Station Main
395 Mulock Drive
Newmarket, ON L3Y 4X7

Attention: Mr. Bob Shelton
Chief Administrative Officer

Dear Mr. Shelton:

Re: Infiltration (I-I) Reduction Study Pilot Project
Marianneville Developments Limited
Town of Newmarket

The Marianneville Developers Group is pleased to be part of the growing community of Newmarket and is eager to build a new community that both the Town and Newmarket residents will be proud of. As a part of the development process we will require sanitary allocation from the Town prior to each phase of the development. However, we understand that there is insufficient near-term allocation available to match up with our proposed schedule. This affords both the Town and the Developer's Group an excellent opportunity to work together and achieve mutually beneficial goals.

The Region of York over the past four (4) years have been working on pilot projects with many local municipalities and developer groups to provide allocation ahead of the proposed schedule using a simple process of trading Inflow and Infiltration (I-I) Reduction for sanitary allocation. As we understand, this has not yet been completed with the Town of Newmarket and we therefore wish to submit ourselves as a partner with the Town to work with the Region on this project in the same manner. With a 2:1 ratio of I-I peak flow removed from the system to allocation given by the municipality we believe this will not only help us achieve our schedule, but also improve the Town's infrastructure, all at no cost to the Town.

We understand the risks involved in this endeavour both financially and otherwise, as well as the fact that outcome is not guaranteed. To minimize both the Town's and our risk, and to ensure a successful project outcome, we are partnering with Cole Engineering, the same firm that had been working on the other four (4) successful I/I projects completed within the Region. In light of the above, we formally request the Town's approval to initiate an Inflow and Infiltration (I-I) Reduction Study with the Town of Newmarket and the Region of York. In consideration of the Region's requirements, the Marianneville Developers Group would further request that this I-I Reduction Study be considered the Town of

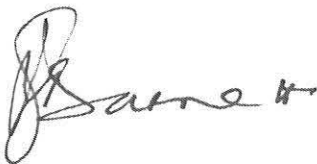
*Town of Newmarket
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Newmarket's official Pilot project and that the same be secured by way of a confirmation letter or short form agreement with both the Town and Region, if required.

Thank you for considering this proposal and we await your timely response.

Yours truly,

MARIANNEVILLE DEVELOPMENTS LIMITED

A handwritten signature in black ink, appearing to read "Joanne Barnett", with a stylized flourish at the end.

Joanne Barnett MCIP RPP
Vice President, Planning Operations

c.: Rachel Prudhomme, Town of Newmarket
Rick Bingham, Town of Newmarket
Scott Cole, Cole Engineering Group Ltd.