

PRIORITIES AND KEY INITIATIVES COMMITTEE – MARCH 21, 2011

BLOCK 61 INFLOW AND INFILTRATION REDUCTION PILOT PROJECT HUNTINGTON LANDOWNERS TRUSTEE INC.

WARD 1

Recommendations

The Commissioner of Engineering and Public Works, in consultation with the Director of Legal Services, recommends:

1. That a by-law be enacted authorizing the Mayor and Clerk to execute the necessary agreements with Huntington Landowners Trustee Inc. (Block 61 Developers' Group) and York Region for the Block 61 Inflow and Infiltration Reduction Pilot Project based on the principles and terms set out in this report;
2. That York Region be requested to endorse and participate in the Block 61 Inflow and Infiltration Reduction Pilot Project;
3. That staff be directed to report back to a future Committee of the Whole meeting on the results of the Block 61 Inflow and Infiltration Reduction Pilot Project; and
4. That a copy of this report be forwarded to York Region.

Contribution to Sustainability

The reduction of inflow and infiltration (unwanted sources of water) within the existing local and regional sanitary sewerage systems will result in a more sustainable infrastructure network by increasing conveyance capacity and overall operational efficiency.

The proposed Block 61 Inflow and Infiltration Reduction Pilot Project is consistent with the objectives of the City's Community Sustainability and Environmental Master Plan (Green Directions Vaughan, April 2009) as it will assist in:

- The promotion of sustainable growth and development;
- Minimizing energy consumption;
- The creation of a City with sustainable built form;
- Sharing sustainable best practices and ideas between and among municipal staff and the community; and
- Support the City's mandate to minimize inflow and infiltration within the existing sewerage system and to optimize overall system efficiency.

Economic Impact

The proposed Block 61 Inflow and Infiltration Reduction Pilot Project is a developer initiated project which will be fully funded by Huntington Landowners Trustee Inc. Accordingly, there is no economic impact to the City resulting from the adoption of this report.

Communications Plan

A comprehensive communication plan is proposed by the Block 61 Developers' Group to ensure the City, Region and local residents / businesses are informed during all phases of the Pilot Project. The communication plan includes public awareness components such as notices to residents, site visits with individual property owners, and a project website. Notices will include a detailed description of required field investigation and remedial works that may be carried out

throughout the duration of the project.

Purpose

The purpose of this report is to seek Council's endorsement of the proposed Block 61 Inflow and Infiltration Reduction Pilot Project, which will be undertaken by Huntington Landowners Trustee Inc. in close coordination and collaboration with City and Regional staff.

Background

The Ministry of the Environment (MOE) imposed conditions of approval on the Regional Southeast Collector Sewer Individual Environmental Assessment (IEA) that requires specific environmental sustainability targets related to inflow and infiltration reduction and water conservation are achieved. This responsibility lies with both regional and local municipalities. The distribution of additional servicing allocation capacity from the York Sewage / Water Supply Systems to local municipalities will be dependant upon successfully achieving these sustainability targets.

Accordingly, since April of 2010 staff has participated in a joint Regional and Municipal Water and Wastewater Task Force in order to establish a strategy by which the MOE sustainability targets can be achieved. Final strategy documents and detailed implementation plans will be submitted to the MOE by March 31, 2011. The Strategies will include priorities, targets, timelines, tactics, initiatives and implementation logistics / costs associated with meeting the targets established for inflow and infiltration reduction and water conservation. One recommendation of the Strategy supports the pursuit of innovative solutions to addressing inflow and infiltration reduction in sewers including the undertaking of pilot projects.

York Region Endorsement of Developer Funded Pilot Projects

On September 23, 2010, York Region approved the undertaking of a developer funded inflow and infiltration reduction pilot project within the Town of Markham. At the same time, York Region extended the opportunity to each local municipality to undertake one similar pilot project within their own jurisdiction. In general terms, the developer is proposing to fund and undertake works to reduce the inflow and infiltration in priority sewer systems in return for receiving servicing capacity based on a ratio of the flow reduction.

Each pilot project will provide the Region with opportunities and challenges. The opportunities include:

- developer funded inflow and infiltration reduction project;
- developer expedient schedule and resources availability; and
- acquiring project experience which can be used for other inflow and infiltration reduction programs.

The main challenge is to ensure that the pilot projects meet the objectives of the Region's overall inflow and infiltration reduction strategy and the MOE's Southeast Collector Sewer Individual Environmental Assessment conditions of approval.

Any reduction in inflow and infiltration that may be realized by the proposed pilot project will provide the following benefits:

- Accelerated inflow and infiltration reduction in the local and regional sewerage systems;
- Improved sewerage system efficiencies;
- Reduced potential for sewage spills and related environmental impacts as a result of cross connections;

- Reduced potential for basement flooding;
- Reduced municipal liability;
- Increased certainty of sewer system condition;
- Assistance in meeting MOE approval conditions for the Southeast Collector;
- Reduced surcharge risks in regional and local sewerage systems; and
- Reduced volumes reaching the treatment plant.

Block 61 Pilot Project

In January 2011, Huntington Landowners Trustee Inc. (the Block 61 Developers' Group) submitted a proposal to implement an Inflow and Infiltration Reduction Pilot Project in the City to facilitate the development in Block 61.

Block 61 is located within the Kleinburg-Nashville Community. It is bound by Major Mackenzie Drive to the south, Huntington Road to the west, Nashville Road to the north and Stevenson Avenue to the east. The existing Canadian Pacific Railway (CPR) right-of-way runs through the Block in a north-south direction thereby bisecting the Block into an east and west portion as shown on Attachment No. 1.

The lands west of the existing CPR right-of-way are designated for residential development by the area specific Official Plan Amendment No. 699. On February 1, 2011, a Public Hearing was held for the proposed Block 61 West (Nashville Heights) Block Plan. The participating landowners in the Block have submitted draft plan of subdivision and zoning applications which are currently under review by staff. The proposed Block Plan will accommodate the development of approximately 3,000 units with an equivalent population of about 10,200 people. The lands east of the CPR right-of-way comprise of two draft approved plan of subdivisions; Lake Rivers Inc. (19T-05V10) and Molise Kleinburg Inc. (19T-06V14) as shown on Attachment No. 1. Collectively, these plans contain a total of 760 residential lots. Both plans are currently advancing towards detailed design in support of a phase 1 development. In total, Block 61 east and west will comprise of about 3,800 units.

The Block 61 Pilot Project will develop a methodology for estimating the overall inflow and infiltration reduction in the local and Regional sewerage systems, part of which will be used for risk reduction and the remainder for allocation to new development areas. It is expected that both flow rates and flow volumes will be reduced so as to optimize or free-up capacity in the existing system. The overall benefit of the project is that the efficiency of the City and Region's sewerage system is improved at no cost to the City, and in return the developer receives sanitary servicing capacity which will facilitate the development within Block 61.

The individual phases of the pilot project will include the following components:

1. Catchment area selection;
2. Initial sewage flow monitoring;
3. Catchment area testing;
4. Inflow and infiltration source identification and evaluation;
5. Remedial works to reduce inflow and infiltration;
6. Post remedial monitoring; and
7. Inflow and Infiltration reduction verification / reporting.

The Block 61 Developer's Group is committing to fully fund the pilot project. Based on a preliminary schedule, it is anticipated that the pilot project will take approximately 18 to 24 months to complete. Through partnership with the City, the Developers Group will assist in achieving a reduction in inflow and infiltration in the City's sewerage system at no cost to the City or Region in exchange for sanitary servicing capacity for Block 61.

Ultimately, York Region must verify that any remedial works completed has resulted in a measurable reduction in peak wet-weather flows and volume in the York-Durham Sewage System. Once the flow reduction is quantified and confirmed by the Region and City, it will be converted into equivalent residential units. Based on the parameters of the pilot project, Huntington Landowners Trustee Inc. must demonstrate an actual flow reduction equivalent to two residential units in order to receive one unit of new servicing capacity.

Overall, the Pilot Project will achieve a net improvement in risk reduction / management and enhance environmental protection and public safety. In return, it will allow for the advancement of future servicing allocation capacity to new development areas above and beyond current commitments from York Region. Development/Transportation Engineering and Public Works staff will work closely with the Block 61 consultants and representatives from York Region throughout the duration of the Pilot Project.

Pilot Project Target

The development in Block 61 will required a total of about 3,800 units of servicing capacity to provide for the full build out of the block. Based on the 2:1 ratio, the pilot project must identify a total of 7,600 units of capacity to reach this target.

In addition, City staff has requested that the pilot project realize a further flow reduction equivalent to 800 units. These additional 800 units will be assigned to the City and may be allocated to any development application within the City, regardless of catchment area, in accordance with the current Servicing Capacity Distribution Protocol as approved by Council. Accordingly, the overall objective of the pilot project is to identify servicing capacity for a total of 9,200 units (3,800 + 800 x 2). The engineering consultant for Block 61 is optimistic that this overall target flow reduction can be achieved successfully based on the experience gained in the Markham Pilot to date.

Initial Allocation of Capacity

Development in Block 61 may be in a position to proceed before the pilot project has been completed. Accordingly, it may be necessary to allocate servicing capacity to the initial phase of the development in Block 61, which will return to the City after the pilot project is completed. The Region has also requested that the City show support to the initial phase of the development proceeding through the allocation of capacity for the first phase from existing assigned capacity. This will be addressed in the next annual servicing capacity allocation update report in Q2-2011. Any capacity realized through the Block 61 Inflow and Infiltration Reduction Pilot Project is in addition to the City's current Regional assignment of 2013 capacity. Future Regional assignments of servicing capacity to the City will consider the results of the Pilot Project and growth projections.

Principles of Agreement

In order to facilitate the proposed Pilot Project, a tri-party agreement will be required between the City, York Region and Huntington Landowners Trustee Inc. (Block 61). The tri-party agreement will be based on the following principles:

1. All work associated with the Block 61 Inflow and Infiltration Reduction Pilot Project shall be area specific and coordinated with the Region's broader inflow and infiltration reduction program; no other similar allocation seeking pilot project will be permitted in the City until it is demonstrated that there is an overall benefit to the Region and the City;
2. The inflow and infiltration reduction pilot project shall be fully funded by Huntington Landowners Trustee Inc. (Block 61 Developers' Group) and will not be eligible for Development Charge credits;

3. The Block 61 Developers Group shall pay any and all costs incurred by the City in connection with the Block 61 Inflow and Infiltration Reduction Pilot Project including the cost of consultants engaged by the City for the purpose of peer reviewing the results of the pilot, verification monitoring and testing, staff time and resources, etc.;
4. The Block 61 Developers Group may complete more than one high priority catchment area, if necessary, to achieve sufficient inflow / infiltration reduction to meet the overall project target of 3,800 new residential units for Block 61 and 800 residential units for the City;
5. The Block 61 Developers Group shall receive 3,800 residential units of capacity realized by inflow / infiltration reduction and the City shall receive 800 residential units of capacity.
6. The total allocation capacity target for this pilot project is 4,600 residential units (3,800 + 800). The advancement of allocation capacity realized by the pilot project shall be distributed as follows:
 - a. The first 3,000 units shall be used for development in Block 61.
 - b. The remaining 1,600 units shall be divided equally between the City and Block 61 at a ratio of 1:1.
7. The Block 61 Developers Group shall commit to complete all remediation works identified in any single catchment area as mutually identified by the Block 61 Developers Group, the Region and the City prior to completion of the project and prior to receiving the corresponding allocation of servicing capacity;
8. Capacity assignment shall be provided in stages based on proven inflow / infiltration reduction through remedial works carried out by the Block 61 Developers Group and City approved development phasing;
9. The inflow and infiltration reduction work shall be carried out in catchment areas as recommended by the Block 61 Developers Group and approved by the Region and the City;
10. The Block 61 Developers Group shall develop an inflow and infiltration reduction / monitoring work plan to be approved by the City and Region prior to commencement of the work. The work plan shall outline the approach and shall include flow monitoring works for the chosen catchments. Upon approval by the City and Region, the Block 61 Developers Group may choose to expand the work into other catchment areas if necessary to achieve flow reduction targets, provided the remedial works in the original catchment areas are completed; or adequate securities are posted with the City and the Region to ensure completion of the additional work;
11. The City and the Region and/or its agent will review the analysis and monitoring works carried out by the developer to determine inflow/infiltration reduction. At its sole discretion, the City and the Region and/or its agent may carry out independent analysis and monitoring works to quantify and verify the results;
12. The methodology used to quantify inflow / infiltration reduction shall be one adopted by the Region with baselines defined by the Region. Verification and quantification of I/I reduction will take into consideration, but shall not be limited to, the length of the monitoring period, the quality and consistency of data collected, the number and intensity of storm events during the monitoring period; and shall be at the sole discretion of the City and York Region;
13. Capacity assignment to the City shall not exceed more that 1 unit for every 2 units of

proven capacity created by inflow / infiltration reduction;

14. The Region will at its sole discretion determine the exact allocation assignment ratio to be used, based on the nature of remediation and the flow reduction verification process;
15. The Block 61 Developers Group shall implement the new sewer design, inspection and commissioning standards developed by York Region in conjunction with local municipalities in the Block 61 development. All new infrastructure shall be inspected to the satisfaction of the Region and the City;
16. Prior to implementing any remedial work, a resident communication protocol shall be established by the developer in close cooperation with the City, to the satisfaction of the Region and City;
17. The Region and/or City may inspect the work and may require stoppage of work at its 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 / infiltration reduction program;
18. All flow monitoring records collected by the Block 61 Developers Group shall become the property of the Region and the City at the end of the pilot project;
19. The City shall consider reserving/allocating servicing capacity to the initial phase of development in Block 61. This reservation/allocation of capacity shall be from the City's available capacity assignment, and allocated in accordance with the City's Servicing Capacity Distribution Protocol;
20. The Block 61 Developers Group shall provide the City with a letter of Credit for the full estimated value of the remedial work and where work is subsequently expanded into other catchment areas, the Letter of Credit shall be increased accordingly;
21. The Block 61 Developers Group shall fully indemnify the Region and City against any and all legal action that may arise throughout the full duration of the pilot project, including design, monitoring and construction of works and thereafter, as well as against any action taken against the Region and City as a result of the Region and City agreeing to proceed with this project;
22. The Region and the City will support draft plan approval provided that the Block enters into a "No Presale" Agreement for development lands beyond Phase 1 and provided that a Holding Zone be placed on all development lands beyond Phase 1 capacity;
23. Servicing allocation commitments will be finalized by the City and the Region in consultation with the Block 61 Developers Group and once the City and Region are satisfied that all benefiting parties are in good standing with the Trustee; and
24. The Block 61 Inflow and Infiltration Reduction Pilot Project shall be deemed complete once all targets have been achieved.

Based on the principles outlined above, it is recommended that the City enter into a tri-party agreement with York Region and the Block 61 Developers Group so the Block 61 Inflow and Infiltration Reduction Pilot Project can be undertaken.

It is anticipated that flow monitoring within the City's existing sewerage system may commence in advance of the execution of the final agreement in order to maximize the use of flow monitoring data captured from the upcoming spring melt and wet weather events.

Relationship to Vaughan Vision 2020 / Strategic Plan

In consideration of the strategic priorities related to Vaughan Vision 2020, the recommendations of this report will assist in:

- The pursuit of excellence in service delivery;
- Planning and managing growth and economic vitality;
- Leading and promoting environmental sustainability;
- Maintaining assets and infrastructure integrity;
- Ensuring and enhancing community safety, health and wellness;
- Ensuring financial stability; and
- The demonstration of leadership and promotion of effective governance.

This report is therefore consistent with the priorities previously set by Council and the necessary resources have been allocated and approved.

Regional Implications

Regional endorsement of the Block 61 Inflow and Infiltration Reduction Pilot Project will be required. The City will continue to actively participate with York Region in all inflow and infiltration reduction programs and initiatives in order to satisfy the MOE conditions of approval for the Southeast Collector Sewer. Accordingly, it is recommended that a copy of this report be forwarded to the Region with a request that the Region endorse and participate in the Block 61 Inflow and Infiltration Reduction Pilot Project.

Conclusion

The proposed Pilot Project will be fully funded by the Block 61 Developers' Group. Successful completion of the pilot will improve the overall efficiency in both local and regional sanitary sewerage systems and will assist in meeting the MOE approval conditions for the Southeast Collector. The Pilot Project anticipates a "win-win-win" outcome for the City, Region and the proponents in Block 61. The duration of the pilot from initial monitoring to post remediation monitoring is anticipated to take approximately 18 to 24 months to complete. By achieving the inflow and infiltration reduction targets anticipated by the pilot, additional servicing allocation capacity will be realized for active development applications throughout the City.

Staff will report back to a future Committee of the Whole meeting on the results of the proposed Block 61 Inflow and Infiltration Pilot Project.

Attachments

1. Block 61 Location Plan

Report prepared by:

Jennifer Cappola-Logullo, Water / Wastewater Engineer, Ext. 8433
Michael Frieri, Manager of Engineering Planning & Studies, Ext. 8729

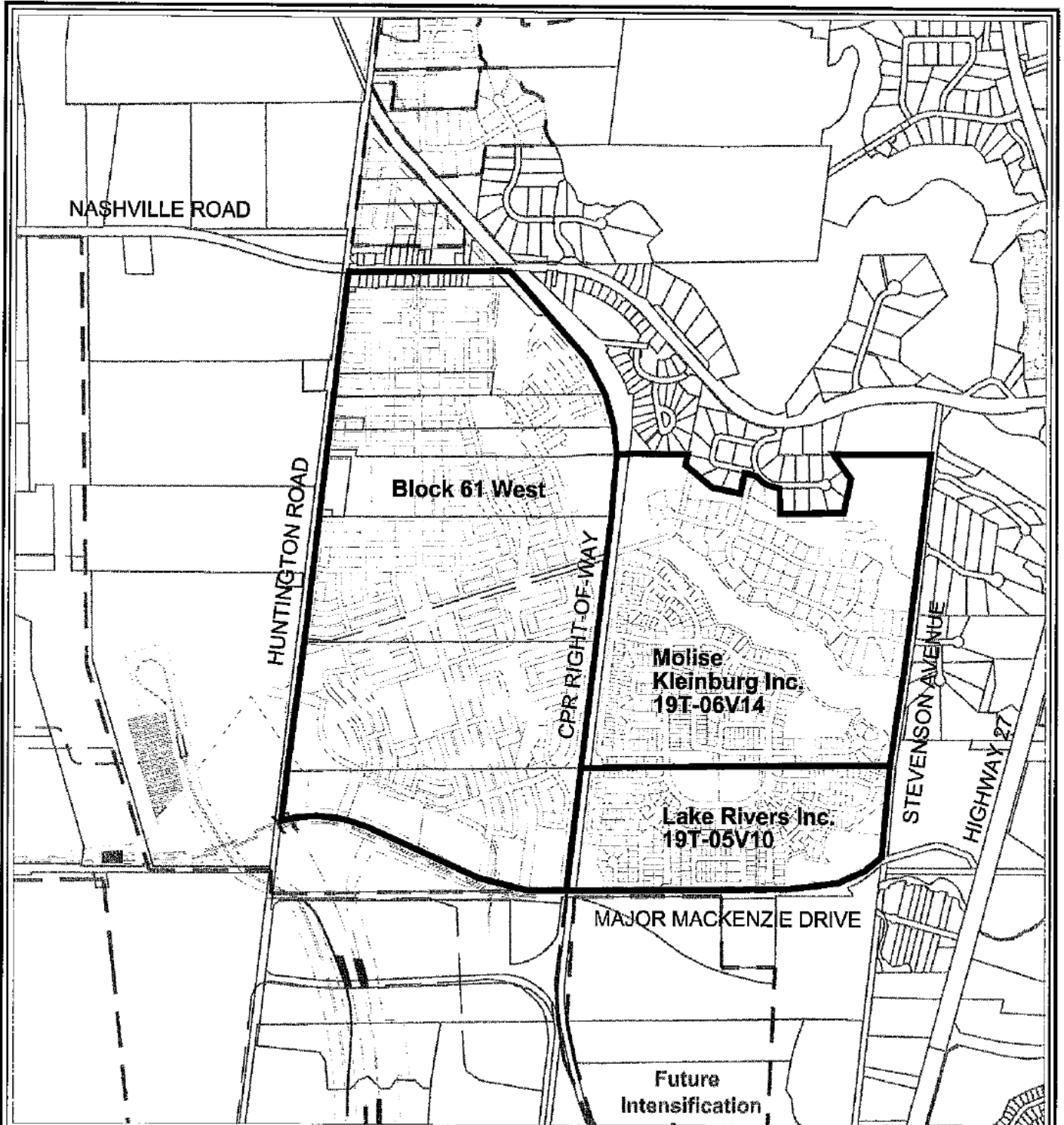
Respectfully submitted,

Bill Robinson, P. Eng.
Commissioner of Engineering and
Public Works

Andrew Pearce, C.E.T.
Director of Development /
Transportation Engineering

Brian Anthony, CRS-S, C. Tech.
Director of Public Works

ATTACHMENT No. 1



BLOCK 61 LOCATION PLAN



N.T.S.