
DATE: September 1, 2010

REPORT TITLE: **FLOODING REMEDIATION PROGRAM**

FROM: Dan Labrecque, Commissioner of Public Works

OBJECTIVE

The purpose of this report is to update Regional Council on the progress and issues emanating from the Flooding Remediation Program.

REPORT HIGHLIGHTS

- Phase 1 Flooding Remediation Program Household Drainage Survey (HHDS) results indicate that the Phase 1 Program may need to be expanded to include:
 - Those homes on a wye connection with the flooded homes from Phase 1;
 - Those homes that have subsequently reported being flooded on August 4, 2009;
 - Those homes that are in the sub-drainage areas impacted on August 4, 2009 that want to protect themselves from future potential floods; and
- Smoke testing results indicate that the Inflow and Infiltration issues are widespread beyond those homes that reported flooding in the drainage area and are potentially a large contributor to the surcharging of sanitary sewers.
- Further investigation indicates that approximately 40,000 homes constructed pre-Regional Government in Mississauga, Brampton and Caledon have a high likelihood of having their downspouts and foundation drains connected to the sanitary system as this was a permitted connection at that time. Disconnection of these homes from the sanitary system is identified as a possible long term initiative utilizing an inspection and subsidy program which will be further explored in the 2011 Budget deliberations.

DISCUSSION

1. Background

On August 4, 2009 an intense localized storm event occurred in Mississauga resulting in 254 homes reporting basement flooding in and around the Cooksville Creek area. In response to this event, staff have partnered with the City of Mississauga and Credit Valley Conservation to identify potential factors that may have contributed to the flooding and develop strategies and solutions to address these issues.

In addition, Mayor McCallion chairs the Cooksville Creek Flooding Task force that includes: City of Mississauga, Region of Peel and Credit Valley Conservation staff, City and Regional Councilors from the impacted Wards and community representatives from the flooded areas.

September 1, 2010

FLOODING REMEDIATION PROGRAM

PW-E1 -2-

As a result of the preliminary investigations into the flooding issue, the report of the Commissioner of Public Works titled, Phase 1 Inflow and infiltration Remediation Program, City of Mississauga – Wards 1,3,4,5,6 and 7, dated February 5, 2010 recommended the implementation of Phase 1 – Flooding Remediation program and was approved by Regional Council on February 25, 2010 (Resolution 2010-191). This report limited all of the proposed remedial actions to those 254 homes that had reported flooding from the August 4, 2009 storm and identified the need to:

- Conduct Household Drainage Surveys to confirm the plumbing configurations of residents and identify possible cross connections between storm and sanitary drainage systems in order to remove any extraneous flows that may be contributing to surcharging of the mains;
- Implement a shared cost subsidy program to offset residents costs to disconnect downspouts and install backflow prevention devices (backwater valves); and
- Implement a Manhole sealing program to reduce extraneous flows from entering the sanitary system when the roadways are flooded in low lying or problematic areas.

The Phase 1- Flooding Remediation Program was initiated in May once the required contracted services to perform the work were secured. Although this work is currently underway, the work undertaken to date provides an excellent backdrop to understand the complexity of the problems and develop strategies to resolve the issues in a more permanent manner.

2. Phase 1 Flooding Remediation Program Update:

a) Household Drainage Surveys

Approximately 125 (49 percent) of the residents that reported basement flooding from the August 4, 2009 storm have signed up for a Household Drainage Survey to date. Sixty-five of these surveys have been completed. Of those completed to date, 10 (15 percent) have been identified as requiring a sump pump to disconnect their weeping tiles; 39 have been advised that they would be suitable to install a backwater valve; and 8 have been identified for downspout disconnection. In some instances, especially for those residents that require a sump pump, the residents have been advised by their insurance companies that they require a back flow prevention device to remain insurable.

b) Subsidy Program

To date there has been one application filed for the backwater subsidy program and no applications for the others. Staff are anticipating that these applications will be made once the homeowner has undertaken the recommended work.

c) Manhole Sealing program

Fifty-two (52) manholes in the Cooksville Creek area have been identified for remedial works to help reduce the opportunity for inflow in low lying areas along the watershed. In addition, approximately 40 manholes have been identified for sealing in various areas based on their location within the floodplain or in low lying geographical areas. Work has commenced and will be ongoing through 2010.

On June 27, 2010, a high intensity storm once again hit some areas in the Cooksville Creek drainage shed and some of those residents that were flooded in August 2009 were flooded again. Residents continue to be highly interested in the actions taken to resolve the

September 1, 2010

FLOODING REMEDIATION PROGRAM

underlying contributing factors to the flood and in protecting their property from any potential future flooding events.

In fact, since the inception of the program, staff have compiled a list of approximately 160 additional residents that want to participate in the program but aren't currently eligible including those residents that flooded but did not initially report flooding to the Region or City and those that are in the impacted drainage area that weren't flooded and are interested in protecting their property for the future.

3. Ongoing Investigation and Findings

Staff have continued to conduct and expand investigations into the factors that contributed to the August 4, 2009 flood event. These investigations have identified additional issues for resolution and the need to consider the immediate expansion of the current program for the Cooksville Creek and other drainage areas impacted by the August 2009 storm and a future Region-wide program to more broadly protect Peel residents and the environment.

a) Smoke Testing Results:

As part of the investigation into the August 4, 2009 flood, staff retained a consultant to undertake smoke testing in sub-drainage sheds for those areas that were flooded. The results from this investigation have identified that over 500 homes within these areas are potentially cross connected with private storm water systems being connected to the sanitary system. None of these homes are part of the 254 homes that reported flooding. Household drainage surveys need to be undertaken to confirm the results of the smoke testing, identify where cross connections exist for potential disconnection, and subsidies for disconnections need to be made available.

b) Wye connections:

Seventy percent of the 254 homes that flooded on August 4, 2009 share a common sanitary lateral within the public right of way through a wye connection at the property line. This configuration can prove to be problematic to those homeowners on the wye connection that were not flooded on August 4, 2009. If the companion homeowner installs a back water valve it now makes their wye counterpart more susceptible to flooding as the flood water may be diverted into their half of the wye connection. These homeowners need to be able to have access to the Household Drainage Survey's and subsidy program to protect their properties from potential flooding.

c) Historical Data:

Staff have undertaken a review of available data and identified that basement flooding has occurred prior to August 4, 2009 and was not isolated to these specific areas in Mississauga, but has also occurred in other communities in Mississauga, Bolton and Brampton. In addition, further review of data indicates that prior to Regional Government the plumbing code allowed direct storm water connections to be made to the sanitary system. There are over 40,000 homes across Peel that may have their downspouts and foundations drains (weeping tiles) connected to the sanitary system. This would be a major contributor to the potential for surcharging of the sanitary system in the Mississauga, Brampton and Bolton communities. Removing these flows from Peel's sanitary system would be extremely beneficial in reducing the potential for surcharging of mains and reducing the costs associated with treating these extraneous

September 1, 2010

FLOODING REMEDIATION PROGRAM

flows, but would be a long term endeavor due to the magnitude of the numbers potentially connected. Disconnecting these homes from Peel's wastewater system would be the focus of a long term Flooding remediation program which will be further explored in the 2011 Budget deliberations.

d) Closed Circuit Television Inspection (CCTV)

All mains in the sub-drainage areas associated with the August 4, 2009 storm event have been inspected. As noted in the Phase 1 – Inflow and Infiltration Remediation Program Report in February 2010 (Resolution 2010-191), there were no hydraulic deficiencies found in the sanitary system and further visual site inspections over the past several months during high rainfall events have shown the mains to be performing adequately with no visible surcharging.

CCTV inspections are an integral part of ongoing condition assessment of the wastewater collection system and inspection results form part of Peel's data base for infrastructure repair and renewal programs.

4. Proposed Direction

- In order to address the above issues associated with the August 4, 2009 storm event that have been discovered since the approval of the February 25, 2010 Council Report (Resolution 2010-191), staff will be continuing discussions with City of Mississauga on the proposed expansion of the Phase 1 – Basement Flooding Remediation Program to approximately 594 homes including: 254 (initially identified in Phase I); approximately 180 homes that are on wye connections with the 254 homes that reported flooding from the August 4, 2009 storm; and approximately 160 homes that have flooded but did not initially report flooding to the Region or City including those in the impacted area that did not flood but want to protect their homes from future potential flooding.

As noted above, the factors contributing to basement flooding are diverse and prevalent in pockets across all Peel communities. Staff will continue working toward resolving and eliminating direct inflow connections to Peel's sanitary sewer system to reduce the likelihood of basement flooding and will be moving toward the establishment of a permanent Flooding Remediation Program through the 2011 Budget process including expanded dialogue with Mississauga, Brampton and Caledon.

FINANCIAL IMPLICATIONS

There are no financial implications from this report. Additional financial, technical and equipment resourcing will be addressed in the 2011 Wastewater Budget.

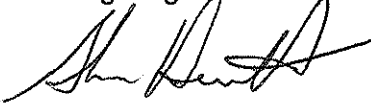
September 1, 2010

PW-E1 - 5 -

FLOODING REMEDIATION PROGRAM

CONCLUSION

This initiative continues to enable Peel to demonstrate due diligence in addressing and resolving basement flooding associated with inflow and infiltration issues in the sanitary system, and provide increased capability in protecting both the environment and Peel residents by mitigating future basement flooding.



pu
Dan Labrecque
Commissioner of Public Works

Approved for Submission:



D. Szwarc, Chief Administrative Officer

For further information regarding this report, please contact [Linda Petelka at extension 4455 or via email at linda.petelka@peelregion.ca

Authored By: Linda Petelka, B.Sc. Manager Wastewater Program Planning

c. Legislative Services