



**REPORT TO: MAYOR AND COUNCIL**

**FROM: Brad Sokach, P.Eng.  
Director of Public Works**

**DATE: March 17, 2014**

**SUBJECT: Swaley Drain Maintenance**

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### **REPORT HIGHLIGHTS**

- The Township Drainage Superintendent received a verbal request for cleaning of a portion of the Swaley Drain.
- A formal petition, as required under the Drainage Act, has not been received for the work, however is expected.
- A survey of the lower portion of the Swaley Drain has been completed including a portion of what is thought to be the Muskrat Creek.

### **Background**

This report is being generated to update Council on efforts related to the Swaley Municipal Drain (Swaley).

The Swaley Drain is a Municipal Drain. Maintenance of Municipal Drains are the responsibility of the Township as directed by Township Council who receive advice and recommendations from the drainage superintendent (Mark Archer, Deputy Director of Public Works) or an appointed drainage engineer.

Municipal drains are defined engineered drains under the Drainage Act as opposed to roadside ditches, for example.

Several engineered branches of Municipal Drains feed into the main Swaley Drain and in the event of maintenance work being directed by Council, any upstream benefitting landowners (as prescribed in the Engineers report) would have a proportional financial responsibility for the net cost of the work. The most current assessment of landowners within the Swaley Drain catchment area was updated by the appointed drainage engineer in 2003. There are over 3,358 acres and 94 landowners who would be responsible for paying a proportional cost of any work completed.

Municipal drains are regulated under the Drainage Act. The Act is prescriptive and clearly defines the duties and rights of Council and Landowners for any request for drainage

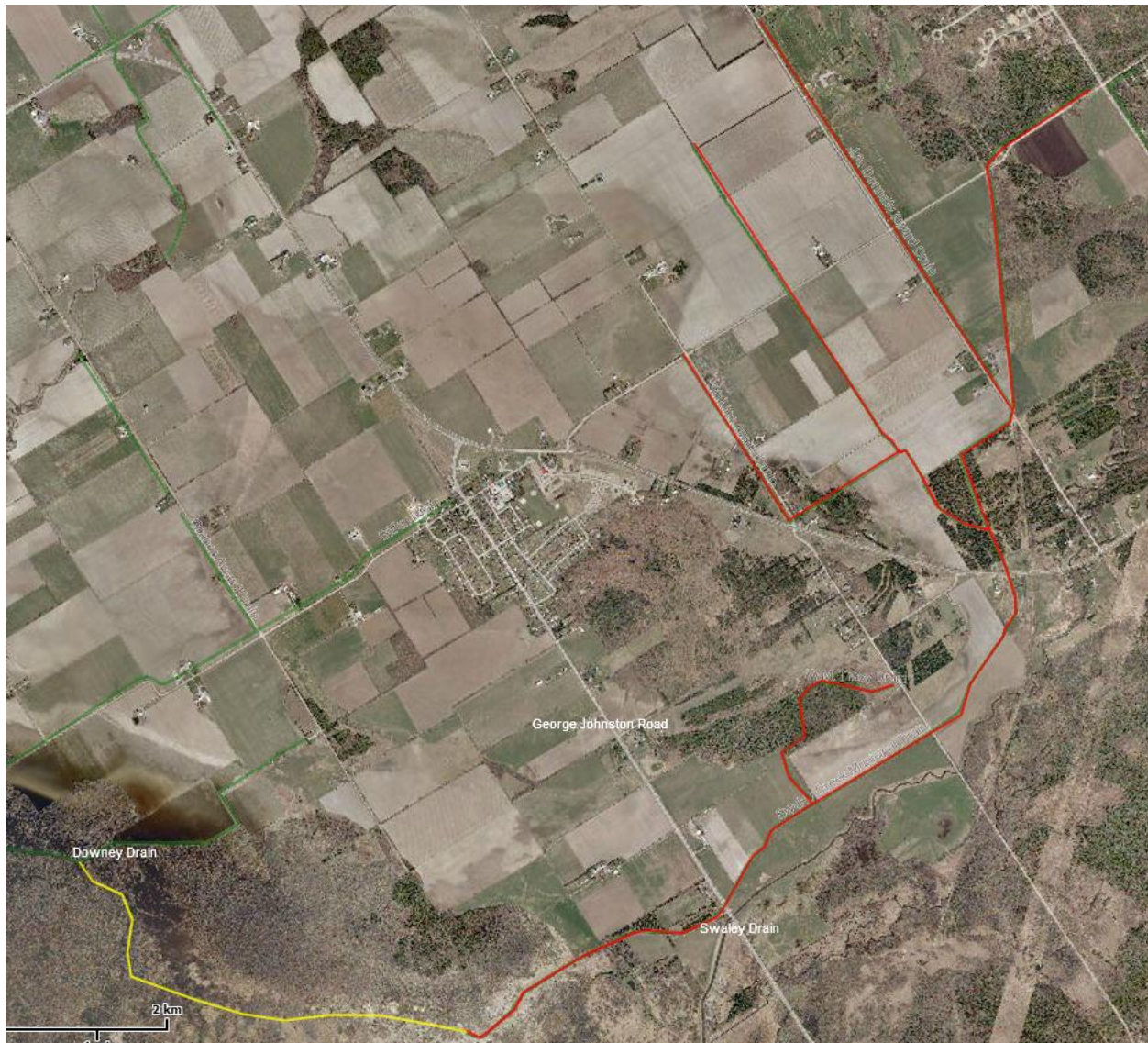
maintenance right through to the engineering review, tendering, construction and future maintenance of the Drain.

In December 2013, the Township was requested to attend a site visit with a resident whose land is adjacent to George Johnston Road and drains to the Swaley Drain. The resident contends that as a result of silt buildup in the drain, his field tiles are underwater and are not functioning properly. The resident has asked the Township to undertake work to remove the silt and thus improve the functioning of the field drains.

The landowner/resident also contends that undefined Township actions have made the situation worse. The Drainage Superintendent has determined that the drain has silted in and the cleaning of the section requested by the landowner will not lower the water levels because of the water levels throughout, and the actual bottom in the Minesing wetland (where the drain outlets) will not provide sufficient gradient to improve the drainage flows. The Landowner has accepted these findings but has verbally requested that the Township take the required actions to improve the outlet of the Swaley Drain.

It is important to note that the efforts required to improve the drainage at the outlet of the Swaley Drain are within the Minesing Wetland and beyond the end of the Swaley Drain as defined under the Drainage Act.

The drawing below shows the different municipal drains feeding into the Swaley Drain. As noted above, costs associated with the maintenance of a municipal drain are assessed against all benefitting landowners which would include landowners contributing water to all of the drains feeding to the Swaley Drain. As shown in the drawing the Swaley Drain discharges to the Minesing Wetland where it is thought to have originally discharged into the Muskrat Creek.



The lines in red in the above drawing represent the Swaley Drain or other drains feeding to the Swaley Drain. The yellow line represents the approximate location of the Muskrat Creek.

In response to the inquiry by the resident, the Drainage Superintendent set out to evaluate the condition of subject area of the drain, the elevations and fall associated with the drain, and the condition of the outlet in the Minesing Wetland. In addition to having the lower portion of the drain surveyed, the Township's Drainage Superintendent and a longtime resident familiar with the Minesing Wetland tracked through the Minesing Wetland to the end of the Swaley Drain. They then followed the natural flow through what is thought to be the former Muskrat Creek to its discharge at the Downey Drain. The purpose of this, in part, was to investigate the feasibility of deepening the Swaley Drain and Muskrat Creek to better drain the resident's property.

The Swaley Drain extends approximately 1.8 km from George Johnston Road west into the Minesing Wetland. The Muskrat Creek then runs an additional 2.5 km to the Downey Drain. The Muskrat Creek appears to run through Ministry of Natural Resources (MNR) and Nottawasaga Valley Conservation Authority (NVCA) owned land.

The surveying completed by the Township's Drainage Superintendent suggested that there is very little grade from George Johnston Road to the Downey Drain. The survey suggests that the grade in this area is on the order of 0.06% as there is a fall of approximately 2.5 meters over a length of approximately 4,500 meters. For context the minimum ditch grade the Township will consider in a new development is 0.5%.

The survey results were also compared to the original Swaley Drain design drawings. The survey clearly shows that the drain has silted-in since the original construction. There is no historical information available regarding the elevation of the bottom of the Muskrat River at the time of construction of the Swaley Drain. Based on the current conditions it is difficult to understand how cleaning out the sediment in the Swaley Drain will improve drainage as there will still be an obstructed area through the Muskrat Creek.

It is the opinion of the Drainage Superintendent that at this time any work within the Swaley Drain would not markedly improve the drainage on the resident/landowners land.

### **Next Steps**

The Township contacted the Ontario Ministry of Agriculture Food and Rural Affairs (OMAFRA) who have advised that the municipality should take the following next steps in accordance with its responsibilities under the Drainage Act:

- Advise the affected landowners of their ability to head up a petition for maintenance on the existing limits of the drain or to request for an extension of the drain;
- Upon receipt of a valid petition seek Township Council direction regarding the request in the petition;
- Alternatively, a consultation process, with peer Drainage experts could be undertaken that would determine if the Act is the best practice to address the request.

Township staff understand that the resident will be providing a petition for a clean-out of the drain in the coming weeks.

Until a valid petition has been received, the Township does not have an obligation to take any further steps regarding to the cleaning of the drain.

The Township's Drainage Superintendent is planning to meet with a Drainage peer to discuss the matter as well as attend the drain during the spring thaw with representatives of the NVCA.

## **Guiding Principles**

The above initiative is not tied to a guiding principle.

## **Applicable Municipal Policy or Legislation**

Drainage Act

Submitted by: Brad Sokach, P.Eng. on behalf of Mark Archer

Report Reviewed by: Mark Archer

Approved by: Robert Brindley, Chief Administrative Officer

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