

COMMITTEE OF THE WHOLE – MARCH 3, 2008

LIFE SAVING STATIONS IN STORM WATER MANAGEMENT FACILITIES

Recommendation

Councillor DiVona, Chair Safe City Committee, in consultation with John Caruso, Chief Fire Prevention Officer, Andrew Pearce, Director of Development/Transportation Engineering, and Joseph Chiarelli, Manager of Licensing/Risk Management, recommend:

1. That the City of Vaughan Council approve of the recommendations contained herein as to the introduction of "life saving stations" in storm water management facilities throughout the City of Vaughan;
2. That Staff be directed to finalize an implementation, operational, and financial plan to equip each storm water management facility in the City with lifesaving stations, and report back to a future Committee of the Whole meeting in the next 30 days; and
3. That the City of Vaughan Council approve of the proposal to amend the "adopt a park" program to provide for "adopt a pond" for all existing ponds.

Economic Impact

There are no immediate budgetary impacts resulting from the adoption of this report and the new safety standard.

However, should Vaughan Council approve of the life saving stations as a new standard for safety, it will result in the revision to the design criteria as contained within the subdivision agreements and life savings station costs will be absorbed by the developer. Currently, the design criteria provides for signage. This is the funding practice used by the City of in Brampton for all "new" and "unassumed" swm facilities and being recommended for the City of Vaughan.

It is further recommended that Vaughan Council should advance the life saving stations to cover all swm facilities. Should Vaughan Council approve of the life saving stations as a new standard for safety, abutting property owners and the public will be offered an opportunity to "adopt a pond" and pay the estimated \$350 cost for the installation of the life saving station for those swm ponds that have already been assumed by the municipality using the guidelines and principles of the "adopt-a-park" program.

Existing maintenance levels are to be maintained. However, during the normal or regular maintenance periods it is requested that the safety audit form be completed which requires a visual 3 point inspection. Should any damage or stolen safety device exist, it is expected that we keep a supply of the life savings station device(s) .

Annual safety audit of all storm water management ponds by Engineering and Parks Maintenance Departments. As swm facilities have been constructed over the past few decades at varying standards, it is necessary, with or without this recommendation, to ensure the necessary signage exists, and consider life saving stations with those facilities in older established areas. A further report will come forth in one year to address the results of the inspections of the older swm facilities and any implication.

Communications Plan

There will be no communications plan required resulting from the adoption of this report.

Purpose

The purpose of this report is to provide Council with information on a new initiative for the City of Vaughan similar to that of a neighbouring municipality (Brampton) to equip storm water management facilities with lifesaving devices and to receive direction with respect to staff reviewing and implementing this practice in Vaughan.

Background - Analysis and Options

Storm water management techniques are necessary to mitigate the effects of urbanization on the hydrologic cycle, and have been incorporated as part of the municipal services in new development in the City since the early 1980's. Currently, the City owns approximately 120 storm water management facilities. It is anticipated that through further development within the City, an additional 80 SWMF will be constructed over the next 20 years.

Properly designed storm water management plans maintain the existing hydrologic cycle while protecting water quality and preventing increased erosion and flooding. Typically, storm water management plans employ a treatment train approach, which uses a combination of lot level, conveyance and end-of-pipe (storm water management facility) measures. The form, function and design of SWM facilities have evolved over time. Initially, SWM facilities were regular shaped and designed to detain storm water as a means of preventing down stream flooding. Today, SWM facilities are integrated as focal features in new communities and are designed to meet a multitude of objectives including water quantity, quality and erosion control. Over the years, safety has been an important consideration in the design of each SWM facility.

In 1994, the MOE published a document entitled "Storm Water Management Practices Planning and Design Manual" which provided technical and procedural guidance for the planning, design and review of SWM facilities. This document was subsequently updated in 2003 and is currently considered the primary resource/design manual for storm water management facilities by engineers and review agencies. In accordance with the Provincial, City, Conservation Authority, and industry standards, the design of new storm water management ponds must incorporate numerous public safety features including:

- Grading near the edge of the permanent pool is to be terraced with gentle slopes to minimize the potential for any person to fall into the water;
- The maximum depth of the permanent pool is generally between 1.0 and 1.5 metres deep;
- Perimeter fencing is provided along the property lines of residential, commercial and industrial or institutional lands where they abut a storm water management pond block;
- Warning signs are placed near pedestrian traffic routes or walkways located near the perimeter of a storm water management pond;
- Dense landscaping is strategically placed near structures and areas of steeper topography to restrict access and to act as a fall arrest;
- Many SWM facilities have extensive public frontage to ensure that the interior of the facility can be seen by motorists and pedestrians;
- All structures are equipped with the necessary grates and handrails;
- Side slopes between 3:1 and 7:1 which are easily accessible by foot; and
- Pedestrian and vehicular accessibility.

Notwithstanding the above inherent safety design features, there is still a potential risk that a member of the general public, in particular a child or youth, could stray into the permanent pool area of a SWM facility and may need assisted extraction. In consideration of this potential situation, the Safe City Committee has recommended that the City explore the feasibility of equipping each SWM facility with lifesaving stations. In addition, the Safe City Committee has suggested that the following procedure could be adopted:

- The initial audit of all ponds and storm water maintenance ponds was completed by their Engineering Department. This included identifying locations and size of the ponds and number of safety stations required.
- The installation of the safety stations was completed by outside contractors or internal staff.
- Inspections are carried out on a by-weekly basis by their Parks Service Personnel who then complete inspection forms and maintain the records. (VFRS anticipated Enforcement Services would look after this).
- Inspectors will keep an inventory of parts and equipment on hand for replacement purposes.
- Inspectors will complete a work order for damaged stands, signs etc and submit to their Supervisor for processing within 24 hrs.

Insurance and Risk Management Considerations

The City of Vaughan insurance carrier has been contacted by the Manager of Licensing, Mr. Joe Chiarelli and has submitted a few comments.

The City of Vaughan is required to ensure signage is properly and sufficiently displayed. Currently, new subdivisions include signage requirements at storm water management facilities. Sample signage is attached #4 for Engineering Department to review and consider for inclusion within the design guidelines within subdivision agreements.

The City of Vaughan would be required to ensure that a plan is established to regularly maintain storm water management facilities. Currently, swm facilities are maintained on a regular cycle. The City of Vaughan would be required to include within any regular inspection the inspection and maintenance of the life savings station, i.e. replace the life pole, ring or rope. A sample of the Brampton Parks Department, "safety station inspection" report is attached showing the three point visual inspection requirement. See attachment 5.

No further concern has been raised by the insurance company or Licensing Department.

Relationship to Vaughan Vision 2020

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

- The pursue of excellence in service delivery;
- Enhancing and ensuring community safety, health and wellness; and
- Demonstrating leadership and promoting effective governance.

This report is therefore consistent with the priorities previously set by Council.

Regional Implications

There will be no Regional implications resulting from the adoption of this report.

Conclusion

The permanent pool in most storm water management facilities in the City presents a potential risk (water hazard) to the general public. To mitigate this risk, it is recommended that staff investigate the feasibility of equipping each storm water management facility in the City with

lifesaving stations and report back to a future Committee of the Whole meeting. The feasibility study shall include consideration for the operational, financial and liability implications of implementing such a program.

Attachment

1. Storm water Management Pond Summary
2. Life Saving Stations Components and Criteria- John Caruso, Chief Fire Prevention Officer
3. City of Vaughan Storm Drainage and Stormwater Management Master Plan
4. Proposed signage for Life Savings Stations and signage requirements.
5. Safety Station Inspection form.

Report prepared by:

Bernie DiVona, Councillor Ward 3
John Caruso, Chief Fire Prevention Officer
Andrew Pearce, Director of Development/Transportation Engineering
Joseph Chiarelli, Manager of Licensing/Risk Management
Michael Frieri, Supervisor of Engineering Planning and Studies

Respectfully submitted,

Bernie DiVona
Councillor – Ward 3
'Working for You'

ATTACHMENT No. 1

STORMWATER MANAGEMENT POND SUMMARY

Assumed Dry Ponds	20
Assumed Wet Ponds	52
Proposed or Constructed (Unassumed) Wet Ponds	50
Potential New Retrofit Wet Ponds	20
Regional OPA 19 - West Vaughan Enterprise Zone Estimated Future Wet Ponds	12
Urban Expansion Area (City Limits) Estimated Future Wet Ponds	48
Total Estimated City-Wide Ponds	202

**City of Vaughan Storm Drainage and Storm
Water Management**

Components:

- 1 stand 10' in concrete footing
- Ring bouy with 50'ft of rope
- Sign with international symbols

Criteria:

Storm drainage and storm water management should be place approx 150 ft Apart?, and above the possible maximum water level with a minimum of 2 stations per site.

Inspections:

Bi- weekly all year round.
Repairs or replacements should be accomplished within 24hrs.
Documentations should be noted to i.e. Parks.

Budget:

Labour cost to put concrete footing
Equipment
Capital Start up for existing Ponds

The supplier is Aquam Specialiste Aquatique inc.
5500 Fullum suite 100
Montreal, Que
H2G 2H3
Tel # 514-948-4878

John Caruso

Chief Fire Prevention Officer

**CITY OF VAUGHAN
STORM DRAINAGE AND
STORMWATER MANAGEMENT
MASTER PLAN**

Attachments

DRAFT

- LEGEND**
- CITY BLOCK NUMBER
 - - - EXISTING PROPERTY BOUNDARY
 - - - PROPOSED DEVELOPMENT
 - - - PROTECTED COUNTRYSIDE
 - OPEN
 - OPEN SPACE
 - ASSUMED OPEN SPACES
 - UNASSIGNED ZONES
 - PROPOSED PONDS
 - EXISTING FLOOD DAMAGE VULNERABLE

City of Vaughan Planning
1000 Sheppard Avenue East
Vaughan, Ontario L4N 4R2
Tel: (905) 709-2200
Fax: (905) 709-2201

Vanigan Planning
The City's Planning Partner
1000 Sheppard Avenue East
Vaughan, Ontario L4N 4R2
Tel: (905) 709-2200
Fax: (905) 709-2201



01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107

WARNING



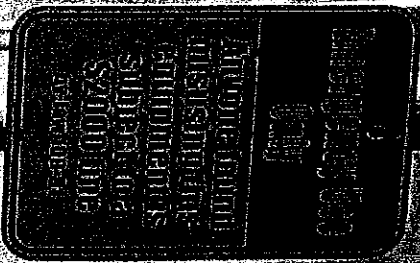
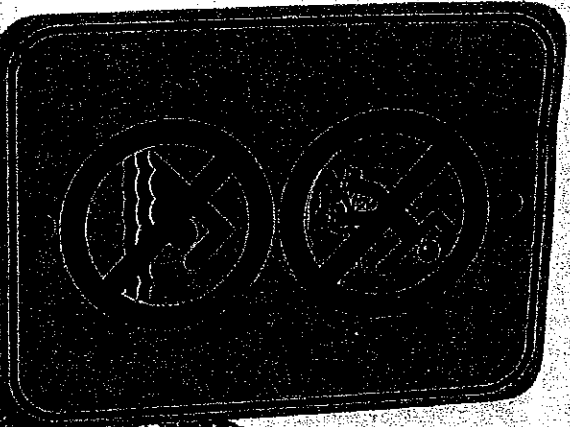
**CONDITIONS IN THE
STORM WATER POND
CAN CHANGE RAPIDLY
INCLUDING FLUCTUATING
WATER LEVELS AND THIN ICE
SKATING & SWIMMING
ARE PROHIBITED**

By-Law 89-161

UNAUTHORIZED
MOTOR
VEHICLES

BY LAW 161-83





กรมส่งเสริมการค้าระหว่างประเทศ



Attachment 5

SAFETY STATION INSPECTION

PERFORMED BY: _____

DATE: _____

LOCATION	# OF STNS	LIFE POLE		LIFE RING		ROPE		REPLACE/COMP DATE	SIGNATURE
		MISSING	PRESENT	MISSING	PRESENT	MISSING	PRESENT		
N O R T H	Hilldale S.	1							
	Hilldale N.	1							
	Maitland N.	2							
	Maitland S.	2							
	Manitou	1							
	Prof's Lake	8							
	Castlemore S.	1							
	Ezard	1							
	Major Oaks	1							
	Ken Park	1							
	Chesham	1							
	Donnelly East	1							
	Loafer's Lake	2							
S O U T H	Birchbank	1							
	Victoria	1							
	Aloma	1							
	Balmoral	1							
	Clarke	2							
	Crawley	1							
	Norton	4							
	Parr. L. N.	4							
	Parr. L. S.	3							
	Centennial	2							
Eldorado	2								