



City of
Peterborough

TO: Members of the Planning Committee

FROM: Malcolm Hunt, Director of Planning & Development Services
W. H. Jackson, Director of Utility Services

MEETING DATE: September 2, 2008

SUBJECT: Report PLPD08-070
Drainage Modifications on Technology Drive

PURPOSE

A report to evaluate the merits of drainage modifications on Technology Drive.

RECOMMENDATION

That Council approve the recommendation outlined in Report PLPD08-070, dated September 2, 2008, of the Director of Planning & Development Services and the Director of Utility Services, as follows:

That Report PLPD08-070 be received for information and that no further action be taken to adjust the storm drainage system on Technology Drive at this time.

BUDGET AND FINANCIAL IMPLICATIONS

There are no direct budget or financial implications arising from this recommendation.

BACKGROUND

During Council's consideration of the sale of the property on Technology Drive to Drain Bros. Excavating Limited (PLPD08-047), Staff was directed to explore a storm drainage proposal advocated by Councillor Vass. The concept expressed involved the collection of storm water presently flowing through a network of ditches at a point more or less in the vicinity of Highway 115/7 where it crosses the railway spur servicing Peterborough Industrial Park, immediately east of the former National Grocers site. From this point, the storm water would be pumped to south Meade Creek, near the Otonabee Best Western Hotel, following the alignment of the railway spur. The resolution adopted by Council on June 9, 2008 was as follows:

"That Committee direct staff to discuss drainage issues related to this property with ORCA and Drain Bros. and provide recommendations as necessary to Committee in the future".

In 1997 the City retained the Conservation Authority to develop a drainage plan for Technology Drive. The work undertaken by the Conservation Authority was comprehensive in scope and twelve (12) specific drainage solutions were evaluated. The recommended solution was approved by Council and constructed in 1997 and 1998 with acceptable results. At that time a similar pumping proposal was made. Attached as Appendix 'A' is a Report dated March 9, 1998, prepared by the Director of Utility Services, addressing the storm water pumping proposal, in light of the recently completed Technology Drive Drainage Plan. Staff could not recommend implementing the pumping solution.

On July 8, 2008, a meeting was convened with representatives of the Conservation Authority, the Director of Utility Services and the Director of Planning & Development Services to give fresh consideration to Councillor Vass' proposal. It is the position of the Conservation Authority that the capture and pumping of storm water as proposed is not feasible. The evaluation of the Authority is contained in a letter dated July 18, 2008 attached as Appendix 'B'.

On the basis of the foregoing, staff have not met with Drain Bros. Excavating to review drainage modifications or to develop a cost estimate for the construction of new drainage works.

Given that the existing drainage improvements were constructed following a thorough evaluation process and with acceptable outcomes, it is recommended that no further action be taken to adjust the storm water drainage system on Technology Drive at this time.

Submitted by,

Malcolm Hunt
Director of Planning & Development
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W.H. Jackson
Director of Utility Services
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Attachments:

Appendix A - Report dated March 9, 1998, prepared by the Director of Utility Services
Appendix B - Letter dated July 18, 2008 from Otonabee Conservation



*file - Technology Dr.
Drainage*
Utility Services Department
Engineering & Construction Division
March 9, 1998

TO: CHAIRMAN AND MEMBERS OF GENERAL COMMITTEE

RE: TECHNOLOGY DRIVE DRAINAGE IMPROVEMENTS AND CONTRACT 1998-01

On February 23, 1998, Council approved the award of Contract 1998-01, for the construction of an outlet ditch in the vicinity of Technology Drive. This work is the completion of maintenance work begun in the fall of 1997.

Council has received correspondence from Mr. Len Vass, and this report contains background information on this work.

Background:

Due to the flat nature of the land in the proximity of the Peterborough Industrial Park, surface drainage ponding has been historically experienced in portions of the Technology Drive roadside ditches and other ditches in the area. In particular, seasonal, surface ponding in the parking lot and operations yard on the National Grocers' site has occasionally occurred.

Discussions began in 1995 between City staff and National Grocers with respect to National Grocers' proposal to carry out major improvements and regrading of their site. It was the position of National Grocers that the investment in these improvements could not be justified unless localized drainage conditions were improved. Therefore, the City retained the Otonabee Region Conservation Authority (ORCA) to undertake a review of the drainage in the vicinity of Technology Drive, as a supplementary study to the comprehensive Meade Creek Subwatershed Study currently being carried out by ORCA.

ORCA's investigation of the potential for drainage improvements, on the north side of Technology Drive, considered twelve possible alternatives¹. The selected option provides the best combination of high water protection, cost effectiveness, minimization of land acquisition and approval process requirements, and least impact on future land development. This option involves the regrading of the roadside ditch on the north side of Technology Drive adjacent to the National Grocers' site, including enlargement of the driveway culverts and the culverts under the railway sidings and the construction of an outlet ditch northerly on railway lands and then easterly across City owned lands, finally turning south along Miltronics Ltd.'s west property line to connect back into the existing Technology Drive ditch and culvert under Technology Drive. This route is illustrated on the accompanying sketch. It should be noted that this work is in the nature of maintenance, rather than representing any major new undertaking.

As a result of discussions in the fall of 1997 with National Grocers regarding improvements to their site, a timetable for the construction of the chosen drainage improvements was established in order to accommodate National Grocers' schedule. A portion of the drainage improvement work involving the installation of new culverts and re-ditching along Technology Drive and new culverts under the railway spur lines was completed last fall. However, due to weather and site conditions, and high tender prices, the completion of the outlet ditch was deferred with the intention of re-tendering this portion of the work during the winter of 1998 in anticipation of lower tender prices due to the off-peak construction period and improved site working conditions. The tender was issued and closed on February 20, 1998. It should be noted that the original study recommended the sealing of the existing culvert under Technology Drive at the National Grocers' spur. This has not been included in the scope of the current contract, and will be re-evaluated after the work has been completed and the system has been monitored.

¹ chart summarizing the alternatives accompanies this report

To: Chairman and Members of General Committee
Re: Technology Drive Drainage Improvements and Contract 1998-01
March 9, 1998
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Due to the restricted construction time schedule and commitments made to National Grocers, it was necessary to have a special General Committee meeting and special Council meeting on February 23, 1998 for the award of Contract 1998-01 for the construction of the ditch to complete the necessary outlet for the portion of the work completed in the fall of 1997.

Mr. Vass has recently written to Council, suggesting he would prefer to see a different outlet constructed for these ditches. Mr. Vass' proposal has been conveyed to staff verbally, and is a conceptual proposal only. It would involve the construction of a drainage outlet from the Technology Drive/National Grocers' area northwesterly along the railway allowance to Meade Creek near the Best Western Otonabee Motel. Staff have discussed this concept with ORCA, and it cannot be recommended for the following reasons:

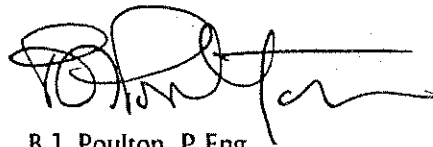
- 1) It goes against the natural grade of the land which would require a major portion of the outlet to be enclosed in a pipe rather than being an open ditch, since the required depth of the outlet would be in the 4.5 metre (15 foot) range. This is undesirable both from a safety and maintenance perspective, and also because it would be difficult, if not impossible, to contain it within the railway right-of-way.
- 2) Construction costs would be higher, because of the need to pipe portions of the system, and, in addition, it would necessitate crossing under two multi-lane arterial streets and the payment of an annual licence fee to the railway.
- 3) Re-directing the flows away from the natural drainage route could have detrimental effects on the upper sections of Meade Creek which currently receive this water.

Options 9 and 10 in the accompanying chart, although not exactly the route suggested by Mr. Vass, did consider drainage schemes to the north, and were similarly not recommended.

Respectfully submitted,



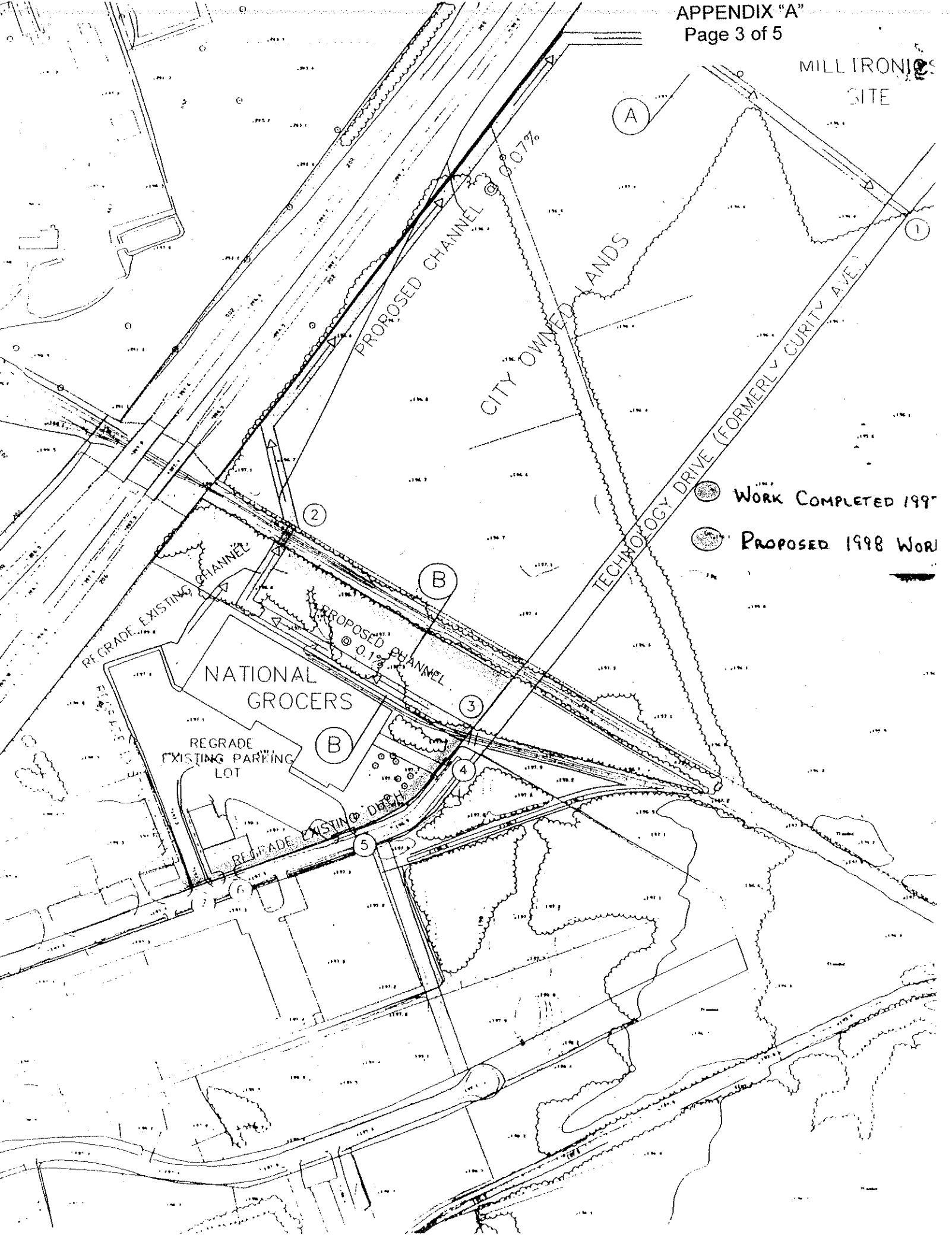
G.P. Rye, P.Eng.
Manager
Engineering & Construction Division



B.J. Poulton, P.Eng.
City Engineer
Director, Utility Services Department

GPR/BJP:cf
Attachments
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MILL IRONIES
SITE



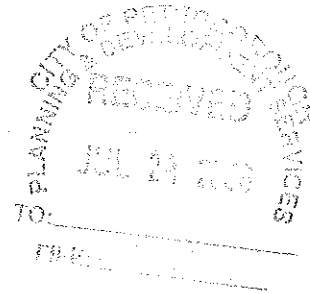
Option	Description	Option Opportunities	Option Constraints	Recon
1. Regrade NG parking lot	Lowest area of parking lot below observed water surface elevation in Technology Dr. ditches	Will reduce depth and frequency of flooding on parking lot at a minimal cost.	Loading dock elevations. Truck turning movements. Tailwater from wetland.	Not recommended alone.
2. Upgrade NG entrance culverts (including subdrains in ditch)	Lower portions of existing culverts subject to bottom ice formation and upper portions damaged	Will reduce increase in water surface profiles across entrances	Limited cover on culverts. Possible high ground water. Tailwater from wetland.	Not recommended alone.
3. Upgrade NG entrance culverts and upgrade Technology Dr. culvert crossing (@ NG)	As for 2 above. Existing Technology Dr. culvert in satisfactory condition	As for 2 above	As for 2 above.	Not recommended alone.
4. Divert Technology Drive road side ditches to O'Brien Dr. outlet	Construct culvert crossing for Technology Dr. at NG and new ditch south to O'Brien Dr.	Minimal Cost.	Tailwater from wetland above ditch elevation. Affects on private property..	Not recommended.
5. Divert Technology Dr. north road side ditch around NG	Upgrade existing NG ditch system similar to historic pattern	Diverts flows away from problem area in front of NG.	Existing CPR culvert elevation and capacity. Filling has altered outlet.	Not recommended alone.
6. Construct new outlet ditch to existing Walsh drain - south alignment option	Consistent with historical pattern and MJD 1996 solution.	Eliminates influence of wetland water surface elevations.	Two CPR culvert crossings required. Meade Cr.. flood elevations. Private property.	Not recommended alone.
7. Construct new outlet ditch to Walsh drain - north alignment option.	Similar to historical drainage pattern.	Eliminates influence of wetland water surface elevations as well as restoring historical drainage patterns.	Existing CPR culvert elevation and capacity. Meade Cr.. flood elevations.	Not recommended alone.

Option	Description	Option Opportunities	Option Constraint	
8. Construct new storm sewer / ditch along Plastics Rd. CPR spur	As per MJD proposal.	Bypasses wetland and eliminates influence of wetland water surface elevation.	High cost. Limited slope and stability. Private property	Not recommended.
9. Construct new outlet ditch and bypass culvert crossings to Meade creek at Lansdowne St. / Television Rd.	Parallels ditch system shown on 1:2000 OBM - proposes reverse flow direction.	Eliminates influence of wetland water surface elevation. Lower Meade creek elevations.	High cost. Not a historical pattern. MTO property and approvals required.	Not recommended
10. Construct new outlet ditch and CPR culverts to Meade creek via Lansdowne Street tributary	Establish new drainage system northerly along CPR to existing tributary at Lansdowne St.	Eliminates influence of wetland water surface elevation. Lower Meade creek elevations.	Existing CPR culvert and capacity. Existing Lansdowne St. culvert elevation and capacity.	Not recommended.
11. Combination of 1, 2, 5, and 7 above	See 1, 2, 5, and 7	See 1, 2, 5, and 7	Existing CPR culvert and capacity. Meade Cr.. Flood elevations. Technology Dr. culvert capacity.	Preferred recommendation.
12. Combination of 1, 2, 5, and 6 above	See 1, 2, 5, and 6	See 1, 2, 5, and 6	Existing CPR culvert and capacity. New CPR culvert crossings. Meade Cr.. Flood elevations.	Secondary preferred recommendation



July 18, 2008

Mr. Malcolm Hunt,
Director of Planning
City of Peterborough
500 George Street North
Peterborough, Ontario
K9H 3R9



Re: Technology Drive Industrial Park (the Park) – Review of Conceptual Drainage Proposal

Dear Mr. Hunt:

As discussed in the meeting of July 8th, the Otonabee Region Conservation Authority (ORCA) was asked to review a conceptual drainage proposal to capture surface water in a centralized facility near the northwest portion of the industrial park and then pump the water north along a new outlet located in the railway corridor to South Meade creek in the vicinity of the Best Western Otonabee hotel on Lansdowne Street. The purpose of this system would be to capture surface water at the upstream end of the site, thus preventing it from flowing through the rest of the property, resulting in reduced floodplain area and increased area for development.

As you are aware, ORCA has undertaken two (2) drainage studies for the City in this area; the first being the design of the drainage channel along the rear of the property (which was constructed in 1997); and the second being the conceptual layout of the industrial park and the associated surface drainage system (ORCA, 2003). ORCA has previously issued permits for fill placement on this site as needed. Thus, we are aware of the drainage issues on and around the subject property.

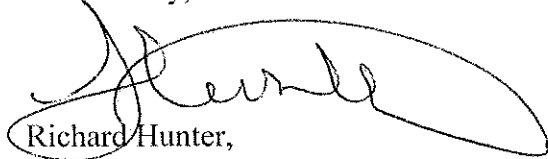
We have reviewed past correspondence and conducted additional field visits to evaluate the feasibility of the conceptual drainage proposal (i.e. capture and pump to the north). Generally, the proposal is not feasible, in ORCA's opinion, for the following reasons:

- There have been no changes to the drainage patterns since the completion of the perimeter channel in 1998. This channel was identified as the preferred alternative in the 1996 drainage assessment, and there is no new information that would result in an alternate conclusion based on current conditions.
- Complete capture of surface water within the facility would not be permissible. Baseflow would have to be maintained downstream at all times in order to satisfy riparian rights of downstream users as well as to prevent adverse ecological impacts to habitat within the warmwater creek and the Coldsprings wetland.
- The Coldsprings wetland complex was classified by MNR as a provincially significant wetland in 2005 (Snider's Ecological Services, February 2005). The current EIS prepared for the industrial park development (J&J Environmental, 2004) would have to be substantially revised to demonstrate that no adverse impacts occur to the form and function of the wetland as a result of any drainage changes.

- The current preferred development plan for the industrial park requires substantial fill volumes to provide positive drainage to the creek outlet. Generally, this drainage occurs by gravity in a northwest to southeast direction, ultimately outletting from the site to the culvert under Technology Drive at the eastern property boundary. The alternate proposal (capture and pump system) would require that the site be reverse graded such that all surface water would be conveyed from southeast to northwest; an extremely difficult task to achieve on this site.
- The proposed storage facility in the northwest corner of the property would require a permit from ORCA under Ontario Regulation 167/06. However, a permit could not be issued since the facility would be located within regulatory floodplain.

Should you have any questions, or require additional information, please contact the undersigned.

Yours Truly,



Richard Hunter,
CAO/Secretary-Treasurer

cc. File